



PAT McCrory
Governor

NICHOLAS J. TENNYSON
Secretary

September 21, 2016

U.S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Ms. Lori Beckwith
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 14 and Section 401 Water Quality Certification** for Improvements to NC 107 from just north of SR 1002 to NC 281; Jackson County; F.A. Project No. STP-107(10). TIP No. R-4753; \$570.00 debit WBS No. 46125.1.1.

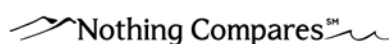
Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to improve and upgrade 3.7 miles of NC 107 from just north of SR 1002 to NC 281. The existing bridge will be utilized as an onsite detour during construction. There will be 389 lf of permanent impacts to surface waters from stream relocations, culvert extensions and roadway fill. There will be 0.03 acre of temporary impacts to surface waters resulting from this action. Mitigation has been acquired from the North Carolina Division of Mitigation Services (NCDMS) for the stream impacts for this project.

Please see enclosed copies of the Pre-Construction Notification (PCN), DMS Acceptance Letter, PJD Form; Stormwater Management Plan, Permit Drawings, and Roadway Plansheets. A Categorical Exclusion (CE) was completed in June 2011 and distributed shortly thereafter. Additional copies are available upon request.

This project is located in a trout county; therefore comments from the NCWRC will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests NCWRC Review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

Concurrence has been requested from USFWS (Letter dated September 20, 2016), for the Indiana bat with a biological conclusion of May Affect; Not Likely to Adversely Affect.



This project calls for a letting date of December 20, 2016 and a review date of November 1, 2016.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <http://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please call Jeff Hemphill at (919) 707-6126.

Sincerely,

A handwritten signature in blue ink, appearing to read 'PHILIP S. HARRIS', with a long horizontal flourish extending to the right.

for

Philip S. Harris, P.E., Manager
Project Development and Environmental Analysis Unit

cc:
NCDOT Permit Application Standard Distribution List



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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 14 or General Permit (GP) number:	
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:	Improvements to NC 107 from just north of SR 1002 to NC 281.
2b. County:	Jackson
2c. Nearest municipality / town:	East Laporte
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	R-4753

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) 707-6126
3g. Fax no.:	(919) 212-5785
3h. Email address:	jhemphill@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: 35.27628 (DD.DDDDDD) Longitude: - 83.13851 (-DD.DDDDDD)
1c. Property size:	19.6 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Tuckasegee River
2b. Water Quality Classification of nearest receiving water:	WS-III, B;Tr
2c. River basin:	Little Tennessee
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: Forest communities, agriculture, minor residential development	
3b. List the total estimated acreage of all existing wetlands on the property: 0	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 980 lf	
3d. Explain the purpose of the proposed project: To upgrade NC 107 to current design standards	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves safety improvements to NC 107 including widening the lanes and shoulders to upgrade the facility to current design standards The projec crosses eight streams that will require culvert extensions. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	☐ Yes ☒ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☐ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. Requesting a PJD with this permit application.	
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 (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
			☐ Yes ☐ No	☐ Corps ☐ DWQ	
			☐ Yes ☐ No	☐ Corps ☐ DWQ	
			☐ Yes ☐ No	☐ Corps ☐ DWQ	
			☐ Yes ☐ No	☐ Corps ☐ DWQ	
			☐ Yes ☐ No	☐ Corps ☐ DWQ	
2g. Total wetland impacts					
2h. Comments:					

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☒ P ☐ T	Pipe reloc and extend	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	47
Site 1 ☒ P ☐ T	Energy Dissipater	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	16
Site 1 ☐ P ☒ T	Dewatering and construction	UT to Tuckasegee River	☐ PER ☒ INT	☒ Corps ☐ DWQ	1	45
Site 2 ☒ P ☐ T	Pipe reloc and extend	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	30
Site 2 ☐ P ☒ T	Construction	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	6
Site 3 ☒ P ☐ T	Pipe Extension	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	30
Site 3 ☒ P ☐ T	Energy Dissipater	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	8
Site 3 ☐ P ☒ T	Dewatering and construction	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	36
Site 4 ☒ P ☐ T	Pipe Extension	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	40
Site 4 ☒ P ☐ T	Energy Dissipater	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	13
Site 4 ☐ P ☒ T	Temporary Construction	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12
Site 5 ☒ P ☐ T	Culvert extension	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	6	27
Site 5 ☐ P ☒ T	Dewatering Temp Construction	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	6	44
Site 6 ☒ P ☐ T	Replace Pipe & Extend	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	12
Site 6 ☒ P ☐ T	Energy Dissipater	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	19
Site 6 ☐ P ☒ T	Dewatering and Construction	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	24
Site 6A ☐ P ☐ T	Pipe Extension	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	20
Site 6A ☐ P ☐ T	Energy Dissipater	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	14
Site 6A ☐ P ☐ T	Temporary Construction	UT to Tuckasegee River	☐ PER ☒ INT	☒ Corps ☐ DWQ	2	29
Site 7 ☒ P ☐ T	Reloc. pipe and extend	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	38
Site 7 ☒ P ☐ T	Energy Dissipater	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	23

Site 7 ☐ P ☒ T	Dewatering and Construction	UT to Tuckasegee River	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	39		
Site 8 ☒ P ☐ T	Reloc culvert and extend	John Brown Branch	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	52		
Site 8 ☐ P ☒ T	Dewatering and construct	John Brown Branch	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	66		
3h. Total stream and tributary impacts						389 Perm 301 Temp		
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				X Permanent X Temporary				
4g. Comments:								
5. Pond or Lake Construction If pond or lake construction proposed, then complete the chart below.								
5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
5f. Total								
5g. Comments:								
5h. Is a dam high hazard permit required?			☐ 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 ☐ Tar-Pamlico ☐ Other: ☐ Catawba ☐ Randleman		
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☐ P ☐ T			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
6h. Total buffer impacts					
6i. Comments:					

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. See Stormwater Management Plan - Shoulder berm Gutter will be utilized in sections along the project to channelize stormwater and to prevent erosion of the fill slopes. Retaining walls will also be used along portions of the project to eliminate impacts to the Tuckasegee River. Permit Site 5 was redesigned to eliminate a temporary causeway from the Tuckasegee River.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Best Management Practices for Surface Waters will be used during all phases of construction.		
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	
	☐ DWQ ☒ Corps	
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	☒ Yes	
4b. Stream mitigation requested:	389 linear feet	
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☒ cold	
4d. Buffer mitigation requested (DWQ only):	0 square feet	
4e. Riparian wetland mitigation requested:		
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?				☐ Yes ☒ No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1				
Zone 2				
	6f. Total buffer mitigation required:			
6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).				
6h. Comments:				

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If no, 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.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☒ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HWQ ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No NA
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No NA
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No NA

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:	☒ Yes ☐ No
2. Violations (DWQ Requirement)	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes ☒ No
2b. Is this an after-the-fact permit application?	☐ Yes ☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
3. Cumulative Impacts (DWQ Requirement)	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.	
4. Sewage Disposal (DWQ Requirement)	
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. not applicable	

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☒ Yes	☐ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☒ Yes	☐ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☐ Raleigh ☒ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? N.C. Natural Heritage Program database; USFWS-website; biological surveys for protected species listed for Jackson County. Biological Conclusions of "No Effect"/No Habitat was rendered for Appalachian elktoe after a screening in the summer of 2009. NCDOT's BioSurveys Unit confirmed that this conclusion is still valid in 2016. Marginal habitat for small whorled pogonia exists, but surveys conducted in the study area in 2008 and 2014 resulted in no specimens being found. An eagle survey was conducted in 2014 with no nests observed. Summer roosting habitat is present for Indiana bat and Section 7 Concurrence is currently being pursued with a call of MANLTAA (Letter to USFWS sent on 9/20/16). A bat report dated September 16, 2016 stated that NCDOT is in 4(d) compliance for the NLEB.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
fox 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.)	09-21-2016 Date



PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

September 15, 2016

Mr. Philip S. Harris, III, P.E., CPM
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

R-4753, NC 107 from SR 1002 (Roger Road) to NC 281, Jackson County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on September 15, 2016, the impacts are located in CU 06010203 of the Little Tennessee River basin in the Southern Mountains (SM) Eco-Region, and are as follows:

Little Tennessee 06010203 SM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	389.0	0	0	0	0	0	0	0

*Some of the stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

The impacts and associated mitigation needs were under projected by the NCDOT in the 2016 impact data. DMS will commit to implement sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of 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 Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill
Credit Management Supervisor

cc: Ms. Lori Beckwith, USACE – Asheville Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: R-4753

ATTACHMENT A
PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

- A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): _____
- B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

- C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

- D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: NC County/parish/borough: _____ City: _____

Center coordinates of site (lat/long in degree decimal format):

Lat. _____ °N; Long. _____ °W.
(XX.XXXXX) (-XX.XXXXX)

Universal Transverse Mercator: Z: _____ E: _____ N: _____

Name of nearest waterbody: _____

Identify (estimate) amount of waters in the review area:

Non-wetland waters:

_____ linear feet: _____ width (ft) and/or _____ acres.

Cowardin Class: _____

Stream Flow: _____

Wetlands: _____ acres.

Cowardin Class: _____

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: _____

Non-Tidal: _____

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date: _____

☐ Field Determination. Date(s): _____

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: _____

☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: _____

☐ Corps navigable waters' study: _____

☐ U.S. Geological Survey Hydrologic Atlas: _____

☐ USGS NHD data

☐ USGS 8 and 12 digit HUC maps

☐ U.S. Geological Survey map(s). Cite scale & quad name: _____

☐ USDA Natural Resources Conservation Service Soil Survey.
Citation: _____

☐ National wetlands inventory map(s). Cite name: _____

☐ State/Local wetland inventory map(s): _____

☐ FEMA/FIRM maps: _____

☐ 100-year Floodplain Elevation is: _____
(National Geodetic Vertical Datum of 1929)

☐ Photographs: ☐ Aerial (Name & Date): _____ or
☐ Other (Name & Date): _____

☐ Previous determination(s). File no. and date of response letter: _____

☐ Other information (please specify): _____

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there “*may be*” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and date of
Regulatory Project Manager
(REQUIRED)

Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

Site Number	Latitude (XX.XXXXX)	Longitude (-XX.XXXXX)	Cowardin Class	Estimated Amount of Aquatic Resource in the Review Area (lin. ft.or ac.)	Class of Aquatic Resource



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 2.04; Released November 2015)

WBS Element: 39999.1.1 TIP No.: R-4753 County(ies): Jackson Page 1 of 2

General Project Information

WBS Element:	39999.1.1	TIP Number:	R-4753	Project Type:	Roadway Widening	Date:	
NCDOT Contact:	William (Bill) Zerman, Jr., PE			Contractor / Designer:	Carlas Sharpless, PE		
Address:	1590 Mail Service Center Raleigh, NC 27599-1590			Address:	1590 Mail Service Center Raleigh, NC 27599-1590		
	Phone: 919-707-6755				Phone: 919-707-6750		
	Email: bzerman@ncdot.gov				Email: csharpless@ncdot.gov		
City/Town:	Cullowhee			County(ies):	Jackson		
River Basin(s):	Little Tennessee			CAMA County?	No		
Wetlands within Project Limits?				No			

Project Description

Project Length (lin. miles or feet):	3.74 Mi.	Surrounding Land Use:	Rural Residential
	Proposed Project		Existing Site
Project Built-Up Area (ac.)	19.6 ac.	10.8 ac.	
Typical Cross Section Description:	2-12 foot travel lanes with 6 foot paved shoulders and shoulder sections with variable side slopes to tie-in. 6' paved shoulder is to be striped as designated bike lane.		
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 8,800	Year: 2035	Existing: 6,270
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The project involves widening NC 107 from North of SR 1002 to NC 281. The existing roadway consists of 24' of BST with shoulder section. This project will improve the roadway to a 2-12 ft. travel lane facility with 6' paved shoulder to greatly enhance the safety of the motoring public in this region. Shoulder berm Gutter will be utilized in sections along the project to channelize stormwater and to prevent erosion of the fill slopes. Retaining walls will also be used along portions of the project to eliminate impacts to the Tuckasegee River.		

Waterbody Information

Surface Water Body (1):	Tuckasegee River	NCDWR Stream Index No.:	2-79-(24)
NCDWR Surface Water Classification for Water Body	Primary Classification:	Water Supply III (WS-III)	Class B
	Supplemental Classification:	Trout Waters (Tr)	
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)			



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

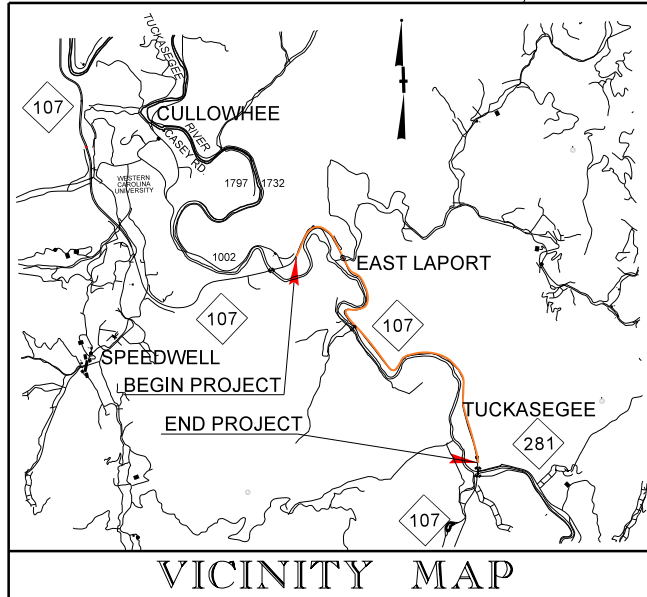


(Version 2.04; Released November 2015)

WBS Element:	39999.1.1	TIP No.:	R-4753	County(ies):	Jackson	Page	2	of	2
Additional Waterbody Information									
Surface Water Body (2):	John Brown Branch			NCDWR Stream Index No.:	2-79-(24)				
NCDWR Surface Water Classification for Water Body			Primary Classification:	Water Supply III (WS-III)					
			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)									

09/08/99

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 Thru 1C-5 For Survey Control Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

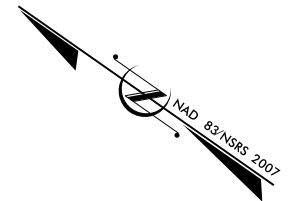
LOCATION: NC 107 FROM NORTH OF SR 1002 TO NC 281

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & RETAINING WALLS

SURFACE WATER IMPACTS PERMIT

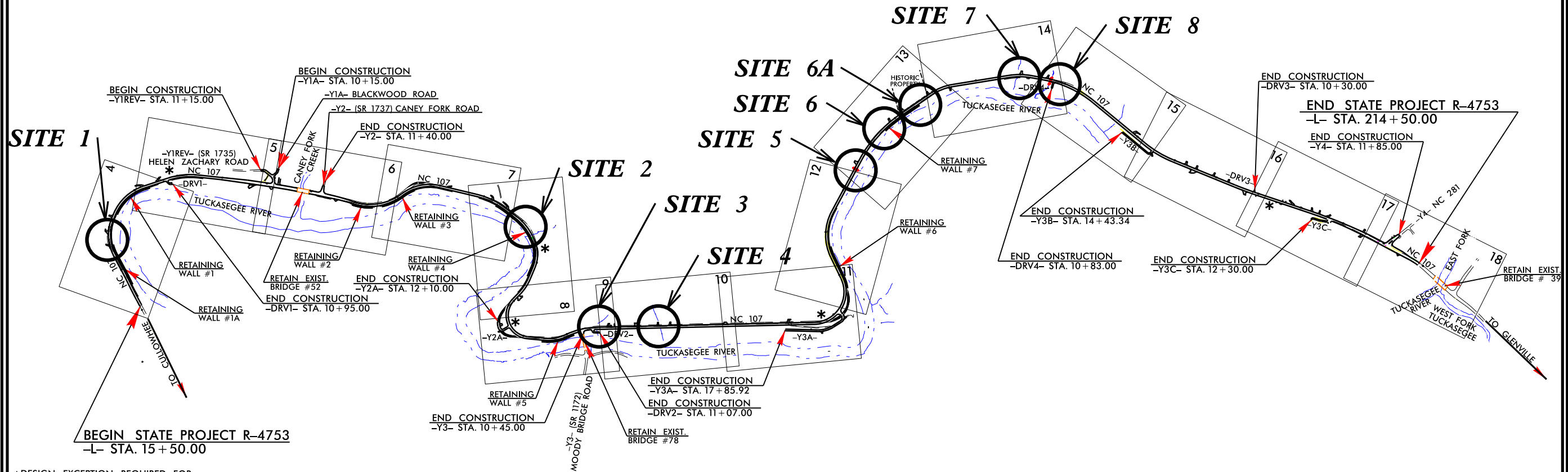
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4753	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
39999.1.1	STP-0107(10)	P.E.	
39999.2.FR2	STP-0107(10)	RW & UTILITIES	
39999.3.1	STP-0107(10)	CONST.	

PERMIT DRAWING
SHEET 1 OF 27



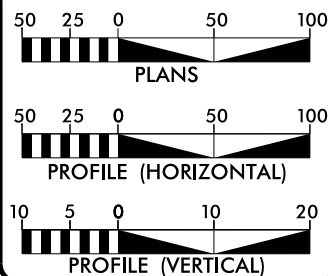
TIP PROJECT: R-4753

CONTRACT:



*DESIGN EXCEPTION REQUIRED FOR:
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES



DESIGN DATA

ADT 2016 = 6270
ADT 2035 = 8800
K = 10 %
D = 60 %
T = 9 % *
V = 40 MPH
* TTST = 2% DUAL = 7%
FUNC CLASS =
MINOR COLLECTOR
"REGIONAL TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-4753 = 3.743 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 29, 2015

LETTING DATE:
DECEMBER 20, 2016

JAMES A. SPEER, PE
PROJECT ENGINEER

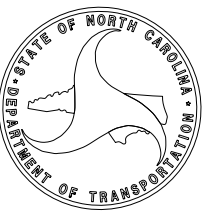
DANIEL W. GARDNER, JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: _____ P.E.

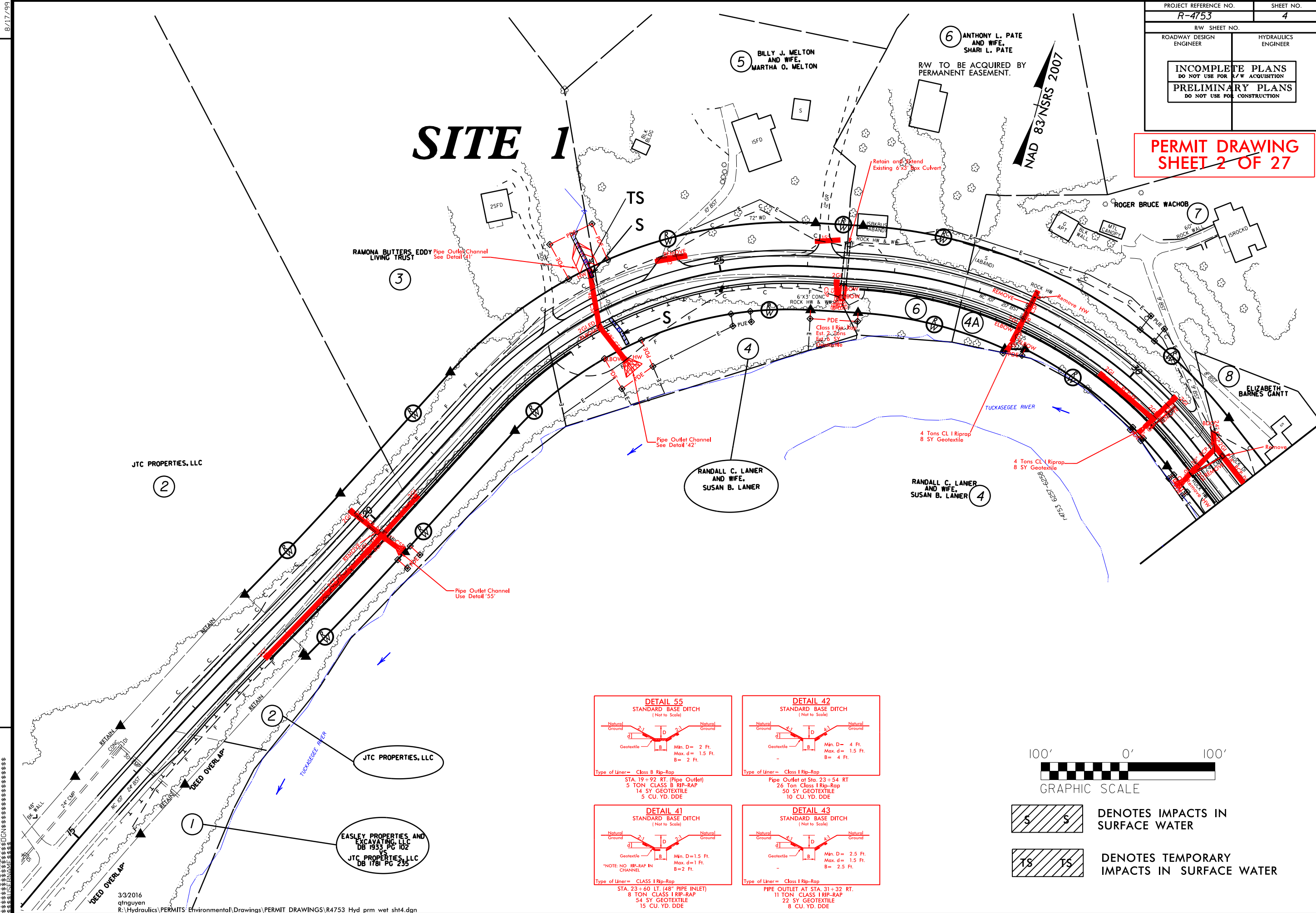


8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-4753	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 2 OF 27



SITE 1

⑥ ANTHONY L. PATE
AND WIFE,
SHARI L. PATE

R/W TO BE ACQUIRED BY
PERMANENT EASEMENT.

WAD 83 NSRS 2007

RAMONA BUTTERS EDDY Pipe, Outlet Channel
LIVING TRUST See Detail 41' -

JTC PROPERTIES, LLC

RANDALL C. LANIER
AND WIFE,
SUSAN B. LANIER

RANDALL C. LANIER
AND WIFE.
SUSAN B. LANIER

ELIZABETH
BARNES GANT

JTC PROPERTIES, LLC

EASLEY PROPERTIES AND
EXCAVATING, LLC
DB 1933 PG 102
VS
JTC PROPERTIES, LLC
DB 1781 PG 235

3/3/2016
qtnguyen
R:\Hydraulics\PERMITS\Environmental\Drawings\PERMIT DRAWINGS\R4753 Hyd prm wet sht4.dgn

Diagram illustrating a ditch cross-section with a 2:1 slope. The ditch is lined with a geotextile material. The dimensions are defined as follows:

- D : Depth of the ditch.
- d : Thickness of the geotextile layer.
- B : Width of the ditch bottom.

Additional specifications:

- Min. $D = 2$ Ft.
- Max. $d = 1.5$ Ft.
- $B = 2$ Ft.

Type of Liner- Class B Rip-Rap
STA. 19+92 RT. (Pipe Outlet)
5 TON CLASS B RIP-RAP
14 SY GEOTEXTILE
5 CU YD DDE

Diagram illustrating a V-shaped ditch cross-section. The ditch has a bottom width B and a depth D . The side slopes are labeled $2:1$. The ditch is lined with Geotextile. The top edges are labeled Natural Ground. A note states: "NOTE: NO RIP-RAP IN CHANNEL." Dimensions are given as "Min. $D=1.5$ Ft." and "Max. $d=1$ Ft."

Type of Liner= CLASS I Rip-Rap
STA. 23+60 LT. (48" PIPE INLET)
8 TON CLASS I RIP-RAP
54 SY GEOTEXTILE
15 CU YD DDE

Min. D = 4 Ft.
Max. d = 1.5 Ft.
B = 4 Ft.

Type of Liner = Class I Rip-Rap
Pipe Outlet at Sta. 23+54 RT
26 Ton Class I Rip-Rap
50 SY GEOTEXTILE
10 CU YD DDE

Min. D = 2.5 Ft.
Max. d = 1.5 Ft.
B = 2.5 Ft.

Type of Liner = Class I Rip-Rap
PIPE OUTLET AT STA. 31+32 RT.
11 TON CLASS I RIP-RAP
22 SY GEOTEXTILE
8 CU YD DDE

A horizontal graphic scale bar. The left end is marked '100'' and the right end is marked '0''. The bar is divided into alternating black and white squares, with a total of 10 squares. Below the bar, the text 'GRAPHIC SCALE' is written in all caps.

 DENOTES IMPACTS IN SURFACE WATER

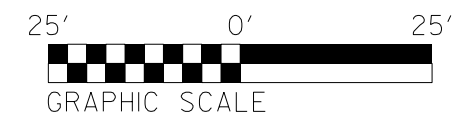
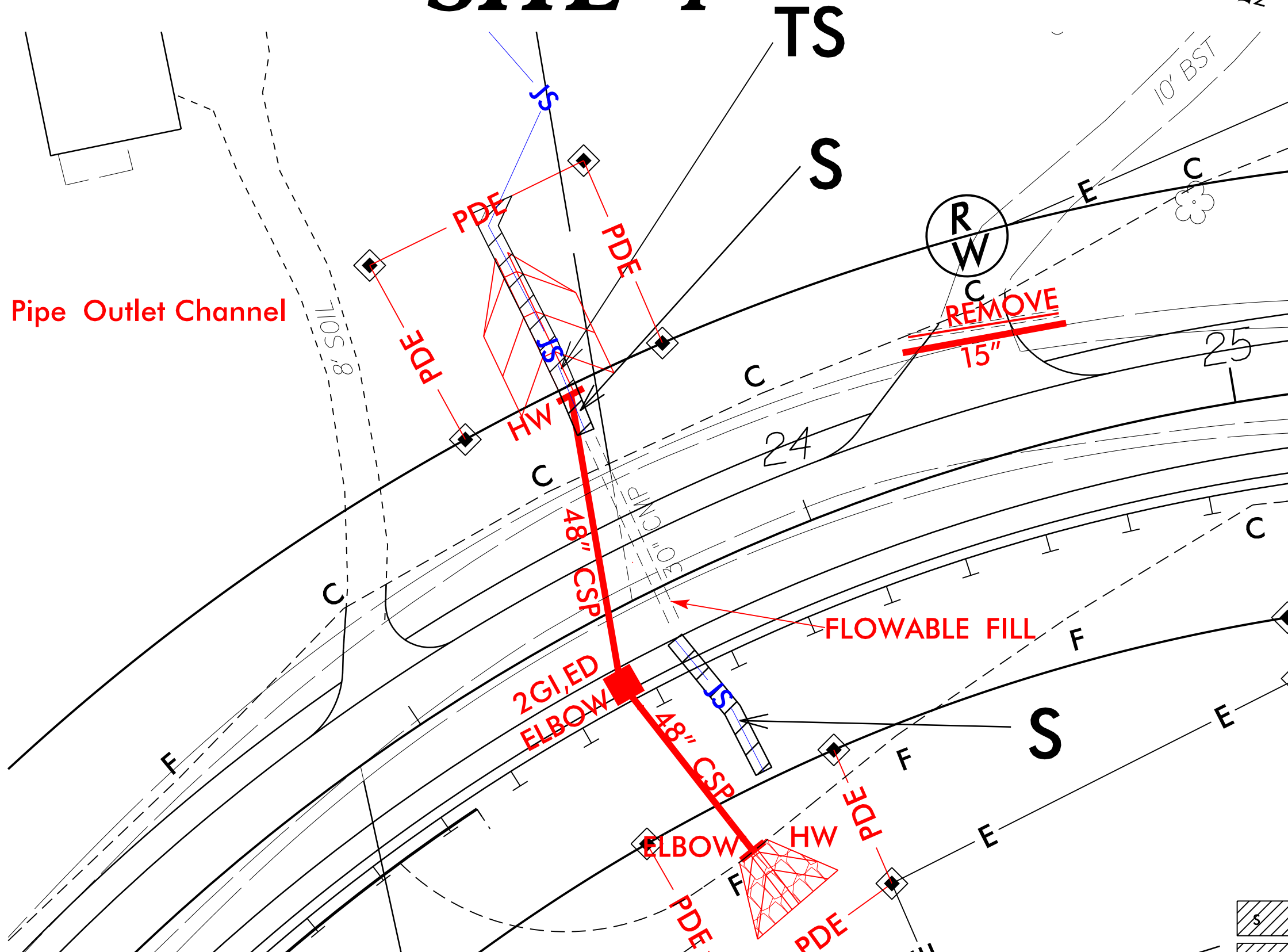
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

ENLARGEMENT SITE 1

PROJECT REFERENCE NO.	SHEET NO.
R-4753	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 4 OF 27



	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

8/17/99

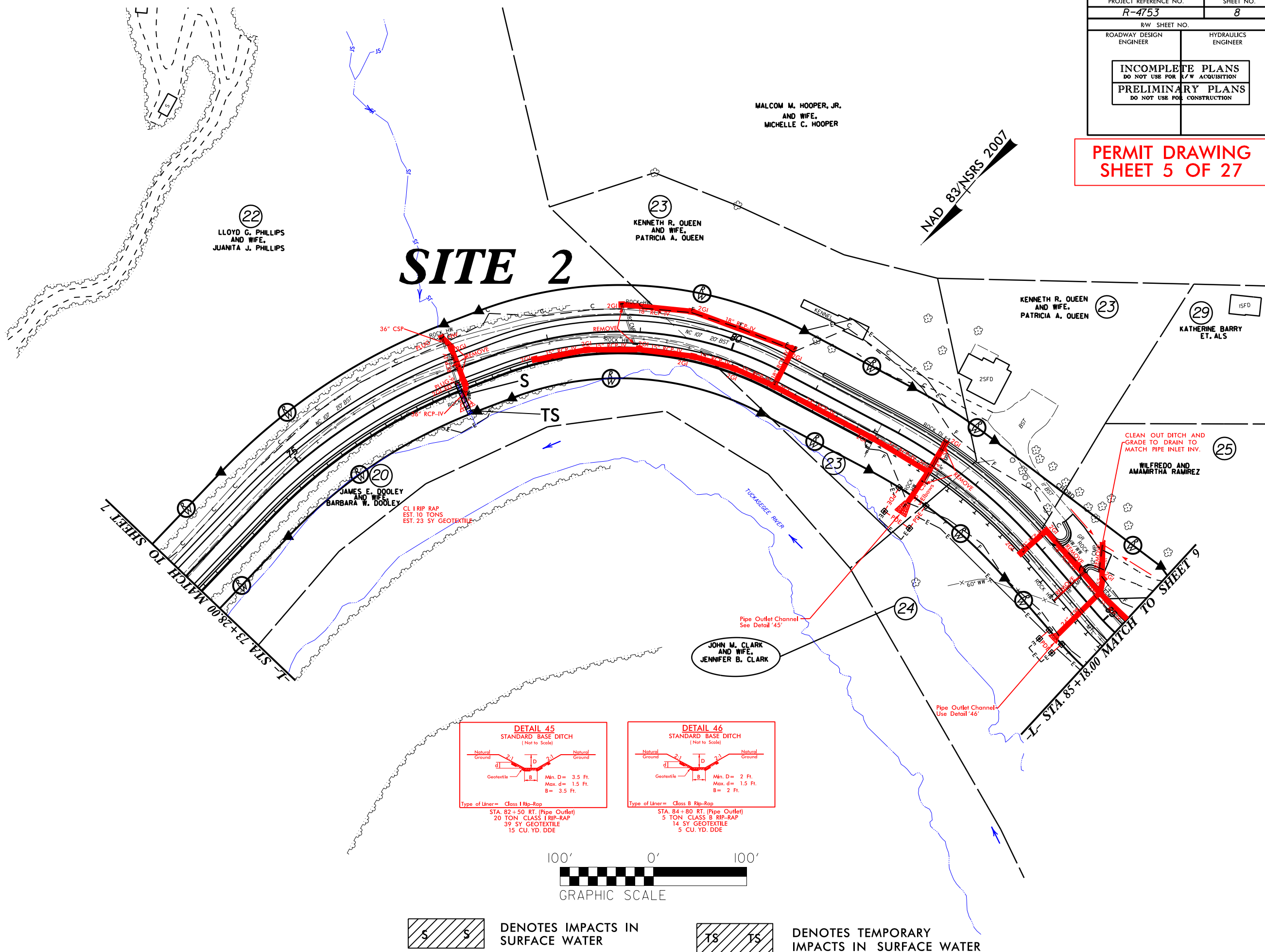
REVISIONS

SYTIME
csharpless
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753_Hyd_perm_wet_sht8.dgn

9/14/2016
csharpless

PROJECT REFERENCE NO.	SHEET NO.
R-4753	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 5 OF 27





DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

8/17/99

PERMIT DRAWING
SHEET 7 OF 27

NAD 83/NSRS 2007



9/14/2016
csharpless
R:\Hydraulics\PERMITS Environmental\Drawings\PERMIT DRAWINGS\R4753 Hyd_prm_wet_sht8_enlarge_site2.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-4753	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

**PERMIT DRAWING
SHEET 8 OF 27**

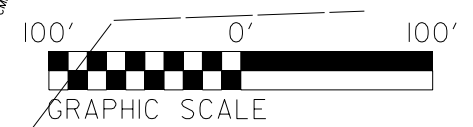
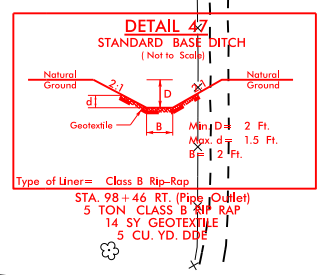
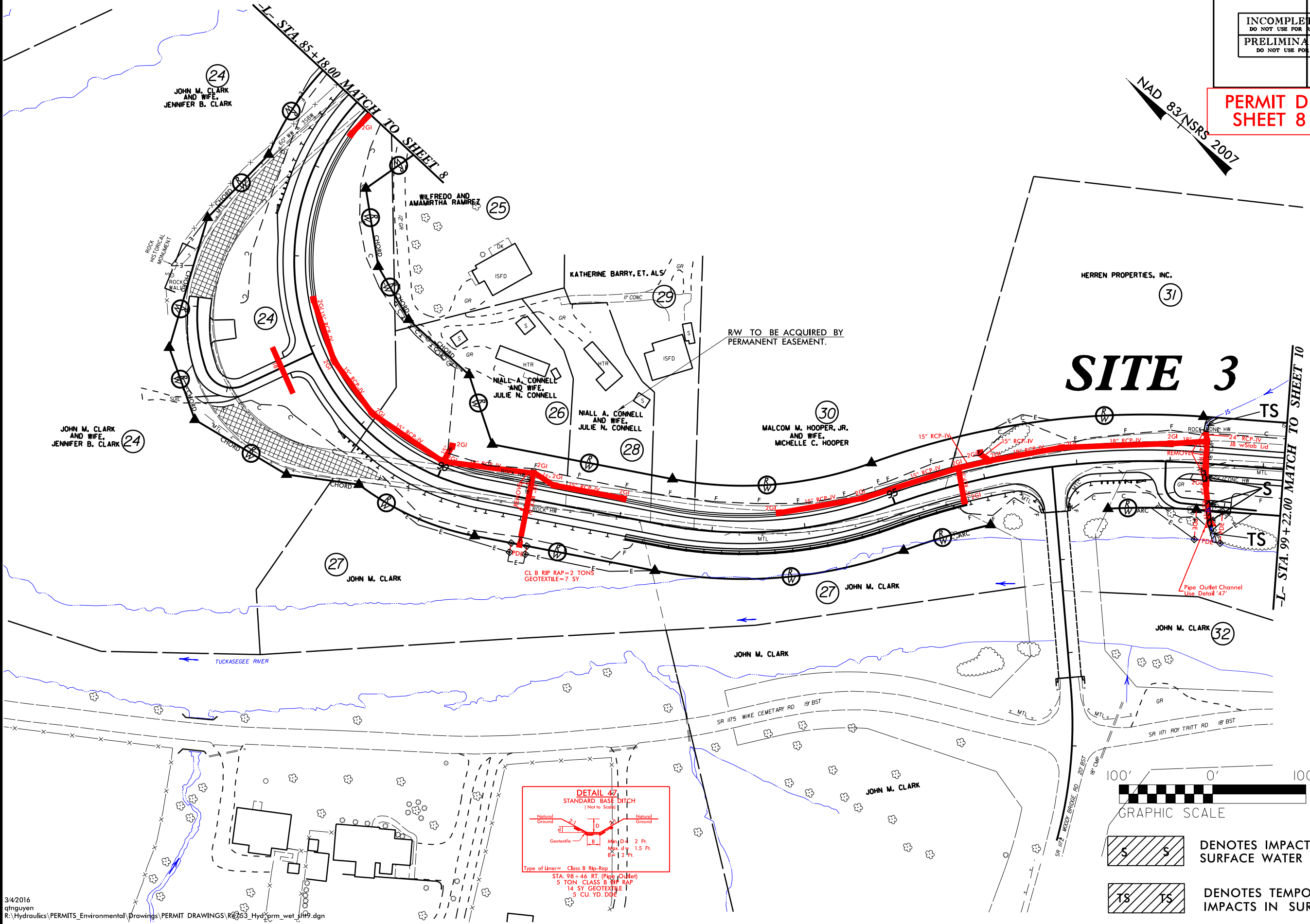
NAD 83/NSRS 2007

REVISIONS

SITE 3

L- STA. 99 + 22.00 MATCH TO SHEET 10

L- STA. 85 + 18.00 MATCH TO SHEET 8



Denotes Impacts in Surface Water

Denotes Temporary Impacts in Surface Water

3/4/2016
qnguyen
R:\Hydraulics\PERMITS_Environmental Drawings\PERMIT DRAWINGS\R-4753_Hyd\prn_wet.shp.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-4753	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

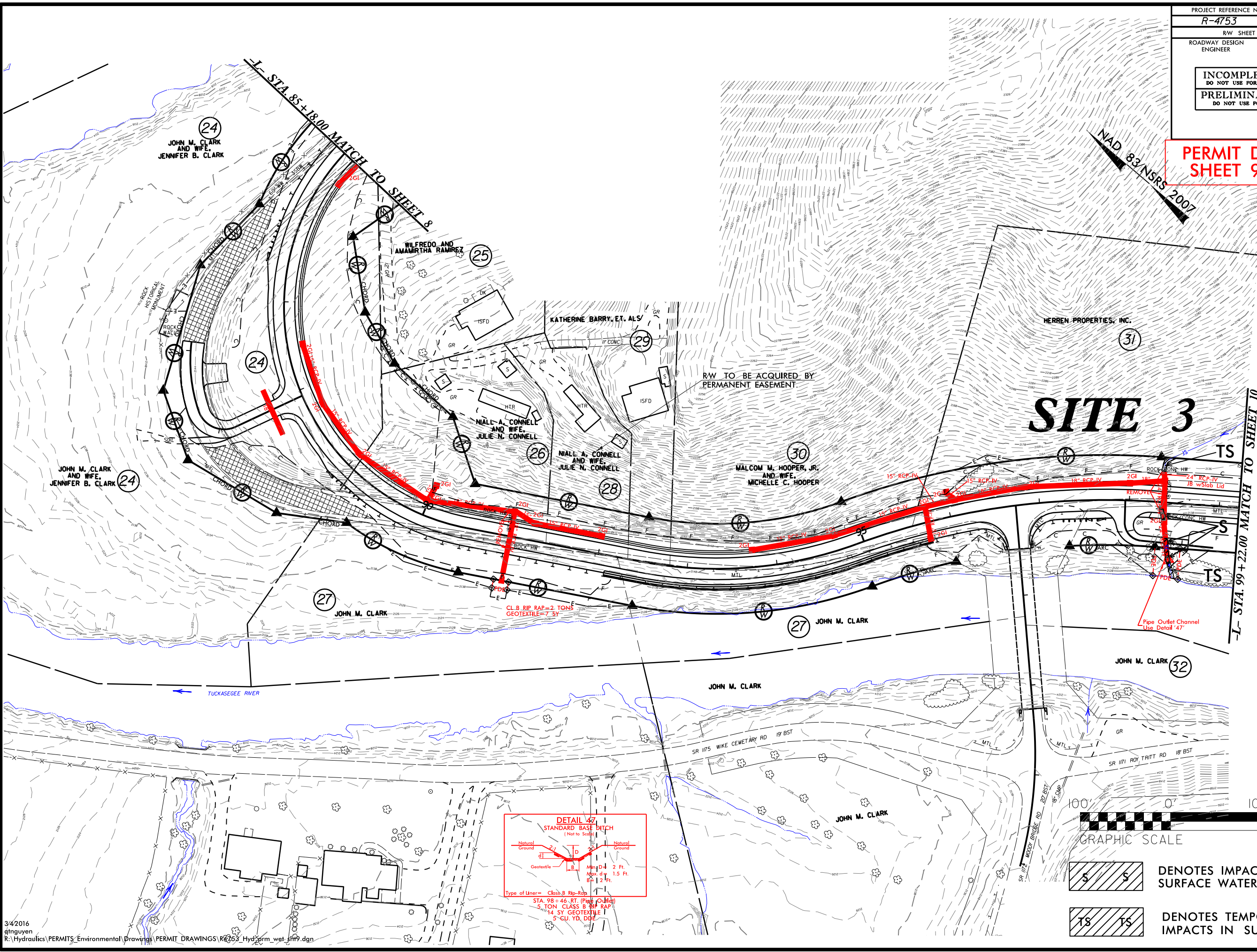
PERMIT DRAWING
SHEET 9 OF 27

NAD 83 NSRS 2007

SITE 3

L- STA. 99 + 22.00 MATCH TO SHEET 10

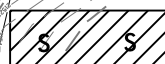
L- STA. 85 + 18.00 MATCH TO SHEET 8



DETAIL 47
STANDARD BASE DITCH
(Not to Scale)

Natural Ground
Geotextile
Min. D = 2 Ft.
Max. d = 1.5 Ft.
B = 12 Ft.

Type of Liner = Class B Rip-Rap
STA. 98 + 46 RT (Pipes Outlet)
5 TON CLASS B RIP RAP
14 SY GEOTEXTILE
5 CU. YD. DGE



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

REVISIONS

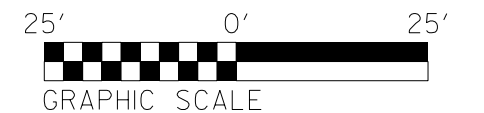
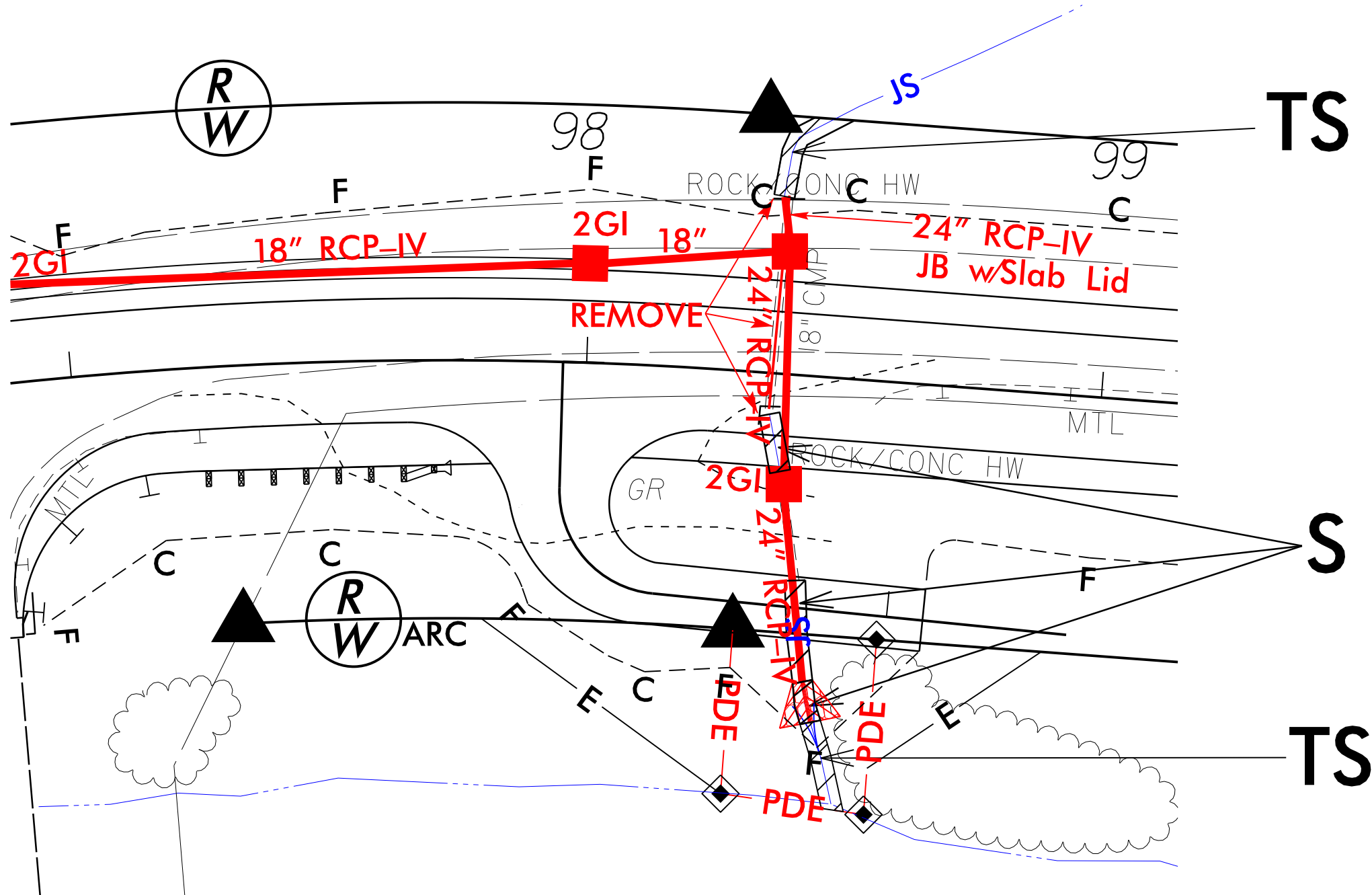
8/17/99

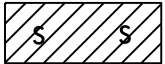
3/4/2016
qinguyen
R:\Hydraulics\PERMITS\Environmental Drawings\PERMIT DRAWINGS\R-4753_Hyd\prn_wet_sht9.dgn

ENLARGEMENT SITE 3

PROJECT REFERENCE NO.	SHEET NO.
R-4753	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 10 OF 27

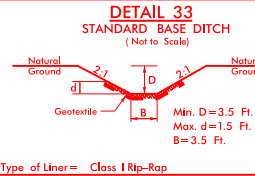
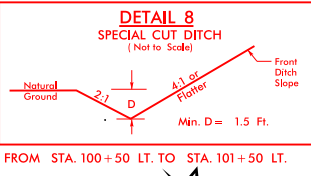
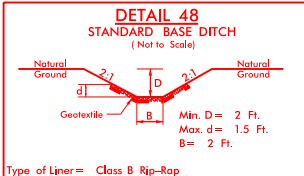
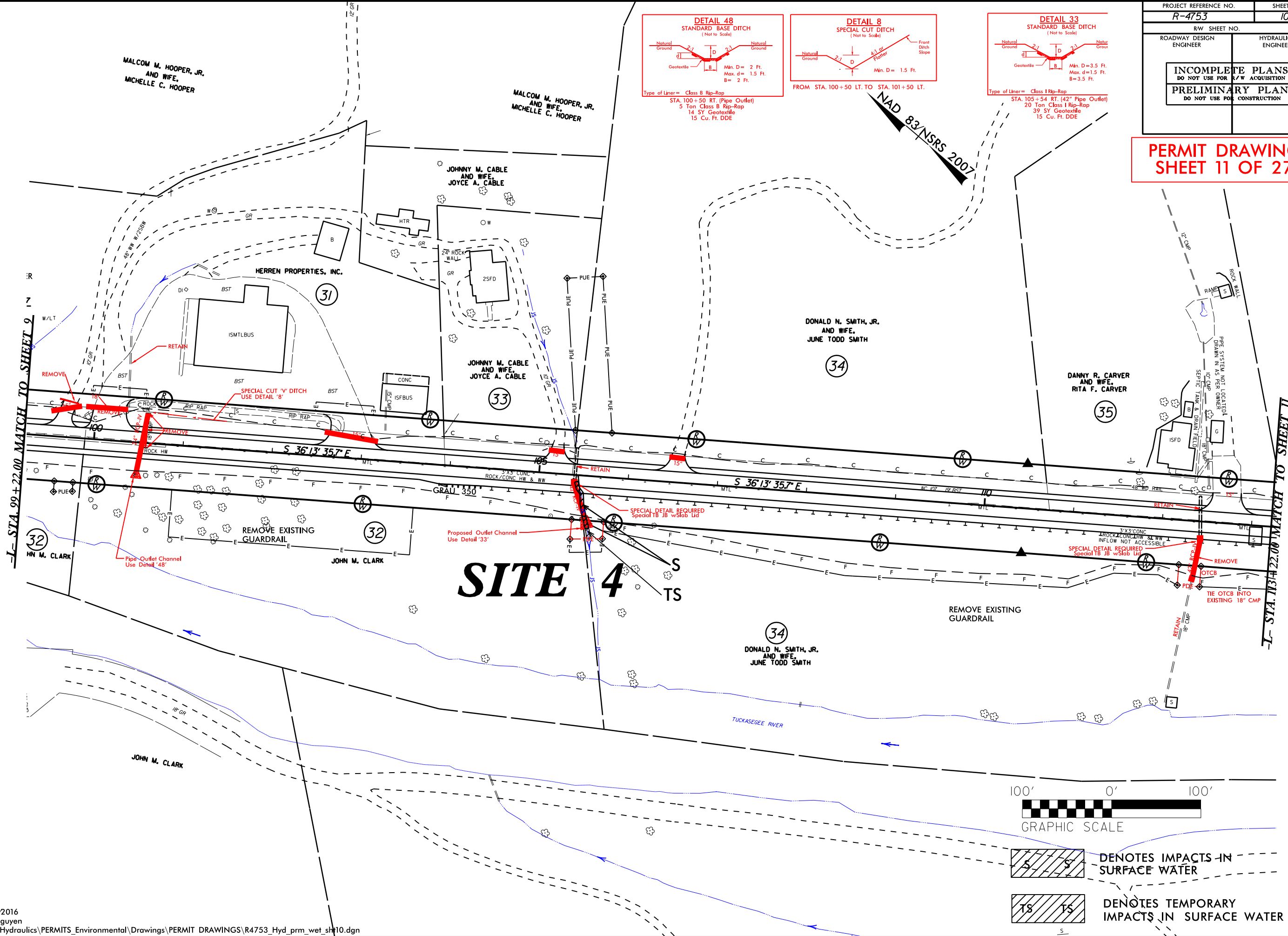


-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

8/17/99

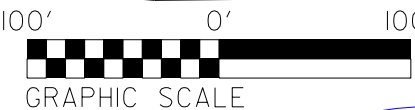
REVISIONS

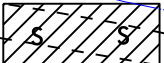
3/3/2016
qtnnguyen
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753_Hyd_prm_wet_sh10.dgn



PROJECT REFERENCE NO.	SHEET NO.
R-4753	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 11 OF 27



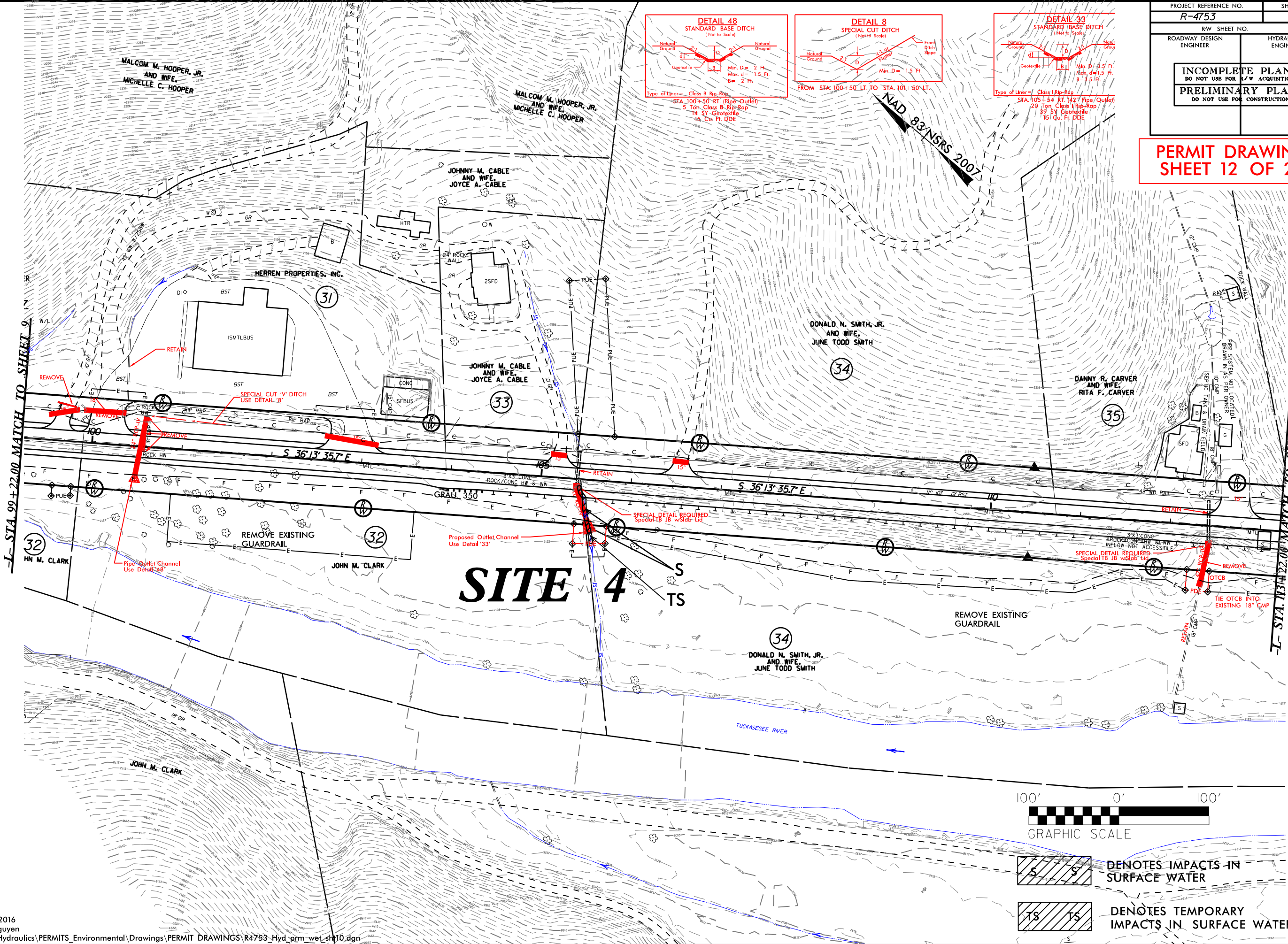
 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

8/17/99

REVISIONS

33/2016
qtnghuyen
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753-Hyd_prm_wet.sh10.dgn

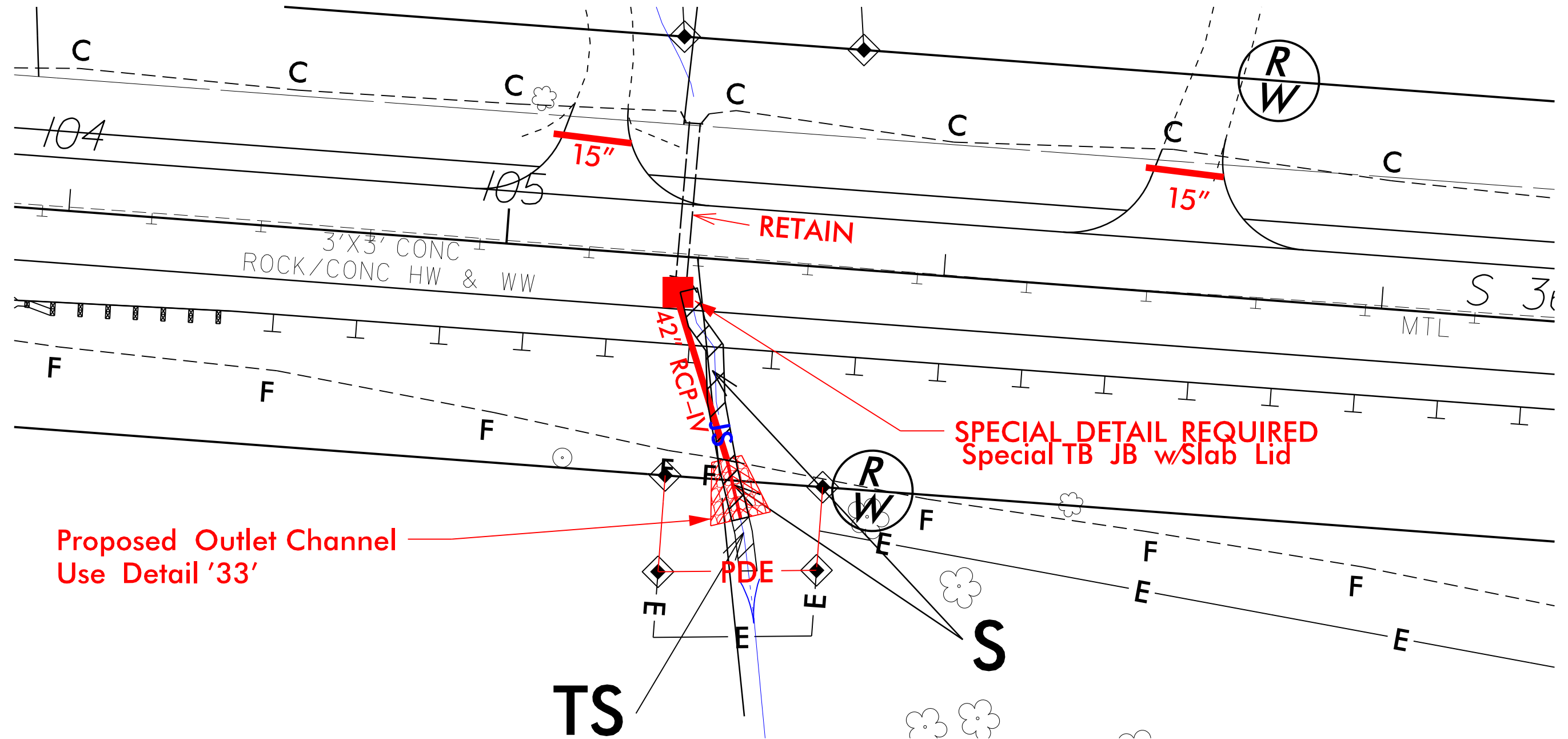


ENLARGEMENT SITE 4

NAD 83/NSRS 2007

PROJECT REFERENCE NO. R-4753	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

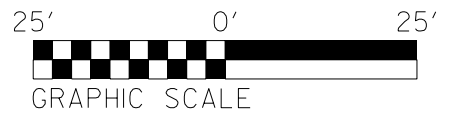
**PERMIT DRAWING
SHEET 13 OF 27**



Proposed Outlet Channel
Use Detail '33'

SPECIAL DETAIL REQUIRED
Special TB JB w/Slab Lid

TS



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

8/17/99
REVISIONS
3/3/2016
qtnguyen
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753_Hyd_prm_wet_sht10_enlarge site4.dgn

8/17/99

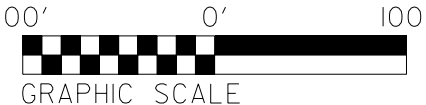
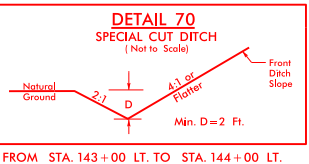
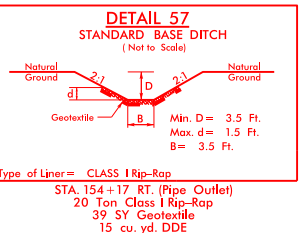
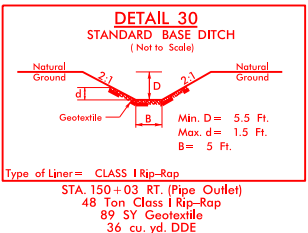
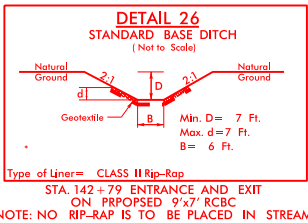
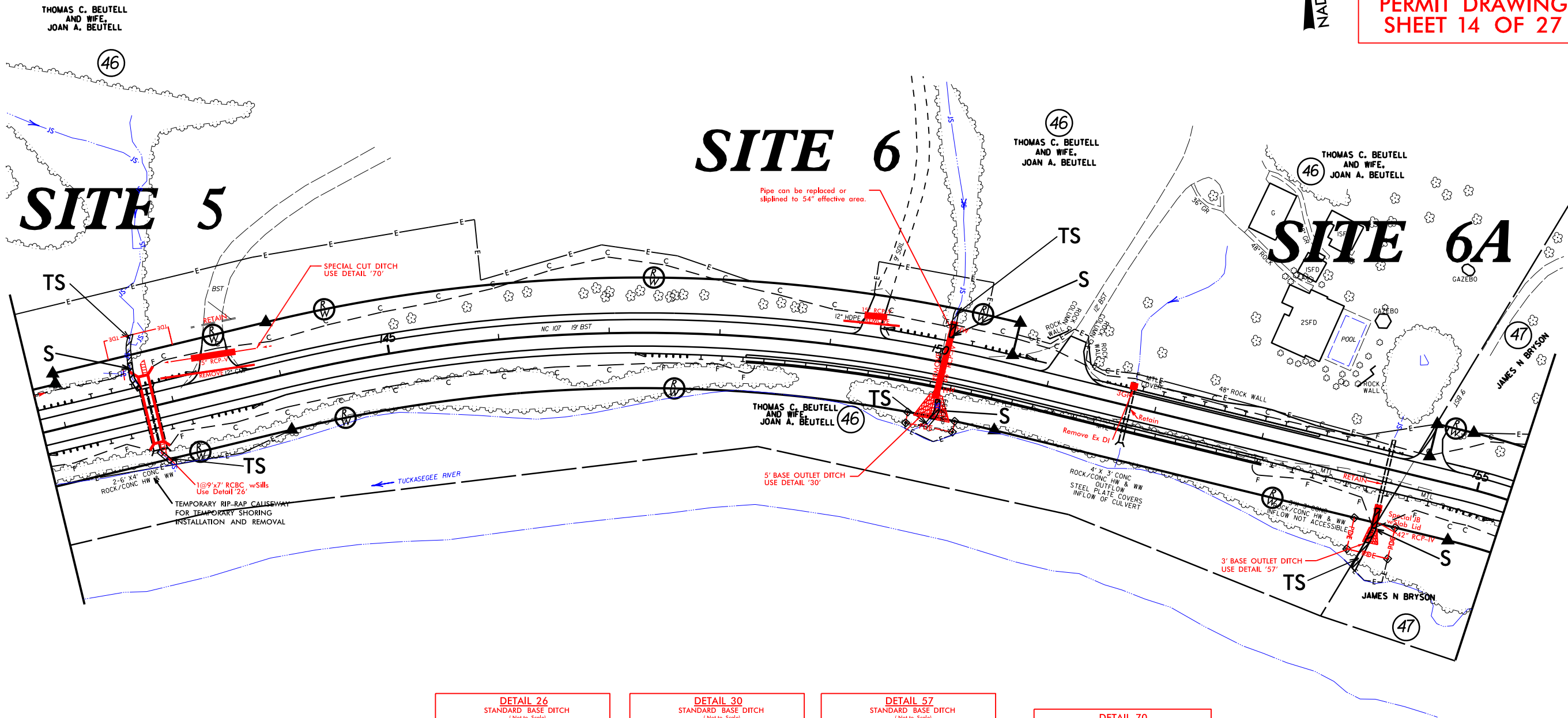
REVISIONS

9/14/2016
csharpless
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753_Hyd_prm_wet_sht13.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-4753	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 14 OF 27

NAD 83/NSRS 2007



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

8/17/99

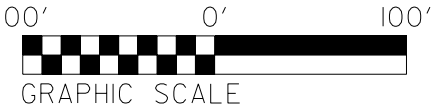
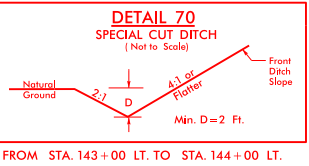
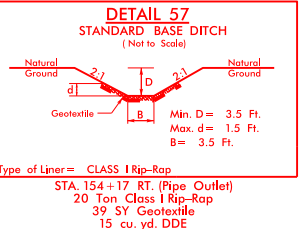
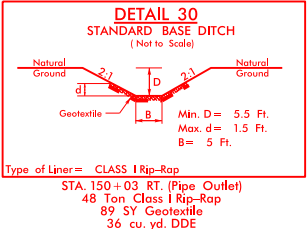
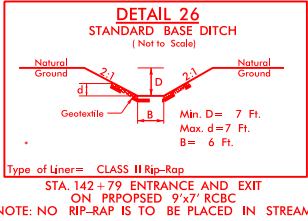
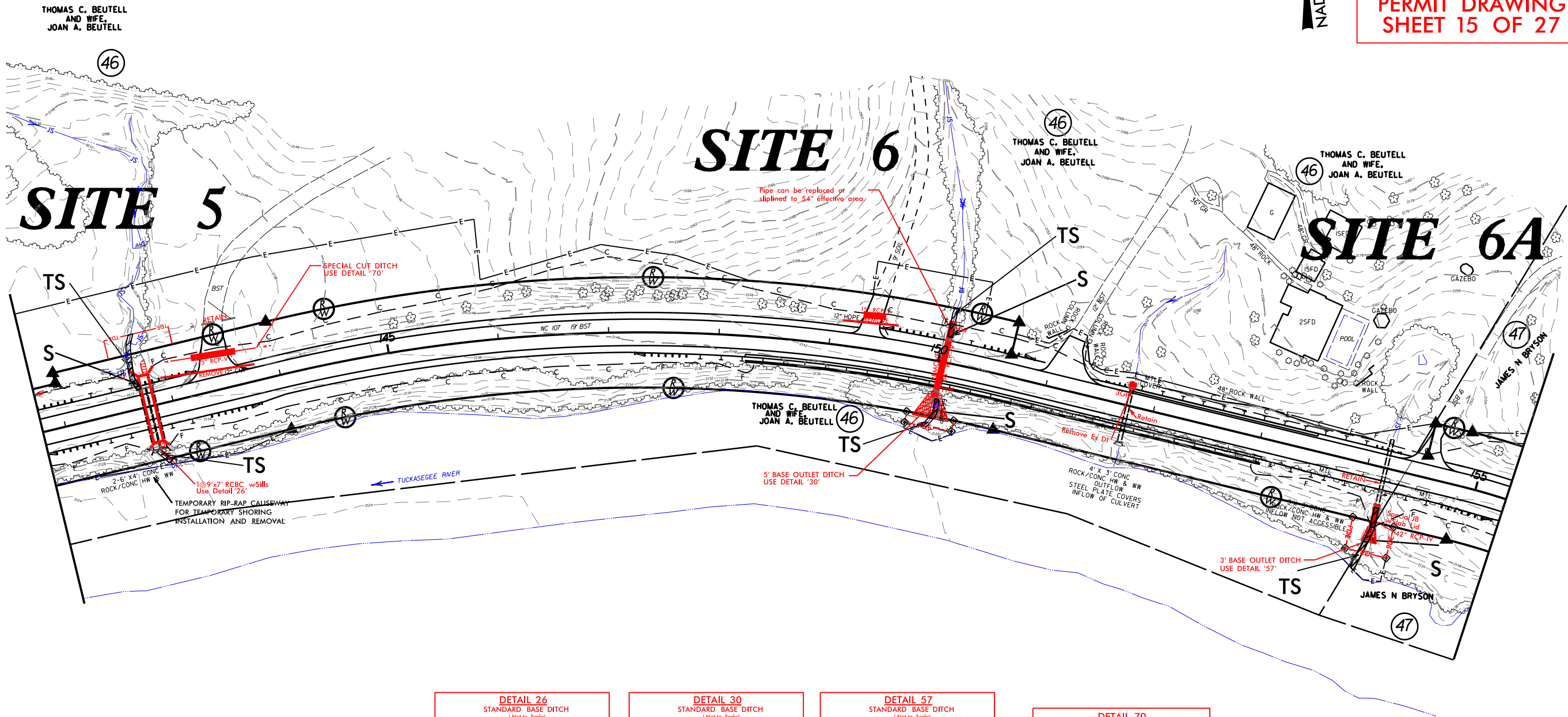
REVISIONS

9/14/2016
csharpless
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753_Hyd_prm_wet_sht13.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-4753	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 15 OF 27

NAD 83/NSRS 2007



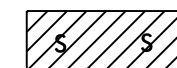
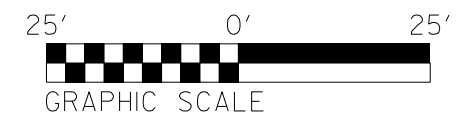
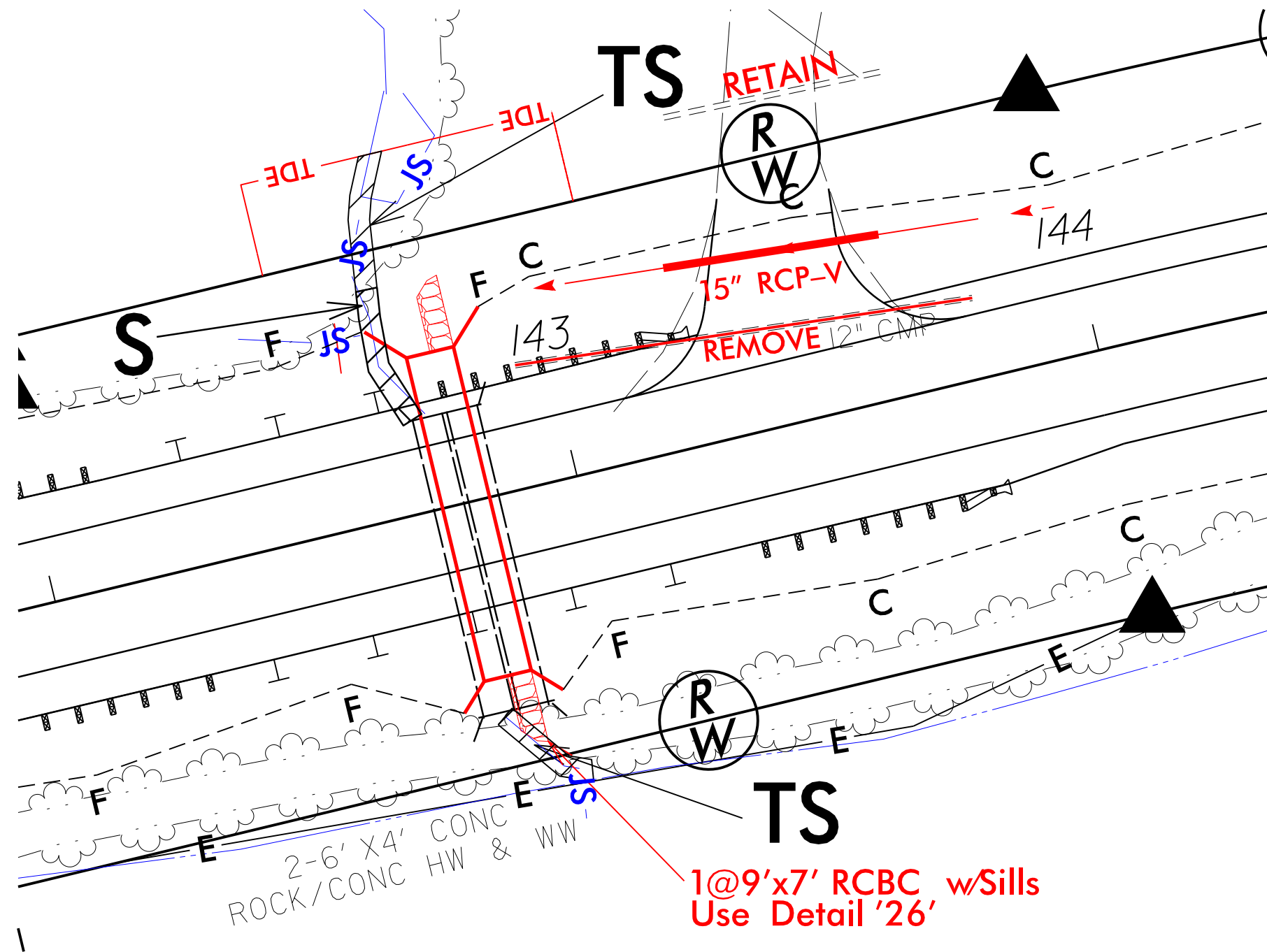
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

ENLARGEMENT SITE 5

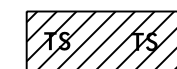
PROJECT REFERENCE NO.	SHEET NO.
R-4753	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 16 OF 27

NAD 83/NSRS 2007



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

3/3/2016

qtnguyen

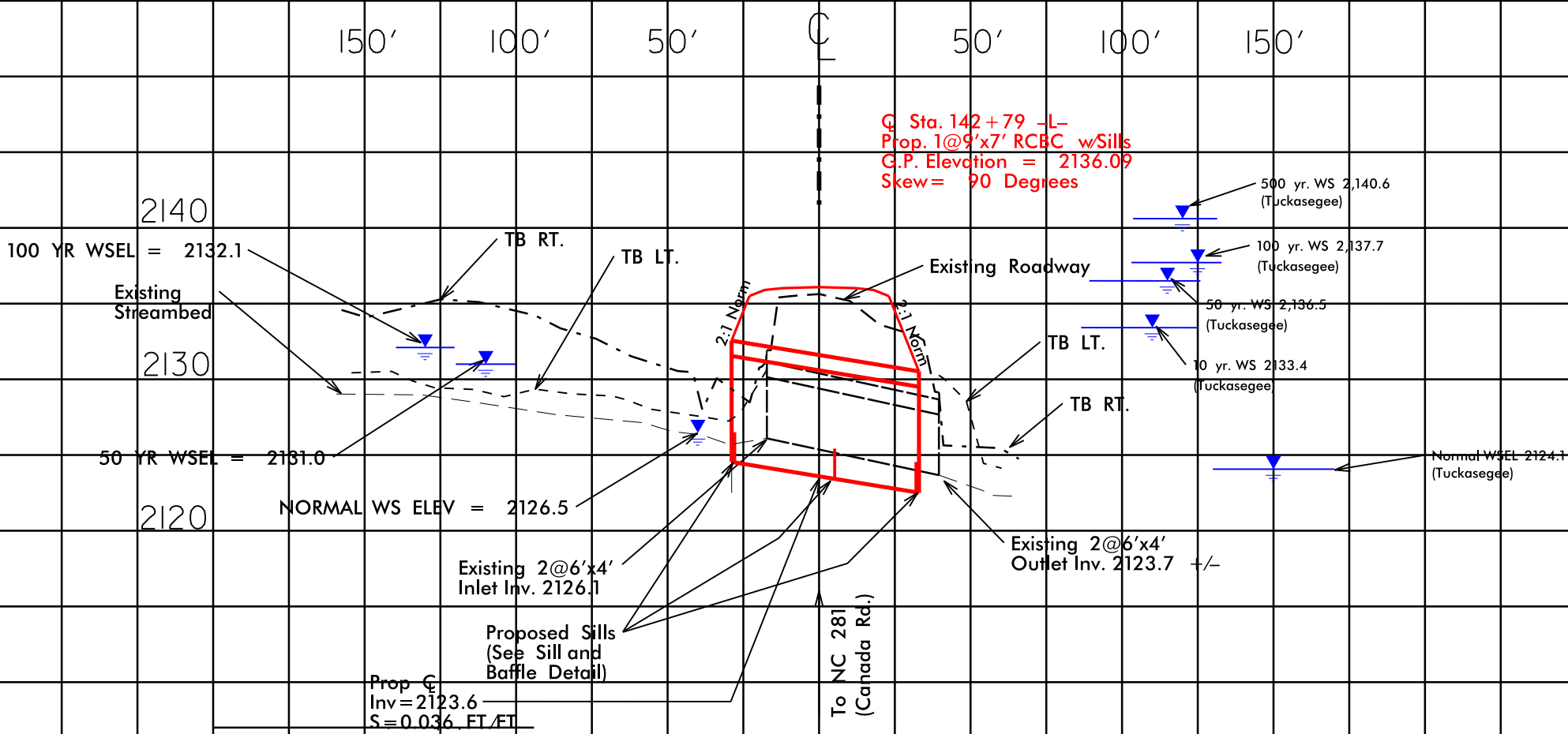
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753_Hyd_prm_wet_sht13_enlarge_site5.dgn

5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
R-4753			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 17 OF 27

SITE 5

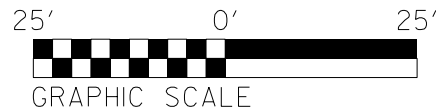
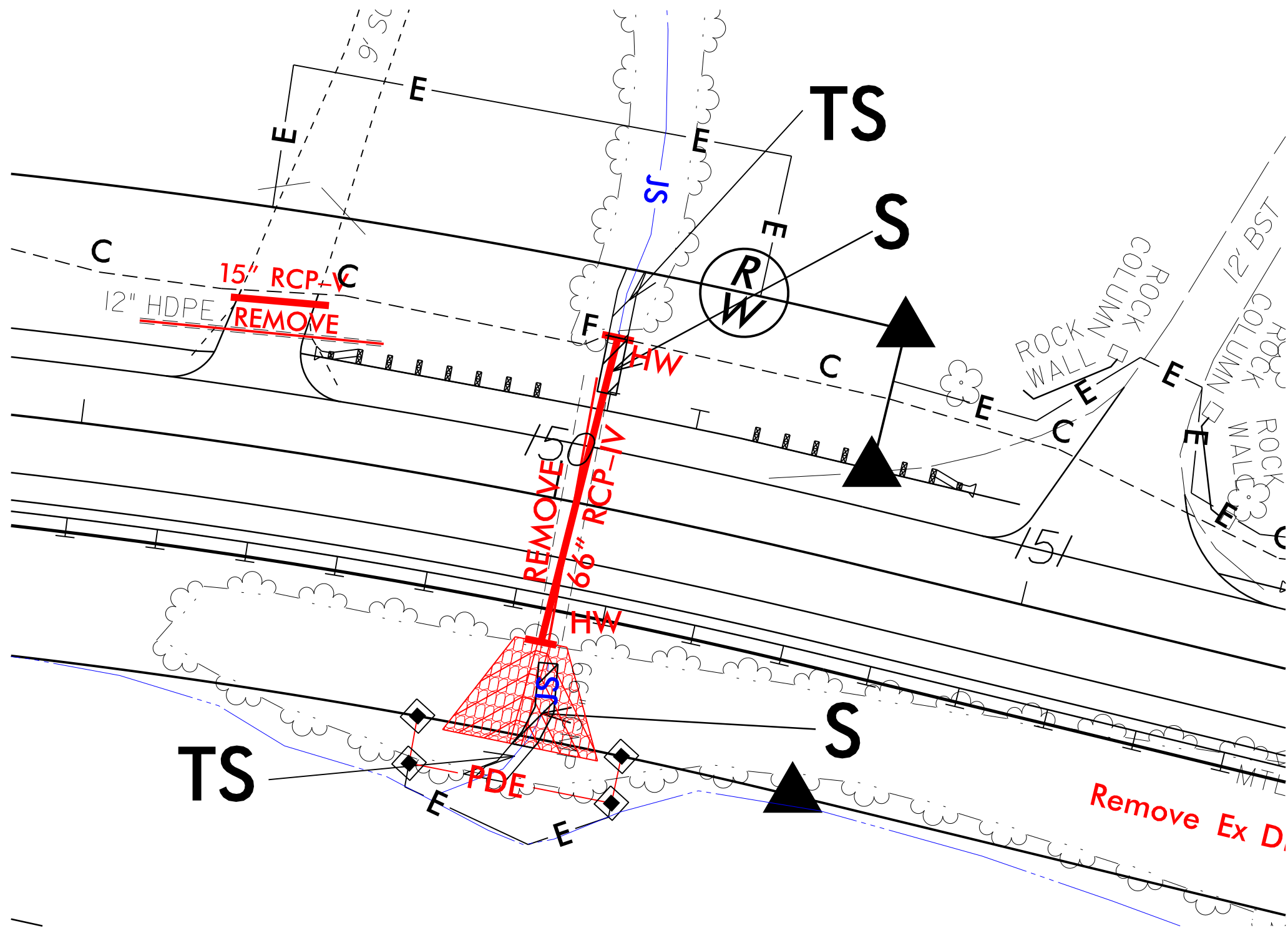


ENLARGEMENT SITE 6

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
R-4753	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 18 OF 27



DENOTES IMPACTS IN
SURFACE WATER



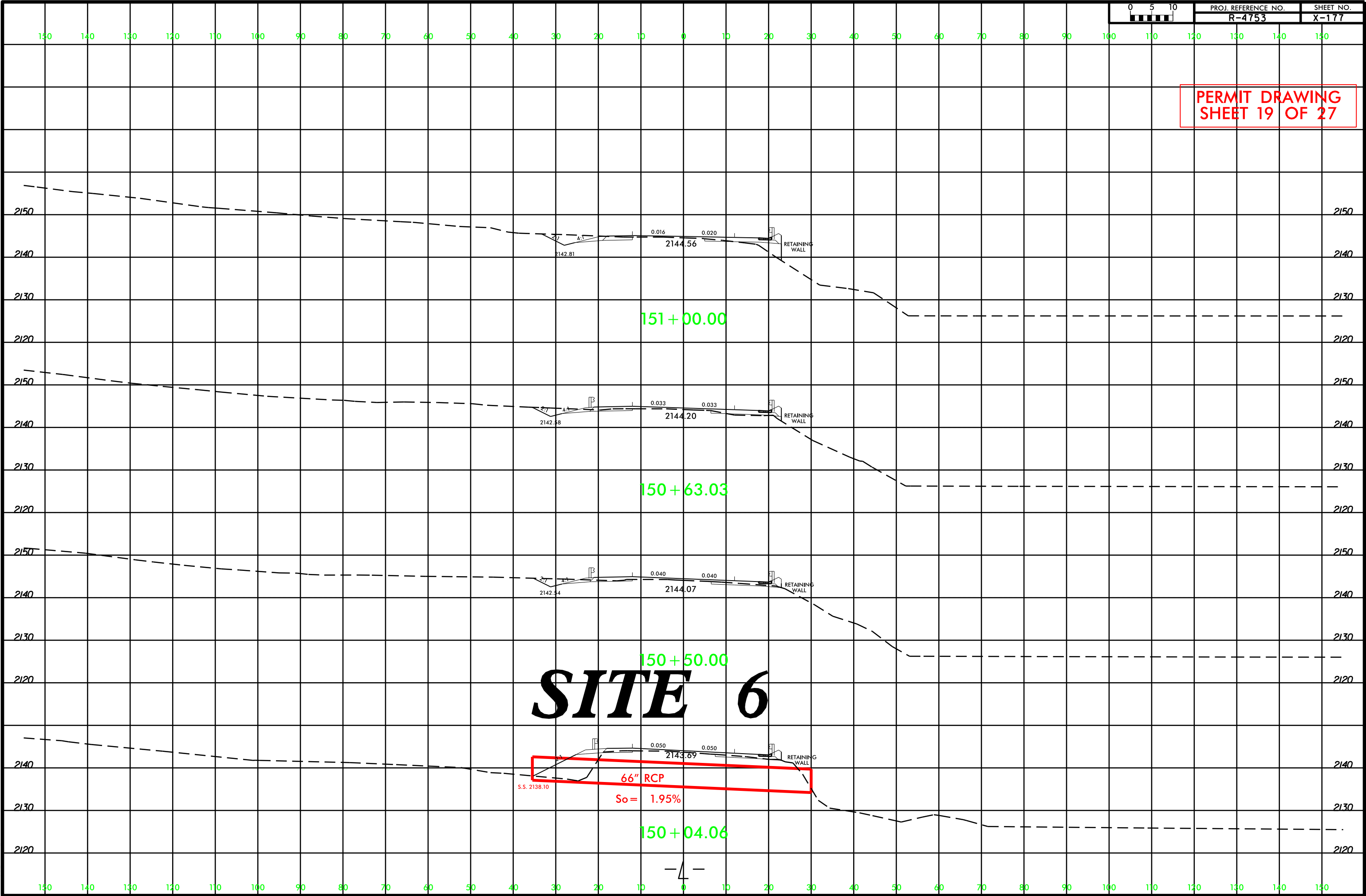
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

3/3/2016

qtnguyen

R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753_Hyd_prm_wet_sht13_enlarge site6.dgn

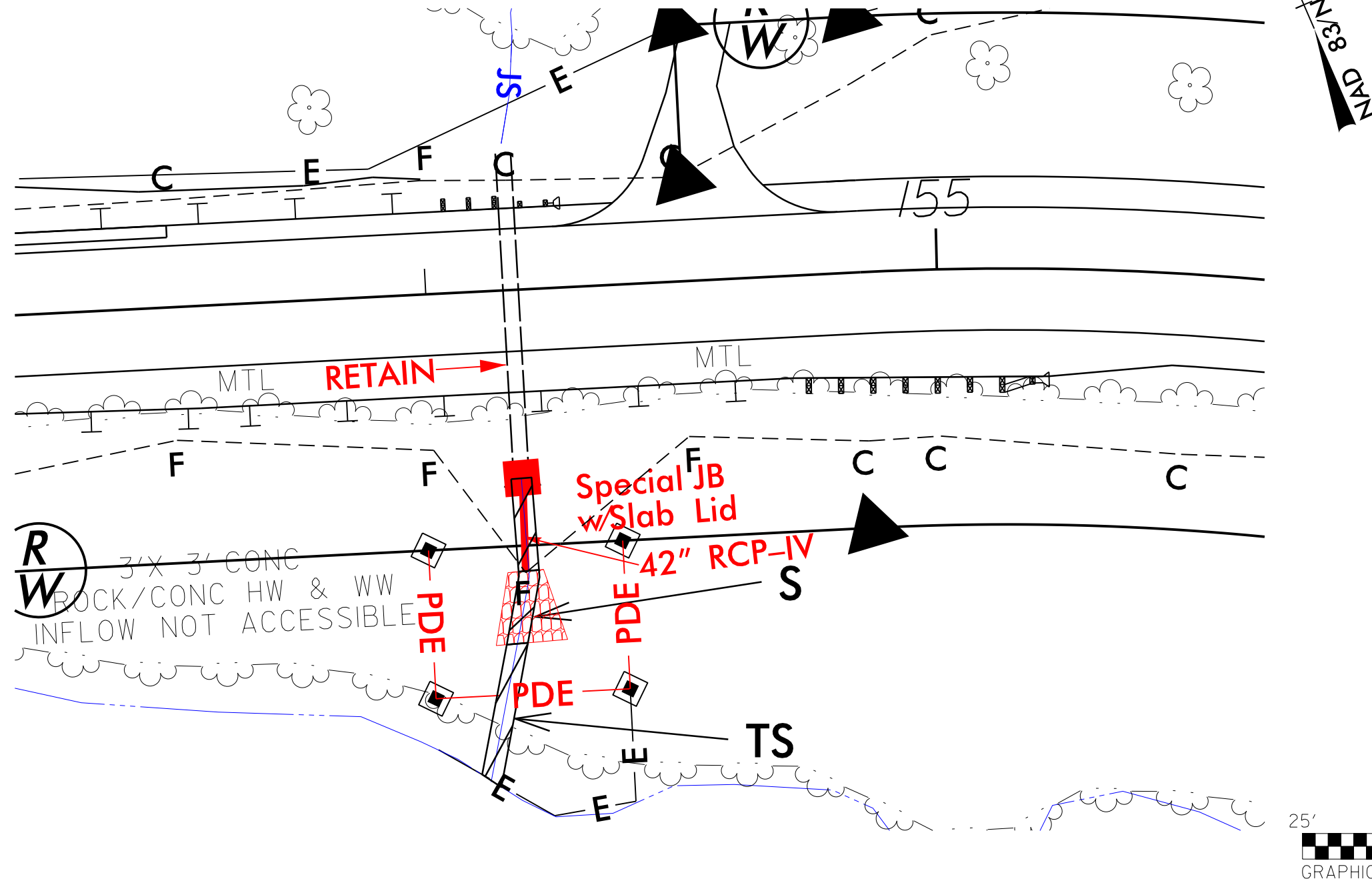
PERMIT DRAWING
SHEET 19 OF 27



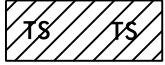
ENLARGEMENT SITE 6A

PROJECT REFERENCE NO.	SHEET NO.
R-4753	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 20 OF 27



 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

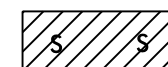
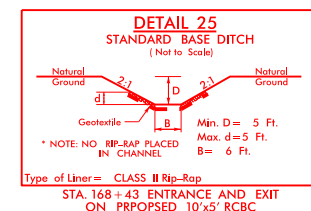
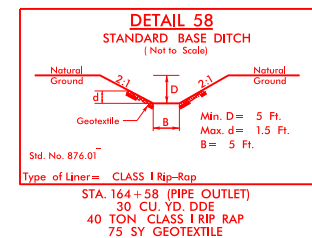
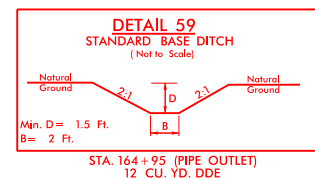
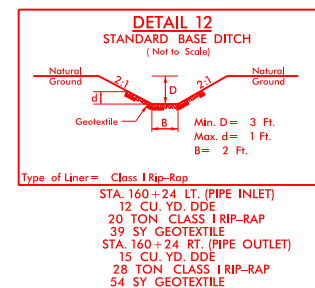
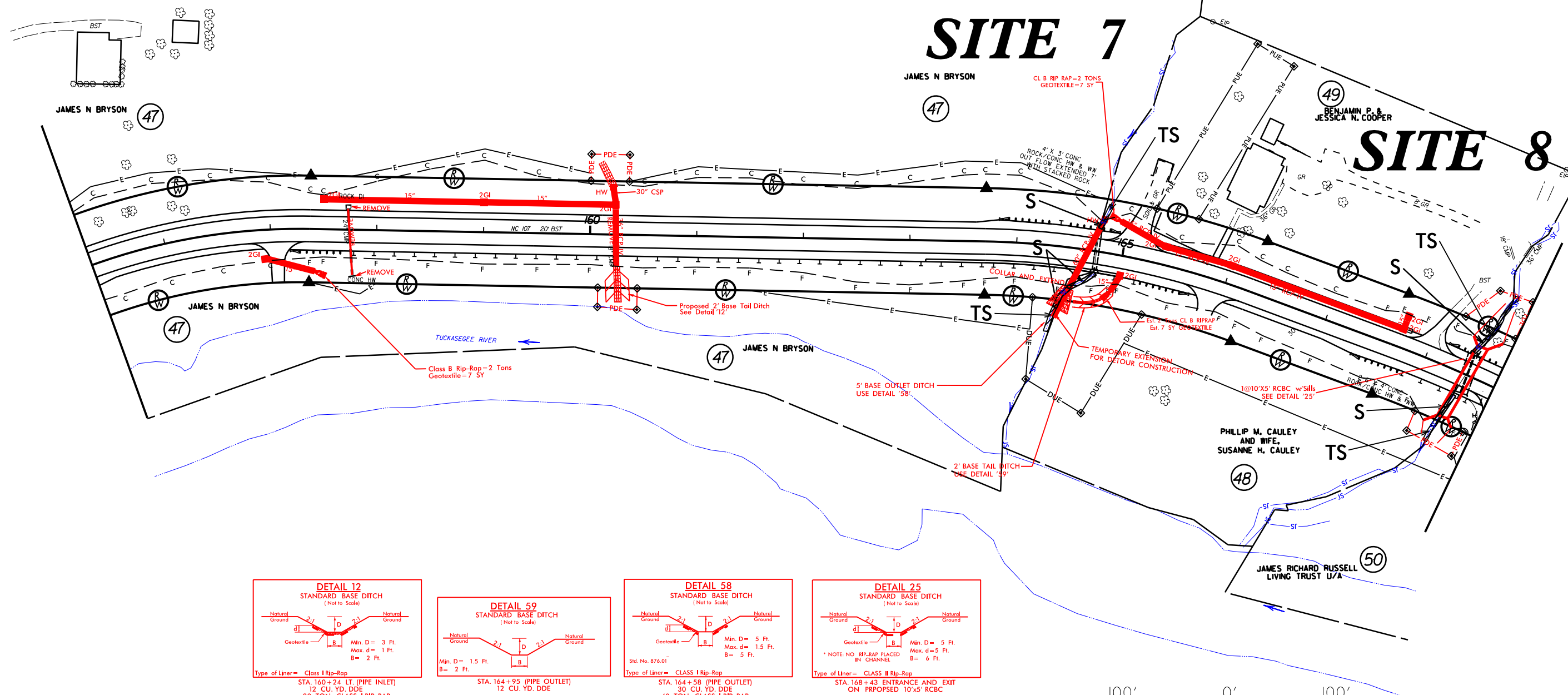
PROJECT REFERENCE NO.	SHEET NO.
R-4753	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 21 OF 27

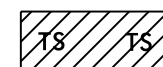
BAUCOM RODGERS LLC

SITE 7

SITE 8



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

REVISIONS

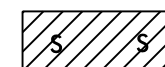
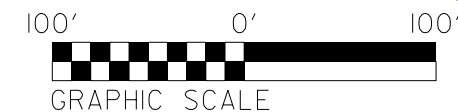
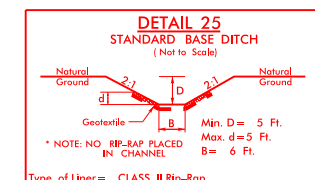
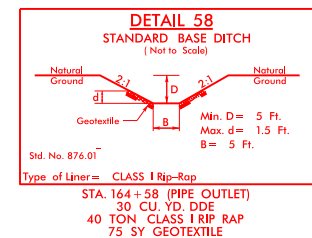
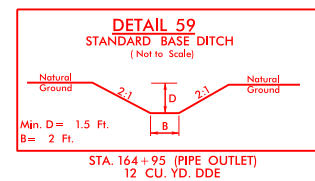
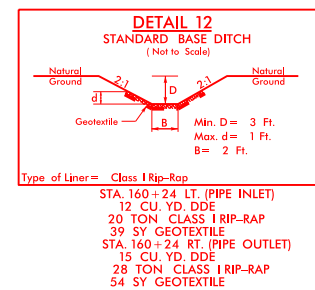
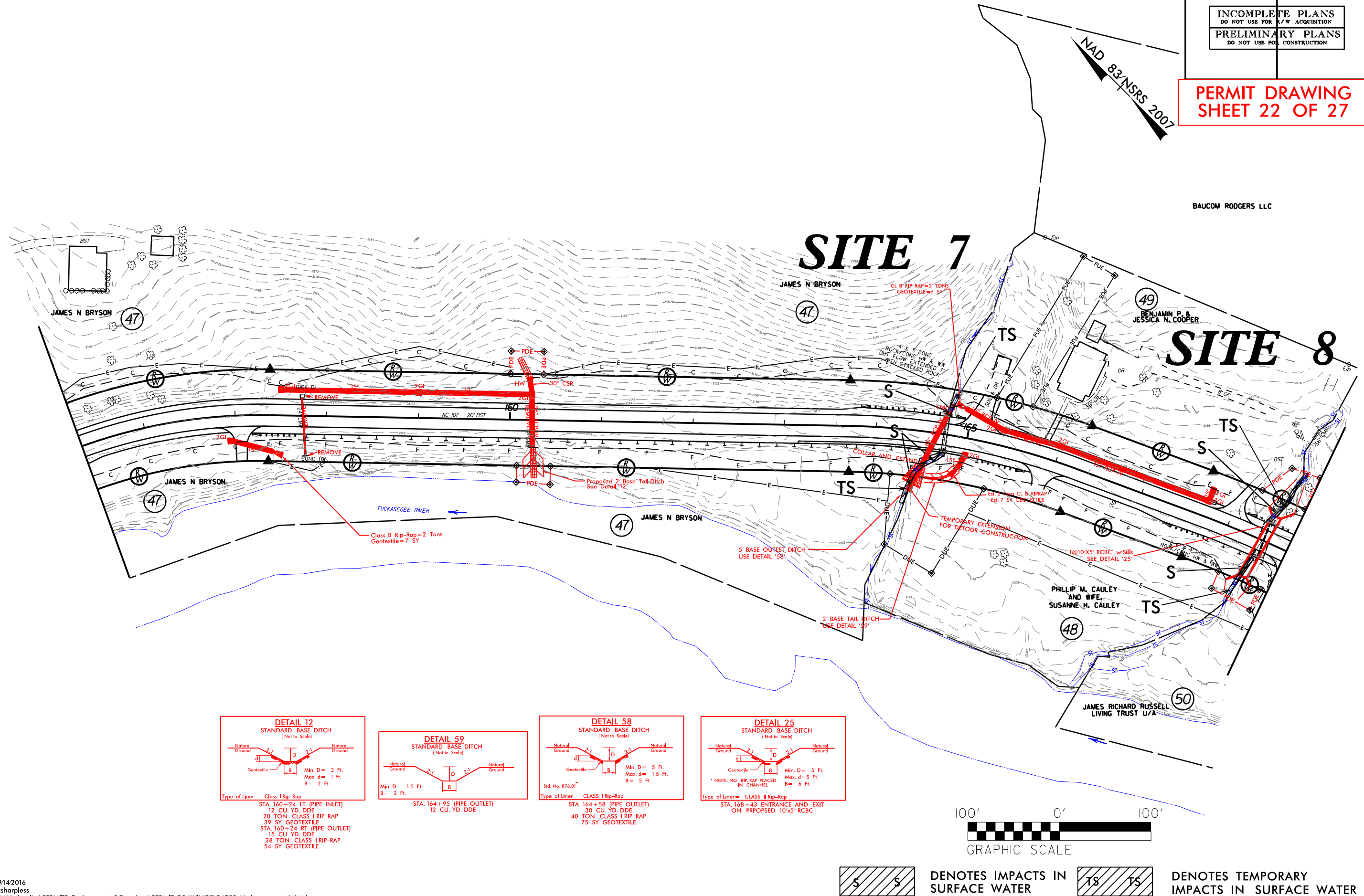
8/17/99

9/14/2016
csharpless
R:\Hydraulics\PERMITS Environmental\Drawings\PERMIT DRAWINGS\R4753 Hyd.prm wet sh114.dgn

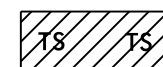
PROJECT REFERENCE NO.	SHEET NO.
R-4753	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING
SHEET 22 OF 27

BAUCOM RODGERS LLC



DENOTES IMPACTS IN
SURFACE WATER



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

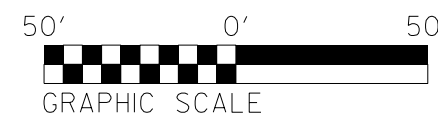
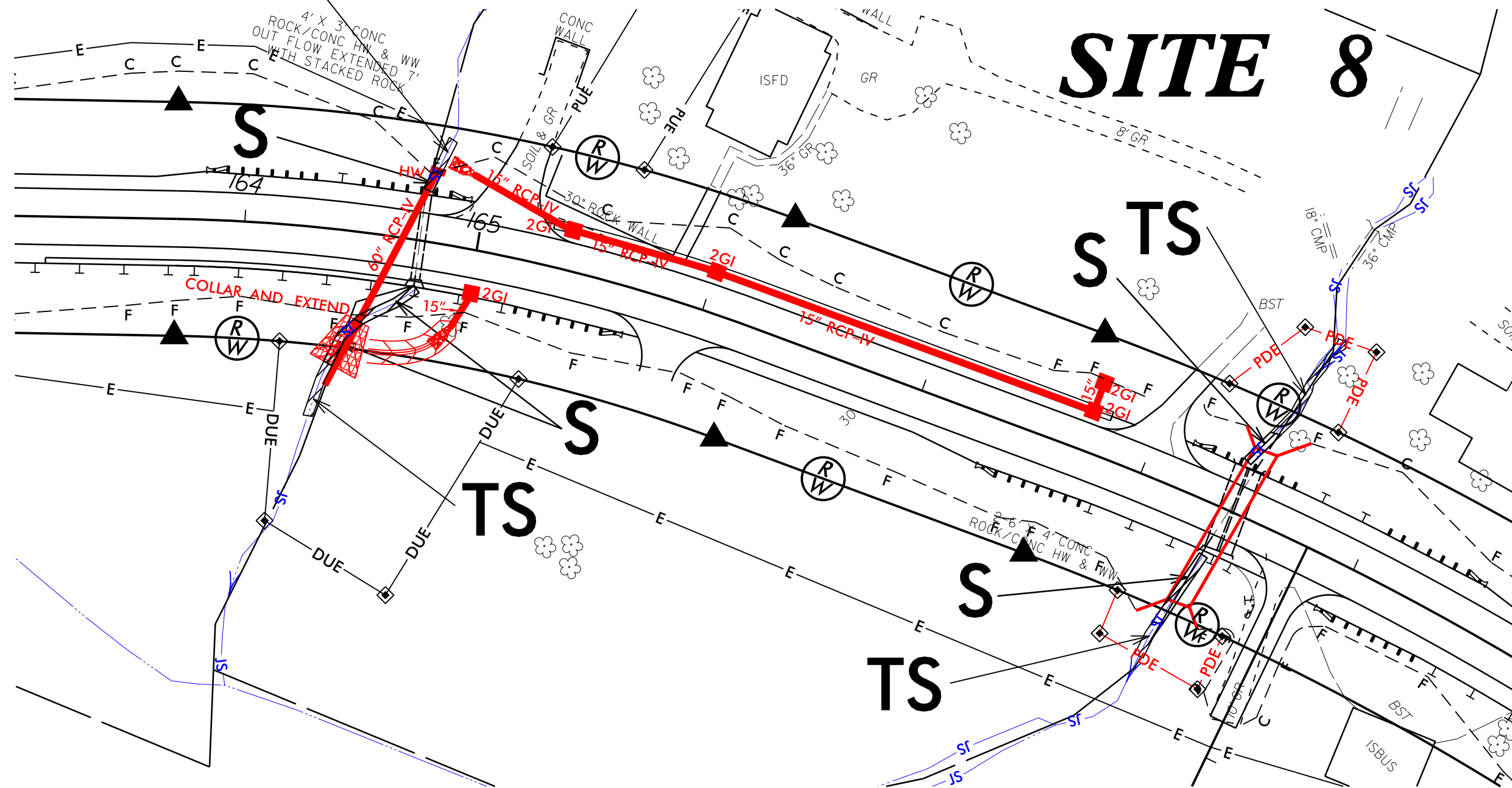
8/17/99

REVISIONS

9/14/2016
csharpless
R:\Hydraulics\PERMITS Environmental\Drawings\PERMIT DRAWINGS\R4753 Hyd.prm wet sh14.dgn

TS ***SITE 7***

NAD 83/NSRS 2001



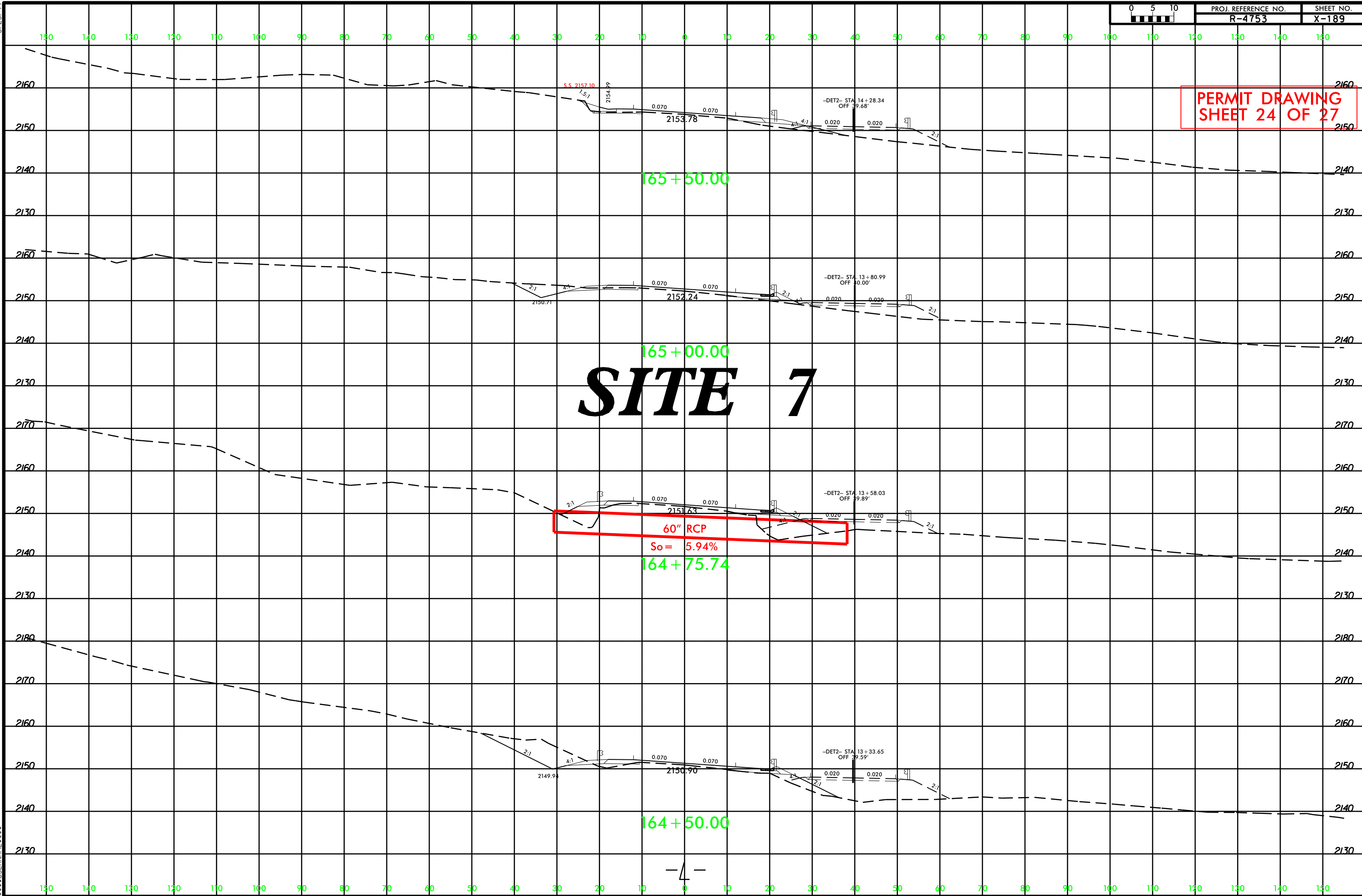
A rectangular area with diagonal hatching (lines from top-left to bottom-right) and two 'S' symbols inside.

DENOTES IMPACTS IN
SURFACE WATER

A rectangular block with diagonal hatching from top-left to bottom-right. Inside the block, the letters 'TS' are written twice, once on the left and once on the right.

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

9/14/2016
csharpless
R:\Hydraulics\PERMITS_Environmental\Drawings\PERMIT DRAWINGS\R4753 Hyd_prm_wet sht14_enlarge site7,8.dgn

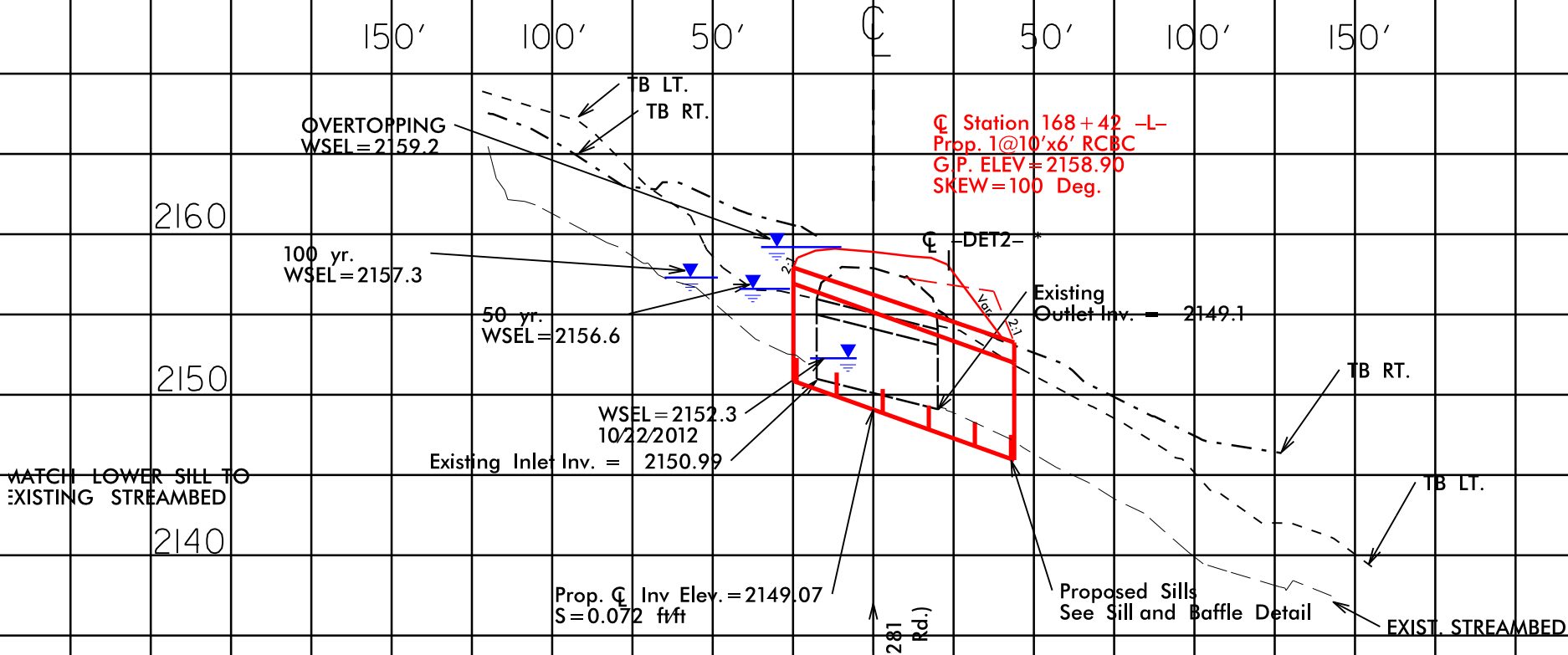


5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
R-4753			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SITE 8

PERMIT DRAWING
SHEET 25 OF 27



3/3/2016
qnguyen
R:\Hydraulics\PERMITS Environmental\Drawings\PERMIT DRAWINGS\R4753 Hyd_XPL_site8.dgn

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)
1	23+61 / 23+70 -L-LT	48" CSP, DITCH						< 0.01	< 0.01	11	45	
1	23+58 / 23+67 -L-RT	STREAM REALIGN						< 0.01		36		
1	23+50 / 23+72 -L- RT	RIP RAP ACROSS STREAM						< 0.01		16		
2	76+89 / 76+95 -L-RT	36" RCP						< 0.01	< 0.01	30	6	
3	98+33 / 98+48 -L-LT	24" RCP							< 0.01		19	
3	98+34 / 98+40 -L-RT	24" RCP						< 0.01		11		
3	98+42 / 98+48 -L-RT	24" RCP						< 0.01		19		
3	98+44 / 98+56 -L-RT	RIP RAP ACROSS STREAM						< 0.01	< 0.01	8	17	
4	105+40 / 105+55 -L-RT	42" RCP						< 0.01		40		
4	105+51 / 105+63 -L-RT	RIP RAP ACROSS STREAM						< 0.01	< 0.01	13	12	
5	142+66 / 142+78 -L-LT	9' X 7' RCBC						< 0.01	< 0.01	27	26	
5	142+74 / 142+90 -L-RT	9' X 7' RCBC							< 0.01		18	
6	150+04 / 150+09 -L-LT	66" RCP						< 0.01	< 0.01	12	14	
6	149+92 / 150+08 -L-RT	RIP RAP ACROSS STREAM						< 0.01	< 0.01	19	10	
TOTALS*:								0.02	0.02	242	167	0

*Rounded totals are sum of actual impacts

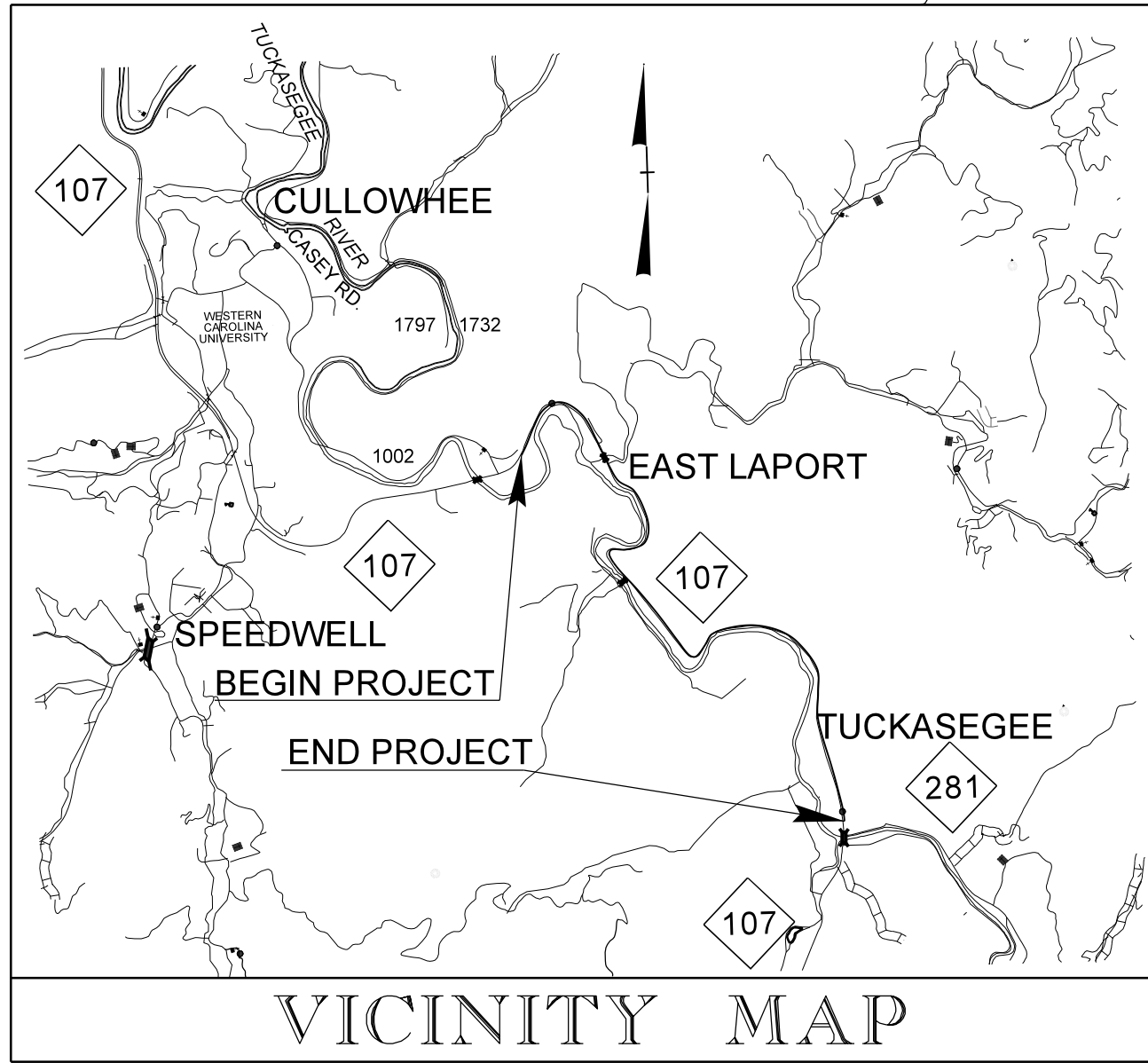
NOTES:
Sites 1,3,4, and 6 contain Rip-Rap in the stream to function as a energy dissapator due to erosive velocities at pipe outlets.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
3/8/2016
JACKSON
R-4753
3999.1.1

SHEET26OF27

09/08/99

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 Thru 1C-5 For Survey Control Sheets



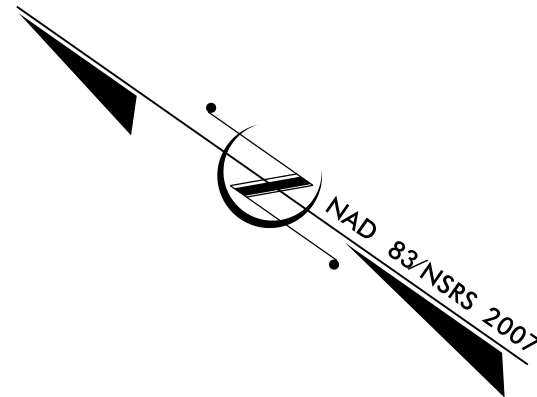
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

LOCATION: NC 107 FROM NORTH OF SR 1002 TO NC 281

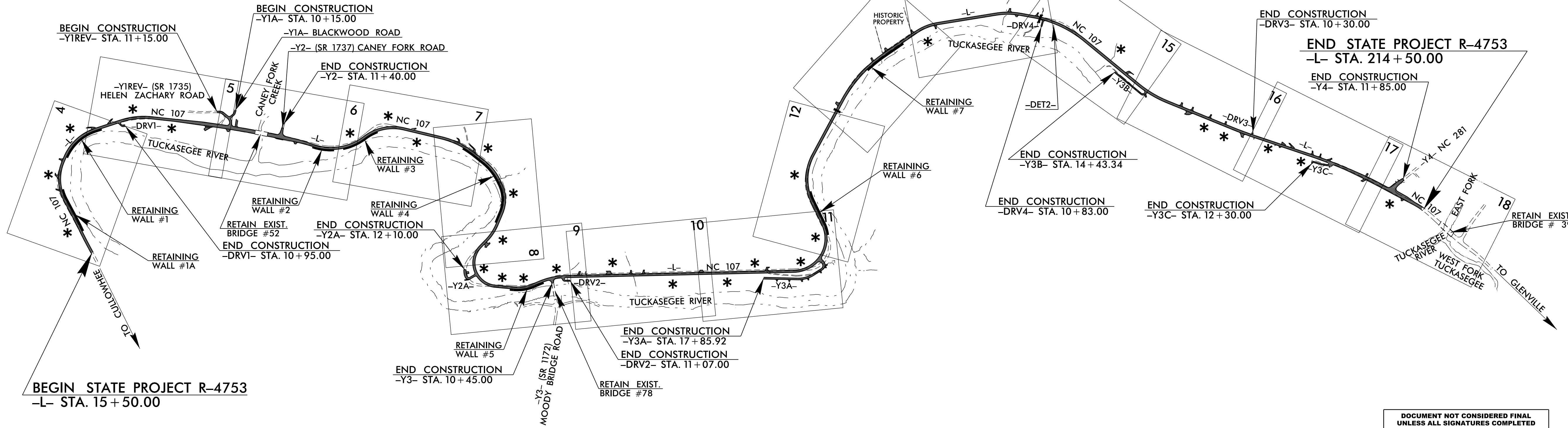
TYPE OF WORK: GRADING, DRAINAGE, PAVING,
RETAINING WALLS & CULVERTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4753	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39999.1.1	STP-0107(10)	P.E.	
39999.2.FR2	STP-0107(10)	R/W & UTILITIES	
39999.3.FR1	STP-0107(10)	CONST.	



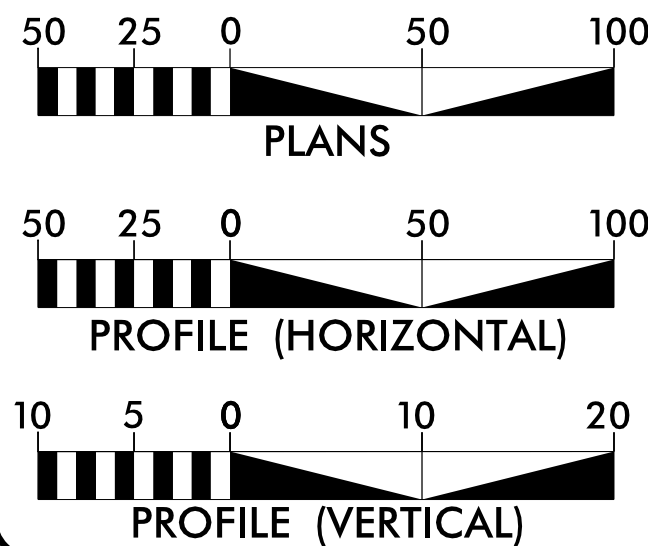
TIP PROJECT: R-4753

CONTRACT: C203825



*DESIGN EXCEPTION REQUIRED FOR: HORIZONTAL CURVE RADIUS, SAG VERTICAL CURVE, CREST VERTICAL CURVE, AND ASSOCIATED NIGHTTIME STOPPING SIGHT DISTANCE.

GRAPHIC SCALES



DESIGN DATA

ADT 2016 = 6270
ADT 2035 = 8800
K = 10 %
D = 60 %
T = 9 % *
V = 50 MPH
* TTST = 2% DUAL = 7%
FUNC CLASS =
MINOR COLLECTOR
"REGIONAL TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-4753 = 3.743 MILES
LENGTH EXISTING STRUCTURE #52 = 0.026 MILES
TOTAL LENGTH TIP PROJECT R-4753 = 3.769 MILES

Prepared in the Office of:
CDM Smith
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 29, 2015

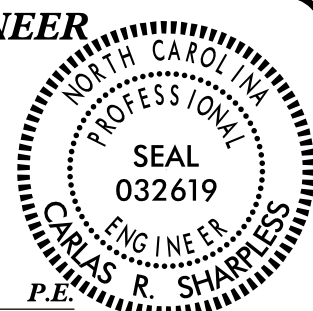
LETTING DATE:
DECEMBER 20, 2016

DAVID J. CLODGO, P.E.
PROJECT ENGINEER

KIT A. PERSIANI, P.E.
PROJECT DESIGN ENGINEER

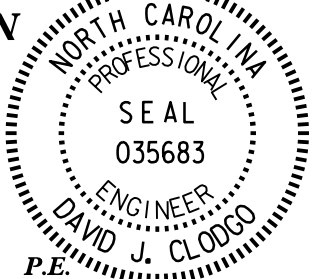
THAD F. DUNCAN, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

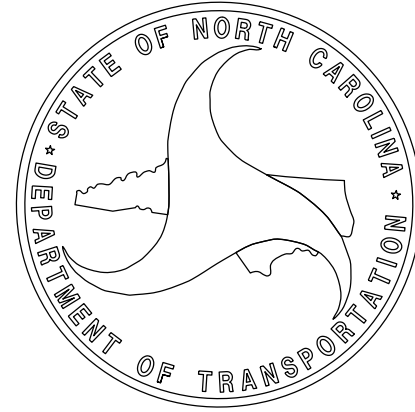


SIGNATURE:

ROADWAY DESIGN
ENGINEER



SIGNATURE:

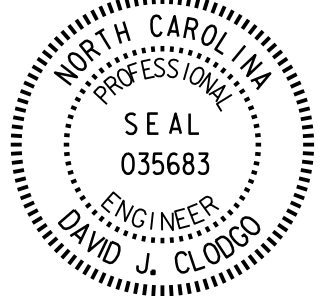


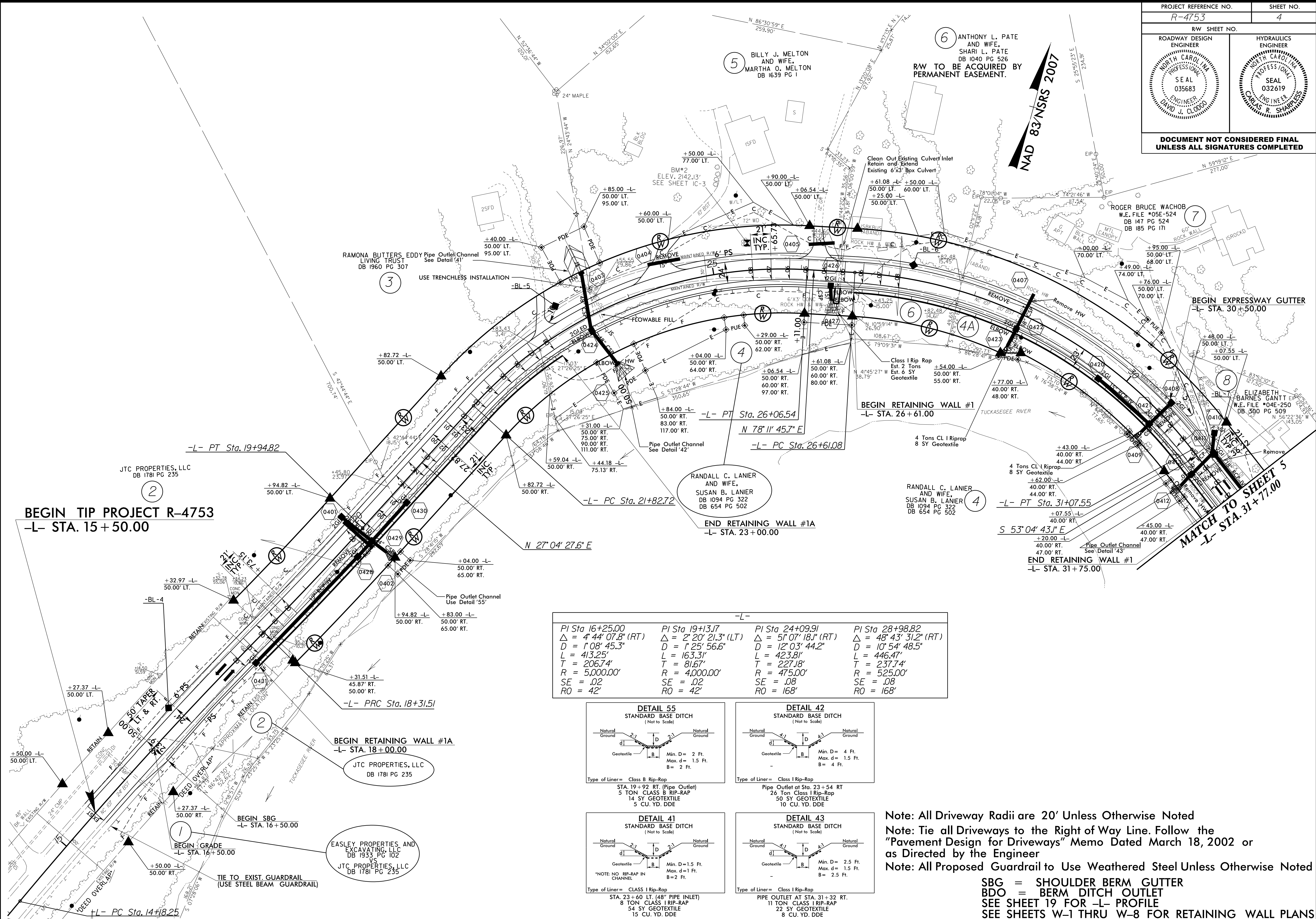
\\SYTIME-
Roadway\Proj\R4753_Rdy_tsh.dgn
USER: persiani

5/14/99

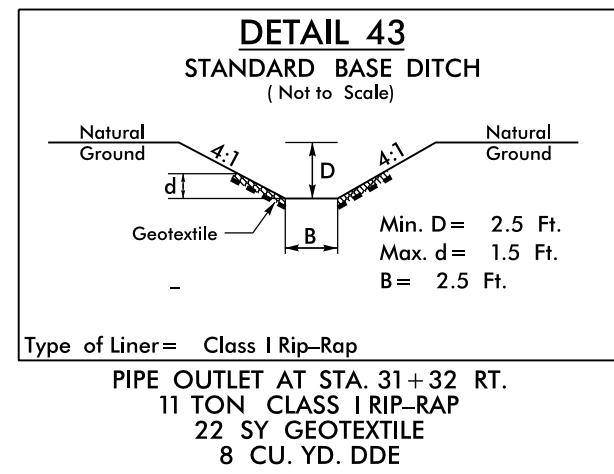
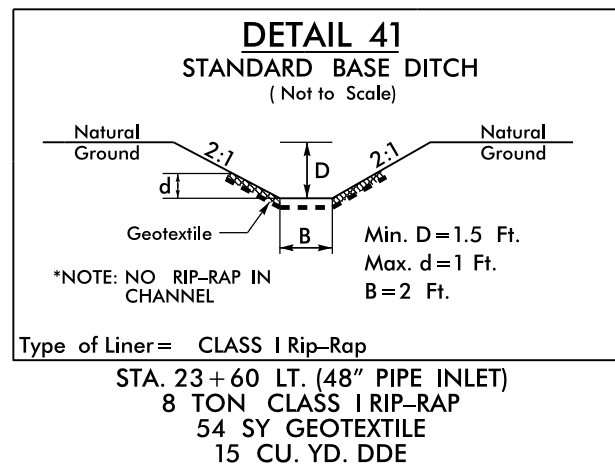
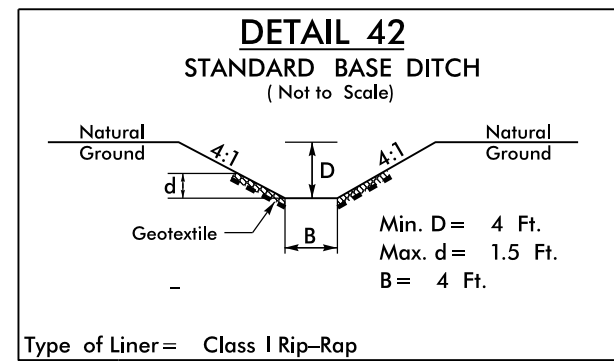
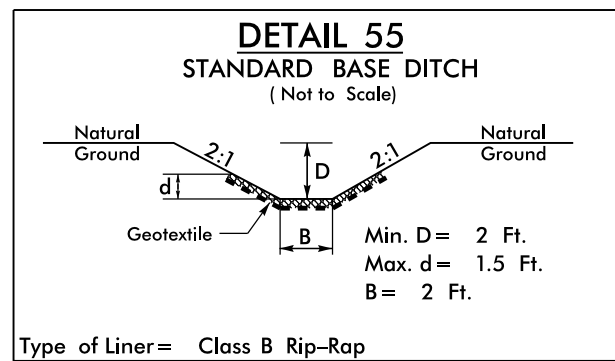
REVISIONS

Invalid expression: 53_Rdy+psb04.dgn
USE: 53_Rdy+psb04.dgn

PROJECT REFERENCE NO.		SHEET NO.	
R-4753		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

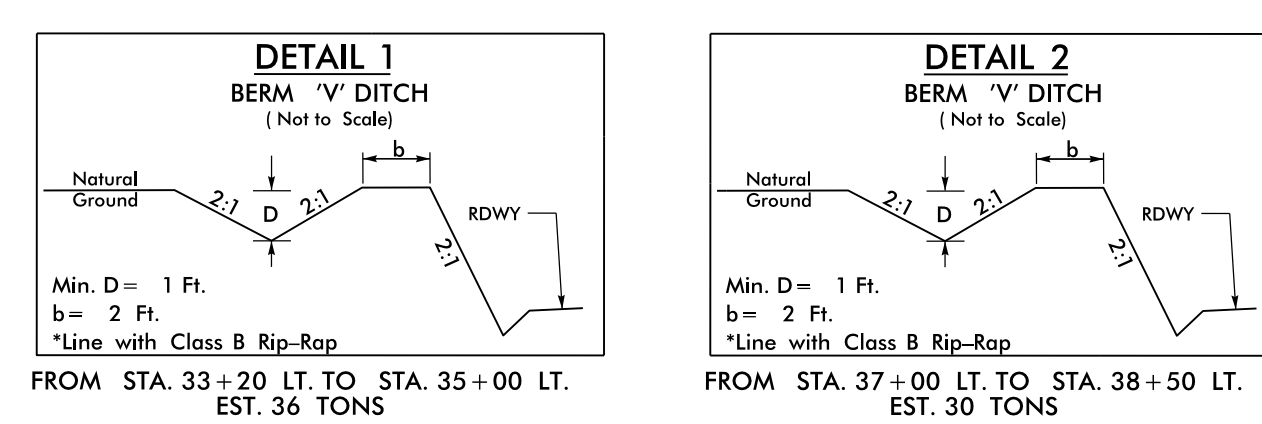


$PI Sta. 16+25.00$ $\Delta = 4' 44" 07.8" (RT)$ $D = 1' 08' 45.3"$ $L = 413.25'$ $T = 206.74'$ $R = 5,000.00'$ $SE = .02$ $RO = 42'$	$PI Sta. 19+13.17$ $\Delta = 2' 20' 21.3" (LT)$ $D = 1' 25' 56.6"$ $L = 163.31'$ $T = 81.67'$ $R = 4,000.00'$ $SE = .02$ $RO = 42'$	$PI Sta. 24+09.91$ $\Delta = 5' 07' 18.1" (RT)$ $D = 12' 03' 44.2"$ $L = 423.81'$ $T = 227.18'$ $R = 475.00'$ $SE = .08$ $RO = 168'$	$PI Sta. 28+98.82$ $\Delta = 48' 43' 31.2" (RT)$ $D = 10' 54' 48.5"$ $L = 446.47'$ $T = 237.74'$ $R = 525.00'$ $SE = .08$ $RO = 168'$
---	--	---	--



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted
SBG = SHOULDER BERM GUTTER
BDO = BERM DITCH OUTLET
SEE SHEET 19 FOR -L- PROFILE
SEE SHEETS W-1 THRU W-8 FOR RETAINING WALL PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-4753	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



Note: All Driveway Radii Are 20' Unless Otherwise Noted

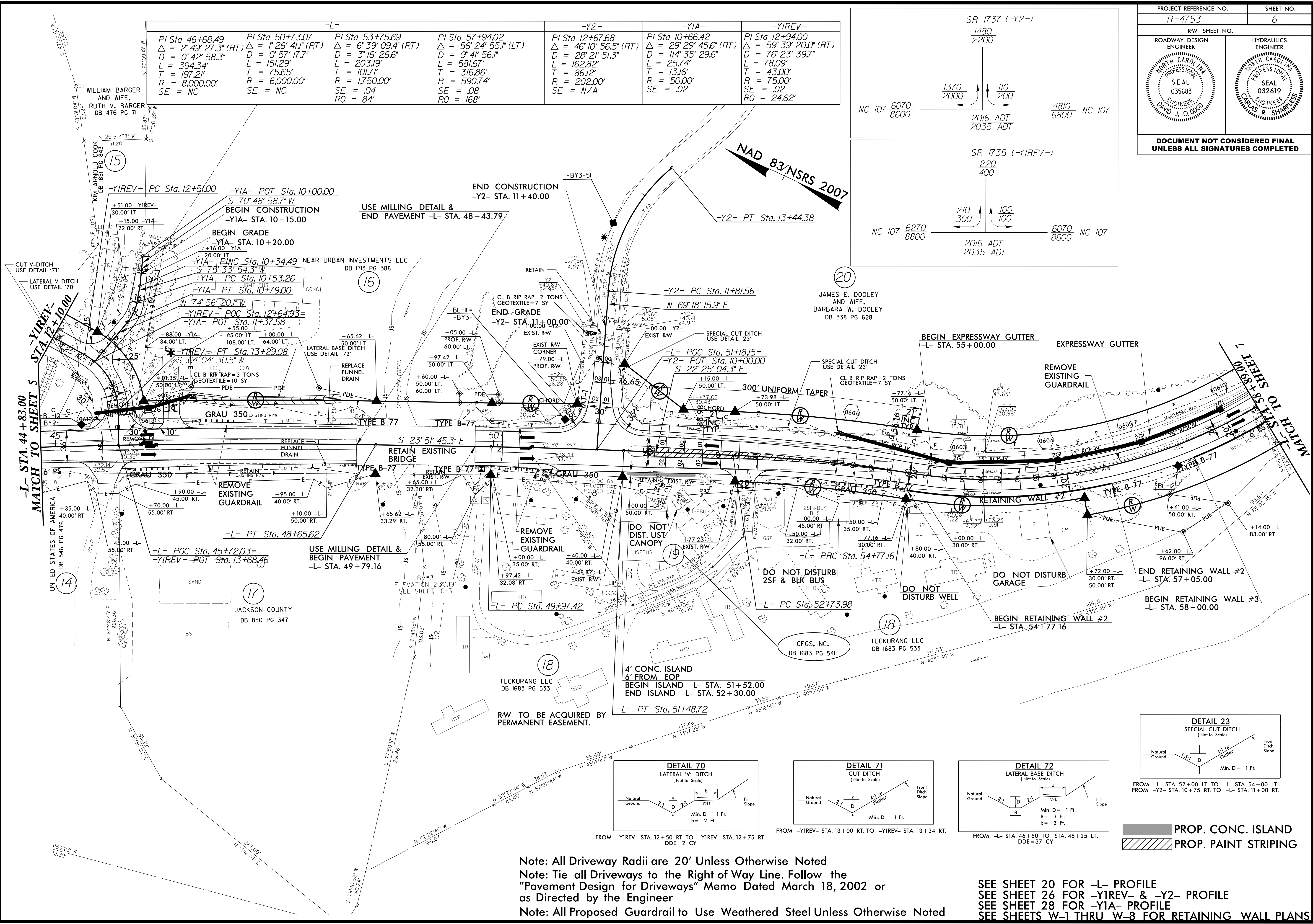
Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer

Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

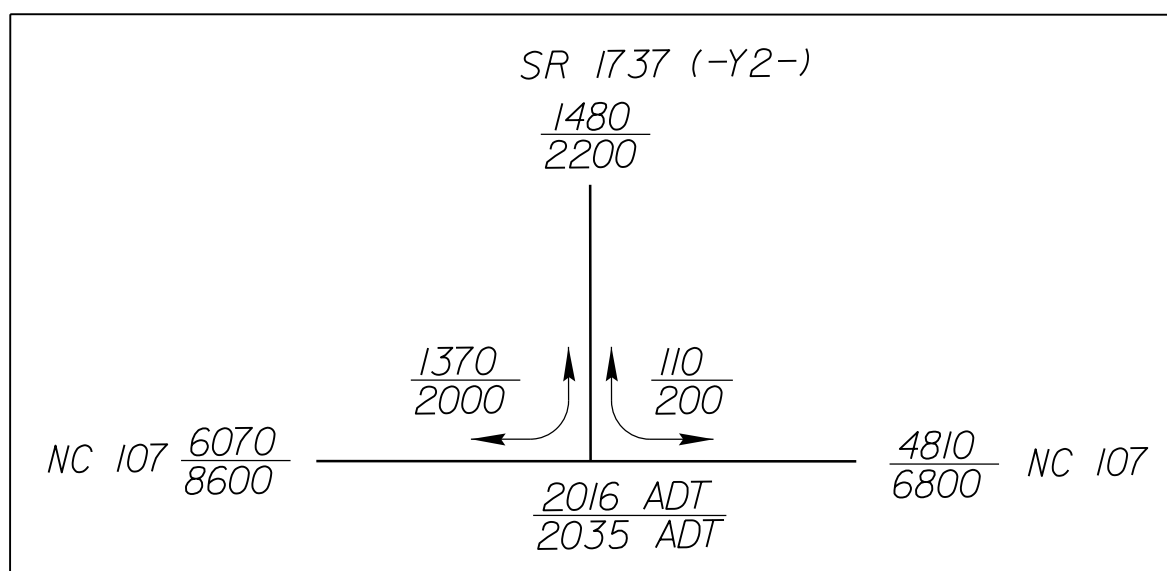
5/14/99

REVISIONS

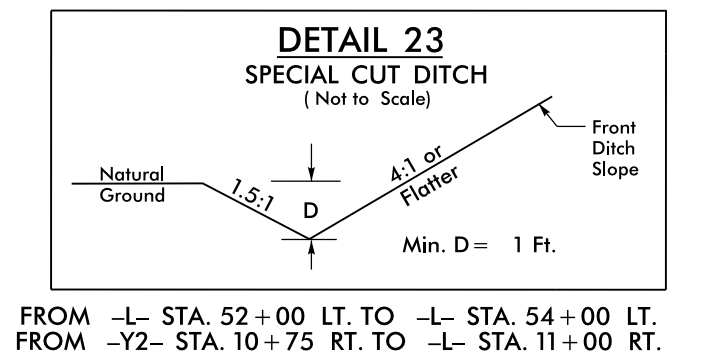
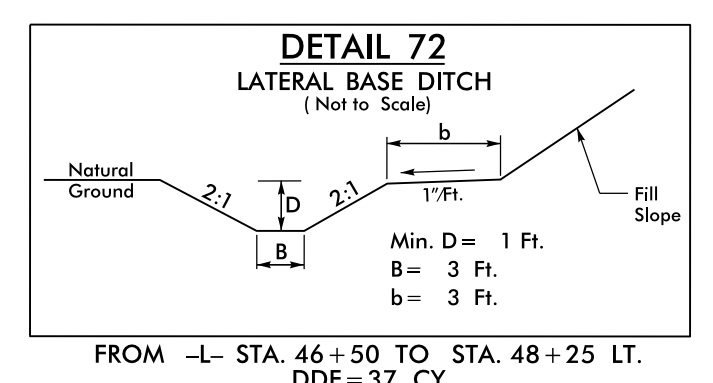
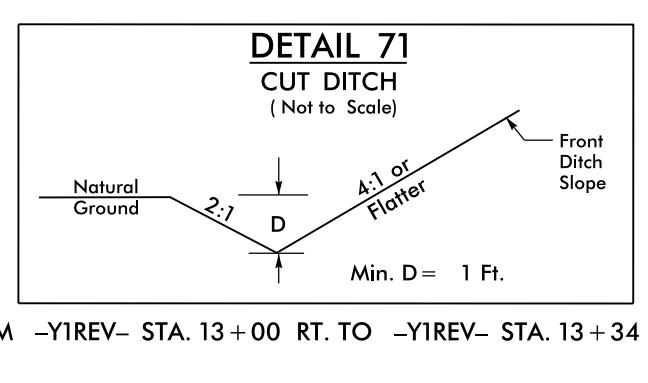
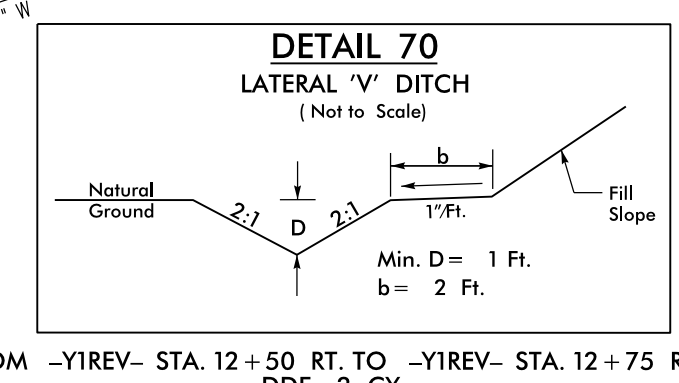
Invalid expression: 53_Rdy_psh06.dgn
USER: C:\PROGRAMS\AUTOCAD\



-L-		-Y2-		-Y1A-		-YIREV-	
PI Sta 46+68.49	PI Sta 50+73.07	PI Sta 53+75.69	PI Sta 57+94.02	PI Sta 12+67.68	PI Sta 10+66.42	PI Sta 12+94.00	
$\Delta = 2' 49' 27.3''$ (RT)	$\Delta = 1' 26' 41.1''$ (RT)	$\Delta = 6' 39' 09.4''$ (RT)	$\Delta = 56' 24' 55.1''$ (LT)	$\Delta = 46' 10' 56.5''$ (RT)	$\Delta = 29' 29' 45.6''$ (RT)	$\Delta = 59' 39' 20.0''$ (RT)	
D = 0' 42' 58.3"	D = 0' 57' 17.7"	D = 3' 16' 26.6"	D = 9' 41' 56.1"	D = 28' 21' 51.3"	D = 114' 35' 29.6"	D = 76' 23' 39.7"	
L = 394.34'	L = 151.29'	L = 203.19'	L = 581.67'	L = 162.82'	L = 257.4'	L = 78.09'	
T = 197.21'	T = 75.65'	T = 101.71'	T = 316.86'	T = 86.12'	T = 131.6'	T = 43.00'	
R = 8,000.00'	R = 6,000.00'	R = 1,750.00'	R = 590.74'	R = 202.00'	R = 50.00'	R = 75.00'	
SE = NC	SE = NC	SE = .04	SE = .08	SE = N/A	SE = .02	SE = .02	
		RO = 84'	RO = 168'			RO = 24.62'	

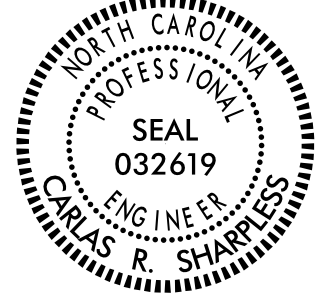


PROJECT REFERENCE NO. R-4753		SHEET NO. 6
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035683 DAVID J. CLODDO	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032619 NICHOLAS R. SHIRRESS	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

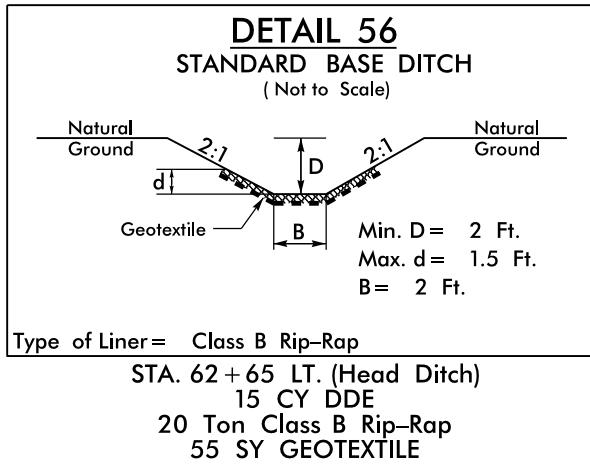
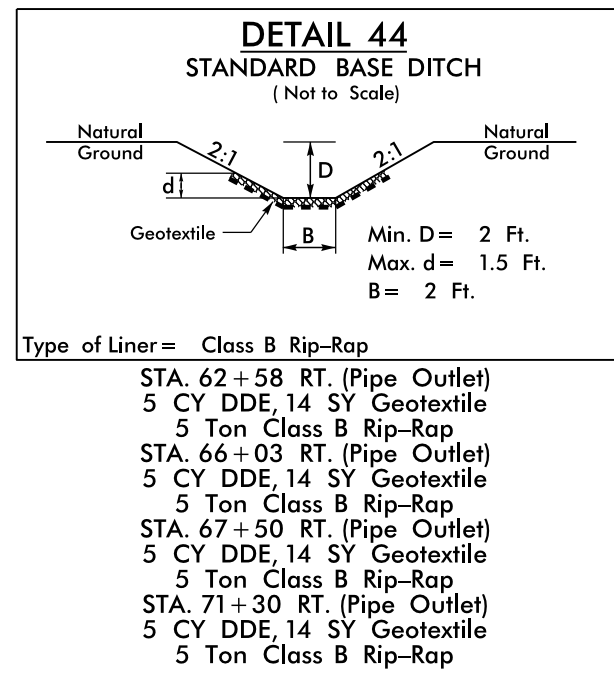
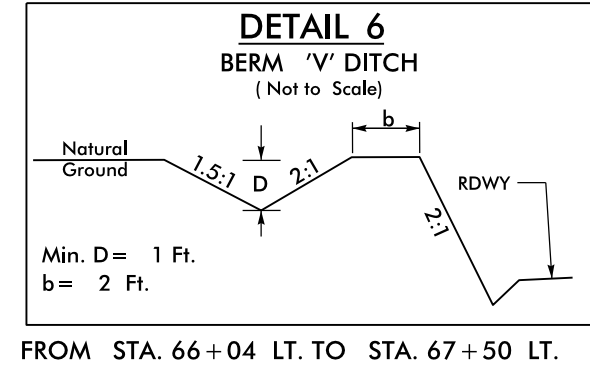
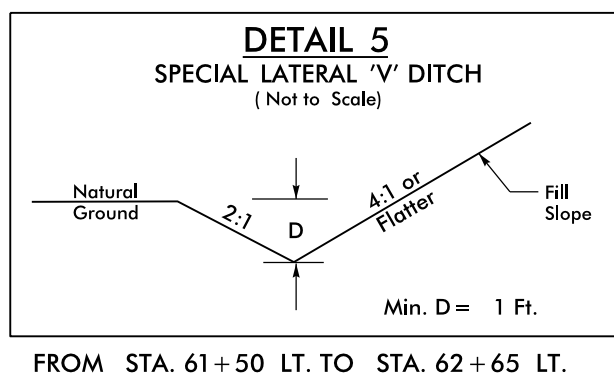
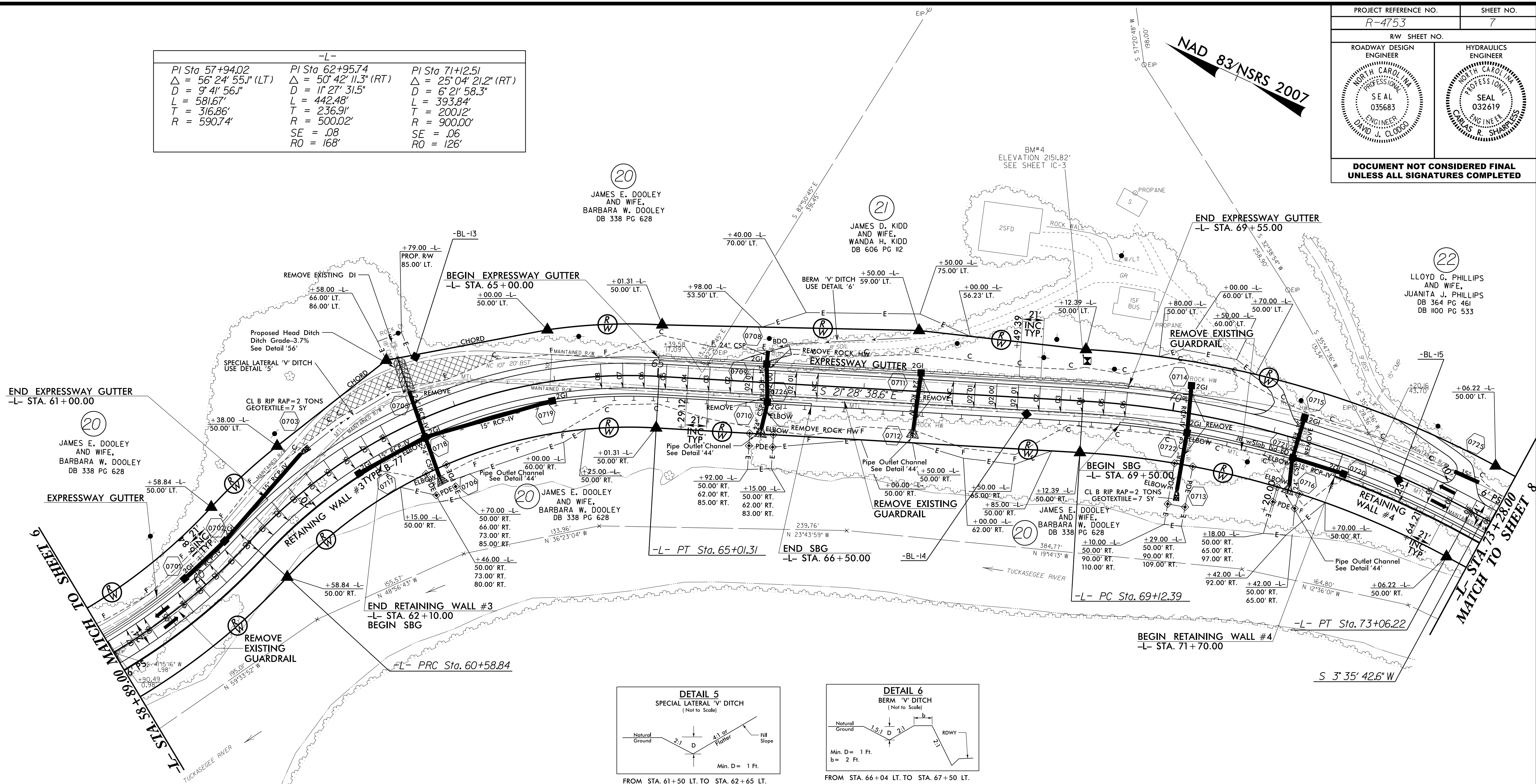


Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 26 FOR -YIREV- & -Y2- PROFILE
SEE SHEET 28 FOR -Y1A- PROFILE
SEE SHEETS W-1 THRU W-8 FOR RETAINING WALL PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-4753	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PI Sta 57+94.02 $\Delta = 56^{\circ}24'55.1''$ (LT) $D = 9^{\circ}41'56.1''$ $L = 581.67'$ $T = 316.86'$ $R = 590.74'$	PI Sta 62+95.74 $\Delta = 50^{\circ}42'11.3''$ (RT) $D = 11^{\circ}27'31.5''$ $L = 442.48'$ $T = 236.91'$ $SE = .08$ $RO = 168'$	PI Sta 71+12.51 $\Delta = 25^{\circ}04'21.2''$ (RT) $D = 6^{\circ}21'58.3''$ $L = 393.84'$ $T = 200.12'$ $R = 900.00'$ $SE = .06$ $RO = 126'$
---	--	--



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

BDO = BERM DITCH OUTLET
SBG = SHOULDER BERM GUTTER
SEE SHEETS 20 & 21 FOR -L- PROFILE
SEE SHEETS W-1 THRU W-8 FOR RETAINING WALL PLANS

REVISIONS

5/14/99

Invalid expression
USE: C:\PROGRAMS\AutoCAD\ACAD.PLT

5/14/99

REVISIONS

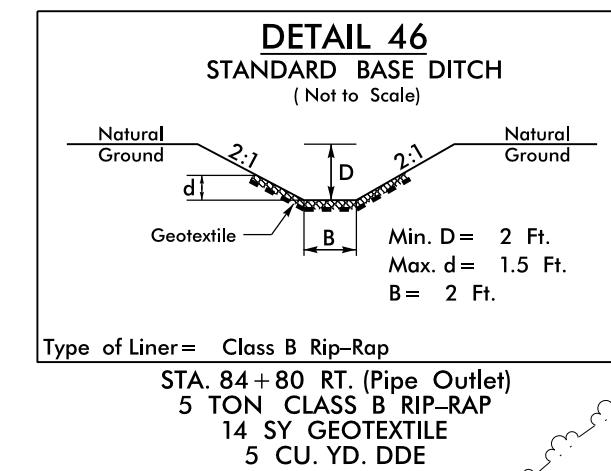
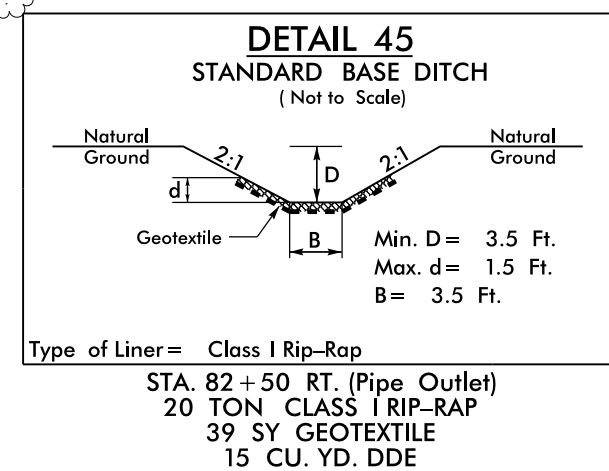
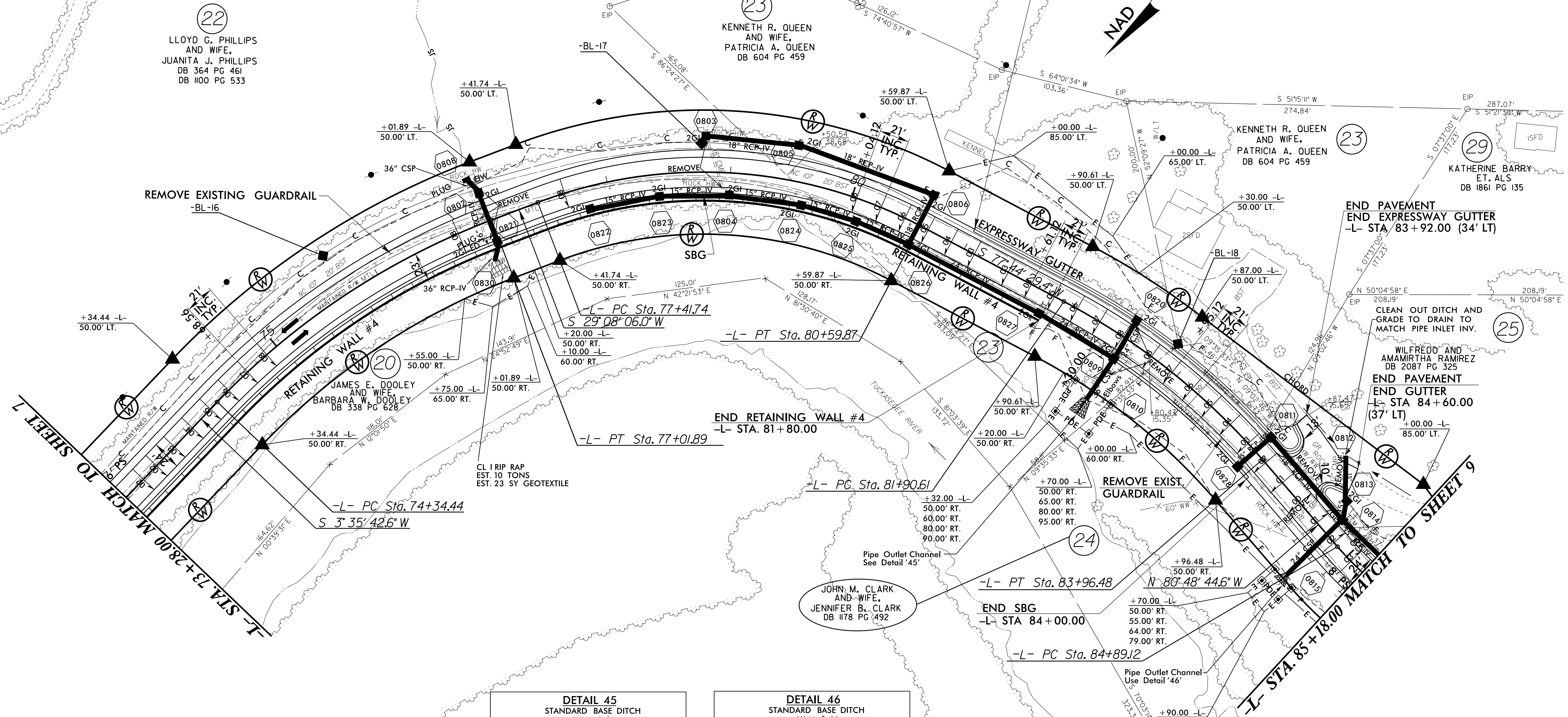
Invalid expression: 53_Rd.pst:08.dgn
USER: N:\00000001

-L-			
PI Sta 75+70.42 $\Delta = 25^\circ 32' 23.4" (RT)$ $D = 9^\circ 32' 57.5"$ $L = 267.45'$ $T = 135.99'$ $R = 600.00'$ $SE = .08$ $RO = 168'$	PI Sta 79+11.09 $\Delta = 48^\circ 36' 23.4" (RT)$ $D = 15^\circ 16' 43.9"$ $L = 318.13'$ $T = 169.34'$ $R = 375.00' (35mph)$ $SE = .08$ $RO = 168'$	PI Sta 82+94.76 $\Delta = 21^\circ 26' 46.0" (RT)$ $D = 10^\circ 25' 02.7"$ $L = 205.87'$ $T = 104.15'$ $R = 550.00'$ $SE = .08$ $RO = 168'$	PI Sta 90+10.62 $\Delta = 128^\circ 46' 31.1" (LT)$ $D = 22^\circ 55' 05.9"$ $L = 561.89'$ $T = 521.50'$ $R = 250.00' (30mph)$ $SE = .08$ $RO = 168'$

*Design Exception Required for Horizontal Curve Radius

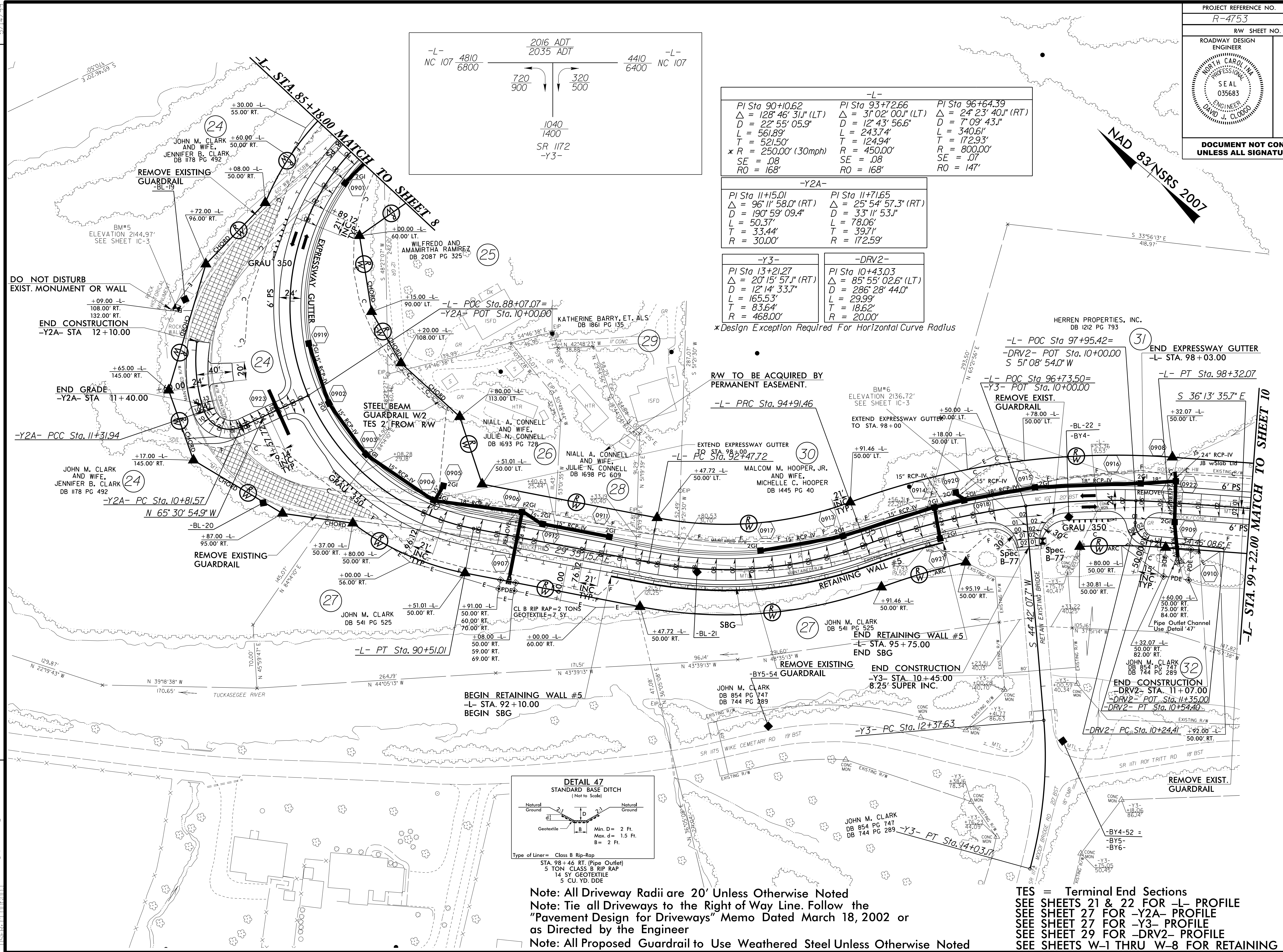
MALCOM M. HOOPER, JR.
AND WIFE,
MICHELLE C. HOOPER
DB 1445 PG 40

PROJECT REFERENCE NO.		SHEET NO.
R-4753		8
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the
"Pavement Design for Driveways" Memo Dated March 18, 2002 or
as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

SBG = SHOULDER BERM GUTTER
SEE SHEET 21 FOR -L- PROFILE
SEE SHEETS W-1 THRU W-8 FOR RETAINING WALL PLANS



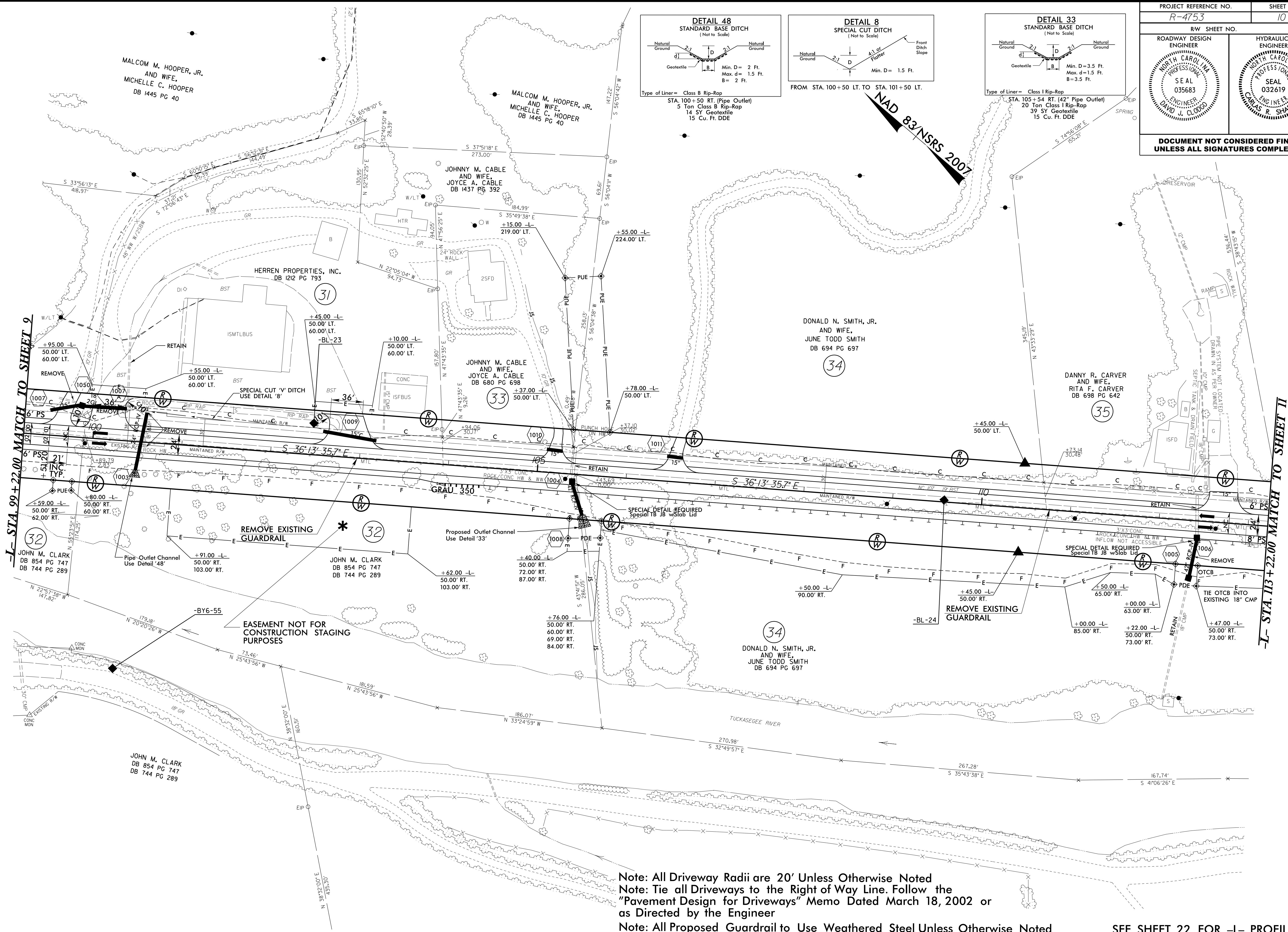
Note: All Driveway Radii are 20' Unless Otherwise Noted
 Note: Tie all Driveways to the Right of Way Line. Follow the
 "Pavement Design for Driveways" Memo Dated March 18, 2002 or
 as Directed by the Engineer
 Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

TES = Terminal End Sections
SEE SHEETS 21 & 22 FOR -L- PROFILE
SEE SHEET 27 FOR -Y2A- PROFILE
SEE SHEET 27 FOR -Y3- PROFILE
SEE SHEET 29 FOR -DRV2- PROFILE
SEE SHEETS W-1 THRU W-8 FOR RETAINING WALL PLANS

5/14/99

REVISIONS

Invalid expression: Rdg_psh10.dgn
USER: N:\D\147\53_Rdg_psh10.dgn



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the
"Pavement Design for Driveways" Memo Dated March 18, 2002 or
as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

SEE SHEET 22 FOR -L- PROFILE

PROJECT REFERENCE NO.		SHEET NO.
R-4753		10
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		SEAL 035683 DAVID J. CLODDO
NORTH CAROLINA PROFESSIONAL ENGINEER		SEAL 032619 WILLIAM R. SHARP
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

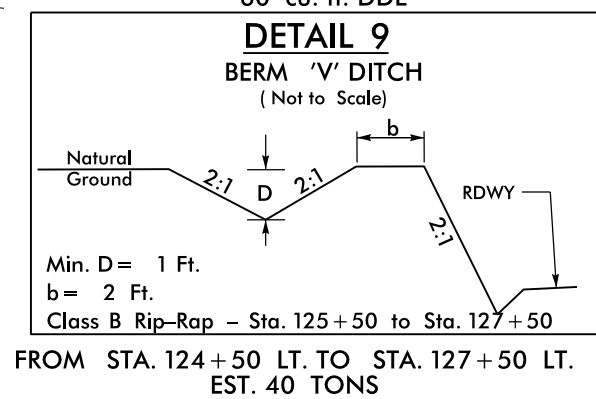
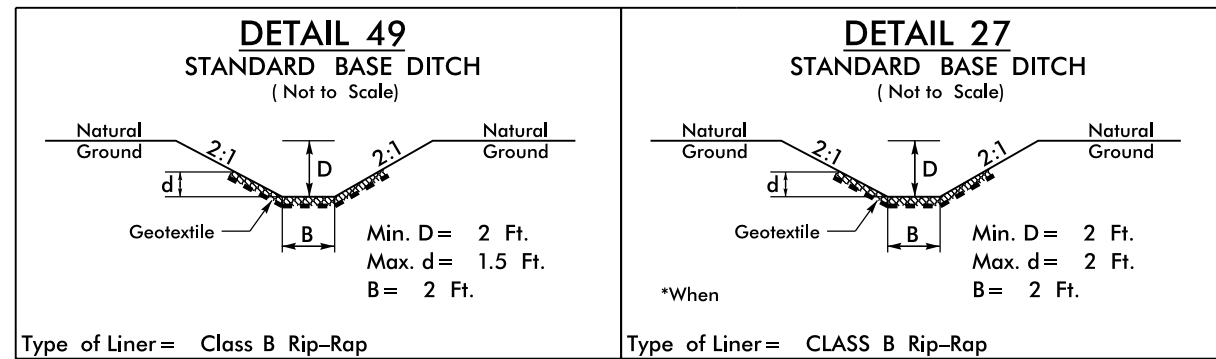
5/14/99

REVISIONS

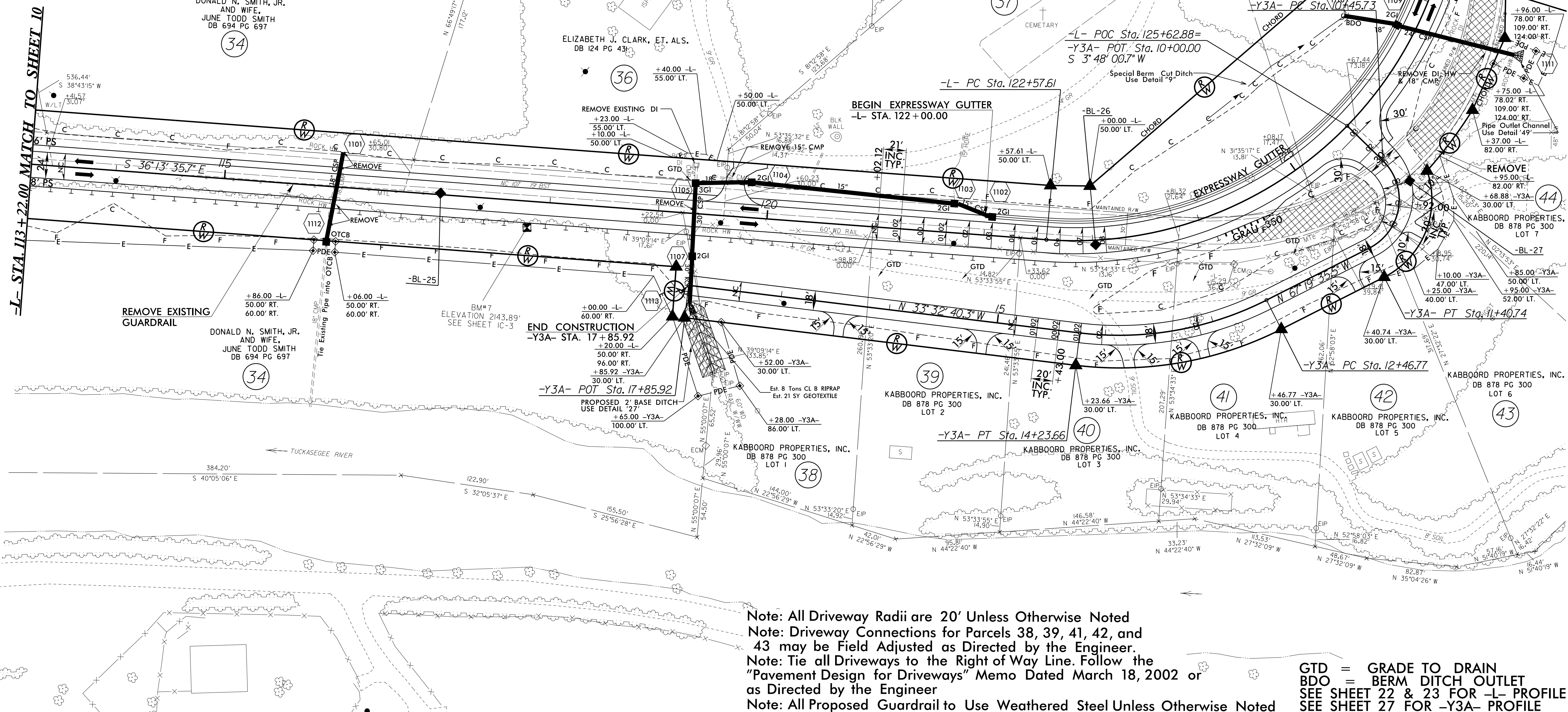
Invalid expression: 4753_Rdy.pst11.dgn
USE: 4753_Rdy.pst11.dgn

-L-	-Y3A-	
PI Sta 128+00.46 $\Delta = 114^{\circ}22'34.4"$ (LT) $D = 16^{\circ}22'12.8"$ $L = 698.68'$ $T = 542.85'$ $* R = 350.00'$ (35mph) $SE = .08$ $RO = 168'$	PI Sta 11+15.66 $\Delta = 108^{\circ}52'23.8"$ (RT) $D = 114^{\circ}35'29.6"$ $L = 95.01'$ $T = 69.93'$ $R = 50.00'$ $SE = SEE PLANS$	PI Sta 13+37.87 $\Delta = 33^{\circ}46'55.2"$ (RT) $D = 19^{\circ}05'54.9"$ $L = 176.88'$ $T = 91.10'$ $R = 300.00'$ $SE = SEE PLANS$

* Design Exception Required For Horizontal Curve Radius



-L- STA. 113+22.00 MATCH TO SHEET 10



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Driveway Connections for Parcels 38, 39, 41, 42, and 43 may be Field Adjusted as Directed by the Engineer.
Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

GTD = GRADE TO DRAIN
BDO = BERM DITCH OUTLET
SEE SHEET 22 & 23 FOR -L- PROFILE
SEE SHEET 27 FOR -Y3A- PROFILE

PROJECT REFERENCE NO.		SHEET NO.
R-4753		11
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

5/14/99

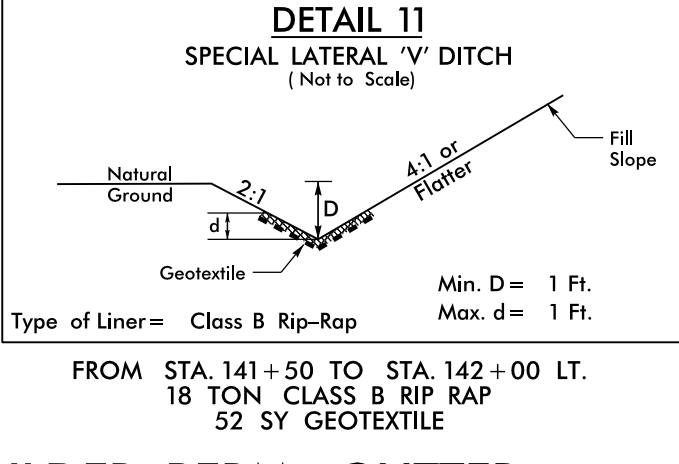
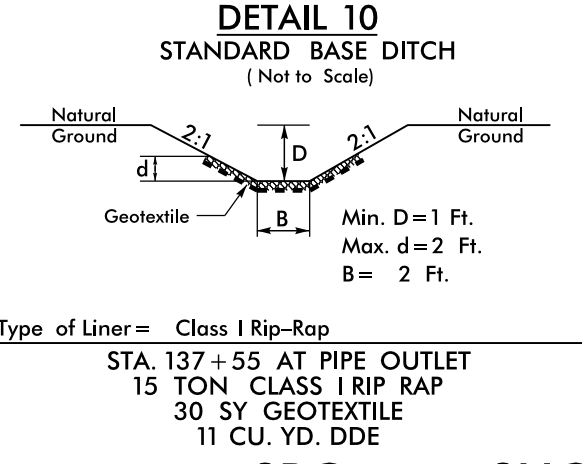
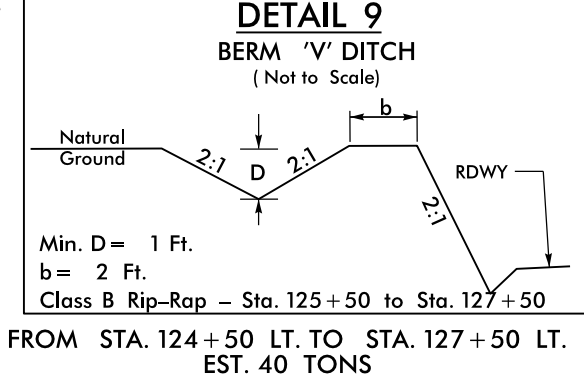
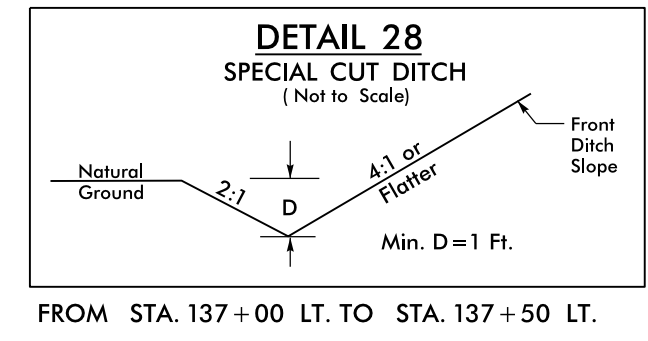
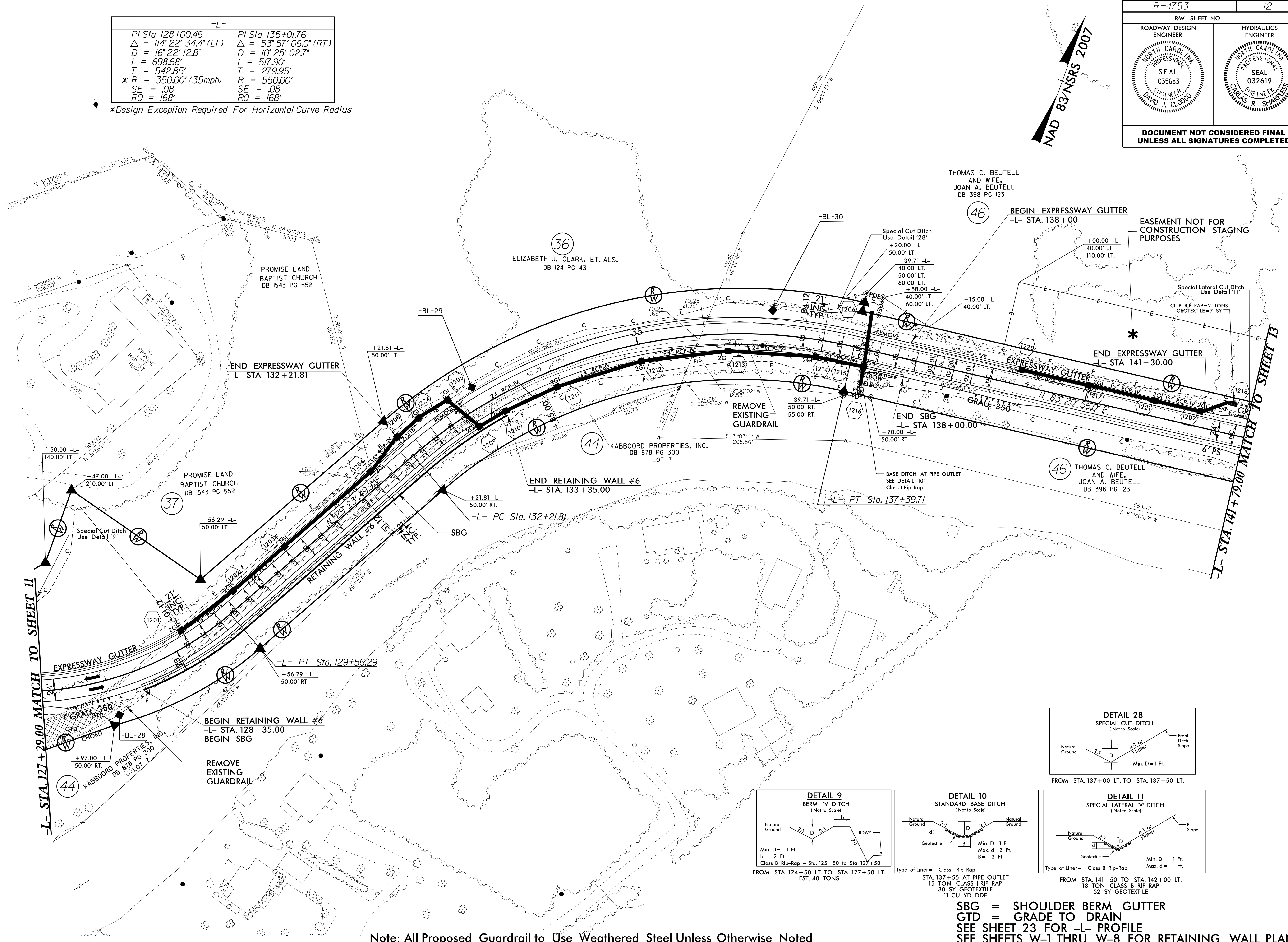
REVISIONS

Invalid expression: Rdj_psh12.dgn
USER: N1000000

-L-	
PI Sta 128+00.46	PI Sta 135+01.76
$\Delta = 114^{\circ} 22' 34.4''$ (LT)	$\Delta = 53^{\circ} 57' 06.0''$ (RT)
D = 16' 22' 12.8"	D = 10' 25' 02.7"
L = 698.68'	L = 517.90'
T = 542.85'	T = 279.95'
* R = 350.00' (35mph)	R = 550.00'
SE = .08	SE = .08
RO = 168'	RO = 168'

*Design Exception Required For Horizontal Curve Radius

PROJECT REFERENCE NO.		SHEET NO.
R-4753		12
R/W SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		SEAL 035683 DAVID J. CLODDO
NORTH CAROLINA PROFESSIONAL ENGINEER		SEAL 032619 THOMAS R. SHARPSS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

SBG = SHOULDER BERM GUTTER
GTD = GRADE TO DRAIN
SEE SHEET 23 FOR -L- PROFILE
SEE SHEETS W-1 THRU W-8 FOR RETAINING WALL PLANS

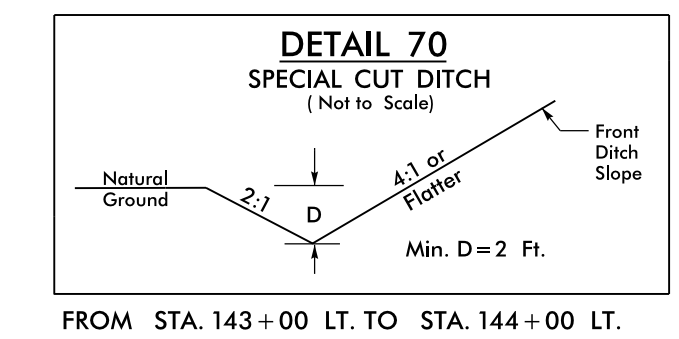
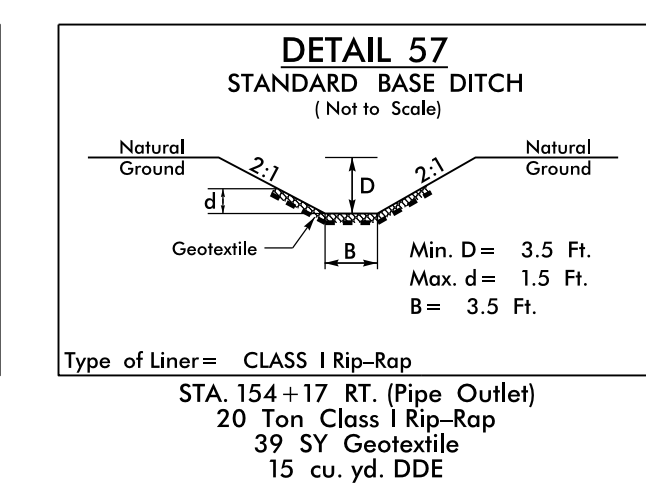
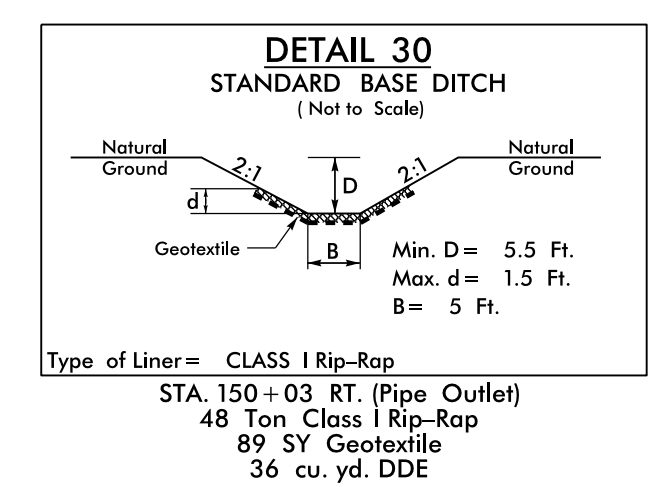
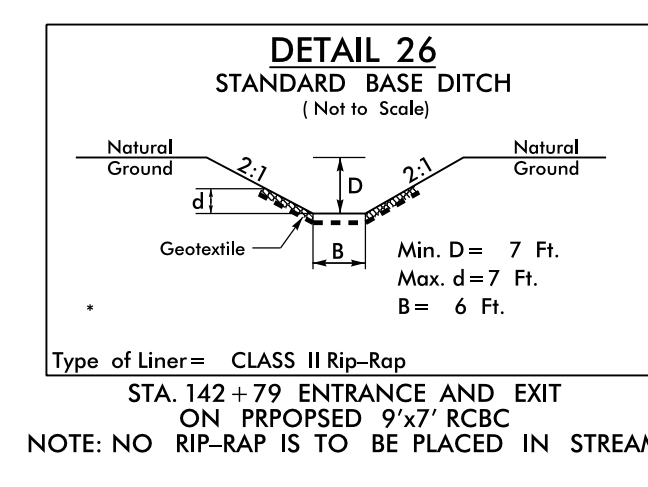
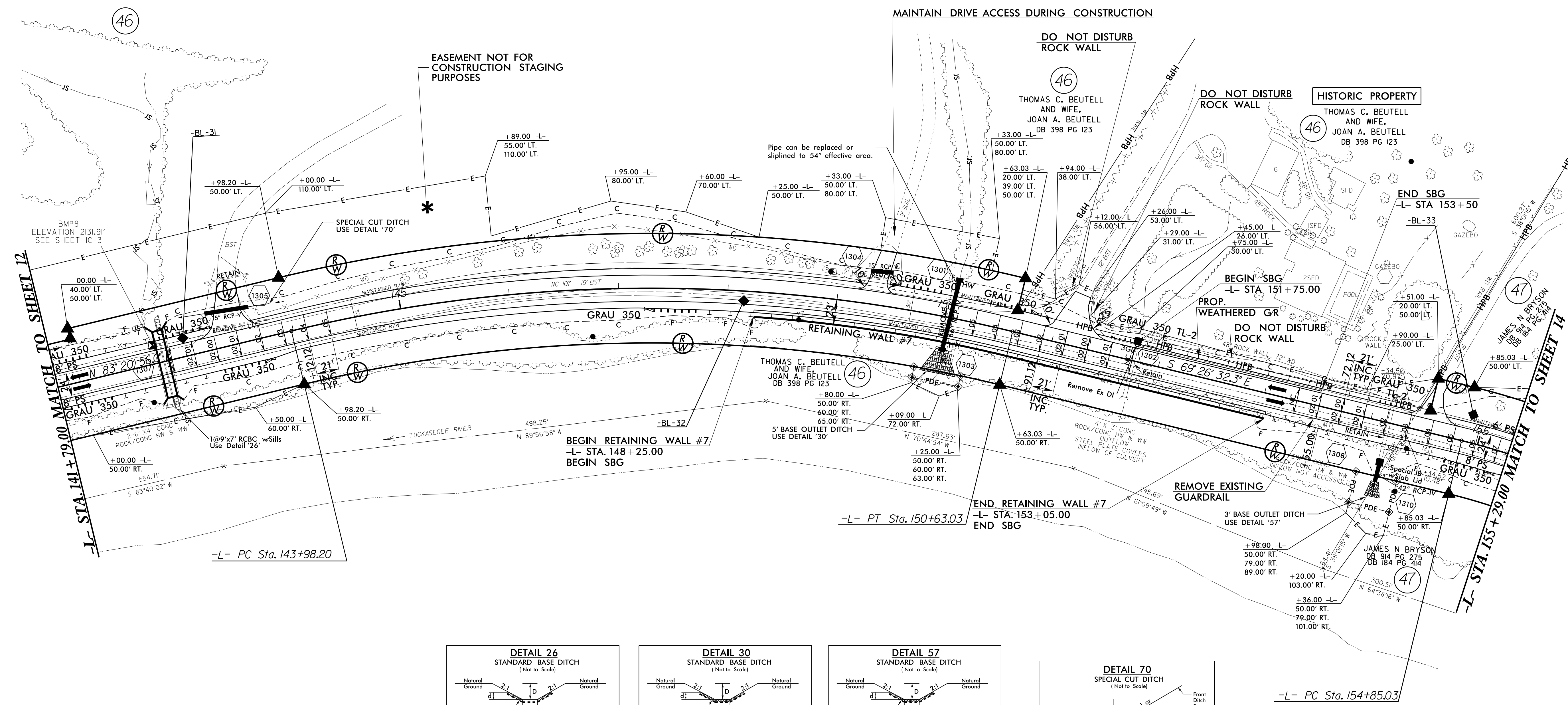
PROJECT REFERENCE NO.	SHEET NO.
R-4753	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NSRS 2007

-L-	
PI Sta 147+37.01	PI Sta 156+13.24
$\Delta = 27^{\circ}12'31.7"$ (RT)	$\Delta = 25^{\circ}21'12.8"$ (RT)
D = 4'05'33.2"	D = 10'03'06.8"
L = 664.84'	L = 252.23'
T = 338.81'	T = 128.21'
R = 1,400.00'	*R = 570.00' (40mph)
SE = .05	SE = .08
RO = 105'	RO = 168'

*Design Exception Required For Horizontal Curve Radius

THOMAS C. BEUTELL
AND WIFE,
JOAN A. BEUTELL
DB 398 PG 123



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

SBG = SHOULDER BERM GUTTER
SEE SHEETS 23 & 24 FOR -L- PROFILE
SEE SHEETS C-1 THRU C-14 FOR CULVERT PLANS
SEE SHEETS W-1 THRU W-8 FOR RETAINING WALL PLANS

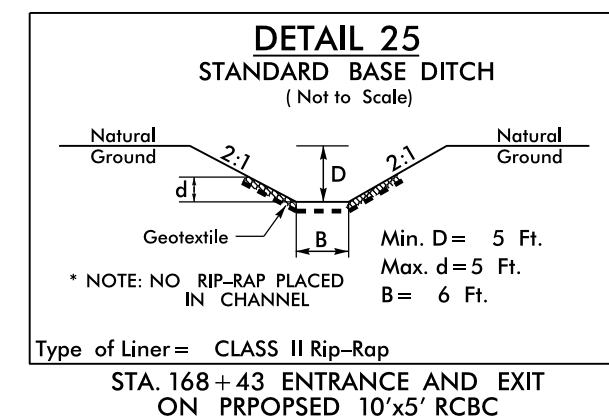
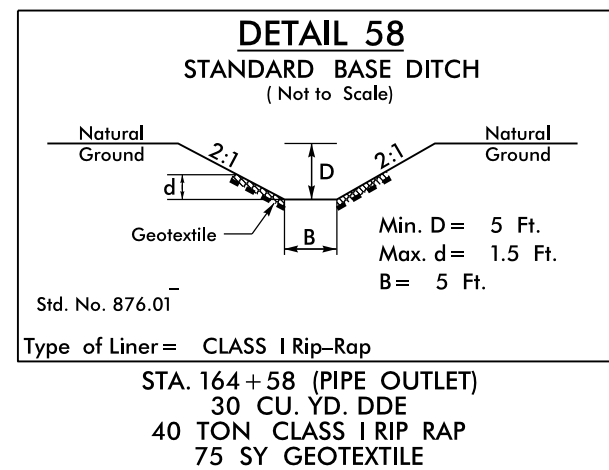
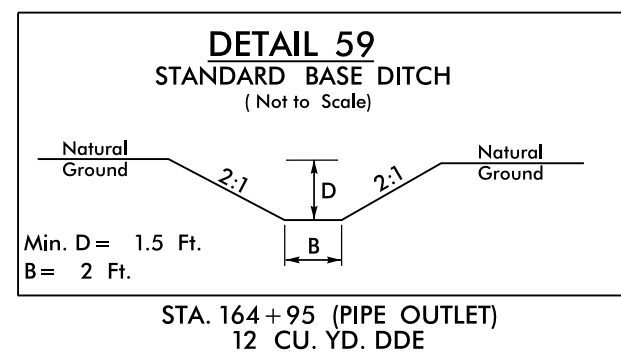
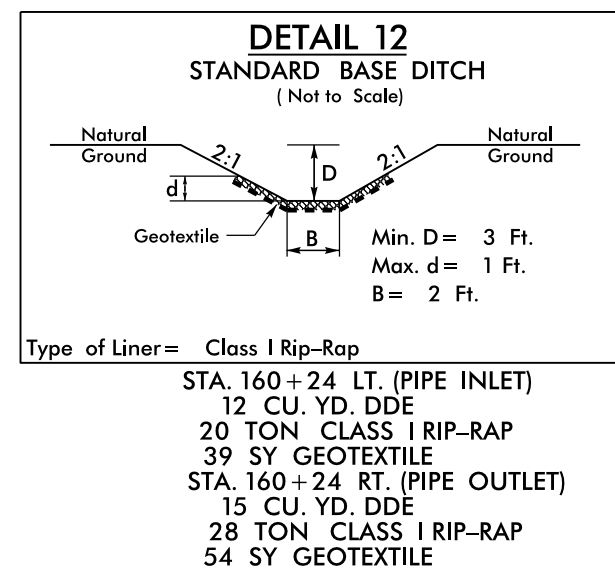
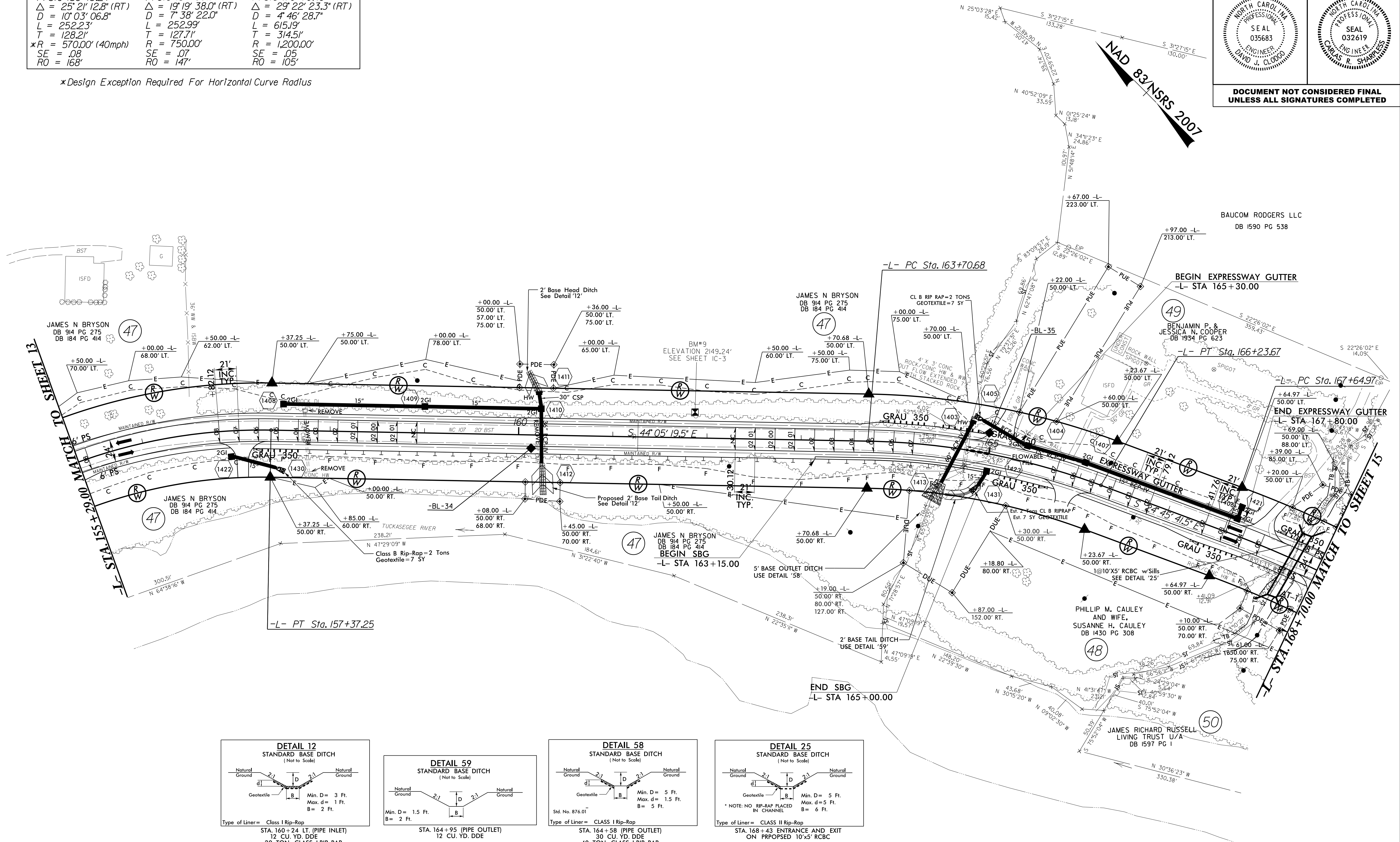
5/14/99

REVISIONS

Invalid expression: Rdj_psh13.dgn
USER: N1000000

-L-		
PI Sta 156+13.24	PI Sta 164+98.39	PI Sta 170+79.48
$\Delta = 25^\circ 21' 12.8''$ (RT)	$\Delta = 19^\circ 19' 38.0''$ (RT)	$\Delta = 29^\circ 22' 23.3''$ (RT)
$D = 10^\circ 03' 06.8''$	$D = 7^\circ 38' 22.0''$	$D = 4^\circ 46' 28.7''$
$L = 252.23'$	$L = 252.99'$	$L = 615.19'$
$T = 128.21'$	$T = 127.71'$	$T = 314.51'$
$*R = 570.00'$ (40mph)	$R = 750.00'$	$R = 1,200.00'$
$SE = .08$	$SE = .07$	$SE = .05$
$RO = 168'$	$RO = 147'$	$RO = 151'$

*Design Exception Required For Horizontal Curve Radius



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the
"Pavement Design for Driveways" Memo Dated March 18, 2002 or
as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

SBG = SHOULDER BERM GUTTER
SEE SHEET 24 FOR -L- PROFILE
SEE SHEET C-1 THRU C-14 FOR CULVERT PLANS

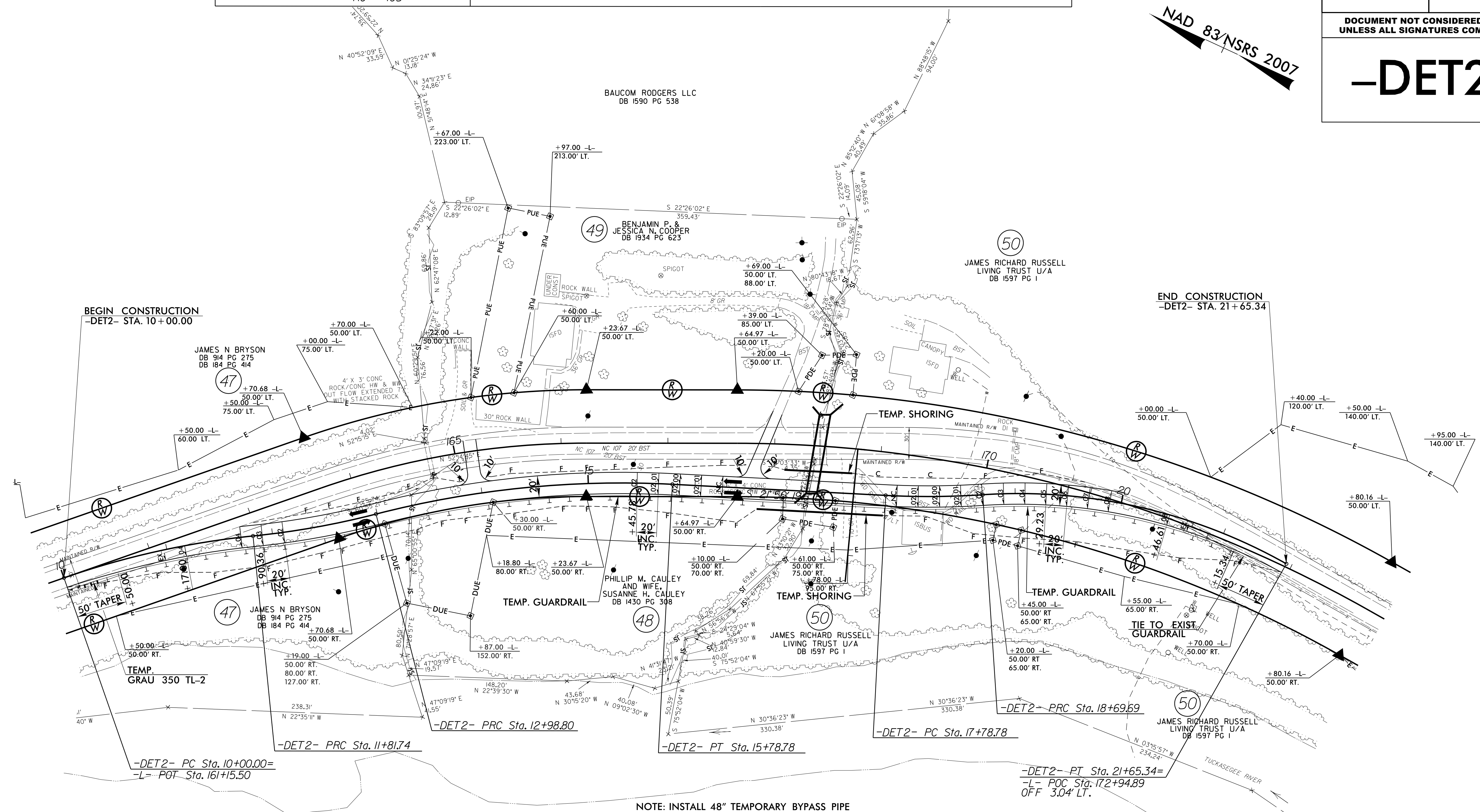
REVISIONS

5/14/99

Invalid expression: 63_Rdu-psht14.dgn
USER: NICHOLAS

-L-		-DET2-					
<i>PI Sta 164+98.39</i> $\Delta = 19^{\circ} 19' 38.0"$ (RT) $D = 7^{\circ} 38' 22.0"$ $L = 252.99'$ $T = 127.71'$ $R = 750.00'$ $SE = .07$ $RO = 147'$	<i>PI Sta 170+79.48</i> $\Delta = 29^{\circ} 22' 23.3"$ (RT) $D = 4^{\circ} 46' 28.7"$ $L = 615.19'$ $T = 314.51'$ $R = 1,200.00'$ $SE = .05$ $RO = 105'$	<i>PI Sta 10+91.30</i> $\Delta = 13^{\circ} 31' 24.7"$ (RT) $D = 7^{\circ} 26' 27.6"$ $L = 181.74'$ $T = 91.30'$ $R = 770.00'$ $SE = SEE PLANS$	<i>PI Sta 12+40.38</i> $\Delta = 8^{\circ} 42' 36.3"$ (LT) $D = 7^{\circ} 26' 27.6"$ $L = 117.06'$ $T = 58.64'$ $R = 770.00'$ $SE = SEE PLANS$	<i>PI Sta 14+39.88</i> $\Delta = 17^{\circ} 26' 11.5"$ (RT) $D = 6^{\circ} 13' 40.1"$ $L = 279.98'$ $T = 141.08'$ $R = 920.00'$ $SE = SEE PLANS$	<i>PI Sta 18+24.29</i> $\Delta = 6^{\circ} 45' 52.8"$ (LT) $D = 7^{\circ} 26' 27.6"$ $L = 90.91'$ $T = 45.51'$ $R = 770.00'$ $SE = SEE PLANS$	<i>PI Sta 20+21.80</i> $\Delta = 33^{\circ} 12' 54.1"$ (RT) $D = 11^{\circ} 14' 04.1"$ $L = 295.65'$ $T = 152.11'$ $R = 510.00'$ $SE = SEE PLANS$	

NAD 83/NSRS 2007



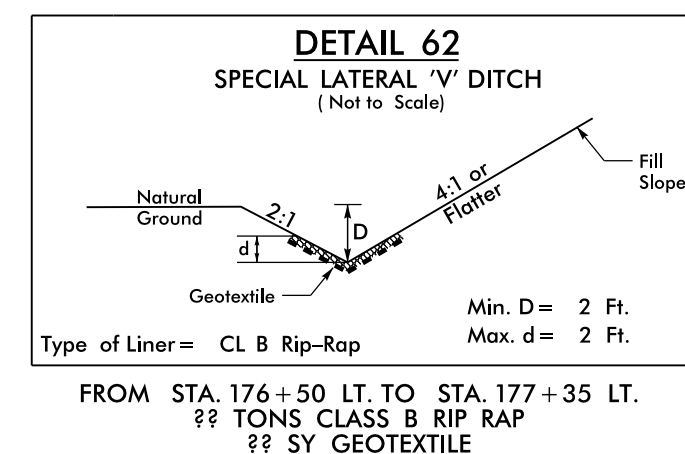
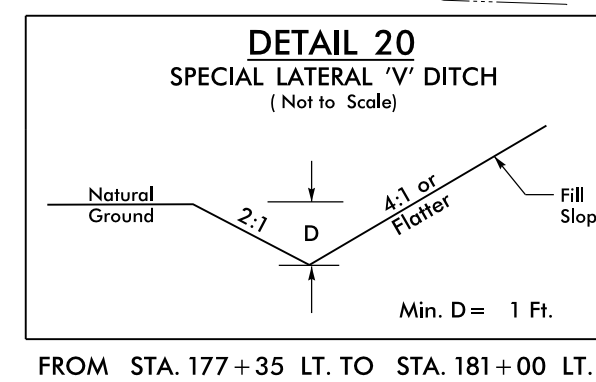
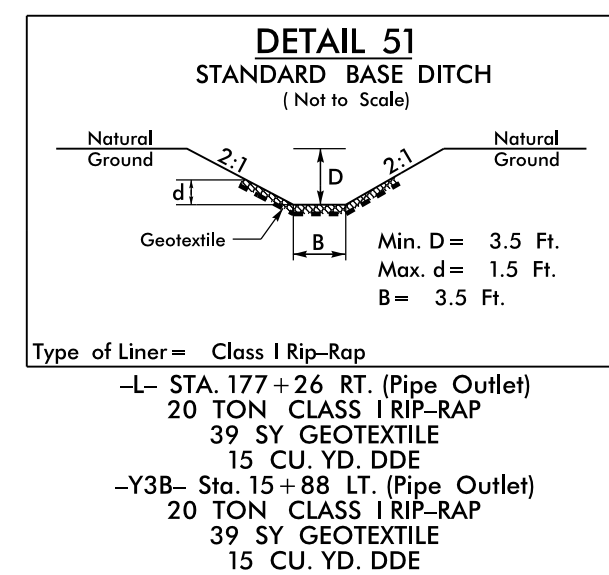
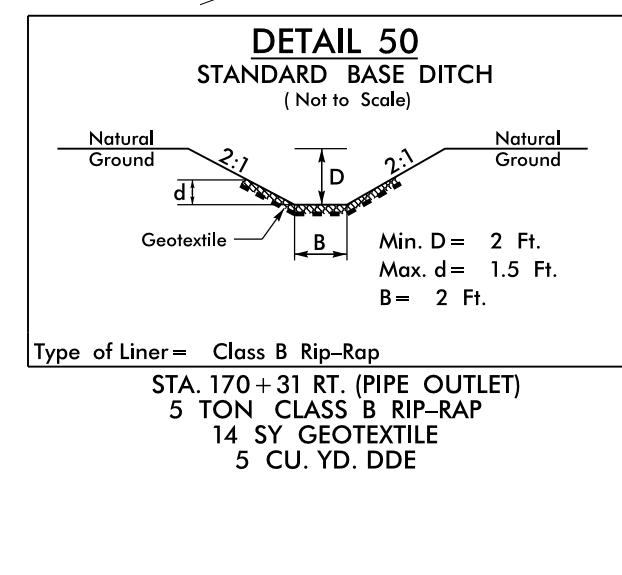
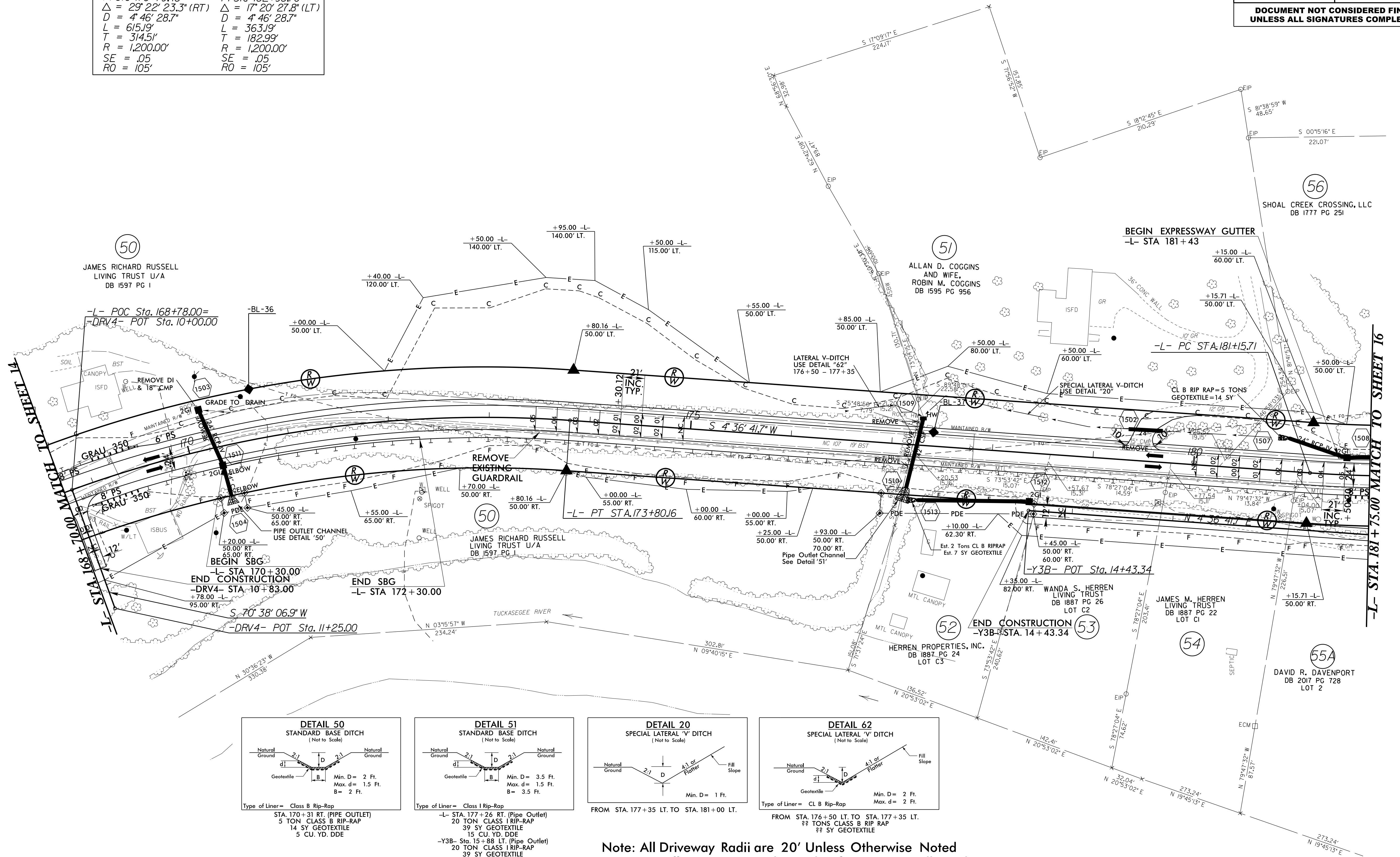
SEE SHEET 30 FOR -DET2- PROFILE
PARCEL 50 WILL NOT BE PROVIDED ACCESS (-DRV4-) DURING THE TEMPORARY DETOUR DURATION
SEE TRAFFIC MANAGEMENT PLANS FOR TRAFFIC PHASING.
SEE TRAFFIC MANAGEMENT PLANS FOR TEMPORARY SHORING OFFSETS AND STATIONS ALONG -DET2-.

REVISIONS

```
invalid expression
\Proj\R4753_Rdy-psh14A.dgn
USER: C:\Program Files\Autodesk\AutoCAD 2010\bin\psh14A.dgn
```


NAD 83/NSRS 2007

-L-	
PI Sta 170+79.48	PI Sta 182+98.70
$\Delta = 29^{\circ} 22' 23.3"$ (RT)	$\Delta = 17^{\circ} 20' 27.8"$ (LT)
D = 4' 46' 28.7"	D = 4' 46' 28.7"
L = 615.19'	L = 363.19'
T = 314.51'	T = 182.99'
R = 1,200.00'	R = 1,200.00'
SE = .05	SE = .05
RO = 105'	RO = 105'



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

SBG = SHOULDER BERM GUTTER
SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 28 FOR -Y3B- PROFILE
SEE SHEET 29 FOR -DRV4- PROFILE

5/14/99

REVISIONS

Invalid expression: \\53.Rdu-psht15.dgn
USER: N1000000

NAD 83/NSRS 2007

~~BEGIN EXPRESSWAY GUTTER~~
-L- STA 192+92
-L- PC Sta. 192+23.25

-DRV3- POT Sta. 10+79.5

END CONSTRUCTION
-DRV3- STA. 10+30.0
-DRV3- PC Sta. 10+21.33

$\frac{-L - POC \text{ Sta. } 194+50.31 =}{-DRV3 - PC \text{ Sta. } 10+00.00}$
 $N \ 74^{\circ} 01' 05.3" \ E$
 $-L - PT \text{ Sta. } 194+7$

-L- PT Sta. 194+76.6
S 16

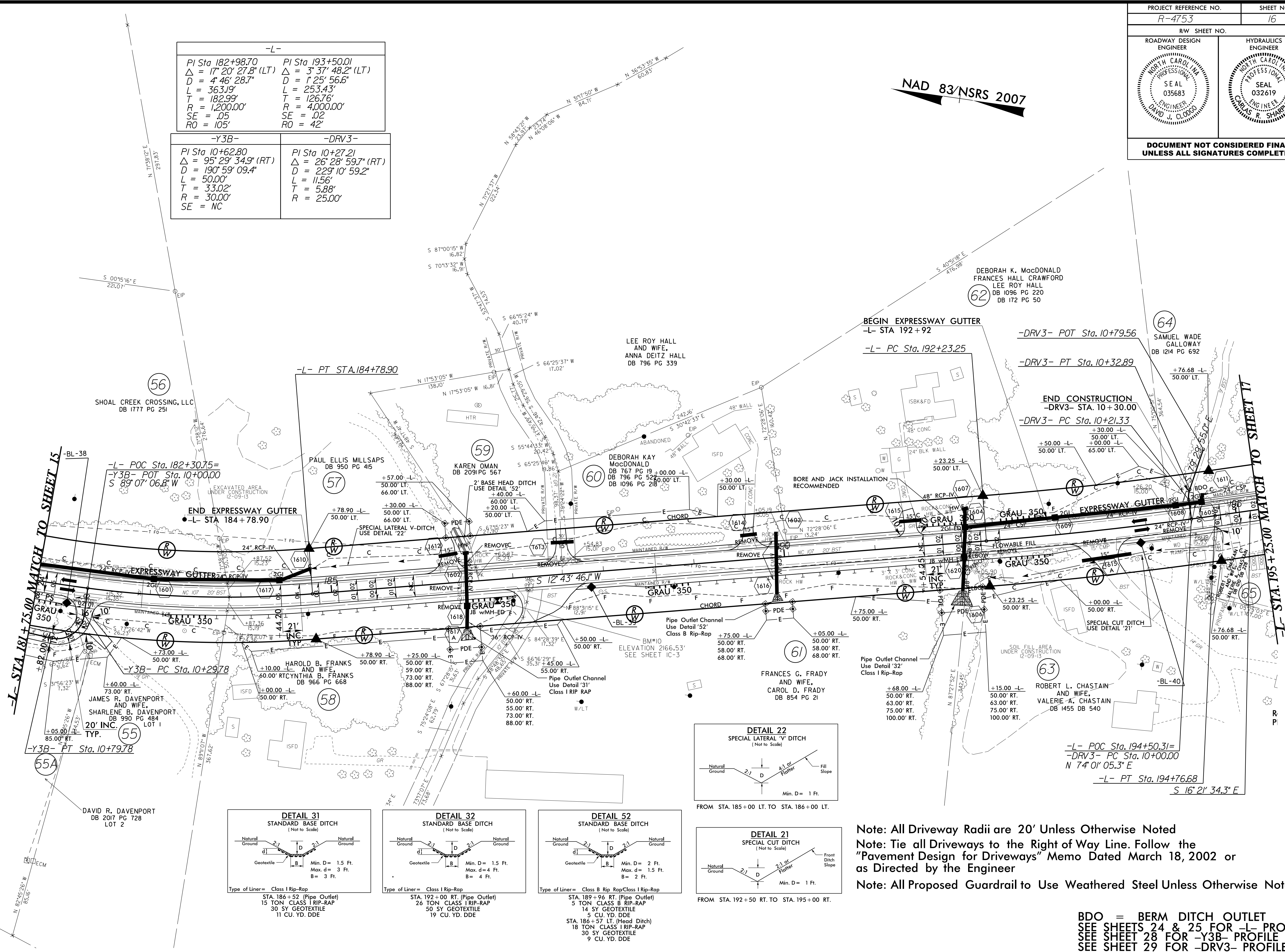
S 16° 21' 34.3" E

BDO = BERM DITCH OUTLET
SEE SHEETS 24 & 25 FOR -L- PROFILE
SEE SHEET 28 FOR -Y3B- PROFILE
SEE SHEET 29 FOR -DRV3- PROFILE

Note: All Driveway Radii are 20' Unless Otherwise Noted

Note: Tie all Driveways to the Right of Way Line. Follow the "Pavement Design for Driveways" Memo Dated March 18, 2002 or as Directed by the Engineer

Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted



REVISIONS

5/14/99

Invalid expression
/Prod/R4753-Rdy-psh16.dgn

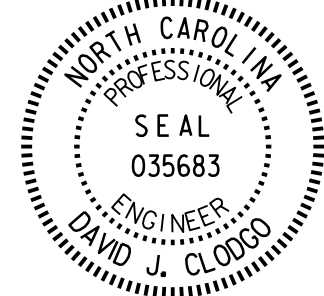
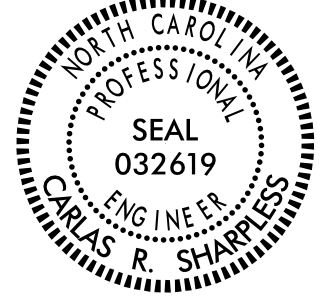
5/14/99

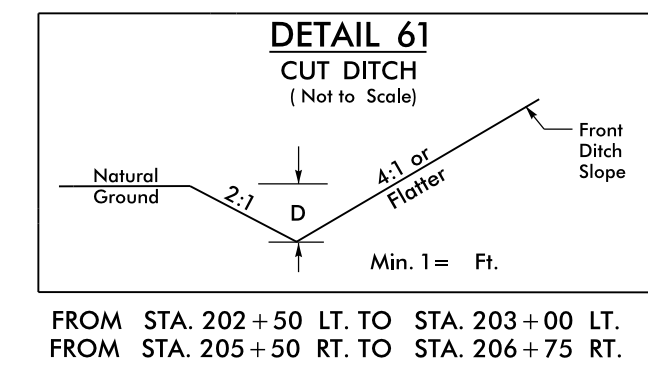
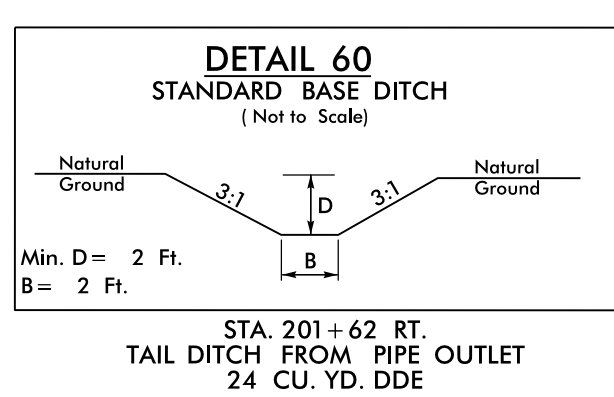
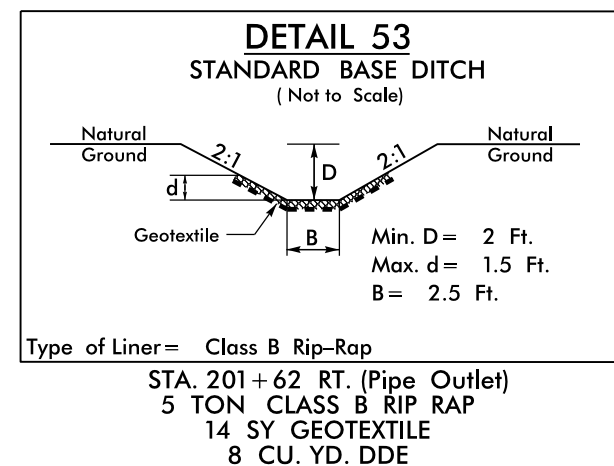
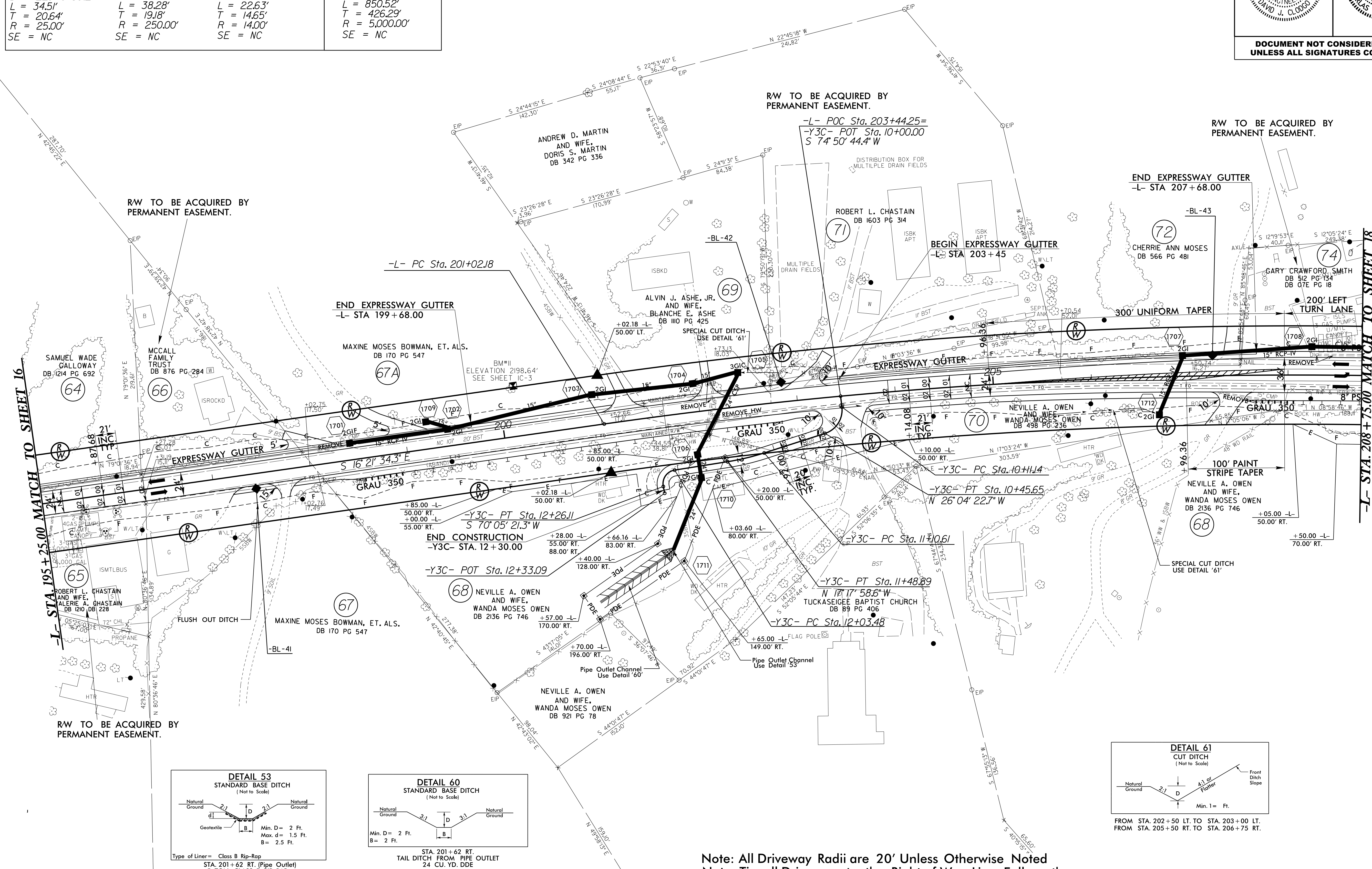
REVISIONS

Invalid express90_3_Rdy-psn17.dgn
USER: N1000004753

-Y3C-			-L-
PI Sta 10+31.78 $\Delta = 79^{\circ} 04' 52.9''$ (RT) $D = 229^{\circ} 10' 59.2''$ $L = 34.51'$ $T = 20.64'$ $R = 25.00'$ $SE = NC$	PI Sta 11+29.79 $\Delta = 8^{\circ} 46' 24.1''$ (RT) $D = 22^{\circ} 55' 05.9''$ $L = 38.28'$ $T = 19.18'$ $R = 250.00'$ $SE = NC$	PI Sta 12+18.13 $\Delta = 92^{\circ} 36' 40.0''$ (LT) $D = 409^{\circ} 15' 20.0''$ $L = 22.63'$ $T = 14.65'$ $R = 14.00'$ $SE = NC$	PI Sta 205+28.46 $\Delta = 9^{\circ} 44' 46.4''$ (RT) $D = 1^{\circ} 08' 45.3''$ $L = 850.52'$ $T = 426.29'$ $R = 5,000.00'$ $SE = NC$

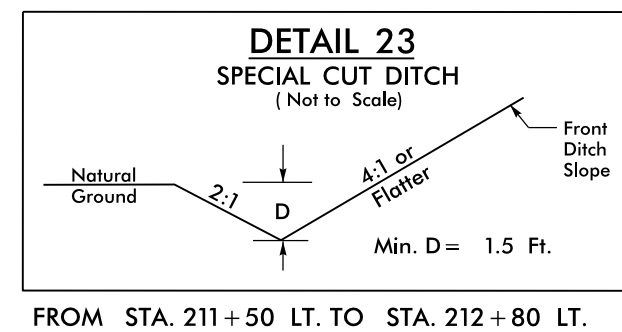
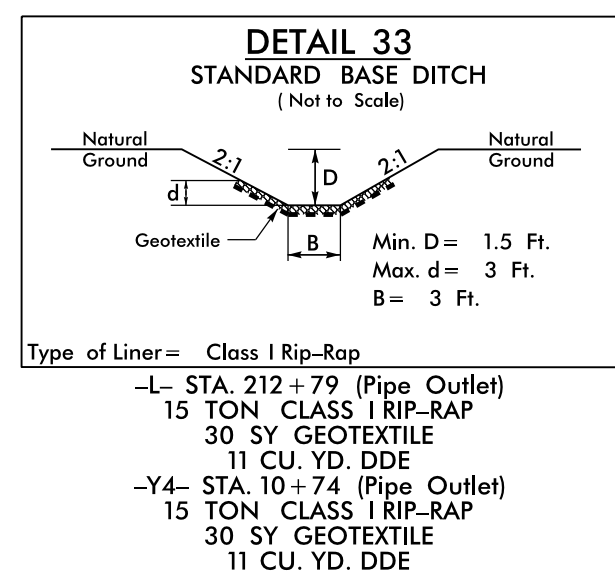
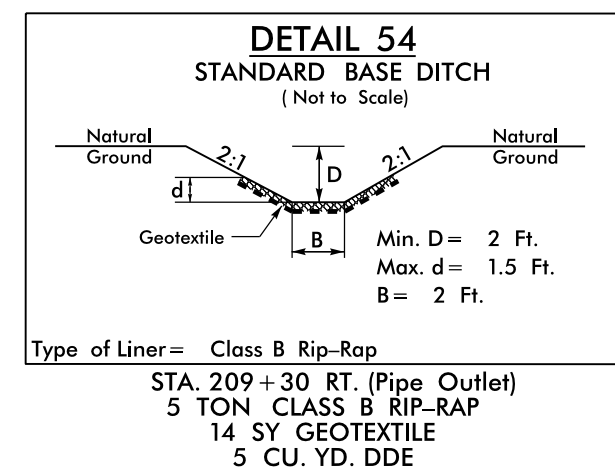
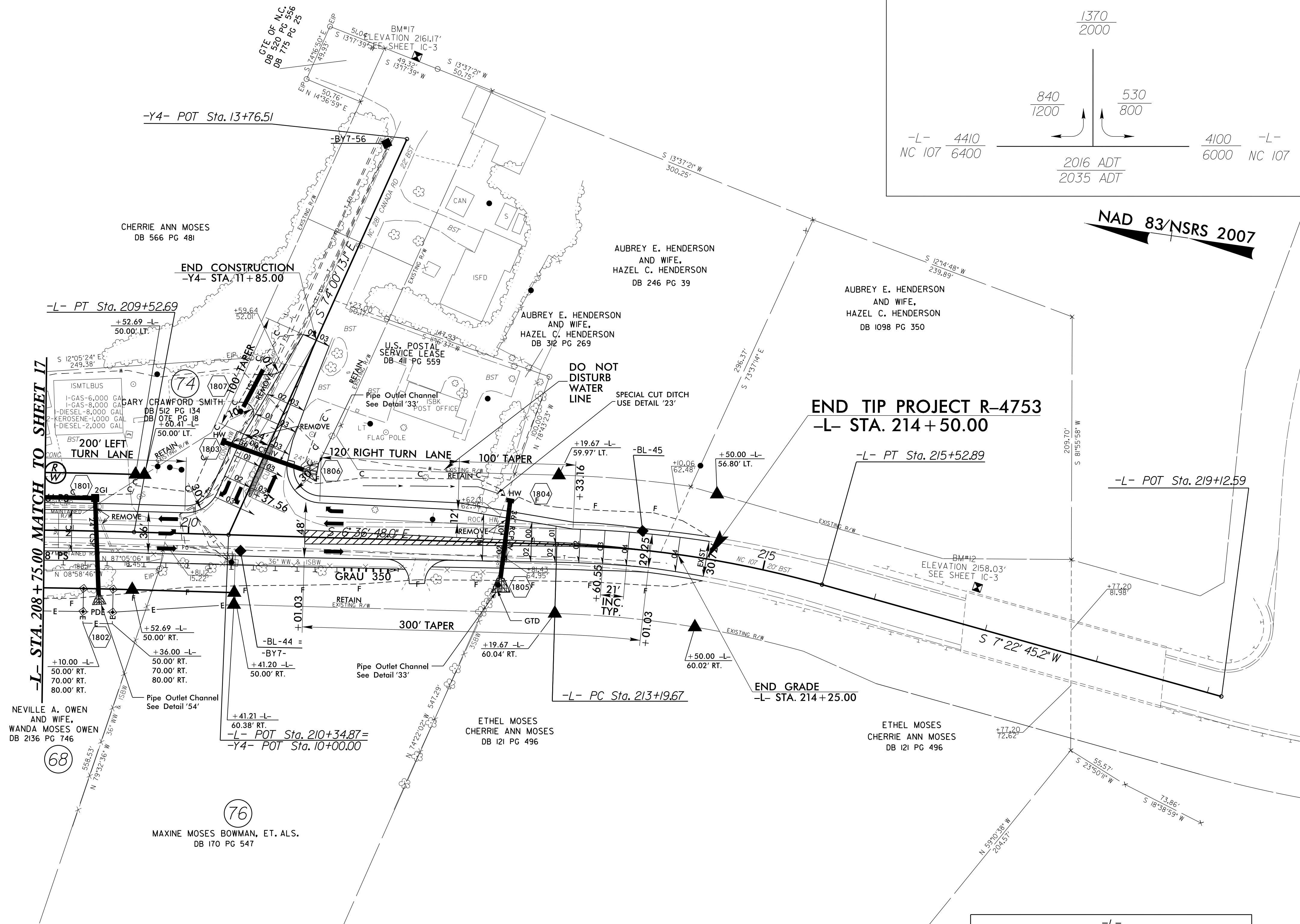
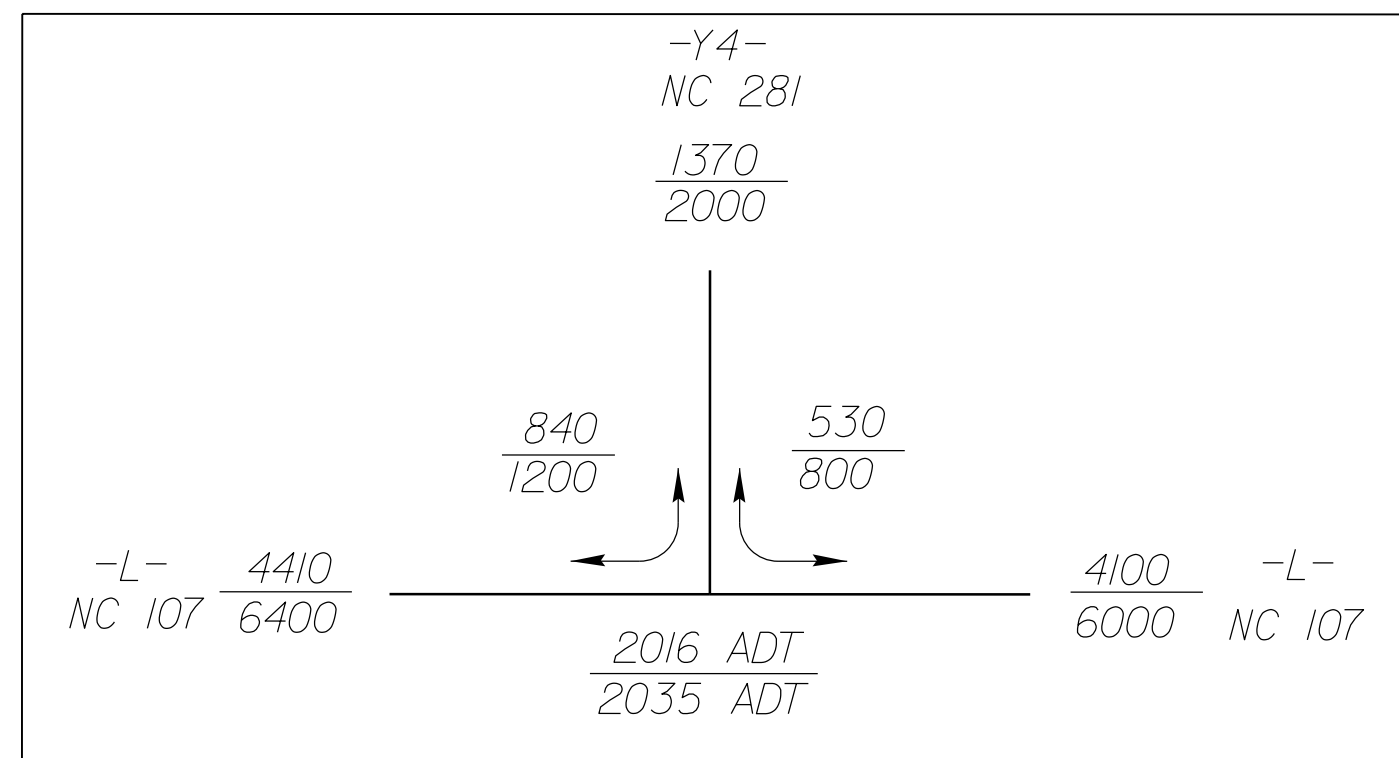
NAD 83/NSRS 2007

PROJECT REFERENCE NO.		SHEET NO.
R-4753		17
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



Note: All Driveway Radii are 20' Unless Otherwise Noted
Note: Tie all Driveways to the Right of Way Line. Follow the
"Pavement Design for Driveways" Memo Dated March 18, 2002 or
as Directed by the Engineer
Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted

 PROP. PAINT STRIPING
SEE SHEET 25 FOR -L- PROFILE
SEE SHEET 28 FOR -Y3C- PROFILE



-L-	
PI Sta. 205+28.46	PI Sta. 214+36.86
$\Delta = 9' 44' 46.4''$ (RT)	$\Delta = 13' 59' 33.2''$ (RT)
$D = 1' 08' 45.3''$	$D = 5' 59' 58.4''$
$L = 850.52'$	$L = 233.23'$
$T = 426.29'$	$T = 117.20'$
$R = 5,000.00'$	$R = 955.00'$
$SE = NC$	$SE = Exist (.04)$

Note: All Driveway Radii are 20' Unless Otherwise Noted
 Note: Tie all Driveways to the Right of Way Line. Follow the
 "Pavement Design for Driveways" Memo Dated March 18, 2002 or
 as Directed by the Engineer
 Note: All Proposed Guardrail to Use Weathered Steel Unless Otherwise Noted
 Note: Transition From 6' Paved Shoulder to Existing -L- Sta. 213+51.03 to Sta. 214+01.03 Lt./Rt.

 PROP. CONC. ISLAND
 PROP. PAINT STRIPING
 GTD = GRADE TO DRAIN
 SEE SHEETS 25 & 26 FOR -L- PROFILE
 SEE SHEET 28 FOR -Y4- PROFILE