STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

July 24, 2013

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

ATTN: Mr. Monte Matthews
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 14 and Section 401 Water Quality Certification** for the proposed US 21 Improvements from SR 1100 (Old Gap Rd) in Roaring Gap to SR 1121 (Pine Swamp Rd) in Sparta, Alleghany County, Federal Aid Project No. STP-21(11); Division 11; TIP No. R-3101 $570.00 debit WBS No. 37044.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes improvements (12-foot lanes with 2-foot paved shoulders) to US 21 from SR 1100 (Old Gap Rd) in Roaring Gap to SR 1121 (Pine Swamp Rd) in Sparta, Alleghany County. There will be 1,862 linear feet of permanent impacts and 0.10 acre of temporary impacts to jurisdictional streams. There will be 0.22 acre of permanent impacts, and 0.18 acre of temporary impacts, to wetlands associated with the project. The cumulative impacts to a jurisdictional feature will not exceed the Nationwide thresholds.

Please see enclosed copies of the Pre-Construction Notification (PCN), EEP acceptance letter, Stormwater Management Plan, permit drawings, and design plans. A Notification of Jurisdictional Determination was received from the USACE, dated July 17, 2013. A Categorical Exclusion (CE) was completed in February 2012 and distributed shortly thereafter. Additional copies are available upon request.

Comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachments, 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.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-707-6000
FAX: 919-212-5785
WEBSITE:NCDOT.GOV

LOCATION:
CENTURY CENTER, BUILDING B
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

This project calls for a letting date of September 17, 2013 and a review date of July 30, 2013.

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 Bill Barrett at (919) 707-6103.

Sincerely,

E. L. Luck

for Gregory J. Thorpe, Ph.D., 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:	US 21 Improvements from SR 1100 (Old Gap Rd) in Roaring Gap to SR 1121 (Pine Swamp Rd) in Sparta.
2b. County:	Alleghany
2c. Nearest municipality / town:	Sparta to west, Roaring Gap to east.
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	R-3101

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Responsible Party (for LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6103
3g. Fax no.:	(919) 212-5785
3h. Email address:	wabarrett@ncdot.gov

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

B. Project Information and Prior Project History		
1. Property Identification		
1a. Property identification no. (tax PIN or parcel ID):	*not applicable*	
1b. Site coordinates (in decimal degrees): *** see Waters Upload Sheet for specific lat/long.s for each stream.**	Latitude: 36.450213 (DD.DDDDDD)	Longitude: - 81.029498 (-DD.DDDDDD)
1c. Property size:	32.87 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Laurel Branch, Brush Creek, Glade Creek, Little Glade Creek and Wolf Branch	
2b. Water Quality Classification of nearest receiving water:	C;Tr	
2c. River basin:	New	
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: The surrounding area to the project is predominately wooded and agricultural with some residential neighborhoods and businesses along US 21.		
3b. List the total estimated acreage of all existing wetlands on the property: 2.999		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 16,350		
3d. Explain the purpose of the proposed project: To improve safety along US 21.		
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves upgrading the existing US 21, from SR 1100 (Old Gap Rd) in Roaring Gap to SR 1121 (Pine Swamp Rd) in Sparta, a distance of 12 miles. The existing two-lane road will be widened from the existing 9-foot and 11-foot lanes to 12-foot lanes with 2-foot paved shoulders.		
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): Kris Dramby / Bill Barrett	Agency/Consultant Company: NCDOT Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. USACE Notification of Jurisdictional Determination (SAW-2012-01963) dated July 17, 2013.		
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)
Site 3 ☒ P ☐ T	fill	PFO1/PSS1 (W-19)	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 6 ☒ P ☐ T	fill/construction area	PSS1 (W-26)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site 6 ☐ P ☒ T	fill/construction area	PSS1 (W-26)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 7 ☒ P ☐ T	fill / riprap apron	PSS1 (W-27)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site 7 ☐ P ☒ T	fill / riprap apron	PSS1 (W-27)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site 12 ☒ P ☐ T	fill/construction area	PFO1 (W-29)	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 14 ☒ P ☐ T	fill/construction area	PFO1 (W-30)	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 14 ☐ P ☒ T	fill/construction area	PFO1 (W-30)	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 19 ☒ P ☐ T	construction area	PSS1 (W-31)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 19 ☐ P ☒ T	construction area	PSS1 (W-31)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.02
Site 26 ☒ P ☐ T	fill	PEM1 (W-22)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 26 ☒ P ☐ T	excavation	PEM1 (W-22)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 29 ☒ P ☐ T	fill / riprap apron	PEM1 (W-16)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site 31 ☒ P ☐ T	fill	PFO1 (W-15)	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 31 ☐ P ☒ T	fill	PFO1 (W-15)	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 32 ☒ P ☐ T	fill	PFO1 (W-15)	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 34 ☒ P ☐ T	fill/construction area	PEM1 (W-35)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.03
Site 34 ☐ P ☒ T	fill/construction area	PEM1 (W-35)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.06
Site 36 ☐ P ☒ T	fill/construction area	PFO1 (W-14)	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 37 ☒ P ☐ T	fill/construction area	PSS1 / PEM1 (W-13)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01

Site 37 ☐ P ☒ T	fill/construction area	PSS1 / PEM1 (W-13)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 38 ☒ P ☐ T	fill/construction area	PSS1 / PEM1 (W-13)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.07
Site 38 ☐ P ☒ T	fill/construction area	PSS1 / PEM1 (W-13)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.06
Site 43 ☒ P ☐ T	18” RCP fill / riprap apron	PFO1 (W-11)	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 43 ☒ P ☐ T	18” RCP / inlet excavation	PSS1 (W-25)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.02
Site 48A ☒ P ☐ T	fill	PEM1 (W-37)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site 51 ☒ P ☐ T	fill for channel relocation	PEM1 (W-38)	☐ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 55 ☒ P ☐ T	fill	PFO1 (W-5)	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 56 ☒ P ☐ T	excavation	PSS1 (W-4)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site 57 ☒ P ☐ T	30” RCP & junction box	PEM1 (W-1)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 57 ☒ P ☐ T	headwall fill	PEM1 (W-2)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 58 ☒ P ☐ T	fill for 30”CSP	PEM1 (W-1)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site 58 ☒ P ☐ T	Excavation for 30” CSP, headwall and ditch	PEM1 (W-3)	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.01
Site U1 ☐ P ☒ T	Utility relocation	PEM1 (W-2)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site U2 ☐ P ☒ T	Utility relocation	PEM1 (W-10)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
Site U3 ☐ P ☒ T	Utility relocation	PEM1 (W-38)	☐ Yes ☒ No	☒ Corps ☐ DWQ	<0.01
				2g. **Total wetland impacts**	0.22 Permanent 0.18 Temporary

2h. Comments:

“Total” values derived using actual impact values for each site calculated to one ten-thousandth of an acre (x.xxxx), all site impact values summed, and then rounded to the one hundredth of an acre (x.xx).

UTILITY IMPACTS: The Utility Impacts listed (Sites U1, U2 and U3) are those utility impacts that fall outside the footprint of project impacts.

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	fill for culvert extention	UT to Laurel Branch (UT-39)	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	16
Site 1 ☒ P ☐ T	fill for riprap apron	UT to Laurel Branch (UT-39)	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	10
Site 4 ☐ P ☒ T	fill/construction area	Laurel Branch	☒ PER ☐ INT	☒ Corps ☐ DWQ	15	74 (0.02 ac)
Site 8 ☒ P ☐ T	54" CCFRPM	UT to Laurel Branch (UT-33)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	15
Site 8 ☐ P ☒ T	54" CCFRPM	UT to Laurel Branch (UT-33)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	17 (0.01 ac)
Site 9 ☒ P ☐ T	channel relocation	UT to Laurel Branch (UT-32)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	160
Site 10 ☒ P ☐ T	fill for riprap apron	UT to Laurel Branch (UT-32)	☒ PER ☐ INT	☐ Corps ☐ DWQ	2	12
Site 11 ☒ P ☐ T	24” RCP	UT to Laurel Branch (UT-31)	☐ PER ☒ INT	☒ Corps ☐ DWQ	2	49
Site 11 ☒ P ☐ T	riprap apron	UT to Laurel Branch (UT-31)	☐ PER ☒ INT	☒ Corps ☐ DWQ	2	11
Site 11 ☐ P ☒ T	24” RCP	UT to Laurel Branch (UT-31)	☐ PER ☒ INT	☒ Corps ☐ DWQ	2	13 (<0.01 ac)
Site 13 ☒ P ☐ T	30” RCP / riprap apron	UT to Laurel Branch (UT-30)	☐ PER ☐ INT	☒ Corps ☐ DWQ	2	17
Site 18 ☒ P ☐ T	42” RCP	UT to Laurel Branch (UT-29)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	29
Site 18 ☒ P ☐ T	riprap apron	UT to Laurel Branch (UT-29)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12
Site 18 ☒ P ☐ T	Bank stabilization	UT to Laurel Branch (UT-29)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	34
Site 18 ☐ P ☒ T	Bank stabilization	UT to Laurel Branch (UT-29)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	7 (<0.01 ac)
Site 21 ☒ P ☐ T	Channel relocation	UT to Laurel Branch (UT-28)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	17
Site 21 ☐ P ☒ T	Channel relocation	UT to Laurel Branch (UT-28)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	21 (<0.01 ac)
Site 22 ☒ P ☐ T	24” RCP	UT to Brush Creek (UT-40)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	11
Site 22 ☒ P ☐ T	riprap apron	UT to Brush Creek (UT-40)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	11
Site 23 ☒ P ☐ T	24” RCP	UT to Little Glade Creek (UT-26)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	9
Site 23 ☒ P ☐ T	riprap apron/pipe removal	UT to Little Glade Creek (UT-26)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	22
Site 24 ☒ P ☐ T	Construction area	UT to Little Glade Creek (UT-25)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	18
Site 24 ☒ P ☐ T	Construction area	UT to Little Glade Creek (UT-25)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	129

Site 25 ☒ P ☐ T	riprap apron	UT to Little Glade Creek (UT-25)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12
Site 27 ☒ P ☐ T	riprap apron	UT to Little Glade Creek (UT-25)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	13
Site 28 ☒ P ☐ T	36” RCP	UT to Little Glade Creek (UT-21)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	7
Site 28 ☒ P ☐ T	Endwall	UT to Little Glade Creek (UT-21)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	7
Site 29 ☒ P ☐ T	Riprap apron	UT to Little Glade Creek (UT-19)	☐ PER ☒ INT	☒ Corps ☐ DWQ	2	8 (non-mitigable)
Site 30 ☒ P ☐ T	24” RCP	UT to Little Glade Creek (UT-19)	☐ PER ☒ INT	☒ Corps ☐ DWQ	1	15 (non-mitigable)
Site 30 ☐ P ☒ T	24” RCP	UT to Little Glade Creek (UT-19)	☐ PER ☒ INT	☒ Corps ☐ DWQ	1	12 (<0.01 ac)
Site 32 ☒ P ☐ T	fill	UT to Little Glade Creek (UT-36)	☐ PER ☒ INT	☒ Corps ☐ DWQ	2	17
Site 33 ☒ P ☐ T	endwall	UT to Little Glade Creek (UT-18)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	14
Site 33 ☐ P ☒ T	endwall	UT to Little Glade Creek (UT-18)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	14 (<0.01 ac)
Site 33 ☒ P ☐ T	30” RCP	UT to Little Glade Creek (UT-18)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	78
Site 34 ☒ P ☐ T	30” RCP	UT to Little Glade Creek (UT-18)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	15
Site 34 ☒ P ☐ T	riprap apron	UT to Little Glade Creek (UT-18)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	8
Site 39 ☐ P ☒ T	24” RCP (retaining wall)	UT to Glade Creek (UT-17)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	19 (<0.01 ac)
Site 39 ☒ P ☐ T	24” RCP	UT to Glade Creek (UT-17)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	72
Site 39 ☒ P ☐ T	riprap apron	UT to Glade Creek (UT-17)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	11
Site 40 ☒ P ☐ T	30” RCP	UT to Glade Creek (UT-16)	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	10
Site 40 ☒ P ☐ T	riprap apron	UT to Glade Creek (UT-16)	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	10
Site 40 ☐ P ☒ T	endwall	UT to Glade Creek (UT-16)	☒ PER ☐ INT	☒ Corps ☐ DWQ	1	12 (<0.01 ac)
Site 41 ☒ P ☐ T	30”: RCP	UT to Glade Creek (UT-15)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	16
Site 41 ☐ P ☒ T	retaining wall and cut	UT to Glade Creek (UT-15)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12 (<0.01 ac)
Site 41 ☐ P ☒ T	endwall	UT to Glade Creek (UT-15)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12 (<0.01 ac)
Site 42 ☒ P ☐ T	riprap apron	UT to Glade Creek (UT-14)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	9
Site 42 ☒ P ☐ T	30” CCFRPM	UT to Glade Creek (UT-14)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	13
Site 42 ☐ P ☒ T	30” CCFRPM	UT to Glade Creek (UT-14)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12 (<0.01 ac)
Site 42 ☐ P ☒ T	retaining wall	UT to Glade Creek (UT-14)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	11 (<0.01 ac)
Site 45 ☒ P ☐ T	36” RCP	UT to Glade Creek (UT-13)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	27

Site 45 ☒ P ☐ T	riprap apron	UT to Glade Creek (UT-13)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	11
Site 46 ☒ P ☐ T	30” CCFRPM	UT to Glade Creek (UT-12)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	25
Site 46 ☒ P ☐ T	Earthen ditch/retaining wall	UT to Glade Creek (UT-12)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12
Site 46 ☒ P ☐ T	riprap apron	UT to Glade Creek (UT-12)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	17
Site 47 ☒ P ☐ T	42” CCFRPM	UT to Glade Creek (UT-10)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	13
Site 47 ☒ P ☐ T	42” CCFRPM	UT to Glade Creek (UT-10)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	16
Site 47 ☒ P ☐ T	riprap apron	UT to Glade Creek (UT-10)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	12
Site 47 ☒ P ☐ T	channel relocation	UT to Glade Creek (UT-10)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	84
Site 48 ☒ P ☐ T	channel relocation	UT to Glade Creek (UT-41)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	41
Site 48 ☒ P ☐ T	relocated channel w/ riprap erosional lining	UT to Glade Creek (UT-41)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	69
Site 48 ☒ P ☐ T	channel relocation (on –LT)	UT to Glade Creek (UT-41)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	39
Site 49 ☐ P ☒ T	structure removal	Glade Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	20	24 (0.02 ac)
Site 50 ☒ P ☐ T	channel fill	UT to Glade Creek (UT-42)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	184
Site 50 ☒ P ☐ T	earthen ditch	UT to Glade Creek (UT-42)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	72
Site 50 ☐ P ☒ T	channel relocation	UT to Glade Creek (UT-42)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	18
Site 51 ☒ P ☐ T	channel relocation (base ditch)	UT to Glade Creek (UT-7)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	111
Site 52 ☒ P ☐ T	42” RCP	UT to Glade Creek (UT-7)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	19
Site 52 ☐ P ☒ T	endwall	UT to Glade Creek (UT-7)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	25 (<0.01 ac)
Site 53 ☒ P ☐ T	riprap apron	UT to Glade Creek (UT-6)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	9
Site 54 ☒ P ☐ T	6’ X 7’ RCBC	UT to Glade Creek (UT-5)	☒ PER ☐ INT	☒ Corps ☐ DWQ	5	17
Site 54 ☐ P ☒ T	6’ X 7’ RCBC	UT to Glade Creek (UT-5)	☒ PER ☐ INT	☒ Corps ☐ DWQ	5	21 (<0.01 ac)
Site 55 ☒ P ☐ T	72” RCP	UT to Glade Creek (UT-4)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	28
Site 55 ☐ P ☒ T	72” RCP	UT to Glade Creek (UT-4)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	10 (<0.01 ac)
Site 56 ☒ P ☐ T	72” RCP	UT to Glade Creek (UT-4)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	31
Site 56 ☒ P ☐ T	channel relocation	UT to Glade Creek (UT-4)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	84

Site 56 ☐ P ☒ T	tying in 3" ditch	UT to Glade Creek (UT-4)	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	27 (<0.01 ac)
Site 57 ☒ P ☐ T	30" RCP & junction box	UT to Glade Creek (UT-3)	☒ PER ☐ INT	☒ Corps ☐ DWQ	2	13
Site 58 ☒ P ☐ T	30" CSP	UT to Glade Creek (UT-1)	☐ PER ☒ INT	☒ Corps ☐ DWQ	2	11
				3h. **Total stream and tributary impacts**		1,862 Perm 349 Temp (0.10 ac)

3i. Comments: **"Total" acreage value for temporary impacts derived using individual impact values for each site calculated to one ten-thousandth of an acre (x.xxxx), all site impact values summed, and then rounded to the one hundredth of an acre (x.xx).**

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)
Site 2 ☒ P ☐ T	Pond-2	fill	JD pond	0.11
			4f. Total open water impacts	0.11 Permanent

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

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.

- All storm drainage will be diffused and designed for non-erosive velocities before entering wetland areas to the maximum extent practicable.
- Throughout the project, grass-lined ditches with non-erosive velocities are designed to convey the runoff to the existing drainage structures that are being replaced.
- Stormwater has been discharged as far away from streams as practicable.
- In several cases, headwalls were used to minimize impacts to jurisdictional streams. 2:1 fill slopes are used throughout the project.
- At Laurel Branch and Glade Creek crossings, existing concrete box culverts will be replaced with bridges that will span the streams.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

- *Design Standards in Sensitive Watersheds* will be implemented.
- NCDOT will abide by a Trout Moratorium from October 15th – April 15th on all streams.

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 **NOTE: Per JD site visit, it was determined that impacts to UT-19 (Sites 29 & 30) do not require mitigation.**
2b. If yes, mitigation is required by (check all that apply):	☒ DWQ ☒ Corps
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank: not applicable

3b. Credits Purchased (attach receipt and letter)	Type	Quantity

3c. Comments:

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.	☒ Yes
4b. Stream impacts for which mitigation requested:	1,839 linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☒cold
4d. Buffer mitigation requested (DWQ only):	square feet
4e. Riparian wetland impacts for which mitigation requested:	0.22 acres
4f. Non-riparian wetland mitigation requested:	acres
4g. Coastal (tidal) wetland mitigation requested:	acres

4h. Comments:

5. Complete if Using a Permittee Responsible Mitigation Plan

5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?			☐ Yes ☐ No	
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
	6f. **Total buffer mitigation required:**			
6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).				
6h. Comments:				

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

F. Supplementary Information		
1. Environmental Documentation (DWQ Requirement)		
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ 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. This project is for the widening of existing lanes (no new lanes) and the creation of paved roadway shoulders for safety. As such, 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, ind icate 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? NHP, USFWS, NCDOT field surveys. The bog turtle is the only species listed (for similarity of appearance) – it does not require a Biological Conclusion.		
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		

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	E. P. Luck Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	7-24-13 Date

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. SAW-2012-01963 County: Alleghany U.S.G.S. Quad: NC-WHITEHEAD

NOTIFICATION OF JURISDICTIONAL DETERMINATION

RECEIVED
JUL 2013
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

Property Owner: NC Department of Transportation
Gregory Thorpe
Address: 1598 Mail Service Center
Raleigh, NC, 27699-1598
Telephone Number: 919-707-6103

Size (acres) Linear project along US 21
Nearest Waterway Little River
USGS HUC 5050001

Nearest Town Sparta, NC
River Basin Upper New. North Carolina, Virginia.
Coordinates Latitude: 36.4915650291764
Longitude: -81.1286213621144

Location description: US 21 from SR 1100 in Roaring Gap to SR 1121 in Sparta, Alleghany County, North Carolina. This determination is for proposed impacts contained within the existing NCDOT right-of-way. The project area is detailed on the attached maps.

Indicate Which of the Following Apply:

A. Preliminary Determination

XX Based on preliminary information, there may be waters of the U.S. including wetlands on the above described project area. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are waters of the U.S. including wetlands on the above described property subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

_ The waters of the U.S. including wetlands on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The waters of the U.S. including wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

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

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

- The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **Monte Matthews** at **919-554-4884 x30 or Monte.K.Matthews@usace.army.mil.**

C. Basis For Determination: Use of the 1987 Wetlands Delineation Manual and applicable supplement, as well as documentation of ordinary high water marks needed for jurisdictional tributaries.

D. Remarks: Glade Creek and Laurel Branch drain to the Little River, then to the New River, a TNW.

E. Attention USDA Program Participants

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

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

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

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

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **(not applicable due to preliminary determination)**.

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

Corps Regulatory Official: Monte Matthews

Date: **July 17, 2013** Expiration Date: **July 17, 2018**

Ecosystem Enhancement PROGRAM

July 23, 2013

Mr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-3101, Improvements to US 21 from Roaring Gap to Sparta, Alleghany County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and riparian wetland mitigation for the subject project. Based on the information supplied by you on July 19, 2013, the impacts are located in CU 05050001 of the New River basin in the Northern Mountains (NM) Eco-Region, and are as follows:

New 05050001 NM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	1,839.0	0	0.22	0	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.

This impact and associated mitigation need were under projected by the NCDOT in the 2013 impact data. EEP 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 N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program 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 EEP.

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

Sincerely,

James B. Stanfill
EEP Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, Division of Water Quality, Wetlands/401 Unit
Ms. Amy Euliss, Division of Water Quality – Winston-Salem Office
File: R-3101

North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released July 2012)

Project/TIP No.: R-3101 **County(ies):** Alleghany

General Project Information

Project No.:	R-3101	**Project Type:**	Roadway Widening	**Date:**	7/15/2013
NCDOT Contact:	Ramie Shaw	**Contractor / Designer:**	Vaughn and Melton		
Address:	Highway Division 11 801 Statesville Rd North Wilkesboro, NC 28659	**Address:**	1318-F Patton Ave. Asheville, NC 28806		
Phone:	(336)903-9134	**Phone:**	(828) 253-2796		
Email:	rashaw@ncdot.gov	**Email:**	accarver@vaughnmelton.com		
City/Town:		**County(ies):**	Alleghany		
River Basin(s):	New	**CAMA County?**	No		
Primary Receiving Water:	Laural Branch and Glade Creek	**NCDWQ Stream Index No.:**			
NCDWQ Surface Water Classification for Primary Receiving Water	**Primary:**	Class C			
	Supplemental:	Trout Waters (Tr)			
Other Stream Classification:					
303(d) Impairments:					
Buffer Rules in Effect	N/A				

Project Description

Project Length (lin. Miles or feet):	9.684 Miles	**Surrounding Land Use:**	Residential

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	32.87 ac.	ac.
Typical Cross Section Description:	Two lane, 28' wide pavement	
Average Daily Traffic (veh/hr/day):	Design/Future: 17000	Existing: 8300

General Project Narrative:

This project consists of widening 9.864 miles of US 21 from SR 1100 (Oklahoma Rd.) to SR 1121 (Pine Swamp Rd.). The existing two-lane road will be widened from 9' and 11' lanes to 12' lanes with 2' paved shoulders. It includes replacing existing drainage structures and placing rip rap to reduce erosive velocities. All storm drainage will be diffused and designed for non-erosive velocities before entering wetland areas to the maximum extent practicle. Throughout the project, grass-lined ditches with non-erosive velocities are designed to convey the run-off to the existing drainage structures that are being replaced. Stormwater has been discharged as far away from streams as practicle. In several cases, headwalls were used to minimize impacts to Jurisdictional Streams. The surrounding area is predominately wooded and agricultural with some residential neighborhoods and businesses along US 21. The project is located in the New River Basin. All streams on this project will flow into Laural Branch or Glade Creek. At the Laural Branch and Glade Creek crossings, existing concrete box culverts will be replaced with bridges.

References

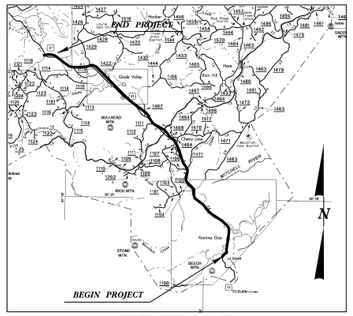
09/08/99

TIP PROJECT: R-3101

CONTRACT: _____

$$$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$$

See Sheet 1-A For Index of Sheets



VICINITY MAP
(NO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ALLEGHANY COUNTY

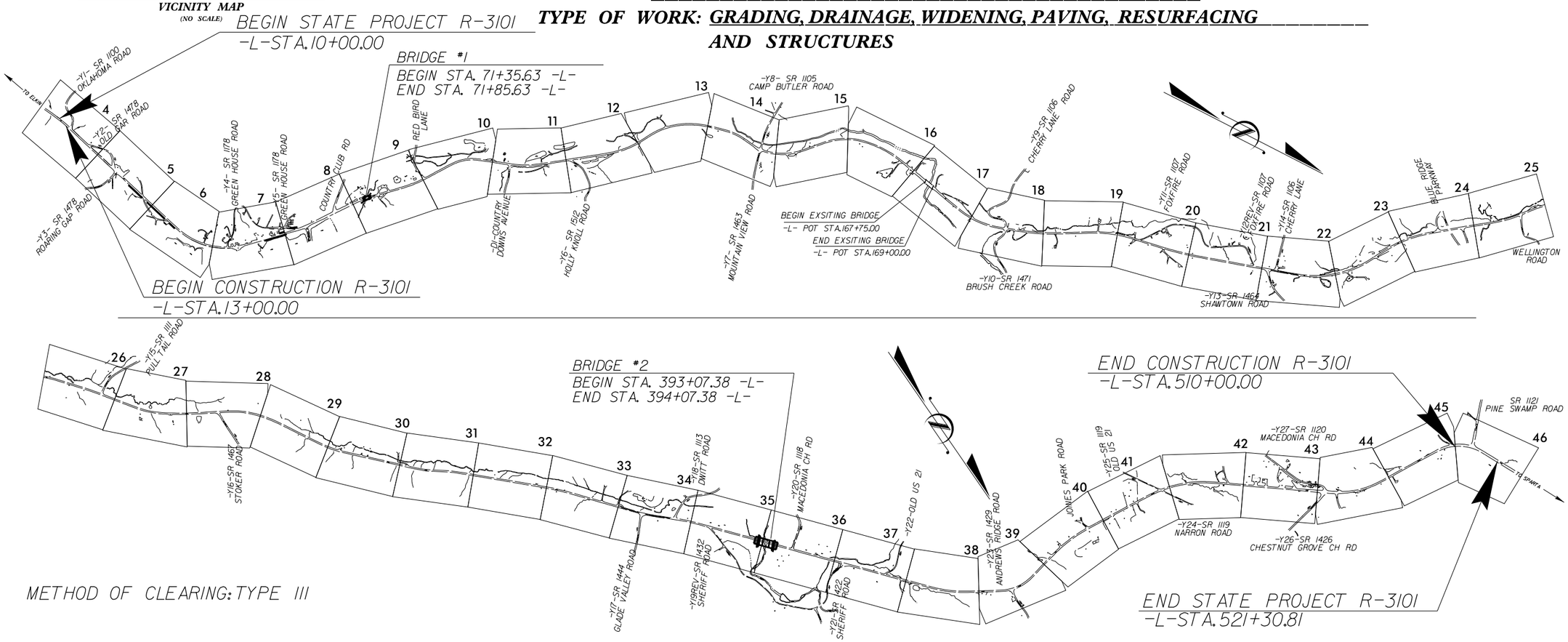
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3101	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
37044.1.1	STP – 21(11)	PE
37044.2.1	STP-0021(11)	R/W

Permit Sheet 1 of 93

LOCATION: *US 21 FROM SR 1100 (OKLAHOMA RD.) TO SR 1121 (PINE SWAMP RD.)*

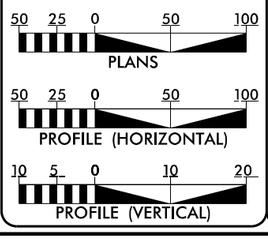
TYPE OF WORK: *GRADING, DRAINAGE, WIDENING, PAVING, RESURFACING AND STRUCTURES*



WETLAND AND SURFACE WATER IMPACTS PERMIT

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA
REGIONAL TIER DESIGN

ADT 2004 = 8300
ADT 2030 = 17000
DHV = 11 %
D = 60 %
T = 10 % *
V = 55 MPH
* TTST 5% DUAL 5%
FUNC CLASS =

PROJECT LENGTH

ROADWAY LENGTH TIP PROJECT R-3101 = 9.656 MI
STRUCTURE LENGTH TIP PROJECT R-3101 = 0.028 MI
TOTAL LENGTH TIP PROJECT R-3101 = 9.684 MI

Prepared in the Office of:
DIVISION OF HIGHWAYS
801 Statesville Road, North Wilkesboro, NC 28659

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 16, 2011

LETTING DATE:
SEPTEMBER 20, 2013

DIVISION ENGINEER
M. A. PETTYJOHN, P.E.

P.E.
SIGNATURE
DATE

HYDRAULICS ENGINEER
VAUGHN & MELTON CONSULTANTS

P.E.
SIGNATURE:

DIVISION OPERATIONS ENGINEER
W.O. ATKINS, P.E.

P.E.
SIGNATURE:

DIVISION PROJECT MANAGER
JOSEPH L. LAWS, PE

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 48
FOR -Y4- PROFILE SEE SHEET 69
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 2 of 93

2004 / 2030 ADT
-Y5- GREEN HOUSE RD
2/3
1-/1-
1/2
35/63
36/65

NAD 83/95

MATCH LINE -L- STA. 45+00 SEE SHEET 6

MATCH LINE -L- STA. 57+00 SEE SHEET 8

BEGIN EXPRESSWAY GUTTER STA. 50+50.00

END EXPRESSWAY GUTTER STA. 56+25.00

End Retaining Wall 57+00.00

Beg. Retaining Wall 56+15.00

POT 10+00.00 -Y5-

-Y4- POT STA. 11+62.54 =
-L- POC STA. 47+42.00

EXPRESSWAY GUTTER
-L- STA 50+50 TO STA 56+25 LT

SITE 1

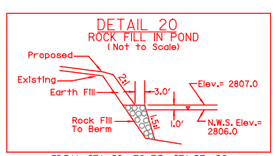
SITE 2

PROPOSED ROCK FILL IN POND SEE X-SECTIONS AND DETAIL 20

RECONDITION EXISTING CULVERT AND EXTEND 15' WITH 108" CSP AND ALUMINUM HEADWALL SEE DETAIL SHEET 7-4

W.E.= 28060

DETAIL 20
ROCK FILL IN POND
(Not to Scale)



FROM STA. 53+70 TO STA. 57+20

-Y4-

-Y4-POT Sta. 10+00.00
S 89° 48' 47.3" E
-Y4-PC Sta. 10+52.75
-Y4-PI Sta 10+76.32
△ = 27° 43' 33.9" (LT)
D = 60° 00' 00.0"
L = 46.21'
T = 23.57'
R = 95.49'
-Y4-PT Sta. 10+98.96
N 62° 27' 38.9" E
-Y4-POT Sta. 11+62.54=
-L-POC Sta. 47+42.00

-Y5-

POT Sta. 10+00.00
N 33° 51' 15.8" W
PC Sta. 10+81.12
PI Sta 10+93.77
△ = 1° 15' 53.9" (LT)
D = 5° 00' 00.0"
L = 25.30'
T = 12.65'
R = 1,145.92'

PT Sta. 11+06.42
N 35° 07' 09.7" W
PC Sta. 11+73.91
PI Sta 11+87.92
△ = 1° 24' 02.4" (LT)
D = 5° 00' 00.0"
L = 28.01'
T = 14.01'
R = 1,145.92'

PT Sta. 12+01.93
N 36° 31' 12.1" W
PC Sta. 12+43.59
PI Sta 12+87.44
△ = 10° 29' 37.7" (RT)
D = 12° 00' 00.0"
L = 87.45'
T = 43.85'
R = 477.46'

PT Sta. 13+31.04
N 26° 01' 34.4" W
PC Sta. 13+59.81
PI Sta 14+01.03
△ = 4° 56' 33.3" (LT)
D = 6° 00' 00.0"
L = 82.38'
T = 41.21'
R = 954.93'

PT Sta. 14+42.19
N 30° 58' 07.7" W
PC Sta. 14+56.38
PI Sta 14+81.34
△ = 47° 04' 52.0" (RT)
D = 99° 59' 59.9"
L = 47.08'
T = 24.96'
R = 57.30'

PT Sta. 15+03.46 -Y5J-
POC Sta. 58+81.87 -L-

TS / TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S / S DENOTES IMPACTS IN SURFACE WATER

E / E DENOTES EXCAVATION IN WETLAND

F / F DENOTES FILL IN WETLAND

TF / TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

$$$$$$$SYSTIME$$$$$
$$$$$$$USERNAME$$$$$
$$$$$$$DGN$$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 48
FOR -Y4- PROFILE SEE SHEET 69
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 3 of 93

NAD 83/95

2004 / 2030 ADT
-Y5- GREEN HOUSE RD
2/3
1-/1-
1/2
35/63
36/65

MATCH LINE -L- STA. 45+00 SEE SHEET 6

MATCH LINE -L- STA. 57+00 SEE SHEET 8

BEGIN EXPRESSWAY GUTTER STA.50+50.00

END EXPRESSWAY GUTTER STA.56+25.00

Beg. Retaining Wall 56+15.00

End Retaining Wall STA.57+00.00

-Y4- POT STA.11+62.54 =
-L- POC STA.47+42.00

-Y4-
-Y4-POT Sta. 10+00.00
S 89° 48' 47.3" E
-Y4-PC Sta. 10+52.75
-Y4-PI Sta 10+76.32
Δ = 27° 43' 33.9" (LT)
D = 60° 00' 00.0"
L = 46.21'
T = 23.57'
R = 95.49'
-Y4-PT Sta. 10+98.96
N 62° 27' 38.9" E
-Y4-POT Sta. 11+62.54=
-L-POC Sta. 47+42.00

	NORTH	EAST	ELEV.
POT	972165.90	1415146.47	2804.25
CUL2	972168.29	1415143.89	2805.25
CE1	972167.28	1415145.53	2806.25
HW1	972166.91	1415145.91	2807.25

-Y5-
POT Sta. 10+00.00
N 33° 51' 15.8" W
PC Sta. 10+81.12
PI Sta 10+93.77
Δ = 25° 15' 53.9" (LT)
D = 5° 00' 00.0"
L = 25.30'
T = 12.65'
R = 1,145.92'

PT Sta. 11+06.42
N 35° 07' 09.7" W
PC Sta. 11+73.91
PI Sta 11+87.92
Δ = 1° 24' 02.4" (LT)
D = 5° 00' 00.0"
L = 28.01'
T = 14.01'
R = 1,145.92'

PT Sta. 12+01.93
N 36° 31' 12.1" W
PC Sta. 12+43.59
PI Sta 12+87.44
Δ = 10° 29' 37.7" (RT)
D = 12° 00' 00.0"
L = 87.45'
T = 43.85'
R = 477.46'

PT Sta. 13+31.04
N 26° 01' 34.4" W
PC Sta. 13+59.81
PI Sta 14+01.03
Δ = 4° 56' 33.3" (LT)
D = 6° 00' 00.0"
L = 82.38'
T = 41.21'
R = 954.93'

PT Sta. 14+42.19
N 30° 58' 07.7" W
PC Sta. 14+56.38
PI Sta 14+81.34
Δ = 47° 04' 52.0" (RT)
D = 99° 59' 59.9"
L = 47.08'
T = 24.96'
R = 57.30'

PT Sta. 15+03.46 -Y5.1-
POC Sta. 58+81.87 -L-

DETAIL 20
ROCK FILL IN POND
(Not To Scale)
Proposed
Existing Earth Fill
Rock Fill To Berm
3.0'
1.5'
1.0'
Elev.= 2807.0
N.W.S. Elev.= 2806.0
FROM STA. 53+70 TO STA.57+20

SITE 1
SITE 2
PROPOSED ROCK FILL IN POND SEE X-SECTIONS AND DETAIL 20
108" CSP
CULVERT #1 ONE BARREL
RECONDITION EXISTING CULVERT AND EXTEND 15' WITH 108" CSP AND ALUMINUM HEADWALL SEE DETAIL SHEET 7-4
40 TONS CLASS 'A' RIP RAP WITH 75 S.Y. FILTER FABRIC
38 TONS CLASS 'B' RIP RAP WITH 31 S.Y. FILTER FABRIC
4' CONC. DITCH BEHIND RET.WALL SEE DETAIL
4' CONC. DITCH
OTCB
REMOVE HEADWALL
REMOVE
RETAIN COLLAR AND EXTEND
TBDI W/ FLAT GRATE
REM. JB
DO NOT DISTURB
EXPRESSWAY GUTTER -L- STA. 50+50 TO STA. 56+25 LT

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	7B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 4 of 93

EXPRESSWAY GUTTER
-L- STA 50+50 TO STA 56+25 LT

RETAINING WALL 48" CMP

51+38.91
30.00

DO NOT DISTURB (SIGN)

ST Sta. 51+38.91

ISF BUS

SEPTIC TANK

52+41.41
30.00

52+42.00
25.00

2SBLK BUS

NAD 83/95

GR 12" CMP INV=2841.05

-Y5-

18" CMP

BLK #44

55+15.44
30.00

CONC

UNABLE TO LOCATE INV

24" RCP

55+13.47
2SBKD
25.00

TOP = 2821.67
INV = 2818.17
D = 3.50'
TBDI W/ FLAT GRATE

TOP = 2822.41
INV = 2818.91
D = 3.50'
TBDI W/ FLAT GRATE

TOP = 2821.15
INV = 2817.15
D = 4.00'
TBDI W/ FLAT GRATE

INV = 2817.78

TOP = 2823.91
INV = 2817.41
D = 6.50'

7-8
7-10
7-11
7-12
7-14
7-15
7-16

2831.78
UNKNOWN
UNKNOWN

RETAIN
COLLAR AND EXTEND
15"

RETAIN

TAIL LINES ON OLD ROAD ACROSS ROAD

BST

CONC

DO NOT DISTURB

MLT CANOPY

SEPTIC TANK

ISBKD

4' CONC. DITCH

OTCB

REM.JB

JB

18"

24"

PAVED SHLDR

TOP = 2820.50
INV = 2818.33
D = 2.17'

EXISTING R/W

N 50° 28' 04.0" W
400.00'

MTL

14'X8' BARREL

60

55

51

24" CMP

INV = 2816.77

51+38.91
30.00

+30.00
R\W
70.00

80.00
30.00

108" CSP

SITE 1

7-9

+55.00
R\W
70.00

40 TONS CLASS 'A' RIP RAP WITH 75 S.Y. FILTER FABRIC

INV = 2805.25
BOTTOM OF TOE WALL = 2803.25

PROPOSED ROCK FILL IN POND
SEE X-SECTIONS
AND DETAIL 20

5 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC
INV = 2814.35
SITE 2

4' CONC. DITCH BEHIND RET.WALL SEE DETAIL

S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

$$$$USERNAME$$$$ $$$$SYSTIME$$$$

8/17/99

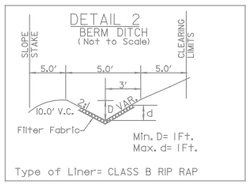
NS SHOWN ON THESE ROADWAY PLANS
Y DESIGNS AND SUBJECT TO REVISIONS.

PROJECT REFERENCE NO.	SHEET NO.
R-3101	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 5 of 93

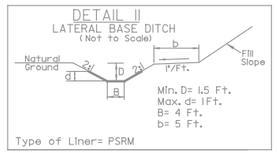
DETAIL 2
BERM DITCH
(Not to Scale)



Type of Liner= CLASS B RIP RAP

-L- STA. 76+50 TO 82+00 RT

DETAIL 11
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= PSRM

-L- STA. 71+55 TO 72+30 RT

NAD 83/95

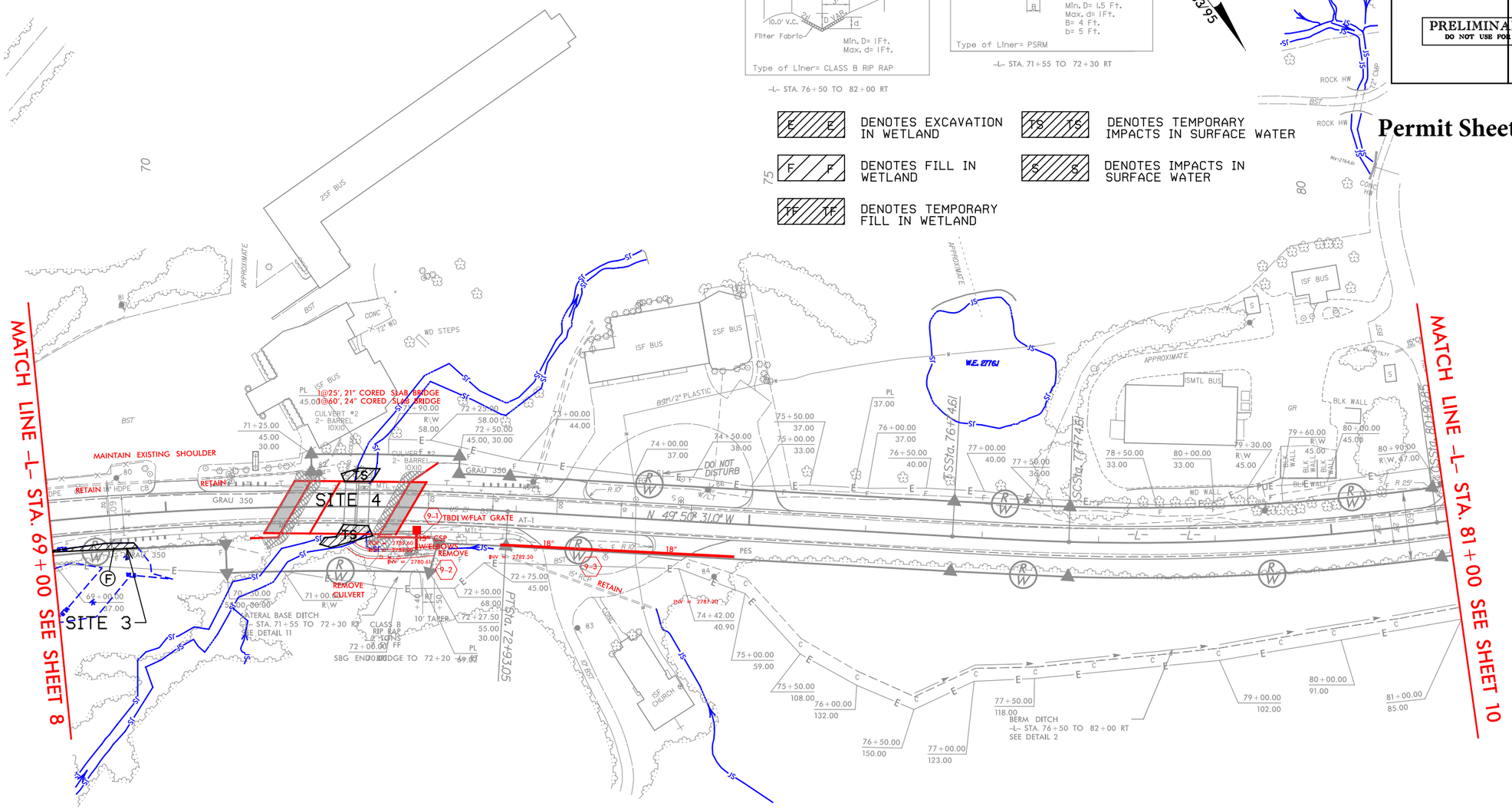
E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER



CULVERT #2
TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	973241.07	1413542.93	2776.59
CUL2	973234.72	1413550.66	2776.54
CUL3	973233.82	1413551.71	2776.58
CUL4	973227.72	1413558.85	2777.56
CE1	973234.49	1413550.84	2786.71
HW1	973234.30	1413550.64	2788.84
CUL5			
CUL6	973205.38	1413528.30	2776.56
CUL7	973206.65	1413526.89	2776.25
CUL8	973212.79	1413519.43	2776.23
CE2	973205.98	1413527.89	2786.34
HW2	973206.41	1413527.70	2788.00

NOTES

FOR -L- PROFILE SEE SHEET 49
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

-L-

PI Sta 70+66.44
Δ = 10° 13' 27.3" (RT)
D = 2° 15' 00.0"
L = 454.41'
T = 227.81'
R = 2,546.48'
SE = 0.02
RUNOFF = 59'

PIs Sta 77+41.28
θs = 1° 30' 00.0"
Ls = 100.00'
LT = 66.67'
ST = 33.34'

PI Sta 79+33.09
Δ = 9° 29' 13.7" (LT)
D = 3° 00' 00.0"
L = 316.24'
T = 158.48'
R = 1,909.86'

PIs Sta 81+24.19
θs = 1° 30' 00.0"
Ls = 100.00'
LT = 66.67'
ST = 33.34'

0 50 100 150 200

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

8/17/99

NS SHOWN ON THESE ROADWAY PLANS
Y DESIGNS AND SUBJECT TO REVISIONS.

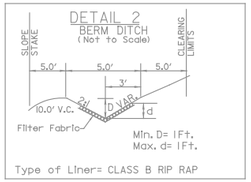
PROJECT REFERENCE NO.	SHEET NO.
R-3101	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 6 of 93

NAD 83/95

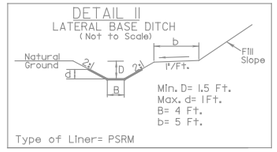
DETAIL 2
BERM DITCH
(Not to Scale)



Type of Liner= CLASS B RIP RAP

-L- STA. 76+50 TO 82+00 RT

DETAIL 11
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= PSRM

-L- STA. 71+55 TO 72+30 RT

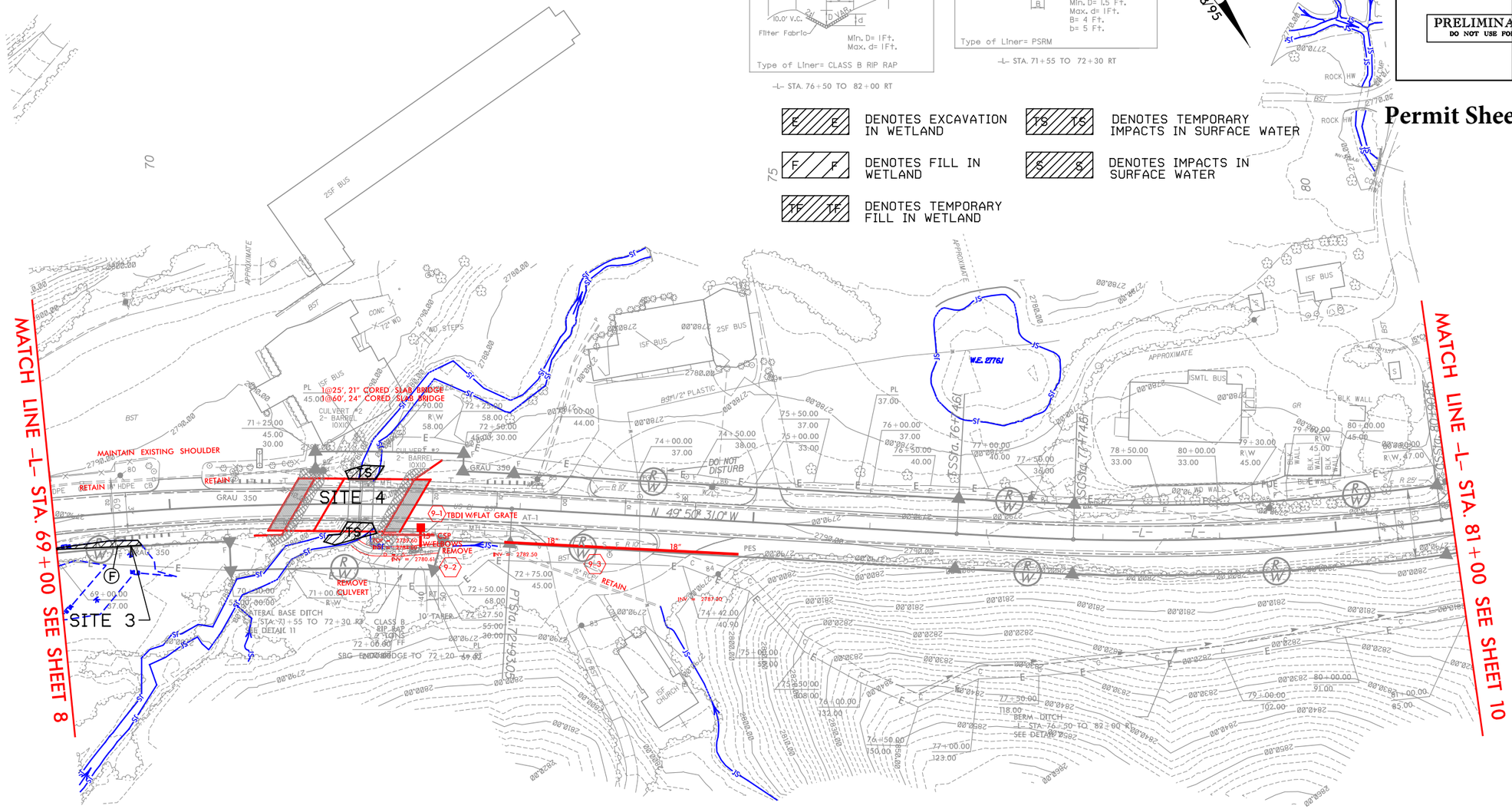
E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER



CULVERT #2
TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	973241.07	1413542.93	2776.59
CUL2	973234.72	1413550.66	2776.54
CUL3	973233.82	1413551.71	2776.58
CUL4	973227.72	1413558.85	2777.56
CE1	973234.49	1413550.84	2786.71
HW1	973234.30	1413550.64	2788.84
CUL5			
CUL6	973205.38	1413528.30	2776.56
CUL7	973206.65	1413526.89	2776.25
CUL8	973212.79	1413519.43	2776.23
CE2	973205.98	1413527.89	2786.34
HW2	973206.41	1413527.70	2788.00

NOTES

FOR -L- PROFILE SEE SHEET 49
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

-L-

PI Sta 70+66.44
Δ = 10° 13' 27.3" (RT)
D = 2° 15' 00.0"
L = 454.41'
T = 227.81'
R = 2,546.48'
SE = 0.02
RUNOFF = 59'

PIs Sta 77+41.28
Θs = 1° 30' 00.0"
Ls = 100.00'
LT = 66.67'
ST = 33.34'

PI Sta 79+33.09
Δ = 9° 29' 13.7" (LT)
D = 3° 00' 00.0"
L = 316.24'
T = 158.48'
R = 1,909.86'

PIs Sta 81+24.19
Θs = 1° 30' 00.0"
Ls = 100.00'
LT = 66.67'
ST = 33.34'

0 50 100 150 200

$$$$SYSTIME$$$$
$$$$FILENAME$$$$
$$$$DGN$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	9B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 7 of 93

NAD 83/95

PL 45.00

1@25', 21" CORED SLAB BRIDGE
1@60', 24" CORED SLAB BRIDGE

CULVERT #2
2- BARREL
10X10

71+25.00
45.00
30.00

71+90.00
R\W
58.00

72+25.00
58.00
72+50.00
45.00, 30.00

73+00.00
44.00

74+00.00
37.00

MAINTAIN EXISTING SHOULDER

RETAIN

SITE 3

SITE 4

GRAU 350

9-1 TBDI W/FLAT GRATE AT-1

TOP = 2789.60
INV = 2784.60
D = 5'
INV = 2780.61

15" CSP W/ELBOWS REMOVE

9-2

INV = 2782.50

18"

9-3

15" RCP

RETAIN

INV = 2787.20

N 49° 50' 31.0"

69+00.00
37.00

70+50.00
55.00, 30.00

71+00.00 CULVERT
R\W

REMOVE

LATERAL BASE DITCH
-L- STA. 71+55 TO 72+30 RT
SEE DETAIL 11

CLASS B RIP RAP
2 TONS
7 SY FF

72+00.00

SBG END BRIDGE TO 72+20 -L- RT

72+50.00
68.00

72+27.50
55.00
30.00

72+75.00
45.00

74+42.(
40.(

PT Sta. 72+93.05

10' TAPER

10' BST

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

0 20 40 60 80

$$$$SYSTIME$$$$
$$$$FILENAME$$$$ DGN $$$$$

8/17/99

NOTES

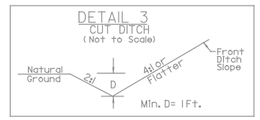
FOR -L- PROFILE SEE SHEET 50
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 8 of 93

DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 102+00 TO 103+00 RT

NAD 83/95

MATCH LINE -L- STA. 93+00 SEE SHEET 10

MATCH LINE -L- STA. 105+00 SEE SHEET 12

-DI- POT Sta. 10+00.00
-L- PT Sta. 95+81.47

SITE 5

SITE 6

SITE 7

SITE 8

POT Sta. 96+01.86

POT Sta. 100+74.52

POT Sta. 114+00.00

PI Sta 98+40.09
Δ = 17° 43' 29.8" (LT)
D = 3° 45' 00.0"
L = 472.67'
T = 238.24'
R = 1,527.89'

-L-

(39) ALEXANDER T. DAVISON
DB 81 PG 625
DB 67 PG 109
DB 67 PG 370
DB 65 PG 505

(40) ROYALL FAMILY, LLC
DB 256 PG 532

CULVERT #3
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	975258.69	1411532.70	2750.75
CUL2	975262.36	1411529.83	2750.75
CE1	975260.86	1411530.97	2755.74
HW1	975259.92	1411531.05	2757.45
CUL3	975232.72	1411499.95	2750.04
CUL4	975229.77	1411503.02	2750.09
CE2	975231.55	1411501.49	2755.11
HW2	975231.62	1411501.67	2756.78

(36) JERRY W. SADDLER
DB 2872 PG 853
DB 1672 PG 953

(37) ROBERT E. FRELICH
DB 242 PG 1336

(38) STERLING C. CARROLL
DB 270 PG 892

(41) W. QUINCY ROYALL AND CORA LEE ROYALL
DB 238 PG 985
DB 120 PG 484

(42) THOMAS MONROE & LOIS HUFF MILLER
DB 120 PG 483

(220) OLDE BEAU GENERAL PARTNERSHIP
DB 149 PG 802

(221) J. LARRY WOODIE AND PATRICIA T. WOODIE
DB 274 PG 1139

SLIPLINE EXIST. 5'X5' CULVERT WITH 54" CCERPM PIPE

CONC. ENDWALL

CUT DITCH
-L- STA. 102+00 TO 103+00 RT
SEE DETAIL 3

TS / TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S / S DENOTES IMPACTS IN SURFACE WATER

E / E DENOTES EXCAVATION IN WETLAND

F / F DENOTES FILL IN WETLAND

TF / TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$DGN$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 50
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 9 of 93

DETAIL 3
CUT DITCH
(Not to Scale)

Natural Ground, 2d, D, All of Flatter, Front Ditch Slope
Min. D= 1Ft.

-L- STA. 102+00 TO 103+00 RT

NAD 83/95

MATCH LINE -L- STA. 93+00 SEE SHEET 10

MATCH LINE -L- STA. 105+00 SEE SHEET 12

SITE 5

SITE 6

SITE 7

SITE 8

POT Sta. 10+00.00 -L- RT Sta. 95+81.47

POT Sta. 14+50.00

PCS Sta. 96+01.86

PI Sta 100+74.52

W.E. 2757.4

W.E. 2750.9

W.E. 2

POND 1

POND 2

POND 3

39 ALEXANDER T. DAVISON
DB 81 PG 625
DB 67 PG 109
DB 67 PG 370
DB 65 PG 505

36 JERRY W. SADDLER
DB 2000 PG 877
DB 272 PG 932

37 ROBERT E. PRELICH
DB 242 PG 1336

38 STERLING C. CARROLL
DB 270 PG 892

40 ROYALL FAMILY, LLC
DB 256 PG 532

42 THOMAS HOWELL ALLEN
DB 80 PG 41
DB 80 PG 45

41 W. QUINCY ROYALL AND CORA LEE ROYALL
DB 256 PG 984
DB 170 PG 983

220 OLDE BEAU GENERAL PARTNERSHIP
DB 149 PG 802

221 J. LARRY WOODIE AND PATRICIA T. WOODIE
DB 274 PG 1139

	NORTH	EAST	ELEV.
CUL1	975258.69	1411532.70	2750.75
CUL2	975262.36	1411529.83	2750.75
CE1	975260.86	1411530.97	2755.74
HW1	975259.92	1411531.05	2757.45
CUL3	975232.72	1411499.95	2750.04
CUL4	975229.77	1411503.02	2750.09
CE2	975231.55	1411501.49	2755.11
HW2	975231.62	1411501.67	2756.78

-L-
PI Sta 98+40.09
Δ = 17° 43' 29.8" (LT)
D = 3° 45' 00.0"
L = 472.67'
T = 238.24'
R = 1,527.89'

TS / TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S / S DENOTES IMPACTS IN SURFACE WATER

E / E DENOTES EXCAVATION IN WETLAND

F / F DENOTES FILL IN WETLAND

TF / TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

$$$$$$$$SYSTIME$$$$$
$$$$$$$$USERNAME$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	11B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 10 of 93

NAD 83/95

93+00.00
R\W, 41.00
93+54.00
82.00
93+64.00
84.00
93+71.00
49.00
96+50.00
40.00
94+80.00
R\W
50.00
95+55.00
50.00
95+60.00
R\W, 50.00
93+50.00
43.00
96+55.00
R\W
96+22.00
R\W
11+00.00 -D1-
20.00
96+73.00
91.00
96+63.00
96+65.00
R\W
PL
30.00

-DI- POT Sta. 10+00.00
-L- PT Sta. 95+81.47
PC Sta. 96+01.86

W.E. 2757.4
W.E. 2761.6
POND
SITE 5
SITE 6
SITE 7
EARTH DAM
ROBERT E. PRELICH
DB 242 PG 1336
JERRY W. SADDLER
DB 2041 PG 893
DB 172 PG 933
N20°22'40"W
S84°25'54"W
N 25°24'05.7"W
EXISTING R/W
PKNAIL
EIP
ISBLK
BUS
SCRUB
5SBW
BST
PUE
JS
TS
TF
F
WLM
INV = 2764.50
INV = 2763.19
INV = 2764.05
INV = 2764.93
18"
36"
15 CMP
30" CMP
48" WW
36" WD
15SD
11-1
11-2

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TF TF — DENOTES TEMPORARY FILL IN WETLAND

F F — DENOTES FILL IN WETLAND

0 20 40 60 80

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	11C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 11 of 93

DB 81PG 625
DB 67 PG 109
DB 67 PG 370
DB 65 PG 505

NAD 83/95

SITE 8
101+03.00
67.00, 50.00

W.E. 2750.9

PI Sta. 100+74.52

100+55.00
62.00, 50.00

100+00.00
R\W, 50.00

+95.00
R\W
50.00

+15.00
R\W
50.00
65.00

+15.00
R\W
50.00

101+65.00
60.00, 50.00

WD DOCK

SOIL

ISFD

PUE

GRAU 350

EXISTING R/W

SCRUB

BST

54" CCFRPM

SLIPLINE EXIST. 5'X5' CULVERT
WITH 54" CCFRPM PIPE

RETAIN

11-3

CONC.
ENDWALL

REBAR

102+76.00
R\W

CUT DITCH
-L- STA. 102+00 TO 103+00 RT
SEE DETAIL 3

102+42.00
R\W

102+81.00
75.00

102+00.00
41.00

102+45.00
51.00

102+91.00
90.00

103+02.00
86.00

103+50.00
113.00

101+00.00
R\W
30.00

101+50.00
41.00

W. QUINCY ROYALL AND CORA LEE ROYALL
DB 238 PG 985
DB 120 PG 484

5SBW

1.5SFD

5SHE

41

N11°01'0"E
19.43'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

8/17/99

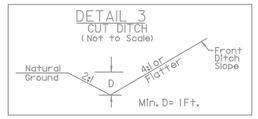
PROJECT REFERENCE NO.	SHEET NO.
R-3101	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

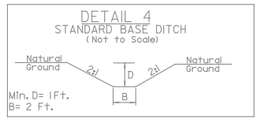
Permit Sheet 12 of 93

DETAIL 3
CUT DITCH
(Not to Scale)



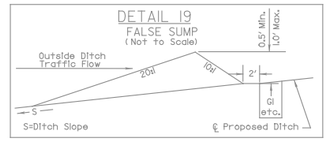
-L- STA. 107+40 TO 109+07 RT

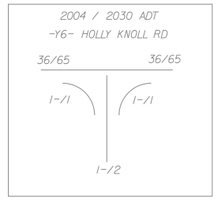
DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

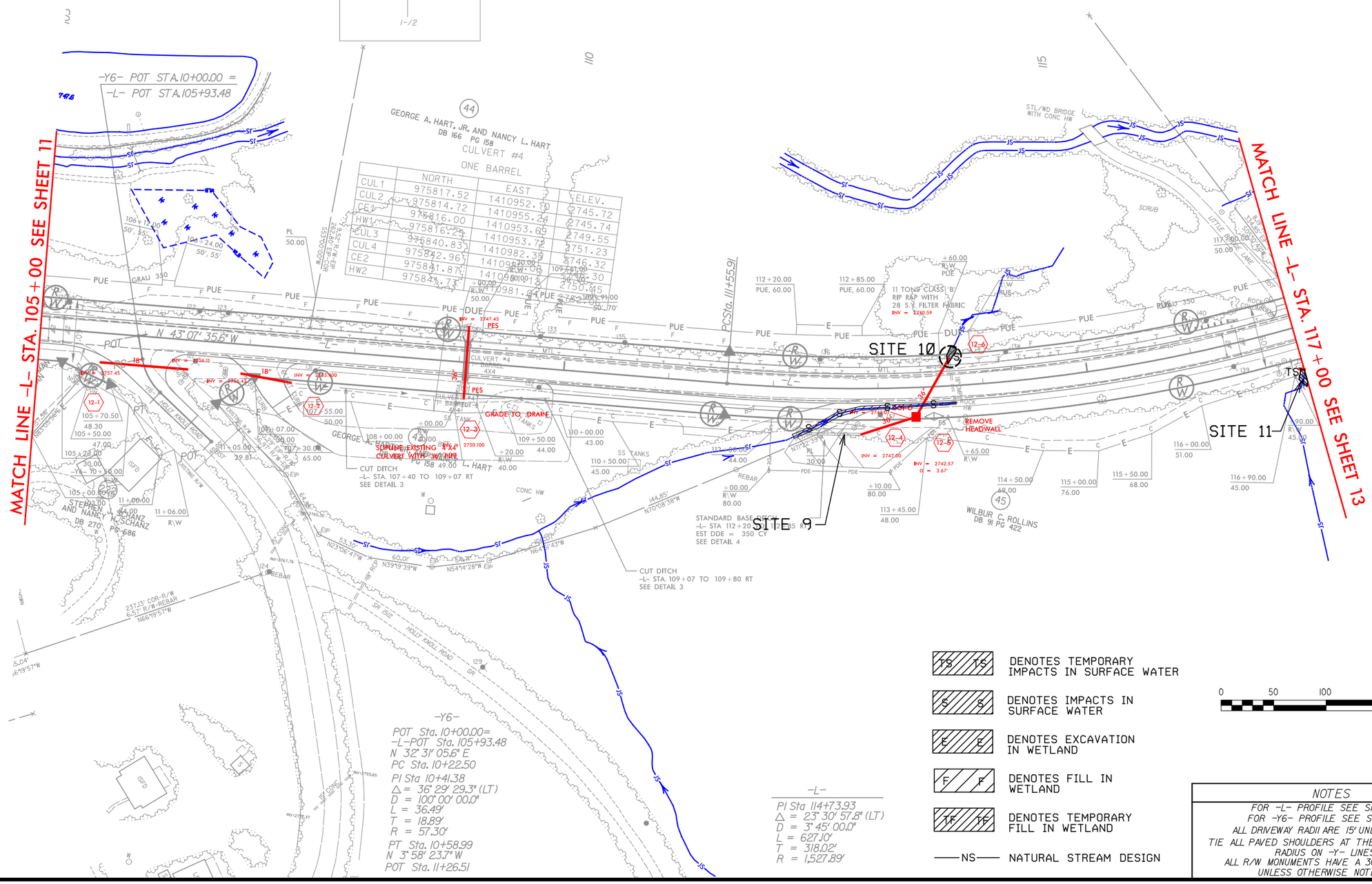


-L- STA 112+20 TO 112+85 RT
EST. 350 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)







NOTES
FOR -L- PROFILE SEE SHEET 5I
FOR -Y6- PROFILE SEE SHEET 7O
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$

8/17/99

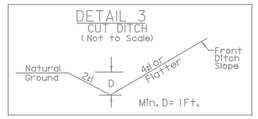
PROJECT REFERENCE NO.	SHEET NO.
R-3101	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/95

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

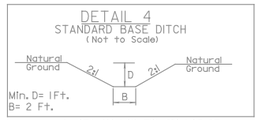
Permit Sheet 13 of 93

DETAIL 3
CUT DITCH
(Not to Scale)



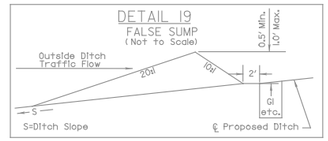
-L- STA. 107+40 TO 109+07 RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

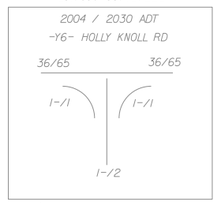


-L- STA 112+20 TO 112+85 RT
EST. 350 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)



2004 / 2030 ADT
-Y6- HOLLY KNOLL RD



MATCH LINE -L- STA. 105+00 SEE SHEET 11

MATCH LINE -L- STA. 117+00 SEE SHEET 13

-Y6- POT STA.10+00.00 =
-L- POT STA.105+93.48

GEORGE A. HART, JR. AND NANCY L. HART
DB 166, PG 158
CULVERT #4
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	975817.52	1410952.50	2745.72
CUL2	975814.72	1410955.24	2745.74
CE1	975816.00	1410953.69	2749.55
HW1	975816.25	1410953.72	2751.23
CUL3	975840.83	1410982.35	2746.32
CUL4	975842.96	1410980.08	2746.30
CE2	975841.87	1410981.14	2750.45
HW2	975844.73	1410978.04	2750.70

SITE 10

SITE 9

SITE 11

REMOVE HEADWALL

SIMPLINE EXISTING 5'X4' CULVERT WITH 36" PIPE

GRADE TO DRAIN

CUT DITCH
-L- STA. 107+40 TO 109+07 RT
SEE DETAIL 3

STANDARD BASE DITCH
-L- STA 112+20 TO 112+85 RT
ESP DDE = 350 CY
SEE DETAIL 3

CUT DITCH
-L- STA 109+07 TO 109+80 RT
SEE DETAIL 3

STL/WD BRIDGE WITH CONC HW

11 TONS CLASS 'B' RIP RAP WITH 28 S.Y. FILTER FABRIC
INV = 2740.59

-Y6-
POT Sta. 10+00.00=
-L-POT Sta. 105+93.48
N 32° 31' 05.6" E
PC Sta. 10+22.50
PI Sta 10+41.38
Δ = 36° 29' 29.3" (LT)
D = 100° 00' 00.0"
L = 36.49'
T = 18.85'
R = 57.30'
PT Sta. 10+58.99
N 3° 58' 23.7" W
POT Sta. 11+26.51

-L-
PI Sta 114+73.93
Δ = 23° 30' 57.8" (LT)
D = 3° 45' 00.0"
L = 627.10'
T = 318.02'
R = 1,527.89'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

——NS—— NATURAL STREAM DESIGN

0 50 100 150 200

NOTES
FOR -L- PROFILE SEE SHEET 5I
FOR -Y6- PROFILE SEE SHEET 70
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	12B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 14 of 93

NAD 83/95

SCRUB

PCSta. 111+55.91

112+20.00
PUE, 60.00

112+85.00
PUE, 60.00

+60.00
R\W
PUE

11 TONS CLASS 'B'
RIP RAP WITH
28 S.Y. FILTER FABRIC
INV = 2740.59

+90.00
R\W
PUE

+25.00
R\W
45.00

PUE
E
PUE
PUE
DUE
PUE
PUE
P

8/17/99

NOTES

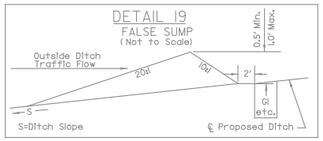
FOR -L- PROFILE SEE SHEET 5I
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

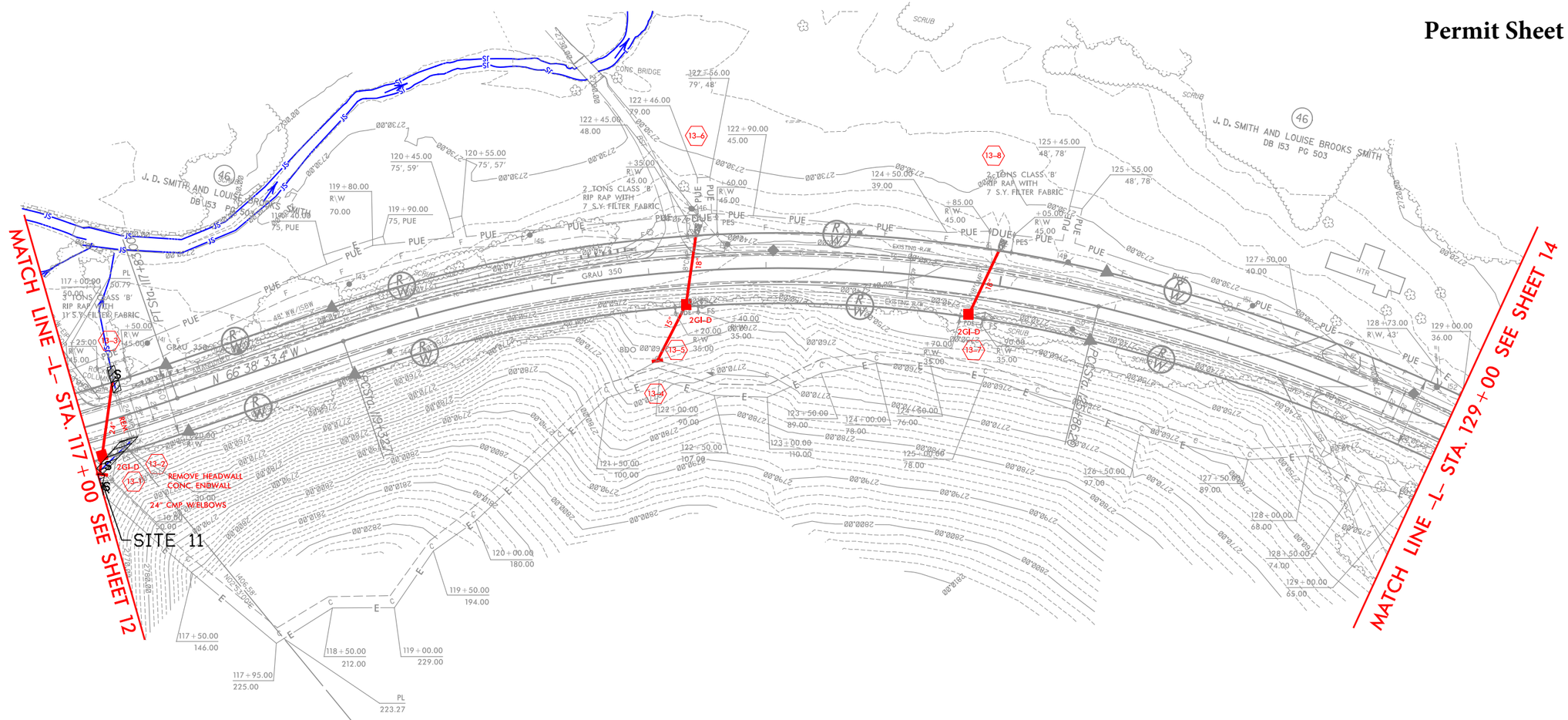
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 15 of 93

DETAIL 19
FALSE SUMP
(Not to Scale)



NAD 83/95



TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

$$$$$$$$SYSTIME$$$$$
$$$$$$$$USERNAME$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	13B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 16 of 93

J. D. SMITH AND LOUISE BROOKS SMITH
DB 153 PG 503

46 SCRUB

JS

119 + 80.00
R\W
70.00

119 + 40.00
75, PUE

120 + 45.00
75', 59'

75', 57'

NAD 83/95

119 + 90.00
75, PUE

+35.00
R\W
45.00

2 TONS CLASS 'B'
RIP RAP WITH
7 S.Y. FILTER FABRIC

PUE

F

SCRUB

143

145

147

GRAU 350

48" WW/ISBW

ABANDONED

N 66° 38' 33.4" W

PCSta. 119+32.71

PCSta. 118+23.00

PL
50.79

-00.00

ONS CLASS 'B'
RAP WITH
.Y. FILTER FABRIC

+50.00
R\W
45.00

25.00
W
.00

13–3

141

142

144

ROCK
COLUMN

BDE

24" REM.

20.00
R\W

FS
2GI–D

13–2

13–1

REMOVE HEADWALL
CONC. ENDWALL

30.00

24" CMP W/ELBOWS

+10.00
50.00

+90.00

SITE 11

18"

15"

FDE
FS
2GI–D

+20.00
R\W
35.00

+40.00
R\W
35.00

BDO

13–5

13–4

C
E

122 + 00.00
90.00

122 + 50.00
107.00

121 + 50.00
100.00

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 17 of 93

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2H, D, 2H, Natural Ground
Min. D= 1Ft.
B= 2 Ft.

-L- STA. 139+62 LT
EST. 8 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 20ft, 10ft, 2', 0.5' Min., 1.0' Max., 12 ea.o.c.
S=Ditch Slope
℄ Proposed Ditch

-Y8-PC Sta. 10+00.00

NAD 83/95

-Y8- STA.15+24.08 = M.E.
-L- POC STA. 138+43.13

-Y8-PT Sta. 15+27.30

-Y8- STA.14+46.57 = -L- POC STA. 133+58.91

-Y8- STA.14+97.67 = -L- POC STA. 133+20.00

-Y7- STA.10+00.00 = -L- POC STA. 138+39.69

MATCH LINE -L- STA. 129+00 SEE SHEET 13

MATCH LINE -L- STA. 141+00 SEE SHEET 15

SITE 12

SITE 13

SITE 14

SITE 18

NEW BRIDGE LOCATION

2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC

8 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC

STANDARD BASE DITCH
-L- STA. 139+62 LT
DDE = 8 CY
SEE DETAIL 4

REMOVE HEADWALL

30" CMP WILBOWS

CONC. ENDWALL

2GI-A

2GI-B

2GI-D

GRADE TO DRAIN

M.E. MOTSINGER, JR. AND MARGARET K. MOTSINGER
DB 57 PG 45

DANIEL BUCKLE, JR. AND FRANCES S. BUCKLE
DB 882 PG 118

MATTIE ELIZABETH WINESETT
DB 82 PG 23

VICTOR ALBERT AND CLARA DARLENE HOLLIFIELD
DB 224

GREEN HOUSE

L.S.S.F.D.

BUTLER ROAD

MOUNTAIN VIEW ROAD

SR 1405 COTTONSPINDLE ROAD

SR 1403 WOODRUFF CHURCH ROAD

30.72' COTTONSPINDLE-R/W
151.39' R/W-COR
S10°29'53"E

148.66'
N21°19'43"W

-Y7-
-Y7-POT Sta. 10+00.00=
-L-POC Sta. 138+39.69
N 70° 27' 37.4" E
PC Sta. 12+00.58
PI Sta 13+64.17
△ = 7° 21' 04.4" (LT)
D = 2° 15' 00.0"
L = 326.72'
T = 163.59'
R = 2,546.48'
PT Sta. 15+27.30

-Y8-
-Y8-PC Sta. 10+00.00
PI Sta 11+82.34
△ = 16° 18' 00.1" (LT)
D = 4° 30' 00.0"
L = 362.22'
T = 182.34'
R = 1,273.24'
-Y8-PT Sta. 13+62.22
N 70° 54' 54.7" E
-Y8-POT Sta. 15+24.41=
-L-POC Sta. 138+43.13

-L-
PI Sta 133+58.91
△ = 20° 47' 57.5" (RT)
D = 5° 45' 00.0"
L = 361.73'
T = 182.88'
R = 996.45'

PI Sta 138+86.19
△ = 27° 22' 22.8" (LT)
D = 7° 30' 00.0"
L = 364.97'
T = 186.04'
R = 763.94'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

2004 / 2030 ADT
-Y8- WOODRUFF CHURCH RD
1/3
1/2
36/65
38/67

2004 / 2030 ADT
-Y7- MOUNTAIN VIEW RD
36/65
38/67
1-/1
1/2
1/3

NOTES
FOR -L- PROFILE SEE SHEET 52
FOR -Y7- & -Y8- PROFILES SEE SHEET 70
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

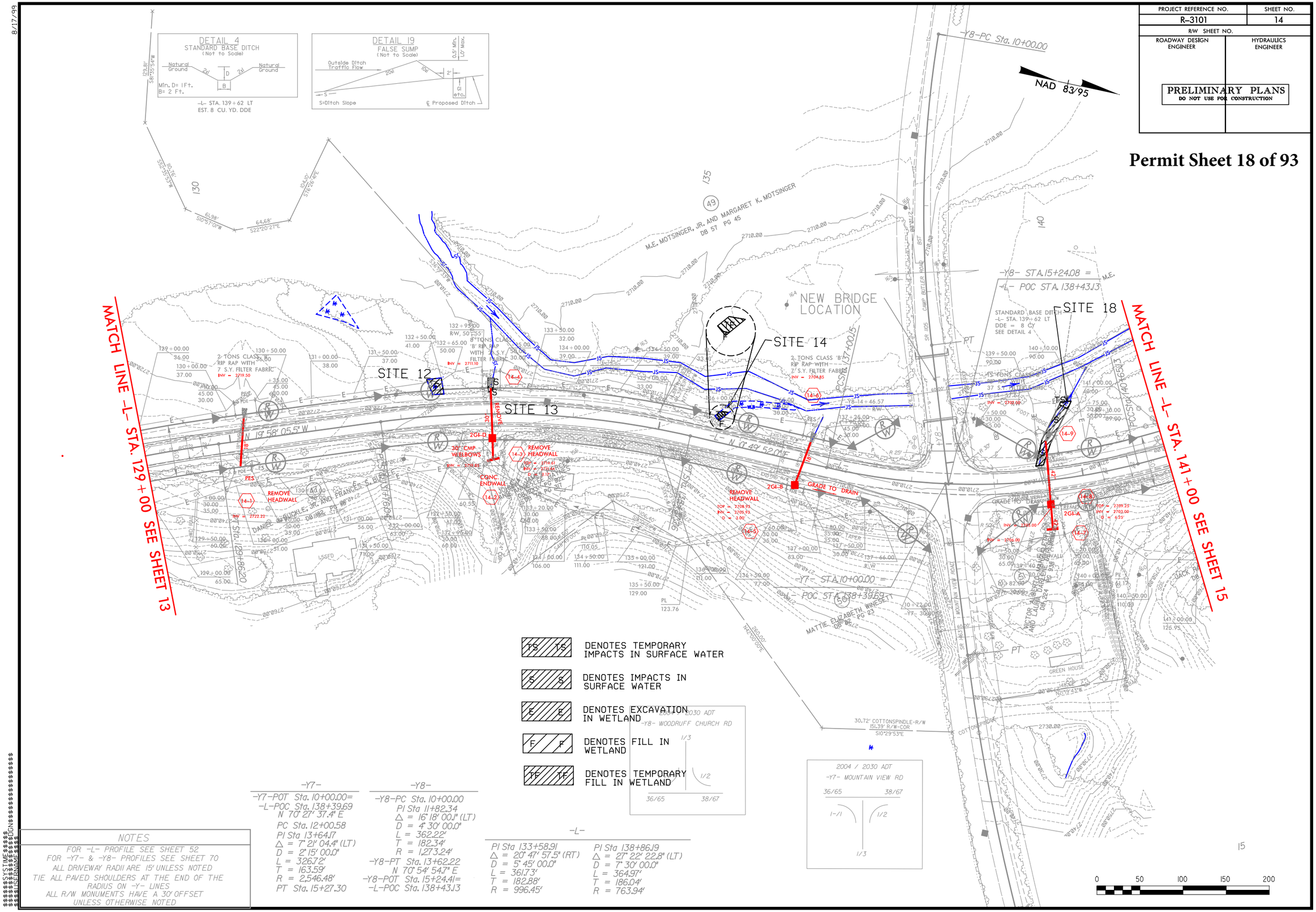
$$$$$$SYSTIME$$$$$
$$$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 18 of 93


DETAIL 4
STANDARD BASE DITCH
(Not to Scale)
Natural Ground
2H
D
2H
Natural Ground
Min. D= 1Ft.
B= 2 Ft.
-L- STA. 139+62 LT
EST. 8 CU. YD. DDE
DETAIL 19
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
20ft
10ft
2'
S
S=Ditch Slope
℄ Proposed Ditch
NAD 83/95
-Y8- PC Sta. 10+00.00
-Y8- STA. 15+24.08 = -L- POC STA. 138+43.13
M.E.
M.E. MOTSINGER, JR. AND MARGARET K. MOTSINGER
DB 57 PG 45
NEW BRIDGE LOCATION
SITE 12
SITE 13
SITE 14
SITE 18
MATCH LINE -L- STA. 129+00 SEE SHEET 13
MATCH LINE -L- STA. 141+00 SEE SHEET 15
2-TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC
INV = 2719.50
INV = 2711.10
8" TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC
2-TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC
INV = 2704.85
STANDARD BASE DITCH
-L- STA. 139+62 LT
DDE = 8 CY
SEE DETAIL 4
8" TONS CLASS 'B' RIP RAP WITH 37 S.Y. FILTER FABRIC
INV = 2709.00
REMOVE HEADWALL
INV = 2722.22
2GI-D
30" CMP W/ELBOWS
INV = 2716.61
INV = 2710.00
CONC ENDWALL
REMOVE HEADWALL
TOP = 2711.61
INV = 2710.00
REMOVE HEADWALL
TOP = 2708.93
INV = 2705.93
D = 3.00
2GI-B
GRADE TO DRAIN
REMOVE HEADWALL
TOP = 2709.25
INV = 2703.00
D = 5.25
INV = 2705.00
2GI-A
GRADE TO DRAIN
INV = 2709.00
INV = 2705.00
L=SSED
DANIEL STICKLE, JR. AND FRANCES S. BLOCK
DB 882 PG 215
MATTIE ELIZABETH WINES
DB 58 PG 23
VICTORIA BEECHER DARDEN AND CARL DARDEN
DB 224
GREEN HOUSE
JACK PT
PT
PCSS
PCSS
SR 1105
CAMP BUTLER ROAD
MOUNTAIN VIEW ROAD
SR 1403
COTTONSPINDLE
30.72' COTTONSPINDLE-R/W
151.39' R/W-COR
S10°29'53"E
2730.00
2710.00
2715.00
2720.00
2725.00
2730.00
2735.00
2740.00
2745.00
2750.00
2755.00
2760.00
2765.00
2770.00
2775.00
2780.00
2785.00
2790.00
2795.00
2800.00
2805.00
2810.00
2815.00
2820.00
2825.00
2830.00
2835.00
2840.00
2845.00
2850.00
2855.00
2860.00
2865.00
2870.00
2875.00
2880.00
2885.00
2890.00
2895.00
2900.00
2905.00

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	14B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 19 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

NAD 83/95

131 + 00.00
38.00

131 + 50.00
37.00

132 – 50.00
41.00

132 + 65.00
50.00

R/W, 50', 55'
8 TONS CLASS 'B' RIP RAP WITH 21 S.Y. FILTER FABRIC
+15.00
50.00
30.00

SITE 12

INV = 2711.10

PDE
PES

14–4

133 + 50.00
32.00

134 + 00.00
39.00

134 + 50.00
39.00

135 + 00.00
33.00

PL
33.01

SITE 14

136 + 00.00
38.00

WLB

REMOVE
30"

SITE 13

2GI–D

30" CMP W/ELBOWS

INV = 2719.85

FS

14–3

REMOVE HEADWALL

TOP = 2714.61
INV = 2711.44
D = 3.17'

CONC. ENDWALL

14–2

REMOVE HEADWALI

TOP = 2708.93
INV = 2705.93
D = 3.00'

14–5

30 + 50.00
48.00

131 + 00.00
56.00

131 + 50.00
71.00

132 + 00.00
63.00

132 + 50.00
61.00

132 + 95.00
30.00
60.00

133 + 20.00
30.00
60.00

133 + 50.00
88.00

134 + 00.00
106.00

PL
110.05

134 + 50.00
111.00

135 + 00.00
121.00

JAMES LEE HAYNES DB 922 PG 317

ANNIE JOHNSON AND JOHN S. BUCKLE, JR. AND FRANCES S. BUCKLE DB 233 PG 118

DB 182 PG 118

ROCK STEPS

1.5SFD

24" CMP

0 20 40 60 80

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	14C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 20 of 93

NAD 83/95

NEW BRIDGE LOCATION

-Y8- STA. 15+24.08 =

-L- POC STA. 138+43.13

M.E. MOTTS

CAMP BUTLER ROAD

SR 1105

PT

STANDARD BASE DITCH
-L- STA. 139+62 LT
DDE = 8 CY
SEE DETAIL 4

2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC
INV = 2704.85

PCSTA 137+00.15

14-6

137+25.00
+90.00
45.00
30.00

-Y8-14+46.57

RW

PES

PDE

18" RCP

2'52.0" 10.5%

EXISTING R/W

-L-

2GI-B

GRADE TO DRAIN

137+00.00
63.00

137+50.00
30.00

137+66.00
R\W

+50.00
77.00

-Y7- STA. 10+00.00 =

139+50.00
90.00

140+10.00
90.00

15 TONS CLASS 'B' RIP RAP WITH 37 S.Y. FILTER FABRIC

-Y8-14+57.67

INV = 2702.60

SITE 18

+50.00
30.00
55.00

FOOT BRIDGE

14-9

141+00.00
40.00

+75.00
30.00
55.00

140+10.00
39.00

PCSTA 140+65.13

EXISTING CULVERT #5 BARREL 3'X3'

42" RCP

NO ACCESS TO CULVERT #5 ON THIS R/W

14-8

GRADE TO DRAIN

REMOVE DI
2GI-A
TOP = 2709.25
INV = 2703.00
D = 6.25'

INV = 2703.00

INV = 2706.00

14-7

+50.00
30.00
65.00

CONC ENDWALL

139+40.00

+70.00
30.00
65.00

+60.00
30.00
35.00

+80.00
35.00
35.00

80' TAPER

BST -Y7-

ROAD

DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

$$$$$$YSTIME$$$$
$$$$$$ZSTIME$$$$
$$$$$$ZFILENAME$$$$

8/17/99

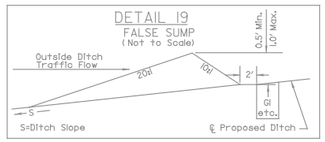
PROJECT REFERENCE NO.	SHEET NO.
R-3101	15
R/W SHEET NO.	

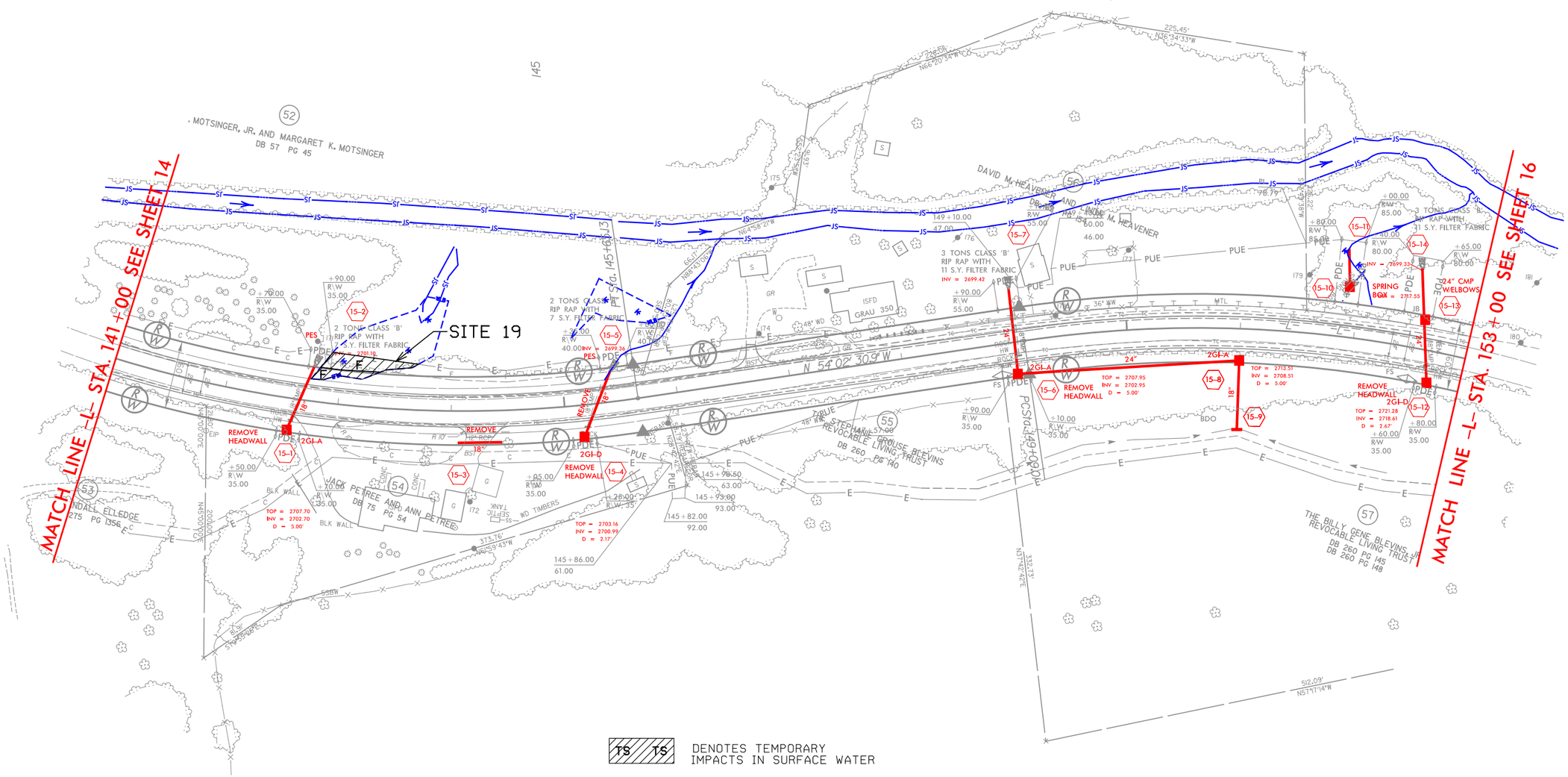
PERMIT DRAWING

Permit Sheet 21 of 93

NAD 83/95

DETAIL 19
FALSE SUMP
(Not to Scale)





TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

-L-

PI Sta 143+20.04	PI Sta 152+73.49
△ = 27° 30' 00.0" (LT)	△ = 38° 34' 01.7" (RT)
D = 5° 30' 00.0"	D = 5° 30' 00.0"
L = 500.00'	L = 701.22'
T = 254.91'	T = 364.48'
R = 1,041.74'	R = 1,041.74'

0 50 100 150 200

$$$$$$$SYSTIME$$$$$$
$$$$$$$USERNAME$$$$$$$

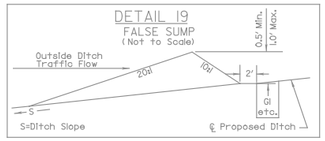
8/17/99

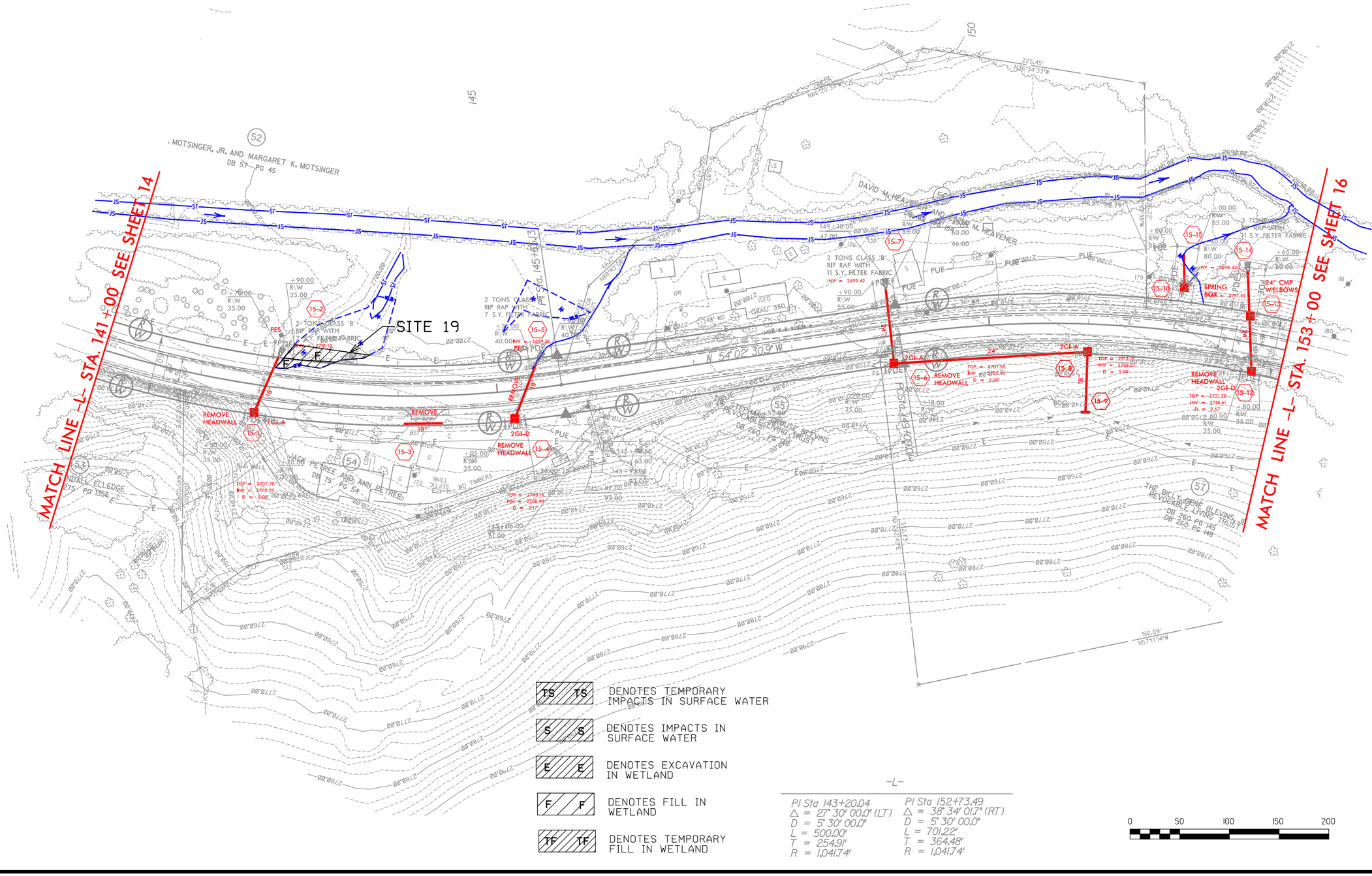
PROJECT REFERENCE NO.	SHEET NO.
R-3101	15
R/W SHEET NO.	

PERMIT DRAWING
Permit Sheet 22 of 93

NAD 83/95

DETAIL 19
FALSE SUMP
(Not to Scale)





TS / TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S / S DENOTES IMPACTS IN SURFACE WATER

E / E DENOTES EXCAVATION IN WETLAND

F / F DENOTES FILL IN WETLAND

TF / TF DENOTES TEMPORARY FILL IN WETLAND

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$
$$$$$$$$DGN$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	15B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 23 of 93

TF TF DENOTES TEMPORARY FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

F F JS DENOTES FILL IN WETLAND

NAD 83/95

+70.00
R\W
35.00

+90.00
R\W
35.00

15–2

2 TONS CLASS 'B'
RIP RAP WITH
7 S.Y. FILTER FABRIC

PES
INV = 2701.10

SITE 19

PDE

8"IM

18"

8" CMP

REMOVE HEADWALL

2GI–A

15–1

+50.00
R\W
35.00

N45°00'00"E
218.0'
EIP

ROCK HW

+70.00
R\W
35.00

TOP = 2707.70
INV = 2702.70
D = 5.00'

N45°00'00"E
200.00'

BLK WALL

JACK PETREE AND WIFE ANN PETREE
DB 75 PG 54

54

CONC

CONC

172

G

SEPTIC TANK

SS

WD TIMBERS

BLK WALL

373.76'
N61°59'43"W

REMOVE
12" RCP
18"

15–3

+05.00
R\W
35.00

Sta. 145+66.13

2 TONS CLASS 'B'
RIP RAP WITH
7 S.Y. FILTER FABRIC

+35.00
R\W
40.00

INV = 2699.36

15–5

PES

PDE

REMOVE

18"

REMOVE HEADWALL

2GI–D

15–4

+25.00
R\W, 35'

TOP = 2703.16
INV = 2700.99
D = 2.17'

145+86.00
61.00

+80.00
R\W
40.00

66.17'
N88°43'06"W

128.99'
S88°43'06"E

PUE

PUE

S

REBAR

N28°42'42"E
5.79'

REBAR & CAP

145+98.50
63.00

145+93.00
93.00

145+82.00
92.00

0 20 40 60 80

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$
$$$$$$FILENAME$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 54
FOR -Y9- & -Y10- PROFILES SEE SHEET 70
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 24 of 93

NAD 83/95

-Y9-
-Y9-POT Sta. 10+00.00
N 22° 41' 21.7" W
-Y9-PC Sta. 10+74.92
PI Sta 11+35.56
Δ = 64° 50' 10.4" (RT)
D = 60° 00' 00.0"
L = 108.06'
T = 60.64'
R = 95.49'
-Y9-PT Sta. 11+82.98
N 42° 08' 48.7" E
-Y9-PC Sta. 11+92.09
PI Sta 12+16.82
Δ = 19° 35' 23.8" (RT)
D = 40° 00' 00.0"
L = 48.97'
T = 24.73'
R = 143.24'
-Y9-PT Sta. 12+41.06
N 61° 44' 12.4" E
-Y9-POT Sta. 12+67.5=
-L-POC Sta. 182+93.02

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground
Min. D= 1 Ft.
B= 2 Ft.
-L- STA. 187+70 LT
EST. 5 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow, 20H, 6H, 2', 0.5' Min., 1.0' Max., GI etc.
S=Ditch Slope
℄ Proposed Ditch

63
THE REBA E. BLEVINS REVOCABLE LIVING TRUST
DB 251 PG 825
DB 251 PG 827
DB 251 PG 831

64
THE REBA E. BLEVINS REVOCABLE LIVING TRUST
DB 251 PG 825
DB 251 PG 827
DB 251 PG 831

65
CHERRY LANE VOLUNTEER FIRE DEPARTMENT
DB 108 PG 770
DB 150 PG 89

66
EDITH BILLINGS
DB 74 PG 306

67
JOE F. MCKNIGHT AND JANET MCKNIGHT
DB 257 PG 679

69
F. A. MCKNIGHT AND JANIE W. MCKNIGHT
DB 67 PG 373
STANDARD BASE DITCH
-L- STA. 187+70 LT
DDE = 5 CY
SEE DETAIL 4

MATCH LINE -L- STA. 177+00 SEE SHEET 17

MATCH LINE -L- STA. 189+00 SEE SHEET 19

5+00.00 POT
-BY11- 102

7+74.68 PINC
-BY11- 103

-Y9-POT Sta. 10+00.00

BEGIN EXPRESSWAY GUTTERING STA. 183+25

END EXPRESSWAY GUTTERING STA. 188+00

T5-213 PINC 7+79.45
ELEV=2685.21'
(BRIDGE SPIKE SET)

T5-214 PINC 9+09.70
ELEV=2686.97'
(BRIDGE SPIKE SET)

T5-215 PINC 10+40.78
ELEV=2688.50'
(BRIDGE SPIKE SET)

PCSta. 186+16.70

-Y9- POC STA. 181+31.64 =
-L- POC STA. 182+93.02

-Y10- POC STA. 10+00.00 =
-L- POC STA. 182+95.24

-BL- 37 171+11.74 PINC

-BL- 38 177+10.86 PINC

= -T5- 38 POT 5+00.00
ELEV=2682.63'
(TRAV. MON.)

8+31.42 POT
-BY12- 106

SITE 21

CHERRY LANE ROAD SR 1106

RETAIN

REMOVE CB

GRADE TO DRAIN
REMOVE CB

REMOVE

REMOVE 34" -84" CMP

24" CSP
18" GRADE TO HEADWALL

REMOVE 18" CMP

REMOVE HEADWALL

RET.WALL

REMOVE 8'X6' CULVERT & HW
CONNECT RET. WALL TO HEADWALLS

5 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC

3 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC

DO NOT DISTURB (AWNING)

PES

PUE

PL

TS / TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S / S — DENOTES IMPACTS IN SURFACE WATER

E / E — DENOTES EXCAVATION IN WETLAND

F / F — DENOTES FILL IN WETLAND

TF / TF — DENOTES TEMPORARY FILL IN WETLAND

-L-

PI Sta 178+35.30	PIs Sta 181+98.34	PI Sta 188+50.39
Δ = 24° 04' 03.0" (LT)	Θs = 4° 00' 00.0"	Δ = 9° 19' 37.3" (LT)
D = 4° 00' 00.0"	Ls = 200.00'	D = 2° 00' 00.0"
L = 601.69'	LT = 133.37'	L = 466.35'
T = 305.35'	ST = 66.70'	T = 233.69'
R = 1,432.39'		R = 2,864.79'

-Y10-
-Y10-POT Sta. 10+00.00=
-L-POC Sta. 182+95.24
N 72° 07' 15.3" E
-Y10-PC Sta. 10+34.73
PI Sta 10+95.41
Δ = 36° 21' 15.5" (RT)
D = 31° 00' 00.0"
L = 117.27'
T = 60.69'
R = 184.83'
-I0-PT Sta. 11+52.00
S 71° 31' 29.2" E
-Y10-POT Sta. 12+03.83

0 50 100 150 200

$$$$$$$$SYSTIME$$$$$
$$$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 54
FOR -Y9- & -Y10- PROFILES SEE SHEET 70
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 25 of 93

NAD 83/95

-Y9-
-Y9-POT Sta. 10+00.00
N 22° 41' 21.7" W
-Y9-PC Sta. 10+74.92
PI Sta 11+35.56
Δ = 64° 50' 10.4" (RT)
D = 60° 00' 00.0"
L = 108.06'
T = 60.64'
R = 95.49'
-Y9-PT Sta. 11+82.98
N 42° 08' 48.7" E
-Y9-PC Sta. 11+92.09
PI Sta 12+16.82
Δ = 19° 35' 23.8" (RT)
D = 40° 00' 00.0"
L = 48.97'
T = 24.73'
R = 143.24'
-Y9-PT Sta. 12+41.06
N 61° 44' 12.4" E
-Y9-POT Sta. 12+67.5=
-L-POC Sta. 182+93.02

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground, B
Min. D= 1 Ft.
B= 2 Ft.
-L- STA. 187+70 LT
EST. 5 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)
0.5' Min., 1.0' Max., Outside Ditch Traffic Flow, 20H, 10H, 2', GI etc., S
S=Ditch Slope
℄ Proposed Ditch

63
THE REBA E. BLEVINS REVOCABLE LIVING TRUST
DB 251 PG 825
DB 251 PG 827
DB 251 PG 831

64
THE REBA E. BLEVINS REVOCABLE LIVING TRUST
DB 251 PG 825
DB 251 PG 827
DB 251 PG 831

69
F. A. MCKNIGHT AND JANIE W. MCKNIGHT
DB 67 PG 373
STANDARD BASE DITCH
-L- STA. 187+70 LT
DDE = 5 CY
SEE DETAIL 4

67
JOE F. MCKNIGHT AND JANET MCKNIGHT
DB 257 PG 679

66
EDITH BILLINGS
DB 74 PG 306

CHERRY LANE VOLUNTEER FIRE DEPARTMENT
DB 0000 PG 770
DB 150 PG 89

5+00.00 POT
-BY11- 102

7+74.68 PINC
-BY11- 103

T5-213 PINC 7+79.45
ELEV=2685.21'
(BRIDGE SPIKE SET)

T5-214 PINC 9+09.70
ELEV=2686.97'
(BRIDGE SPIKE SET)

T5-215 PINC 10+40.78
(BRIDGE SPIKE SET)

8+31.42 POT
-BY12- 106

-BL- 37 171+11.74 PINC

-BL- 38 177+10.86 PINC

-BL- 38 POT 5+00.00
= -T5- 38 POT 5+00.00
ELEV=2682.63'
(TRAV. MON.)

-Y9- POT STA. 10+00.00
-L- POC STA. 182+93.02

-Y9- POT STA. 10+00.00=
-L- POC STA. 182+95.24

-Y10- POC STA. 10+00.00=
-L- POC STA. 182+95.24

-Y10-
-Y10-POT Sta. 10+00.00=
-L-POC Sta. 182+95.24
N 72° 07' 15.3" E
-Y10-PC Sta. 10+34.73
PI Sta 10+95.41
Δ = 36° 21' 15.5" (RT)
D = 31° 00' 00.0"
L = 117.27'
T = 60.69'
R = 184.83'
-10-PT Sta. 11+52.00
S 71° 31' 29.2" E
-Y10-POT Sta. 12+03.83

-L-
PI Sta 178+35.30
Δ = 24° 04' 03.0" (LT)
D = 4° 00' 00.0"
L = 601.69'
T = 305.35'
R = 1,432.39'

PIs Sta 181+98.34
Θs = 4° 00' 00.0"
Ls = 200.00'
LT = 133.37'
ST = 66.70'

PI Sta 188+50.39
Δ = 9° 19' 37.3" (LT)
D = 2° 00' 00.0"
L = 466.35'
T = 233.69'
R = 2,864.79'

MATCH LINE -L- STA. 177+00 SEE SHEET 17

MATCH LINE -L- STA. 189+00 SEE SHEET 19

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S DENOTES IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
F F DENOTES FILL IN WETLAND
TF TF DENOTES TEMPORARY FILL IN WETLAND

2004 / 2030 ADT
-Y10- BRUSH CREEK RD
38/69 40/69
1:1 1:1 1:2 1:2

2004 / 2030 ADT
-Y10- BRUSH CREEK RD
38/69 40/69
1:1 1:1 1:2

REMOVE CB
GRADE TO DRAIN
REMOVE CB
REMOVE
REMOVE 34" CMP
24" CSP (18 GAUGE MINIMUM)
18" CMP
REMOVE 18"
REMOVE HEADWALL
RET.WALL
REMOVE 8'X6' CULVERT & HW
CONNECT RET. WALL TO HEADWALLS
5 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC
RETAIN
DO NOT DISTURB (OWNING)
PES
SITE 21

0 50 100 150 200

$$$$$$$$SYSTIME$$$$$$
$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	18B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 26 of 93

NAD 83/95

CHERRY LANE VOLUNTEER FIRE DEPARTMENT
DB 108 PG 770
DB 150 PG 89

CHERRY LANE FIRE STA
ISBKD
UNABLE TO GET INV
ISFD

-Y9-11+50.00
30.28
181+95.00
R\W
181+80.00
R\W, 50.00

-Y9-12+00.00
30.25
183+92.00
30.00
183+58.00
R\W

185+31.12
30.00
185+23.27
25.00
+20.00
R\W, 50'
+50.00
R\W, 50'

183+48.00
R\W

181+86.00
30.00

-Y10-10+95.00
29.77

-Y10-10+65.00
30.28

184+00.00
CL 'II36'100RAP

PL
PC
PT
PCSta. 186+
PCSta. 183+31.64
PCSta. 181+31.64
RETAIN
EXISTING R/W
TC
BST
PUE
REBAR
EXISTING R/W
2GI-D
24"
24"CMP
24"CONC.
36"CMP
18"CMP
RET.WALL
CONC HDWL
48" WW
CB R 30
CB
JB
ISFD
SITE 21

18-1
18-2
18-3
18-4
18-5
18-6

REMOVE CB
GRADE TO DRAIN
REMOVE CB
REMOVE
REMOVE 34'-84" CMP
96" CSP (18 GUAGE MINIMUM)
5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC
REMOVE 8'X6' CULVERT & HW
CONNECT RET. WALL TO HEADWALLS

N 26° 04' 00.2" W
S46°15'42"W 15.4
S54°50'57"W 17.72'
S51°11'32"W 14.26'
S36°32'58"W 11.29'
S45°35'24"W 11.08'
S27°07'11"W 6.78'
S20°43'47"W 17.66'
N48°09'13"W
S22°19'58"W 63.02'
S27°19'50"W
S68°34'00"W
S60°00'00"E 224.

-Y10- POC STA.10+00.00 =
-L- POC STA.182+95.24

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

SYMBOLS SHEET
SIGNS SHEET
SIGNAGE SHEET

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 54
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

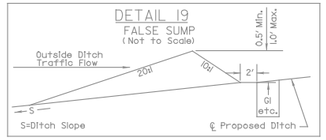
S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

DETAIL 19
FALSE SUMP
(Not to Scale)

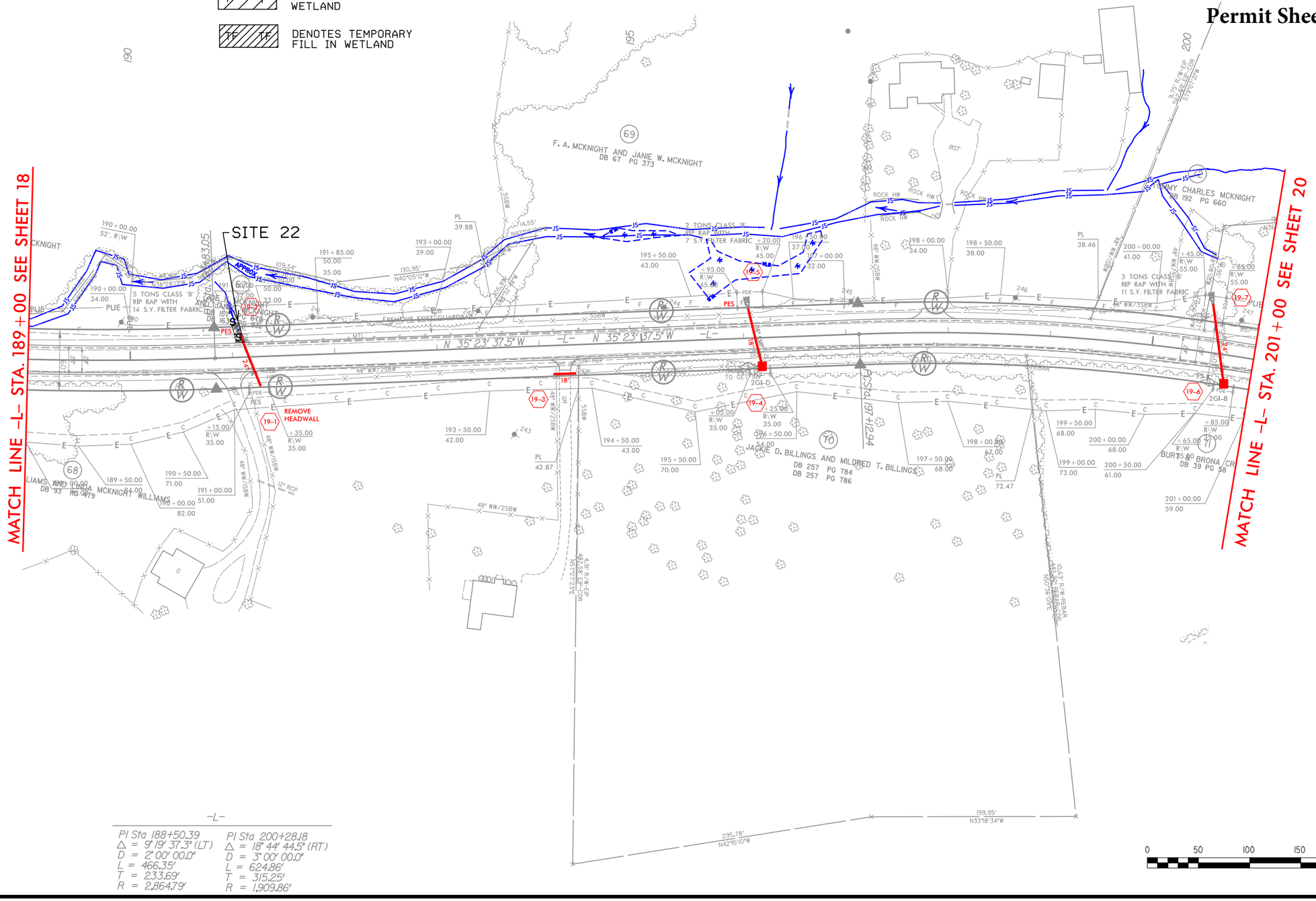


PROJECT REFERENCE NO.	SHEET NO.
R-3101	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 27 of 93



-L-

PI Sta 188+50.39	PI Sta 200+28.18
△ = 9°19' 37.3" (LT)	△ = 18° 44' 44.5" (RT)
D = 2° 00' 00.0"	D = 3° 00' 00.0"
L = 466.35'	L = 624.86'
T = 233.69'	T = 315.25'
R = 2,864.79'	R = 1,909.86'

$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 54
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

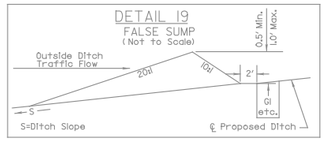
S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

DETAIL 19
FALSE SUMP
(Not to Scale)

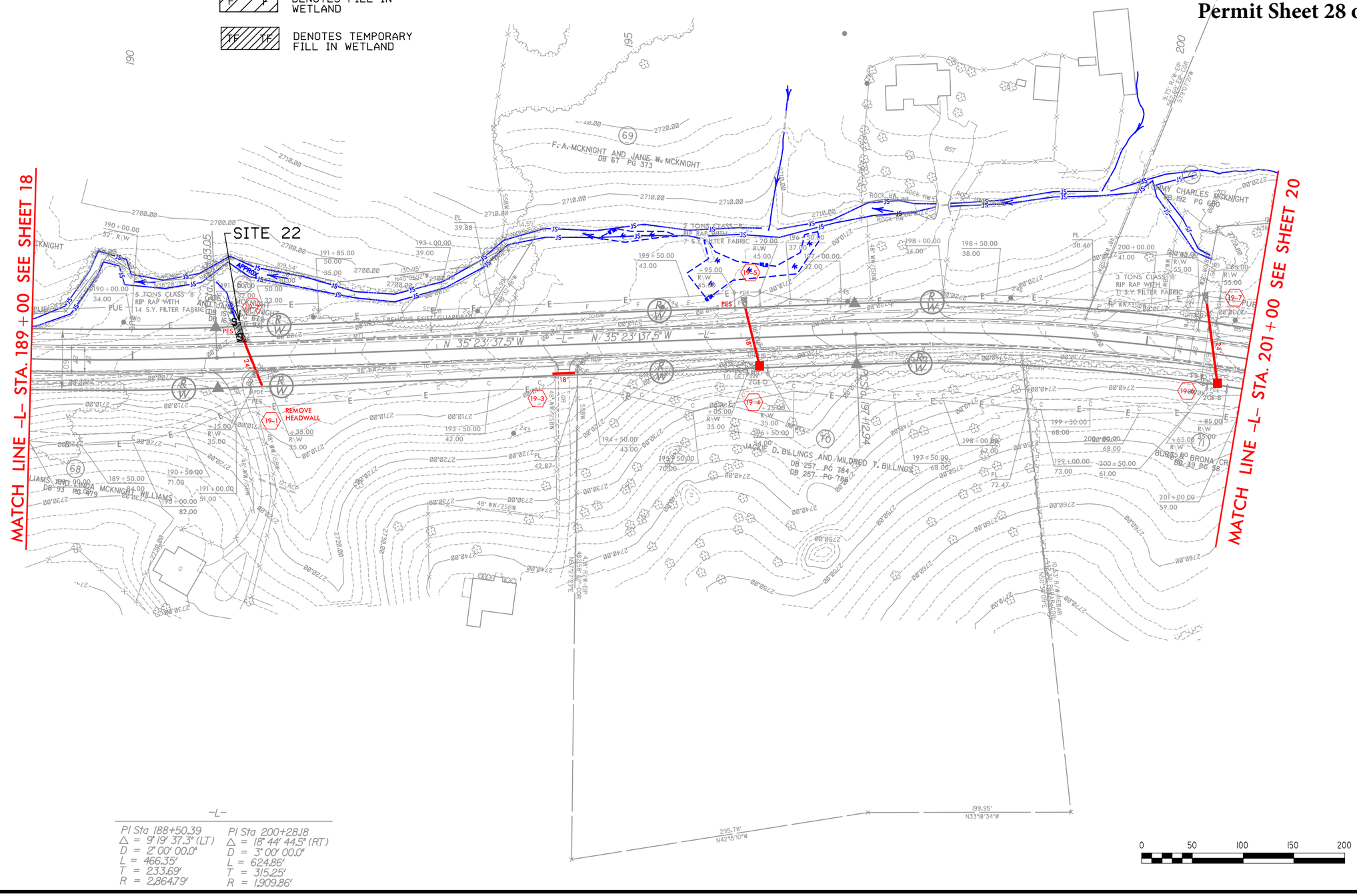


PROJECT REFERENCE NO.	SHEET NO.
R-3101	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 28 of 93

NAD 83/95



$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	19B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 29 of 93

S S DENOTES IMPACTS IN SURFACE WATER

NAD 83/95

MCKNIGHT

190+00.00
52', R\W

190+00.00
34.00

PUE

PUE

5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

SITE 22

APPROX

191+60.00
32.00

191+30.00
50.00
33.00

191+85.00
50.00
35.00

193+00.00
39.00

PL
39.88

JS

E

C

F

T

TC

PES

PDE

19-1

19-2

19-3

REMOVE HEADWALL

REMOVE EXIST. GUARDRAIL

24"

18"

48" WW/2SBW

48" WW/1SBW

12" RCP

5SBW

GR

N 35° 23' 37.5" W

+15.00
R\W
35.00

+35.00
R\W
35.00

189+50.00
84.00

190+50.00
71.00

191+00.00
51.00

190+00.00
82.00

193+50.00
42.00

PL
42.87

68

ILLIAMS
DB 93
LINDA MCKNIGHT WILLIAMS

0 20 40 60 80

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 30 of 93

MATCH LINE -L- STA. 213+00 SEE SHEET 20

MATCH LINE -L- STA. 225+00 SEE SHEET 22

-Y12REV-
PI Sta 11+86.24
Δ = 69° 30' 27.9" (RT)
D = 51° 00' 00.0"
L = 136.29'
T = 77.95'
R = 112.34'

PI Sta 13+56.60
Δ = 33° 20' 39.9" (RT)
D = 27° 15' 00.0"
L = 122.36'
T = 62.97'
R = 210.26'

-Y12REV- POT Sta. 10+00.00

-Y12REV- POT Sta. 12+00.00

WE 287.0
BEGIN CONSTRUCTION

-Y12REV- POT STA.15+07.01 = -L- POT STA.222+75.00

SITE 23

SOUTHERN REPAIR SERVICE, INCORPORATED
DB 115 PG 691
PB 4 PG 80

SANDRA VARELA
DB 261 PG 809
PB 4 PG 80

STEVIE MOXLEY
DB 266 PG 887

BILLY GENE BLEVINS, SR. AND BILLY GENE BLEVINS, JR.
DB 236 PG 379
DB 253 PG 136

THE BILLY GENE BLEVINS REVOCABLE LIVING TRUST
DB 249 PG 1433
DB 249 PG 1477
DB 249 PG 1480
DB 249 PG 1493

SOUTHERN REPAIR SERVICE, INCORPORATED
DB 115 PG 691
PB 4 PG 80

BARRY R. EDWARDS
DB 191 PG 201
PB 6 PG 58

SMITH TAYLOR
DB 18 PG 534

3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 16 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

REMOVE HEADWALL

CONC. ENDWALL

BORE AND JACK

LATERAL BASE DITCH
-L- STA. 213+00 TO 214+50 RT
SEE DETAIL 1

LATERAL BASE DITCH
-L- STA. 214+50 TO 215+50 RT
SEE DETAIL 1

LATERAL BASE DITCH
-L- STA. 215+50 TO 216+25 LT
SEE DETAIL 17

CUT DITCH
-L- STA. 219+00 TO 220+00 RT
SEE DETAIL 3

STANDARD BASE DITCH
-L- STA. 223+10 TO 223+60 LT
DDE = 180 CY
SEE DETAIL 4

-L-
PI Sta 211+67.63
Δ = 7° 08' 29.5" (LT)
D = 1° 00' 00.0"
L = 714.15'
T = 357.54'
R = 5,729.58'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

DETAIL 3
CUT DITCH
(Not to Scale)
Natural Ground, 2H, D, 4H or Flatter, Front Ditch Slope
Min. D= 1Ft.
-L- STA. 219+00 TO 220+00 RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, Natural Ground, B
Min. D= 1Ft.
B= 2 Ft. Type of Liner: Colr Fiber
-L- STA. 223+10 TO 223+60 LT
EST. 180 CU. YD. DDE

DETAIL 17
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, d, D, 2H, b, Fill Slope, Filter Fabric, B
*When B Is < 6.0'
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.
Type of Liner= Class 'I' Rip-Rap
-L- STA. 214+00 TO 214+50 RT
-L- STA. 215+50 TO 216+25 LT
EST. 41 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow, 20H, 10H, 0.5' Min., 1.0' Max., 2', CI etc.
S=Ditch Slope
℄ Proposed Ditch

2004 / 2030 ADT
-Y12REV- FOXFIRE ROAD
I-/I
I-/I-
I-/I
40/69
40/70

0 50 100 150 200

NOTES
FOR -L- PROFILE SEE SHEET 55
FOR -Y12REV- PROFILES SEE SHEET 71
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 31 of 93

-Y12REV-
PI Sta 11+86.24
Δ = 69° 30' 27.9" (RT)
D = 51° 00' 00.0"
L = 136.29'
T = 77.95'
R = 112.34'

PI Sta 13+56.60
Δ = 33° 20' 39.9" (RT)
D = 27° 15' 00.0"
L = 122.36'
T = 62.97'
R = 210.26'

-Y12REV- POT Sta. 10+00.00

WE 287.0
BEGIN CONSTRUCTION
-Y12REV- POT Sta. 12+00.00

MATCH LINE -L- STA. 213+00 SEE SHEET 20

MATCH LINE -L- STA. 225+00 SEE SHEET 22

SITE 23
STANDARD BASE DITCH
-L- STA. 223+10 TO 223+60 LT
DDE = 180 CY
SEE DETAIL 4

SITE 23
223+83.00

-Y12REV- POT STA. 15+07.01 =
-L- POT STA. 222+75.00

-Y12REV- POT STA. 2+25.25

REMOVE HEADWALL

CONC. ENDWALL

BORE AND JACK

CUT DITCH
-L- STA. 219+00 TO 220+00 RT
SEE DETAIL 3

LATERAL BASE DITCH
-L- STA. 213+00.00 TO 214+50 RT
SEE DETAIL 1

LATERAL BASE DITCH
-L- STA. 214+50 TO 215+50 RT
SEE DETAIL 1

LATERAL BASE DITCH
-L- STA. 215+50 TO 216+25 LT
SEE DETAIL 17

3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 16 S.Y. FILTER FABRIC

3 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

SOUTHERN REPAIR SERVICE, INCORPORATED
DB 115 PG 691
PB 4 PG 80

SANDRA VARELA
DB 261 PG 603
PB 4 PG 80

KENNETH TAYLOR
PG 934

THE BILLY GENE BLEVINS TRUST
REVOCABLE LIVING TRUST
DB 249 PG 1433
DB 243 PG 1433

BILLY GENE BLEVINS SR.
AND BILLY GENE BLEVINS JR.
BB 236 PG 379
DB 253 PG 136

STEVIE MOXLEY
DB 266 PG 887

SOUTHERN REPAIR SERVICES INCORPORATED
DB 115 PG 691
PB 4 PG 80

BARRY EDWARDS
DB 1054 PG 55
PB 6 PG 56

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

-L-
PI Sta 211+67.63
Δ = 7° 08' 29.5" (LT)
D = 1° 00' 00.0"
L = 714.15'
T = 357.54'
R = 5,729.58'

DETAIL 3
CUT DITCH
(Not to Scale)

-L- STA. 219+00 TO 220+00 RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

Min. D= 1Ft.
B= 2 Ft. Type of Liner: Colr Fiber

-L- STA. 223+10 TO 223+60 LT
EST. 180 CU. YD. DDE

DETAIL 17
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.
*When B Is < 6.0'
Type of Liner= Class 'I' Rip-Rap

-L- STA. 214+00 TO 214+50 RT
-L- STA. 215+50 TO 216+25 LT
EST. 41 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)

S=Ditch Slope

2004 / 2030 ADT
-Y12REV- FOXFIRE ROAD
I-/I
I-/I-
I-/I
40/69 40/70

0 50 100 150 200

NOTES

FOR -L- PROFILE SEE SHEET 55
FOR -Y12REV- PROFILES SEE SHEET 71
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$DGN$$$$$$$$$$$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	21B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 32 of 93

-Y12REV- POT STA.15+07.01 =
-L- POT STA.222+75.00

NAD 83/95

219+55.00
55.00, 70.00

+55.00
R\W
55.00

+35.00
R\W
55.00

5 TONS CLASS 'B'
RIP RAP WITH
16 S.Y. FILTER FABRIC

21-4

220+00.00
55.00, 42.00

221+65.00
30.00

221+72.46
R\W

13+50.00
R\W, 30'

13+72.00
R\W
5 TONS CLASS 'B'
RIP RAP WITH
14 S.Y. FILTER FAB

14+10.00
R/W

21-5

223+59.50
56.66
224+00.00
40.00 & R/W

223+83.00
30.00

SITE 23

BILLY GENE BLEVINS, SR.
AND BILLY GENE BLEVINS, JR.
DB 236 PG 379
DB 253 PG 136

BLEVINS
NG TRUST
1477
1490
1493

GRAU 350

N 23° 47' 22.5" W

-L-

MTL

30" REMOVE HEADWALL

24" CMP

24" RCP

REMOVE 12" RCP

FS
2GI-D

24"
2GI-A

REMOVE DI

PUE

21-3

21-6

21-7

224+00.00
40.00, 30.00

+00 RT

CONC. ENDWALL

PL
65.00

222+48.00
65.00

SCRUB

REBAR

MTL

BARRY R. EDWARDS
DB 192 PG 201
PB 6 PG 58

PRIVATE R/W EASEMENT AS IN PB 6 PG 58

PARADISE LANE

15" CMP

24" CMP

EXISTING R/W

ROCK R/W

PKNAIL

S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

8/17/99

REVISIONS

12/19/2011 ADDED NOTE TO PARCEL 99 FOR DRIVEWAY TIE; ADDED NOTED TO SEAL AND ABANDON WELL ON PARCEL 099 STA 234+35 RT

$$$$$$$SYSTIME$$$$$$$
$$$$$$$

8/17/99

REVISIONS

12/19/2011 ADDED NOTE TO PARCEL 99 FOR DRIVEWAY TIE; ADDED NOTED TO SEAL AND ABANDON WELL ON PARCEL 099 STA 234+35 RT

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$
$$$$$$$$DGN$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	22B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 35 of 93

NAD 83/95

5 TONS CLASS 'B'
RIP RAP WITH
14 S.Y. FILTER FABRIC

SITE 25

22-4

PES

24"

REMOVE

2GI-B

2GI-A

22-2

22-3

22-5

15"

REMOVE
HEADWALL

SEAL AND
ABANDON WELL

RETAIN EXISTING DRIVE

TIE TO EXISTING DRIVE TOP

SITE 24

232+74.00
54', R\W

PL
50.00

PL
54.71

233+55.00
63', 98'

233+65.00
99.00

233+66.00
63.00

235+94.00
83', 118'

236+06.00
81', 118'

TAMERA M. JACKSON AND ROBERT L
DB 266 PG 374

ETTA EVANS
DB 266 PG 468

CHERRY LANE VOLUNTEER
FIRE DEPARTMENT
DB 108 PG 770
DB 150 PG 89

DONNA L. SHUMATE AND DAVID CHRIS WALKER
DB 227 PG 710

DAVID L. DALTON AND PAMELA J.
DB 267 PG 286

ELGIN JONE

GRAU 350

BILL BOARD

ISBKD

BK WALL

WD WALL

PUE

JS

S

RW

97 100 101 98 99

S41°29'58"W 217.13'
N36°15'23"W 71.61'
N39°40'23"W 95.68'
N42°05'25"W
S51°40'37"W 40.00'
N74°25'25"E 189.17'

DENOTES IMPACTS IN
SURFACE WATER

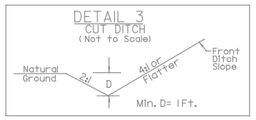
0 20 40 60 80

8/17/99

NOTES

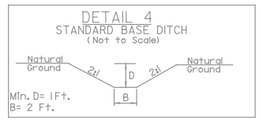
FOR -L- PROFILE SEE SHEET 56
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 239+60 TO 241+00 RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 239+10 TO 239+60 RT
EST. 8 CU. YD. DDE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 36 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

NAD 83'95

MATCH LINE -L- STA. 237+00 SEE SHEET 22

MATCH LINE -L- STA. 249+00 SEE SHEET 24

SITE 27

SITE 26

END CONSTRUCTION
BEGIN MILL AND RESURFACE
POS Sta. 246+50.00 -L-

REMOVE HEADWALL

STANDARD BASE DITCH
-L- STA. 239+10 TO 239+60 RT
DDE = 8 CY
SEE DETAIL 4

CUT DITCH
-L- STA. 239+60 TO 241+00 RT
SEE DETAIL 3

POND
WE 27163

5 TONS CLASS 'B' RIP RAP WITH 16 S.Y. FILTER FABRIC

PLUG AND ABANDON

ROBERT L. JACKSON, JR. DB 374

CARL DEAN BLEVINS DB 135 PG 184

BILLY GENE BLEVINS SR. AND BILLY GENE BLEVINS, JR. DB 236 PG 379 DB 253 PG 1136

THE BILLY GENE BLEVINS AND BILLY GENE BLEVINS REVOCABLE TRUST DB 253 PG 1134 DB 253 PG 1142

PETTY LOU JONES DB 319

ELEVATION = 2768.00'
E 1485244.
BL STATION 238+45.00 -L- RIGHT

-L-

PI Sta 237+22.38	PIs Sta 246+49.19	PI Sta 250+04.16
△ = 43° 01' 07.4" (LT)	Θs = 3° 00' 00.0"	△ = 17° 10' 10.9" (RT)
D = 3° 30' 00.0"	Ls = 200.00'	D = 3° 00' 00.0"
L = 1,229.11'	LT = 133.35'	L = 572.32'
T = 645.15'	ST = 66.68'	T = 288.32'
R = 1,637.02'		R = 1,909.86'

0 50 100 150 200

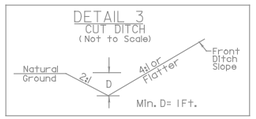
$$$$SYSTIME$$$$
$$$$USERNAME$$$$

8/17/99

NOTES

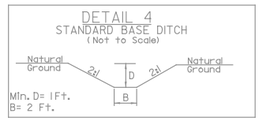
FOR -L- PROFILE SEE SHEET 56
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 239+60 TO 241+00 RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 239+10 TO 239+60 RT
EST. 8 CU. YD. DDE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 37 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

NAD 83'95

MATCH LINE -L- STA. 237+00 SEE SHEET 22

MATCH LINE -L- STA. 249+00 SEE SHEET 24

SITE 27

SITE 26

END CONSTRUCTION
BEGIN MILL AND RESURFACE
POS Sta. 246+50.00 -L-

REMOVE HEADWALL

PLUG AND ABANDON

CUT DITCH
-L- STA. 239+60 TO 241+00 RT
SEE DETAIL 3

STANDARD BASE DITCH
-L- STA. 239+10 TO 239+60 RT
DDE = 8
SEE DETAIL 4

POND
WE 27163

ROBERT L. JACKSON, JR.

CARL DEAN BLEVINS
DB 135 PG 184

BILLY GENE BLEVINS SR. AND BILLY GENE BLEVINS, JR.
DB 236 PG 379
DB 253 PG 1136

THE BILLY GENE BLEVINS AND BILLY LYNN BLEVINS REVOCABLE TRUST
GENE BLEVINS, JR.
DB 253 PG 1134
1142

PETTY LOU JONES

-L-

PI Sta 237+22.38	PIs Sta 246+49.19	PI Sta 250+04.16
△ = 43° 01' 07.4" (LT)	Θs = 3° 00' 00.0"	△ = 17° 10' 10.9" (RT)
D = 3° 30' 00.0"	Ls = 200.00'	D = 3° 00' 00.0"
L = 1,229.11'	LT = 133.35'	L = 572.32'
T = 645.15'	ST = 66.68'	T = 288.32'
R = 1,637.02'		R = 1,909.86'

0 50 100 150 200

$$$$SYSTIME$$$$
$$$$ON$$$$
$$$$FILENAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	23B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 38 of 93

JACKSON AND ROBERT L. JACKSON, JR.
DB 266 PG 374

NAD 83/95

SITE 27
+85.00
40.00
30.00

+10.00
40.00
30.00
5 TONS CLASS 'B' RIP RAP WITH
23-3 16 S.Y. FILTER FABRIC

242+00.00
30.00, 26.00

GRAU 350

PES

PLUG AND ABANDON

SITE 26

23-1

15"

30"

GRAU 350

REMOVE HEADWALL

CONC ENDWALL
+59.00
60.00

23-2

BORE AND JACK

240+00.00
+80.00
30', 60', 65'

240+92.00
60.00

240+97.00
95.00

CUT DITCH
-L- STA. 239+60 TO 241+00 RT
SEE DETAIL 3

241+20.00
65.00

241+08.00
94.00

242+00.00
95.00

CARL DEAN BLEVINS
DB 135 PG 184

TY LOU JONES
379

237+96.00
73.00

STANDARD BASE DITCH
-L- STA. 239+10 TO 239+60 RT
DDE = 8 CY
SEE DETAIL 4

239+10.00
30', 60'

238+59.00
60.00

238+37.00
86.00

POND
WE 2776.3

ISFD

ISBLK BUS/S

48" WW/ISBW

2" HDPE

24" CMP

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES EXCAVATION IN WETLAND

0 20 40 60 80

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 58
FOR -Y15- PROFILES SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 39 of 93

DETAIL 19
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20H
10H
2'
0.5' Min. 1.0' Max.
6H etc.
S
S=Ditch Slope
℄ Proposed Ditch

-Y15-
PI Sta 12+38.10
△ = 35° 48' 31.2" (LT)
D = 11° 00' 00.0"
L = 325.53'
T = 168.28'
R = 520.87'

-Y15-POT Sta. 10+00.00
-Y15-PC Sta. 10+69.82
NAD 83/95
-Y15-PT Sta. 13+95.35
-L-POC Sta. 282+74.95
-Y15-POT Sta. 15+00.22=
PT Sta. 13+85.83

GEORGE WOODRUFF AND MARY WOODRUFF
DB 55 PG 221
DB 72 PG 437

SITE 28

MATCH LINE -L- STA. 273+00 SEE SHEET 25
MATCH LINE -L- STA. 285+00 SEE SHEET 27

N 42° 29' 52.1" W
N 25° 46' W
N 63° 52' W

2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC
REMOVE HEADWALL
GRADE TO DRAIN
REM. DI
BORE & JACK
RETAIN
CONC. HEADWALL
12" RCP
18" RCP
24" RCP
36" RCP
48" RCP
48" CMP
84" CMP
2GI-D
2GI-A
PDE
ISFD
ISBLK
ISBW
ISBM
4SBW
SCRUB
DECK
HTR
GR
MTL
GRAU 350
PUE
DUE
PES
-L-
-Y15-

JAMES L. WOODRUFF DB 268 PG 932 DB 268 PG 581 PLAT BK 27 PG 164
JAMES CLYDE HINCHER AND JANE HINCHER DB 180 PG 971
JOE F. MCKNIGHT AND JANET MCKNIGHT DB 685 PG 931 DB 685 PG 679
CALVIN A. MELLOTT DB 1166 PG 1240

2004 / 2030 ADT
-Y15- PULL TAIL RD
3/5
1/2
2/3
43/81
44/82

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S DENOTES IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
F F DENOTES FILL IN WETLAND
TF TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

-L-
PI Sta. 281+24.78
△ = 3° 55' 02.3" (RT)
D = 0° 45' 00.0"
L = 522.31'
T = 261.26'
R = 7,639.44'

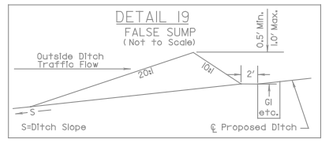
$$$$$$$SYSTIME$$$$$$
$$$$$$$USERNAME$$$$$$
$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 58
FOR -Y15- PROFILES SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

DETAIL 19
FALSE SUMP
(Not to Scale)



-Y15-
PI Sta 12+38.10
△ = 35° 48' 31.2" (LT)
D = 11° 00' 00.0"
L = 325.53'
T = 168.28'
R = 520.87'

-Y15-POT Sta. 10+00.00

-Y15-PC Sta. 10+69.82

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-3101	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 40 of 93

GEORGE WOODRUFF AND MARY WOODRUFF
DB 55 PG 221
DB 72 PG 437

MATCH LINE -L- STA. 273+00 SEE SHEET 25

MATCH LINE -L- STA. 285+00 SEE SHEET 27

SITE 28

-Y15-PT Sta. 13+95.35

-Y15-POT Sta. 15+00.22=
-L-POC Sta. 282+74.95

-Y15-PT Sta. 15+63.63

JOE F. MCKNIGHT AND JANET MCKNIGHT
DB 183 PG 931
DB 187 PG 879

JAMES CLYDE HINCHER AND JANE HINCHER
DB 180 PG 911

CALVIN A. MELLOTT
DB 186 PG 1200

JAMES L. WOODRUFF
DB 268

REMOVE HEADWALL

GRADE TO DRAIN

REM. DI

BORE & JACK

RETAIN

2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC

CONC CUTWALL

2004 / 2030 ADT
-Y15- PULL TAIL RD
3/5
1/2
2/3
43/81
44/82

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

-L-
PI Sta 281+24.78
△ = 3° 55' 02.3" (RT)
D = 0° 45' 00.0"
L = 522.31'
T = 261.26'
R = 7,639.44'

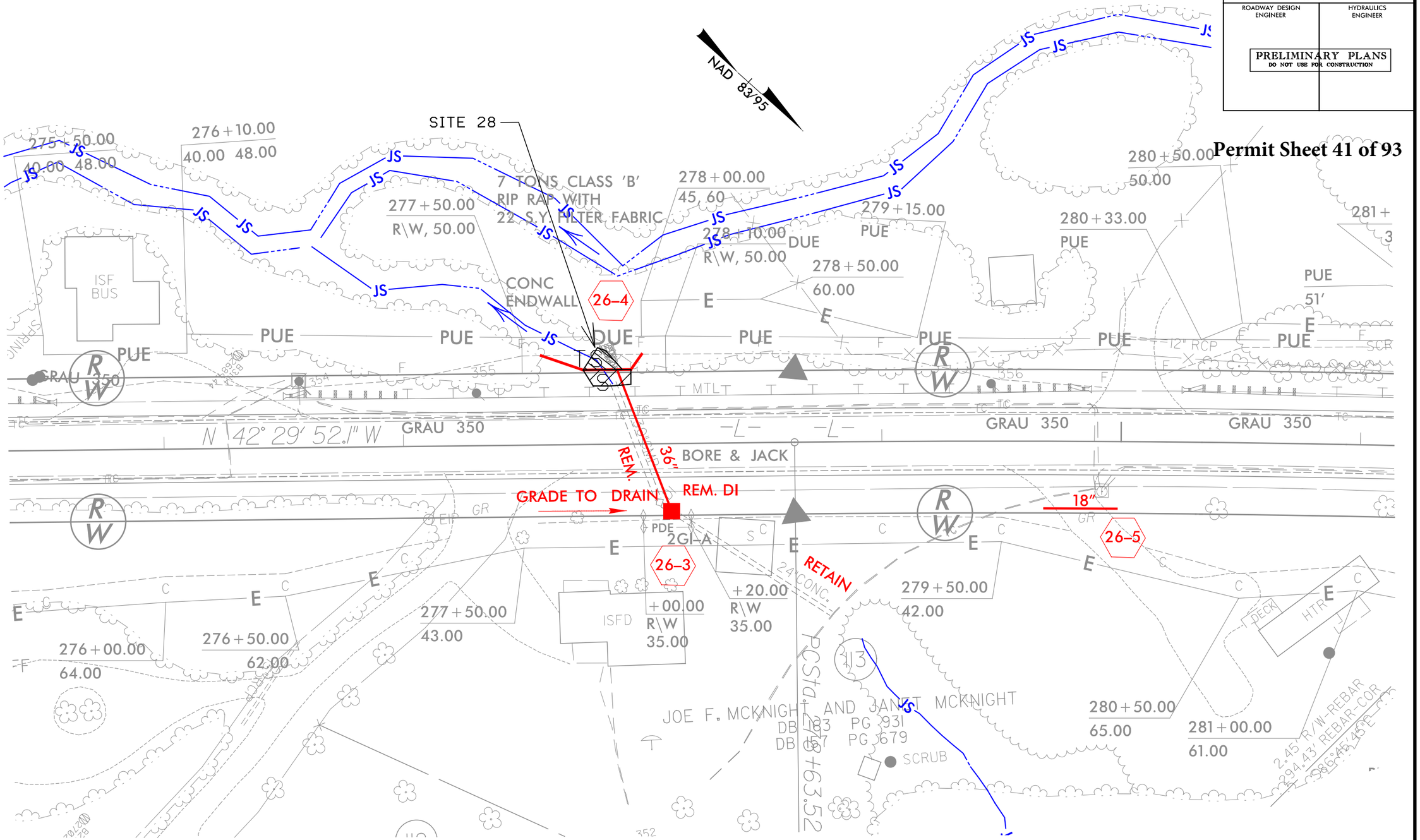
$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	26B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 41 of 93



S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

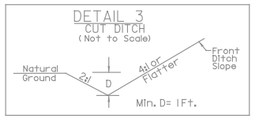
$$$$$$SYSTIME$$$$$$
$$$$$$FILENAME$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 58
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 291+35 TO 292+00 RT

PROJECT REFERENCE NO.	SHEET NO.
R-3101	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 42 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

MATCH LINE -L- STA. 285+00 SEE SHEET 26

MATCH LINE -L- STA. 297+00 SEE SHEET 28

SITE 29

SITE 30

WILLIAM A. HASH AND WANDA HASH DB 93 PG 602 PB PG 61

BRIAN W. RAINE DB 168 PG 890 PB 2 PG 61

ELUGENE E. EDWARDS DB 156 PG 115

SCOTT STOKER AND SHANE STOKER DB 258 PG 291

CLICK STOKER AND LORRAINE M. STOKER SEE DB 96 PG 236 DB 74 PG 473 PB 1 PG 85 PB 2 PG 61

DUKE POWER R/W

SCRUB

GRAU 350

N 38°34'49.8" W

N 58°30'37.0" W

N41°52'37"E 1950.34'

S41°58'55"W 319.00'

N45°06'05"W 198.44'

CONC. ENDWALL

REMOVE HEADWALL

3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC

-L-

PI Sta 291+20.61
Δ = 20° 03' 43.2" (LT)
D = 3° 30' 00.0"
L = 573.20'
T = 289.56'
R = 1,637.02'

PI Sta 296+95.41
Δ = 4° 11' 08.1" (LT)
D = 1° 00' 00.0"
L = 418.56'
T = 209.37'
R = 5,729.58'

0 50 100 150 200

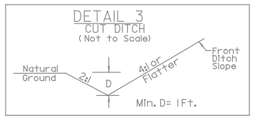
$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 58
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 291+35 TO 292+00 RT

PROJECT REFERENCE NO.	SHEET NO.
R-3101	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 43 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

MATCH LINE -L- STA. 285+00 SEE SHEET 26

MATCH LINE -L- STA. 297+00 SEE SHEET 28

SITE 29

SITE 30

WILLIAM A. HASH AND THOMAS HASH DB 93 PG 602 PB 2 PG 61

BRIAN W. RAINE DB. 168 PG 890 PB 2 PG 61

ELIZABETH ANN HASH DB 288 PG 304

ELIZABETH ANN HASH DB 288 PG 304

ELIZABETH ANN HASH DB 288 PG 304

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	27B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 44 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

NAD 83/95

PT Sta. 288+31.04

288+50.00
45.00

289+50.00
45.00

290+50.00
39.00

5 TONS CLASS 'B'
RIP RAP WITH
14 S.Y. FILTER FABRIC

292+50.00
30.00

293+50.00
32.00

294+00.00
34.00

PL
33.12

PL
33.54

PT Sta.

136.47'
S50°37'47"W

2
RII
7

27-7

27-5

+05.00
R\W
45.00

+30.00
R\W
45.00

366

369

370

WLB

PES

PDE

SITE 29

GRAU 350

24"

15"

SITE 30

27-3

27-4

CONC.
ENDWALL

+30.00
R\W
50.00

+50.00
R\W
50.00

EDWARDS
PG 115
-50.00

289+00.00
60.00

289+50.00
47.00

289+50.00
48.00

291+00.00

PL
46.67

CONC 40.00

GR

N47°02'23"E
265.50

117

SCOTT STOKER AND SHANE STOKER
DB 258 PG 291

N37°53'54"E
269.91'

291+50.00
61.00

292+00.00
44.00

118

GUT DITCH
STA 291+35 TO 292+00 RT
SEE DETAIL 3

292+50.00
65.00

LORRAINE M. STOKER
DB 38 PG 236
DB 74 PG 473
PB 1 PG 65
PB 2 PG 61

293+00.00
72.00

294+00.00
60.00

20' 10' 0' 20' 40'

$$$$$$$SYTWES$$$$
$$$$$$$USERNAME$$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 59
FOR -Y16REV- PROFILES SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 45 of 93

SITE 31
SITE 32
SITE 33
SITE 34

MATCH LINE -L- STA. 297+00 SEE SHEET 27

MATCH LINE -L- STA. 309+00 SEE SHEET 29

-Y16-PC Sta. 10+00.00=
-L-POT Sta. 302+08.49

POT Sta. 299+01.59

POT Sta. 303+68.38

3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 16 S.Y. FILTER FABRIC

SPECIAL DITCH GRADE

REMOVE HEADWALL

30" CSP W/ELBOWS

GRADE TO DRAIN

SPRING BOX

119 BRIAN W. RAINES DB 168 PG 890 PB 2 PG 61

120 VIRGINIA ST. FEAZELL AND DAVID FEAZELL DB 98 PG 284 DB 98 PG 240 PB 2 PG 61

121 WARD CARL JOHNSON AND FRANCIS MASHBURN JOHNSON DB 131 PG 476

122

123 HASH HEIRS DB AND PG NUMBER UNKNOWN

124 MARY SUE JOHNSON AND PEARSON F. JOHNSON DB 141 PG 500

125 FRANCES Y. SQUIRES, ET AL DB 272 PG 284 PB 9 PG 346

SR 1407 STOKER ROAD (BST)

N 62° 49' 41" W

2004 / 2030 ADT
-Y16REV- STOKER RD
44/82 47/87
1/3 4/8
5/11

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

-L-
PI Sta 306+58.09
Δ = 22° 52' 06.1" (RT)
D = 4° 00' 00.0"
L = 571.71'
T = 289.71'
R = 1,432.39'

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$
$$$$$$FILENAME$$$$$$

8/17/99

NOTES

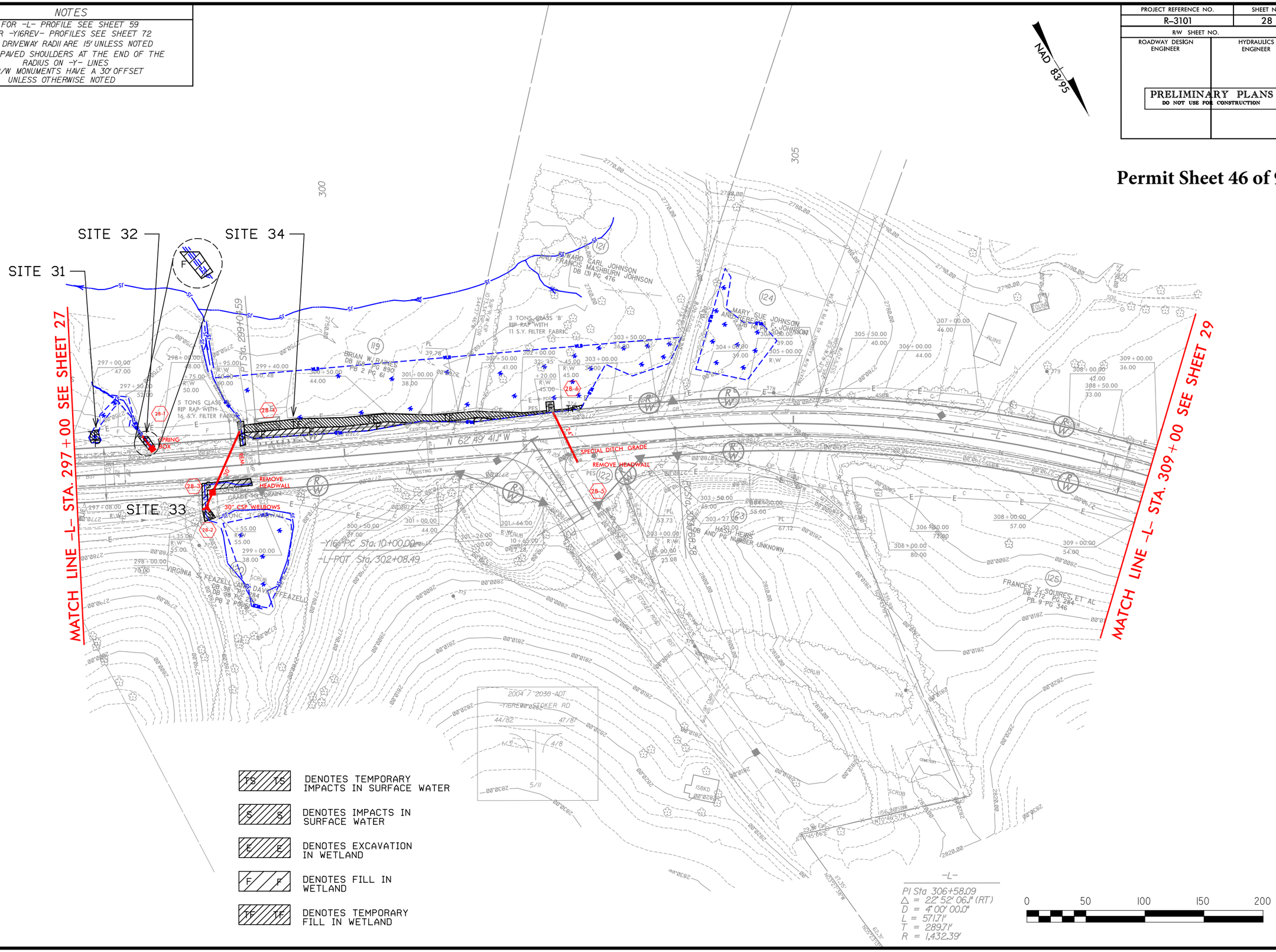
FOR -L- PROFILE SEE SHEET 59
FOR -Y16REV- PROFILES SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 46 of 93



TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

$$$$$$$$SYSTIME$$$$$$
$$$$$$$$USERNAME$$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	28B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 47 of 93

NAD 83/95

297+00.00
47.00

SITE 31

297+50.00
52.00

SITE 32

298+00.00
48.00

+75.00
R\W
50.00

+95.00
R\W
50.00
60.00

PT Sta. 299+04.59

299+40.00
60, 48

300+50.00
44.00

301+00.00
38.00

PL
39.78

301+50.00
41.00

302+00.00

32' 45'

+45.00
R\W
45.00

+20.00
R\W
45.00

303-

119
BRIAN W. RAINES
DB 168 PG 890
PB 2 PG 61

S44°37'46"W
103.34' EP-COR

9.8' R/W-EP

3 TO
RIP R
11 S.Y. FILTER FABRIC

5 TONS CLASS B'
RIP RAP WITH
16 S.Y. FILTER FABRIC

28-1

28-4

28-6

SITE 34

SPRING
BOX

REM.

30"

24"

REMOVE
HEADWALL

2GI-D

GRADE TO DRAIN

30" CSP W/ELBOWS

SLONC "L" ENDWALL

28-3

28-2

SITE 33

297+08.00
R\W

+35.00
R\W
55.00

+55.00
R\W
55.00

299+00.00
38.00

298+00.00

372

374

EXISTING R/W

N 62° 49' 41.1" W

NAIL

ROCK

SCRUB

300+50.00
77.00

301+00.00
44.00

301+26.00
30.00

301+66.00
R\W

10+65.00
27.28

-Y16-PC Sta. 10+00.00=

-L-POT Sta. 302+08.49

Y16REV

N 25° 00' 00.1" W

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TF TF DENOTES TEMPORARY FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

0 20 40 60 80

$$$$$SYTWES$$$$
$$$$$SZONES$$$$$
$$$$$SFRAMES$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 59
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 48 of 93

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2H, D, 2H, Natural Ground, B
Min. D= 1Ft.
B= 2 Ft.

-L- STA. 310+15 TO 310+40 LT
-L- STA. 317+40 LT
EST. 9 CY DDE

DETAIL 19
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 20H, 10H, 2', 0.5' Min., 1.0' Max., S, S=Ditch Slope, ℄ Proposed Ditch

NAD 83/95

SITE 36
SITE 37
SITE 38
SITE 39

MATCH LINE -L- STA. 309+00 SEE SHEET 28

MATCH LINE -L- STA. 321+00 SEE SHEET 30

STANDARD BASE DITCH
-L- STA. 310+15 TO 310+40 LT
DDE = 5 CY
SEE DETAIL 4

STANDARD BASE DITCH
-L- STA. 317+40 LT
DDE = 4 CY
SEE DETAIL 4

3 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 38.00 S.Y. FILTER FABRIC

REMOVE DI
REMOVE HEADWALL
REMOVE HEADWALL
CONC ENDWALL

LEWIS J. WASH DB 157 PG 956
SUSAN M. BILLINGS DB 257 PG 827
DAVID L. JONES DB 271 PG 1058 PB 9 PG 346
BILLY GENE BLEVINS JR. AND STEPHANIE C. BLEVINS DB 272 PG 284 PB 9 PG 346
CAROLINA CASCADES DB 5035 PG 1427

BM13
N 991457.
E 400304.
ELEVATION= 2767.35'
BL STATION 312+00.23' LEFT

PCCSta. 309+40.09
PTSta. 313+40.09

PI Sta 306+58.09
△ = 22° 52' 06.1" (RT)
D = 4° 00' 00.0"
L = 571.71'
T = 289.71'
R = 1,432.39'

PI Sta 311+40.34
△ = 7° 00' 00.0" (RT)
D = 1° 45' 00.0"
L = 400.00'
T = 200.25'
R = 3,274.04'

PI Sta 321+52.45
△ = 13° 50' 03.4" (LT)
D = 3° 00' 00.0"
L = 461.14'
T = 231.70'
R = 1,909.86'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S DENOTES IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
F F DENOTES FILL IN WETLAND
TF TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

$$$$$$$$SYSTIME$$$$$
$$$$$$$$USERNAME$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

8/17/99

NOTES

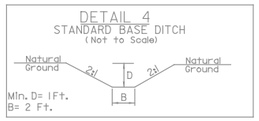
FOR -L- PROFILE SEE SHEET 59
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

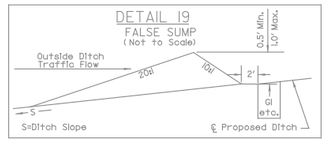
Permit Sheet 49 of 93

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 310+15 TO 310+40 LT
-L- STA. 317+40 LT
EST. 9 CY DDE

DETAIL 19
FALSE SUMP
(Not to Scale)



NAD 83/95

SITE 36
SITE 37
SITE 38
SITE 39

MATCH LINE -L- STA. 309+00 SEE SHEET 28

MATCH LINE -L- STA. 321+00 SEE SHEET 30

STANDARD BASE DITCH
-L- STA. 310+15 TO 310+40 LT
DDE = .5 CY
SEE DETAIL 4

STANDARD BASE DITCH
-L- STA. 317+40 LT
DDE = .4 CY
SEE DETAIL 4

5 TONS CLASS 'B' RIP RAP WITH 38.00 S.Y. FILTER FABRIC

3 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC

REMOVE HEADWALL

CONC ENDWALL

LEWIS JOSEPH DASH DB 157 PG 956

SUSAN M. BILLINGS DB 257 PG 827

DAVID L. JONES DB 271 PG 1058 PB 5 PG 346

BILLY GENE BLEVINS JR. AND STEPHANIE C. BLEVINS DB 272 PG 284 PB 91 PG 336

CAROLYN C. HOWARD DB 1350 PG 1

PRIVATE R/W PASSPORT AS IN PB 8 PG 73

BM13
N 991457.
E 1400384.
ELEVATION 2767.35
BL STATION 312+00.23 LEFT

PCC SIA 309+00.09

PI Sta 306+58.09
Δ = 22° 52' 06.1" (RT)
D = 4° 00' 00.0"
L = 571.71'
T = 289.71'
R = 1,432.39'

PI Sta 311+40.34
Δ = 7° 00' 00.0" (RT)
D = 1° 45' 00.0"
L = 400.00'
T = 200.25'
R = 3,274.04'

PI Sta 321+52.45
Δ = 13° 50' 03.4" (LT)
D = 3° 00' 00.0"
L = 461.14'
T = 231.70'
R = 1,909.86'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

TF TF DENOTES TEMPORARY FILL IN WETLAND

0 50 100 150 200

$$$$$$$SYSTIME$$$$$
$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	29B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

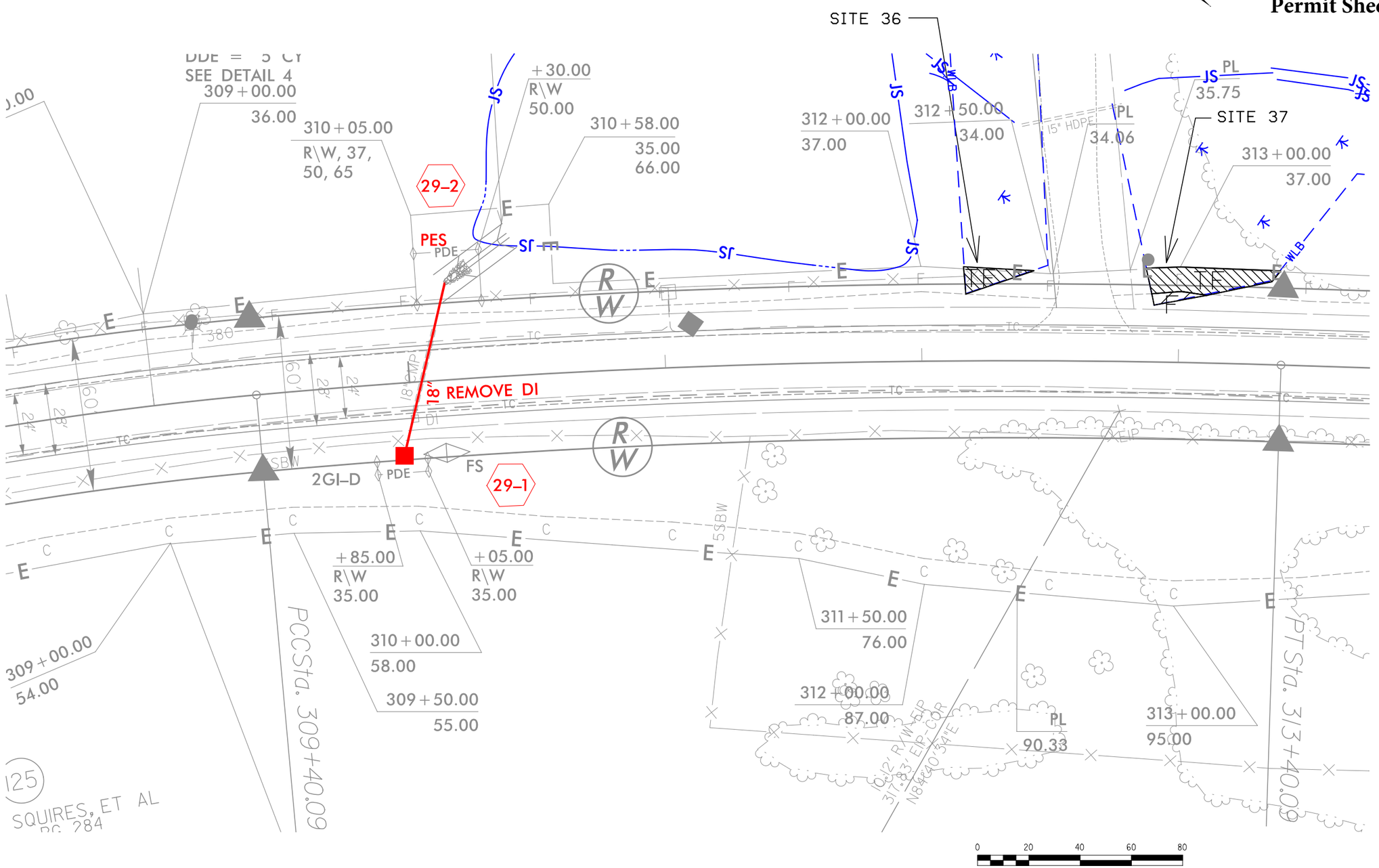
Permit Sheet 50 of 93

S S DENOTES IMPACTS IN SURFACE WATER

TF TF DENOTES TEMPORARY FILL IN WETLAND

F F DENOTES FILL IN WETLAND

NAD 83/95



5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	29C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 51 of 93

SITE 38

SITE 39

NAD 83/95

STANDARD BASE DITCH
-L- STA. 317+40 LT
DDE = 4 CY
SEE DETAIL 4

3 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

29-4

29-5

29-3

PES

PDE

FS

REMOVE HEADWALL

18" CMP

24" CMP

CONC ENDWALL

SUSAN M. BILLINGS
DB 257 PG 827

DAVID L. JONES
DB 271 PG 1058
PB 9 PG 346

72" CHL

SCRUB

ROCK

5SBW

N 32° 57' 35.0" W

+80.00 R\W 50.00	+30.00 R\W 45.00
+60.00 R\W 50.00	+45.00 R\W 45.00
+55.00 R\W 35.00	+75.00 R\W 35.00
+00.00 R\W 35.00	+30.00 R\W 35.00

314+50.00 35.00	315+00.00 43.00	316+00.00 41.00	316+50.00 43.00
317+00.00 42, 60	317+55.00 38.00	318+00.00 37.00	318+50.00 37.00
319+00.00 41.00	314+50.00 74.00	314+00.00 86.00	315+00.00 58.00
316+00.00 44.00	316+50.00 48.00	317+00.00 44.00	317+50.00 43.00
318+50.00 63.00	319+00.00 62.00		

TF TF DENOTES TEMPORARY FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

0 20 40 60 80

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 60
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

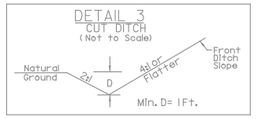
PROJECT REFERENCE NO.	SHEET NO.
R-3101	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

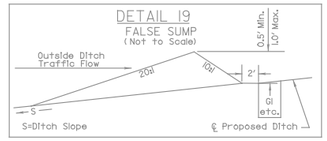
Permit Sheet 52 of 93

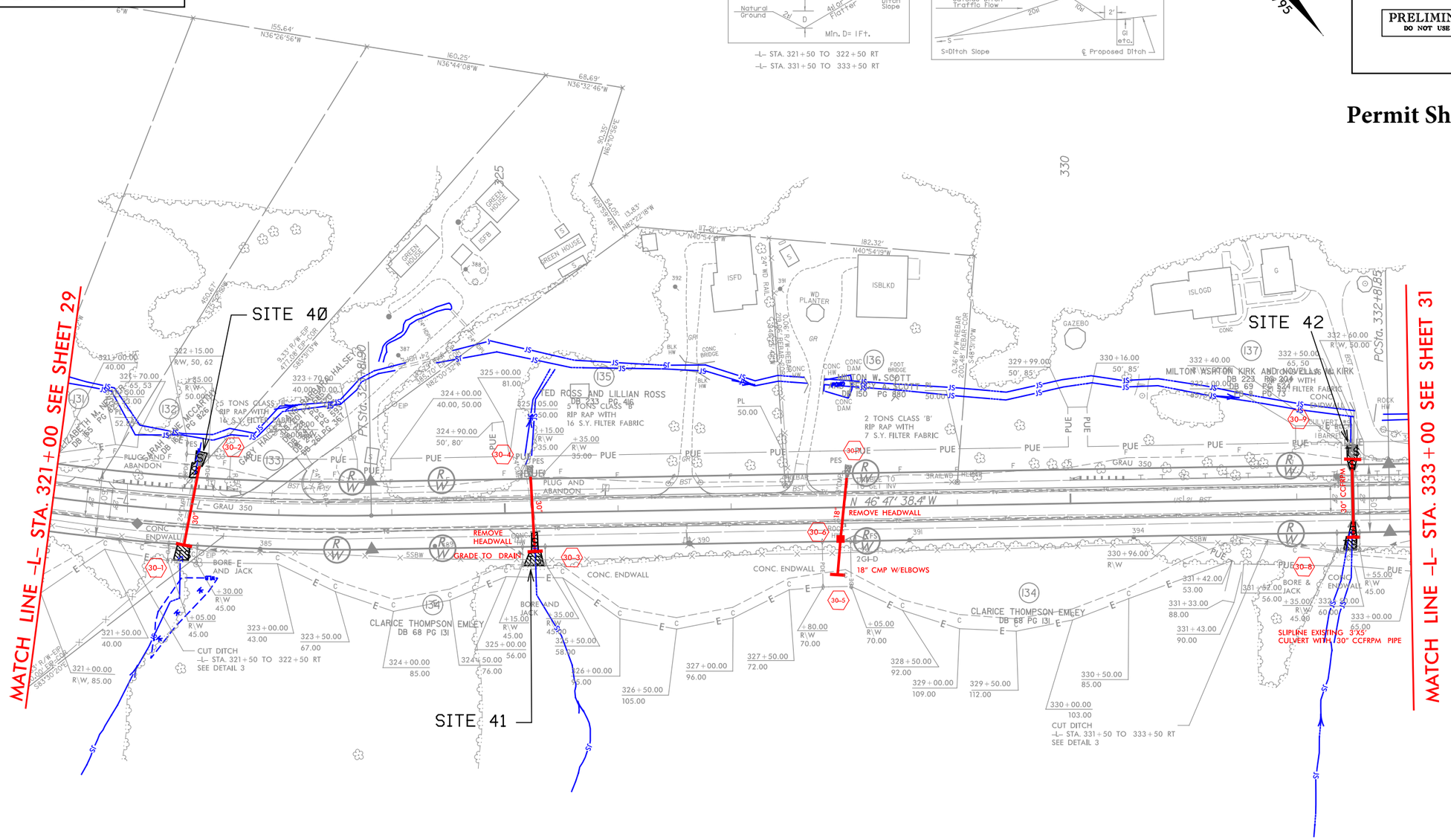
DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 321+50 TO 322+50 RT
-L- STA. 331+50 TO 333+50 RT

DETAIL 19
FALSE SUMP
(Not to Scale)





TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

0 50 100 150 200

-L-
PI Sta 321+52.45
△ = 13° 50' 03.4" (LT)
D = 3° 00' 00.0"
L = 461.14'
T = 231.70'
R = 1,909.86'

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 60
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

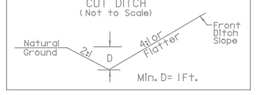
PROJECT REFERENCE NO.	SHEET NO.
R-3101	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

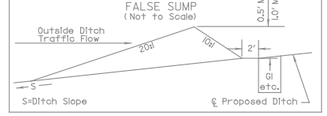
Permit Sheet 53 of 93

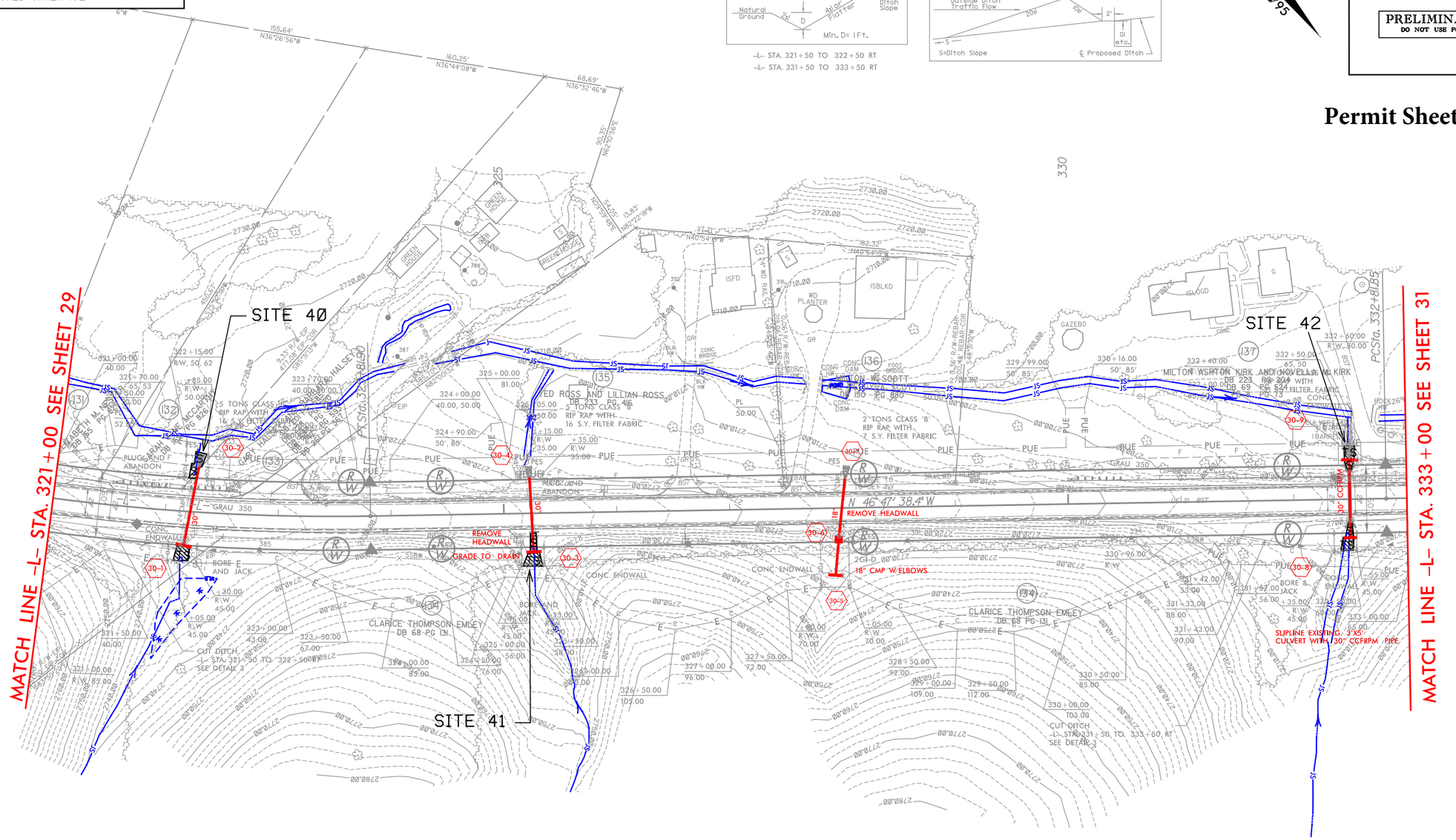
DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 321+50 TO 322+50 RT
-L- STA. 331+50 TO 333+50 RT

DETAIL 19
FALSE SUMP
(Not to Scale)





TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

0 50 100 150 200

-L-
PI Sta 321+52.45
Δ = 13° 50' 03.4" (LT)
D = 3° 00' 00.0"
L = 461.14'
T = 231.70'
R = 1,909.86'

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	30B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 54 of 93

NAD 83/95

321+00.00
40.00

321+70.00
65, 53

321+50.00
53.00

PL
52.85

322+15.00
R/W, 50, 62

+35.00
R\W
50.00

SITE 40

5 TONS CLASS 'B'
RIP RAP WITH
16 S.Y. FILTER FABRIC

322+55.00
50.00, R/W

323+70.00
40,00, 50.00

324+00.00
40.00, 50.00

324+90.00
50', 80'

325+00.00
81.00

325+05.00
50.00

+15.00
R\W
35.00

+35.00
R\W
35.00

5 TONS CLASS 'B'
RIP RAP WITH
16 S.Y. FILTER FABRIC

PLUG AND ABANDON

PLUG AND ABANDON

30-1

30-2

30-3

30-4

REMOVE HEADWALL

GRADE TO DRAIN

CONC ENDWALL

CONC. ENDWALL

BORE AND JACK

BORE AND JACK

+30.00
R\W
45.00

+05.00
R\W
45.00

+15.00
R\W
45.00

+35.00
R\W
45.00

CUT DITCH
-L- STA. 321+50 TO 322+50 RT
SEE DETAIL 3

321+50.00
40.00

321+00.00
R\W, 85.00

323+00.00
43.00

323+50.00
67.00

324+00.00
85.00

324+50.00
76.00

325+00.00
56.00

325+50.00
58.00

326+00.00
95.00

327+00.
96.00

SITE 41

CLARICE THOMPSON EMLEY
DB 68 PG 131

TED ROSS AND LILLIAN ROSS
DB 233 PG 416

ELIZABETH M. NEELY
DB 165 PG 826

SARAH E. MCCARTHY
DB 162 PG 826

GARY HALSEY AND SARA BRYANT HALSEY
DB 2241 PG 685
DB 2241 PG 690
DB 2241 PG 593
DB 26L PG 367

PT Sta. 321+81.90

9.33' R/W-EIP
477.08' EIP-COR
S85°31'13"W

153.29' R/W-EIP
385.70' EIP-COR
N82°00'32"W

427.69
S65°33'52"

GRAU 350

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

$$$$SYSTIME$$$$
$$$$LFNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	30C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 55 of 93

NAD 83/95

SITE 42

329+99.00
50', 85'

330+16.00
50', 85'

332+40.00
R\W 50.00

332+00.00
65, 50

332+50.00
65, 50

332+60.00
R\W, 50.00

136

137

134

MILTON W. SCOTT AND PEGGY A. SCOTT
DB 150 PG 880

CLARICE THOMPSON-EMLEY
DB 68 PG 131

MILTON WILSON KIRK AND WIFE LILLIE M. KIRK
DB 223 PG 204
DB 69 PG 524
PB 8 PG 73

CONC HW
CONC DAM
FOOT BRIDGE
CONC DAM
POND
0.36' R/W-R
200.48' REBAR
S48°31'10"W
GR
ROCK HW
3RAILWD
REBAR
UNABLE TO GET INV
N 46° 47' 38.4" W
US 21 BST
5SBW
3-WD BR

PL
50.00

PUE

JS

F
T
TC
TV
C
E
PDE

2 TONS CLASS 'B'
RIP RAP WITH
7 S.Y. FILTER FABRIC

8 TONS CLASS 'B'
RIP RAP WITH
21 S.Y. FILTER FABRIC
CONC ENDWALL

30-9
CULVERT #9
3'X5' ROCK
1 BARREL

30-7
PES

30-6
ROCK HW

30-5

30-8

18"
REMOVE HEADWALL

30" CCFRPM

2GI-D
18" CMP W/ELBOWS

391

394

330+96.00
R\W

328+50.00
92.00

329+00.00
109.00

329+50.00
112.00

330+50.00
85.00

331+42.00
53.00

331+33.00
88.00

331+43.00
90.00

331+52.00
56.00

BORE & JACK

+35.00
R\W
45.00

CONC ENDWALL

332+50.00
60.00

333+00.00
65.00

+55.00
R\W
45.00

+80.00
R\W
70.00

+05.00
R\W
70.00

SLIPLINE EXISTING 3'X5' CULVERT WITH 30" CCFRPM PIPE

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

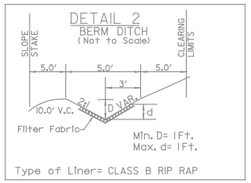
0 20 40 60 80

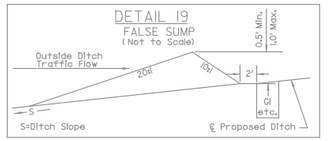
$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$
$$$$$FILENAME$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 60
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE





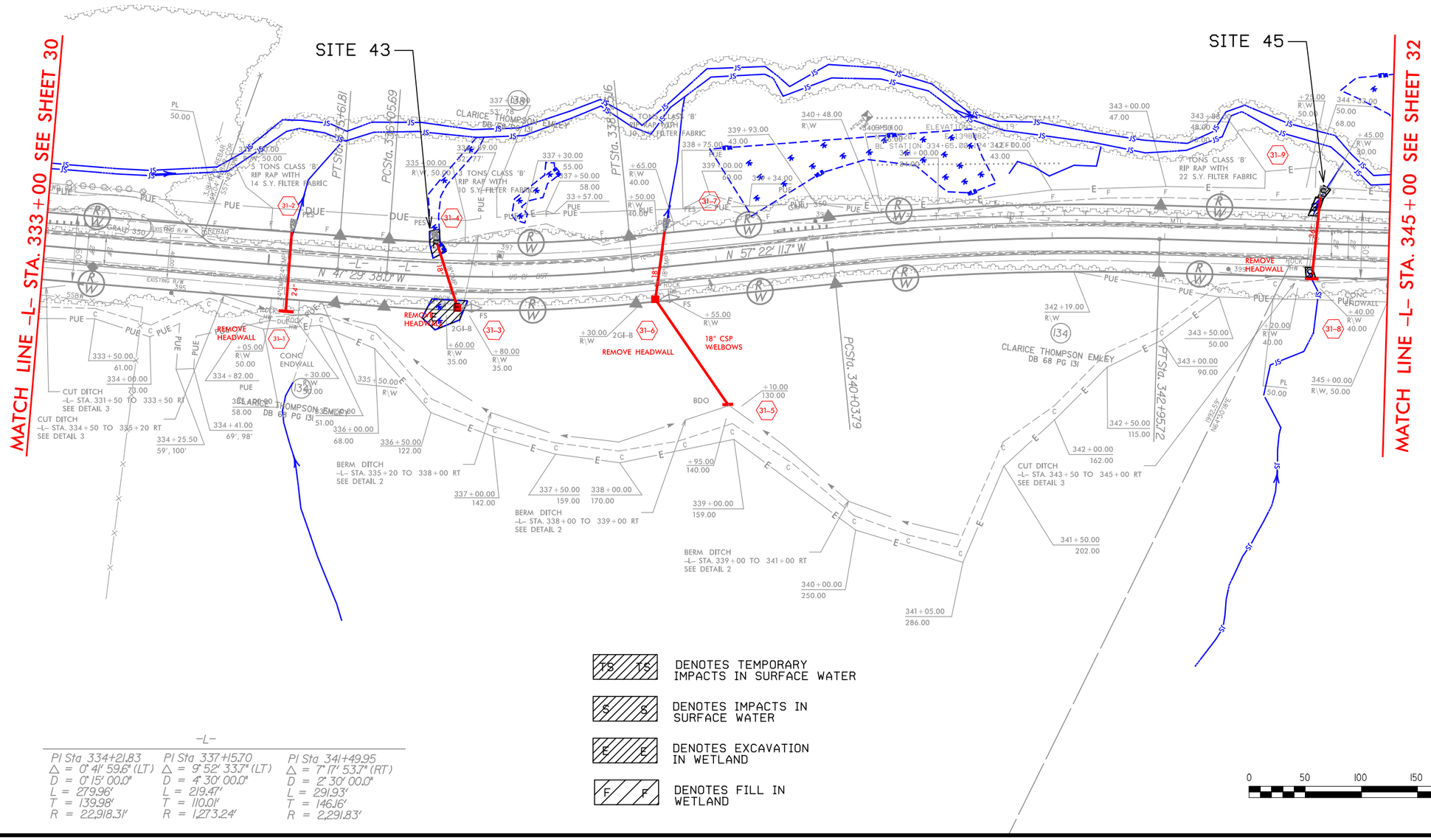
-L- STA. 335+20 TO 338+00 RT
-L- STA. 338+00 TO 339+00 RT
-L- STA. 339+00 TO 341+00 RT

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-3101	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 56 of 93



-L-		
PI Sta 334+21.83	PI Sta 337+15.70	PI Sta 341+49.95
△ = 0° 41' 59.6" (LT)	△ = 9° 52' 33.7" (LT)	△ = 7° 17' 53.7" (RT)
D = 0° 15' 00.0"	D = 4° 30' 00.0"	D = 2° 30' 00.0"
L = 279.96'	L = 219.47'	L = 291.93'
T = 139.98'	T = 110.01'	T = 146.16'
R = 22,918.31'	R = 1,273.24'	R = 2,291.83'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

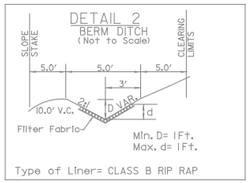
F F DENOTES FILL IN WETLAND

$$$$USERNAME$$$$ $$$$DGN$$$$ $$$$SYSTIME$$$$

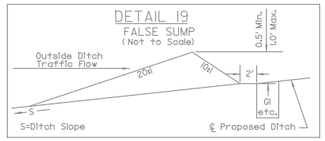
8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 60
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE



-L- STA. 335+20 TO 338+00 RT
-L- STA. 338+00 TO 339+00 RT
-L- STA. 339+00 TO 341+00 RT



NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-3101	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 57 of 93

335 340 345

MATCH LINE -L- STA. 333+00 SEE SHEET 30

MATCH LINE -L- STA. 345+00 SEE SHEET 32

SITE 43

SITE 45

-L-
N 41° 29' 38.0" W
N 57° 22' 11.7" W

Pl Sta 334+21.83
Δ = 0° 41' 59.6" (LT)
D = 0° 15' 00.0"
L = 279.96'
T = 139.98'
R = 22,918.31'

Pl Sta 337+15.70
Δ = 9° 52' 33.7" (LT)
D = 4° 30' 00.0"
L = 219.47'
T = 110.01'
R = 1,273.24'

Pl Sta 341+49.95
Δ = 7° 17' 53.7" (RT)
D = 2° 30' 00.0"
L = 291.93'
T = 146.16'
R = 2,291.83'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

0 50 100 150 200

$$$$$$$SYSTIME$$$$$
$$$$$$$USERNAME$$$$$
$$$$$$$DGN$$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	31B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 58 of 93

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

NAD 83/95

PL 50.00

PTSta. 335+61.81

PCSta. 336+05.69

PTSta. 338+05.16

CLARICE THOMPSON EMLEY DB 68 PG 131

337+04.00 53', 78'

336+89.00 52', 77'

335+00.00 R\W, 50.00 5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

337+30.00 55.00 337+50.00 58.00 33+57.00

3 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC

+65.00 R\W 40.00 +50.00 R\W 40.00

338+75.00 PUE 339+00. 60.

SITE 43

31-2 31-4 31-7

JS PUE DUE PES E F WLB

3.8' R/W REBAR 149.04' REBAR-COR S57°45'E

GRAU 350 EXISTING R/W REBAR PCT

EXISTING R/W 395 397

N 47° 29' 38.0" W

-L- -L-

24" CMP 24" CMP 18" CMP 18" CSP

US 21 BST TC TW TW

ROCK HW

REMOVE HEADWALL 31-1 +05.00 R\W 50.00

CONC ENDWALL +30.00 R\W 50.00

334+82.00 PUE

335+00.00 58.00

334+41.00 69', 98'

334+25.50 59', 100'

335+50.00 R\W

335+50.00 51.00

336+00.00 68.00

336+50.00 122.00

CLARICE THOMPSON EMLEY DB 68 PG 131

REMOVE HEADWALL 2GI-B 31-3 +60.00 R\W 35.00 +80.00 R\W 35.00

FS +55.00 R\W

+30.00 R\W 2GI-B 31-6 REMOVE HEADWALL

18" CSP W/ELBOW BDO

333+50.00 61.00 334+00.00 73.00

T DITCH STA. 331+50 TO 333+50 RT DETAIL 3

H 334+50 TO 335+20 RT L 3

0 20 40 60 80

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	31C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 59 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

NAD 83/95

SITE 45

340 + 50.00
86.00

341 + 00.00
34.00

342 + 00.00
43.00

343 + 00.00
47.00

343 + 88.00
48.00
63.00

+25.00
R\W
50.00

344 + 33.00
50.00
68.00

+45.00
R\W
50.00

7 TONS CLASS 'B' RIP RAP WITH 22 S.Y. FILTER FABRIC

31-9

REMOVE HEADWALL

36"

ROCK

342 + 19.00
R\W

134

CLARICE THOMPSON EMLEY
DB 68 PG 131

PTSta. 342+95.72

1992.59'
N64°30'18"E

343 + 50.00
50.00

343 + 00.00
90.00

342 + 50.00
115.00

+20.00
R\W
40.00

31-8

CONC HEADWALL
+40.00
R\W
40.00

PL
50.00

345 + 00.00
R\W, 50.00

PUE

JS

WLB

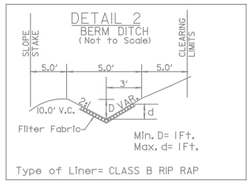
MTL

0 20 40 60 80

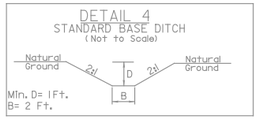
8/17/99

NOTES

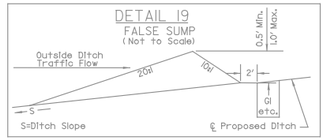
FOR -L- PROFILE SEE SHEET 61
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE



-L- STA. 350+50 TO 354+00 RT



-L- STA. 354+03 LT
EST. 4 CU. YD. DDE

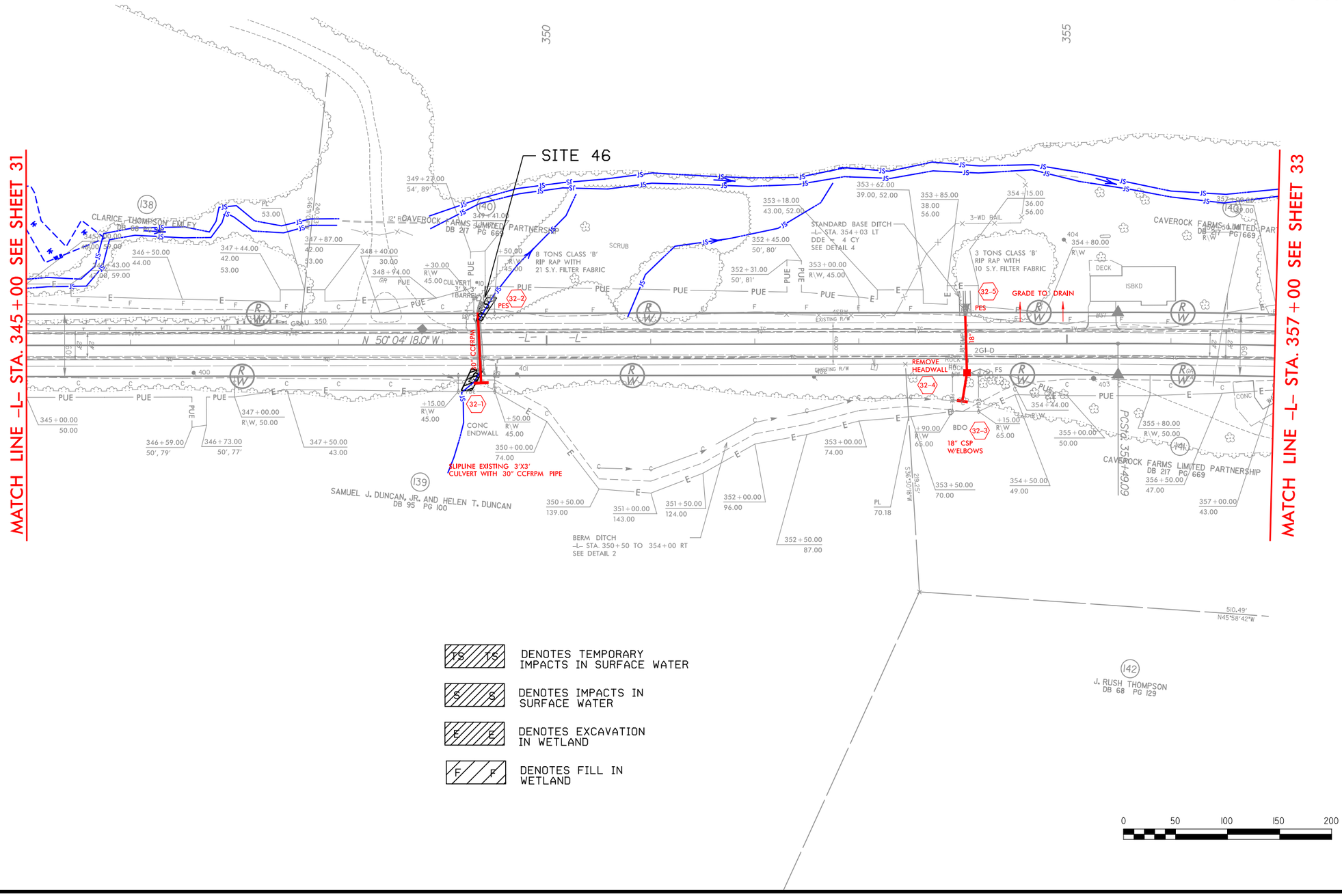


NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-3101	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 60 of 93



$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 61
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

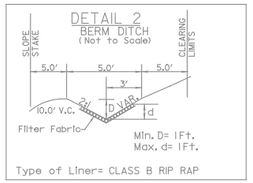
PROJECT REFERENCE NO.	SHEET NO.
R-3101	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 61 of 93

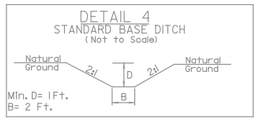
DETAIL 2
BERM DITCH
(Not to Scale)



Type of Liner= CLASS B RIP RAP

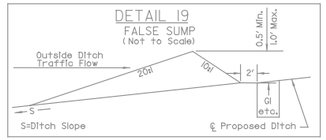
-L- STA. 350+50 TO 354+00 RT

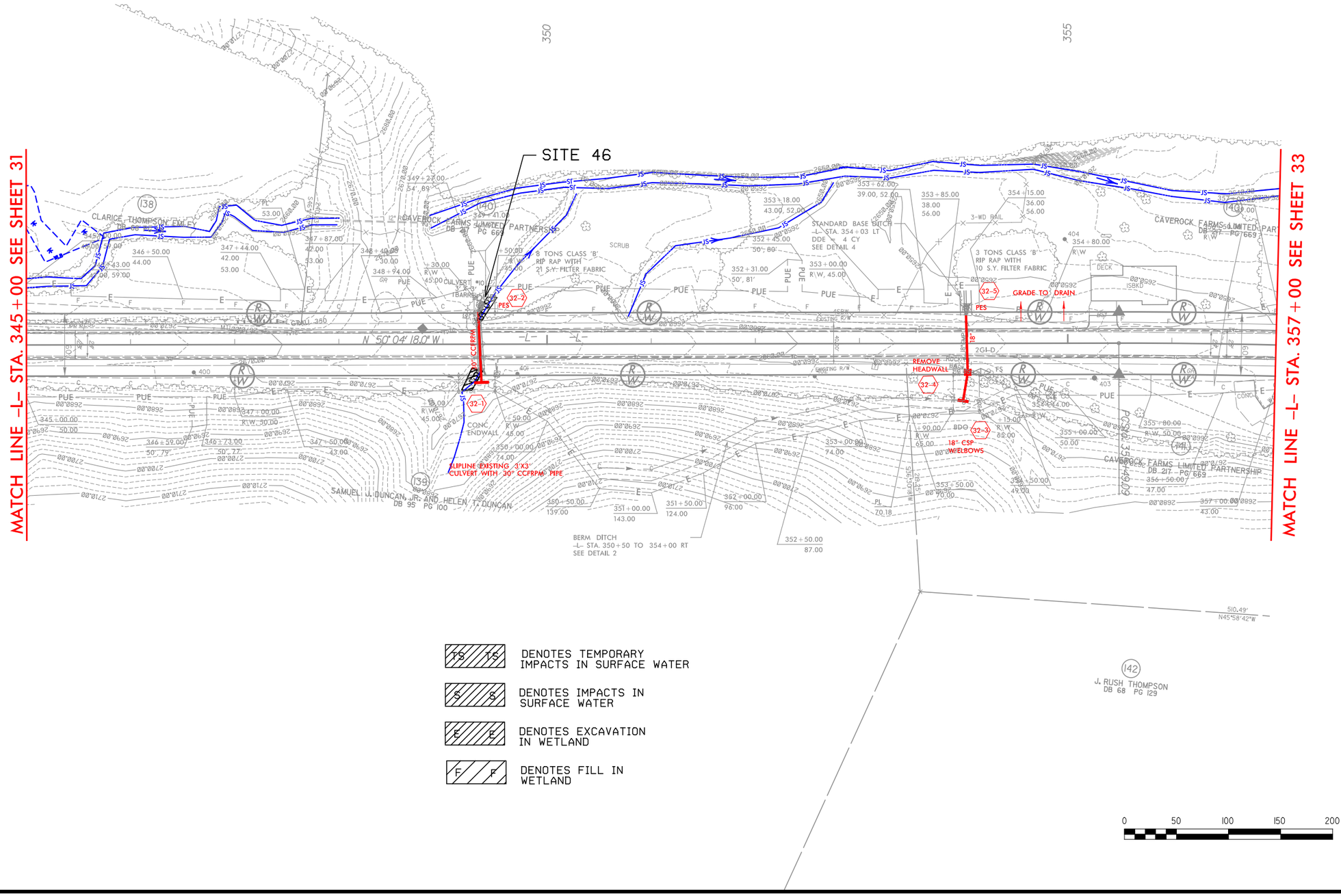
DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 354+03 LT
EST. 4 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)





TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$$$FILENAME$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	32B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 62 of 93

SITE 46

NAD 83/95

PL
53.00

S46°11'04"W
240.93'

12" RCP

CAVEROCK FARMS LIMITED PARTNERSHIP
DB 217 PG 669

140

349+27.00
54', 89'

349+41.00
56', 90'

347+87.00
42.00
53.00

348+40.00
30.00

348+94.00
GR

+30.00
R\W
45.00

PUE

CULVERT #10
3' X 3'
1 BARREL

DUE

PES
32-2

+50.00
R\W
45.00

8 TONS CLASS 'B'
RIP RAP WITH
21 S.Y. FILTER FABRIC

SCRUB

352+31.00
50', 81'

353+00.00
R\W, 45.00

GRAU 350

N 50° 04' 18.0" W

-L-

4SBW
EXISTING R/W

30" CCFRPM

401

402

+00.00
50.00

+15.00
R\W
45.00

32-1

CONC
ENDWALL

+50.00
R\W
45.00

347+50.00
43.00

350+00.00
74.00

SLIPLINE EXISTING 3'X3'
CULVERT WITH 30" CCFRPM PIPE

139

SAMUEL J. DUNCAN, JR. AND HELEN T. DUNCAN
DB 95 PG 100

350+50.00
139.00

351+00.00
143.00

351+50.00
124.00

352+00.00
96.00

353+00.00
74.00

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$
$$$$$FILENAME$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 61
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

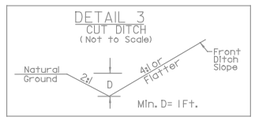
PROJECT REFERENCE NO.	SHEET NO.
R-3101	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

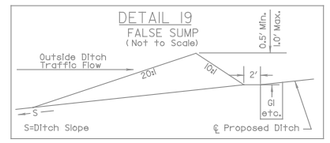
Permit Sheet 63 of 93

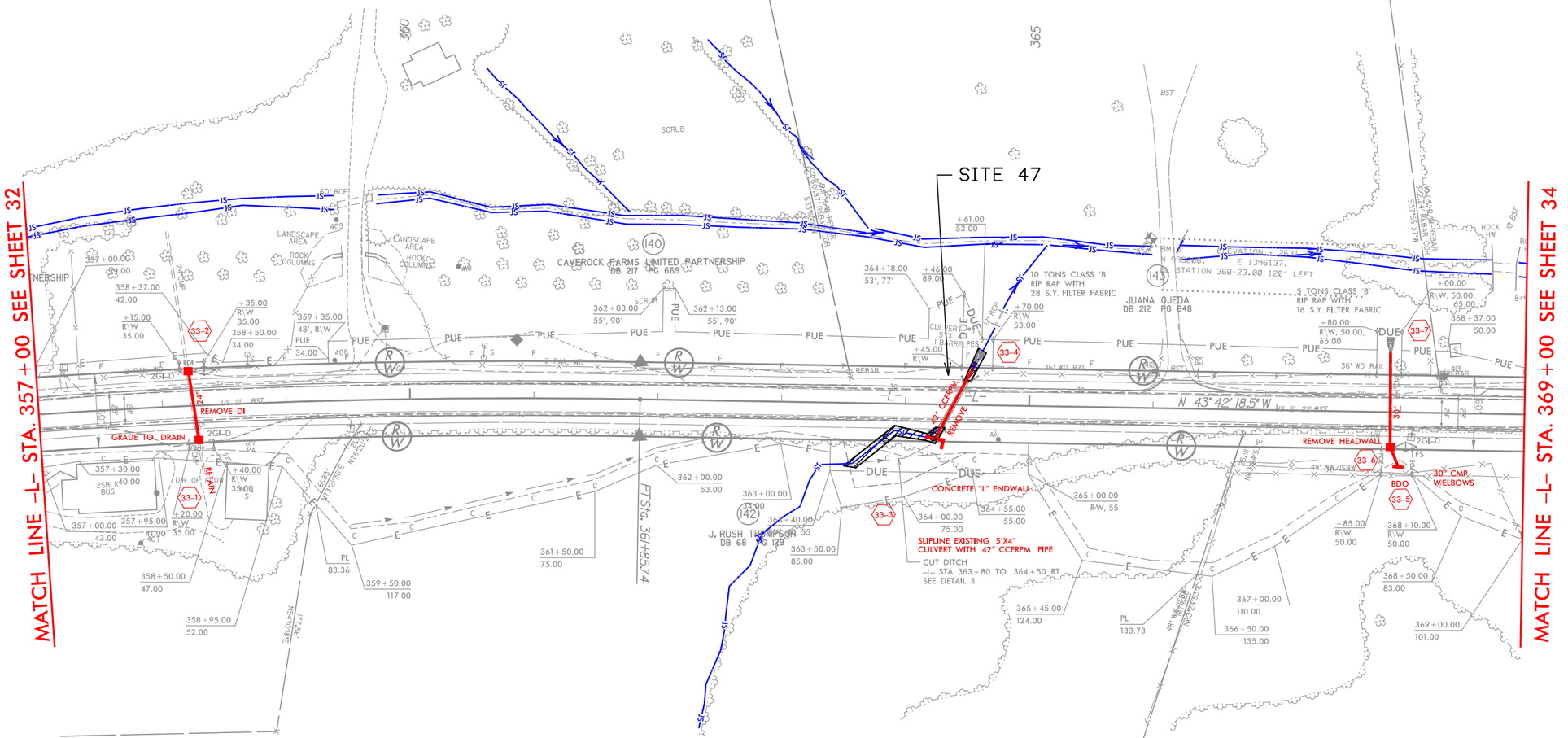
DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 363+80 TO 364+50 RT

DETAIL 19
FALSE SUMP
(Not to Scale)





TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S — DENOTES IMPACTS IN SURFACE WATER

E E — DENOTES EXCAVATION IN WETLAND

F F — DENOTES FILL IN WETLAND

-L-
PI Sta 358+67.74
△ = 6° 21' 59.5" (RT)
D = 1° 00' 00.0"
L = 636.65'
T = 318.65'
R = 5,729.58'

0 50 100 150 200

$$$$SYSTIME$$$$
$$$$USERNAME$$$$ $$$$DGN$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 6I
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

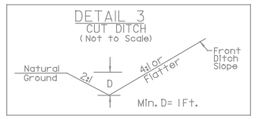
PROJECT REFERENCE NO.	SHEET NO.
R-3101	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

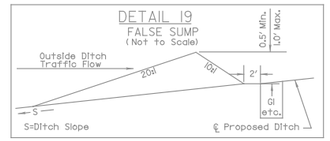
Permit Sheet 64 of 93

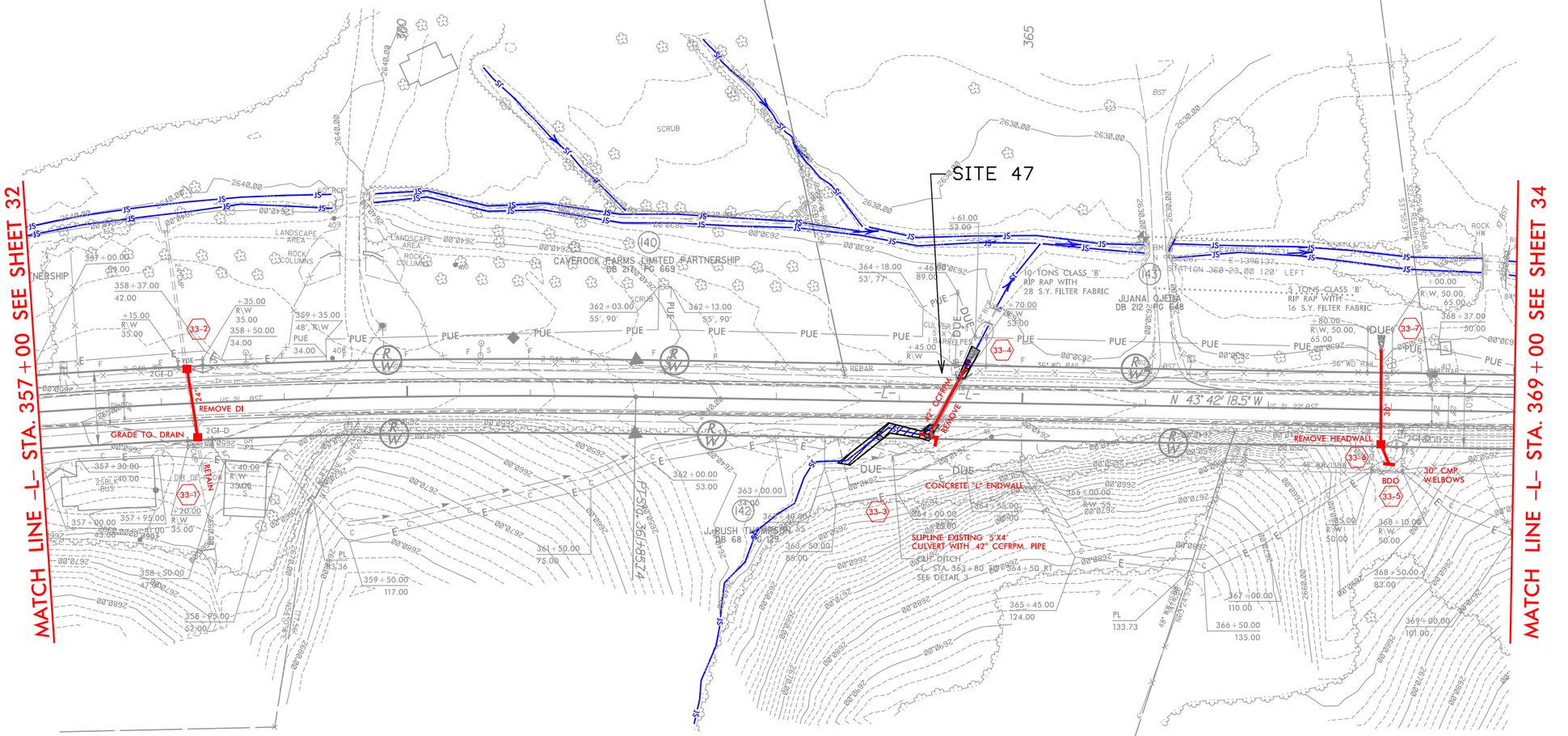
DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 363+80 TO 364+50 RT

DETAIL 19
FALSE SUMP
(Not to Scale)





DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

-L-
PI Sta 358+67.74
△ = 6° 21' 59.5" (RT)
D = 1° 00' 00.0"
L = 636.65'
T = 318.65'
R = 5,729.58'

\$\$\$\$\$\$\$\$SYSTIME\$\$\$\$\$\$
\$\$\$\$\$\$\$\$USERNAME\$\$\$\$\$\$\$\$DGN\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	33B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 65 of 93

NAD 83/95

JS
SF
PUE
DUE
F
E
C
TC
EP
-L-
R/W

+61.00
53.00

364+18.00
53', 77'

+46.00
89.00

362+13.00
55', 90'

+45.00
R\W

+70.00
R\W
53.00

+80
R\W
65.0

10 TONS CLASS 'B'
RIP RAP WITH
28 S.Y. FILTER FABRIC

TED PARTNERSHIP
669

JUANA OJEDA
DB 212 PG 648

143

CULVERT #1
5' X 4'
1 BARREL

12" RCP

PES

33-4

36" WD RAIL

412

BST

REBAR

54" RYAN-REBAR
601.87' REBAR COR
S33°11'43"W

SITE 47

42" CCFRPM

REMOVE

411

N 43° 42' 18.5" W
US 21 22' BST

362+00.00
53.00

363+00.00
34.00

142

363+40.00
R/W 40, 55

363+50.00
85.00

J. RUSH THOMPSON
DB 68 PG 129

33-3

364+00.00
75.00

364+55.00
55.00

CONCRETE "L" ENDWALL

365+00.00
R/W, 55

SLIPLINE EXISTING 5'X4'
CULVERT WITH 42" CCFRPM PIPE

CUT DITCH
-L- STA. 363+80 TO 364+50 RT
SEE DETAIL 3

45.91'
N6°34'53"E

48" WW

DENOTES IMPACTS IN
SURFACE WATER

0 20 40 60 80

$$$$$SYTIME$$$$$
$$$$$SYDATE$$$$$
$$$$$USERNAME$$$$$
$$$$$DGNFILE$$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	34
R/W SHEET NO.	

PERMIT DRAWING

Permit Sheet 66 of 93

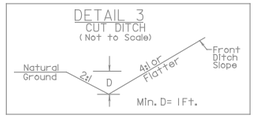
NAD 83/95

DETAIL 2
BERM DITCH
(Not to Scale)

Type of Liner= CLASS B RIP RAP

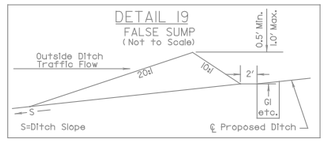
-L- STA. 376+13 TO 380+50 RT
-L- STA. 380+50 TO 384+90 RT

DETAIL 3
CUT DITCH
(Not to Scale)

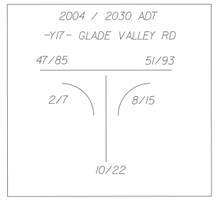


-L- STA. 372+00 TO 372+50 RT

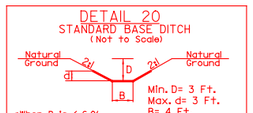
DETAIL 19
FALSE SUMP
(Not to Scale)



2004 / 2030 ADT
-Y17- GLADE VALLEY RD



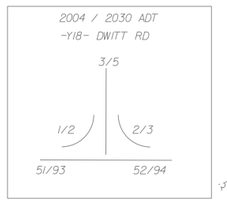
DETAIL 20
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= PSRM

-Y17- STA. 10+63.80 TO 11+35.85 RT
EST. DDE = 300 CY

2004 / 2030 ADT
-Y18- DWITT RD



MATCH LINE -L- STA. 369+00 SEE SHEET 33

MATCH LINE -L- STA. 381+00 SEE SHEET 35

SITE 48

SITE 48A

-Y17- PT STA. 10+00.00 =
-L- POC STA. 373+04.69

-Y18- POT STA. 10+00.00 =
-L- POC STA. 378+26.30

-Y18- POC STA. 13+06.84 =
-L- POC STA. 378+26.30

END CONSTRUCTION
-Y17- POT STA. 12+50.00

5+00.00 POT
-BY24- 134

6+25.67 PINC
-BY23- 132

9+90.98 POT
-BY23- 133

DB 168 PG 9
DB 269 PG 83

DB 255 PG 734

DB 253 PG 1342

DB 32 PG 590

CUT DITCH
-L- STA. 372+00 TO 372+50 RT
SEE DETAIL 3

STANDARD BASE DITCH
-Y17- STA. 10+63.80 TO 11+35.85 RT
SEE DETAIL 20

BERM DITCH
-L- STA. 372+50 TO 380+50 RT
SEE DETAIL 2

BERM DITCH
-L- STA. 380+50 TO 384+90 RT
SEE DETAIL 2

5 TONS CLASS 'B' RIP RAP WITH PUBLIC'S FILTER FABRIC
INV = 2615.05

CONC. ENDWALL
INV = 2614.78

CONC. ENDWALL
INV = 2624.26

PLUG AND ABANDON 36" RCP

REMOVE (1) 12" PLASTIC PIPE

GRADE TO DRAIN

BORE AND JACK

TS IS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

-Y17-

-Y17-POT Sta. 10+00.00=
-L-POC Sta. 373+04.69
N 52° 03' 41.4" E
-Y17-PC Sta. 10+22.68
PI Sta 10+79.23
△ = 14° 37' 23.1" (LT)
D = 13° 00' 00.0"
L = 112.49'
T = 56.55'
R = 440.74'
-Y17-PT Sta. 11+35.17
N 37° 26' 18.3" E
-Y17-POT Sta. 12+79.68

-Y18-

-Y18-POT Sta. 10+00.00
N 64° 01' 52.6" E
-Y18-PC Sta. 10+34.76
PI Sta 11+63.85
△ = 10° 56' 21.4" (LT)
D = 4° 15' 00.0"
L = 257.39'
T = 129.09'
R = 1,348.14'
-Y18-PT Sta. 12+92.16
N 53° 05' 31.2" E
-Y18-POT Sta. 13+06.84=
-L-POC Sta. 378+26.30

-L-

PI Sta 373+66.36
△ = 7° 31' 37.0" (LT)
D = 2° 00' 00.0"
L = 376.35'
T = 188.45'
R = 2,864.79'

PI Sta 380+48.45
△ = 6° 51' 08.1" (RT)
D = 1° 30' 00.0"
L = 456.82'
T = 228.68'
R = 3,819.72'

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

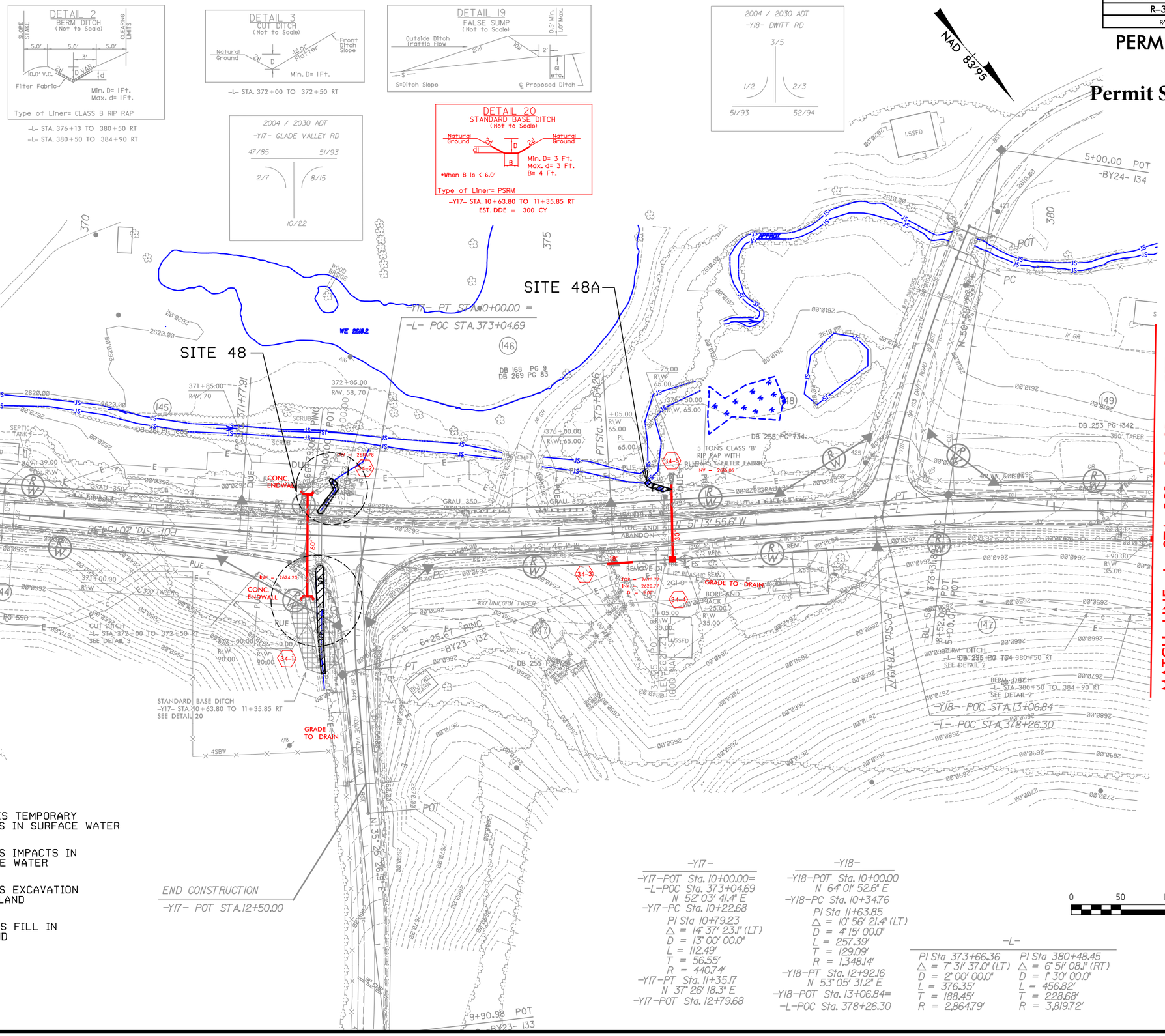
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	34
R/W SHEET NO.	

PERMIT DRAWING

Permit Sheet 67 of 93

NAD 83/95



$$$$$$SYSTIME$$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
34B	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

R-3101

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 68 of 93

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

NAD 83/95

371+85.00
R/W, 70

372+85.00
R/W, 58, 70

PCSta. 371+77.91

PTSta. 375+54.26

+25.00
R\W
65.00

376+50.00
R\W, 65.00

+05.00
R\W
65.00
PL
65.00

375+00.00
R\W, 65.00

SCRUB

SCRUB

JS JS JS Sf JS JS JS JS JS JS JS JS JS JS

E E E

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 62
FOR -Y20- PROFILE SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-3101	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 69 of 93

NAD 83/95

2004 / 2030 ADT
-Y20- MACEDONIA CHURCH RD
4/10
1/2 3/8
53/96 55/102

-Y20-POT Sta. 10+00.00
BM16 ELEVATION = 2588.74'
N 997163. E 1394006.
BL STATION 389+29.00 200' LEFT

SR 1118 MACEDONIA CHURCH ROAD 20' BST

-Y20- 11+20.00
24.83

-Y20- 11+18.00
25.16

-Y20-POT Sta. 12+15.73=
-L-POT Sta. 397+92.67

MATCH LINE -L- STA. 393+00 SEE SHEET 35

MATCH LINE -L- STA. 405+00 SEE SHEET 37

155 T.R. GREENE AND DORIS GREENE DB 53 PG 137

158 T.R. GREENE AND DORIS GREENE DB 53 PG 137

159 CLIFF EL TARLTON AND NINA H. TARLTON DB 244 PG 778

160 PHILIP S. HORTON AND PAMELA HORTON DB 863

157 CLICK STOKER AND LORRAINE M. STOKER DB 98 PG 236 DB 74 PG 473 PB 1 PG 65 PB 2 PG 61

156 BLUE RIDGE ELECTRIC MEMBERSHIP CORPORATION DB 189 PG 509 DB 237 PG 85 DB 267 PG 385

IS MTL BUS

BREMCO SUBSTATION

50.00CL 'II' RIP RAP (STRUCTURAL PAY ITEM)

CL 'II' RIP RAP (STRUCTURAL PAY ITEM)

MTL GATE

SITE 49

SITE 50

BLUE GRASS

-Y21-

PI Sta 10+89.04
△ = 35° 30' 59.2" (RT)
D = 57° 17' 44.8"
L = 61.99'
T = 32.03'
R = 100.00'

PI Sta 11+80.07
△ = 12° 18' 44.9" (LT)
D = 15° 15' 00.0"
L = 80.74'
T = 40.52'
R = 375.71'

0 50 100 150 200

$$$$$$$$SYSTIME$$$$$$
$$$$$$$$USERNAME$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 62
FOR -Y20- PROFILE SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-3101	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 70 of 93

NAD 83/95

2004 / 2030 ADT
-Y20- MACEDONIA CHURCH RD
4/10
1/2 3/8
53/96 55/102

MATCH LINE -L- STA. 393+00 SEE SHEET 35

MATCH LINE -L- STA. 405+00 SEE SHEET 37

-Y20-POT Sta. 10+00.00
BM1 ELEVATION = 2589.74'
N 997163. E 1394006.
BL STATION 389+29.00 200' LEFT

-Y20- 11+18.00

-Y20- 20+00

-Y2POT Sta. 12+15.73

-L-POT Sta. 397+92.67

395+00.00
50.00, 30.00

396+83.00
30.00

SR 1118 MACEDONIA CHURCH ROAD 20' BST

50.00CL 'II' RIP RAP (STRUCTURAL PAY ITEM)

155 T.R. GREENE AND DORIS GREENE DB 53 PG 137

158 T.R. GREENE AND DORIS GREENE DB 53 PG 137

159 CLIFF E. TARLTON AND NINA H. TARLTON DB 244 PG 778

160 PHILIP S. HORTON ET AL AND PAMELA HORTON DB 244 PG 863

157 CLICK STOKER AND LORRAINE M. STOKER DB 98 PG 236 DB 74 PG 473 PB 1 PG 65 PB 2 PG 61

156 BLUE RIDGE ELECTRIC MEMBERSHIP CORPORATION DB 369 PG 509 DB 237 PG 86 DB 267 PG 385

151 T.R. GREENE AND DORIS GREENE DB 53 PG 137

SITE 49

SITE 50

BREMCO SUBSTATION

CL 'II' RIP RAP (STRUCTURAL PAY ITEM)

MTL GATE

84" CHL & 3-SBW

48" WW

BLADE CREEK

-Y21-

PI Sta 10+89.04
△ = 35° 30' 59.2" (RT)
D = 57° 17' 44.8"
L = 61.99'
T = 32.03'
R = 100.00'

PI Sta 11+80.07
△ = 12° 18' 44.9" (LT)
D = 15° 15' 00.0"
L = 80.74'
T = 40.52'
R = 375.71'

0 50 100 150 200

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	36B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 71 of 93

NAD 83/95

240.19'

PL

50.00 CL 'II' RIP RAP
(STRUCTURAL PAY ITEM)

JS

TS

155

T.R. GREENE AND
DORIS GREENE
DB 53 PG 137

-L-POT Sta. 12+15.73=

-L-POT Sta. 397+92.67

395+00.00
50.00, 30.00

396+83.00
30.00

-Y20- 11+20.00
24.83

R/W

36-1

EXISTING R/W

50.00'

37.5' Rt.

-Y20-

R 40'

PES

18"

18" CMP

PE

4-SBW

GRAU 350

28'

24'

100'

60'

40.00'

AT-1

48" WW

GR

MTL GATE

VERT. 13 BARREL 10X10

445

446

451

SITE 49

154

T.R. GREENE AND
DORIS GREENE
DB 53 PG 137

CL 'II' RIP RAP
(STRUCTURAL PAY ITEM)

395+00.00
R\W, 50.00

PL
50.00

395+62.00
50.00
63.00

156

396+50.00
50.00

BLUE RIDGE ELECTRIC
MEMBERSHIP CORPORATION
DB 59 PG 509
DB 237 PG 166
DB 267 PG 385

396+06.00
50.00
63.00

397+00.00
43.00

397+50.00
41.00

398+00.00
45.00

PL
42.44

N38°32'49"E
241.98'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

0 20 40 60 80

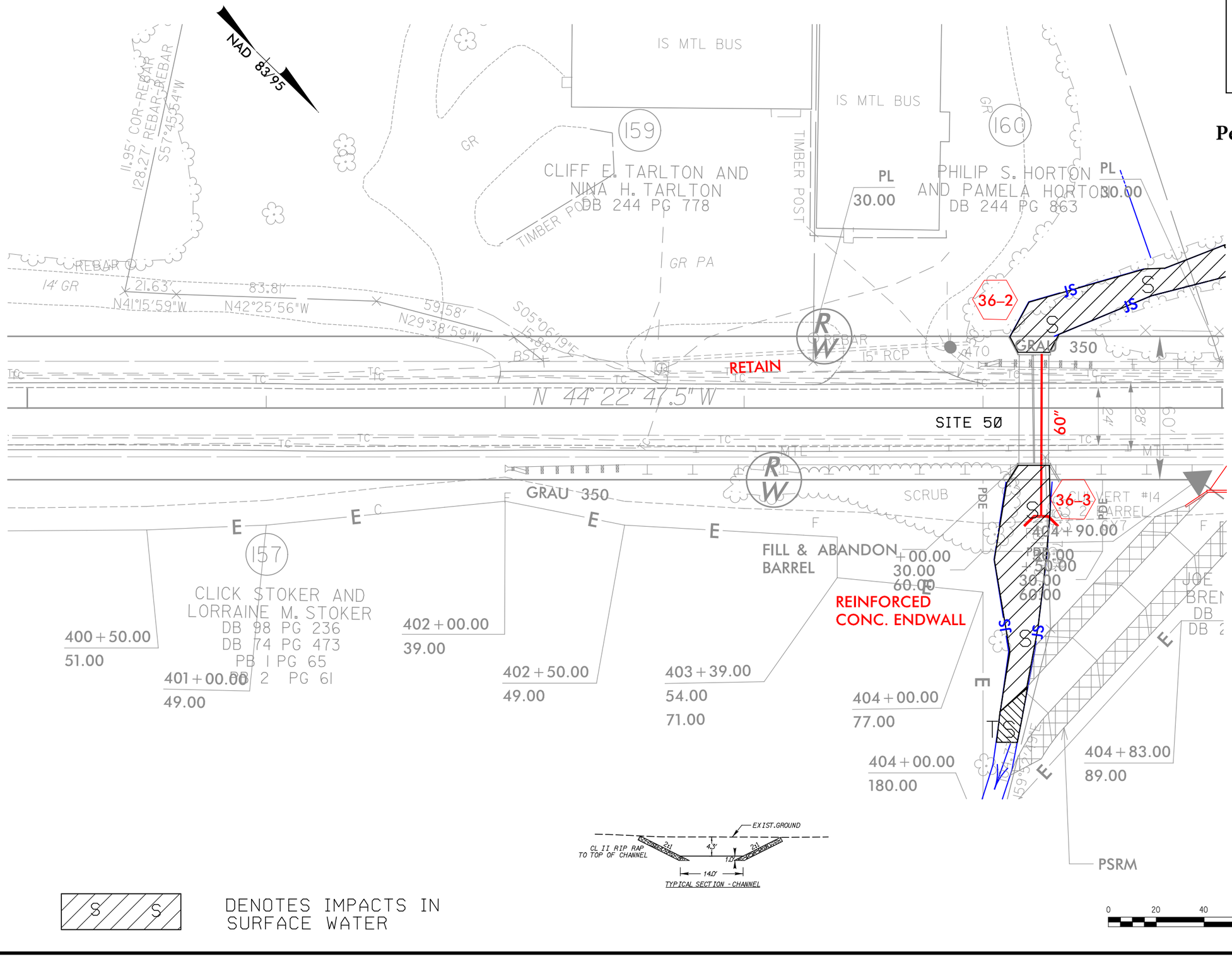
$$$$$$$$$$ SETTINGS $$$$$$$$$$
$$$$$$$$$$ USERNAME $$$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	36C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 72 of 93



S S DENOTES IMPACTS IN SURFACE WATER

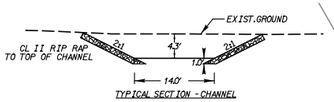
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

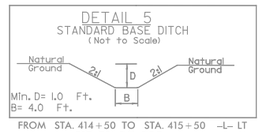
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 73 of 93

NAD 83/95

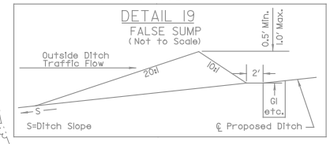


DETAIL 5
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 414+50 TO STA. 415+50 -L- LT
EST. 75 C.Y. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)



-L- STA. 406+50 TO 407+50 RT.
-L- STA. 416+20 TO 417+00 LT.
-Y21- STA. 10+32 TO 11+00 LT.

-Y22-
-Y22-POT Sta. 10+00.00
N 42° 13' 09.7" E
-Y22-PC Sta. 10+19.76
PI Sta 11+26.62
△ = 56° 24' 05.8" (RT)
D = 28° 45' 00.0"
L = 196.18'
T = 106.86'
R = 199.29'
-Y22-PT Sta. 12+15.94
S 81° 22' 44.5" E
-Y22-PC Sta. 12+48.00
PI Sta 12+76.60
△ = 38° 31' 25.5" (LT)
D = 70° 00' 00.0"
L = 55.03'
T = 28.60'
R = 81.85'
-Y22-PT Sta. 13+03.03=
-L-POT Sta. 413+47.86

-Y21-POT Sta. 10+00.00=
-L-POT Sta. 406+00.00

-L-POT Sta. 409+60.00

-Y22- POT STA.10+00.00

-Y22-12+10.00
13.20

-Y22-11+78.00
12.90

SITE 50

SITE 51

SITE 52

MATCH LINE -L- STA. 405+00 SEE SHEET 36

MATCH LINE -L- STA. 417+00 SEE SHEET 38

PROP. 2 BARREL 7'x7' RCBC BURY INVERT 1.0' W/ LOW FLOW SILLS

3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

REMOVE HEADWALL

GRADE TO DRAIN

CONC. ENDWALL (37-4)

CONC. ENDWALL (37-3)

REMOVE HEADWALL

CUT DITCH
-L- STA. 406+50 TO 407+50 RT.
SEE DETAIL 3

CUT DITCH
-Y21- STA. 10+32 TO 11+00 LT.
SEE DETAIL 3

CUT DITCH
-L- STA. 416+20 TO 417+00 LT.
SEE DETAIL 3

END CONSTRUCTION
-D2-POT Sta. 11+70.25

-Y22- POC STA.13+03.03 =
-L- POT STA.413+47.86

EARL C. FOGLEMAN AND RUBY L. FOGLEMAN
DB 165 PG 810

DONNIE WAYNE WARNER
DB 12 PG 573

ELMER RICHARD EDWARDS AND LEXA RAE CREED EDWARDS
DB 75 PG 302

CLICK STOKER AND LORRAINE M. STOKER
DB 98 PG 236
DB 74 PG 473
PB 1 PG 65
PB 2 PG 61

STOKER AND DA STOKER
98 PG 284
33 PG 883

ERIC PAGE BLEVINS
DB 166 PG 744

BMK
N 993658.
E 1392641.
ELEVATION = 2613.46'
BY2@STATION 7+33.00 35' LEFT

4' BASE CHANNEL ROCK CROSS VANES SEE DETAILS AND ROCK CHECK DAMS

2004 / 2030 ADT
-Y21- SHERIFF RD
55/102
55/104
1/1
1/3
2/4

PAVEMENT TO BE REMOVED

-Y21-
-Y21-POT Sta. 10+00.00=
-L-POT Sta. 407+10.15
N 45° 37' 12.5" E
S 83° 33' 09.6" E
-Y21-PC Sta. 10+93.13
PI Sta 11+85.49
△ = 27° 37' 23.6" (LT)
D = 15° 15' 00.0"
L = 181.14'
T = 92.36'
R = 375.71'
-Y21-PT Sta. 12+74.27

-D2-
-D1-POT Sta. 10+00.00=
-L-POT Sta. 409+60.00
N 45° 37' 12.5" E
PI Sta 11+16.07
△ = 70° 21' 59.0" (LT)
D = 229° 15' 00.2"
L = 30.69'
T = 17.62'
R = 24.99'
-D1-PT Sta. 11+29.14
N 24° 44' 46.5" W
-D1-POT Sta. 11+70.25

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

0 50 100 150 200

NOTES
FOR -L- PROFILE SEE SHEET 63
FOR -Y22- & -Y23- PROFILES SEE SHEET 73
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

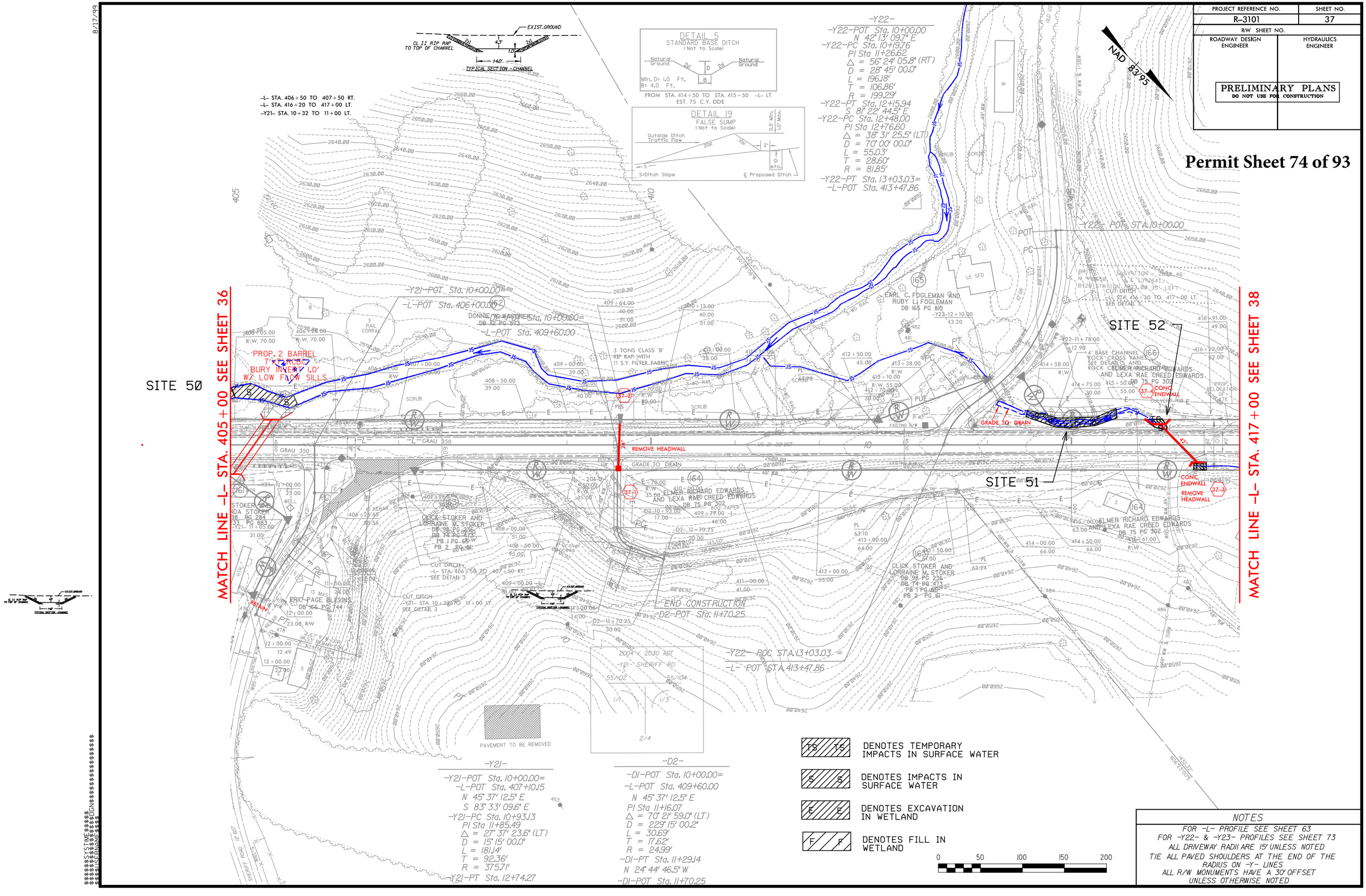
$$$$$$$SYSTIME$$$$$$$
$$$$$$$USERNAME$$$$$$$
$$$$$$$DGN$$$$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 74 of 93



NOTES

FOR -L- PROFILE SEE SHEET 63
FOR -Y22- & -Y23- PROFILES SEE SHEET 73
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	37B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 75 of 93

NAD 83/95

-Y21-POT Sta. 10+00.00=
-L-POT Sta. 406+00.00

-D2-POT Sta. 10+00.00=
-L-POT Sta. 409+60.00

DONNIE W. WAGONER
DB 112 PG 573

405+05.00
R\W, 70.00

406+25.00
R\W, 70.00

PROP. 2 BARREL
7'x7' RCBC
BURY INVERT 1.0'
W/ LOW FLOW SILLS

SITE 50

406+50.00
R/W

407+00.00
35.00

408+50.00
39.00

409+00.00
39.00

+50.00
R\W
40.00

409+64.00
40.00
51.00

+70.00
R\W
40.00

3 TONS CLASS 'B'
RIP RAP WITH
11 S.Y. FILTER FABRIC

37-2

PES

24"

REMOVE HEADWALL

GRADE TO DRAIN

3 RAIL CORRAL

SCRUB

GRAU 350

EXISTING R/W

-Y21- 11+00.00
25.00

STOKER AND
NDA STOKER
98 PG 284
233 PG 883

-Y21- 11+05.00
31.00

SHERIFF ROAD
SR 1911

406+26.65
85.56

11+00.00
32.00

11+50.00

407+19.07
30.00

CLICK STOKER AND
LORRAINE M. STOKER
DB 98 PG 236
DB 74 PG 473
PB 1 PG 65
PB 2 PG 61

406+89.50
R\W

408+00.00
51.00

408+50.00
95.00

CUT DITCH
-L- STA. 406+50 TO 407+50 RT.
SEE DETAIL 3

2GI-D
+50.00
R\W
35.00

37-1

+70.00
R\W
35.00

-D2-10+93.00
17.00

-D2- 11+
30.0

ELMER RICH
AND LEXA RAE
DB 75

TIE TO
EXISTING
APPROX

-D2-:
8" Gravel
Access

EXIST.GROUND
CL II RIP RAP TO TOP OF CHANNEL
2:1
4.3'
2:1
1.0'
14.0'
TYPICAL SECTION - CHANNEL

DENOTES IMPACTS IN SURFACE WATER

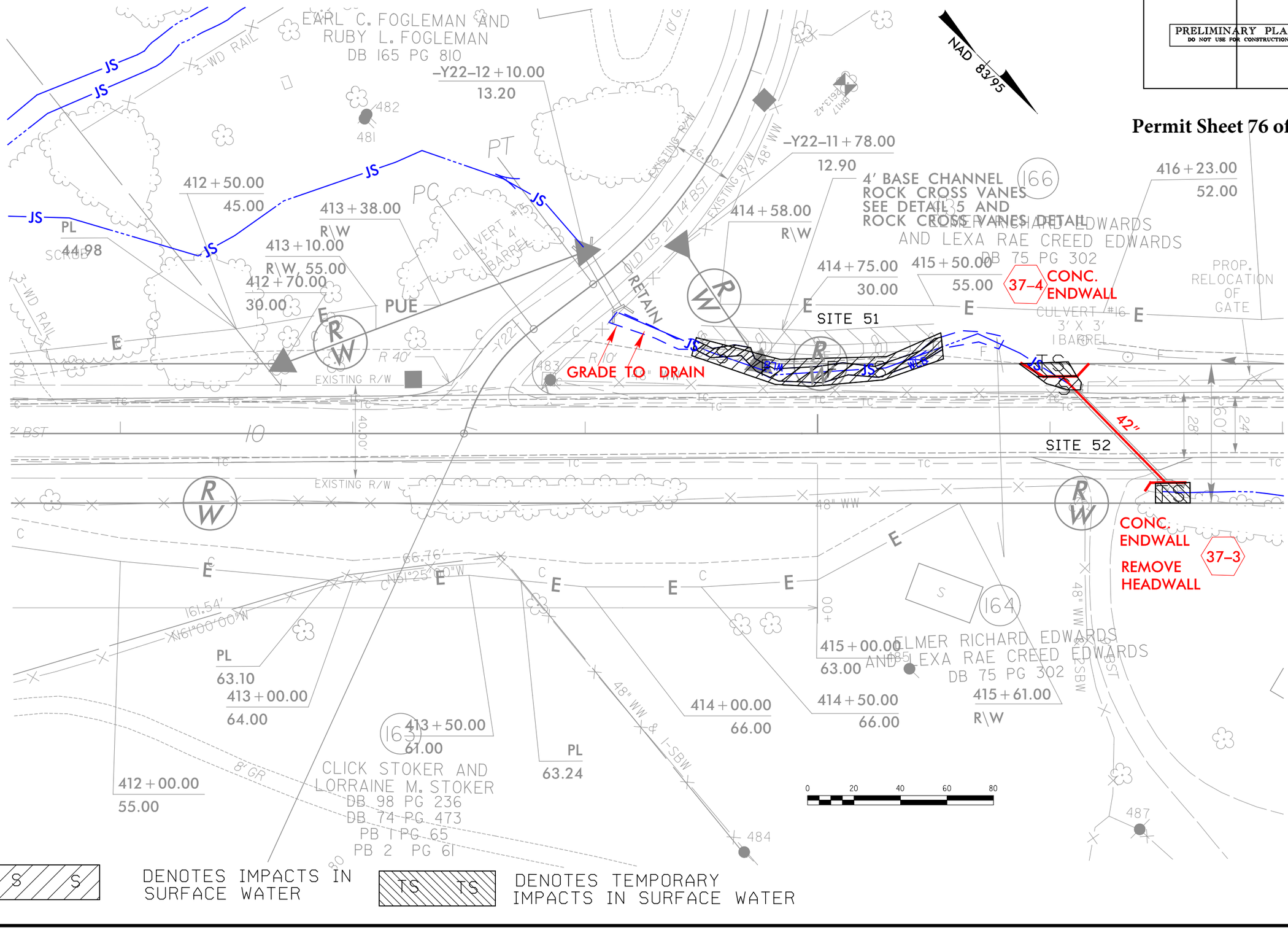
0 20 40 60 80

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	37C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 76 of 93



$$$$$$$$SYTIWE$$$$$
$$$$$$$$SZIWE$$$$$
$$$$$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 64
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

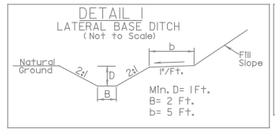
PROJECT REFERENCE NO.	SHEET NO.
R-3101	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 77 of 93

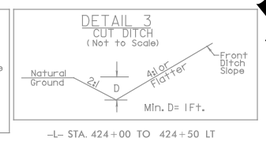
DETAIL 1
LATERAL BASE DITCH
(Not to Scale)



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

-L- STA. 426+40 TO 427+50 RT
-L- STA. 427+20 TO 429+00 LT
EST. 94 CY DDE

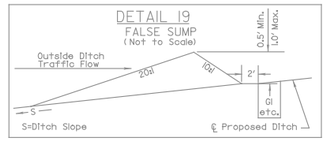
DETAIL 3
CUT DITCH
(Not to Scale)

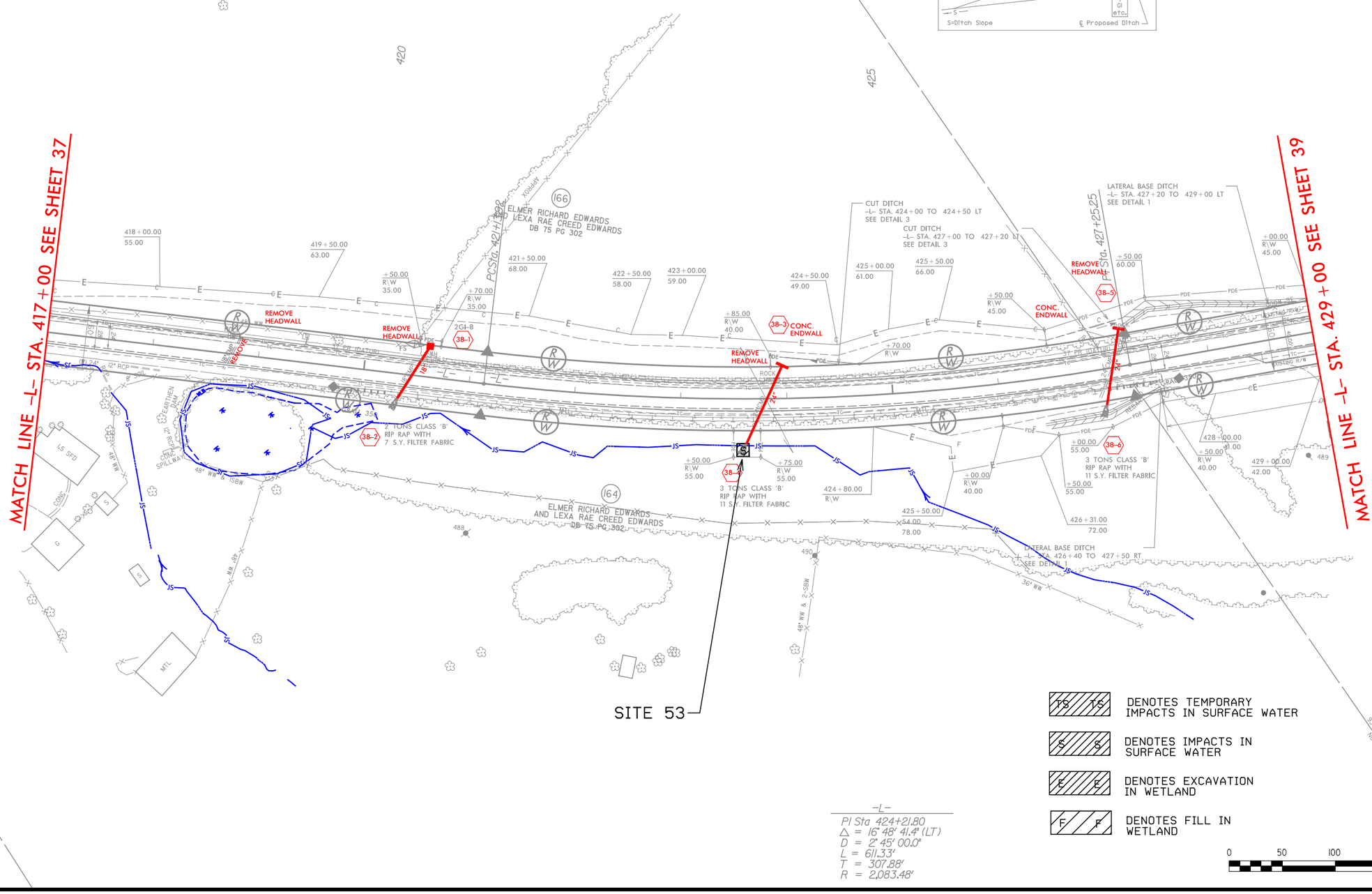


Min. D= 1Ft.

-L- STA. 424+00 TO 424+50 LT
-L- STA. 427+00 TO 427+20 LT

DETAIL 19
FALSE SUMP
(Not to Scale)





$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 64
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

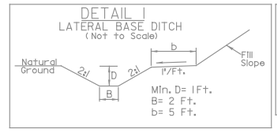
PROJECT REFERENCE NO.	SHEET NO.
R-3101	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 78 of 93

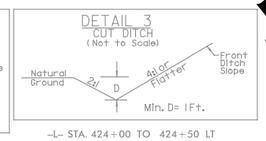
NAD 83/95

DETAIL 1
LATERAL BASE DITCH
(Not to Scale)



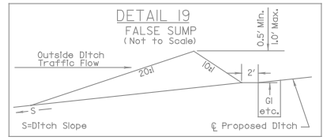
-L- STA. 426+40 TO 427+50 RT
-L- STA. 427+20 TO 429+00 LT
EST. 94 CY DDE

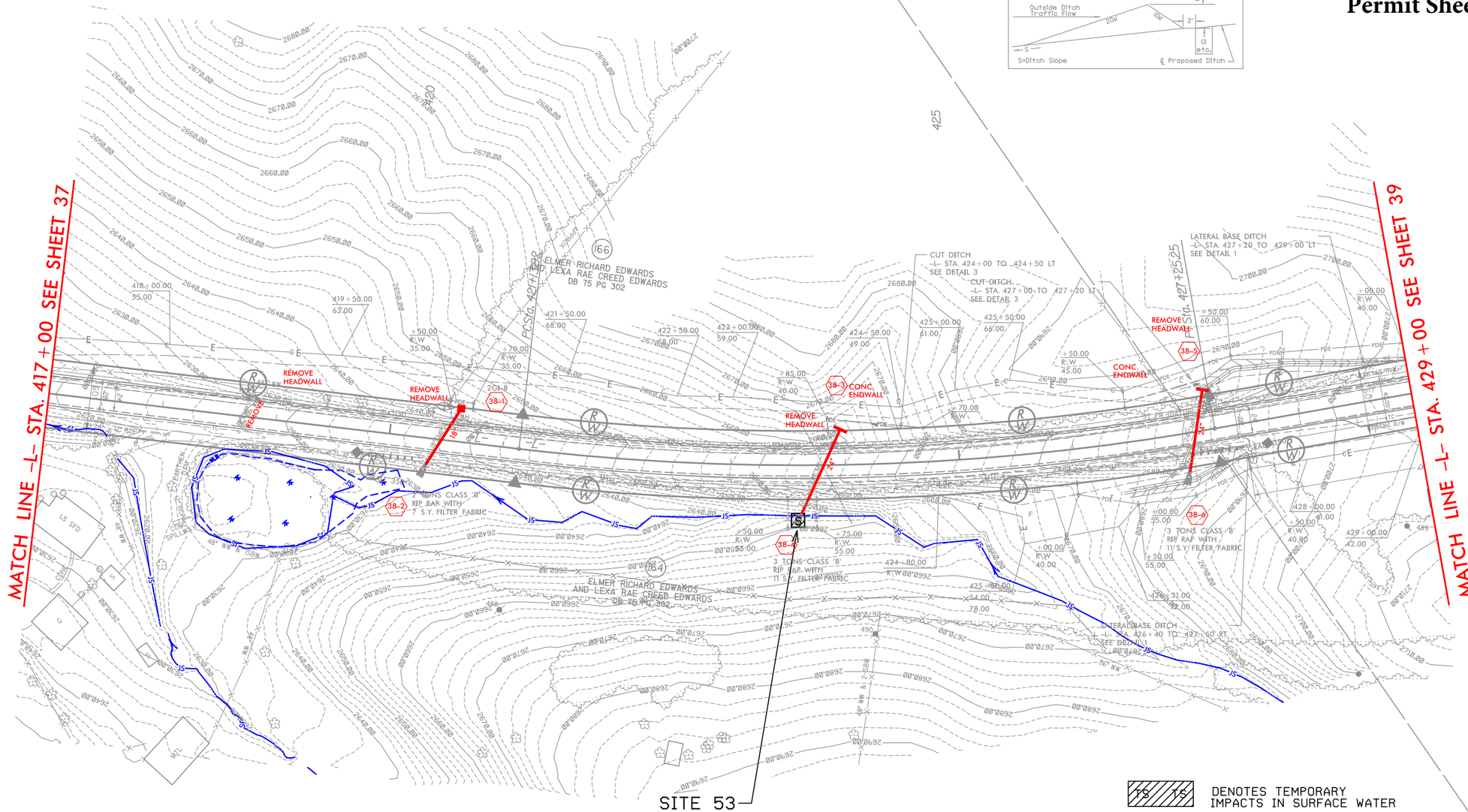
DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 424+00 TO 424+50 LT
-L- STA. 427+00 TO 427+20 LT

DETAIL 19
FALSE SUMP
(Not to Scale)





-L-
PI Sta 424+21.80
△ = 16° 48' 41.4" (LT)
D = 2° 45' 00.0"
L = 611.33'
T = 307.88'
R = 2,083.48'

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$FILENAME$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R–3101	38B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 79 of 93

NAD 83/95

166

ELMER RICHARD EDWARDS
AND LEXA RAE CREED EDWARDS
DB 75 PG 302

PCSta. 421+39.92
PROP. ℄

421+50.00
68.00

422+50.00
58.00

423+00.00
59.00

424+50.00
49.00

425+00.00
61.00

425+50.00
66.00

+50.00
R\W
45.00

CONC.
ENDWALL

CUT DITCH
–L– STA. 424+00 TO 4+50 LT
SEE DETAIL 3

CUT DITCH
–L– STA. 427+00 TO 427+20 LT
SEE DETAIL 3

+85.00
R\W
40.00

38–3

CONC.
ENDWALL

REMOVE
HEADWALL

PDE

PDE

+70.00
R\W

ROCK

24"

JS

JS

JS

JS

JS

PDE

PDE

+50.00
R\W
55.00

38–4

+75.00
R\W
55.00

3 TONS CLASS 'B'
RIP RAP WITH
11 S.Y. FILTER FABRIC

424+80.00
R\W

+00.00
R\W
40.00

425+50.00
54.00

164

ELMER RICHARD EDWARDS
AND LEXA RAE CREED EDWARDS
DB 75 PG 302

SITE 53

S S DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

$$$$$SYSTIME$$$$
$$$$$USERNAME$$$$
$$$$$FILENAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	40
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 80 of 93

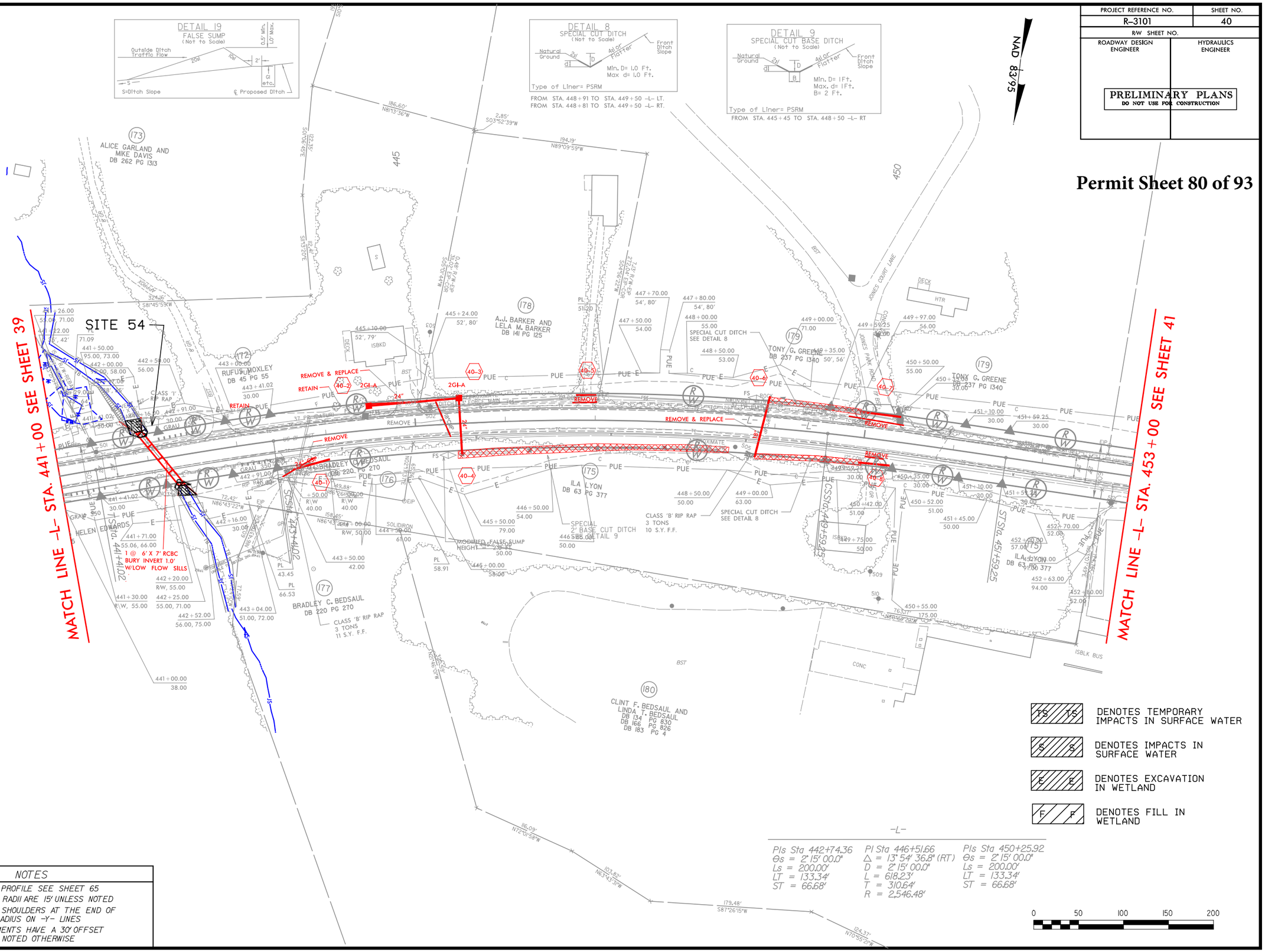
DETAIL 19
FALSE SUMP
(Not to Scale)

DETAIL 8
SPECIAL CUT DITCH
(Not to Scale)

Min. D= 1.0 Ft.
Max d= 1.0 Ft.
Type of Liner= PSRM
FROM STA. 448+91 TO STA. 449+50 -L- LT.
FROM STA. 448+81 TO STA. 449+50 -L- RT.

DETAIL 9
SPECIAL CUT BASE DITCH
(Not to Scale)

Min. D= 1Ft.
Max. d= 1Ft.
B= 2 Ft.
Type of Liner= PSRM
FROM STA. 445+45 TO STA. 448+50 -L- RT



NOTES
FOR -L- PROFILE SEE SHEET 65
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

-L-

Pls Sta 442+74.36	Pl Sta 446+51.66	Pls Sta 450+25.92
θs = 2°15' 00.0"	Δ = 13°54' 36.8" (RT)	θs = 2°15' 00.0"
Ls = 200.00'	D = 2°15' 00.0"	Ls = 200.00'
LT = 133.34'	L = 618.23'	LT = 133.34'
ST = 66.68'	T = 310.64'	ST = 66.68'
	R = 2,546.48'	

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$LOGIN$$$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	40
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 81 of 93

NAD 83/95

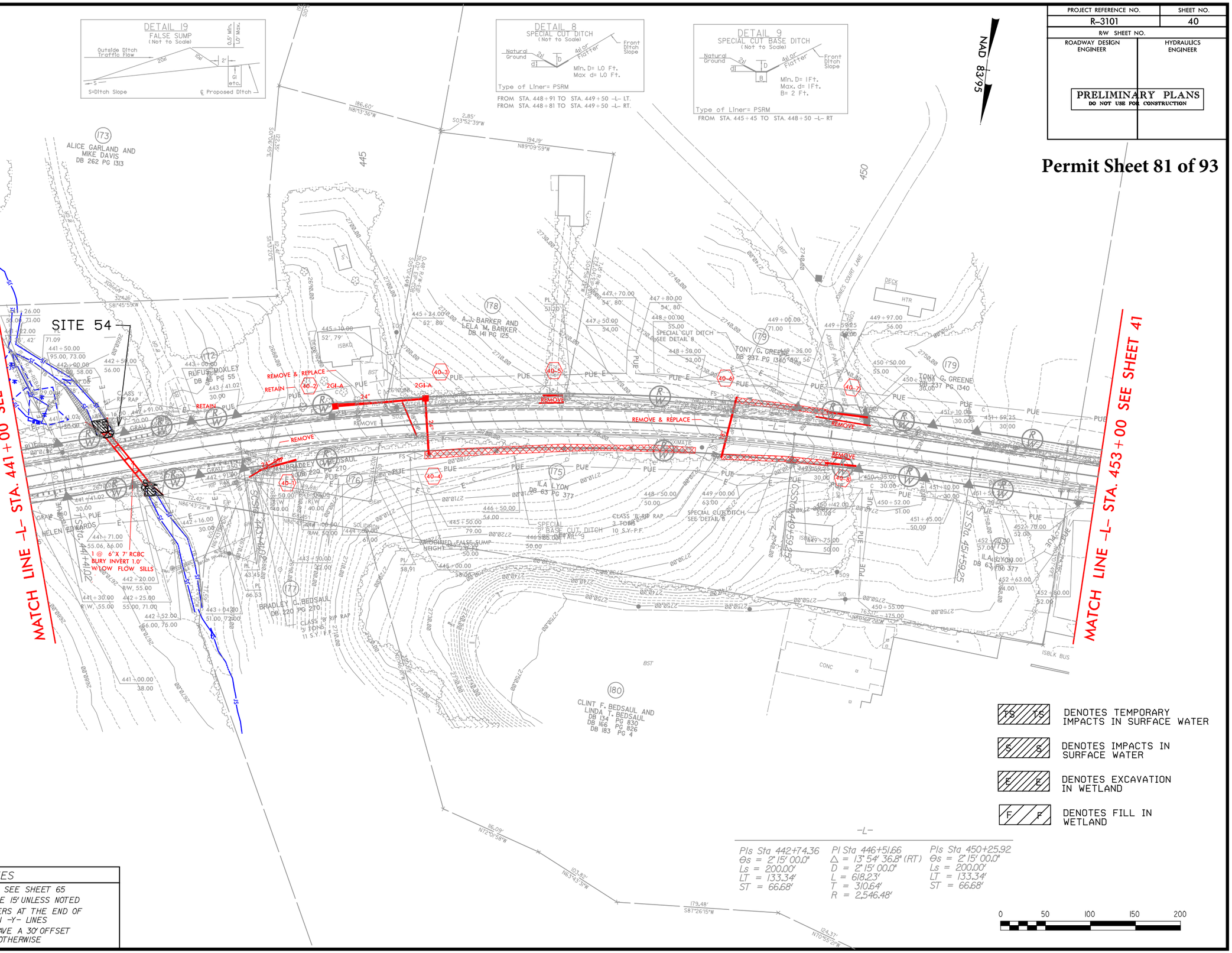
DETAIL 19
FALSE SUMP
(Not to Scale)

DETAIL 8
SPECIAL CUT DITCH
(Not to Scale)

Type of Liner= PSRM
FROM STA. 448+91 TO STA. 449+50 -L- LT.
FROM STA. 448+81 TO STA. 449+50 -L- RT.

DETAIL 9
SPECIAL CUT BASE DITCH
(Not to Scale)

Type of Liner= PSRM
FROM STA. 445+45 TO STA. 448+50 -L- RT



TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S	DENOTES IMPACTS IN SURFACE WATER
E E	DENOTES EXCAVATION IN WETLAND
F F	DENOTES FILL IN WETLAND

-L-

PIs Sta 442+74.36	PI Sta 446+51.66	PIs Sta 450+25.92
θs = 2°15' 00.0"	Δ = 13°54' 36.8" (RT)	θs = 2°15' 00.0"
Ls = 200.00'	D = 2°15' 00.0"	Ls = 200.00'
LT = 133.34'	L = 618.23'	LT = 133.34'
ST = 66.68'	T = 310.64'	ST = 66.68'
	R = 2,546.48'	

0 50 100 150 200

NOTES

FOR -L- PROFILE SEE SHEET 65
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

$$$$$$$SYSTIME$$$$$
$$$$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	40B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 82 of 93

NAD 83/95

441+26.00
55.00, 71.00
441+22.00
35', 42'
PL
71.09
441+50.00
95.00, 73.00
442+00.00
95.00, 58.00
441+47.00
38', 65'
442+50.00
56.00
443+00.00
443+29.00
43', 64'
441+41.02
30.00
442+16.00
30.00
442+91.00
30.00
443+41.02
30.00
445+10.00
52', 79'
52', 80'

CLASS 'I' RIP RAP
RETAIN
REMOVE & REPLACE
REMOVE
24" CSP
24"
1 @ 6' X 7' RCBC
BURY INVERT 1.0'
W/LOW FLOW SILLS
MODIFIED FALSE SUMP
HEIGHT = 2.0 FT.

40-1
40-2
40-3
40-4
2GI-A

SITE 54

RUFUS MOXLEY
DB 45 PG 55
BRADLEY C. BEDSAUL
DB 220 PG 270
HELEN EDWARDS
SOLIDIRON

441+71.00
55.06, 66.00
441+30.00
R\W, 55.00
442+20.00
R/W, 55.00
442+25.00
55.00, 71.00
442+52.00
443+04.00
51.00, 72.00
443+50.00
42.00
444+00.00
R/W, 50.00
444+50.00
61.00
445+00.00
58.00
445+50.00
79.00
446+50.00
54.00
+50.00
R\W
40.00
00.00
R\W
40.00

PL
43.45
PL
66.53
PL
58.91

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

0 20 40 60 80

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	42
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 83 of 93

NAD 83'95

-L-
PIs Sta 461+48.70
Θs = 3° 00' 00.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

-L-
PI Sta 466+73.01
Δ = 26° 57' 05.9" (RT)
D = 3° 00' 00.0"
L = 898.39'
T = 457.66'
R = 1,909.86'

-L-
PIs Sta 471+80.42
Θs = 3° 00' 00.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

DETAIL II
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, b, T/Ft., Fill Slope, d, B
Min. D= 1.5 Ft.
Max. d= 1 Ft.
B= 4 Ft.
b= 5 Ft.
Type of Liner= PSRM
FROM STA. 476+00 TO STA. 477+00 -L- RT
EST. 312 CY DDE

DETAIL 3
CUT DITCH
(Not to Scale)
Natural Ground, 2H, D, 4H or Flatter, Front Ditch Slope
Min. D= 1.0 Ft.
FROM STA. 465+50 TO STA. 466+00 -L- RT

DETAIL 8
CUT DITCH
(Not to Scale)
Natural Ground, 2H, D, 4H or Flatter, Front Ditch Slope, d
Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= PSRM
FROM STA. 474+66 TO STA. 477+00 -L- LT

DETAIL 15
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, b, T/Ft., Fill Slope, B
Min. D= 1.5 Ft.
B= 3 Ft.
b= 5 Ft.
FROM STA. 466+00 TO STA. 468+30 -L- 476+50.00
474+50.00 EST. 327 CY DDE

DETAIL 13
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, Natural Ground, B
Min. D= 3 Ft.
B= 3 Ft.
FROM STA. 468+76 TO STA. 469+50 -L- RT
EST. 174 CY DDE

DETAIL 18
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, b, T/Ft., Fill Slope, B
Min. D= 1.5 Ft.
B= 4 Ft.
b= 5 Ft.
FROM STA. 475+00 TO STA. 476+00 -L- RT
EST. 274 CY DDE

DETAIL 12
RIP RAP AT EMBANKMENT
(Not to Scale)
3', Ditch Grade, Filter Fabric, 2', 0
Type of Liner= 40 TONS CL I Rip-Rap
Filter Fabric= 44 sy
FROM STA. 473+15 TO STA. 473+41 -L- RT

SITE 55

SITE 56

MATCH LINE -L- STA. 465+00 SEE SHEET 41

MATCH LINE -L- STA. 477+00 SEE SHEET 43

DANNY D. LYON AND BARBARA LYON
DB III PG 498
PG 405
DB 142 PG 804
DB 142 PG 804
DB 142 PG 804

GEORGE L. BRYAN AND ELIZABETH H. BRYAN
DB 228 PG 304

DELMER A. BRYAN AND JUANITA G. BRYAN
DB 179 PG 15
DB 87 PG 352
DB 228 PG 544
DB 95 PG 623
DB 63 PG 398

WETLANDS OBLITERATED BY OUTSIDE CONTRACTOR

POSSIBLE EXIST. JB

ISBKD

ISFD

CLASS 'I' RIP RAP
38 TONS
78 S.Y. F.F.

CLASS 'B' RIP RAP
EST 3 TONS 11 S.Y. F.F.

CLASS 'B' RIP RAP
5 TONS
14 S.Y. F.F.

RIP RAP @ EMBANKMENT
CLASS 'I' RIP RAP
SEE DETAIL 12

CUT DITCH
SEE DETAIL 3

3' BASE LATERAL DITCH
SEE DETAIL 15

4' BASE LATERAL DITCH
PSRM
SEE DETAIL 11

BASE LATERAL DITCH
SEE DETAIL 18

BASE CUT DITCH
SEE DETAIL 13

CUT DITCH
PSRM
SEE DETAL

REMOVE

PLUG

2GI-A

42-1 42-2 42-3 42-4 42-5 42-6

BY32 STATION 8+29.00 32' LEFT
N 999927, ELEVATION 2750.04'
E 1388159.

SR 1119 NARROW ROAD 12' BST

N05°42'03"E 41.71'

N05°39'19"E 12.47'

2004 / 2030 ADT
-Y24- NARROW RD
58/105 60/106
I-1/1 I/1
0 50 I/2 100 150 200

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

NOTES

FOR -L- PROFILE SEE SHEET 66
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

1/3 BANKFULL WIDTH, 1/3 BANKFULL WIDTH, 1/3 BANKFULL WIDTH
BANKFULL, 20° TO 30°, BANKFULL
FLOW, #57 STONE, FILTER FABRIC, POOL, HEADER ROCK, FOOTER ROCK, POOL EXCAVATED PER DIRECTION OF ENGINEER
KEY IN VANE TO BANK MINIMUM OF 3' AT AN ELEVATION EQUAL TO BANKFULL OR SLIGHTLY LOWER

PLAN VIEW

STATION	BOULDER DIMENSIONS (FT) HEIGHT	LENGTH	WIDTH
468+86 -L- RT	1'	2'	2'
469+13 -L- RT	1'	2'	2'
469+40 -L- RT	1'	2'	2'

NOTE:
USE NATIVE STONE WHERE AVAILABLE

ROCK CROSS VANE DETAIL
NOT TO SCALE

HEADER ROCK ,TYP. SEE PROFILE FOR ELEVATION
SET HEADER ROCK BACK A MINIMUM OF 1/3 WIDTH OF THE FOOTER ROCK
FLOW, BACKFILL, TYP., #57 STONE, TYP., 2' MINIMUM, BED, EXCAVATED POOL, FOOTER ROCK, TYP., ROCKS IN VANE ARM SHOULD NOT BE GAPPED OR HAVE ANY SIGNIFICANT SPACES, EXCAVATED TRENCH FOR ROCK CROSS VANE CONSTRUCTION, FILTER FABRIC, TYP.

SECTION A-A

BANKFULL, FLOW, 4% TO 10% SLOPE, TIE VANE ARM INTO BANKFULL ELEVATION, HEADER ROCKS, BACKFILL, TYP., #57 STONE, FILTER FABRIC, FOOTER ROCKS, BED, 2' MINIMUM, ROCKS IN VANE ARM SHOULD NOT BE GAPPED OR HAVE ANY SIGNIFICANT SPACES

SECTION B-B

NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

$$$$SYSTIME$$$$
$$$$USERNAME$$$$ON$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	42
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 84 of 93

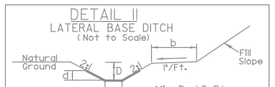
NAD 83'95

-L-
PIs Sta 461+48.70
Θs = 3° 00' 00.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

PI Sta 466+73.01
Δ = 26° 57' 05.9" (RT)
D = 3° 00' 00.0"
L = 898.39'
T = 457.66'
R = 1,909.86'

-L-
PIs Sta 471+80.42
Θs = 3° 00' 00.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

DETAIL II
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1Ft.
B= 4 Ft.
b= 5 Ft.

Type of Liner= PSRM

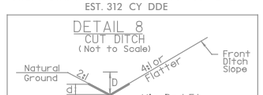
FROM STA. 476+00 TO STA. 477+00 -L- RT
EST. 312 CY DDE

DETAIL 3
CUT DITCH
(Not to Scale)

Min. D= 1.0 Ft.

FROM STA. 465+50 TO STA. 466+00 -L- RT

DETAIL 8
CUT DITCH
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.

Type of Liner= PSRM

FROM STA. 474+66 TO STA. 477+00 -L- LT

SITE 55

SITE 56

MATCH LINE -L- STA. 465+00 SEE SHEET 41

MATCH LINE -L- STA. 477+00 SEE SHEET 43

DANNY D. LYON AND BARBARA LYON
DB 111 PG 498
DB 142 PG 405
DB 142 PG 801
DB 142 PG 804

GEORGE L. BRYAN AND ELIZABETH H. BRYAN
DB 228 PG 304

DELMER A. BRYAN AND JUANITA C. BRYAN
DB 179 PG 15
DB 87 PG 332
DB 228 PG 544
DB 195 PG 623
DB 63 PG 398

WETLANDS OBLITERATED BY OUTSIDE CONTRACTOR

CLASS 'I' RIP RAP
38 TONS
78 S.Y. F.F.

CLASS 'B' RIP RAP
EST 31 TONS 11 S.Y. F.F.

CLASS 'B' RIP RAP
5 TONS
14 S.Y. F.F.

RIP RAP @ EMBANKMENT
CLASS 'I' RIP RAP
SEE DETAIL 12

REMOVE

PLUG

24"

CUT DITCH
SEE DETAIL 3

3' BASE LATERAL DITCH
SEE DETAIL 15

4' BASE LATERAL DITCH
SEE DETAIL 18

4' BASE LATERAL DITCH
PSRM
SEE DETAIL 11

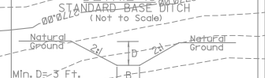
DETAIL 15
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
b= 4 Ft.
b= 5 Ft.

FROM STA. 468+30 TO STA. 468+50 -L- RT
EST. 327 CY DDE

FROM STA. 473+50 TO STA. 476+50 -L- RT
EST. 327 CY DDE

DETAIL 13
STANDARD BASE DITCH
(Not to Scale)



Min. D= 3 Ft.
B= 3 Ft.

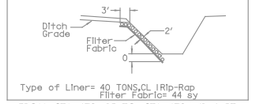
FROM STA. 468+76 TO STA. 469+50 -L- RT
EST. 174 CY DDE

DETAIL 18
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
B= 4 Ft.
b= 5 Ft.

FROM STA. 475+00 TO STA. 476+00 -L- RT
EST. 274 CY DDE

DETAIL 12
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 40 TONS CL I Rip-Rap
Filter Fabric= 44 sy

FROM STA. 473+15 TO STA. 473+41 -L- RT

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

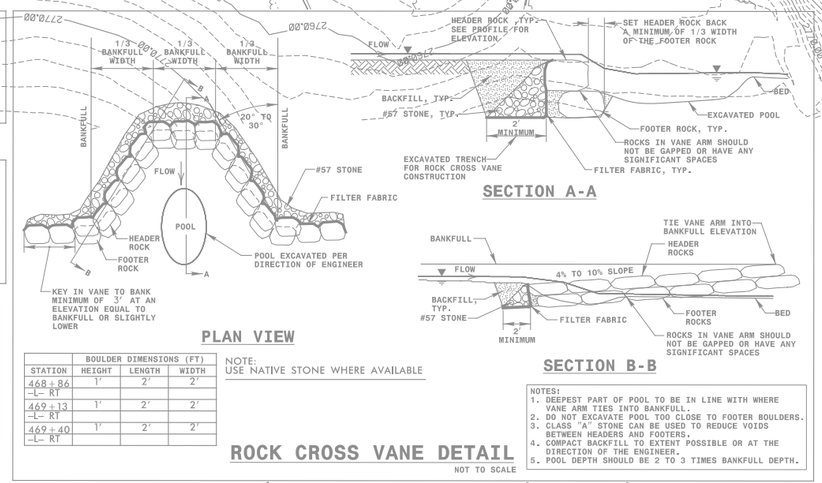
E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

2004 / 2030 ADT
-Y24- NARROW RD
58/105 60/106
1-/1 1/1
0 50 1/2 100 150 200

NOTES

FOR -L- PROFILE SEE SHEET 66
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE



	BOULDER DIMENSIONS (FT)		
STATION	HEIGHT	LENGTH	WIDTH
468+86 -L- RT	1'	2'	2'
469+13 -L- RT	1'	2'	2'
469+40 -L- RT	1'	2'	2'

NOTE:
USE NATIVE STONE WHERE AVAILABLE

NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

ROCK CROSS VANE DETAIL
NOT TO SCALE

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	42B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 85 of 93

NAD 83/95

SITE 55

DANNY D. LYON AND BARBARA LYON
DB III PG 498
DB 142 PG 405
DB 89 PG 511
DB 142 PG 165
DB 142 PG 804

185

466+95.00
55.00, 73.00

467+41.00
55.00, 72.00

+60.00
R\W
55.00

467+80.00
R/W, 55, 77

468+30.00
49.00, 62.00

469+00.00
42.00

WETLANDS
OBLITERATED BY
OUTSIDE CONTRACTOR

469+50.00
36.00

470+50.00
41.00

471+00.00
50.00

CLASS 'I' RIP RAP
38 TONS
78 S.Y. F.F.

CLASS 'B' RIP RAP
EST 3 TONS 11 S.Y. F.F.

42-1

42-3

24"

72"

HW

REMOVE

GRAU 350

2 RAIL WD

36" WW 3-SBW

CLASS 'B' RIP RAP

CULVERT #8
5' X 5'
3 BARREL

42-2

SCRUB

SITE 56

00.00
41.00

466+00.00
59.00

466+00.00
R\W ,40.00

467+50.00
45.00

467+35.00
45.00, 63.00

468+00.00
60.00

468+50.00
60.00

469+50.00
R/W, 40.00

470+03.00
36.00, 51.00

470+53.00
36.00, 51.00

471+00.00
40.00

471+13.74
30.00

188

DANNY D. LYON AND BARBARA LYON
DB III PG 498
DB 142 PG 405
DB 89 PG 511
DB 142 PG 165
DB 142 PG 804

CUT DITCH
SEE DETAIL 3

3' BASE LATERAL DITCH
SEE DETAIL 5

465+50.00
50.00

BASE CHANNEL
ROCK CROSS VANES
SEE DETAILS 5T

TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S	DENOTES IMPACTS IN SURFACE WATER
E E	DENOTES EXCAVATION IN WETLAND
F F	DENOTES FILL IN WETLAND

0 20 40 60 80

$$$$SYSTIME$$$$
$$$$FILENAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 67
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 86 of 93

SITE 57

SITE 58

MATCH LINE -L- STA. 501+00 SEE SHEET 44

MATCH LINE -L- STA. 513+00 SEE SHEET 46

FOY C. HEFNER, SR. AND KATHERYN S. HEFNER DB 131 PG 833

ARTHUR GAMBILL AND JOHNNIE GAMBILL DB 74 PG 504

JERRY G. BILLINGS AND OCTAVIA BILLINGS DB 179 PG 121

RICHARD L. DOUGHTON AND MARY JANE DOUGHTON DB 125 PG 742

WILLIAM A. GRAHAM III AND DENISE H. GRAHAM DB 187 PG 443, DB 179 PG 132, DB 242 PG 653, DB 576 PG 65, DB 169 PG 791, DB 160 PG 430

CONSTRUCTION -L- STA. 510+30.00

END RESURFACING -L- POT STA. 510+00.00

-L- GRAU 350

N 88° 30' 24.6" W

N 87° 41' 33.6" W

REMOVE & REPLACE

REMOVE & REPLACE 30" RCP BURIED 0.5'

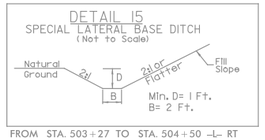
RETAIN

PC Sta. 506+59.31

PT Sta. 507+87.87

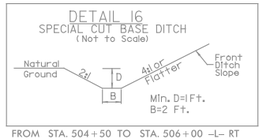
-L-
PI Sta 507+13.59
Δ = 0° 48' 51.0" (RT)
D = 0° 45' 00.0"
L = 108.56'
T = 54.28'
R = 7,639.44'

DETAIL I5
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 503+27 TO STA. 504+50 -L- RT

DETAIL I6
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 504+50 TO STA. 506+00 -L- RT

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

0 50 100 150 200

$$$$$$$$SYSTIME$$$$$$
$$$$$$$$

8/17/99

NOTES

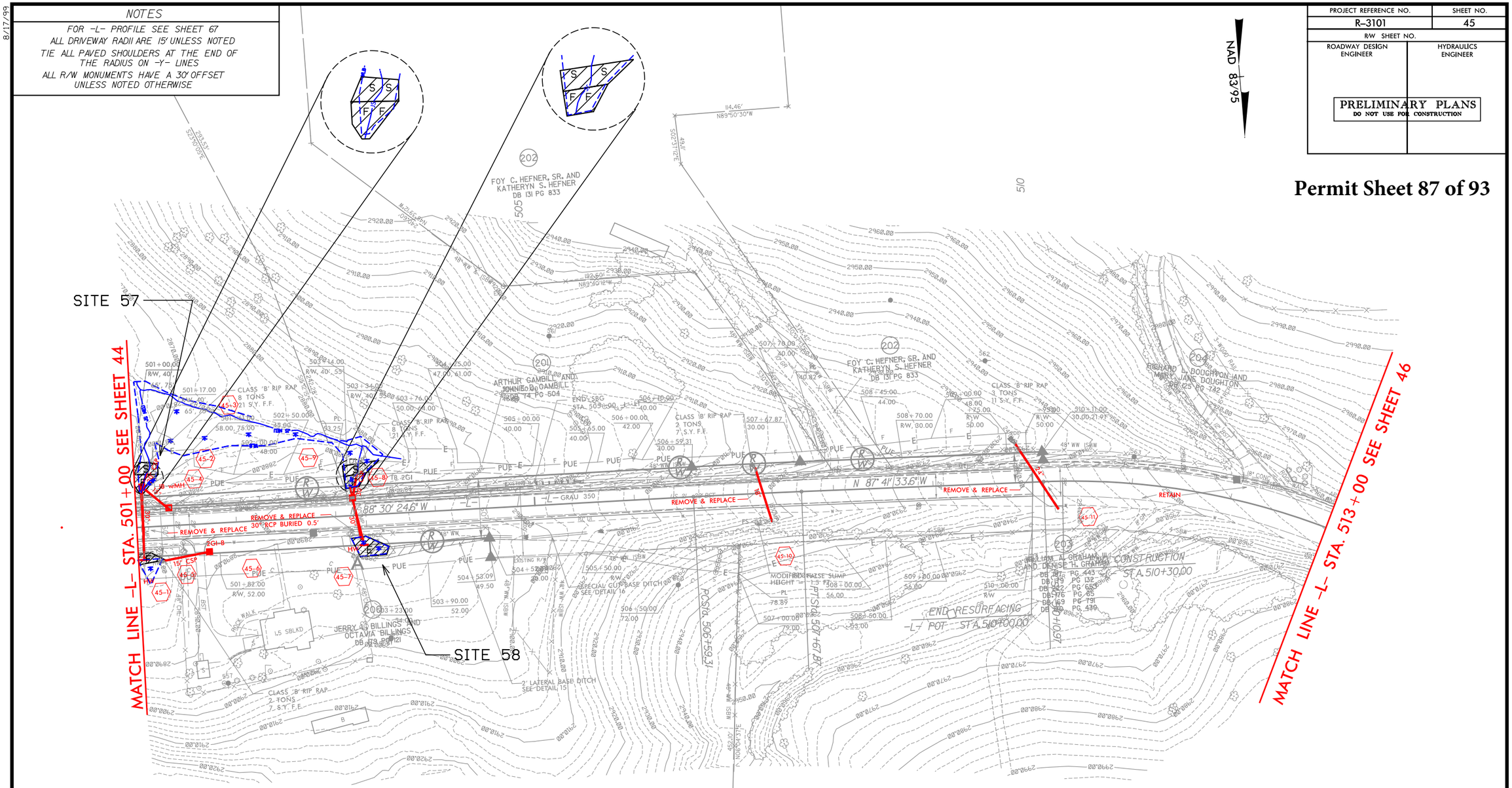
FOR -L- PROFILE SEE SHEET 67
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

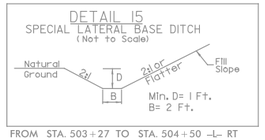
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

Permit Sheet 87 of 93

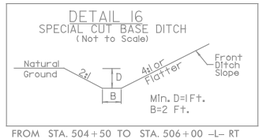


DETAIL I5
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 503+27 TO STA. 504+50 -L- RT

DETAIL I6
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 504+50 TO STA. 506+00 -L- RT

-L-
PI Sta 507+13.59
Δ = 0° 48' 51.0" (RT)
D = 0° 45' 00.0"
L = 108.56'
T = 54.28'
R = 7,639.44'

S / S DENOTES IMPACTS IN SURFACE WATER

TS / TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F / F DENOTES FILL IN WETLAND

E / E DENOTES EXCAVATION IN WETLAND

0 50 100 150 200

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3101	45B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Sheet 88 of 93

5/14/99

SITE 57

501+00.00
R/W, 40',
65', 75'

501+17.00
R/W, 40',
65', 75'

501+61.00
58.00, 75.00

502+00.00
48.00

502+50.00
45.00

503+14.00
R/W, 40', 55'

503+34.00
R/W, 40', 55'

503+76.00
50.00, 64.00

504+25.00
47.00, 61.00

504+50.00
46.00

505+00.00
40.00

505+65.00
40.00

506+00.00
42.00

506+10.00
40.00

506+59.3
30.00

END SBG
STA. 505+00 -L- LT

CLASS 'B' RIP RAP
8 TONS
21 S.Y. F.F.

CLASS 'B' RIP RAP
8 TONS
21 S.Y. F.F.

242.28'
S15°12'15"E

PL
53.25

NAD 83/95

ARTHUR GAMBILL AND
SAMMIE D GAMBILL
DB 74 PG 504

45-1
45-2
45-3
45-4
45-5
45-6
45-7
45-8
45-9

JB w/MH
TB 2GI
2GI-B
HW
15" CSP
30" RCP
18" RCP
24" RCP
48" CMP
48" CHL
48" WW
48" WW ISBW
10" DI
DUE
BST
ROCK WALL
1.5 SBLKD
EXISTING R/W
EXISTING R/SS
GRAU 350
N 88° 30' 24.6" W
REMOVE & REPLACE 30" RCP BURIED 0.5'
REMOVE & REPLACE

PUE
E
F
JS
SS
FSS
W
T
TC
IC
C
L

201
200
A
557
560

503+23.00
54.00

503+90.00
52.00

504+53.09
49.50

504+52.64
30.00

505+50.00
R/W

506+50.00
72.00

SPECIAL CUT BASE DITCH
SEE DETAIL 16

2' LATERAL BASE DITCH
SEE DETAIL 15

JERRY L. BILLINGS AND
OCTAVIA BILLINGS
DB 179 PG 121

SITE 58

CLASS 'B' RIP RAP

S S DENOTES IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

0 20 40 60 80

$$$$SYSTIME$$$$
$$$$SYSDATE$$$$
$$$$FILENAME$$$$

WETLAND PERMIT IMPACT SUMMARY

				WETLAND IMPACTS					SURFACE WATER IMPACTS			
Sheet No.	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)
7	1	52+41 38'RT	Culvert Extension						<0.01		16	
		52+41 38'RT	Riprap Apron						<0.01		10	
	2	53+80 47' RT to 57+00 44' RT	Pond						0.11			
9	3	69+40 24'RT	Fill	0.01								
	4	71+64 20' LT	Const. Area							0.01		32
		71+63 16'RT	Const. Area							0.01		42
11	5	94+80 27' LT	Pond							<0.01		
	6	96+85 25' LT	Fill/Const. Area	<0.01	0.01							
	7	98+29 30' LT	Riprap Apron	<0.01	<0.01							
	8	101+06 26' LT	54" CCFRPM						0.01	<0.01	15	8
		101+06 21'RT	54" CCFRPM							<0.01		9
12	9	112+20 32' RT to 112+85 20' RT	Channel Relocation						0.01		160	
	10	113+70 26' LT	Riprap Apron						<0.01		12	
12&13	11	117+05 35' RT	24" RCP						0.01	<0.01	41	13
		117+35 22' LT	24" RCP						<0.01		8	
		117+35 22' LT	Riprap Apron						<0.01		11	
14	12	132+50 30' LT	Fill/Const. Area	0.01								
	13	133+05 30' LT	Riprap Apron						<0.01		11	
		133+05 30' LT	30" PIPE						<0.01		6	
	14	135+66 25' LT	Const. Area	<0.01	<0.01							
	15	NOT USED										
	16	NOT USED										
	17	NOT USED										
14	18	139+50 18' LT	42" RCP						0.01		29	
		139+61 46' LT	Riprap Apron						<0.01		12	
		139+69 55' LT	Riprap Ditch						0.01		34	
		139+90 84' LT	Riprap Ditch							<0.01		7
15	19	143+05 25' LT	Const. Area	0.01	0.02							
	20	NOT USED										
18	21	183+60 21' RT	Channel Relocation						0.01	<0.01	17	21

WETLAND PERMIT IMPACT SUMMARY												
				WETLAND IMPACTS					SURFACE WATER IMPACTS			
Sheet No.	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)
19	22	191+06 23' LT	24" RCP						<0.01		11	
			riprap apron						<0.01		11	
21	23	223+15 29' LT	24' RCP						<0.01		9	
		223+16 36' LT	Riprap/Pipe remove						<0.01		22	
22	24	230+95 13'RT	Const. Area						<0.01		18	
		233+13 13' RT to 234+40 17' RT	Const. Area						0.02		129	
	25	234+54 19' LT	Riprap Apron						<0.01		12	
23	26	239+69 30' RT	30" pipe / const.	0.01		0.01						
	27	239+98 27' LT	Riprap Apron						<0.01		13	
26	28	277+82 33' LT	36" RCP						<0.01		7	
		277+87 25' LT	Riprap Apron						<0.01		7	
27	29	291+16 34' LT	Riprap Apron	<0.01					<0.01		8	
	30	291+31 24' RT	24" RCP						<0.01	<0.01	15	12
28	31	297+25 36' LT	Wetland	<0.01	<0.01							
	32	297+83 26' LT	Wetland	<0.01					<0.01		17	
	33	298+40 17' RT to 298+93 16' RT	Endwall						0.01	<0.01	14	14
			30" RCP						0.01		78	
	34	298+88 21' LT	30" RCP						<0.01		15	
		298+88 21' LT	Riprap Apron						<0.01		8	
		298+90 30' LT to 300+77 27' LT	Fill/Const. Area	0.03								
		301+18 28' LT to 301+71 27' LT	Fill/Const. Area	<0.01								
		302+30 25' LT	Fill/Const. Area	<0.01								
		298+90 30' LT to 302+28 25' LT	Fill/Const. Area		0.06							
		302+45 25' LT	Fill/Const. Area		<0.01							
	35	NOT USED										

WETLAND PERMIT IMPACT SUMMARY												
				WETLAND IMPACTS					SURFACE WATER IMPACTS			
Sheet No.	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)
29	36	312+22 27' LT	Fill/Const. Area		<0.01							
	37	313+00 24' LT	Fill/Const. Area	<0.01								
		313+00 27' LT	Fill/Const. Area		0.01							
	38	314+94 41 LT to 317+23 42' LT	Fill/Const. Area		0.06							
		315+05 33' LT to 317+18 30' LT	Fill/Const. Area	0.07								
	39	317+17 35' RT	24" RCP(retaining wall)							<0.01		19
		317+30 32' RT	24" RCP						0.01		32	
		317+32 21' RT	24" RCP						0.01		40	
			riprap apron						<0.01		11	
30	40	322+23 31' LT	30" RCP						<0.01		10	
			riprap apron						<0.01		10	
		322+18 31' RT	endwall							<0.1		12
	41	325+25 34 RT	ret. wall & cut							<0.1		12
			30" RCP						<0.1		16	
	42	332+49 16' LT	30" CCFRPM riprap apron						<0.1		9	
			30" CCFRPM							<0.1		12
		332+50 21' RT	30" CCFRPM						<0.01		13	
			Ret. Wall							<0.01		11
31	43	336+50 20' RT	Inlet/18" RCP			0.02						
		336+45 15' LT	Riprap Apron/ 18" RCP	0.01								
		336+53 19' LT	18" RCP	<0.01								
		336+71 21' RT	inlet/18" RCP			<0.01						
	44	NOT USED										
	45	344+29 21' RT	36" RCP						<0.01		10	
		344+33 25' LT	36" RCP						<0.01		17	
			Riprap Apron						<0.01		11	

WETLAND PERMIT IMPACT SUMMARY

Sheet No.	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)
32	46	349+36 25' RT	30" CCFRPM						<0.01		15	
			Earthen Ditch & Prop. Ret. Wall Const.						<0.01		12	
		349+34 22' LT	30" CCFRPM						<0.01		10	
			Riprap Apron						<0.01		17	
33	47	364+28 19' RT	42" CCFRPM						<0.01		13	
			Relocate Channel						0.01		84	
		364+49 20' LT	42" CCFRPM						<0.01		16	
			Riprap Apron						<0.01		12	
34	48	372+61 30 RT	Channel Relocation						<0.01		41	
		372+61 30' RT	Riprap Erosion Stone (Ditch Lining)						0.01		69	
		372+57 22' LT	Channel Relocation						<0.01		39	
	48A	376+00 43' LT	Const. Area	<0.01								
36	49	393+55 LT	Structure removal							0.01		12
		393+55 RT	Structure removal							0.01		12
	50	404+14 100' RT	Channel Relocation						0.04	<0.01	100	18
		404+21 24' LT	Channel Relocation						0.03		84	
37	50	405+45 51' LT	Earthen Ditch						0.02		72	
	51	414+47 33' LT to 415+54 32' LT	Base Ditch	0.01					0.03		111	
	52	416+00 26' LT	Endwall							<0.01		10
		416+07 18' LT	42" RCP						<0.01		19	
		416+46 21' RT	Endwall							<0.01		15
38	53	423+60 44' RT	Riprap Apron						<0.01		9	
40	54	441+94 33' LT	Const. of 6' x 7' RCBC							<0.01		9
									<0.01		13	
		442+31 29' RT							<0.01		4	
										<0.01		12

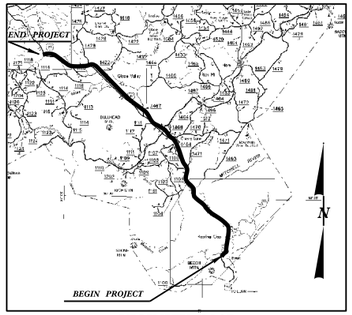
WETLAND PERMIT IMPACT SUMMARY												
				WETLAND IMPACTS					SURFACE WATER IMPACTS			
Sheet No.	Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)
42	55	467+73 23' LT	Endwall							<0.01		10
			Const. of 72" RCP						0.01		28	
		468+31 34' LT	Const. Area	<0.01								
	56	467+98 18' RT to 468+30 31' RT	72" RCP						<0.01		31	
		468+05 18' RT to 468+50 31' RT	From Tying in 3' Ditch							<0.01		27
		468+75 40' RT to 469+54 31' RT	Channel Rel. w/ Rock Cross Vanes			<0.01			0.01		84	
45	57	501+05 31' LT	30" RCP & Junct. Box	0.01					<0.01		13	
		501+05 27' RT	Headwall	0.01								
	58	503+15 40' LT	30" CSP	0.01					0.01		11	
		503+25 21' RT	Headwall & Ditch			0.01						
TOTAL:				0.18	0.18	0.04	0.00	0.00	0.50	0.10	1862	349

09/08/99

TIP PROJECT: R-3101

CONTRACT: C203386

See Sheet 1-A For Index of Sheets



VICINITY MAP
(NO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

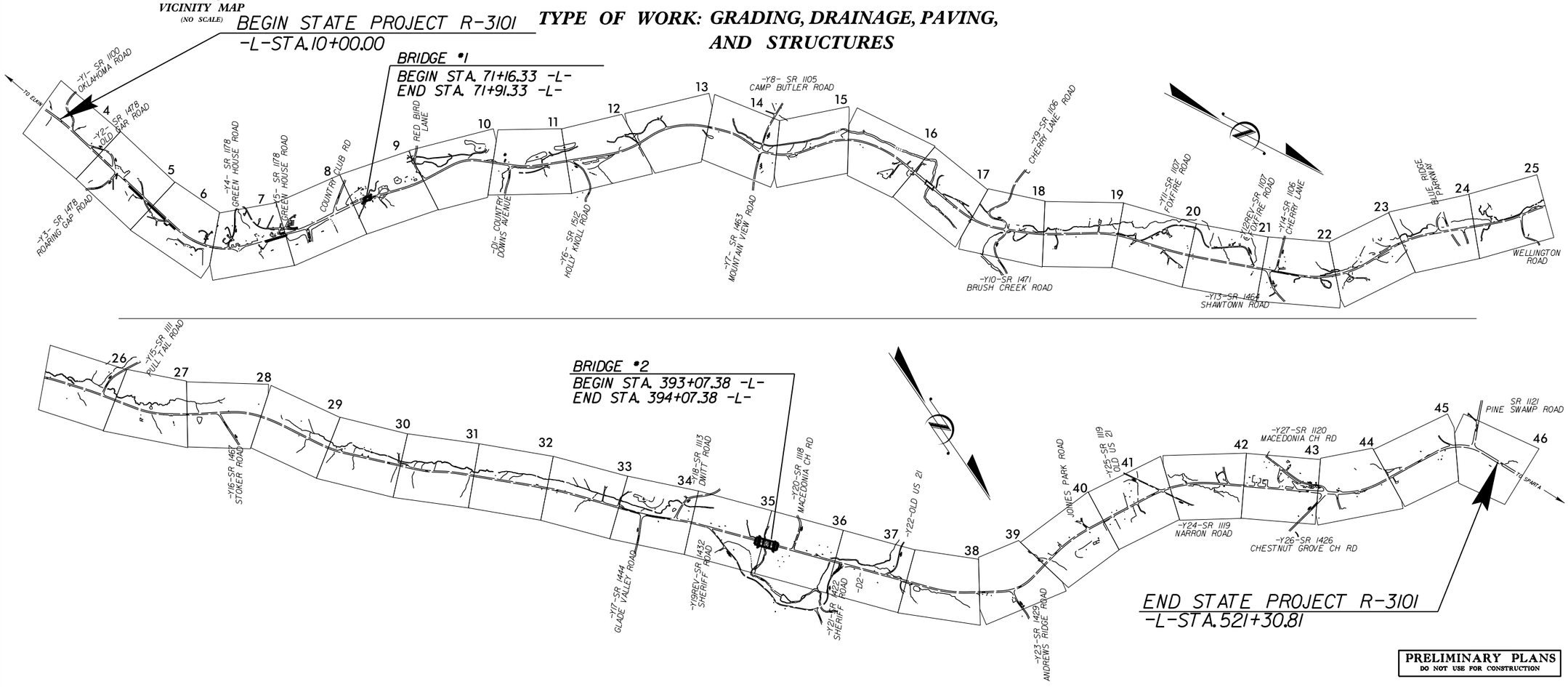
ALLEGHANY COUNTY

LOCATION: US 21 FROM SR 1100 (OKLAHOMA RD.) TO SR 1121 (PINE SWAMP RD.)

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

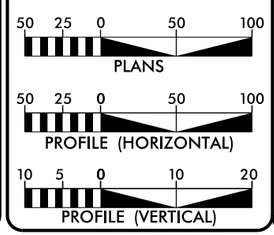
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3101	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
37044.1.1	STP – 21(11)	PE
37044.2.1	STP–0021(11)	R/W
37044.3.1	STP–0021 (14)	CONST
37044.2.UI	STP–0021(11)	UTIL



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA
REGIONAL TIER DESIGN

ADT 2004	=	8300
ADT 2030	=	17000
DHV	=	11 %
D	=	60 %
T	=	10 % *
V	=	60 MPH

* TTST 5% DUAL 5%

PROJECT LENGTH

ROADWAY LENGTH TIP PROJECT R-3101	=	*10.136 MI*
STRUCTURE LENGTH TIP PROJECT R-3101	=	*0.033 MI*
TOTAL LENGTH TIP PROJECT R-3101	=	*10.169 MI*

Prepared In the Office of:
DIVISION OF HIGHWAYS
801 Statesville Road, North Wilkesboro, NC 28659

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 16, 2011

LETTING DATE:
SEPTEMBER 17, 2013

DIVISION ENGINEER
M. A. PETTYJOHN, P.E.

SIGNATURE *P.E.*

DATE

HYDRAULICS ENGINEER
AARON C. CARVER, PE

SIGNATURE: *P.E.*

DIVISION PROJECT MANAGER
JOSEPH L. LAWS, PE

SIGNATURE: *P.E.*

19-JUL-2013 12:42
R:\R3101\Design\r3101_ddc_tsh_081016.dgn
$$$$USERNAME$$$$

12/05/11

PROJECT REFERENCE NO.	SHEET NO.
R-3101	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

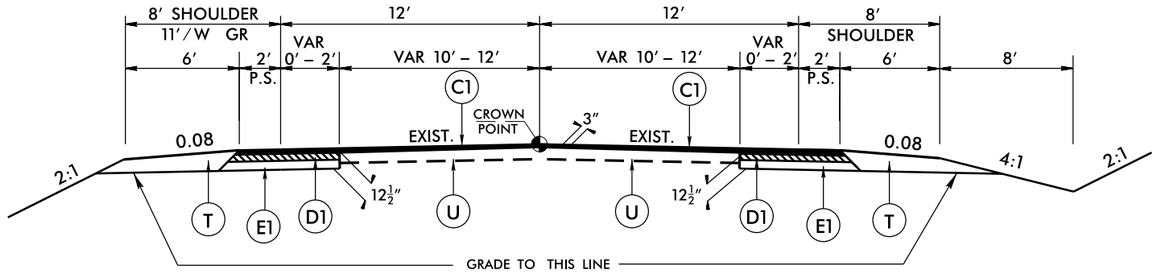
- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

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

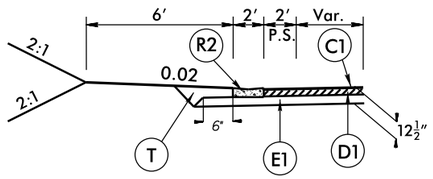
MISCELLANEOUS:

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



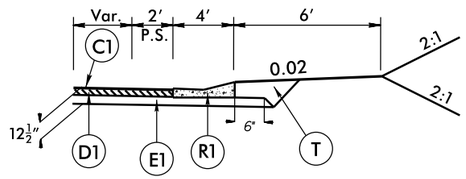
TYPICAL SECTION NO. 1

* –L– STA. 15+00.00 TO STA. 57+45.00
–L– STA. 75+00.00 TO STA. 96+00.00
–L– STA. 103+00.00 TO STA. 137+75.00
–L– STA. 138+25.00 TO STA. 148+00.00
** –L– STA. 170+50.00 TO STA. 221+50.00
–L– STA. 272+00.00 TO STA. 369+50.00
–L– STA. 377+50.00 TO STA. 382+50.00
–L– STA. 407+00.00 TO STA. 415+00.00
–L– STA. 425+50.00 TO STA. 486+00.00
–L– STA. 494+00.00 TO STA. 510+00.00



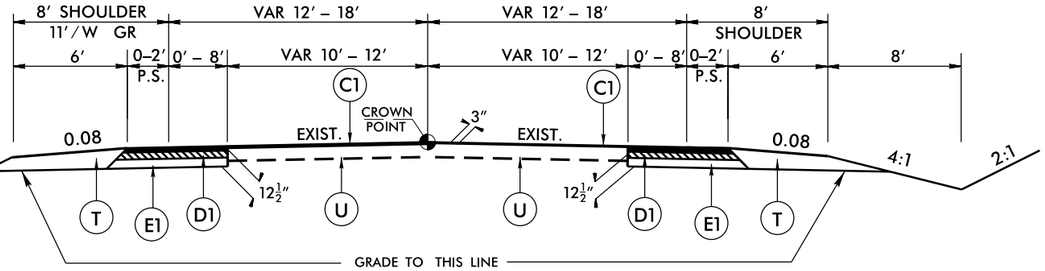
VALLEY GUTTER DETAIL

* –L– STA. 17+50.00 TO –L– STA. 18+95.00 LT



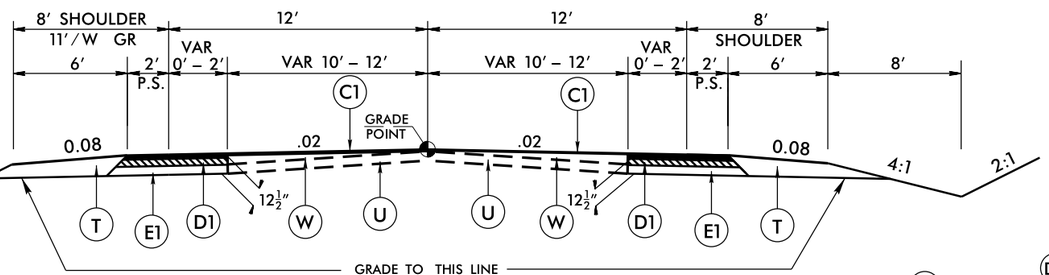
EXPRESSWAY GUTTER DETAIL

* –L– STA. 24+93.00 TO –L– STA. 26+45.00 LT
* –L– STA. 28+00.00 TO –L– STA. 31+10.00 RT
* –L– STA. 31+70.00 TO –L– STA. 36+05.00 RT
* –L– STA. 36+75.00 TO –L– STA. 38+35.00 RT
* –L– STA. 43+65.00 TO –L– STA. 47+05.00 LT
* –L– STA. 50+50.00 TO –L– STA. 56+25.00 LT
** –L– STA. 183+25.00 TO –L– STA. 188+00.00 LT



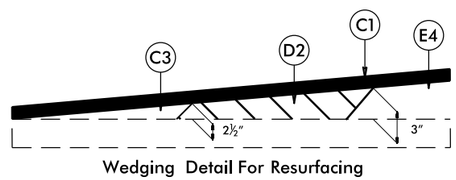
TYPICAL SECTION NO. 2

–L– STA. 13+00.00 TO STA. 15+00.00
–L– STA. 57+45.00 TO STA. 69+00.00
–L– STA. 137+75.00 TO STA. 138+25.00
–L– STA. 242+00.00 TO STA. 246+50.00
–L– STA. 269+00.00 TO STA. 272+00.00
–L– STA. 486+00.00 TO STA. 494+00.00

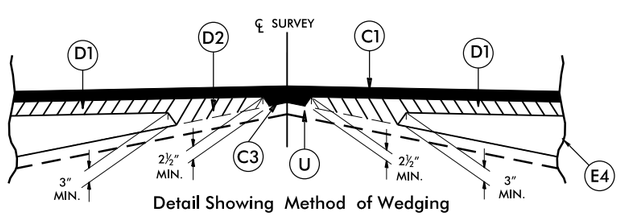


TYPICAL SECTION NO. 3

–L– STA. 69+00.00 TO STA. 71+35.63
–L– STA. 71+85.63 TO STA. 75+00.00



Wedging Detail For Resurfacing



Detail Showing Method of Wedging

PAVEMENT SCHEDULE

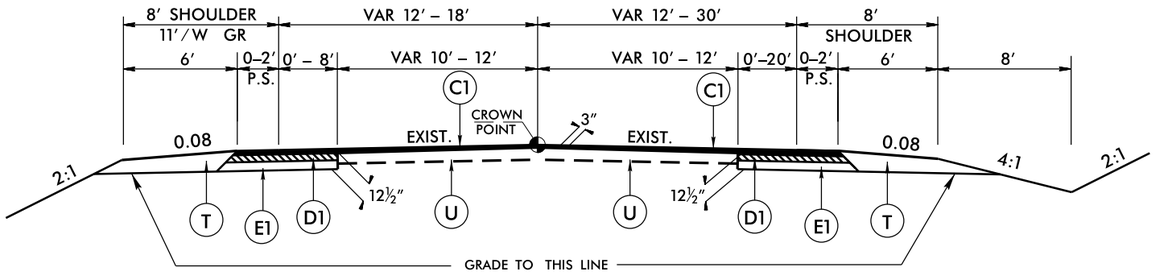
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E3	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 5½" IN DEPTH.
J	PROP. APPROX. 6" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
R1	4' EXPRESSWAY GUTTER
R2	2' VALLEY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	3" MILLING BITUMINOUS PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

6/2/99
19-JUL-2013 12:50
R-3101 ddc_typ_081015.dgn
$$$$USERNAME$$$$

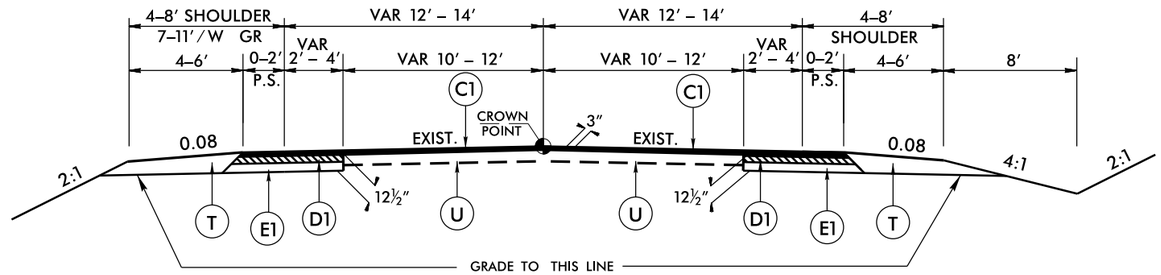
PROJECT REFERENCE NO.	SHEET NO.
R-3101	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



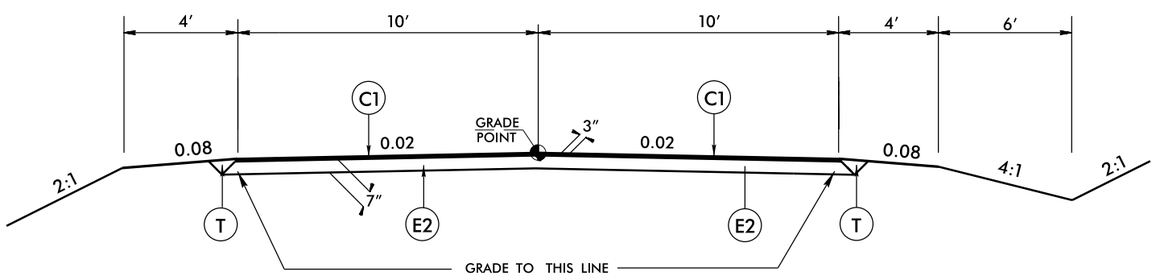
TYPICAL SECTION NO. 4

–L– STA. 221+50.00 TO STA. 230+00.00
–L– STA. 369+50.00 TO STA. 377+50.00



TYPICAL SECTION NO. 5

–L– STA. 96+00.00 TO STA. 97+50.00



TYPICAL SECTION NO. 6

–Y4– STA. 10+25.00 TO STA. 11+50.00
–Y5– STA. 13+25.00 TO STA. 14+80.00
–Y6– STA. 10+15.00 TO STA. 11+25.00
–Y11– STA. 10+50.00 TO STA. 12+15.00
–Y12REV– STA. 12+50.00 TO STA. 15+00.00
–Y17– STA. 10+50.00 TO STA. 12+00.00
–Y19REV– STA. 10+15.00 TO STA. 12+00.00

PAVEMENT SCHEDULE

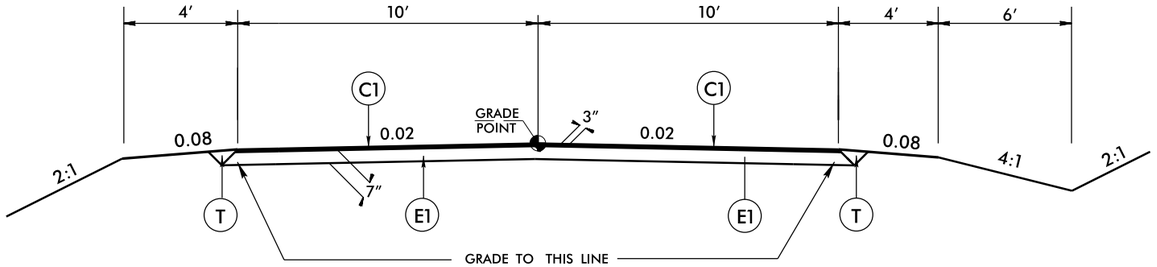
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 5.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E3	PROP. APPROX. 7″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 5½″ IN DEPTH.
J	PROP. APPROX. 6″ AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
R1	4′ EXPRESSWAY GUTTER
R2	2′ VALLEY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	3″ MILLING BITUMINOUS PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

19-JUL-2018 12:50
R-3101\Roadway Design\r3101_ddc_typ_081015.dgn
$$$$USERNAME$$$$

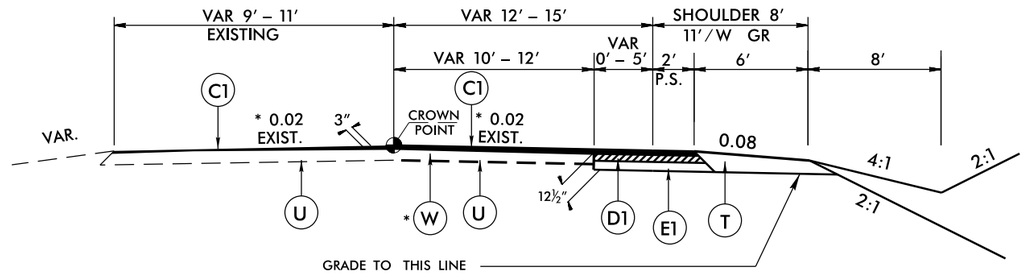
PROJECT REFERENCE NO.	SHEET NO.
R-3101	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



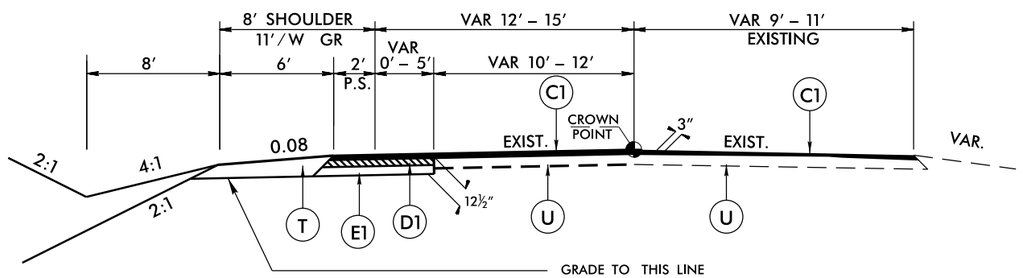
TYPICAL SECTION NO. 7

–Y13– STA. 10+30.00 TO STA. 11+50.00
–Y26– STA. 10+15.00 TO STA. 11+00.00



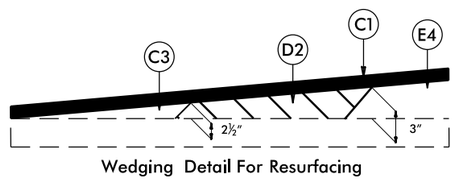
TYPICAL SECTION NO. 8

–L– STA. 148+00.00 TO STA. 164+00.00
–L– STA. 230+00.00 TO STA. 242+00.00
–L– STA. 382+50.00 TO STA. 392+00.00
* –L– STA. 392+00.00 TO STA. 393+07.38 USE PROPOSED PROFILE
* –L– STA. 394+07.38 TO STA. 398+00.00 USE PROPOSED PROFILE
–L– STA. 398+00.00 TO STA. 407+00.00

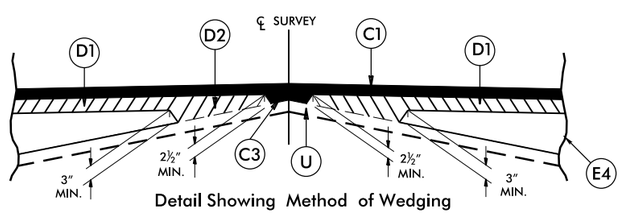


TYPICAL SECTION NO. 9

–L– STA. 97+50.00 TO STA. 103+00.00
–L– STA. 415+00.00 TO STA. 425+50.00



Wedging Detail For Resurfacing



Detail Showing Method of Wedging

PAVEMENT SCHEDULE

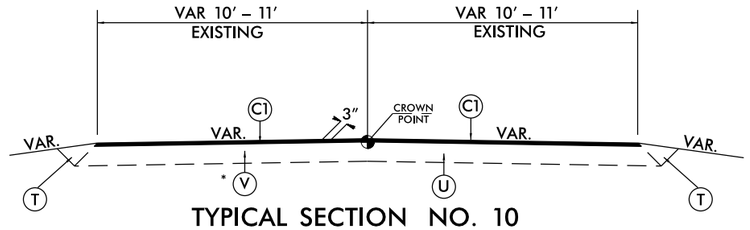
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 5.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E3	PROP. APPROX. 7″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 5½″ IN DEPTH.
J	PROP. APPROX. 6″ AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
R1	4′ EXPRESSWAY GUTTER
R2	2′ VALLEY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	3″ MILLING BITUMINOUS PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

18-JUL-2013 12:50
R-3101_typ_sht_2-B.dgn
R-3101_ddc_typ_0811015.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3101	2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

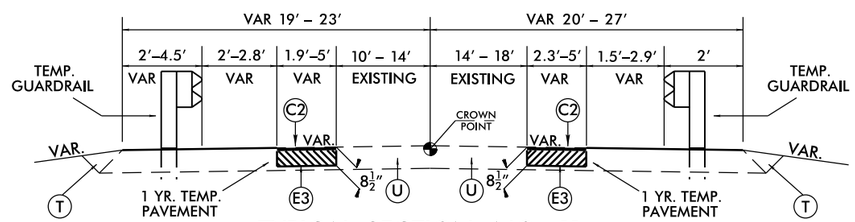


TYPICAL SECTION NO. 10

–L– STA. 12+00.00 TO 13+00.00 (RESURFACE)
–Y1– STA. 12+50.00 TO STA. 13+10.00
–Y2– STA. 10+15.00 TO STA. 11+00.00
–Y2– STA. 15+00.00 TO STA. 16+00.00
–Y3– STA. 10+15.00 TO STA. 11+25.00
–Y4– STA. 10+00.00 TO STA. 10+25.00
–D1– STA. 11+00.00 TO STA. 11+50.00 (RESURFACE)
–Y7– STA. 10+15.00 TO STA. 11+00.00
–Y8– STA. 14+30.00 TO STA. 15+10.00
–Y9– STA. 12+00.00 TO STA. 12+50.00
–Y10– STA. 10+15.00 TO STA. 10+40.00
–Y11– STA. 10+00.00 TO STA. 10+50.00
–Y12REV– STA. 11+00.00 TO STA. 12+50.00
–Y13– STA. 11+50.00 TO STA. 11+75.00
–Y14– STA. 11+80.00 TO STA. 12+40.00
–Y15– STA. 14+25.00 TO STA. 14+85.00
–Y16REV– STA. 10+15.00 TO STA. 11+00.00
–Y18– STA. 12+00.00 TO STA. 12+90.00
–Y20– STA. 11+50.00 TO STA. 12+00.00
–Y21– STA. 10+20.00 TO STA. 10+85.00
–Y22– STA. 12+50.00 TO STA. 12+90.00
–Y23– STA. 10+15.00 TO STA. 10+75.00
–Y24– STA. 10+15.00 TO STA. 10+75.00
–Y25– STA. 11+00.00 TO STA. 11+35.00
–Y26– STA. 10+15.00 TO STA. 11+00.00
–Y27– STA. 11+50.00 TO STA. 11+85.00

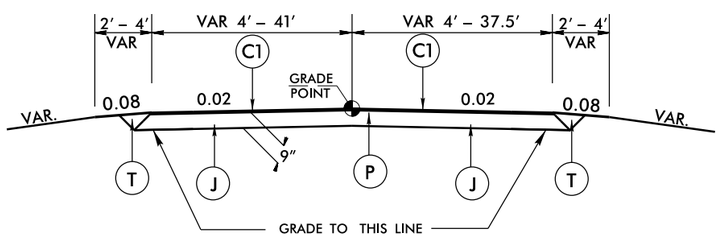
* NOTE: MILL EXISTING PAVEMENT AND REPLACE WITH S9.5C AT STATIONS:

–L– 164+00.00 TO 167+75.00
–L– 168+97.00 TO 170+50.00
–L– 246+50.00 TO 269+00.00



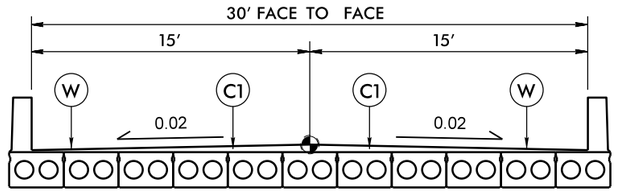
TYPICAL SECTION NO. 11

–L– STA. 69+56.00 TO 73+26.00 LT
–L– STA. 69+56.00 TO 73+26.00 RT
–L– STA. 183+20.00 TO 185+49.00 LT
–L– STA. 371+58.00 TO 373+58.00 LT
–L– STA. 391+37.00 TO 395+77.00 RT
–L– STA. .391+37.00 TO 392+87.36 LT
–L– STA. 394+27.37 TO 395+77.00 LT
–L– STA. 403+62.00 TO STA. 406+93.00 LT
–L– STA. 404+16.00 TO 405+85.00 RT
–L– STA. 406+20.00 TO 406+45.00 RT
–L– STA. 440+70.00 TO 443+54.00 RT
–L– STA. 440+65.00 TO 443+54.00 LT
–L– STA. 466+63.00 TO 469+13.00 LT
–L– STA. 466+63.00 TO 469+13.00 RT



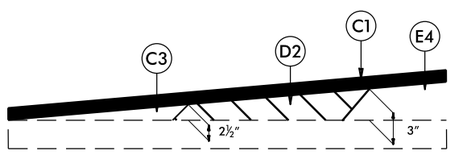
TYPICAL SECTION NO. 12

–D1– STA. 10+14.00 TO STA. 11+00.00
–D2– STA. 10+15.00 TO STA. 11+70.25

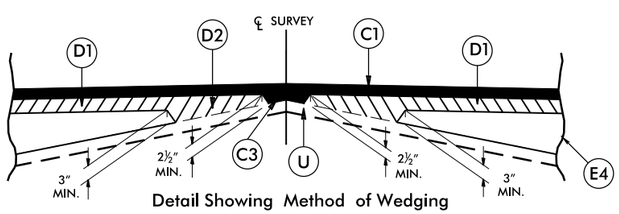


CORED SLAB BRIDGE TYPICAL SECTION NO. 13

–L– STA. 71+35.63 TO –L– STA. 71+85.63
–L– STA. 393+07.38 TO –L– STA. 394+07.38



Wedging Detail For Resurfacing



Detail Showing Method of Wedging

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	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 1½″ IN DEPTH.
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2¼″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 5.5″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E3	PROP. APPROX. 7″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
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 5½″ IN DEPTH.
J	PROP. APPROX. 6″ AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
R1	4′ EXPRESSWAY GUTTER
R2	2′ VALLEY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	3″ MILLING BITUMINOUS PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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

R-3101 typ 081015.dgn
R-3101 ddc typ 081015.dgn
R-3101 ddc typ 081015.dgn
R-3101 ddc

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

(1)

ROARING GAP INCORPORATED

DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95

DETAIL 3
CUT DITCH
(Not to Scale)

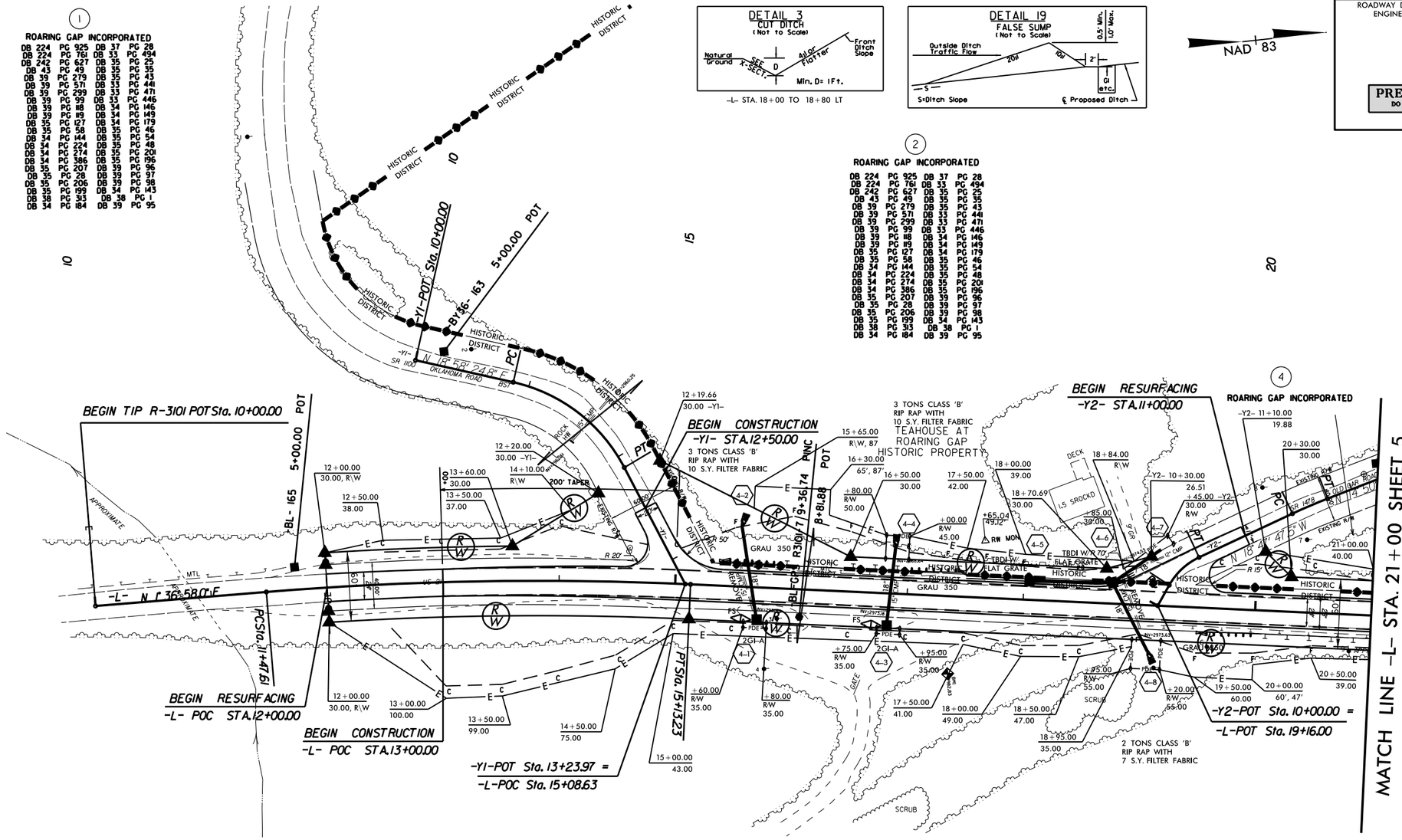
-L- STA. 18+00 TO 18+80 LT

DETAIL 19
FALSE SUMP
(Not to Scale)

(2)

ROARING GAP INCORPORATED

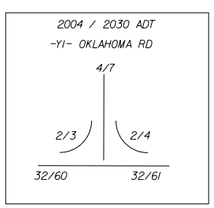
DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95



(3)

ROARING GAP INCORPORATED

DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95



NOTES

FOR -L- PROFILE SEE SHEET 47
FOR -Y1- & -Y2- PROFILES SEE SHEET 69
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

-L-

PI Sta 13+30.67
Δ = 1° 18' 45.0" (RT)
D = 2° 00' 00.0"
L = 365.63'
T = 183.06'
R = 2,864.79'

-Y1-

PI Sta 11+52.70
Δ = 49° 44' 23.5" (RT)
D = 40° 00' 00.0"
L = 124.35'
T = 66.40'
R = 143.24'
PT Sta 12+10.65
N 68° 42' 48.3" E

-Y2-

N 54° 30' 02.7" W
PI Sta 10+38.74
Δ = 35° 42' 15.2" (RT)
D = 100° 00' 00.0"
L = 35.70'
T = 18.45'
R = 57.30'

PI Sta 11+61.23
Δ = 3° 57' 13.7" (RT)
D = 12° 00' 00.0"
L = 32.95'
T = 16.48'
R = 477.46'

PI Sta 13+79.08
Δ = 62° 19' 17.3" (RT)
D = 30° 00' 00.0"
L = 207.74'
T = 115.49'
R = 190.99'

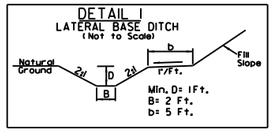
PI Sta 15+61.24
Δ = 25° 37' 39.5" (RT)
D = 30° 00' 00.0"
L = 85.43'
T = 43.44'
R = 190.99'

19-JUL-2013 12:43
R:\R3101\Designs\R3101_ddc_sheet4.dgn
$$USER:Shawn$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

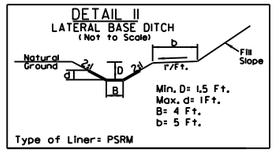
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



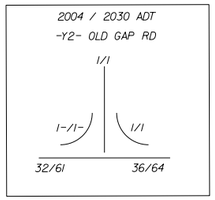
–L– STA. 22+50 TO 22+80 LT
EST. 15 CY DDE

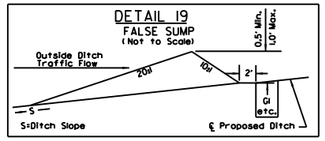
(2)
ROARING GAP INCORPORATED

DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95



–L– STA. 27+00 TO 29+23 LT
EST. 107 CY DDE





(8)
WILLIAM A. BURNETTE
DB 220 PG 767

MATCH LINE –L– STA. 21+00 SHEET 4

MATCH LINE –L– STA. 33+00 SHEET 6

BEGIN RESURFACING
-Y2- STA.15+00.00

-Y2-POT Sta. 16+17.56 =
-L-POT Sta. 24+28.00

-Y2-POT Sta. 10+00.00 =
-L-POT Sta. 25+19.00

BEGIN RESURFACING
-Y3- STA.11+25.00

-Y3-POT Sta. 12+07.03

8+48.05 POT
-BYI-80

INN KEEPER'S STORE
HISTORIC PROPERTY

(4)
ROARING GAP INCORPORATED
–L– STA. 22+50 TO 22+80 LT
SEE DETAIL I

(5)
FGG NEW, LLC
DB 119 PG 796
DB 244 PG 1392

LATERAL BASE DITCH
–L– STA. 27+00 TO 29+23 LT
SEE DETAIL II

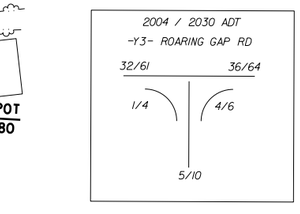
(10)
WALTER SULLIVAN LINEBERGER, JR. AND PACE B. LINEBERGER
DB 275 PG 863
PB 9 PG 355

HOLLIDAY HISTORIC PROPERTY

(7)
ANN W. LINEBERGER
DB 275 PG 871
PB 9 PG 355

(3)
ROARING GAP INCORPORATED

DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95



(6)
ROARING GAP INCORPORATED

DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95

PI Sta 10+38.74	PI Sta 11+61.23	PI Sta 13+79.08	PI Sta 15+61.24
Δ = 35° 42' 15.2" (RT)	Δ = 3° 57' 13.7" (RT)	Δ = 62° 19' 17.3" (RT)	Δ = 25° 37' 39.5" (RT)
D = 100° 00' 00.0"	D = 12° 00' 00.0"	D = 30° 00' 00.0"	D = 30° 00' 00.0"
L = 35.70'	L = 32.95'	L = 207.74'	L = 85.43'
T = 18.45'	T = 16.48'	T = 115.49'	T = 43.44'
R = 57.30'	R = 477.46'	R = 190.99'	R = 190.99'
		N 47° 28' 43.5" E	N 73° 06' 23.0" E

NOTES
FOR –L– PROFILE SEE SHEET 47
FOR –Y2– & –Y3– PROFILES SEE SHEET 69
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON –Y– LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

19-JUL-2013 12:43
R:\r3101\Design\r3101_ddc_sheet5.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 48
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL 19
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow
20'
10'
2'
0.5' Min.
1.0' Max.
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch

(2) ROARING GAP INCORPORATED

DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95

(8) WILLIAM A. BURNETTE
DB 220 PG 767

(9) MAURICE N. JENNINGS
DB 275 PG 329
PB 9 PG 355

(10) WALTER SULLIVAN LINEBERGER, JR. AND PACE B. LINEBERGER
DB 275 PG 863
PB 9 PG 355

(11) MAURICE N. JENNINGS
DB 275 PG 329
PB 9 PG 355

(12) SAYRE LINEBERGER TRIBBLE
DB 275 PG 855
PB 9 PG 355

(13) JAN A. WHITE AND JERRY J. WHITE
DB 255 PG 1449
DB 063 PG 250
PB 1 PG 4

(14) ROARING GAP INCORPORATED

(16) WADE H. MURPHY AND PATSY B. MURPHY
DB 250 PG 670
DB 111 PG 266
PB 1 PG 4

(209) PHILLIP R. BLACKMON AND CATHY P. BLACKMON
DB 259 PG 75
PB 1 PG 4

(212) WILLIAM B. CAVINES AND ANNE S. CAVINES
DB 144 PG 881

KEVIN B. KIMREY
DB 274 PG 171
PB 1 PG 39

MATCH LINE -L- STA. 33+00 SHEET 5

MATCH LINE -L- STA. 45+00 SHEET 7

-L-

PI Sta 38+84.37	PI Sta 44+78.00	PI Sta 50+05.62
Θs = 5° 00' 00.0"	Δ = 49° 23' 47.1" (LT)	Θs = 5° 00' 00.0"
Ls = 200.00'	D = 5° 00' 00.0"	Ls = 200.00'
LT = 133.39'	L = 987.93'	LT = 133.39'
ST = 66.72'	T = 527.02'	ST = 66.72'
	R = 1,145.92'	

(6) ROARING GAP INCORPORATED

DB 224	PG 925	DB 37	PG 28
DB 224	PG 761	DB 33	PG 494
DB 242	PG 627	DB 35	PG 25
DB 43	PG 49	DB 35	PG 35
DB 39	PG 279	DB 35	PG 43
DB 39	PG 571	DB 33	PG 441
DB 39	PG 299	DB 33	PG 471
DB 39	PG 99	DB 33	PG 446
DB 39	PG 118	DB 34	PG 146
DB 39	PG 119	DB 34	PG 149
DB 35	PG 127	DB 34	PG 179
DB 35	PG 58	DB 35	PG 46
DB 34	PG 144	DB 35	PG 54
DB 34	PG 224	DB 35	PG 48
DB 34	PG 274	DB 35	PG 201
DB 34	PG 386	DB 35	PG 196
DB 35	PG 207	DB 39	PG 96
DB 35	PG 28	DB 39	PG 97
DB 35	PG 206	DB 39	PG 98
DB 35	PG 199	DB 34	PG 143
DB 38	PG 313	DB 38	PG 1
DB 34	PG 184	DB 39	PG 95

19-JUL-2013 12:43
R:\R3101\Design\r3101_ddc_sheet6.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 48
FOR -Y4- PROFILE SEE SHEET 69
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2004 / 2030 ADT
-Y5- GREEN HOUSE RD
2/3
1-/1- 1/2
35/63 36/65

NAD 1983

MATCH LINE -L- STA. 45+00 SEE SHEET 6

MATCH LINE -L- STA. 57+00 SEE SHEET 8

-Y4- POT STA. 11+62.54 =
-L- POC STA. 47+42.00

-Y5- POT 10+00.00

-Y5- RRSP

BEGIN EXPRESSWAY GUTTER STA. 50+50.00

END EXPRESSWAY GUTTER STA. 56+25.00

Beg. Retaining Wall 56+15.00

End Retaining Wall 57+20.00

-L- STA. 49+38.91

-L- STA. 54+38.91

-BY2- 82

-BY2- 81

-Y4- 82

-Y4- 81

-Y4- 80

-Y4- 79

-Y4- 78

-Y4- 77

-Y4- 76

-Y4- 75

-Y4- 74

-Y4- 73

-Y4- 72

-Y4- 71

-Y4- 70

-Y4- 69

-Y4- 68

-Y4- 67

-Y4- 66

-Y4- 65

-Y4- 64

-Y4- 63

-Y4- 62

-Y4- 61

-Y4- 60

-Y4- 59

-Y4- 58

-Y4- 57

-Y4- 56

-Y4- 55

-Y4- 54

-Y4- 53

-Y4- 52

-Y4- 51

-Y4- 50

-Y4- 49

-Y4- 48

-Y4- 47

-Y4- 46

-Y4- 45

-Y4- 44

-Y4- 43

-Y4- 42

-Y4- 41

-Y4- 40

-Y4- 39

-Y4- 38

-Y4- 37

-Y4- 36

-Y4- 35

-Y4- 34

-Y4- 33

-Y4- 32

-Y4- 31

-Y4- 30

-Y4- 29

-Y4- 28

-Y4- 27

-Y4- 26

-Y4- 25

-Y4- 24

-Y4- 23

-Y4- 22

-Y4- 21

-Y4- 20

-Y4- 19

-Y4- 18

-Y4- 17

-Y4- 16

-Y4- 15

-Y4- 14

-Y4- 13

-Y4- 12

-Y4- 11

-Y4- 10

-Y4- 9

-Y4- 8

-Y4- 7

-Y4- 6

-Y4- 5

-Y4- 4

-Y4- 3

-Y4- 2

-Y4- 1

-L- 1

-L- 2

-L- 3

-L- 4

-L- 5

-L- 6

-L- 7

-L- 8

-L- 9

-L- 10

-L- 11

-L- 12

-L- 13

-L- 14

-L- 15

-L- 16

-L- 17

-L- 18

-L- 19

-L- 20

-L-

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 49
FOR -Y5- PROFILE SEE SHEET 69
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y5-

POT Sta. 10+00.00
N 33° 51' 15.8" W
PC Sta. 10+81.12
PI Sta 10+93.77
Δ = 1° 15' 53.9" (LT)
D = 5° 00' 00.0"
L = 25.30'
T = 12.65'
R = 1,145.92'

PT Sta. 11+06.42
N 35° 07' 09.7" W
PC Sta. 11+73.91
PI Sta 11+87.92
Δ = 1° 24' 02.4" (LT)
D = 5° 00' 00.0"
L = 28.01'
T = 14.01'
R = 1,145.92'

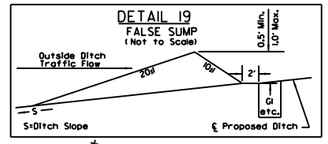
PT Sta. 12+01.93
N 36° 31' 12.1" W
PC Sta. 12+43.59
PI Sta 12+87.44
Δ = 10° 29' 37.7" (RT)
D = 12° 00' 00.0"
L = 87.45'
T = 43.85'
R = 477.46'

PT Sta. 13+31.04
N 26° 01' 34.4" W
PC Sta. 13+59.81
PI Sta 14+01.03
Δ = 4° 56' 33.3" (LT)
D = 6° 00' 00.0"
L = 82.38'
T = 41.21'
R = 954.93'

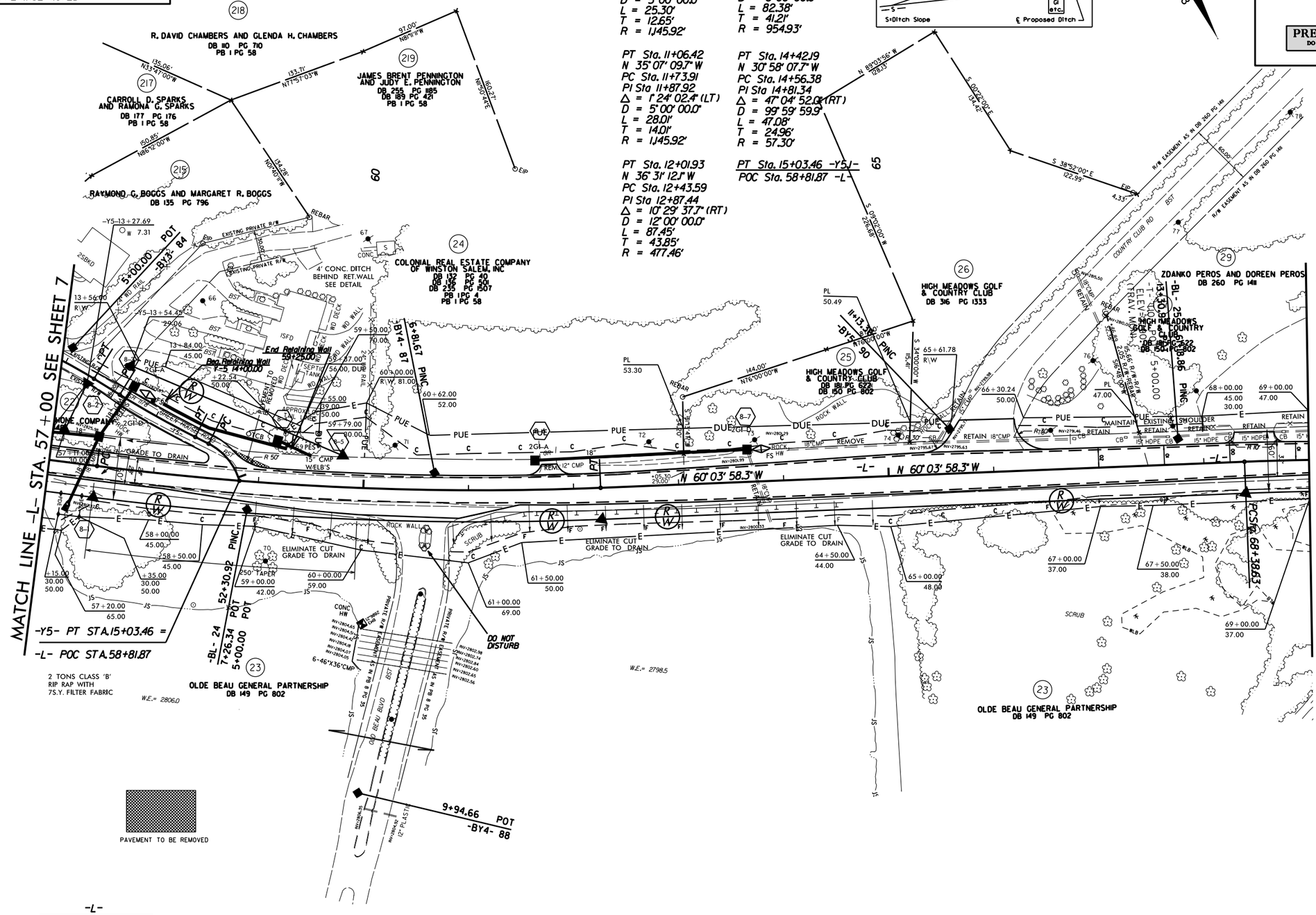
PT Sta. 14+42.19
N 30° 58' 07.7" W
PC Sta. 14+56.38
PI Sta 14+81.34
Δ = 47° 04' 52.0" (RT)
D = 99° 59' 59.9"
L = 47.08'
T = 24.96'
R = 57.30'

PT Sta. 15+03.46 -Y5-
POC Sta. 58+81.87 -L-

DETAIL 19
FALSE SUMP
(Not to Scale)



NAD 83



-L-
PC Sta. 57+45.81
PI Sta 59+86.33
Δ = 9° 35' 54.3" (LT)
D = 2° 00' 00.0"
L = 479.92'
T = 240.52'
R = 2,864.79'
PT Sta. 62+25.73

19-JUL-2013 12:43
R:\R3101\Design\r3101_ddc_sheet8.dgn
$$$$USERNAME$$$$

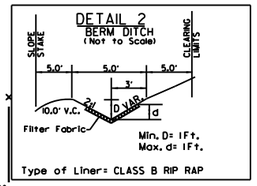
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

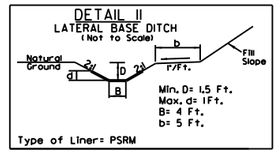
DETAIL 2
BERM DITCH
(Not to Scale)



Type of Liner= CLASS B RIP RAP

-L- STA. 76+50 TO 82+00 RT

DETAIL II
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= PSRM

-L- STA. 71+55 TO 72+30 RT

5+00.00 POT -BV5- 89

262.60' N84°05'38"W

N42°12'E

N05°57'25"E

REBAR

641.02' S13°51'54"W

106.40' S55°26'34"W

REBAR

REBAR

N71°13'18"W 32.01'

N 16°59'11" W 1662.7'

REBAR

N 49° 50' 31.0" W

MATCH LINE -L- STA. 69+00 SEE SHEET 8

MATCH LINE -L- STA. 81+00 SEE SHEET 10

70

75

80

29

ZDANKO PEROS AND DOREEN PEROS
DB 260 PG 141

23

JAMES S. MASSEY AND NANCY C. MASSEY
DB 234 PG 535
DB 175 PG 798

32

HIGH MEADOWS GOLF & COUNTRY CLUB
DB 123 PG 80

30

TRUSTEES OF ANTIOCH METHODIST CHURCH
DB 91PG 170
DB 301PG 606

23

OLDE BEAU GENERAL PARTNERSHIP
DB 149 PG 802

23

OLDE BEAU GENERAL PARTNERSHIP
DB 149 PG 802

1@25', 21" CORED SLAB BRIDGE
1@60', 24" CORED SLAB BRIDGE

SBG END BRIDGE TO 72+20 -L- RT

MAINTAIN EXISTING SHOULDER

CULVERT #2
2- BARREL
10X10

CULVERT #2
2- BARREL
10X10

REMOVE CULVERT

LATERAL BASE DITCH
-L- STA. 71+55 TO 72+30 RT
SEE DETAIL 11

CLASS B
RIP RAP
2 TONS
SY FF

BERM DITCH
-L- STA. 76+50 TO 82+00 RT
SEE DETAIL 2

DO NOT DISTURB

OUTLINE HISTORIC BOUNDARY WITH ORANGE SAFETY FENCE NEAR CONSTRUCTION

HISTORIC BOUNDARY

N 27°50'46" E 398.6'

N65°43'51"W 400.00'

223.08'

PTSta. 72+69.05

TSSta. 76+74.61

SCSta. 77+74.61

CULVERT #2
TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	973241.07	1413542.93	2776.59
CUL2	973234.72	1413550.66	2776.54
CUL3	973233.82	1413551.71	2776.58
CUL4	973227.72	1413558.85	2777.56
CE1	973234.49	1413550.84	2786.71
HW1	973234.30	1413550.64	2788.84
CUL5			
CUL6	973205.38	1413528.30	2776.56
CUL7	973206.65	1413526.89	2776.25
CUL8	973212.79	1413519.43	2776.23
CE2	973205.98	1413527.89	2786.34
HW2	973206.41	1413527.70	2788.00

NOTES

FOR -L- PROFILE SEE SHEET 49
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

-L-

PI Sta 70+66.44	Pls Sta 77+41.28	PI Sta 79+33.09	Pls Sta 81+24.19
Δ = 10° 13' 27.3" (RT)	Θs = 1° 30' 00.0"	Δ = 9° 29' 13.7" (LT)	Θs = 1° 30' 00.0"
D = 2° 15' 00.0"	Ls = 100.00'	D = 3° 00' 00.0"	Ls = 100.00'
L = 454.41'	LT = 66.67'	L = 316.24'	LT = 66.67'
T = 227.81'	ST = 33.34'	T = 158.48'	ST = 33.34'
R = 2,546.48'		R = 1,909.86'	
SE = 0.02			
RUNOFF = 59'			

19-JUL-2013 12:43
R:\R3101\Design\r3101_ddc_sheet9.dgn
$$USER$$

8/17/99

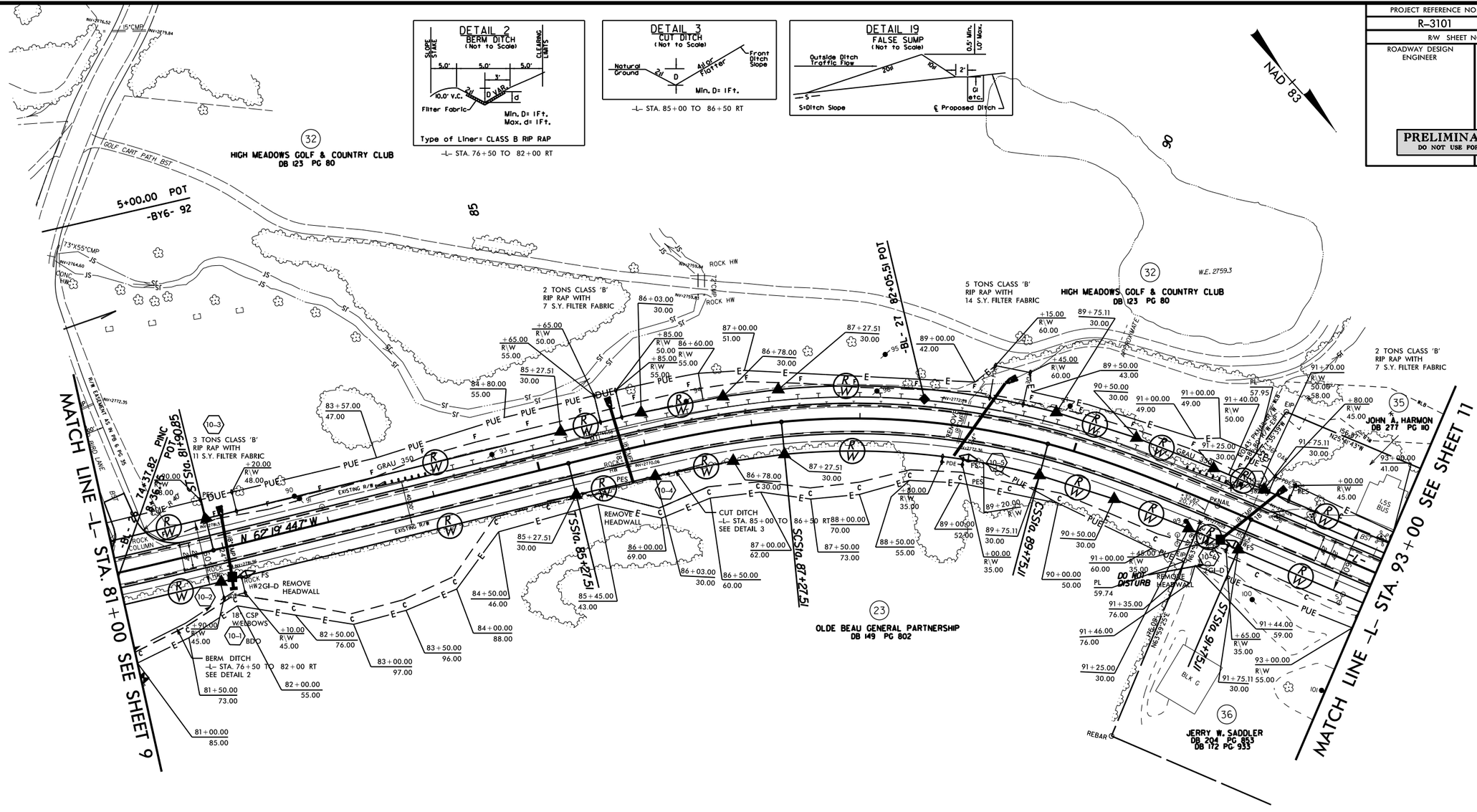
PROJECT REFERENCE NO.	SHEET NO.
R-3101	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 1983

-L- STA. 76+50 TO 82+00 RT

-L- STA. 85+00 TO 86+50 RT



NOTES
FOR -L- PROFILE SEE SHEET 50
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

-L-

Pls Sta 86+60.99	Pl Sta 88+52.64	Pls Sta 90+41.91
θs = 8° 15' 00.0"	Δ = 20° 25' 39.0" (RT)	θs = 8° 15' 00.0"
Ls = 200.00'	D = 8° 15' 00.0"	Ls = 200.00'
LT = 133.48'	L = 247.61'	LT = 133.48'
ST = 66.80'	T = 125.13'	ST = 66.80'
	R = 694.49'	

19-JUL-2013 12:43
R:\STIPS\100\Design\r3101_ddc_sheet10.dgn
$$$$STIPSLOGIN$$$$

8/17/99

NOTES

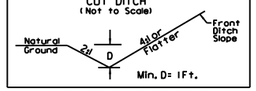
FOR -L- PROFILE SEE SHEET 50
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

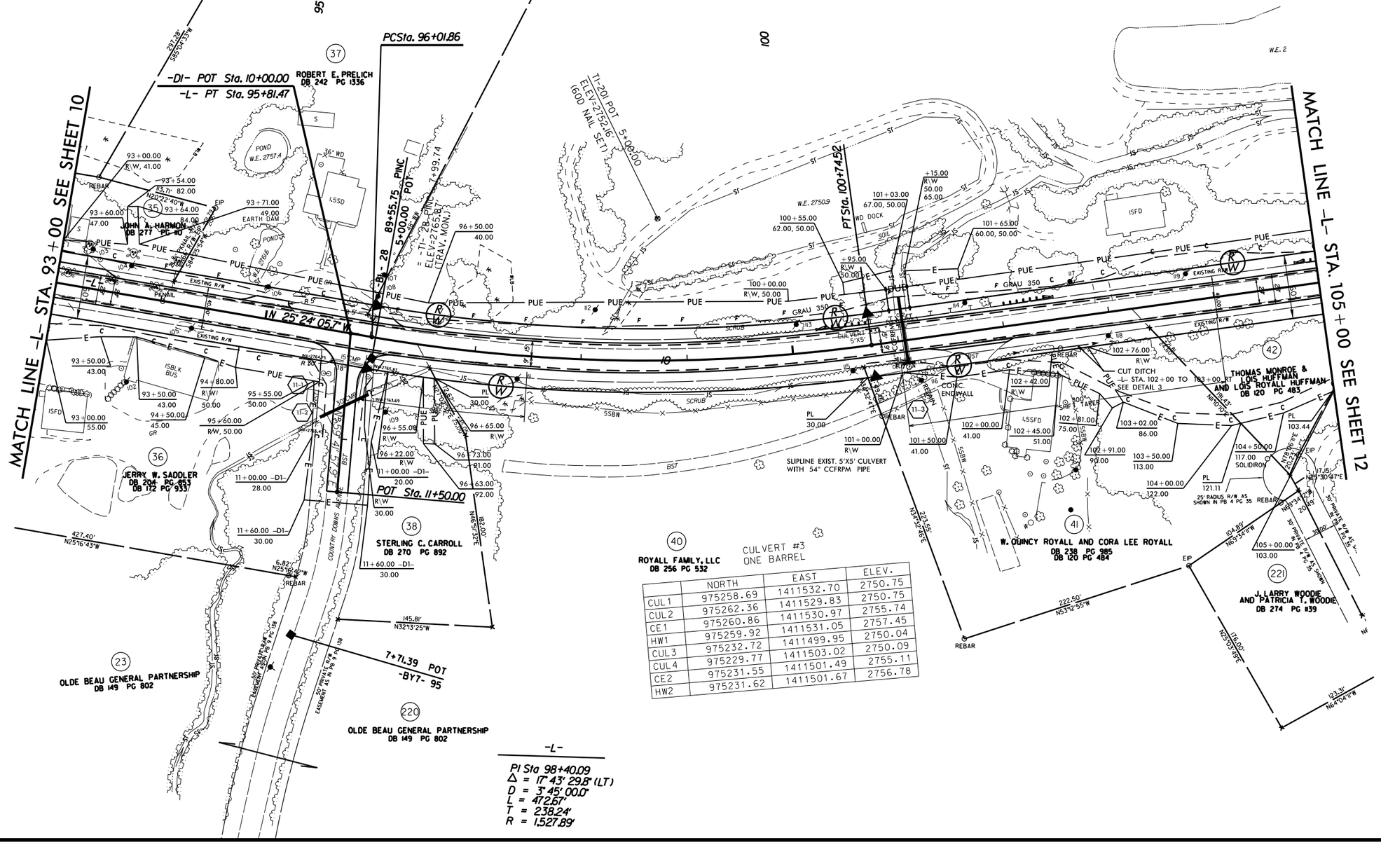
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 102+00 TO 103+00 RT



	NORTH	EAST	ELEV.
CUL1	975258.69	1411532.70	2750.75
CUL2	975262.36	1411529.83	2750.75
CE1	975260.86	1411530.97	2755.74
HW1	975259.92	1411531.05	2757.45
CUL3	975232.72	1411499.95	2750.04
CUL4	975229.77	1411503.02	2750.09
CE2	975231.55	1411501.49	2755.11
HW2	975231.62	1411501.67	2756.78

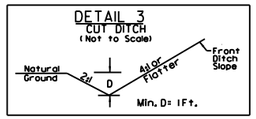
19-JUL-2013 12:43
R:\R3101\Design\r3101_ddc_sheet11.dgn
$$$$USER:DWOMBLE$$$$

8/17/99

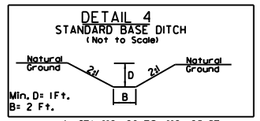
PROJECT REFERENCE NO.	SHEET NO.
R-3101	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

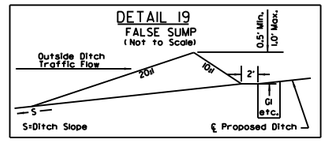
NAD 83

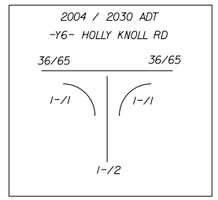


-L- STA. 107+40 TO 109+07 RT



-L- STA 112+20 TO 112+85 RT
EST. 350 CU. YD. DDE





CULVERT #4
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	975817.52	1410952.10	2745.72
CUL2	975814.72	1410955.24	2745.74
CE1	975816.00	1410953.69	2749.55
HW1	975816.25	1410953.72	2751.23
CUL3	975840.83	1410982.35	2746.32
CUL4	975842.96	1410980.06	2746.30
CE2	975841.87	1410981.12	2750.45
HW2	975841.73	1410981.04	2752.06

39
ALEXANDER T. DAVISON
DB 81PG 625
DB 67 PG 109
DB 67 PG 370
DB 65 PG 505

44
GEORGE A. HART, JR. REVOCABLE TRUST
DB 166 PG 158

43
JUDITH C. HART
DB 222 PG 104

222
STEPHEN J. SCHANZ AND NANCY M. SCHANZ
DB 270 PG 686

45
WILBUR C. ROLLINS
DB 91 PG 422

-Y6- POT STA.10+00.00 =
-L- POT STA.105+93.48

105+00 SEE SHEET 11

MATCH LINE -L- STA. 117+00 SEE SHEET 13

GPS R301-9 99+67.88 PINC
5+00.00 POT

GPS R301-10 105+93.57 PINC
5+00.00
= -T2- 10 PINC
ELEV=2748.83'
(TRAV. MON.)

-BL- GPS R301-10

-L-

POT
N 43° 07' 35.6" W
174.8'

PT

POT

-BY8- 97 8+10.97 POT

PCSta. 111+55.91

CULVERT #4
DANIEL 4X4

SLIPLINE EXISTING 4'X4' CULVERT WITH 30" PIPE

CUT DITCH
-L- STA. 107+40 TO 109+07 RT
SEE DETAIL 3

CUT DITCH
-L- STA. 109+07 TO 109+80 RT
SEE DETAIL 3

STANDARD BASE DITCH
-L- STA 112+20 TO 112+85 RT
EST DDE = 350 CY
SEE DETAIL 4

11 TONS CLASS 'B' RIP RAP WITH 28 S.Y. FILTER FABRIC

STL/WD BRIDGE WITH CONC HW

REMOVE CHEADWALL

SCRUB

HOLLY KNOLL ROAD

-Y6-
POT Sta. 10+00.00=
-L-POT Sta. 105+93.48
N 32° 31' 05.6" E
PC Sta. 10+22.50
PI Sta 10+41.38
Δ = 36° 29' 29.3" (LT)
D = 100° 00' 00.0"
L = 36.49'
T = 18.89'
R = 57.30'
PT Sta. 10+58.99
N 3° 58' 23.7" W
POT Sta. 11+26.51

-L-
PI Sta 114+73.93
Δ = 23° 30' 57.8" (LT)
D = 3° 45' 00.0"
L = 627.10'
T = 318.02'
R = 1,527.89'

NOTES

FOR -L- PROFILE SEE SHEET 51
FOR -Y6- PROFILE SEE SHEET 70
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

19-JUL-2013 12:43
H:\R3101\Design\r3101_dds_sheet12.dgn
$$USERNAME$$

8/17/99

NOTES

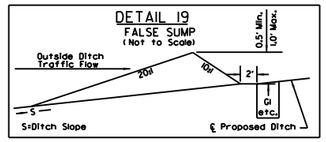
FOR -L- PROFILE SEE SHEET 5I
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

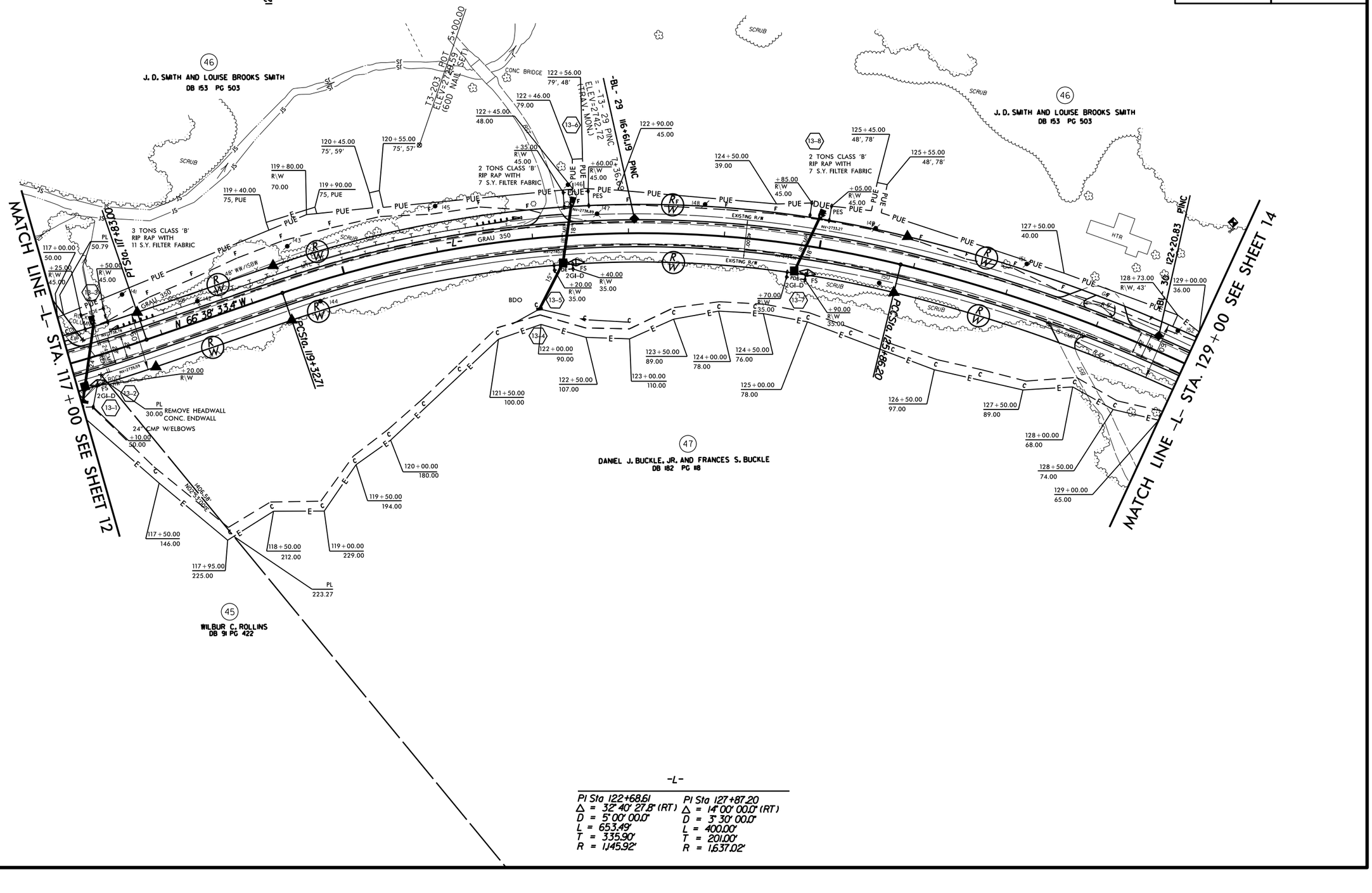
PROJECT REFERENCE NO.	SHEET NO.
R-3101	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 1983

DETAIL 19
FALSE SUMP
(Not to Scale)





-L-

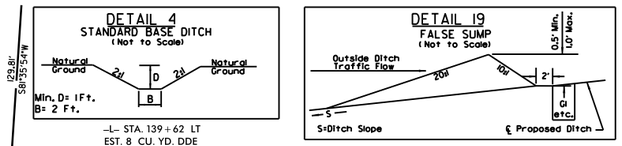
PI Sta 122+68.61	PI Sta 127+87.20
Δ = 32° 40' 27.8" (RT)	Δ = 14° 00' 00.0" (RT)
D = 5° 00' 00.0"	D = 3° 30' 00.0"
L = 653.49'	L = 400.00'
T = 335.90'	T = 201.00'
R = 1,145.92'	R = 1,637.02'

19-JUL-2013 12:43
e:\nrs\3101\Design\r3101_dde_sheet13.dgn
$$$$USER$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

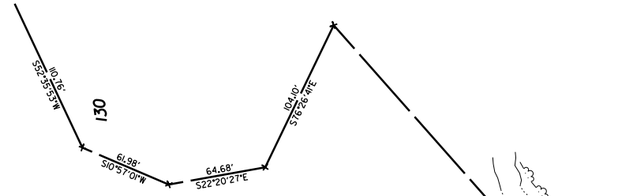
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

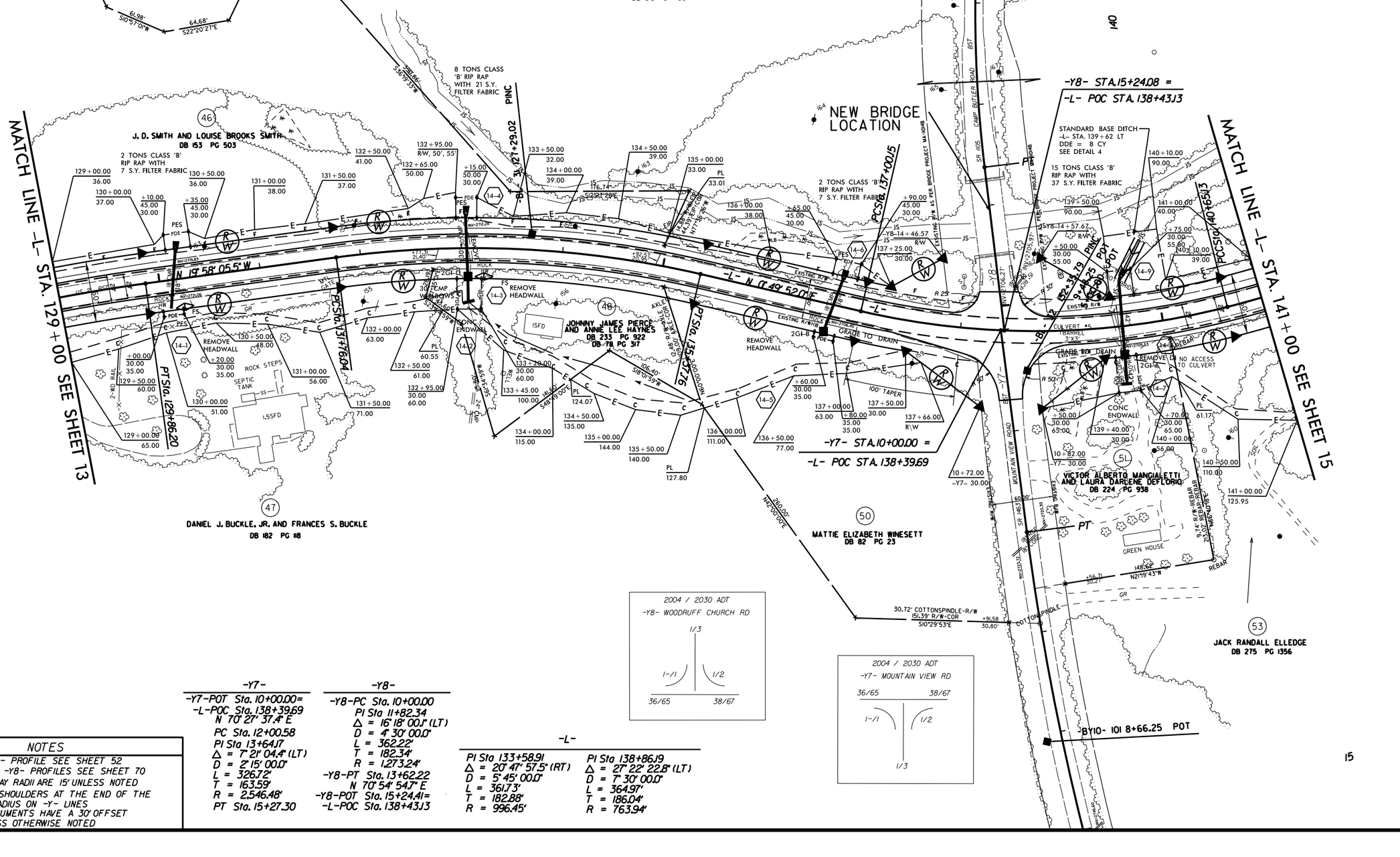


–L– STA. 139+62 LT
EST. 8 CU. YD. DDE

CULVERT #5
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	978132.41	1409299.99	2703.49
CUL2	978135.28	1409298.94	2703.59
CE1	978133.91	1409299.46	2706.34
HW1	978133.97	1409299.75	2707.49





-Y7-	-Y8-
-Y7-POT Sta. 10+00.00=	-Y8-PC Sta. 10+00.00
-L-POC Sta. 138+39.69	PI Sta 11+82.34
N 70° 27' 37.4" E	Δ = 16° 18' 00.1" (LT)
PC Sta. 12+00.58	D = 4° 30' 00.0"
PI Sta 13+64.17	L = 362.22'
Δ = 7° 21' 04.4" (LT)	T = 182.34'
D = 2° 15' 00.0"	R = 1,273.24'
L = 326.72'	-Y8-PT Sta. 13+62.22
T = 163.59'	N 70° 54' 54.7" E
R = 2,546.48'	-Y8-POT Sta. 15+24.41=
PT Sta. 15+27.30	-L-POC Sta. 138+43.13

-L-

PI Sta 133+58.91	PI Sta 138+86.19
Δ = 20° 47' 57.5" (RT)	Δ = 27° 22' 22.8" (LT)
D = 5° 45' 00.0"	D = 7° 30' 00.0"
L = 361.73'	L = 364.97'
T = 182.88'	T = 186.04'
R = 996.45'	R = 763.94'

NOTES

FOR –L– PROFILE SEE SHEET 52
FOR –Y7– & –Y8– PROFILES SEE SHEET 70
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON –Y– LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

19-Jul-2013 12:43
e:\wzdata\3101_design\r-3101_dds_sheet14.dgn
ss\ss1101 ROWLEY'S

8/17/99

NOTES

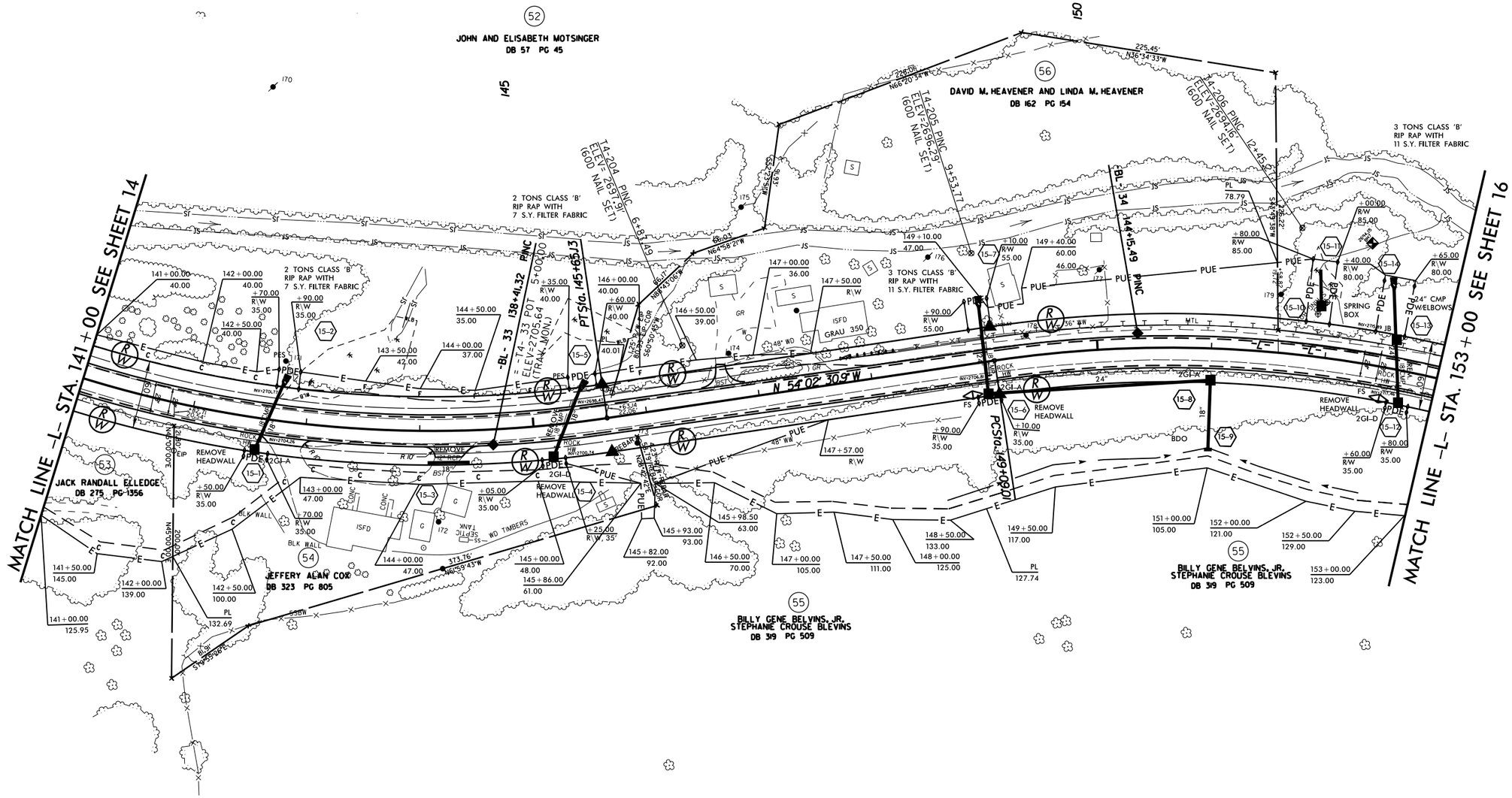
FOR -L- PROFILE SEE SHEET 52
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL 19
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20H
10H
2'
0.5' Min. 1.0' Max.
S=Ditch Slope
℄ Proposed Ditch



-L-

PI Sta 143+20.04	PI Sta 152+73.49
Δ = 27° 30' 00.0" (LT)	Δ = 38° 34' 01.7" (RT)
D = 5° 30' 00.0"	D = 5° 30' 00.0"
L = 500.00'	L = 701.22'
T = 254.91'	T = 364.48'
R = 1,041.74'	R = 1,041.74'

19-JUL-2013 12:43
K:\Projects\Design\r3101_ddc_sheet15.dgn
$$$$USERNAME$$$$

8/17/99

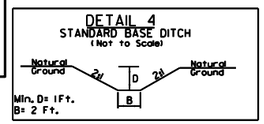
NOTES

FOR -L- PROFILE SEE SHEET 53
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

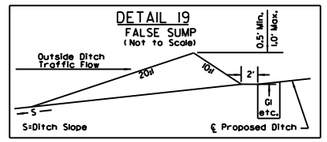
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 161+20 TO 162+10 LT
EST. 60 CY DDE

DETAIL 19
FALSE SUMP
(Not to Scale)



NAD 83
233.00'
N02°30'00"E

STANDARD BASE DITCH
-L- STA. 161+20 TO 162+10 LT
EST DDE = 60 CY
SEE DETAIL 4

JOHN AND ELISABETH MOTSINGER
DB 57 PG 45

CAROL J. HOLCOMB
DB 97 PG 349

END CONSTRUCTION
BEGIN WILL AND RESURFACE
POT Sta. 164+00.00 -L-

5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

BORE AND JACK GRAU 350

REMOVE HEADWALL

RETAIN 15" CMP

RETAIN 15" RCP

72" WD

1.5SBKD

5SBW

2-WD RAIL

BK WALL

WD WALL

POND

40' PRIVATE R/W EASEMENT DB 181 PG 127 AND DB 181 PG 124

JOHN AND ELISABETH MOTSINGER
DB 57 PG 45

BILLY GENE BELVINS, JR.
STEPHANIE CROUSE BLEVINS
DB 519 PG 509

CHERRY LANE COMMUNITY CLUB, INC.
DB 181 PG 124

MATCH LINE -L- STA. 153+00 SEE SHEET 15

MATCH LINE -L- STA. 165+00 SEE SHEET 17

-L-
PI Sta 152+73.49
Δ = 38° 34' 01.7" (RT)
D = 5° 30' 00.0"
L = 701.22'
T = 364.48'
R = 1,041.74'

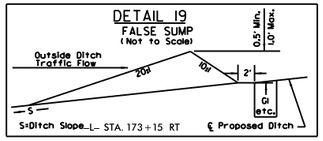
PI Sta 159+67.84
Δ = 21° 28' 31.9" (RT)
D = 3° 15' 00.0"
L = 660.79'
T = 334.32'
R = 1,762.95'

19-JUL-2013 12:44
R:\R3101_Design\r3101_ddc_sheet16.dgn
$$$$USER:DMOMS$$$$

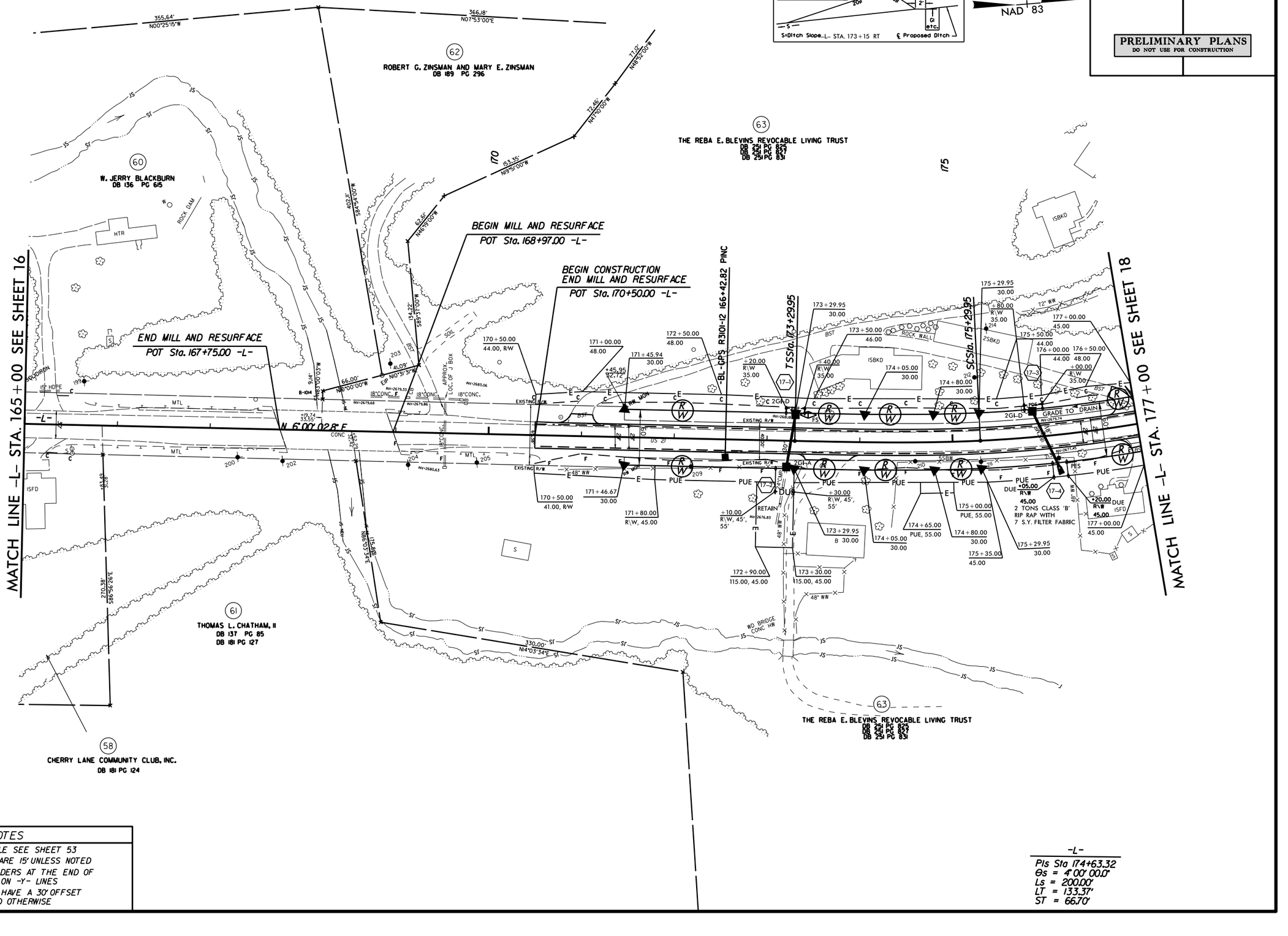
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83



NOTES

FOR -L- PROFILE SEE SHEET 53
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

-L-
PIs Sta 174+63.32
θs = 4° 00' 00.0"
Ls = 200.00'
LT = 133.37'
ST = 66.70'

19-JUL-2013 12:44
R:\r3101\Design\r3101.ddc_sheet17.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 54
FOR -Y9- & -Y10- PROFILES SEE SHEET 70
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

-Y9-
-Y9-POT Sta. 10+00.00
N 22° 41' 21.7" W
-Y9-PC Sta. 10+74.92
PI Sta 11+35.56
Δ = 64° 50' 10.4" (RT)
D = 60° 00' 00.0"
L = 108.06'
T = 60.64'
R = 95.49'
-Y9-PT Sta. 11+82.98
N 42° 08' 48.7" E
-Y9-PC Sta. 11+92.09
PI Sta 12+16.82
Δ = 19° 35' 23.8" (RT)
D = 40° 00' 00.0"
L = 48.97'
T = 24.73'
R = 143.24'
-Y9-PT Sta. 12+41.06
N 61° 44' 12.4" E
-Y9-POT Sta. 12+67.5=
-L-POC Sta. 182+93.02

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, Natural Ground; B
Min. D= 1Ft.
B= 2 Ft.
-L- STA. 187+70 LT
EST. 5 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)
0.5' Min., 1.0' Max.
Outside Ditch Traffic Flow
20ft, 10ft, 2', Q etc.
S=Ditch Slope
℄ Proposed Ditch

63
THE REBA E. BLEVINS REVOCABLE LIVING TRUST
DB 251 PG 835
DB 251 PG 837
DB 251 PG 831

69
CHARLES C. WILLIAMS
DB 335 PG 769
STANDARD BASE DITCH
-L- STA. 187+70 LT
DDE = 5 CY
SEE DETAIL 4

65
CHERRY LANE VOLUNTEER FIRE DEPARTMENT
DB 108 PG 770
DB 150 PG 89

67
JOE F. MCKNIGHT AND JANET MCKNIGHT
DB 257 PG 679

66
EDITH BILLINGS
DB 74 PG 306

63
THE REBA E. BLEVINS REVOCABLE LIVING TRUST
DB 251 PG 835
DB 251 PG 837
DB 251 PG 831

MATCH LINE -L- STA. 177+00 SEE SHEET 17
MATCH LINE -L- STA. 189+00 SEE SHEET 19
BEGIN EXPRESSWAY DIVIDED STA. 183+25
END EXPRESSWAY DIVIDED STA. 188+00
SR 1106 CHERRY LANE ROAD
-Y9- POT Sta. 10+00.00
-BY11- 102
5+00.00
7+74.68 PINC
-BY11- 103
-Y9-11+50.00
-Y9-12+00.00
-Y9-10+00.00
-Y10-10+65.00
-Y10-10+95.00
-BL- 38 177+10.86 PINC
9+36.72
5+00.00
= -T5- 38
ELEV=282.63'
(TRAV. MON.)
8+31.42 POT
-BY12- 106
15-213 PINC ELEV=268.27 (BRIDGE SPINE SET)
15-214 PINC ELEV=266.97 (BRIDGE SPINE SET)
15-215 PINC ELEV=269.27 (BRIDGE SPINE SET)
PC Sta. 186+16.70
ST Sta. 183+31.64
CSS Sta. 181+31.64
-Y10- POC STA.10+00.00 =
-L- POC STA.182+95.24
-Y9- POC STA.12+67.51 =
-L- POC STA.182+93.02
3 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC
5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC
CHERRY LANE FIRE STA
GRADE TO DRAIN REMOVE CB
REMOVE CB TBDI
REMOVE 24" CONC. TO GET
REMOVE 8'X6' CULVERT & HW CONNECT RET. WALL TO HEADWALL
CL 'II' RIP RAP
DO NOT DISTURB (AWNING)
REMOVE HEADWALL
CULVERT #5 96 CMP (ONE BARREL)
CULVERT #6 8'X6' CONC. (ONE BARREL)
RET. WALL BARREL 8'X6'
N 26° 04' 00.2" W
N 25° 02' 12" W
N 48° 09' 13" W
S 46° 35' 24" W
S 55° 50' 54" W
S 27° 10' 16" E
S 13° 03' 44" E
N 20° 05' 52" E
N 19° 44' 10" E
N 48° 52' 25" E
N 38° 32' 25" E
N 46° 36' 56" W
N 55° 32' 56" W
N 55° 55' 56" W
N 55° 55' 56" W
N 55° 55

8/17/99

NOTES

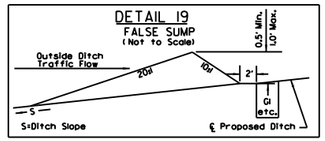
FOR -L- PROFILE SEE SHEET 54
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

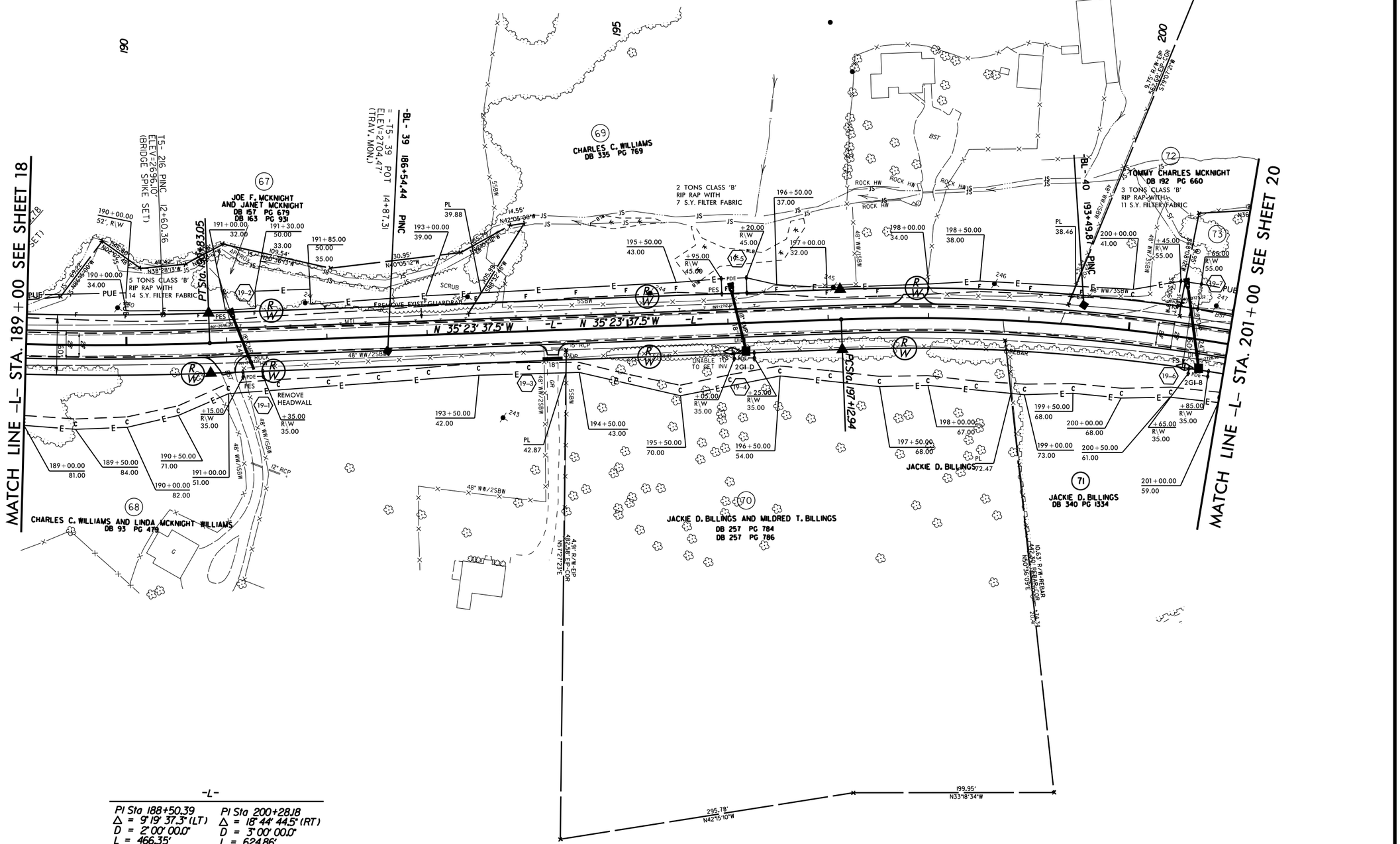
PROJECT REFERENCE NO.	SHEET NO.
R-3101	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL 19
FALSE SUMP
(Not to Scale)





19-JUL-2013 12:44
R:\R-3101\Design\r3101_ddc_sheet19.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 55
FOR -Y11- PROFILES SEE SHEET 71
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

-Y11-
-Y11-POT Sta. 10+00.00
S 61° 33' 45.1" E
PI Sta 11+74.49
Δ = 45° 05' 07.9" (LT)
D = 50° 00' 00.0"
L = 90.17'
T = 47.57'
R = 114.59'
N 73° 21' 07.0" E
-L-POT Sta. 12+32.62

DETAIL 3
CUT DITCH
(Not to Scale)
Natural Ground, 2H, D, 4H or Flatter, Front Ditch Slope
Min. D= 1Ft.
-L- STA. 208+10 TO 208+50 LT

DETAIL 19
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow, 20H, 0.5' Min., 1.0' Max., 2', GI etc., S=Ditch Slope, ℄ Proposed Ditch

PROJECT REFERENCE NO.	SHEET NO.
R-3101	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

BEGIN CONSTRUCTION
POT STA.10+00.00 -Y11-

-Y11- POT STA.12+32.62 =
-L- POT STA.205+50.00

PCSta. 208+10.69
-L- POT
-8715- 107

MATCH LINE -L- STA. 201+00 SEE SHEET 19

MATCH LINE -L- STA. 213+00 SEE SHEET 21

72 TOMMY CHARLES MCKNIGHT DB 192 PG 660
73 TOMMY CHARLES MCKNIGHT DB 67 PG 374
74 DON S. LAMBIOTTE AND KELLEY K. LAMBIOTTE DB 261 PG 276
75 CHARLES E. BRANCH AND EMILY H. BRANCH DB 251 PG 199
76 HAROLD E. HANKS DB 232 PG 492
77 NANCY H. WEST DB 224 PG 346 PB 35 PG 602
79 GLENN LAVERN SMITH DB 81 PG 429
80 KATHLEEN SMITH TAYLOR DB 98 PG 534
81 M. F. TILLEY HEIRS DB 45 PG 158 PB 4 PG 80
83 ABBE ROSE COX HEIRS DB 95 PG 64 PB 4 PG 80
84 RICHARD C. WILLIAMS AND LINDA WILLIAMS DB 95 PG 64 PB 4 PG 80
71 JACKIE D. BILLINGS DB 340 PG 1334
A. DWANE CAUDLE AND LIBBIE J. CAUDLE DB 88 PG 334

3 TONS CLASS 'B' RIP RAP WITH 5 S.Y. FILTER FABRIC
REMOVE HEADWALL
5 TONS CLASS 'B' RIP RAP WITH 16 S.Y. FILTER FABRIC
5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC
CUT DITCH -L- STA. 208+10 TO 208+50 LT SEE DETAIL 3
CUT DITCH -L- STA. 205+00 TO 206+00 RT SEE DETAIL 3
CUT DITCH -L- STA. 206+62 TO 207+50 SEE DETAIL 3
PLUG AND ABANDON
BORE AND PESJACK
DO NOT DISTURB
PAVEMENT TO BE REMOVED

-L-
PI Sta 211+67.63
Δ = 1° 08' 29.5" (LT)
D = 1° 00' 00.0"
L = 714.15'
T = 357.54'
R = 5,729.58'

19-JUL-2013 12:44
H:\R3101\Design\r3101_ddc_sheet20.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

-Y12REV-

PI Sta 11+86.24
Δ = 69° 30' 27.9" (RT)
D = 51° 00' 00.0"
L = 136.29'
T = 77.95'
R = 112.34'

PI Sta 13+56.60
Δ = 33° 20' 39.9" (RT)
D = 27° 15' 00.0"
L = 122.36'
T = 62.97'
R = 210.26'

-Y12REV- POT Sta. 10+00.00

WE 2807.D
BEGIN CONSTRUCTION
-Y12REV- POT Sta. 12+00.00

-Y12REV- POT STA.15+07.01 =
-L- POT STA.222+75.00

MATCH LINE -L- STA. 213+00 SEE SHEET 20

MATCH LINE -L- STA. 225+00 SEE SHEET 22

PT Sta. 215+24.25

SOUTHERN REPAIR SERVICE, INCORPORATED
DB 115 PG 691
PB 4 PG 80

WILLIAM W. CAUDILL SR.
DB 338 PG 1530
PB 4 PG 80

THE BILLY GENE BLEVINS REVOCABLE LIVING TRUST
DB 249 PG 1477
DB 249 PG 1490
DB 249 PG 1493

BILLY GENE BLEVINS SR. AND BILLY GENE BLEVINS, JR.
DB 236 PG 379
DB 253 PG 136

STEVIE MOXLEY
DB 266 PG 887

HENRY C. SMITH AND JOANN KELLY SMITH TR
DB 125 PG 3

SANDY & SUSAN HAMMACK
DB 657 PG 8497

SOUTHERN REPAIR SERVICE, INCORPORATED
DB 115 PG 691
PB 4 PG 80

BARRY R. EDWARDS
DB 1958 PG 201
PB 6 PG 58

JOHN E. ROYAL
DB 143 PG 219
PB 6 PG 58

5 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 16 S.Y. FILTER FABRIC

STANDARD BASE DITCH -L- STA. 223+10 TO 223+60 LT
DDE = 180 CY
SEE DETAIL 4

5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

REMOVE 24" CMP & HW'S

REMOVE HEADWALL

CONC. ENDWALL

BORE AND JACK

SCRUB

CUT DITCH -L- STA. 219+00 TO 220+00 RT
SEE DETAIL 3

LATERAL BASE DITCH -L- STA. 214+50 TO 215+50 RT
SEE DETAIL 1

LATERAL BASE DITCH -L- STA. 214+00 TO 214+50 RT
SEE DETAIL 17

LATERAL BASE DITCH -L- STA. 215+50 TO 216+25 LT
SEE DETAIL 17

DETAIL 1
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, 2:1, b, F/Ft., Fill Slope, B
Min. D= 1Ft.
B= 2 Ft.
b= 5 Ft.

-L- STA. 214+50 TO 215+50 RT
EST. 40 CU. YD. DDE

DETAIL 3
CUT DITCH
(Not to Scale)

Natural Ground, 2:1, D, 4:1 or Flatter, Front Ditch Slope
Min. D= 1Ft.

-L- STA. 219+00 TO 220+00 RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, 2:1, Natural Ground, B
Min. D= 1Ft.
B= 2 Ft.
Type of liner: Coir Fiber

-L- STA. 223+10 TO 223+60 LT
EST. 180 CU. YD. DDE

DETAIL 17
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, 2:1, b, F/Ft., Fill Slope, d1, Filter Fabric, B
*When B is < 6.0'
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.
Type of Liner= Class 'I' Rip-Rap

-L- STA. 214+00 TO 214+50 RT
-L- STA. 215+50 TO 216+25 LT
EST. 41 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 20', 10', 0.5' Min., 10' Max., 2', G, etc.
S=Ditch Slope
℄ Proposed Ditch

2004 / 2030 ADT
-Y12REV- FOXFIRE ROAD
1-/1
1-/1-
1-/1
40/69
40/70

-L-
PI Sta 211+67.63
Δ = 7° 08' 29.5" (LT)
D = 1° 00' 00.0"
L = 714.15'
T = 357.54'
R = 5,729.58'

NOTES
FOR -L- PROFILE SEE SHEET 55
FOR -Y12REV- PROFILES SEE SHEET 71
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

19-JUL-2013 12:44
R:\R3101\Design\r3101_ddc_sheet21.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 56
FOR -Y13- & -Y14- PROFILES SEE SHEET 71
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2004 / 2030 ADT
-Y14- CHERRY LANE RD
4/7
1/1 2/5
40/70 43/81

NAD 83

-Y14-POT Sta. 10+00.00
-Y14-POT Sta. 12+60.16
-L-POT Sta. 227+25.96
5+00.00 POT -BY16- 114
10+36.98 POT -BY15- 113
-Y13- STA.10+00.00 = -L- POT STA.226+08.83
-BL- 44 9+61.83 POT
MATCH LINE -L- STA. 225+00 SEE SHEET 21
MATCH LINE -L- STA. 237+00 SEE SHEET 23
-L- POT Sta. 230+77.24
225+37.04 PINC

HENRY C. SMITH AND JOANN KELLY SMITH TRUST DB 125 PG 3 (93)
CLARENCE ROBY & MARILYN CROUSE AND MARILYN CROUSE DB 144 PG 369 (226)
CHRISTINA BROOKS SIMPSON; CHAD DAVID SIMPSON DB 289 PG 62 (95)
DB 289 PG 62
DARREN RAY BOTTOMLEY DB 347 PG 353 (97)
MELVIN MILES DB 56 PG 162 (129)
CHERRY LANE VOLUNTEER FIRE DEPARTMENT DB 108 PG 170 DB 150 PG 69 (100)
5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC
MARCELENE H. DOUGLAS DB 264 PG 942 (94)
EARL TRIPLETT AND RACHEL T. TRIPLETT DB 93 PG 695 (96)
DONNA L. SHUMATE AND DAVID CHRIS WALKER DB 227 PG 710 (98)
JOHN E. ROYAL, II DB 143 PG 299 PB 6 PB 56 (92)
MICHAEL J. ROYAL AND JUANITA H. ROYAL DB 237 PG 131 PB 6 PG 58 (224)
GEORGE M. WIMMER DB 181 PG 261 (225)
MARLOWE LAVERNE CLIFTON DB 338 PG 1040 (99)
ELGIN JONES AND BETTY LOU JONES DB 84 PG 379 (102)
RETAIN EXISTING DRIVE
TIE TO EXISTING DRIVE 235+94.00
REMOVE HEADWALL
SEAL AND ABANDON WELL
SHAWTOWN ROAD SR 1401

-Y13-

-Y13-POT Sta. 10+00.00=
-L-POT Sta. 226+08.83
N 65°07' 22.0" E
-Y13-PC Sta. 10+30.74
PI Sta 10+42.92
Δ = 23° 52' 49.5" (LT)
D = 99° 28' 44.9"
L = 24.01'
T = 12.18'
R = 57.60'
-Y13-PT Sta. 10+54.75
N 41° 14' 32.5" E

-Y13-PC Sta. 11+50.29
PI Sta 13+00.33
Δ = 27° 56' 23.8" (LT)
D = 9° 30' 00.0"
L = 294.10'
T = 150.04'
R = 603.11'
-Y13-PT Sta. 14+44.40
N 13° 18' 08.7" E
-Y13-POT Sta. 15+41.96

-L-

PI Sta 237+22.38
Δ = 43° 01' 07.4" (LT)
D = 3° 30' 00.0"
L = 1,229.11'
T = 645.15'
R = 1,637.02'

2004 / 2030 ADT
-Y13- SHAWTOWN RD
40/70 43/81
6/10 8/17
15/28

19-JUL-2013 12:44
H:\NCDOT\Design\R-3101_dds_sheet22.dgn
ss.sellers@ncdot.gov

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 56
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

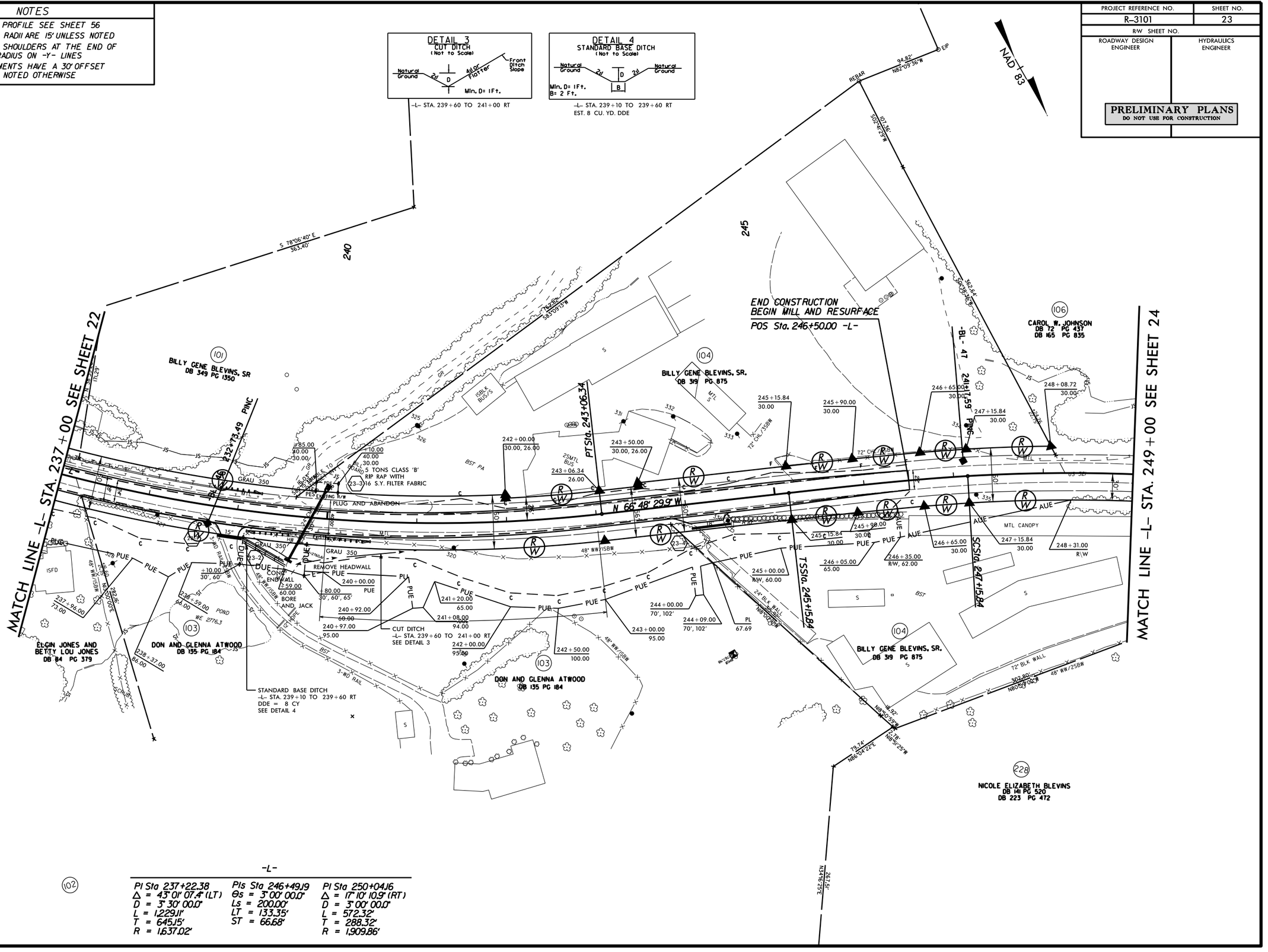
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL 3
CUT DITCH
(Not to Scale)

-L- STA. 239+60 TO 241+00 RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

-L- STA. 239+10 TO 239+60 RT
EST. 8 CU. YD. DDE



19-JUL-2013 12:44
R:\R3101\Design\r3101_ddc_sheet23.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3101	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCH LINE -L- STA. 249+00 SEE SHEET 23

MATCH LINE -L- STA. 261+00 SEE SHEET 25

BLUE RIDGE PARK WAY

CSSta. 252+88.96

STSta. 254+88.96

-L-

PI Sta 250+04.16	PIs Sta 253+54.85
Δ = 17° 10' 10.9" (RT)	Θs = 3° 00' 00.0"
D = 3° 00' 00.0"	Ls = 200.00'
L = 572.32'	LT = 133.35'
T = 288.32'	ST = 66.68'
R = 1,909.86'	

19-JUL-2013 12:44
R:\R3101\Design\r3101_ddc_sheet24.dgn
$$$$USERNAME$$$$

8/17/99

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 57
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE
TCE HAS BEEN ACQUIRED FOR PARCEL 107 AND THE PUE FOR THIS PARCEL IS IN THE PROCESS OF ACQUISTION

PROJECT REFERENCE NO.	SHEET NO.
R-3101	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCH LINE -L- STA. 261+00 SEE SHEET 24

MATCH LINE -L- STA. 273+00 SEE SHEET 26

BLUE RIDGE PARK WAY

PATRICIA P. HOLLOWAY AND ROBERT T. HOLLOWAY
DB 165 PG 698

BEGIN CONSTRUCTION
END MILL AND RESURFACE
POT Sta. 269+00.00 -L-

PT Sta. 268+92.20

PCSta. 264+12.44

-BL-GPS R301-14 259+90.82 PINC
5+00.00 POT
5+00.00 POT

= -T7- 14 POT 5+00.00
ELEV=2663.87'
(TRAV. MON.)

T7-28 ROT 8+42.81
ELEV=2657.13'
(60D NAIL SET)

-BL- 4B 266+48.88 PINC

PCSta. 270+69.58

7+68.90 PINC
-BY20- 124

10+06.90 POT
-BY20- 125

N 56° 49' 56.0" W

CULVERT #8
TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	988433.78	1403693.68	2653.22
CUL2	988439.74	1403687.09	2653.25
CUL3	988440.25	1403686.87	2653.60
CUL4	988446.93	1403680.66	2653.26
CE1	988439.83	1403687.59	2661.22
HW1	988440.65	1403687.38	2662.90
CUL5	988444.39	1403734.75	2653.12
CUL6	988450.77	1403729.00	2653.17
CUL7	988452.20	1403727.72	2653.13
CUL8	988458.39	1403721.54	2653.13
CE2	988450.35	1403728.83	2661.03
HW2	988450.10	1403728.54	2662.68

-L-

PI Sta 266+53.39
Δ = 13° 11' 37.1" (LT)
D = 2° 45' 00.0"
L = 479.77'
T = 240.95'
R = 2,083.48'

PI Sta 272+90.27
Δ = 14° 20' 03.9" (RT)
D = 3° 15' 00.0"
L = 441.06'
T = 221.69'
R = 1,762.95'

19-JUL-2013 12:44
R:\R3101\Design\r3101_ddc_sheet25.dgn
$$$$USERNAME$$$$

8/17/99

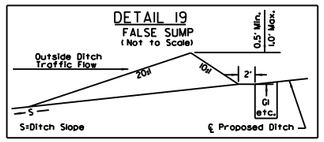
NOTES

FOR -L- PROFILE SEE SHEET 58
FOR -Y15- PROFILES SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL 19
FALSE SUMP
(Not to Scale)



-Y15-
PI Sta 12+38.10
Δ = 35° 48' 31.2" (LT)
D = 11° 00' 00.0"
L = 325.53'
T = 168.28'
R = 520.87'

-Y15-POT Sta. 10+00.00
-Y15-PC Sta. 10+69.82
NAD 83
5+00.00 PINC
-BY21- 126
-Y15-PT Sta. 13+95.35
MATCH LINE -L- STA. 273+00 SEE SHEET 25
MATCH LINE -L- STA. 285+00 SEE SHEET 27
TR-219 POT 5+00.00 ELEV=2693.08 (BRIDGE SPIKE SET)
CAROL W. JOHNSON DB 55 PG 221 DB 72 PG 437
JAMES L. WOODRUFF DB 158 PG 332 DB 268 PG 381
JAMES CLYDE HINCHER AND JANE HINCHER DB 180 PG 971
LINDA BEDSAUL MACK OSBORNE DB 292 PG 762 PB 9 PG 7
CALVIN A. MELLOTT DB 166 PG 124
N 42° 29' 52" W
S 16° 33' 50" E 318.26'
N 86° 45' 45" W 1146'
S 86° 45' 45" E 324.50'
-L- PI Sta 281+24.78 Δ = 3° 55' 02.3" (RT) D = 0° 45' 00.0" L = 522.31' T = 261.26' R = 7,639.44'
-BL-49 2+75.00 PNC 9+29.56 = -TB- 490.01' ELEV=2716.41' (TRAV. MON.)
8+50.56 = -TB- 490.01' ELEV=2716.41' (TRAV. MON.)
-Y15-POT Sta. 15+00.22= -L-POC Sta. 282+17.95
PTSta. 278+63.52
PCSta. 278+63.52
PTSta. 283+85.83
PULL TAIL ROAD SR 1111

2004 / 2030 ADT
-Y15- PULL TAIL RD
3/5
1/2 2/3
43/81 44/82

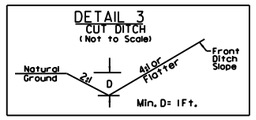
19-JUL-2013 12:44
H:\NCDOT\Design\r3101_ddc_sheet26.dgn
$$USER$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 58
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 291+35 TO 292+00 RT

PROJECT REFERENCE NO.	SHEET NO.
R-3101	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCH LINE -L- STA. 285+00 SEE SHEET 26

MATCH LINE -L- STA. 297+00 SEE SHEET 28

285

290

295

-BL- 50 283+77.56 PINC
ELEV=2734.55'
(TRAV. MON.)

PCSta. 288+31.04

-BL- 51 288+99.86 PINC
9+25.64
= TIO- 51 POT
ELEV=2729.29'
(TRAV. MON.)

PTSta. 294+04.24

PCSta. 294+86.04

19-220 POT 5+00.00
ELEV=2776.43'
(60D NAIL SET)

19-220 POT 7+19.17

DUKE POWER R/W

200.00'

SCRUB

(115) WILLIAM A. HASH AND DORIS HASH
DB 93 PG 652
PB 2 PG 61

(114) CALVIN A. MELLOTT
DB 166 PG 124

(116) ALLEGHANY STONE, LLC
DB 327 PG 877

(117) SCOTT STOKER AND SHANE STOKER
DB 258 PG 291

(118) LORRAINE M. STOKER, ESTATE
WB 12-E-123
DB 98 PG 236
DB 74 PG 473
PB 1 PG 65
PB 2 PG 61

(119) BRIAN W. RAINES
DB 158 PG 890
PB 2 PG 61

285+60.00 47', 65'
286+15.00 50', 65'
+65.00 R\W 45.00
286+85.00 R\W, 45', 65'
287+50.00 65, 48
288+00.00 46.00
288+50.00 45.00
289+00.00 45.00
289+50.00 47.00
290+00.00 39.00
290+50.00 30.00
291+00.00 48.00
291+50.00 61.00
292+00.00 44.00
292+50.00 65.00
293+00.00 77.00
293+50.00 72.00
294+00.00 60.00
294+50.00 44.00
295+00.00 57.00
295+50.00 32.00
296+00.00 75, 54
296+35.00 75, 52
297+00.00 47.00
294+00.00 34.00
294+30.00 R\W 2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC
294+70.00 R\W
295+00.00 35.00
293+50.00 32.00
292+50.00 30.00
+05.00 R\W 45.00
+30.00 R\W 45.00
+50.00 R\W 50.00
+75.00 R\W 35.00
+95.00 R\W 35.00
296+10.00 R\W, 65.00
296+50.00 76.00
296+00.00 62.00
296+60.00 R\W, 65.00
296+97.00 R\W
296+97.00 PUE
296+93.00 90.00
296+86.00 PUE
296+83.00 88.00

285+00.00 83.00
285+50.00 80.00
286+00.00 67.00
286+50.00 43.00
287+00.00 46.00
287+50.00 58.00
288+00.00 65.00
288+50.00 65.00
289+00.00 60.00
289+50.00 47.00

PL 44.45
PL 46.67
PL 51.73
PL 33.12
PL 33.54
PL 53.73
PL 75.43
PL 45.79
PL 51.08

5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC
3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC
2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC

CUT DITCH
-L- STA. 291+35 TO 292+00 RT
SEE DETAIL 3

REMOVE HEADWALL
CONC. ENDWALL
CONC. ENDWALL

N 38° 34' 49.8" W
N 58° 38' 43.0" W
N 45° 52' 37" E
N 37° 53' 51" E
S 45° 55' 19" W 488.84'
S 37° 41' 19" W 198.44'
N 45° 06' 05" W 198.44'
S 37° 55' 19" W 198.00'

EXISTING R/W
GRAU 350
BST
ISBKD
DECK
CONC
EIP
SCRUB

-L-

PI Sta 291+20.61	PI Sta 296+95.41
Δ = 20° 03' 43.2" (LT)	Δ = 4° 11' 08.1" (LT)
D = 3° 30' 00.0"	D = 1° 00' 00.0"
L = 573.20'	L = 418.56'
T = 289.56'	T = 209.37'
R = 1,637.02'	R = 5,729.58'

19-JUL-2013 12:44
C:\Projects\R-3101\Design\r3101_ddc_sheet27.dgn
$$USER$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 59
FOR -Y16REV- PROFILES SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCH LINE -L- STA. 297+00 SEE SHEET 27

MATCH LINE -L- STA. 309+00 SEE SHEET 29

BRIAN W. RAINES
DB 168 PG 890
PB 2 PG 61

EDWARD CARL JOHNSON AND FRANCIS MASHBURN JOHNSON
DB 131 PG 476

MARY SUE JOHNSON AND REBECCA F. JOHNSON
DB 141 PG 504

KRISTEN L. BRAUNIG TRUST
ESTATE FILE 05-E-128
DB 151 PG 956
TAX MAP

HASH HEIRS
DB AND PG NUMBER UNKNOWN

RICHARD H. SOURES, ET AL
DB 332 PG 401
PB 9 PG 146

JOE D. & BRENDA R. STOKER
DB 98 PG 284
DB 98 PG 232
PB 2 PG 61

-Y16-PC Sta. 10+00.00=
-L-POT Sta. 302+08.49

-BL- 295+88.66 POT

-BL- 300+85.24 PINC

6+71.40 PINC
-BY22- 129

9+37.95 POT
-BY22- 130

3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 16 S.Y. FILTER FABRIC

REMOVE HEADWALL
GRADE TO DRAIN
30" ESP. W/ ELBOWS
ALONG "L" ENDWALL

SPECIAL DITCH GRADE

REMOVE HEADWALL

STOKER ROAD SR 1467

HISTORIC BOUNDARY

EXISTING R/W

SCRUB

RUINS

CEMETERY

ISBKD

FOUND

PINC

POT

2004 / 2030 ADT
-Y16REV- STOKER RD
44/82 47/87
1/3 4/8
5/11

-L-
PI Sta 306+58.09
Δ = 22° 52' 06.1" (RT)
D = 4° 00' 00.0"
L = 571.71'
T = 289.71'
R = 1,432.39'

19-Jul-2013 12:45
H:\NCDOT\Design\R-3101_dds_sheet28.dgn
ss$$$$ROADWAY$$$$

8/17/99

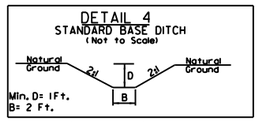
NOTES

FOR -L- PROFILE SEE SHEET 59
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

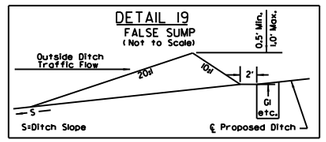
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 310+15 TO 310+40 LT
-L- STA. 317+40 LT
EST. 9 CY DDE

DETAIL 19
FALSE SUMP
(Not to Scale)



NAD 83

MATCH LINE -L- STA. 309+00 SEE SHEET 28

MATCH LINE -L- STA. 321+00 SEE SHEET 30

310

315

320

HISTORIC BOUNDARY

PRIVATE R/W EASEMENT AS IN PB 9 PG 73

PC Sta. 305+36.18
BL - 56.18

PC Sta. 309+40.09

PI Sta. 313+40.09

PC Sta. 319+20.76

(126) KRISTEN L. BRAUNIG TRUST
ESTATE FILE 05-E-128
DB 257 PG 956
TAX MAP

(127) SUSAN M. BILLINGS
DB 257 PG 827

(130) CAROL W. JOHNSON
DB 72 PG 457
DB 165 PG 835

(125) RICHARD H. SQUIRES, ET AL
DB 332 PG 401
PB 9 PG 346

(128) SHON A. TALLY
DB 316 PG 521
DB 314 PG 284

(128) SHON A. TALLY
DB 316 PG 521
DB 314 PG 284

(134) NORMA T. PRICE
J. PATRICK PRICE
DB 301 PG 49

MELANIE JOHNSON WAGONER
DB 271 PG 109
PB 9 PG 346

STANDARD BASE DITCH
-L- STA. 310+15 TO 310+40 LT
DDE = 5 CY
SEE DETAIL 4

STANDARD BASE DITCH
-L- STA. 317+40 LT
DDE = 4 CY
SEE DETAIL 4

3 TONS CLASS 'B' RIP RAP WITH 10 S.Y. FILTER FABRIC

5 TONS CLASS 'B' RIP RAP WITH 14 S.Y. FILTER FABRIC

REMOVE DI

REMOVE HEADWALL

N 32° 57' 35.0" W

468.01'
N11°04'37"W

375.05'
N80°42'09"E

-L-

PI Sta 306+58.09	PI Sta 311+40.34	PI Sta 321+52.45
Δ = 22° 52' 06.1" (RT)	Δ = 7° 00' 00.0" (RT)	Δ = 13° 50' 03.4" (LT)
D = 4° 00' 00.0"	D = 1° 45' 00.0"	D = 3° 00' 00.0"
L = 571.71'	L = 400.00'	L = 461.14'
T = 289.71'	T = 200.25'	T = 231.70'
R = 1,432.39'	R = 3,274.04'	R = 1,909.86'

19-JUL-2013 12:45
R-3101\Design\r3101_ddc_sheet29.dgn
$$$$USER$$$$

8/17/99

NOTES

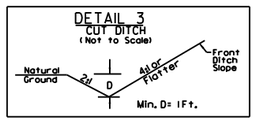
FOR -L- PROFILE SEE SHEET 60
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

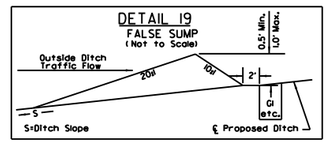
NAD 1983

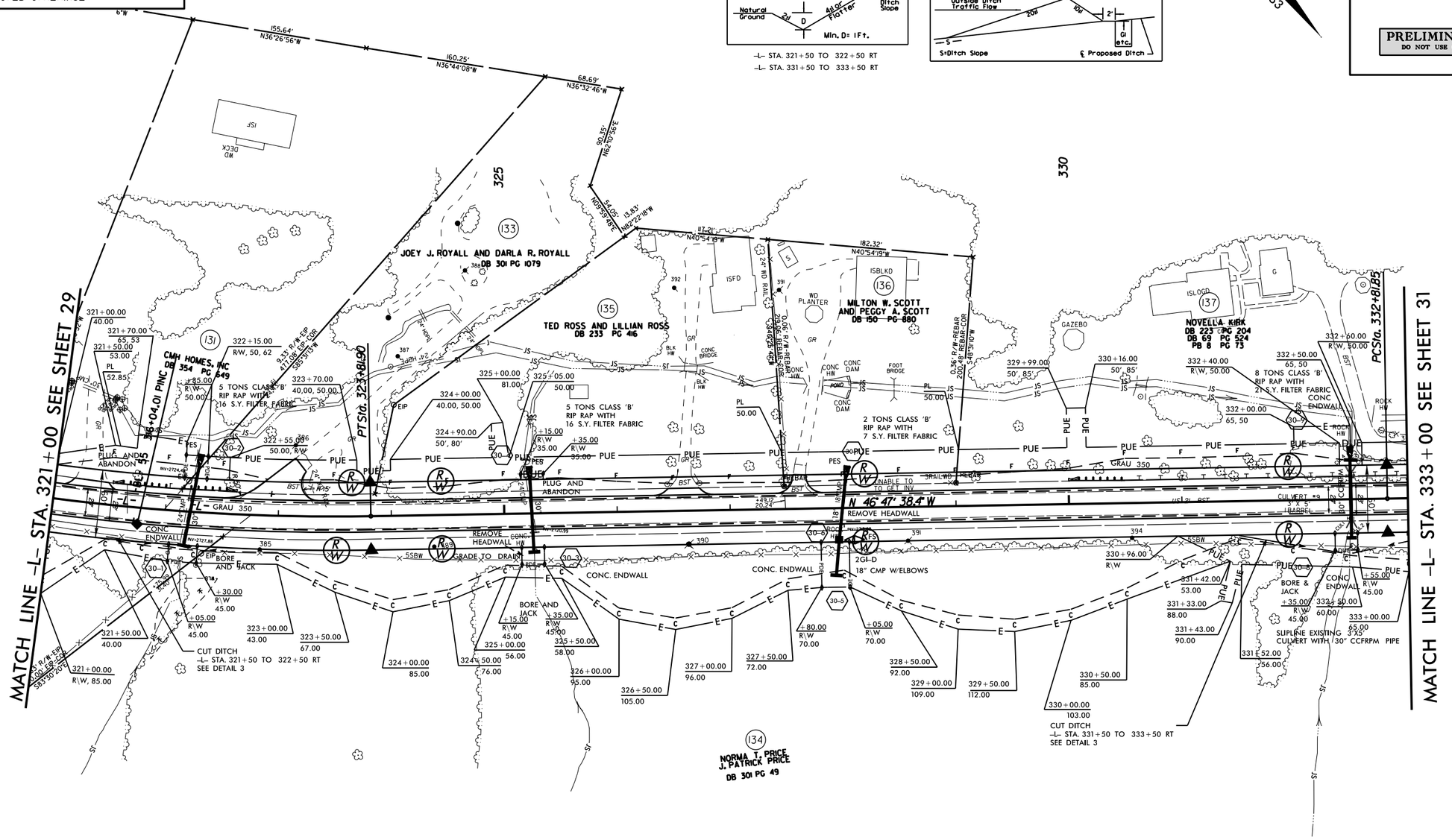
DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 321+50 TO 322+50 RT
-L- STA. 331+50 TO 333+50 RT

DETAIL 19
FALSE SUMP
(Not to Scale)





CULVERT #9
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	993136.63	1398780.74	2693.19
CUL2	993138.60	1398778.89	2693.14
CE1	993137.59	1398779.64	2698.58
HW1	993137.60	1398779.43	2700.16
CUL3	993104.13	1398746.74	2689.87
CUL4	993102.35	1398748.92	2690.03
CE2	993103.37	1398747.88	2694.98
HW2	993103.61	1398747.90	2696.54

-L-
PI Sta 321+52.45
Δ = 13° 50' 03.4" (LT)
D = 3° 00' 00.0"
L = 461.14'
T = 231.70'
R = 1,909.86'

19-JUL-2013 12:45
R:\r3101\Design\r3101_ddc_sheet30.dgn
$$$$USERNAME$$$$

8/17/99

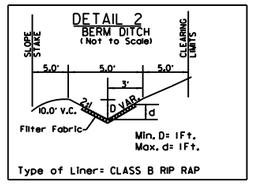
NOTES

FOR -L- PROFILE SEE SHEET 60
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

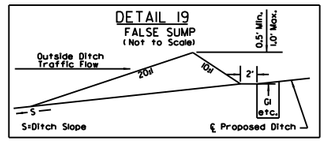
PROJECT REFERENCE NO.	SHEET NO.
R-3101	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

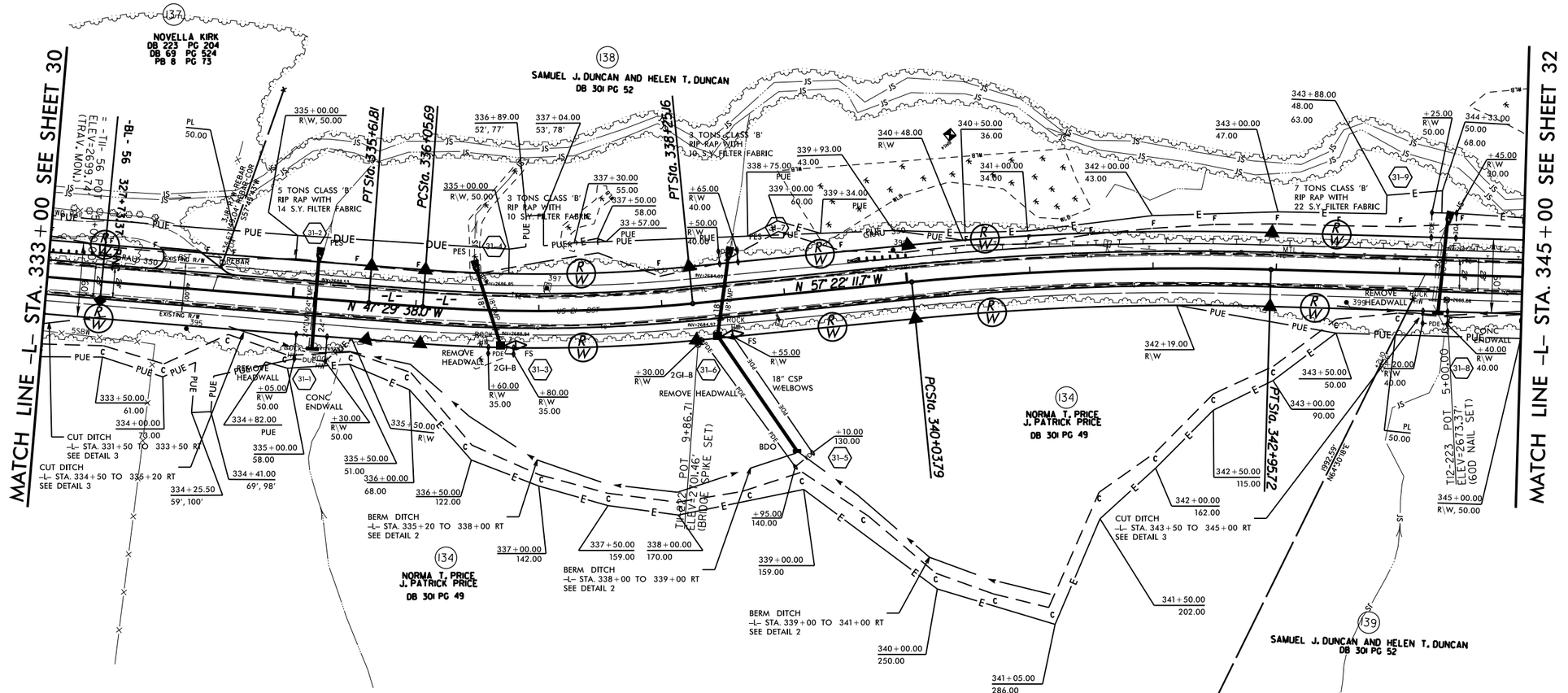
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 1983



-L- STA. 335+20 TO 338+00 RT
-L- STA. 338+00 TO 339+00 RT
-L- STA. 339+00 TO 341+00 RT





-L-

PI Sta 334+21.83	PI Sta 337+15.70	PI Sta 341+49.95
Δ = 0° 41' 59.6" (LT)	Δ = 9° 52' 33.7" (LT)	Δ = 7° 17' 53.7" (RT)
D = 0° 15' 00.0"	D = 4° 30' 00.0"	D = 2° 30' 00.0"
L = 279.96'	L = 219.47'	L = 291.93'
T = 139.98'	T = 110.01'	T = 146.16'
R = 22,918.31'	R = 1,273.24'	R = 2,291.83'

19-JUL-2013 12:45
R:\R-3101\Design\R-3101_ddc_sheet31.dgn
$$$$ USER:thamm

8/17/99

NOTES

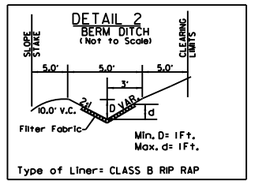
FOR -L- PROFILE SEE SHEET 6I
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 1983

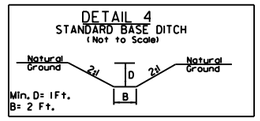
DETAIL 2
BERM DITCH
(Not to Scale)



Type of Liner: CLASS B RIP RAP

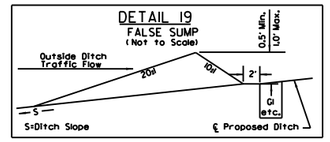
-L- STA. 350+50 TO 354+00 RT

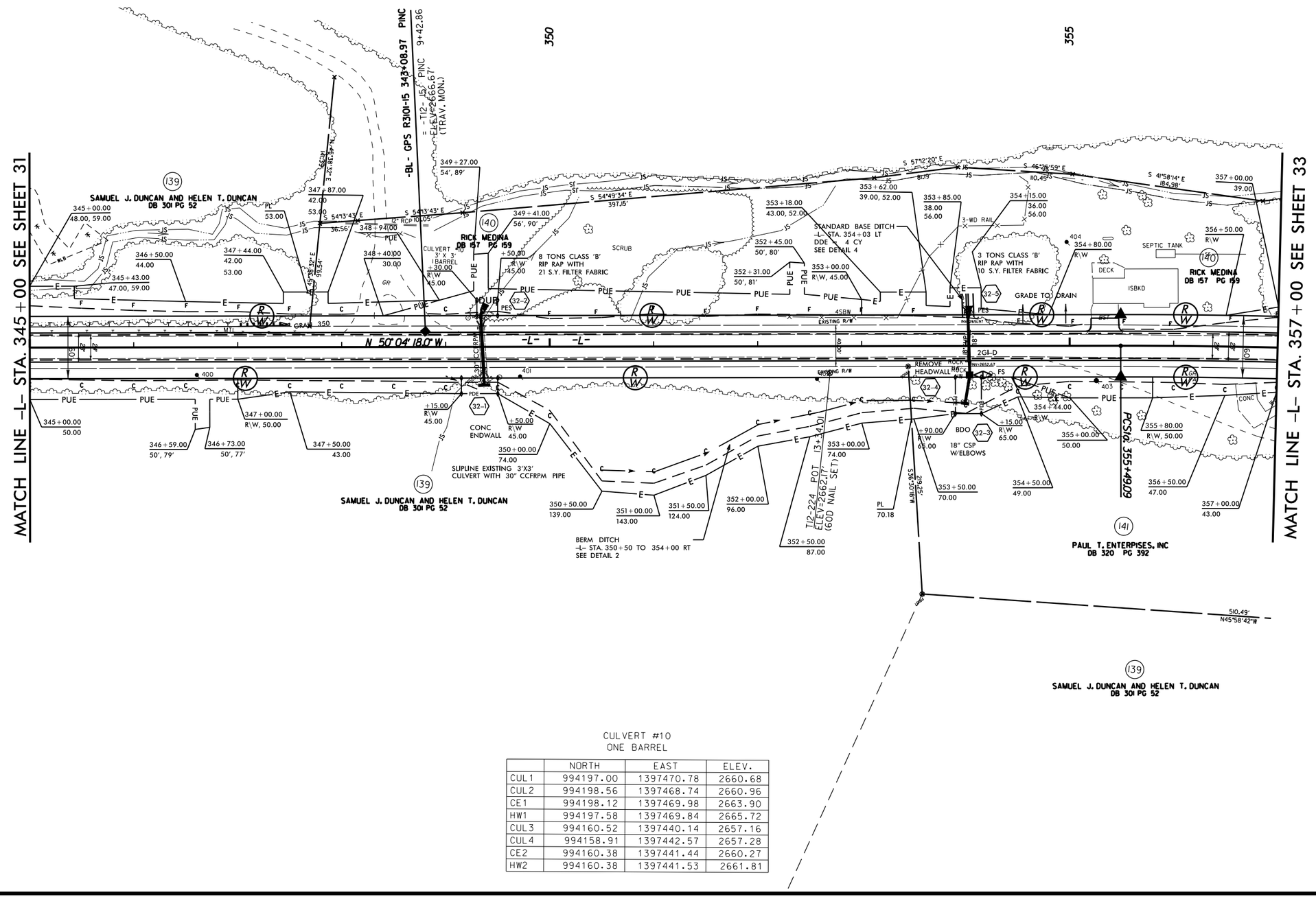
DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 354+03 LT
EST. 4 CU. YD. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)





CULVERT #10
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	994197.00	1397470.78	2660.68
CUL2	994198.56	1397468.74	2660.96
CE1	994198.12	1397469.98	2663.90
HW1	994197.58	1397469.84	2665.72
CUL3	994160.52	1397440.14	2657.16
CUL4	994158.91	1397442.57	2657.28
CE2	994160.38	1397441.44	2660.27
HW2	994160.38	1397441.53	2661.81

19-Jul-2013 12:45
H:\NCDOT\Design\r3101_dds_sheet32.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 6I
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

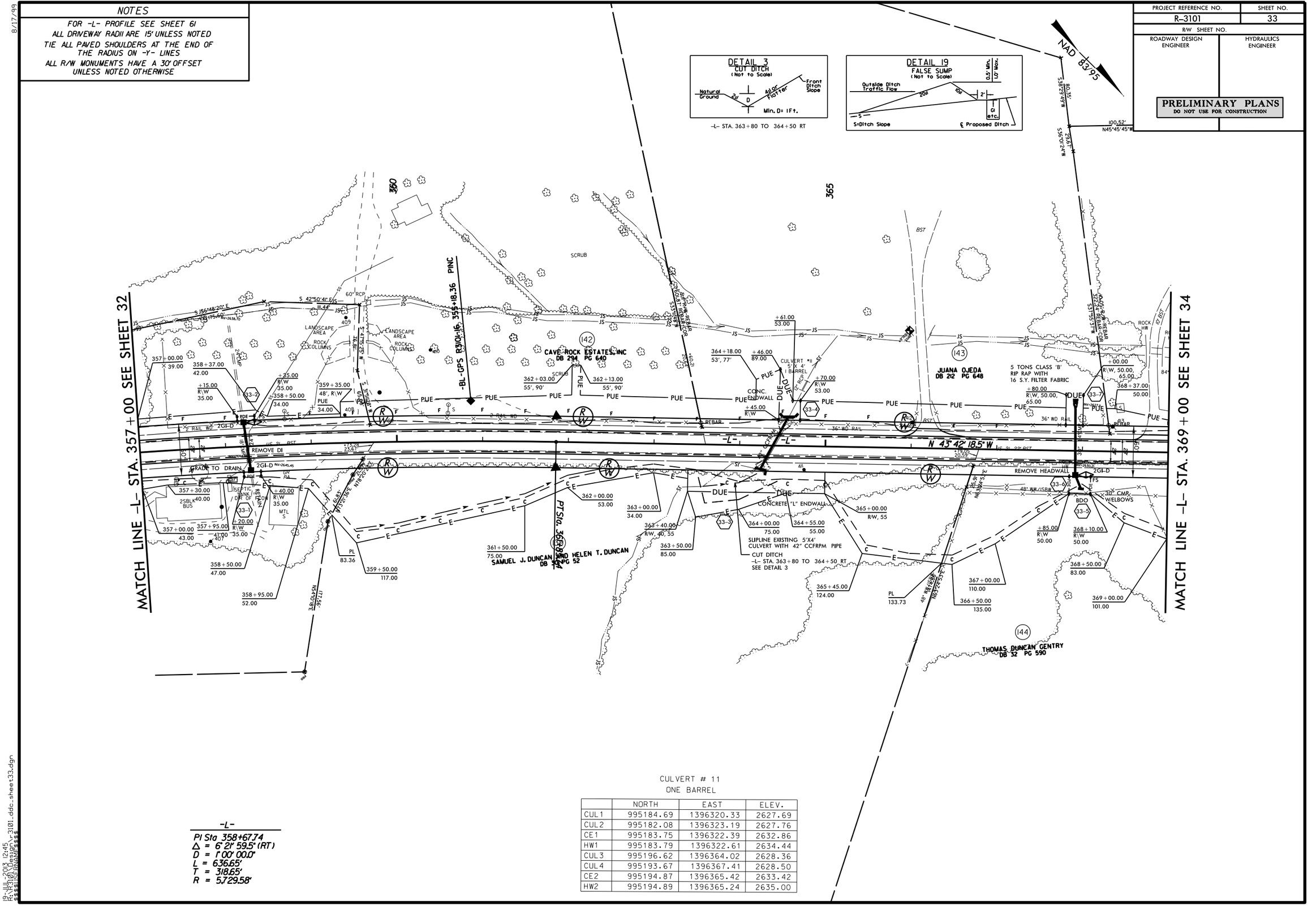
PROJECT REFERENCE NO.	SHEET NO.
R-3101	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL 3
CUT DITCH
(Not to Scale)

-L- STA. 363+80 TO 364+50 RT

DETAIL 19
FALSE SUMP
(Not to Scale)



-L-
PI Sta 358+67.74
Δ = 6° 21' 59.5" (RT)
D = 1° 00' 00.0"
L = 636.65'
T = 318.65'
R = 5,729.58'

CULVERT # 11
ONE BARREL

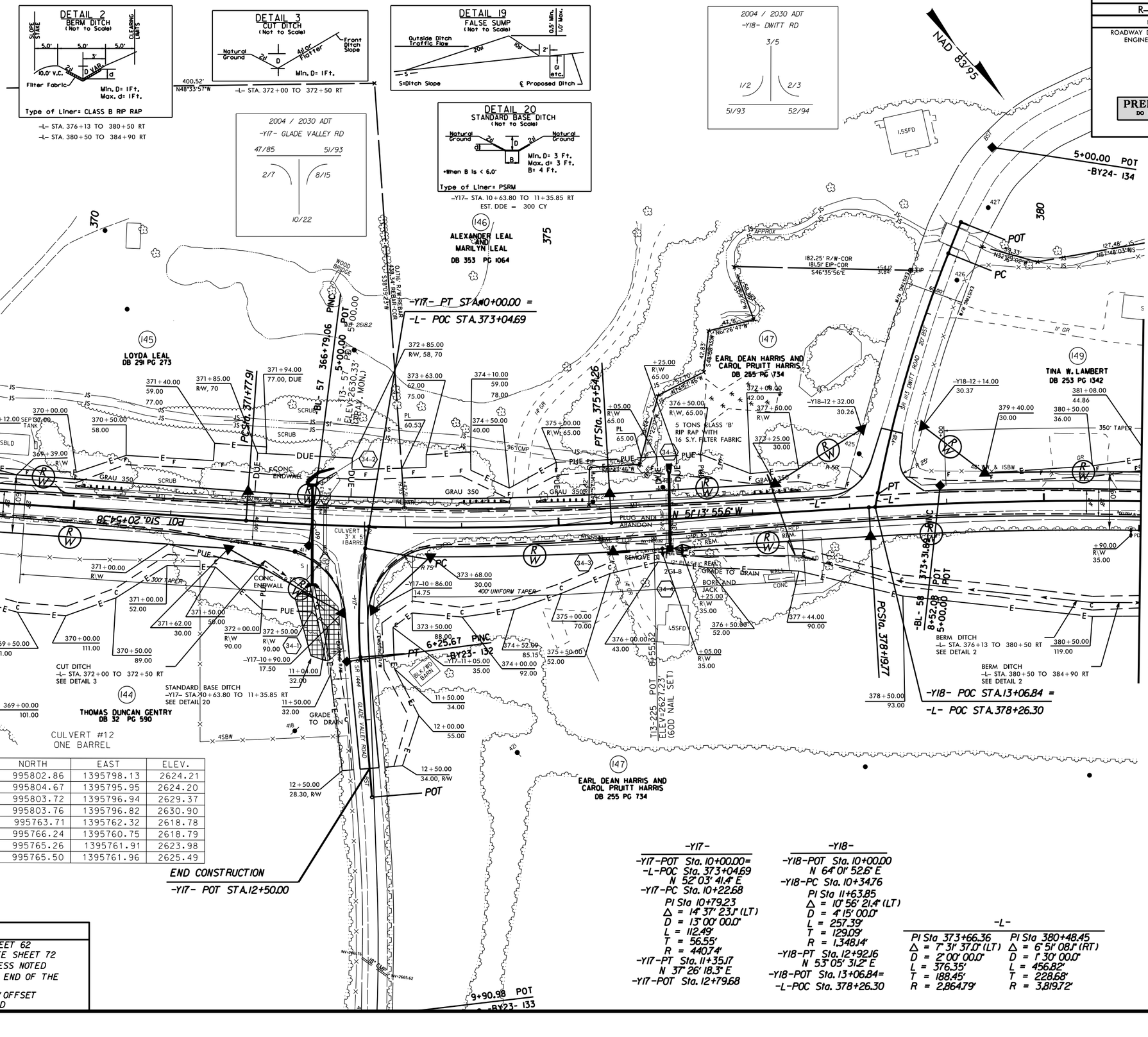
	NORTH	EAST	ELEV.
CUL1	995184.69	1396320.33	2627.69
CUL2	995182.08	1396323.19	2627.76
CE1	995183.75	1396322.39	2632.86
HW1	995183.79	1396322.61	2634.44
CUL3	995196.62	1396364.02	2628.36
CUL4	995193.67	1396367.41	2628.50
CE2	995194.87	1396365.42	2633.42
HW2	995194.89	1396365.24	2635.00

19-JUL-2013 12:45
R:\R3101\Design\r3101_ddc_sheet33.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



	NORTH	EAST	ELEV.
CUL1	995802.86	1395798.13	2624.21
CUL2	995804.67	1395795.95	2624.20
CE1	995803.72	1395796.94	2629.37
HW1	995803.76	1395796.82	2630.90
CUL3	995763.71	1395762.32	2618.78
CUL4	995766.24	1395760.75	2618.79
CE2	995765.26	1395761.91	2623.98
HW2	995765.50	1395761.96	2625.49

-Y17-
-Y17-POT Sta. 10+00.00=
-L-POC Sta. 373+04.69
N 52°03' 41.4" E
-Y17-PC Sta. 10+22.68
PI Sta 10+79.23
Δ = 14° 37' 23.1" (LT)
D = 13° 00' 00.0"
L = 112.49'
T = 56.55'
R = 440.74'
-Y17-PT Sta. 11+35.17
N 37° 26' 18.3" E
-Y17-POT Sta. 12+79.68

-Y18-
-Y18-POT Sta. 10+00.00
N 64° 01' 52.6" E
-Y18-PC Sta. 10+34.76
PI Sta 11+63.85
Δ = 10° 56' 21.4" (LT)
D = 4° 15' 00.0"
L = 257.39'
T = 129.09'
R = 1,348.14'
-Y18-PT Sta. 12+92.16
N 53° 05' 31.2" E
-Y18-POT Sta. 13+06.84=
-L-POC Sta. 378+26.30

-L-

PI Sta 373+66.36	PI Sta 380+48.45
Δ = 7° 31' 37.0" (LT)	Δ = 6° 51' 08.1" (RT)
D = 2° 00' 00.0"	D = 1° 30' 00.0"
L = 376.35'	L = 456.82'
T = 188.45'	T = 228.68'
R = 2,864.79'	R = 3,819.72'

9-JUL-2013 12:45
R-3101\Design\R-3101_ddc_sheet34.dgn
$$USER:NAME$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

MATCH LINE -L- STA. 381+00 SEE SHEET 34

MATCH LINE -L- STA. 393+00 SEE SHEET 36

ROGER DALE HANES
DB 164 PG 920

NELSON MURRAY AND
MAE P. MURRAY
DB 151 PG 141
DB 156 PG 534

EARL DEAN HARRIS AND
CAROL PRUITT HARRIS
DB 255 PG 734

J.B. WATSON AND
MERELE WATSON
DB 168 PG 79

BLUE RIDGE ELECTRIC
MEMBERSHIP
DB 59 PG 509
DB 237 PG 166
DB 267 PG 385

JOHN MICHAEL CAUDILL
DB 180 PG 238

KENNETH WILSON AND
BARBARA WILSON
DB 255 PG 470

DETAIL 2
BERM DITCH
(Not to Scale)

Type of Liner= CLASS B RIP RAP

-L- STA. 380+50 TO 384+90 RT

DETAIL 3
CUT DITCH
(Not to Scale)

-L- STA. 388+50 TO 389+00 RT

DETAIL 8
CUT DITCH
(Not to Scale)

Type of Liner= PSRM

-L- STA. 384+70 TO 385+07 RT

DETAIL 19
FALSE SUMP
(Not to Scale)

-L- STA. 382+00 TO 382+20 RT

-L- STA. 384+00 TO 384+55 RT

-L- STA. 386+47.98 CUT DITCH SEE DETAIL 3

-L- STA. 389+00 TO 389+50 RT

-L- STA. 391+05 TO 391+91 RT

-L- STA. 392+15 TO 392+77 SBG BEGIN BRIDGE LT & RT

-L- STA. 393+00 SEE SHEET 36

-Y19REV-POT Sta. 10+00.00=
-L-POT Sta. 385+40.00

-L-
PI Sta 380+48.45
Δ = 6° 51' 08.1" (RT)
D = 1° 30' 00.0"
L = 456.82'
T = 228.68'
R = 3,819.72'

-Y19REV-
N 45° 37' 12.5" E
PI Sta 10+91.49
Δ = 51° 56' 26.9" (LT)
D = 38° 00' 00.0"
L = 136.69'
T = 73.44'
R = 150.78'

2004 / 2030 ADT
-Y19REV- SHERIFF RD
52/94 53/96
1-/1- 1/2
1/2

NOTES
FOR -L- PROFILE SEE SHEET 62
FOR -Y19REV- PROFILES SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

19-JUL-2013 12:45
R-3101 Design_r3101_ddc_sheet35.dgn
$$USER$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 62
FOR -Y20- PROFILE SEE SHEET 72
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CULVERT #13
FOUR BARRELS

	NORTH	EAST	ELEV.
CUL1	997219.57	1394284.70	2582.50
CUL2	997226.77	1394277.72	2582.36
CUL3	997227.44	1394277.24	2582.37
CUL4	997234.78	1394269.91	2582.38
CUL5	997234.77	1394269.71	2582.54
CUL6	997241.99	1394262.48	2582.40
CUL7	997242.75	1394261.98	2582.45
CUL8	997249.47	1394255.27	2582.38
CE1	997235.09	1394269.95	2592.66
HW1	997234.33	1394269.44	2594.42
CUL9	997224.37	1394229.91	2582.74
CUL10	997217.44	1394236.72	2582.83
CUL11	997217.43	1394237.17	2582.83
CUL12	997210.18	1394244.04	2582.84
CUL13	997209.46	1394244.27	2582.83
CUL14	997202.19	1394251.75	2582.81
CUL15	997201.95	1394251.97	2582.83
CUL16	997194.80	1394259.10	2582.76
CE2	997210.04	1394244.42	2592.80
HW2	997210.10	1394244.44	2594.80

2004 / 2030 ADT
-Y20- MACEDONIA CHURCH RD
4/10
1/2 3/8
53/96 55/102

MATCH LINE -L- STA. 393+00 SEE SHEET 35

MATCH LINE -L- STA. 405+00 SEE SHEET 37

NAD 83

-Y20-POT Sta. 10+00.00
-Y20-POT Sta. 12+15.73=
-L-POT Sta. 397+92.67

-Y21-
PI Sta 10+89.04
Δ = 35° 30' 59.2" (RT)
D = 57° 17' 44.8"
L = 61.99'
T = 32.03'
R = 100.00'

PI Sta 11+80.07
Δ = 12° 18' 44.9" (LT)
D = 15° 15' 00.0"
L = 80.74'
T = 40.52'
R = 375.71'

154 DORIS GREENE DB 53 PG 137

159 CLIFF E. TARLTON AND NINA H. TARLTON DB 244 PG 178

160 PHILIP S. HORTON AND PAMELA HORTON DB 244 PG 863

156 BREMCO SUBSTATION
BLUE RIDGE ELECTRIC MEMBERSHIP CORPORATION
DB 59 PG 509
DB 237 PG 166
DB 267 PG 385

157 LORRAINE W. STOKER, ESTATE
WB 12-E-123
DB 98 PG 236
DB 74 PG 473
PB 1 PG 65
PB 2 PG 61

161 JOE STOKER AND BRENDA STOKER
DB 98 PG 284
DB 233 PG 883

CULVERT #14
TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	998004.96	1393524.48	2581.03
CUL2	998000.83	1393528.55	2580.99
CUL3	998000.53	1393528.84	2581.01
CUL4	997996.24	1393533.24	2580.97
CE1	998000.35	1393528.72	2588.07
HW1	998000.46	1393528.42	2589.73
CUL5	997971.55	1393490.09	2581.57
CUL6	997966.83	1393494.53	2581.62
CUL7	997966.42	1393495.03	2581.55
CUL8	997962.65	1393498.80	2581.47
CE2	997967.02	1393494.64	2588.64
HW2	997967.29	1393494.63	2590.25

19-JUL-2013 12:45
R:\R3101\Design\r3101_ddc_sheet36.dgn
$$$$USERNAME$$$$

8/17/99

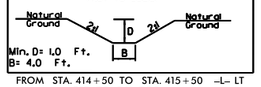
PROJECT REFERENCE NO.	SHEET NO.
R-3101	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CULVERT #15
ONE BARREL

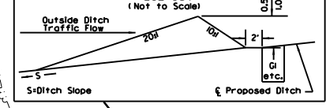
	NORTH	EAST	ELEV.
CUL1	998655.98	1392780.39	2603.01
CUL2	998656.94	1392777.04	2603.02
CE1	998656.42	1392778.46	2606.17
HW1	998656.20	1392778.28	2607.77
CUL3	998627.22	1392772.15	2601.81
CUL4	998628.29	1392768.84	2601.84
CE2	998627.97	1392770.43	2605.03
HW2	998628.22	1392770.48	2606.61

DETAIL 5
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 414+50 TO STA. 415+50 -L- LT
EST. 75 C.Y. DDE

DETAIL 19
FALSE SUMP
(Not to Scale)



-Y22-
-Y22-POT Sta. 10+00.00
N 42° 13' 09.7" E
-Y22-PC Sta. 10+19.76
PI Sta 11+26.62
Δ = 56° 24' 05.8" (RT)
D = 28° 45' 00.0"
L = 196.18'
T = 106.86'
R = 199.29'
-Y22-PT Sta. 12+15.94
S 81° 22' 44.5" E
-Y22-PC Sta. 12+48.00
PI Sta 12+76.60
Δ = 38° 31' 25.5" (LT)
D = 70° 00' 00.0"
L = 55.03'
T = 28.60'
R = 81.85'
-Y22-PT Sta. 13+03.03=
-L-POT Sta. 413+47.86

NAD 83

MATCH LINE -L- STA. 405+00 SEE SHEET 36

MATCH LINE -L- STA. 417+00 SEE SHEET 38

PROP. 2 BARREL 7'x7' RCBC, BURY INVERT 1.0' W/ LOW FLOW SILLS

-Y21-POT Sta. 10+00.00=
-L-POT Sta. 406+00.00

-D2-POT Sta. 10+00.00=
-L-POT Sta. 409+60.00

3 TONS CLASS 'B' RIP RAP WITH 11 S.Y. FILTER FABRIC

REMOVE HEADWALL

GRADE TO DRAIN

CUT DITCH
-L- STA. 406+50 TO 407+50 RT.
SEE DETAIL 3

CUT DITCH
-Y21- STA. 10+32 TO 11+00 LT.
SEE DETAIL 3

CUT DITCH
-L- STA. 416+20 TO 417+00 LT.
SEE DETAIL 3

4' BASE CHANNEL
ROCK CROSS VANES
SEE DETAIL 15 AND
ROCK CROSS VANES DETAIL

CULVERT #16
3' X 3'
1 BARREL

CONC. ENDWALL

PROP. RELOCATION OF GATE

5+00.00 POT
-BY28- 143

-Y22- POT STA.10+00.00

7+37.90 PINC
-BY28- 144

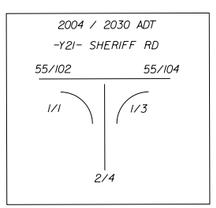
8+23.87 PINC
-BY27- 142

-Y22- POC STA.13+03.03 =
-L- POT STA.413+47.86

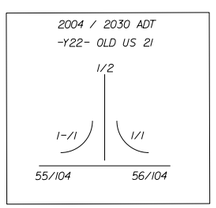
END CONSTRUCTION
-D2-POT Sta. 11+70.25

PAVEMENT TO BE REMOVED

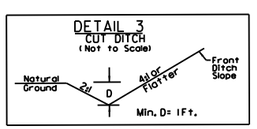
2004 / 2030 ADT
-Y21- SHERIFF RD



2004 / 2030 ADT
-Y22- OLD US 21



DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 406+50 TO 407+50 RT.
-L- STA. 416+20 TO 417+00 LT.
-Y21- STA. 10+32 TO 11+00 LT.

-Y21-
-Y21-POT Sta. 10+00.00=
-L-POT Sta. 407+10.15
N 45° 37' 12.5" E
S 83° 33' 09.6" E
-Y21-PC Sta. 10+93.13
PI Sta 11+85.49
Δ = 27° 37' 23.6" (LT)
D = 15° 15' 00.0"
L = 181.14'
T = 92.36'
R = 375.71'
-Y21-PT Sta. 12+74.27

-D2-
-D1-POT Sta. 10+00.00=
-L-POT Sta. 409+60.00
N 45° 37' 12.5" E
PI Sta 11+16.07
Δ = 70° 21' 59.0" (LT)
D = 229° 15' 00.2"
L = 30.69'
T = 17.62'
R = 24.99'
-D1-PT Sta. 11+29.14
N 24° 44' 46.5" W
-D1-POT Sta. 11+70.25

CULVERT #16
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	998818.84	1392667.21	2608.83
CUL2	998821.31	1392665.23	2608.78
CE1	998820.44	1392665.92	2611.81
HW1	998820.05	1392665.84	2613.44
CUL3	998874.49	1392668.45	2609.44
CUL4	998877.01	1392666.00	2609.27
CE2	998875.90	1392666.84	2612.41
HW2	998875.85	1392666.86	2613.88

NOTES
FOR -L- PROFILE SEE SHEET 63
FOR -Y22- & -Y23- PROFILES SEE SHEET 73
FOR -D2- PROFILE SEE SHEET 74
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

(162) DONNIE W. WAGONER DB 112 PG 573

(165) EARL C. FOGLEMAN AND RUBY L. FOGLEMAN DB 165 PG 810

(164) DEAN R. EDWARDS WILL 09-E-4 DB 75 PG 302 DB 62 PG 15 DB 52 PG 36 DB 74 PG 545

(164) ELMER RICHARD EDWARDS AND LEXA RAE CREED EDWARDS DB 75 PG 302

(157) LORRAINE M. STOKER, ESTATE WB 12-E-123 DB 98 PG 236 DB 74 PG 473 PB 1 PG 65 PB 2 PG 61

(161) NORRIS G. DIXON DURANT C. WHITLEY DENO ALMOND SUE SALMOND DB 349 PG 307

(161A) DB 349 PG 307

TIA-226 POT ELEV=2596.46 (600 NAIL SET)

TIE TO EXISTING

1432.32' N06°23'00"E

19-JUL-2013 12:45
R-3101 Design
$$USERNAME$$
M:\R3101\design\r3101_ddc_sheet37.dgn

8/17/99

NOTES

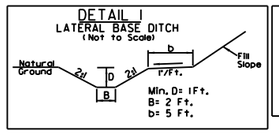
FOR -L- PROFILE SEE SHEET 64
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

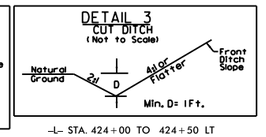
NAD 83

DETAIL 1
LATERAL BASE DITCH
(Not to Scale)



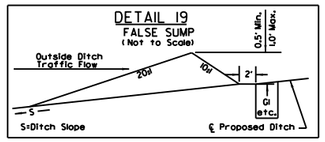
-L- STA. 426+40 TO 427+50 RT
-L- STA. 427+20 TO 429+00 LT
EST. 94 CY DDE

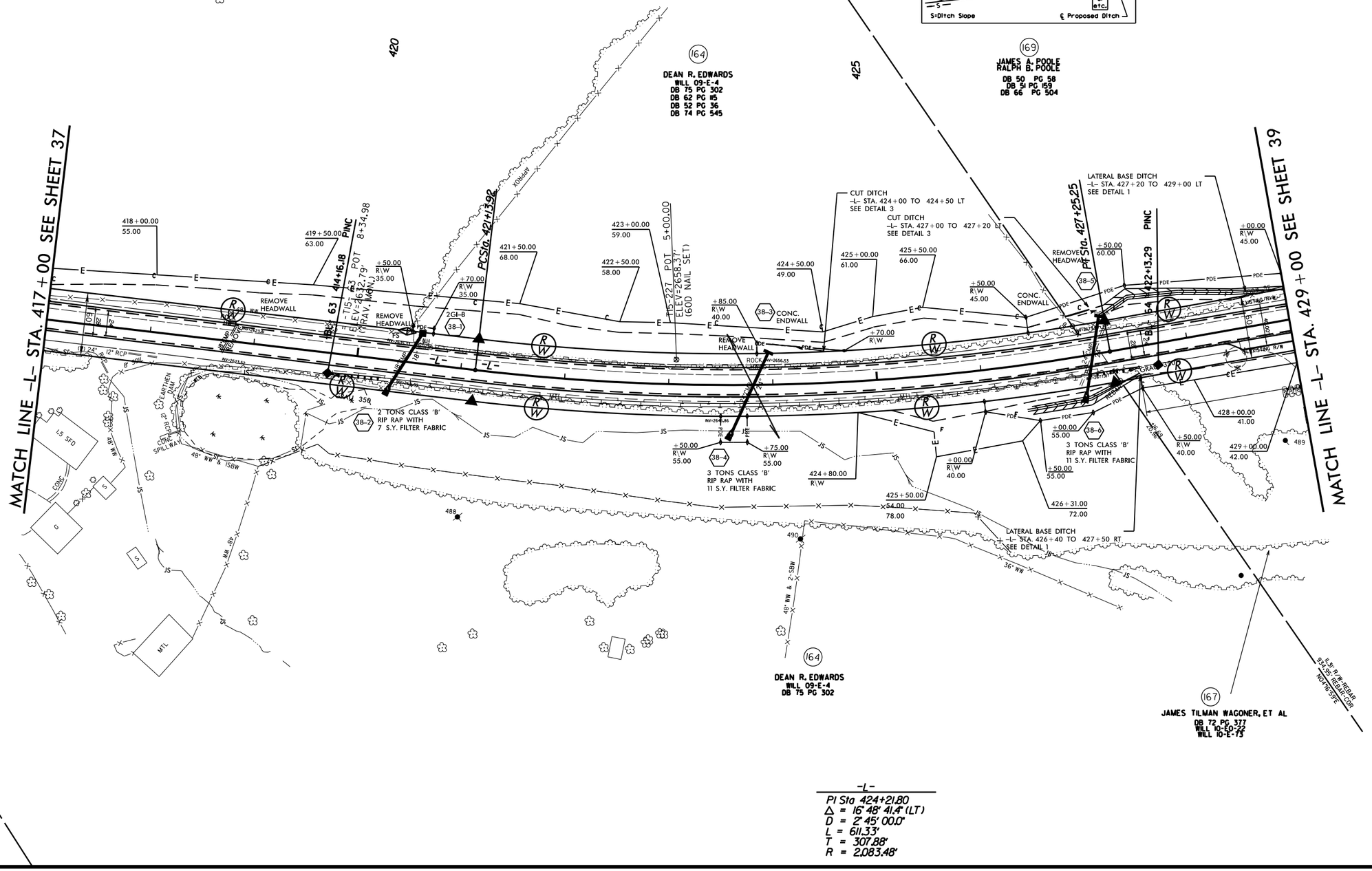
DETAIL 3
CUT DITCH
(Not to Scale)



-L- STA. 424+00 TO 424+50 LT
-L- STA. 427+00 TO 427+20 LT

DETAIL 19
FALSE SUMP
(Not to Scale)





-L-
PI Sta 424+21.80
Δ = 16° 48' 41.4" (LT)
D = 2° 45' 00.0"
L = 611.33'
T = 307.88'
R = 2,083.48'

19-JUL-2013 12:45
N:\Projects\Design\R-3101_dds_sheet38.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 64
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

-L-

Pls Sta 432+94.81
Θs = 8° 15' 00.0"
Ls = 200.00'
LT = 133.48'
ST = 66.80'

PI Sta 435+38.32
Δ = 28° 35' 39.4" (LT)
D = 8° 15' 00.0"
L = 346.60'
T = 176.99'
R = 694.49'

Pls Sta 437+74.73
Θs = 8° 15' 00.0"
Ls = 200.00'
LT = 133.48'
ST = 66.80'

Pls Sta 442+74.36
Θs = 2° 15' 00.0"
Ls = 200.00'
LT = 133.34'
ST = 66.68'

-Y23-

-Y23-POT Sta. 10+00.00=
-L-POC Sta. 434+31.45
N 8° 34' 46.2" E
-Y23-PC Sta. 10+84.79
PI Sta 11+83.67
Δ = 16° 41' 29.5" (LT)
D = 8° 30' 00.0"
L = 196.37'
T = 98.89'
R = 674.07'
-Y23-PT Sta. 12+81.16
N 8° 06' 43.3" W
-Y23-POT Sta. 13+92.53

2004 / 2030 ADT
-Y23- ANDREWS RIDGE RD
56/104 58/105
1/3 3/4
4/7

PROJECT REFERENCE NO.	SHEET NO.
R-3101	39
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCH LINE -L- STA. 429+00 SEE SHEET 38

MATCH LINE -L- STA. 441+00 SEE SHEET 40

-Y23- STA.10+00.00 POT =
-L- STA.434+31.35 POC

(167) JAMES TILMAN WAGONER, ET AL
DB 72 PG 377
WB 10-E-79-22
WB 10-E-75

(168) ROBERT L. PRESNELL, JR. AND PAULA C. PRESNELL
DB 242 PG 845

(169) JAMES A. POOLE
RALPH B. POOLE
DB 50 PG 58
DB 51 PG 159
DB 66 PG 504

(170) LORRAINE M. STOKER, ESTATE
WB 12-E-123
REMAINDER OF
DB 69 PG 528

(171) RUSSELL O. EDWARDS AND HELEN EDWARDS
DB 69 PG 445
PB 1 PG 65

SPECIAL CUT DITCH SEE DETAIL 6

2 TONS CLASS 'B' RIP RAP WITH 7 S.Y. FILTER FABRIC

NO DEFINED CHANNEL EXIST. PIPE SILTED 50% - REMOVE & REPLACE

CLASS 'B' RIP RAP 8 TONS 21 S.Y. F.F.

2' BASE LATERAL DITCH SEE DETAIL 7

2' BASE LATERAL DITCH SEE DETAIL 17

DETAIL 6
CUT DITCH
(Not to Scale)
Natural Ground, 2H, D, 4H or Flatter, Front Ditch Slope
Min. D= 1.5 Ft.
FROM STA. 433+50 TO STA. 434+00 -L- RT

DETAIL 17
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, F/Ft., Fill Slope, Filter Fabric, B
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.
*When B is < 6.0'
Type of Liner= Class 'I' Rip-Rap
FROM STA. 437+00 TO STA. 437+50 -L- RT
EST. 28 CY DDE

DETAIL 7
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2H, D, 2H, F/Ft., Fill Slope, B
Min. D= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.
FROM STA. 437+50 TO STA. 438+19 -L- RT
EST. 40 CY DDE

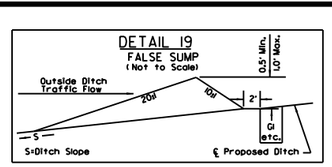
19-JUL-2013 12:45
R-3101 Design 3101_ddc_sheet39.dgn
$$$$USERNAME$$$$

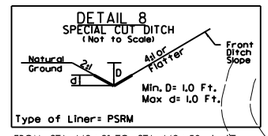
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	40
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

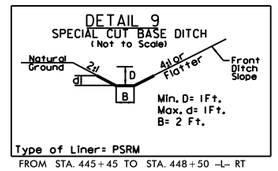
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83





FROM STA. 448+91 TO STA. 449+50 -L- LT
FROM STA. 448+81 TO STA. 449+50 -L- RT



FROM STA. 445+45 TO STA. 448+50 -L- RT

MATCH LINE -L- STA. 441+00 SEE SHEET 39

MATCH LINE -L- STA. 453+00 SEE SHEET 41

(172) LOJEAN MOXLEY 441+50.00 DB 45 PG 55

(173) ALICE GARLAND AND MIKE DAVIS DB 262 PG 1313

(176) BRADLEY C. BEDSAUL DB 220 PG 270

(177) BRADLEY C. BEDSAUL DB 220 PG 270

(178) A.J. BARKER AND LELA M. BARKER DB 141 PG 125

(179) TONY G. GREENE DB 237 PG 1340

(175) CLINT F. BEDSAUL AND LINDA T. BEDSAUL DB 154 PG 830 DB 166 PG 826 DB 183 PG 4 DB 341PG 663

-BL- 68 439+00.49

5+00.00 POT -BY30- 148

CULVERT #17
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	999789.68	1390431.12	2659.61
CUL2	999787.66	1390424.25	2659.72
CE1	999788.64	1390427.78	2665.93
HW1	999788.60	1390427.77	2667.50
CUL3	999742.98	1390477.80	2659.33
CUL4	999741.76	1390471.29	2659.29
CE2	999742.69	1390474.68	2665.36
HW2	999742.79	1390474.47	2666.98

-L-

PIs Sta 442+74.36	PI Sta 446+51.66	PIs Sta 450+25.92
Θs = 2° 15' 00.0"	Δ = 13° 54' 36.8" (RT)	Θs = 2° 15' 00.0"
Ls = 200.00'	D = 2° 15' 00.0"	Ls = 200.00'
LT = 133.34'	L = 618.23'	LT = 133.34'
ST = 66.68'	T = 310.64'	ST = 66.68'
	R = 2,546.48'	

NOTES

FOR -L- PROFILE SEE SHEET 65
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

19-Jul-2013 12:45
c:\r3101\design\r3101_dds_sheet40.dgn
rs $$$$rsnow$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	41
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 1983

2004 / 2030 ADT
-Y25- OLD US 21
3/5
1/2 2/3
58/105 60/106

-L- STA. 453+00 SEE SHEET 40

-L- STA. 465+00 SEE SHEET 42

MATCH LINE -L-

MATCH LINE -L-

-BL- GPS R3101-17 449+72.32 PINC

-BL- GPS R3101-18 469+02.35 PINC

-Y25-POT Sta. 10+00.00

-Y24-POT Sta. 10+00.00=
-L-POC Sta. 463+50.72

-Y25-POT Sta. 11+51.21=
-L-POC Sta. 463+50.82

(181) DANNY D. LYON
DB 327 PG 755

(181A) CONNIE L. LYON
JUDY L. LYON
DB 327 PG 757

(182) CLINT F. BEDSAUL AND
LINDA T. BEDSAUL
DB 134 PG 830
DB 166 PG 826
DB 183 PG 4

(183) ELIZABETH FORTSON AND ANITA BRYAN
ERIC BRYAN AND WALTER F. BRYAN
IRIS LANGFORD AND ROBERT BRYAN
RUDOLPH BRYAN
DB 206 PG 608

(184) DANNY D. LYON
AND BARBARA LYON
DB III PG 498
DB 142 PG 405
DB 89 PG 571
DB 142 PG 165
DB 142 PG 804

(236) ALLEN JOINES AND
APRIL H. JONES
DB 208 PG 988

(237) CHARLES ALTON CROUSE
DB 225 PG 370

(175) CLINT F. BEDSAUL AND
LINDA T. BEDSAUL
DB 134 PG 830
DB 166 PG 826
DB 183 PG 4
DB 341 PG 663

DETAIL 10
TAIL 'V' DITCH
(Not to Scale)

Natural Ground, 2H, D, 2H, Natural Ground
Min. D=VARIES 1.0 to 0 FT

FROM STA. 460+68 -L- LT

DETAIL 3
CUT DITCH
(Not to Scale)

Natural Ground, 2H, D, 4H or Flatter, Front Ditch Slope
Min. D= 1.0 Ft.

FROM STA. 459+50 TO STA. 460+50 -L- RT
STA. 462+00 TO 463+47 -L- RT

-L-

PIs Sta 461+48.70	PI Sta 466+73.01
Θs = 3° 00' 00.0"	Δ = 26° 57' 05.9" (RT)
Ls = 200.00'	D = 3° 00' 00.0"
LT = 133.35'	L = 898.39'
ST = 66.68'	T = 457.66'
	R = 1,909.86'

NOTES
FOR -L- PROFILE SEE SHEET 65
FOR -Y24- & -Y25- PROFILES SEE SHEET 73
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

19-JUL-2013 12:45
H:\r3101\Design\r3101_ddc_sheet41.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	42
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PIs Sta 461+48.70
Θs = 3°00'00.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

PI Sta 466+73.01
Δ = 26°57'05.9" (RT)
D = 3°00'00.0"
L = 898.39'
T = 457.66'
R = 1,909.86'

-L-
PIs Sta 471+80.42
Θs = 3°00'00.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

CULVERT #18
ONE BARREL

	NORTH	EAST	ELEV.
CUL1	999860.08	1387902.48	2729.30
CUL2	999857.82	1387907.32	2729.20
CE1	999858.72	1387904.94	2734.41
HW1	999858.72	1387905.02	2735.97
CUL3	999811.82	1387907.93	2727.76
CUL4	999809.17	1387913.44	2727.61
CE2	999810.61	1387910.80	2732.71
HW2	999811.85	1387911.21	2734.47

NAD 83

DETAIL II
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2d, D, 2d, b, B, F/Ft., Fill Slope
Min. D= 1.5 Ft.
Max. d= 1Ft.
B= 4 Ft.
b= 5 Ft.
Type of Liner= PSRM
FROM STA. 476+00 TO STA. 477+00 -L- RT
EST. 312 CY DDE

DETAIL 8
CUT DITCH
(Not to Scale)
Natural Ground, 2d, D, d, 4d or Flatter, Front Ditch Slope
Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= PSRM
FROM STA. 474+66 TO STA. 477+00 -L- LT

DETAIL 3
CUT DITCH
(Not to Scale)
Natural Ground, 2d, D, 4d or Flatter, Front Ditch Slope
Min. D= 1.0 Ft.
FROM STA. 465+50 TO STA. 466+00 -L- RT

"Contractor to use extreme caution when digging in area around intersection of proposed 72"drain pipe and existing 8"sewer pipe (Sta 467+69/40L) as there is a planned separation of only 4"between top of existing sewer pipe's casing (18"dia., steel) and bottom of proposed RCP drain pipe. Also, note that concrete may be encountered around existing sewer pipe casing since as-built plans (Adams-Heath Engineering, Inc.) called for concrete to be poured around sewer pipe casing in area of stream crossing."

(239) GEORGE L. BRYAN AND ELIZABETH H. BRYAN DB 228 PG 304

(184) DANNY D. LYON AND BARBARA LYON DB III PG 498 DB 142 PG 405 DB 89 PG 571 DB 142 PG 165 DB 142 PG 804

(187) DELMER A. BRYAN AND JUANITA G. BRYAN DB 179 PG 15 DB 87 PG 352 DB 228 PG 544 DB 95 PG 623 DB 63 PG 398

EXIST. SCOUR HOLE RECENTLY BACK FILLED W/ CL. 'I' RIP RAP

TYPICAL CHANNEL INFORMATION
NG, 7', 4', NG, 3'

WETLANDS OBLITERATED BY OUTSIDE CONTRACTOR

SECTION

CLASS 'I' RIP RAP 38 TONS 78 S.Y. F.F.

CLASS 'B' RIP RAP EST 3 TONS 11 S.Y. F.F.

CONFLICT BOX

EXIST. CLASS 'B' RIP RAP REMOVE

CLASS 'B' RIP RAP

3' BASE CHANNEL ROCK CROSS VANES SEE DETAILS

CLASS 'B' RIP RAP 5 TONS 14 S.Y. F.F.

RIP RAP @ EMBANKMENT CLASS 'I' RIP RAP SEE DETAIL 12

CUT DITCH SEE DETAIL 3

3' BASE LATERAL DITCH SEE DETAIL 15

4' BASE CUT-DITCH SEE DETAIL 13

4' BASE LATERAL DITCH SEE DETAIL 18

4' BASE LATERAL DITCH PSRM SEE DETAIL 11

CUT DITCH PSRM SEE DETAIL

POSSIBLE EXIST. JB

EXIST. R/W

REMOVE

PLUG

MATCH LINE -L- STA. 465+00 SEE SHEET 41

MATCH LINE -L- STA. 477+00 SEE SHEET 43

Sta= 465+50 TO 468+00 -L- RT
Q5= 5.5 CFS
V= 2.9 FPS
d= 0.6
s= 5.0%
n= 0.04
DA = 1.7 AC
RURAL RUN-OFF CHART 200.2 = 050
= .14 CFS
SHAPE CORR. CHART 200.4 = 1.0
COVER CORR. CHART 200.5 = 1.0

Sta= 475+00 TO 477+00 -L- LT
Q5= 13.8 CFS
V= 6.8 FPS
d= 1.0
s= 6.68%
n= 0.42
DA = 8.6 AC
= .04
15 15 MIN. INT.

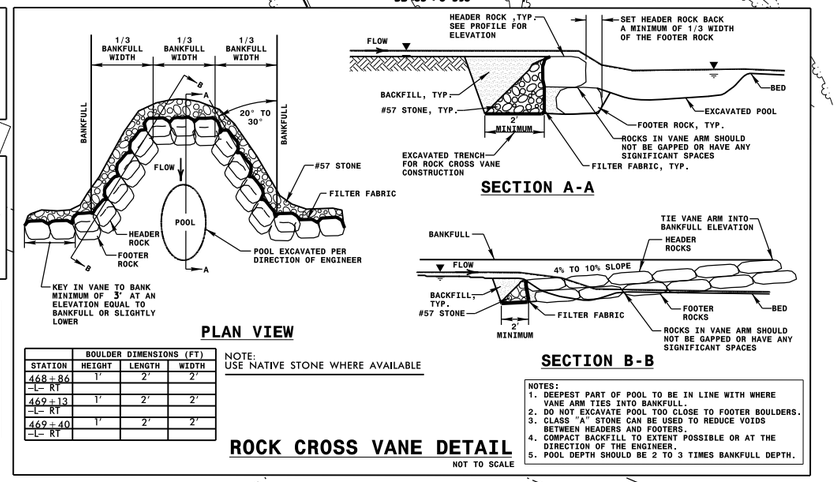
DETAIL 15
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2d, D, 2d, b, B, F/Ft., Fill Slope
Min. D= 1.5 Ft.
B= 3 Ft.
b= 5 Ft.
FROM STA. 466+00 TO STA. 468+30 -L- RT
474+50.00 EST. 327 CY DDE

DETAIL 13
STANDARD BASE DITCH
(Not to Scale)
Natural Ground, 2d, D, 2d, Natural Ground, B
Min. D= 3 Ft.
B= 3 Ft.
FROM STA. 468+76 TO STA. 469+50 -L- RT
EST. 174 CY DDE

DETAIL 18
LATERAL BASE DITCH
(Not to Scale)
Natural Ground, 2d, D, 2d, b, B, F/Ft., Fill Slope
Min. D= 1.5 Ft.
B= 4 Ft.
b= 5 Ft.
FROM STA. 475+00 TO STA. 476+00 -L- RT
EST. 274 CY DDE

DETAIL 12
RIP RAP AT EMBANKMENT
(Not to Scale)
3', Ditch Grade, Filter Fabric, 2', 1, 1
Type of Liner= 40 TONS CL I Rip-Rap Filter Fabric= 44 sy
FROM STA. 473+15 TO STA. 473+41 -L-RT

2004 / 2030 ADT
-Y24- NARROW RD
58/105 60/106
1-/1 1/1
1/2



PLAN VIEW

SECTION A-A

SECTION B-B

STATION	BOULDER DIMENSIONS (FT) HEIGHT	LENGTH	WIDTH
468+86 -L- RT	1'	2'	2'
469+13 -L- RT	1'	2'	2'
469+40 -L- RT	1'	2'	2'

NOTE:
USE NATIVE STONE WHERE AVAILABLE

NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

ROCK CROSS VANE DETAIL
NOT TO SCALE

NOTES
FOR -L- PROFILE SEE SHEET 66
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

19-JUL-2013 12:45
R-3101 Design 2101.ddc_sheet42.dgn
$$USER$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	43
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

-Y27-POT Sta. 10+00.00

-Y26-POT Sta. 13+21.41

-BY33- 156 POT 5+00.00

MATCH LINE -L- STA. 477+00 SEE SHEET 42

MATCH LINE -L- STA. 489+00 SEE SHEET 44

AND SUE D. WAGONER
DB 178 PG 689

(243) JON M. EDWARDS AND LISA A. EDWARDS
DB 241 PG 29

(244) INDEPENDENCE OIL AND L.P. GAS, INC., A VIRGINIA CORPORATION
DB 253 PG 10

(245) GUL K. THADANI AND VICKI C. THADANI
DB 135 PG 51

(246) PHILENA DENNIS
DB 70 PG 211
DB 117 PG 361

(247) FRED TEDDER AND BONNIE TEDDER
DB 66 PG 140

(193) GRANVILLE PAUL WAGONER AND SUE D. WAGONER
DB 178 PG 689

(189) WILLIAM CHARLES BILLINGS AND LARRY DEAN BILLINGS
DB 205 PG 955
DB 218 PG 656

(190) BRADY SETH PROFITT AND MITZI P. PROFITT
DB 202 PG 561
COMMUNITY CHURCH

(192) FOXFIRE REALTY, L.L.C.
DB 245 PG 1247

(191) ROBERT L. JOHNSON AND RUTH C. JOHNSON
MICHAEL S. JOHNSON AND DEBRA P. JOHNSON
ROBERT W. JONSON
DB 174 PG 923

SR 1120 MACEDONIA CHURCH ROAD

-L- N 54° 55' 25.6" W

-BL- 71.173' N 54° 55' 25.6" W

-BL- 71.172' N 54° 55' 25.6" W

-BL- 71.172' N 54° 55' 25.6" W

Sta.= 473+15 TO 480+00 -L- RT
Q5= 50 CFS
V= 2.7 FPS
d= 0.6'
s= 9.2%
n= 0.04
DA =7.6 AC
X = 0.4
X5 30' MIN. INT.

DETAIL 11
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1 Ft.
B= 4 Ft.
b= 5 Ft.
Type of Liner= PSRM
FROM STA. 477+00 TO STA. 478+00 -L- RT
EST. 129 CY DDE

DETAIL 18
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1 Ft.
B= 3 Ft.
b= 5 Ft.
FROM STA. 478+00 TO STA. 479+00 -L- RT
EST. 186 CY DDE

DETAIL 14
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1 Ft.
B= 4 Ft.
b= 5 Ft.
*When B is < 6.0'
Type of Liner= CL. 'I' Rip-Rap
FROM STA. 479+00 TO STA. 480+00 -L- RT
EST. 169 CY DDE

Sta.= 481+00 TO 483+50 -L- RT
Q5= 4 CFS
V= 3.0 FPS
d= 0.4'
s= 3.0%
n= 0.065
DA = 0.1 AC
X = 0.4
2' BASE CUT DITCH

DETAIL 9
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D= 1 Ft.
Max. d= 1 Ft.
B= 2 Ft.
Type of Liner= PSRM
FROM STA. 481+00 TO STA. 483+50 -L- RT

NOTES

FOR -L- PROFILE SEE SHEET 66
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

19-JUN-2013 12:46
R:\R3101\Design\r3101_ddc_sheet43.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 67
FOR -Y26- & -Y27- PROFILES SEE SHEET 73
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-3101	44
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL 19
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
0.5' Min. 1.0' Max.
20H 10H 2' G ℄ etc.
S=Ditch Slope
℄ Proposed Ditch

DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground 2H D Major Flatter Front ditch Slope
Min. D= 1 Ft.
FROM STA. 490+50 TO STA. 493+00 -L- RT
STA. 497+00 TO STA. 498+50 -L- LT

2004 / 2030 ADT
-Y27- MACEDONIA CHURCH RD
6/12
1/3 4/8
60/106 71/127

2004 / 2030 ADT
-Y26- CHESTNUT GROVE CH RD
60/106 71/127
2/4 10/20
12/25

-Y27-PC Sta. 10+69.54
-Y27-PT Sta. 12+00.54=
-L-POT Sta. 490+17.29
-Y26-PT Sta. 11+15.23
-Y26-PC Sta. 10+00.00=
-L-POT Sta. 490+01.36

Sta.= 491+35 TO 493+00 -L- RT
Qs= 7.8 CFS
Vs= 2.3 FPS
Qd= Lgr
Sd= L88%
n=0.057
DA = 3.7 AC
C = 0.5

-Y26-
PI Sta 10+59.27
Δ = 33° 07' 38.1" (RT)
D = 28° 45' 00.0"
L = 115.23'
T = 59.27'
R = 199.29'

-Y27-
PI Sta 11+53.86
Δ = 91° 41' 57.1" (RT)
D = 70° 00' 00.0"
L = 131.00'
T = 84.32'
R = 81.85'

-L-
PI Sta 495+50.36
Δ = 33° 34' 59.0" (LT)
D = 4° 00' 00.0"
L = 839.58'
T = 432.23'
R = 1,432.39'

253.21'
N72°27'50"W
179.65'
N82°06'56"W
251.24'
N38°26'34"W
N55°28'27"W 336.04'

SEE SHEET 43
STA. 489+00
SEE SHEET 45
STA. 501+00
MATCH LINE -L- STA.
MATCH LINE -L- STA.

196 (196.2) ANDREW M. JENNINGS AND GELENE E. JENNINGS DB 179 PG 1 PB 9 PG 100
199 RICHARD L. DOUGHTON AND JANE DOUGHTON DB 181 PG 483
195 EPISCOPAL DIOCESE OF WESTERN NORTH CAROLINA, A UNINCORPORATED RELIGIOUS ASSOCIATION DB 222 PG 653
197 TWENTY FOUR SEVENTY ONE, LLC DB 311 PG 19
198 SUPERIOR PROPERTY INVESTMENTS, INC DB 319 PG 1304
200 JERRY L. BILLINGS DB 179 PG 121

BEGIN EXPRESSWAY GUTTER STA. 497+00
END EXPRESSWAY GUTTER STA. 499+00
PTSTA. 499+57.70
SPECIAL CUT DITCH SEE DETAIL 3
BEGIN SBG STA. 500+00 -L- LT
CLASS 'B' RIP RAP 5 TONS 16 S.Y. F.F.
CLASS B RIP RAP EST. 2 TONS RIP RAP EST. 7 SY FILTER FABRIC
EXIST POND
EXIST RISER
RETAIN
REMOVE & REPLACE
RETAINING WALL
LANDSCAPE AREA
DO NOT DISTURB SIGN
GRASS
JD AND WOOD 3' 278

19-JUL-2013 12:46
R:\R3101\Design\r3101_ddc_sheet44.dgn
$$$$USERNAME$$$$

8/17/99

NOTES

FOR -L- PROFILE SEE SHEET 67
ALL DRIVEWAY RADII ARE 15' UNLESS NOTED
TIE ALL PAVED SHOULDERS AT THE END OF THE RADIUS ON -Y- LINES
ALL R/W MONUMENTS HAVE A 30' OFFSET UNLESS NOTED OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-3101	45
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCH LINE -L- STA. 501+00 SEE SHEET 44

MATCH LINE -L- STA. 513+00 SEE SHEET 46

-BL- 75 49+54.44

-BL- 76 506+83.47

-L- GRAU 350

N 88° 30' 24.6" W

N 87° 41' 33.6" W

298.57'
S 23°40'05" E

366.00'
S 89°40'12" E

114.46'
N89°50'30"W

310.42'
S 40°07'24" E

192.60'
N89°40'12"W

M.G.I.S.B.M.N
.050'

S 23°21'32" E
100.00'

482.01'
N 68°04'37" E

202 GOSPEL BROADCASTING, INC
DB 337 PG 992

199 RICHARD L. DOUGHTON AND JANE DOUGHTON
DB 181 PG 483

201 MARY JANE DOUGHTON & PATRICIA POLLEY
DB 74 PG 504
DB 45 PG 283
DB 45 PG 005
DB 335 PG 721

204 RICHARD L. DOUGHTON AND MARY JANE DOUGHTON
DB 125 PG 742

203 DAVID P. & GAIL G. SIDES
DB 267 PG 968

200 JERRY L. BILLINGS
DB 179 PG 121

505

510

501+00.00 R/W, 40', 65', 75'
501+17.00 R/W, 40', 65', 75'/S
501+61.00 58.00, 75.00
502+00.00 48.00
502+50.00 45.00
503+14.00 R/W, 40', 55'
503+34.00 R/W, 40', 55'
503+76.00 50.00, 64.00
504+25.00 47.00, 61.00
504+50.00 46.00
505+00.00 40.00
505+65.00 40.00
506+00.00 42.00
506+10.00 40.00
506+59.31 30.00
507+67.87 30.00
507+70.00 20.00
508+45.00 44.00
508+70.00 R/W, 30.00
509+00.00 48.00
+75.00 R/W 50.00
+95.00 R/W 50.00
510+11.00 30.00,21.91
501+82.00 R/W, 52.00
503+23.00 54.00
503+90.00 52.00
504+53.09 49.50
504+52.64 30.00 R/W
505+50.00 R/W
506+50.00 72.00
507+00.00 79.00
508+00.00 56.00
508+50.00 53.00
509+20.00 56.00
510+00.00 R/W

CLASS 'B' RIP RAP
8 TONS
21 S.Y. F.F.

CLASS 'B' RIP RAP
2 TONS
7 S.Y. F.F.

CLASS 'B' RIP RAP
3 TONS
11 S.Y. F.F.

TB 2GI

REMOVE & REPLACE

REMOVE & REPLACE 30" RCP BURIED 0.5'

RETAIN

SPECIAL CUT BASE DITCH SEE DETAIL 16

2' LATERAL BASE DITCH SEE DETAIL 15

MODIFIED FALSE SUMP HEIGHT = 1.5 Ft.
PL 78.89

END SBG STA. 505+00

1.5 SBLKD

ROCK WALK

Sta = 503+27 TO 506+00 -L- RT
Q5= 2.8 CFS
V= 2.7 FPS
ds= 0.4
s= 8.98%
n= 0.064
DA = LOAC
C = 0.6
I5 = 4.7

PCSta. 506+59.31

PTSta. 507+67.87

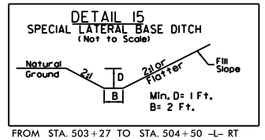
PCSta. 510+10.97

END RESURFACING -L- POT STA. 510+00.00

END CONSTRUCTION -L- STA. 510+30.00

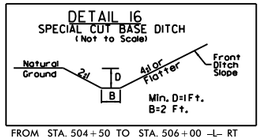
-L-
PI Sta 507+13.59
Δ = 0° 48' 51.0" (RT)
D = 0° 45' 00.0"
L = 108.56'
T = 54.28'
R = 7,639.44'

DETAIL 15
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 503+27 TO STA. 504+50 -L- RT

DETAIL 16
SPECIAL CUT BASE DITCH
(Not to Scale)



FROM STA. 504+50 TO STA. 506+00 -L- RT

19-JUL-2013 12:46
H:\NCDOT\Design\R-3101_dds_sheet45.dgn
$$USER$$

PROJECT REFERENCE NO.	SHEET NO.
R-3101	46
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCH LINE -L- STA. 513+00 SEE SHEET 45

-L- N 28°03'37.5"W

END STATE PROJECT R-3101
-L- POT STA. 521+30.81

-BL- 166 518+87.76 POT

-BL- GPS R3101-19 511+39.33 PINE 12+92.61 POT

PI STA. 517+56.38

MARY JANE DOUGHTON & PATRICIA POOLEY
DB 174 PG 504
DB 185 PG 283
DB 195 PG 053
DB 335 PG 172

RALPH B. POOLE AND JAMES A. POOLE
DB 202 PG 882

W.B. POOLE HEIRS
DB 50 PG 58
DB 51 PG 159
DB 66 PG 504

BILLY HAWKS AND CLIFFORD HAWKS
DB 179 PG 17

GRADY C. CRANFORD
DB 272 PG 855

3 WOOD RAIL 3-SBW
48" WW 15SBW
45° WW 15SBW
MBS-9
MBS1 WW 48"
15SP #2 POND
SPL 1121 PINE SWAMP
0.63' REBAR-R/W
4" WW 15SBW
REBAR
EOI
FSS
TH-1
AIR RELEASE
NO INFO
EXISTING R/W
MTL GATE
5-SBW
4-SBW
15" CMP
GR PARKING
420.76'
S12°14'54"E
1092.77'
S53°39'25"W
S77°42'27"W 1004.37'
-L-
PI Sta 514+21.41
Δ = 59° 37' 56.1" (RT)
D = 8° 00' 00.0"
L = 745.40'
T = 410.44'
R = 716.20'

8/17/99

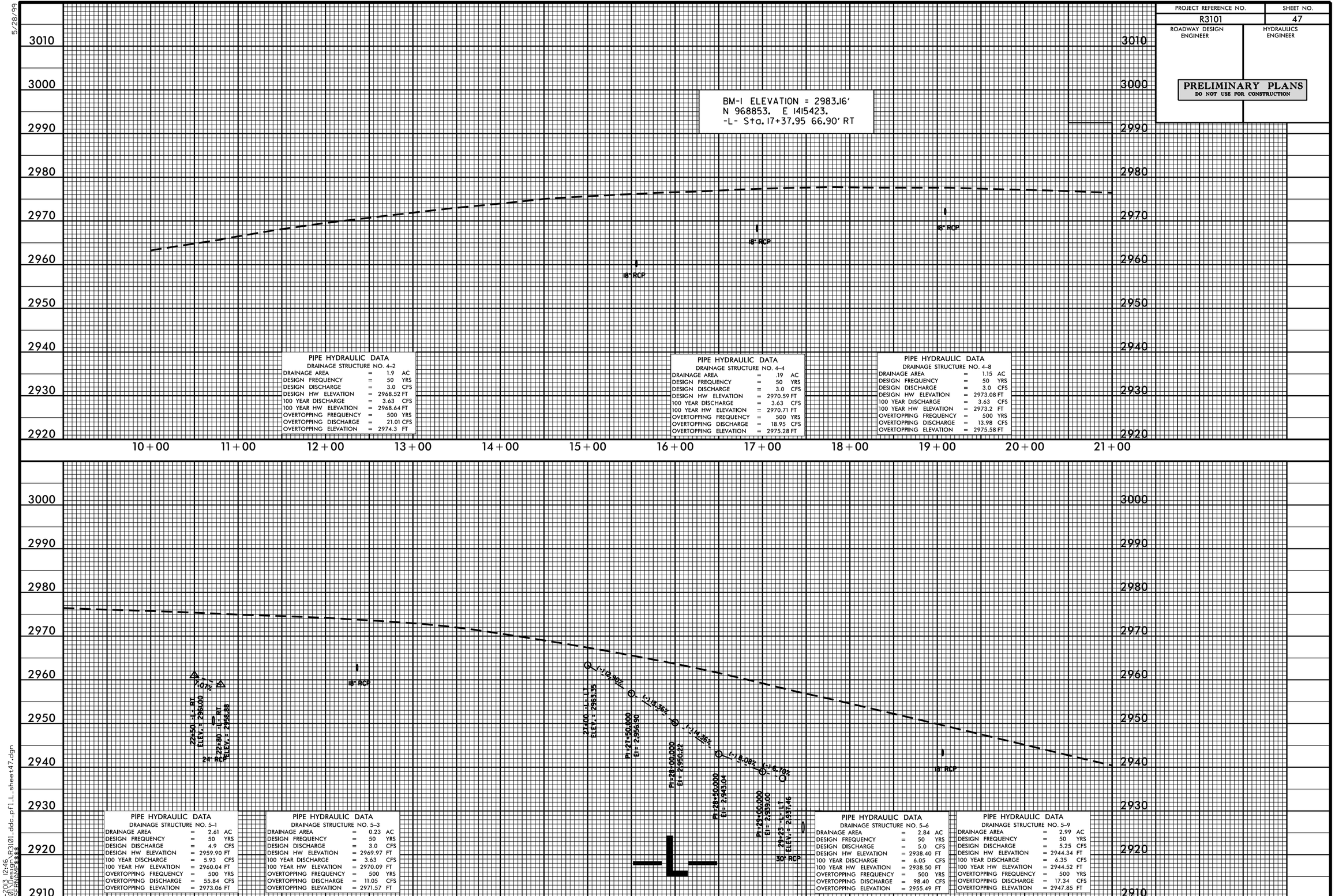
19-JUL-2013 12:46
R:\R3101\Design\r3101_ddc_sheet46.dgn
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-1 ELEVATION = 2983.16'
N 968853. E 1415423.
-L- Sta. 17+37.95 66.90' RT



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 4–2

DRAINAGE AREA	=	1.9 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	3.0 CFS
DESIGN HW ELEVATION	=	2968.52 FT
100 YEAR DISCHARGE	=	3.63 CFS
100 YEAR HW ELEVATION	=	2968.64 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	21.01 CFS
OVERTOPPING ELEVATION	=	2974.3 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 4–4

DRAINAGE AREA	=	.19 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	3.0 CFS
DESIGN HW ELEVATION	=	2970.59 FT
100 YEAR DISCHARGE	=	3.63 CFS
100 YEAR HW ELEVATION	=	2970.71 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	18.95 CFS
OVERTOPPING ELEVATION	=	2975.28 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 4–8

DRAINAGE AREA	=	1.15 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	3.0 CFS
DESIGN HW ELEVATION	=	2973.08 FT
100 YEAR DISCHARGE	=	3.63 CFS
100 YEAR HW ELEVATION	=	2973.2 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	13.98 CFS
OVERTOPPING ELEVATION	=	2975.58 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 5–1

DRAINAGE AREA	=	2.61 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	4.9 CFS
DESIGN HW ELEVATION	=	2959.90 FT
100 YEAR DISCHARGE	=	5.93 CFS
100 YEAR HW ELEVATION	=	2960.04 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	55.84 CFS
OVERTOPPING ELEVATION	=	2973.06 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 5–3

DRAINAGE AREA	=	0.23 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	3.0 CFS
DESIGN HW ELEVATION	=	2969.97 FT
100 YEAR DISCHARGE	=	3.63 CFS
100 YEAR HW ELEVATION	=	2970.09 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	11.05 CFS
OVERTOPPING ELEVATION	=	2971.57 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 5–6

DRAINAGE AREA	=	2.84 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	5.0 CFS
DESIGN HW ELEVATION	=	2938.40 FT
100 YEAR DISCHARGE	=	6.05 CFS
100 YEAR HW ELEVATION	=	2938.50 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	98.40 CFS
OVERTOPPING ELEVATION	=	2955.49 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 5–9

DRAINAGE AREA	=	2.99 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	5.25 CFS
DESIGN HW ELEVATION	=	2944.34 FT
100 YEAR DISCHARGE	=	6.35 CFS
100 YEAR HW ELEVATION	=	2944.52 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	17.34 CFS
OVERTOPPING ELEVATION	=	2947.85 FT

19-JUL-2013 12:46
H:\NCDOT\Design\R3101_dde_pfil_sheet47.dgn
ft_sstl_NAD83.ssf

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-2 ELEVATION = 2925.80'
N 970935. E 1415607.
-L- Sta. 38+24.11 73.88' LT

18" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 6–7

DRAINAGE AREA	=	1.04	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3.0	CFS
DESIGN HW ELEVATION	=	2900.24	FT
100 YEAR DISCHARGE	=	3.63	CFS
100 YEAR HW ELEVATION	=	2900.36	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	12.22	CFS
OVERTOPPING ELEVATION	=	2902.15	FT

18" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 6–10

DRAINAGE AREA	=	2.54	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	4.5	CFS
DESIGN HW ELEVATION	=	2882.71	FT
100 YEAR DISCHARGE	=	5.45	CFS
100 YEAR HW ELEVATION	=	2882.87	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	12.39	CFS
OVERTOPPING ELEVATION	=	2884.44	FT

24" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 7–6

DRAINAGE AREA	=	3.89	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	6.5	CFS
DESIGN HW ELEVATION	=	2835.23	FT
100 YEAR DISCHARGE	=	7.87	CFS
100 YEAR HW ELEVATION	=	2835.39	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	32.17	CFS
OVERTOPPING ELEVATION	=	2839.42	FT

19-JUL-2013 12:46
H:\NCDOT\Design\R3101_ddo_pfl_shee48.dgn
$$$$USER:RMWILSON

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-3 ELEVATION = 2806.24'
N 972725. E 1414603.
-L- Sta. 60+03.48 129.19' RT

5' SMP

18" RCP

PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE NO. 8-1		
DRAINAGE AREA	= 5.57	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.5	CFS
DESIGN HW ELEVATION	= 2818.45	FT
100 YEAR DISCHARGE	= 10.29	CFS
100 YEAR HW ELEVATION	= 2818.87	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 12.70	CFS
OVERTOPPING ELEVATION	= 2819.57	FT

PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE NO. 8-5		
DRAINAGE AREA	= 0.29	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2826.91	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2827.04	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 12.72	CFS
OVERTOPPING ELEVATION	= 2831.00	FT

PI = 70+50.00
EL = 2790.56'
VC = 140'

PI = 72+36.00
EL = 2790.00'
VC = 60'

2790.34

2790.11

(+)0.1433%

(-)0.3000%

(-)0.3000%

(+)0.0415%

18" RCP

2.40%

2.40%

70+55 - LT
ELEV. = 2778.82

72+00 - RT
ELEV. = 2779.90

72+30 - RT
ELEV. = 2780.62

PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE NO. 9-2		
DRAINAGE AREA	= 2.28	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.45	CFS
DESIGN HW ELEVATION	= 2788.40	FT
100 YEAR DISCHARGE	= 5.38	CFS
100 YEAR HW ELEVATION	= 2788.55	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 6.20	CFS
OVERTOPPING ELEVATION	= 2788.69	FT

19-JUL-2013 12:46
$USER
$DGN_FILE
$RFDIR

PROJECT REFERENCE NO.	SHEET NO.
R3101	50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-4 ELEVATION = 2815.78'
N 973882. E 1412847.
-L- Sta. 81+02.60 99.53' RT

24" RCP

2.28%

2.04%

0.40%

2.38%

24" RCP

18" RCP

B4:50 -L- RT
ELEV. = 2775.61

B5:00 -L- RT
ELEV. = 2772.55

B5:50 -L- RT
ELEV. = 2771.51

B6:00 -L- RT
ELEV. = 2771.39

B6:50 -L- RT
ELEV. = 2772.50

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 10-3

DRAINAGE AREA	= 6.07	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.0	CFS
DESIGN HW ELEVATION	= 2782.65	FT
100 YEAR DISCHARGE	= 10.89	CFS
100 YEAR HW ELEVATION	= 2782.85	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 20.15	CFS
OVERTOPPING ELEVATION	= 2874.02	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 10-4

DRAINAGE AREA	= 2.15	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.2	CFS
DESIGN HW ELEVATION	= 2771.99	FT
100 YEAR DISCHARGE	= 5.08	CFS
100 YEAR HW ELEVATION	= 2772.14	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 9.86	CFS
OVERTOPPING ELEVATION	= 2773.06	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 10-5

DRAINAGE AREA	= 6.78	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.75	CFS
DESIGN HW ELEVATION	= 2774.58	FT
100 YEAR DISCHARGE	= 11.80	CFS
100 YEAR HW ELEVATION	= 2774.8	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 25.08	CFS
OVERTOPPING ELEVATION	= 2776.76	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 10-7

DRAINAGE AREA	= 1.19	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2771.22	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2771.34	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 11.80	CFS
OVERTOPPING ELEVATION	= 2773.03	FT

0.08%

0.08%

0.08%

54" CORRUGATED

W2:00 -L- RT
ELEV. = 2758.47

W2:50 -L- RT
ELEV. = 2758.45

W3:00 -L- RT
ELEV. = 2758.39

W3:50 -L- RT
ELEV. = 2758.35

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 11-3

DRAINAGE AREA	= 118	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 99	CFS
DESIGN HW ELEVATION	= 2754.72	FT
100 YEAR DISCHARGE	= 119.79	CFS
100 YEAR HW ELEVATION	= 2755.22	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 215.26	CFS
OVERTOPPING ELEVATION	= 2757.63	FT

5/28/99

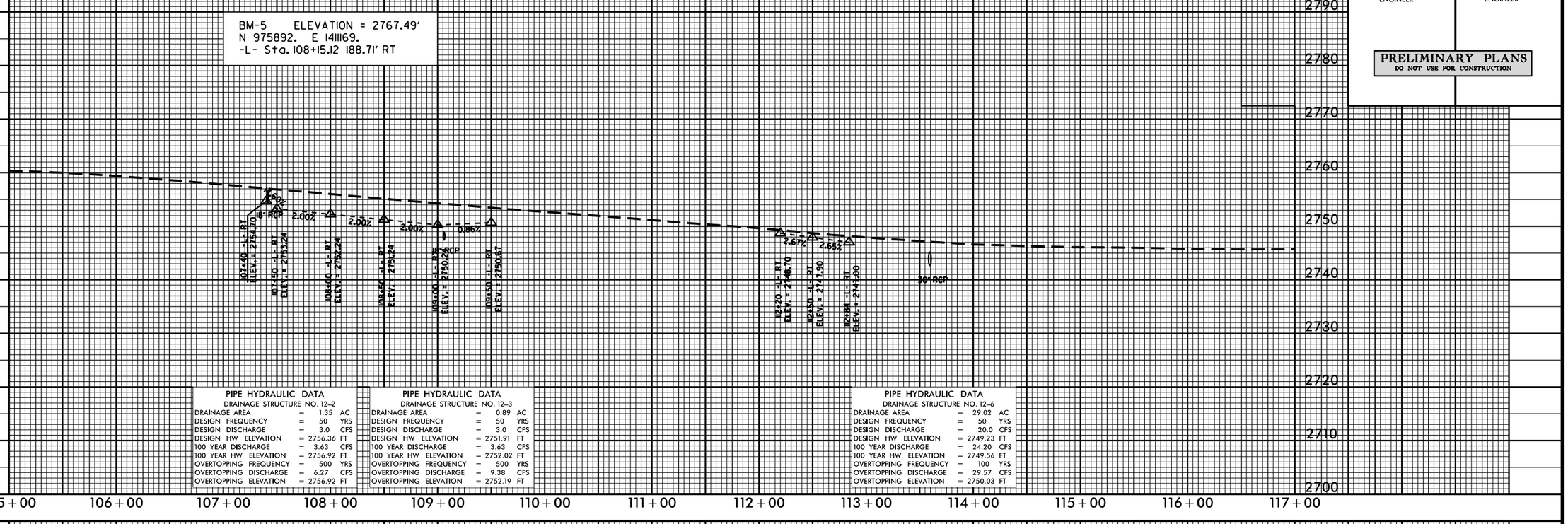
19-JUL-2013 12:46
R:\R3101\Design\R3101_dde_pf1_1_sheet50.dgn
$$$$USER.DGN

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-5 ELEVATION = 2767.49'
N 975892. E 1411169.
-L- Sta. 108+15.12 188.71' RT



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 12-2

DRAINAGE AREA	= 1.35	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2756.36	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2756.92	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 6.27	CFS
OVERTOPPING ELEVATION	= 2756.92	FT

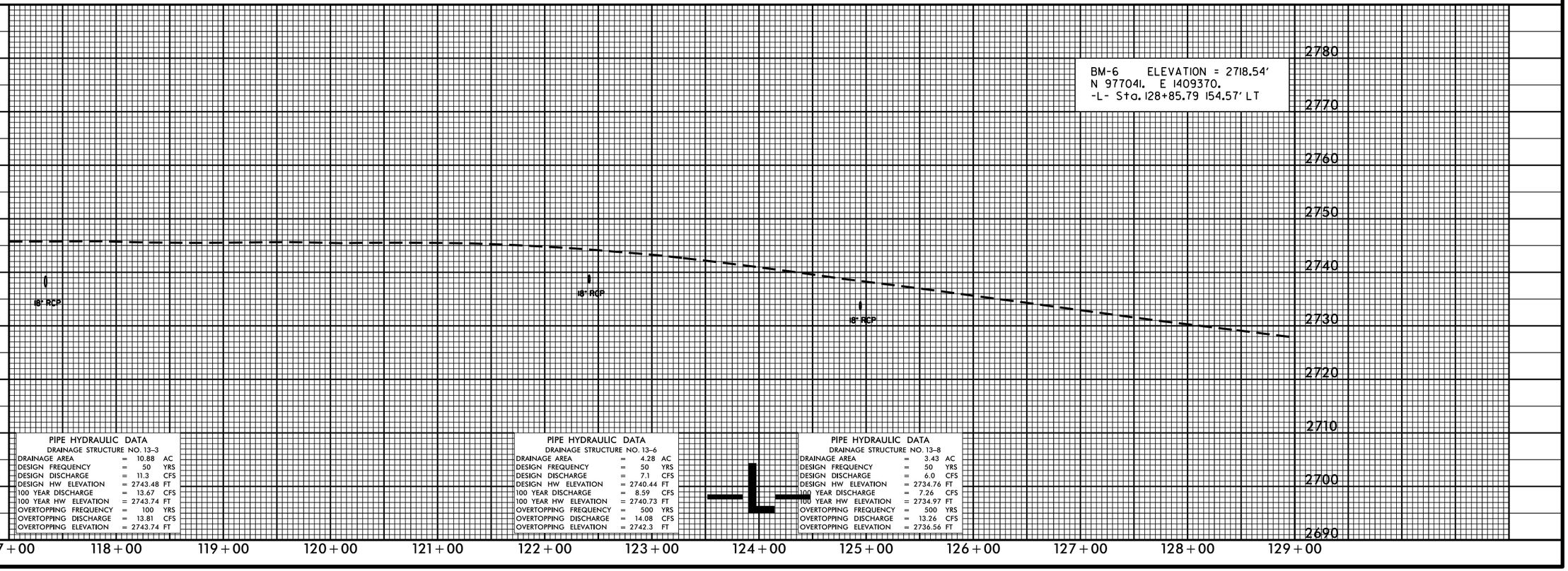
PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 12-3

DRAINAGE AREA	= 0.89	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2751.91	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2752.02	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 9.38	CFS
OVERTOPPING ELEVATION	= 2752.19	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 12-6

DRAINAGE AREA	= 29.02	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 20.0	CFS
DESIGN HW ELEVATION	= 2749.23	FT
100 YEAR DISCHARGE	= 24.20	CFS
100 YEAR HW ELEVATION	= 2749.56	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 29.57	CFS
OVERTOPPING ELEVATION	= 2750.03	FT

BM-6 ELEVATION = 2718.54'
N 977041. E 1409370.
-L- Sta. 128+85.79 154.57' LT



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 13-3

DRAINAGE AREA	= 10.88	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 11.3	CFS
DESIGN HW ELEVATION	= 2743.48	FT
100 YEAR DISCHARGE	= 13.67	CFS
100 YEAR HW ELEVATION	= 2743.74	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 13.81	CFS
OVERTOPPING ELEVATION	= 2743.74	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 13-6

DRAINAGE AREA	= 4.28	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.1	CFS
DESIGN HW ELEVATION	= 2740.44	FT
100 YEAR DISCHARGE	= 8.59	CFS
100 YEAR HW ELEVATION	= 2740.73	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 14.08	CFS
OVERTOPPING ELEVATION	= 2742.3	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 13-8

DRAINAGE AREA	= 3.43	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6.0	CFS
DESIGN HW ELEVATION	= 2734.76	FT
100 YEAR DISCHARGE	= 7.26	CFS
100 YEAR HW ELEVATION	= 2734.97	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 13.26	CFS
OVERTOPPING ELEVATION	= 2736.56	FT

19-Jul-2013 12:46
H:\NCDOT\Design\R3101_dde_pf1_1_shee51.dgn
ssaunders

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	52
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2760 2750 2740 2730 2720 2710 2700 2690 2680 2670

129+00 130+00 131+00 132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00 141+00

18" RCP

30" RCP

18" RCP

42" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 14–1

DRAINAGE AREA	=	6.45	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	9.5	CFS
DESIGN HW ELEVATION	=	2722.19	FT
100 YEAR DISCHARGE	=	11.50	CFS
100 YEAR HW ELEVATION	=	2722.2	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	12.08	CFS
OVERTOPPING ELEVATION	=	2722.86	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 14–4

DRAINAGE AREA	=	9.38	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	12.0	CFS
DESIGN HW ELEVATION	=	2714.03	FT
100 YEAR DISCHARGE	=	14.52	CFS
100 YEAR HW ELEVATION	=	2714.24	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	35.64	CFS
OVERTOPPING ELEVATION	=	2716.09	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 14–6

DRAINAGE AREA	=	1.99	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3.9	CFS
DESIGN HW ELEVATION	=	2706.87	FT
100 YEAR DISCHARGE	=	3.63	CFS
100 YEAR HW ELEVATION	=	2706.98	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	11.46	CFS
OVERTOPPING ELEVATION	=	2708.58	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 14–9

DRAINAGE AREA	=	14.91	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	41.0	CFS
DESIGN HW ELEVATION	=	2708.84	FT
100 YEAR DISCHARGE	=	49.61	CFS
100 YEAR HW ELEVATION	=	2709.24	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	49.61	CFS
OVERTOPPING ELEVATION	=	2709.24	FT

2760 2750 2740 2730 2720 2710 2700 2690 2680 2670

141+00 142+00 143+00 144+00 145+00 146+00 147+00 148+00 149+00 150+00 151+00 152+00 153+00

BM-7 ELEVATION = 2694.14'
N 978983. E 1408364.
-L- Sta. 152+25.62 105.75' LT

18" RCP

18" RCP

24" RCP

24" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 15–2

DRAINAGE AREA	=	0.75	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3.0	CFS
DESIGN HW ELEVATION	=	2703.63	FT
100 YEAR DISCHARGE	=	3.63	CFS
100 YEAR HW ELEVATION	=	2703.75	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	14.64	CFS
OVERTOPPING ELEVATION	=	2706.41	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 15–5

DRAINAGE AREA	=	2.26	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	4.45	CFS
DESIGN HW ELEVATION	=	2702.18	FT
100 YEAR DISCHARGE	=	5.38	CFS
100 YEAR HW ELEVATION	=	2702.33	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	6.14	CFS
OVERTOPPING ELEVATION	=	2702.46	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 15–7

DRAINAGE AREA	=	8.65	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	11.25	CFS
DESIGN HW ELEVATION	=	2704.74	FT
100 YEAR DISCHARGE	=	13.61	CFS
100 YEAR HW ELEVATION	=	2705.00	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	38.84	CFS
OVERTOPPING ELEVATION	=	2709.19	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 15–14

DRAINAGE AREA	=	3.10	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	5.50	CFS
DESIGN HW ELEVATION	=	2718.41	FT
100 YEAR DISCHARGE	=	6.66	CFS
100 YEAR HW ELEVATION	=	2718.5	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	17.80	CFS
OVERTOPPING ELEVATION	=	2719.76	FT

19-Jul-2013 12:46
H:\R3101\Design\R3101_dde_pf1.1_shee52.dgn
$$$$USER:mwatts

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2750 2740 2730 2720 2710 2700 2690 2680 2670 2660

153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00

24" RCP

66"x20" - LL - RT
ELEV.= 2685.39

66"x30" - LL - RT
ELEV.= 2690.02

66"x20" - LL - RT
ELEV.= 2701.00

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 16–3

DRAINAGE AREA	=	5.1	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	8.1	CFS
DESIGN HW ELEVATION	=	2709.94	FT
100 YEAR DISCHARGE	=	9.8	CFS
100 YEAR HW ELEVATION	=	2710.13	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	29.55	CFS
OVERTOPPING ELEVATION	=	2713.29	FT

2730 2720 2710 2700 2690 2680 2670 2660 2650 2640

165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00

30" RCP

18" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 17–1

DRAINAGE AREA	=	2.90	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	5.10	CFS
DESIGN HW ELEVATION	=	2679.98	FT
100 YEAR DISCHARGE	=	6.17	CFS
100 YEAR HW ELEVATION	=	2680.08	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	46.92	CFS
OVERTOPPING ELEVATION	=	2684.22	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 17–4

DRAINAGE AREA	=	2.61	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	4.9	CFS
DESIGN HW ELEVATION	=	2959.90	FT
100 YEAR DISCHARGE	=	5.93	CFS
100 YEAR HW ELEVATION	=	2960.04	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	55.84	CFS
OVERTOPPING ELEVATION	=	2973.06	FT

19-Jul-2013 12:46
H:\hydro\Design\R3101_dde_pf1_1_sheet53.dgn
$$$$staff

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	54
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-8 ELEVATION = 2675.95'
N 981957. E 1408335.
-L- Sta. 181+54.36 133.53' RT

2730 2720 2710 2700 2690 2680 2670 2660 2650 2640

177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00 185+00 186+00 187+00 188+00 189+00

24" RCP

18" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 18–1

DRAINAGE AREA	= 2.04	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.2	CFS
DESIGN HW ELEVATION	= 2677.49	FT
100 YEAR DISCHARGE	= 5.08	CFS
100 YEAR HW ELEVATION	= 2677.62	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 25.73	CFS
OVERTOPPING ELEVATION	= 2680.48	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 18–9

DRAINAGE AREA	= 1.77	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.8	CFS
DESIGN HW ELEVATION	= 2690.95	FT
100 YEAR DISCHARGE	= 4.60	CFS
100 YEAR HW ELEVATION	= 2691.09	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 6.63	CFS
OVERTOPPING ELEVATION	= 2691.43	FT

2760 2750 2740 2730 2720 2710 2700 2690 2680 2670

189+00 190+00 191+00 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00 200+00 201+00

24" RCP

18" RCP

24" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 19–2

DRAINAGE AREA	= 8.96	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 11.8	CFS
DESIGN HW ELEVATION	= 2698.22	FT
100 YEAR DISCHARGE	= 14.28	CFS
100 YEAR HW ELEVATION	= 2698.5	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 18.55	CFS
OVERTOPPING ELEVATION	= 2699.05	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 19–5

DRAINAGE AREA	= 3.88	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6.5	CFS
DESIGN HW ELEVATION	= 2714.69	FT
100 YEAR DISCHARGE	= 7.87	CFS
100 YEAR HW ELEVATION	= 2714.94	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 11.35	CFS
OVERTOPPING ELEVATION	= 2715.77	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 19–7

DRAINAGE AREA	= 4.16	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.0	CFS
DESIGN HW ELEVATION	= 2728.85	FT
100 YEAR DISCHARGE	= 8.47	CFS
100 YEAR HW ELEVATION	= 2729.02	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 26.79	CFS
OVERTOPPING ELEVATION	= 2731.69	FT

19-JUL-2013 12:46
R:\R3101\Design\R3101_dde_pf1_1_shee54.dgn
#ssst01\Plan$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	55
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2820 2810 2800 2790 2780 2770 2760 2750 2740 2730

201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 20-2

DRAINAGE AREA	= 8.20	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 11.25	CFS
DESIGN HW ELEVATION	= 2749.46	FT
100 YEAR DISCHARGE	= 13.61	CFS
100 YEAR HW ELEVATION	= 2749.66	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 44.45	CFS
OVERTOPPING ELEVATION	= 2754.74	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 20-5

DRAINAGE AREA	= 7.42	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.95	CFS
DESIGN HW ELEVATION	= 2780.30	FT
100 YEAR DISCHARGE	= 12.04	CFS
100 YEAR HW ELEVATION	= 2780.53	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 15.07	CFS
OVERTOPPING ELEVATION	= 2780.87	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 20-7

DRAINAGE AREA	= 7.42	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.95	CFS
DESIGN HW ELEVATION	= 2786.93	FT
100 YEAR DISCHARGE	= 12.04	CFS
100 YEAR HW ELEVATION	= 2787.32	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 15.07	CFS
OVERTOPPING ELEVATION	= 2787.52	FT

30" RCP
205+50 -L- RT ELEV. = 2752.54
8.00%
205+50 -L- RT ELEV. = 2756.54
8.00%
206+00 -L- RT ELEV. = 2760.59
206+62 -L- RT ELEV. = 2,765.00
12.98%
207+00 -L- RT ELEV. = 2765.66
10.58%
207+40 -L- RT ELEV. = 2,774.96
24" RCP
208+07 -L- RT ELEV. = 2776.38
6.62%
24" RCP
208+50 -L- RT ELEV. = 2782.24

2880 2870 2860 2850 2840 2830 2820 2810 2800 2790

213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00 221+00 222+00 223+00 224+00 225+00

BM-9 ELEVATION = 2833.18'
N 985092. E 1406865.
-L- Sta. 216+48.55 153.84' RT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 21-2

DRAINAGE AREA	= 4.37	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.1	CFS
DESIGN HW ELEVATION	= 2811.45	FT
100 YEAR DISCHARGE	= 8.59	CFS
100 YEAR HW ELEVATION	= 2811.62	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 45.98	CFS
OVERTOPPING ELEVATION	= 2820.16	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 21-4

DRAINAGE AREA	= 4.87	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.5	CFS
DESIGN HW ELEVATION	= 2831.10	FT
100 YEAR DISCHARGE	= 10.29	CFS
100 YEAR HW ELEVATION	= 2831.27	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 41.85	CFS
OVERTOPPING ELEVATION	= 2834.27	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 21-5

DRAINAGE AREA	= 3.77	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6.8	CFS
DESIGN HW ELEVATION	= 2844.16	FT
100 YEAR DISCHARGE	= 8.23	CFS
100 YEAR HW ELEVATION	= 2844.33	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 25.74	CFS
OVERTOPPING ELEVATION	= 2846.81	FT

214+00 -L- RT ELEV. = 2818.67
6.00%
214+50 -L- RT ELEV. = 2821.67
3.33%
215+00 -L- RT ELEV. = 2823.34
8.00%
24" RCP
215+00 -L- RT ELEV. = 2827.32
215+00 -L- RT ELEV. = 2830.40
215+50 -L- RT ELEV. = 2831.85
8.40%
216+00 -L- RT ELEV. = 2835.05
24" RCP
219+00 -L- RT ELEV. = 2832.11
1.78%
8.60%
219+50 -L- RT ELEV. = 2831.22
220+00 -L- RT ELEV. = 2835.52

19-JUL-2013 12:46
H:\R3101\Design\R3101_dde_pf1_1_sheet55.dgn
$$$$USER:DDAVIS

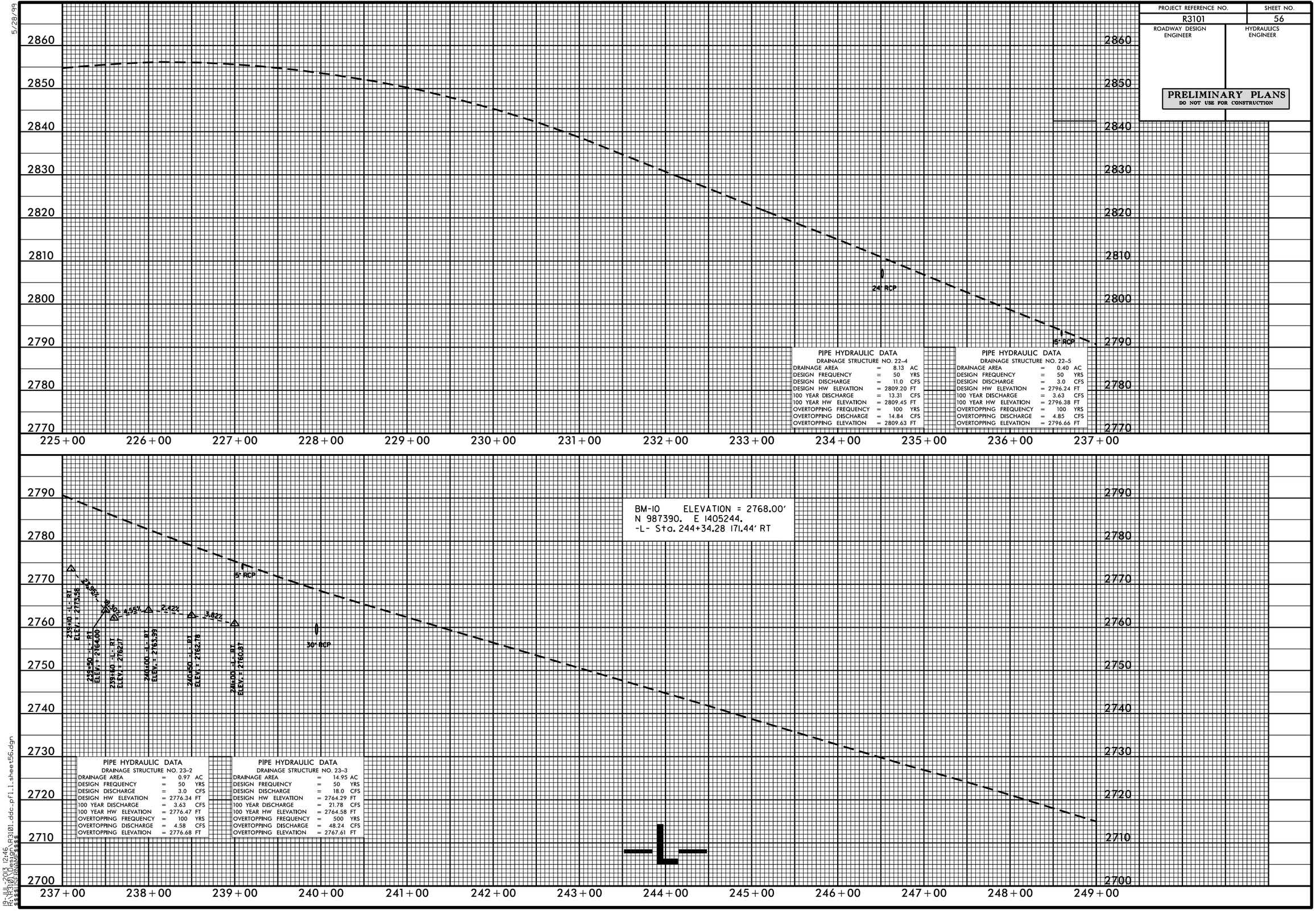
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	56

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 22–4

DRAINAGE AREA	= 8.13	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 11.0	CFS
DESIGN HW ELEVATION	= 2809.20	FT
100 YEAR DISCHARGE	= 13.31	CFS
100 YEAR HW ELEVATION	= 2809.45	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 14.84	CFS
OVERTOPPING ELEVATION	= 2809.63	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 22–5

DRAINAGE AREA	= 0.40	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2796.24	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2796.38	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 4.85	CFS
OVERTOPPING ELEVATION	= 2796.66	FT

BM-10 ELEVATION = 2768.00'
N 987390. E 1405244.
-L- Sta. 244+34.28 171.44' RT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 23–2

DRAINAGE AREA	= 0.97	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2776.34	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2776.47	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 4.58	CFS
OVERTOPPING ELEVATION	= 2776.68	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 23–3

DRAINAGE AREA	= 14.95	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 18.0	CFS
DESIGN HW ELEVATION	= 2764.29	FT
100 YEAR DISCHARGE	= 21.78	CFS
100 YEAR HW ELEVATION	= 2764.58	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 48.24	CFS
OVERTOPPING ELEVATION	= 2767.61	FT

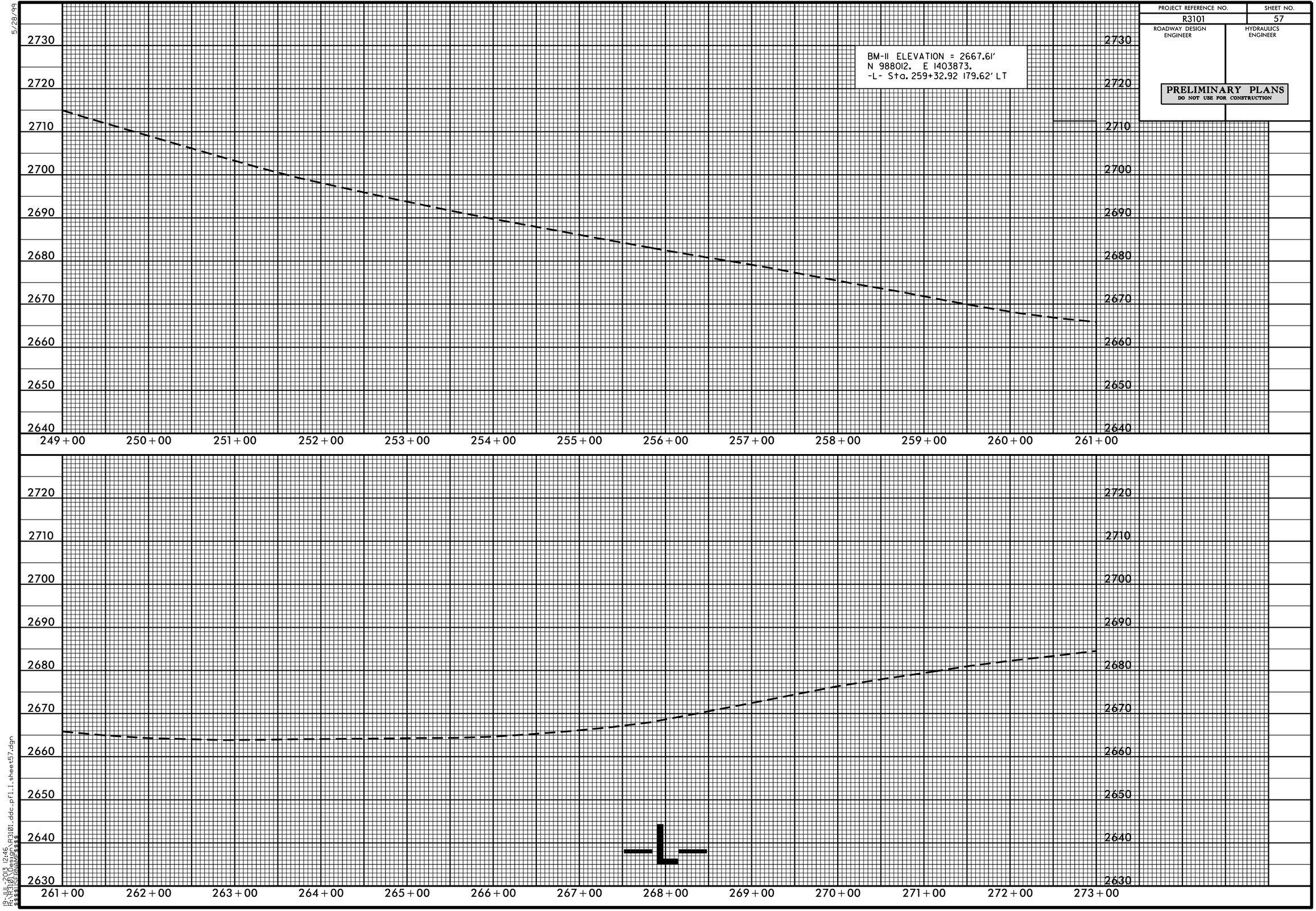
19-JUL-2013 12:46
K:\NRD\Projects\R3101\Design\R3101_dde_pf1_1_shee56.dgn
$$$$USER

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-11 ELEVATION = 2667.61'
N 988012. E 1403873.
-L- Sta. 259+32.92 179.62' LT



19-JUL-2013 12:46
c:\projects\design\r3101_dde_pf1_sheet57.dgn
$$$$USER: Administrator

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	58
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2750 2740 2730 2720 2710 2700 2690 2680 2670 2660

273+00 274+00 275+00 276+00 277+00 278+00 279+00 280+00 281+00 282+00 283+00 284+00 285+00

18" RCP

36" RCP

18" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 26-2

DRAINAGE AREA	=	3.08	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	5.5	CFS
DESIGN HW ELEVATION	=	2684.15	FT
100 YEAR DISCHARGE	=	6.66	CFS
100 YEAR HW ELEVATION	=	2684.35	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	10.75	CFS
OVERTOPPING ELEVATION	=	2685.24	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 26-4

DRAINAGE AREA	=	37.98	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	37.0	CFS
DESIGN HW ELEVATION	=	2694.19	FT
100 YEAR DISCHARGE	=	44.77	CFS
100 YEAR HW ELEVATION	=	2694.76	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	62.02	CFS
OVERTOPPING ELEVATION	=	2696.18	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 26-7

DRAINAGE AREA	=	1.57	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3.0	CFS
DESIGN HW ELEVATION	=	2711.50	FT
100 YEAR DISCHARGE	=	3.63	CFS
100 YEAR HW ELEVATION	=	2711.62	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	17.09	CFS
OVERTOPPING ELEVATION	=	2715.28	FT

2780 2770 2760 2750 2740 2730 2720 2710 2700 2690

285+00 286+00 287+00 288+00 289+00 290+00 291+00 292+00 293+00 294+00 295+00 296+00 297+00

BM-12 ELEVATION = 2726.36'
N 990272. E 1401752.
-L- Sta. 290+52.29 92.57' LT

24" RCP

24" RCP

290+35 -L- 27.50' RT
ELEV. = 2734.50

6.6 CFS

290+30 -L- RT
ELEV. = 2742.55

18" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 27-2

DRAINAGE AREA	=	5.01	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	7.9	CFS
DESIGN HW ELEVATION	=	2728.51	FT
100 YEAR DISCHARGE	=	9.56	CFS
100 YEAR HW ELEVATION	=	2728.74	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	13.50	CFS
OVERTOPPING ELEVATION	=	2729.16	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 27-5

DRAINAGE AREA	=	18.06	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	18.0	CFS
DESIGN HW ELEVATION	=	2736.32	FT
100 YEAR DISCHARGE	=	21.78	CFS
100 YEAR HW ELEVATION	=	2736.91	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	28.43	CFS
OVERTOPPING ELEVATION	=	2738.28	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 27-7

DRAINAGE AREA	=	2.7	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	4.8	CFS
DESIGN HW ELEVATION	=	2754.27	FT
100 YEAR DISCHARGE	=	5.81	CFS
100 YEAR HW ELEVATION	=	2754.43	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	6.26	CFS
OVERTOPPING ELEVATION	=	2754.51	FT

19-Jul-2013 12:46
H:\NCDOT\Design\R3101_dde_pf1_1_sheet58.dgn
$$$$USER$$$$

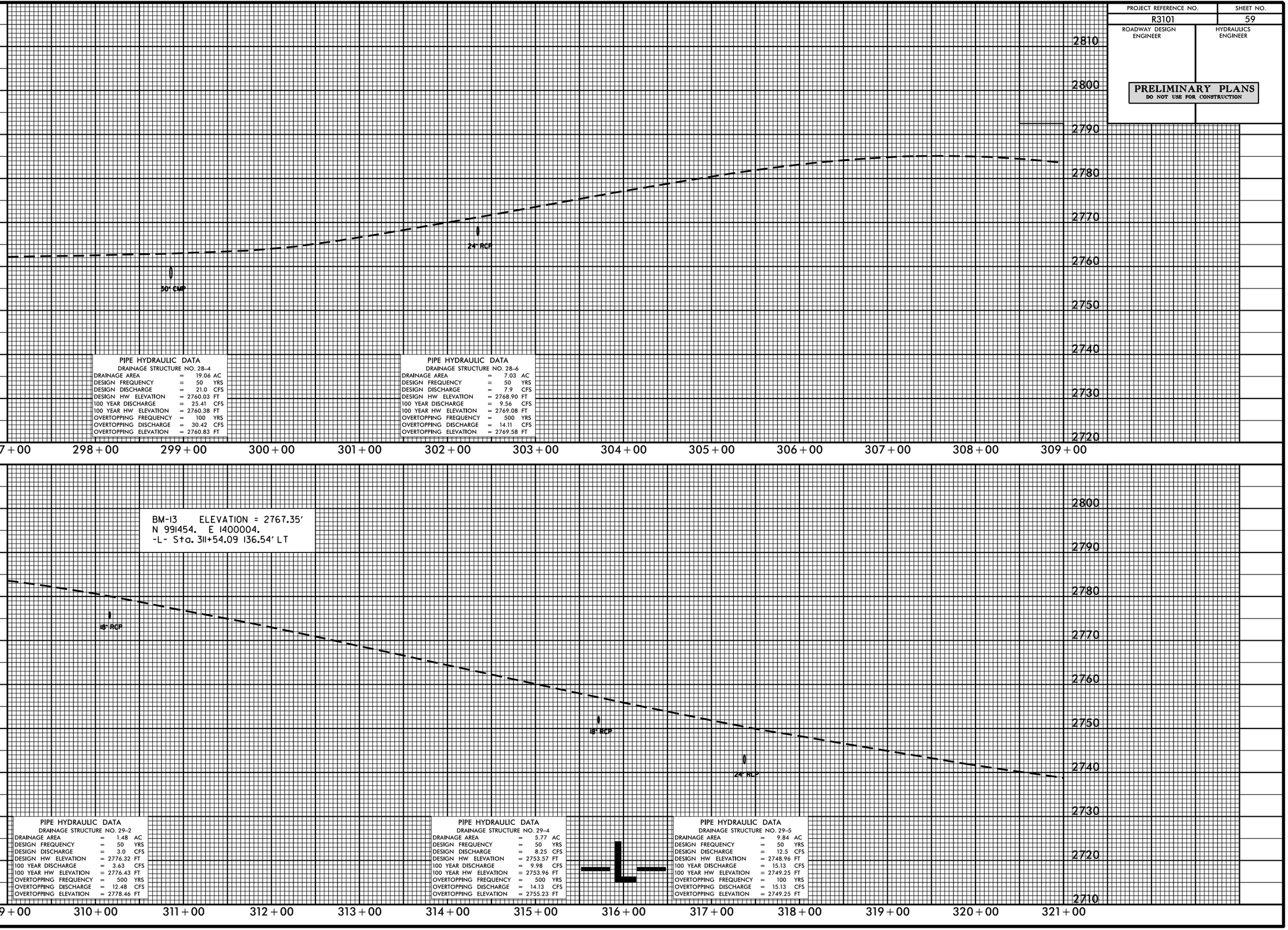
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	59

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 28-4

DRAINAGE AREA	=	19.06	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	21.0	CFS
DESIGN HW ELEVATION	=	2760.03	FT
100 YEAR DISCHARGE	=	25.41	CFS
100 YEAR HW ELEVATION	=	2760.38	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	30.42	CFS
OVERTOPPING ELEVATION	=	2760.83	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 28-6

DRAINAGE AREA	=	7.03	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	7.9	CFS
DESIGN HW ELEVATION	=	2768.90	FT
100 YEAR DISCHARGE	=	9.56	CFS
100 YEAR HW ELEVATION	=	2769.08	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	14.11	CFS
OVERTOPPING ELEVATION	=	2769.58	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 29-2

DRAINAGE AREA	=	1.48	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3.0	CFS
DESIGN HW ELEVATION	=	2776.32	FT
100 YEAR DISCHARGE	=	3.63	CFS
100 YEAR HW ELEVATION	=	2776.43	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	12.48	CFS
OVERTOPPING ELEVATION	=	2778.46	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 29-4

DRAINAGE AREA	=	5.77	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	8.25	CFS
DESIGN HW ELEVATION	=	2753.57	FT
100 YEAR DISCHARGE	=	9.98	CFS
100 YEAR HW ELEVATION	=	2753.96	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	14.13	CFS
OVERTOPPING ELEVATION	=	2755.23	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 29-5

DRAINAGE AREA	=	9.84	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	12.5	CFS
DESIGN HW ELEVATION	=	2748.96	FT
100 YEAR DISCHARGE	=	15.13	CFS
100 YEAR HW ELEVATION	=	2749.25	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	15.13	CFS
OVERTOPPING ELEVATION	=	2749.25	FT

19-Jul-2013 12:46
H:\NCDOT\Design\R3101_dde_pf1_1_sheet59.dgn
ssaul

PROJECT REFERENCE NO.	SHEET NO.
R3101	60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99

2760 2750 2740 2730 2720 2710 2700 2690 2680 2670

321+00 322+00 323+00 324+00 325+00 326+00 327+00 328+00 329+00 330+00 331+00 332+00 333+00

-4.98%- -2.96%- -2.96%-

-L- Sta. 320+40 11.1' RT ELEV.= 2735.37

-L- Sta. 322+00 11.1' RT ELEV.= 2732.88

-L- Sta. 322+50 11.1' RT ELEV.= 2731.40

30" RCP

30" RCP

18" RCP

-L- Sta. 330+50 11.1' RT ELEV.= 2703.58

-L- Sta. 332+00 11.1' RT ELEV.= 2699.41

-L- Sta. 332+50 11.1' RT ELEV.= 2698.58

-L- Sta. 333+00 11.1' RT ELEV.= 2698.08

-L- Sta. 333+20 11.1' RT ELEV.= 2697.86

-1.84%- -2.20%- -1.80%- -1.80%-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 30–2

DRAINAGE AREA	= 1.71	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.5	CFS
DESIGN HW ELEVATION	= 2730.18	FT
100 YEAR DISCHARGE	= 4.24	CFS
100 YEAR HW ELEVATION	= 2730.27	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 34.95	CFS
OVERTOPPING ELEVATION	= 2732.98	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 30–4

DRAINAGE AREA	= 2.61	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.9	CFS
DESIGN HW ELEVATION	= 2959.90	FT
100 YEAR DISCHARGE	= 5.93	CFS
100 YEAR HW ELEVATION	= 2960.04	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 55.84	CFS
OVERTOPPING ELEVATION	= 2973.06	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 30–7

DRAINAGE AREA	= 3.12	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.2	CFS
DESIGN HW ELEVATION	= 2713.61	FT
100 YEAR DISCHARGE	= 5.08	CFS
100 YEAR HW ELEVATION	= 2713.76	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 11.67	CFS
OVERTOPPING ELEVATION	= 2715.17	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 30–9

DRAINAGE AREA	= 27.12	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 29.0	CFS
DESIGN HW ELEVATION	= 2696.83	FT
100 YEAR DISCHARGE	= 35.09	CFS
100 YEAR HW ELEVATION	= 2697.13	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 103.61	CFS
OVERTOPPING ELEVATION	= 2701.32	FT

2730 2720 2710 2700 2690 2680 2670 2660 2650 2640

333+00 334+00 335+00 336+00 337+00 338+00 339+00 340+00 341+00 342+00 343+00 344+00 345+00

BM-14 ELEVATION = 2675.19'
N 993520. E 1398082.
-L- Sta. 340+44.24 116.20' LT

-5.62%- -5.62%-

-L- Sta. 334+50 11.1' RT ELEV.= 2695.12

-L- Sta. 335+00 11.1' RT ELEV.= 2692.31

-L- Sta. 335+20 11.1' RT ELEV.= 2691.43

8" RCP

8" RCP

16" RCP

-L- Sta. 343+50 11.1' RT ELEV.= 2675.27

-L- Sta. 344+00 11.1' RT ELEV.= 2673.13

-L- Sta. 344+50 11.1' RT ELEV.= 2672.22

-L- Sta. 345+00 11.1' RT ELEV.= 2672.29

36" RCP

-3.52%- -2.59%- -0.42%-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 31–2

DRAINAGE AREA	= 7.10	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 10.0	CFS
DESIGN HW ELEVATION	= 2694.46	FT
100 YEAR DISCHARGE	= 12.1	CFS
100 YEAR HW ELEVATION	= 2694.68	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 13.28	CFS
OVERTOPPING ELEVATION	= 2694.81	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 31–4

DRAINAGE AREA	= 0.35	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2688.96	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2688.98	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 11.51	CFS
OVERTOPPING ELEVATION	= 2690.59	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 31–7

DRAINAGE AREA	= 4.43	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.0	CFS
DESIGN HW ELEVATION	= 2686.02	FT
100 YEAR DISCHARGE	= 8.47	CFS
100 YEAR HW ELEVATION	= 2686.31	FT
OVERTOPPING DISCHARGE	= 10.90	CFS
OVERTOPPING ELEVATION	= 2686.89	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 31–9

DRAINAGE AREA	= 35.45	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 36.0	CFS
DESIGN HW ELEVATION	= 2762.76	FT
100 YEAR DISCHARGE	= 43.56	CFS
100 YEAR HW ELEVATION	= 2763.24	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 57.04	CFS
OVERTOPPING ELEVATION	= 2764.28	FT

19-Jul-2013 12:46
N:\RW\Projects\R3101\Design\R3101_dde_pf1_1_sheet60.dgn
$$$$USER$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2700 2690 2680 2670 2660 2650 2640 2630 2620 2610

345+00 346+00 347+00 348+00 349+00 350+00 351+00 352+00 353+00 354+00 355+00 356+00 357+00

30" RCP

18" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 32-2

DRAINAGE AREA	= 22.42	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 25.0	CFS
DESIGN HW ELEVATION	= 2664.63	FT
100 YEAR DISCHARGE	= 30.25	CFS
100 YEAR HW ELEVATION	= 2665.1	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 30.25	CFS
OVERTOPPING ELEVATION	= 2665.1	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 32-5

DRAINAGE AREA	= 6.81	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.25	CFS
DESIGN HW ELEVATION	= 2653.93	FT
100 YEAR DISCHARGE	= 11.19	CFS
100 YEAR HW ELEVATION	= 2654.43	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 12.08	CFS
OVERTOPPING ELEVATION	= 2654.66	FT

2680 2670 2660 2650 2640 2630 2620 2610 2600 2590

357+00 358+00 359+00 360+00 361+00 362+00 363+00 364+00 365+00 366+00 367+00 368+00 369+00

BM-15 ELEVATION = 2631.72'
N 995208. E 1396137.
-L- Sta. 365+96.06 136.90' LT

24" RCP

10%

22%

365+80.00 -L- RT
ELEV.= 2633.00

365+80 -L- RT
ELEV.= 2634.68

42" RCP

30" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 33-2

DRAINAGE AREA	= 14.77	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17.0	CFS
DESIGN HW ELEVATION	= 2646.54	FT
100 YEAR DISCHARGE	= 20.57	CFS
100 YEAR HW ELEVATION	= 2647.5	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 20.57	CFS
OVERTOPPING ELEVATION	= 2647.5	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 33-4

DRAINAGE AREA	= 36.31	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 36.0	CFS
DESIGN HW ELEVATION	= 2634.32	FT
100 YEAR DISCHARGE	= 43.56	CFS
100 YEAR HW ELEVATION	= 2634.68	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 61.49	CFS
OVERTOPPING ELEVATION	= 2635.54	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 33-7

DRAINAGE AREA	= 14.81	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17.5	CFS
DESIGN HW ELEVATION	= 2630.78	FT
100 YEAR DISCHARGE	= 21.28	CFS
100 YEAR HW ELEVATION	= 2631.07	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 38.81	CFS
OVERTOPPING ELEVATION	= 2632.79	FT

19-Jul-2013 12:46
H:\R3101\Design\R3101_dde_pf1_1_shee61.dgn
ssssl01\Plot5.ssa

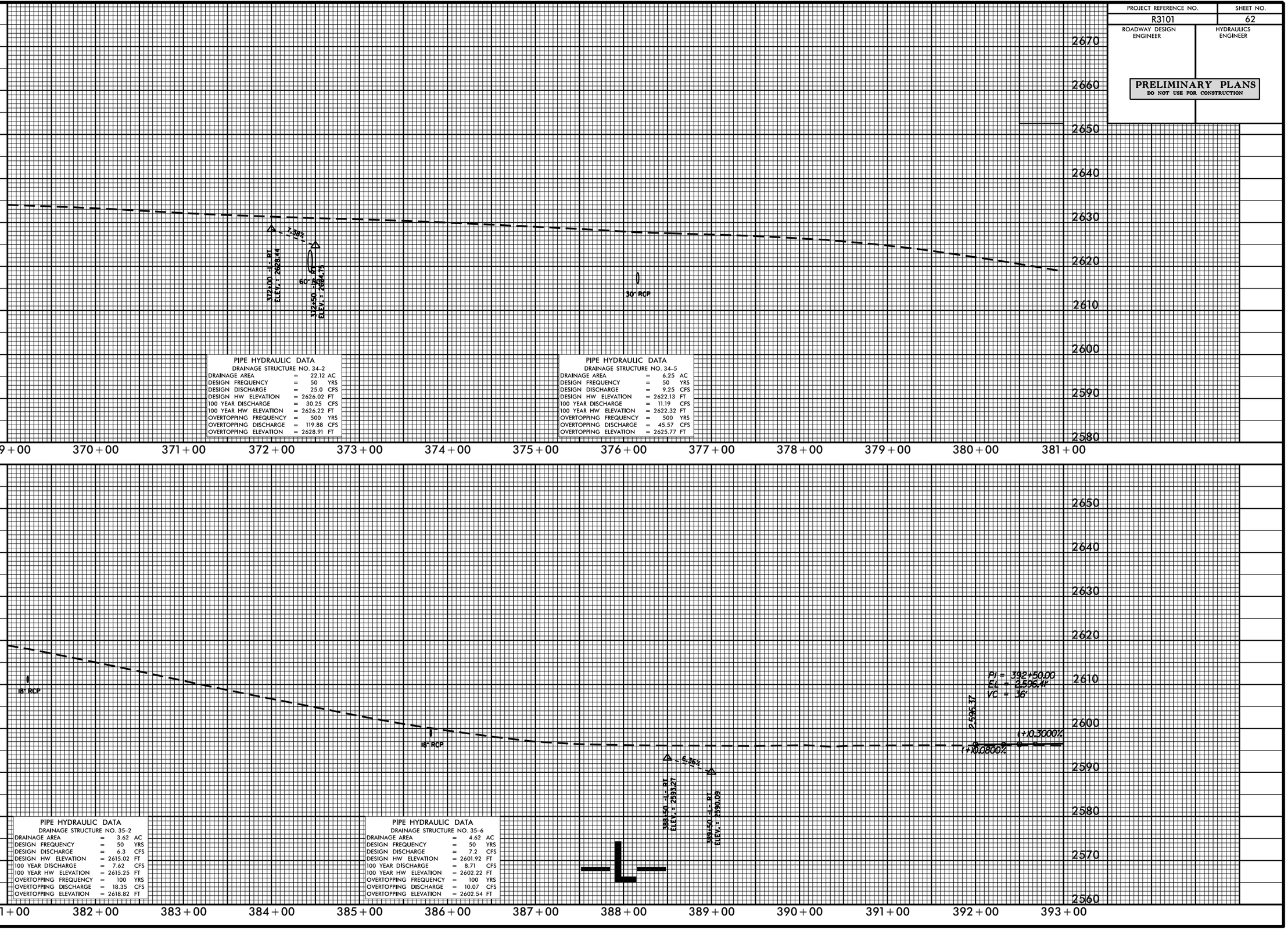
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	62

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 34–2

DRAINAGE AREA	=	22.12	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	25.0	CFS
DESIGN HW ELEVATION	=	2626.02	FT
100 YEAR DISCHARGE	=	30.25	CFS
100 YEAR HW ELEVATION	=	2626.22	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	119.88	CFS
OVERTOPPING ELEVATION	=	2628.91	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 34–5

DRAINAGE AREA	=	6.25	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	9.25	CFS
DESIGN HW ELEVATION	=	2622.13	FT
100 YEAR DISCHARGE	=	11.19	CFS
100 YEAR HW ELEVATION	=	2622.32	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	45.57	CFS
OVERTOPPING ELEVATION	=	2625.77	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 35–2

DRAINAGE AREA	=	3.62	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	6.3	CFS
DESIGN HW ELEVATION	=	2615.02	FT
100 YEAR DISCHARGE	=	7.62	CFS
100 YEAR HW ELEVATION	=	2615.25	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	18.35	CFS
OVERTOPPING ELEVATION	=	2618.82	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 35–6

DRAINAGE AREA	=	4.62	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	7.2	CFS
DESIGN HW ELEVATION	=	2601.92	FT
100 YEAR DISCHARGE	=	8.71	CFS
100 YEAR HW ELEVATION	=	2602.22	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	10.07	CFS
OVERTOPPING ELEVATION	=	2602.54	FT

19-JUL-2013 12:46
H:\NCDOT\Design\R3101_ddo_pf1_1_shee62.dgn
$$$$USER$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	63

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-16 ELEVATION = 2588.74'
N 997163. E 1394006.
-L- Sta. 394+89.21 220.45' LT

PI = 395+25.00
EL = 2597.24'
VC = 180'

(+)0.3000% (-)0.2673%

2596.50

2640 2630 2620 2610 2600 2590 2580 2570 2560

393+00 394+00 395+00 396+00 397+00 398+00 399+00 400+00 401+00 402+00 403+00 404+00 405+00

BM-17 ELEVATION = 2613.46'
N 998658. E 1392641.
-L- Sta. 415+11.81 149.98' LT

406+50 -L- RT
ELEV. = 2592.59

407+00 -L- RT
ELEV. = 2591.07

407+50 -L- RT
ELEV. = 2589.55

0.98%

0.96%

24" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 37-2

DRAINAGE AREA	=	4.45 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	7.1 CFS
DESIGN HW ELEVATION	=	2594.80 FT
100 YEAR DISCHARGE	=	8.59 CFS
100 YEAR HW ELEVATION	=	2594.97 FT
OVERTOPPING FREQUENCY	=	500 YRS
OVERTOPPING DISCHARGE	=	17.68 CFS
OVERTOPPING ELEVATION	=	2595.96 FT

416+50 -L- LT
ELEV. = 2601.18

416+50 -L- LT
ELEV. = 2603.04

6.30%

5.9%

3.9%

45" RCP

416+20 -L- LT
ELEV. = 2604.95

416+50 -L- LT
ELEV. = 2603.91

417+00 -L- LT
ELEV. = 2604.99

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 37-4

DRAINAGE AREA	=	68.71 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	60.0 CFS
DESIGN HW ELEVATION	=	FT
100 YEAR DISCHARGE	=	n/a CFS
100 YEAR HW ELEVATION	=	n/a FT
OVERTOPPING FREQUENCY	=	50 YRS
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING ELEVATION	=	FT

2650 2640 2630 2620 2610 2600 2590 2580 2570 2560

405+00 406+00 407+00 408+00 409+00 410+00 411+00 412+00 413+00 414+00 415+00 416+00 417+00

19-JUL-2013 12:46
H:\R3101\Design\R3101_dde_pf1_1_sheet63.dgn
$$$$USER:$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2700 2690 2680 2670 2660 2650 2640 2630 2620 2610

417+00 418+00 419+00 420+00 421+00 422+00 423+00 424+00 425+00 426+00 427+00 428+00 429+00

18" RCP

24" RCP

424+00 -L- LT ELEV.= 2666.77

424+50 -L- LT ELEV.= 2666.83

426+40 -L- RT ELEV.= 2676.50

426+50 -L- RT ELEV.= 2677.02

427+00 -L- LT ELEV.= 2685.44

427+00 -L- RT ELEV.= 2680.59

427+20 -L- LT ELEV.= 2683.50

427+50 -L- LT ELEV.= 2684.09

428+00 -L- LT ELEV.= 2685.81

428+50 -L- LT ELEV.= 2689.58

429+00 -L- LT ELEV.= 2690.35

429+00 -L- RT ELEV.= 2692.06

2.42%

3.65%

5.47%

1.97%

20.74%

2.00%

1.09%

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 38-2

DRAINAGE AREA	= 4.81	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 7.8	CFS
DESIGN HW ELEVATION	= 2635.00	FT
100 YEAR DISCHARGE	= 9.44	CFS
100 YEAR HW ELEVATION	= 2635.35	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 12.49	CFS
OVERTOPPING ELEVATION	= 2636.19	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 38-4

DRAINAGE AREA	= 0.63	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 2661.23	FT
100 YEAR DISCHARGE	= 3.63	CFS
100 YEAR HW ELEVATION	= 2661.3	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 14.36	CFS
OVERTOPPING ELEVATION	= 2662.51	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 38-6

DRAINAGE AREA	= 1.93	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.9	CFS
DESIGN HW ELEVATION	= 2685.41	FT
100 YEAR DISCHARGE	= 4.72	CFS
100 YEAR HW ELEVATION	= 2685.52	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 28.24	CFS
OVERTOPPING ELEVATION	= 2688.98	FT

2730 2720 2710 2700 2690 2680 2670 2660 2650 2640

429+00 430+00 431+00 432+00 433+00 434+00 435+00 436+00 437+00 438+00 439+00 440+00 441+00

BM-18 ELEVATION = 2707.66'
N 999814. E 1390949.
-L- Sta. 437+10.84 83.25' LT

433+50 -L- RT ELEV.= 2711.45

434+00 -L- RT ELEV.= 2709.11

434+71 -L- RT ELEV.= 2706.7

437+00 -L- RT ELEV.= 2688.05

437+40 -L- RT ELEV.= 2685.76

438+19 -L- RT ELEV.= 2682.56

4.58%

3.39%

4.58%

0.3%

30" RCP

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 39-2

DRAINAGE AREA	= 9.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 22	CFS
DESIGN HW ELEVATION	= 2687.9	FT
100 YEAR DISCHARGE	= 24	CFS
100 YEAR HW ELEVATION	= 2688.1	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 55	CFS
OVERTOPPING ELEVATION	= 2689.0	FT

19-JUL-2013 12:46
R:\R3101\Design\R3101_ddp_pf1_1_shee64.dgn
$$$$USER$$$$

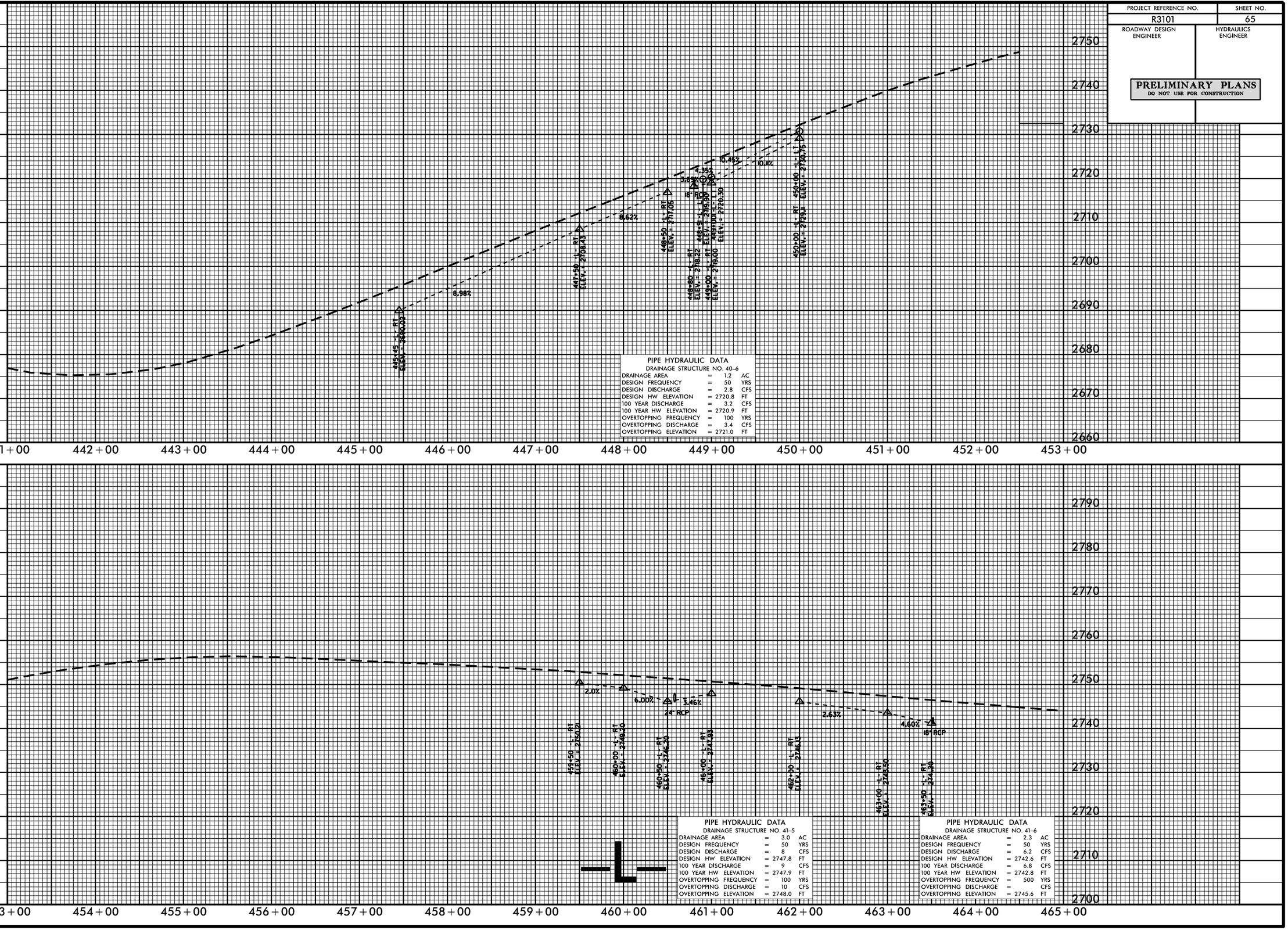
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	65

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



19-JUL-2013 12:46
H:\NRD\ROD\Design\R3101_ddo_pf1_1_shee65.dgn
$$$$USER:ROD

5/28/99

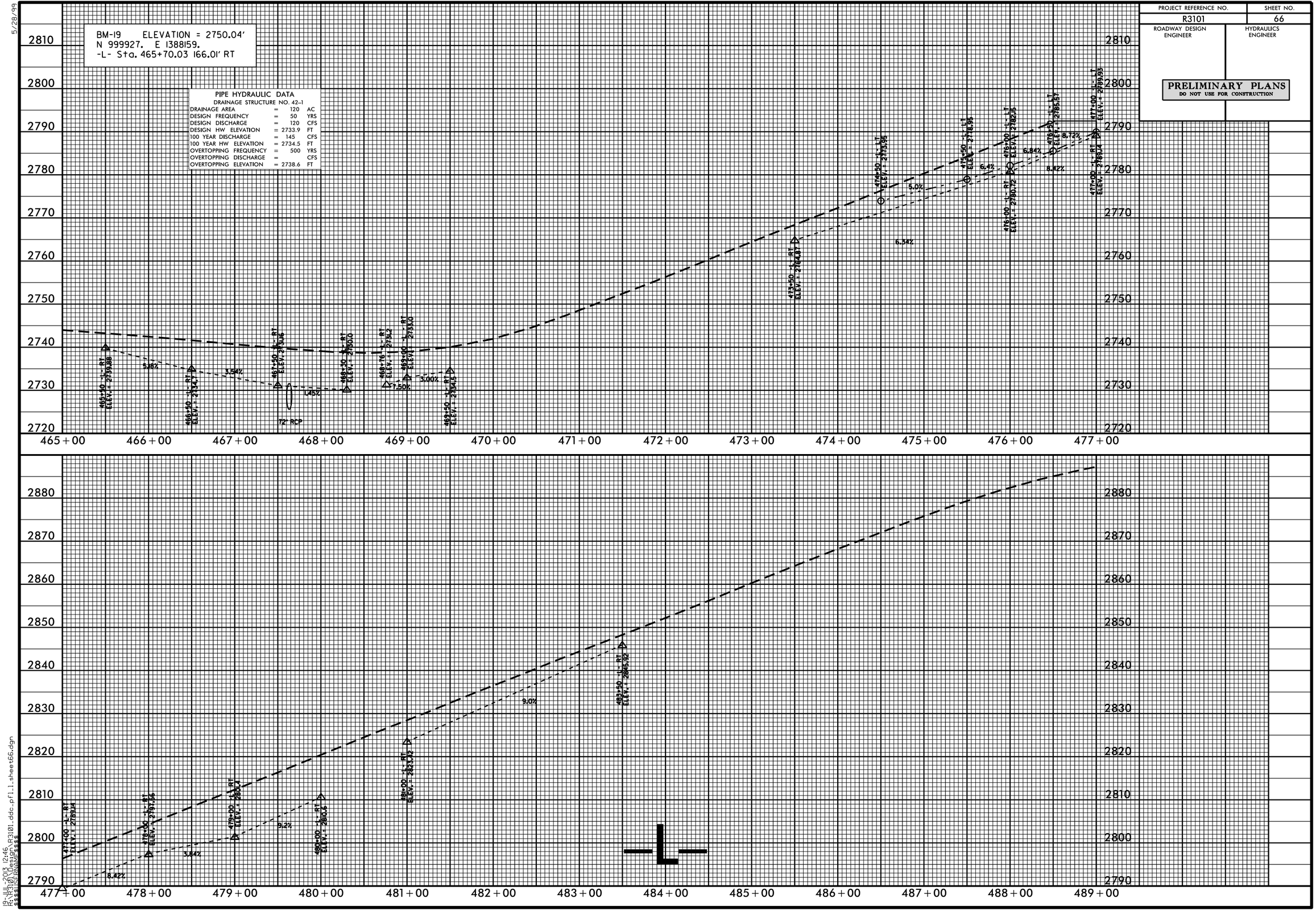
PROJECT REFERENCE NO.	SHEET NO.
R3101	66
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-19 ELEVATION = 2750.04'
N 999927. E 1388159.
-L- Sta. 465+70.03 166.01' RT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 42-1

DRAINAGE AREA	=	120	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	120	CFS
DESIGN HW ELEVATION	=	2733.9	FT
100 YEAR DISCHARGE	=	145	CFS
100 YEAR HW ELEVATION	=	2734.5	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=		CFS
OVERTOPPING ELEVATION	=	2738.6	FT



19-JUL-2013 12:46
C:\PROJECTS\Design\R3101_dde_pf1_1_shee66.dgn
$$$$USER:Dave$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	67
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-20 ELEVATION = 2905.82'
N 1001340. E 1385762.
-L- Sta. 493+98.62 72.95' RT

490+50 -L- RT
ELEV. = 2889.24

491+00 -L- RT
ELEV. = 2889.0

491+34 -L- RT
ELEV. = 2887.72

493+00 -L- RT
ELEV. = 2890.83

497+00 -L- LT
ELEV. = 2886.40

498+50 -L- LT
ELEV. = 2886.85

0.3%

4.05%

4.88%

0.3%

2930
2920
2910
2900
2890
2880
2870
2840

489+00 490+00 491+00 492+00 493+00 494+00 495+00 496+00 497+00 498+00 499+00 500+00 501+00

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 45–3

DRAINAGE AREA	= 5.1	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 14	CFS
DESIGN HW ELEVATION	= 2880.2	FT
100 YEAR DISCHARGE	= 15	CFS
100 YEAR HW ELEVATION	= 2880.2	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING ELEVATION	=	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 45–9

DRAINAGE AREA	= 13.1	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 16	CFS
DESIGN HW ELEVATION	= 2886.2	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 2886.5	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING ELEVATION	= 2890.0	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 45–10

DRAINAGE AREA	= 1.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.3	CFS
DESIGN HW ELEVATION	= 2917.1	FT
100 YEAR DISCHARGE	= 4.7	CFS
100 YEAR HW ELEVATION	= 2917.2	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 7.0	CFS
OVERTOPPING ELEVATION	= 2917.5	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 45–11

DRAINAGE AREA	= 4.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 10.7	CFS
DESIGN HW ELEVATION	= 2937.5	FT
100 YEAR DISCHARGE	= 11.8	CFS
100 YEAR HW ELEVATION	= 2937.6	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING ELEVATION	= 2938.9	FT

30" RCP

18" RCP

24" RCP

505+00 -L- RT
ELEV. = 2906.24

504+00 -L- RT
ELEV. = 2889.88

503+91 -L- RT
ELEV. = 2886.59

4.92%

8.18%

2960
2950
2940
2930
2920
2910
2900
2890
2880
2870

501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00 511+00 512+00 513+00

19-JUL-2013 12:46
H:\NRD\PROJECTS\Design\R3101_dde_pf1_1_sheet67.dgn
$$USER$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	68
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

2990
2980
2970
2960
2950
2940
2930
2920
2910
2900

513+00 514+00 515+00 516+00 517+00 518+00 519+00 520+00 521+00

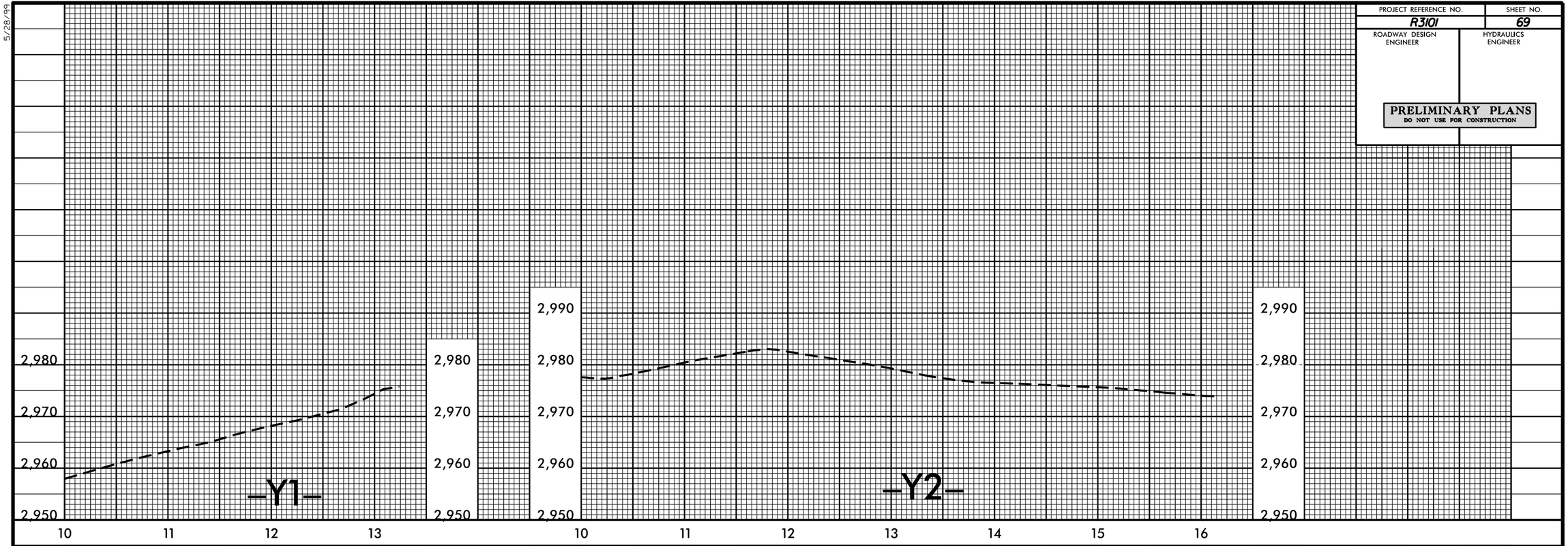
2990
2980
2970
2960
2950
2940
2930
2920
2910
2900

19-JUL-2013 12:46
1DGA10:[Design.R3101.ddo_pf1.1_shee68.dgn
$$$$$[PLOTDRIVERS]

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	69
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



19-JUL-2013 12:46
R:\R3101\Design\r3101_dde.pfl_yl_to_y5_sheet69.dgn
$$$$USER

5/28/99

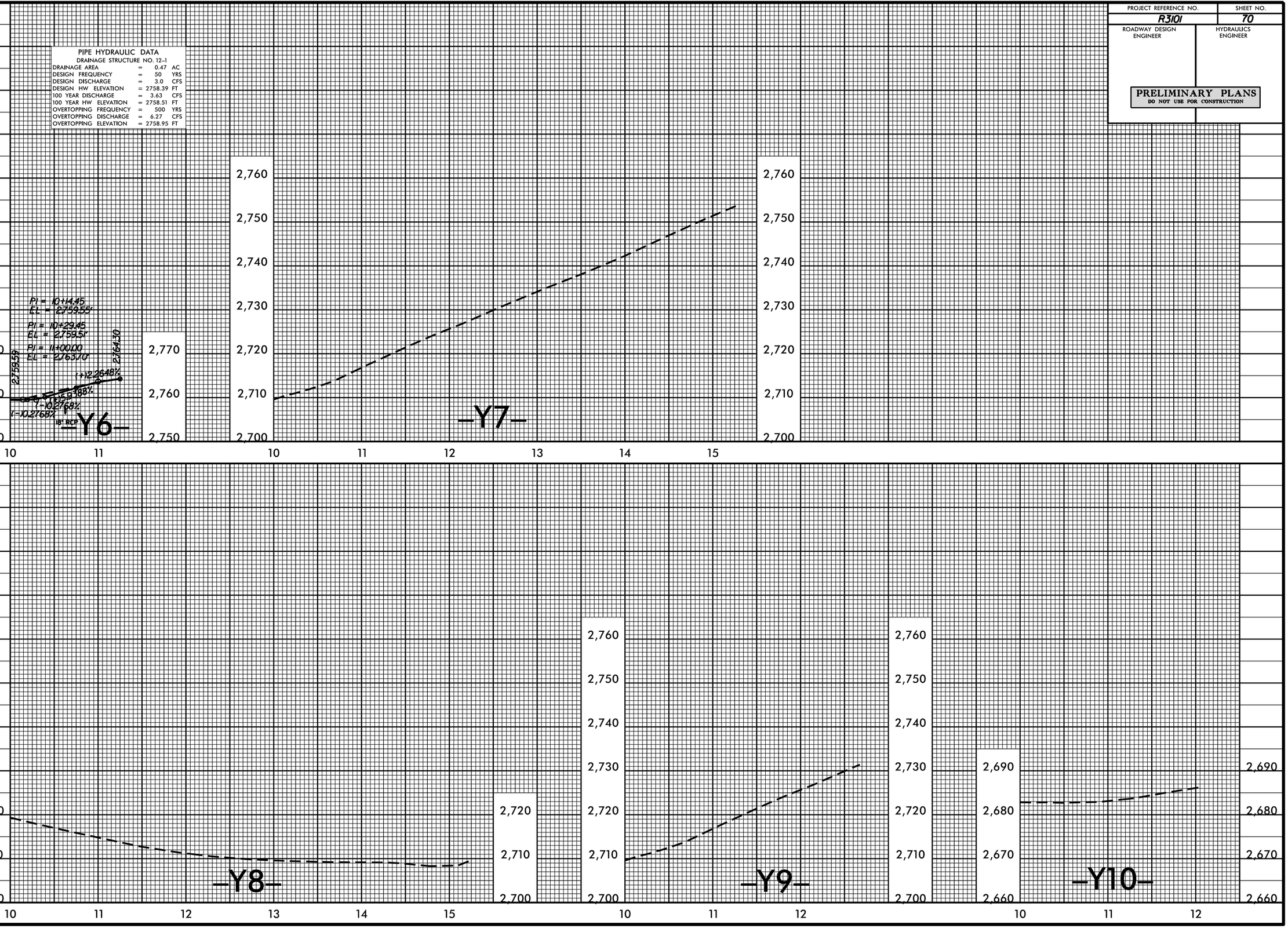
PROJECT REFERENCE NO.	SHEET NO.
R3101	70
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 12-1

DRAINAGE AREA	=	0.47	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3.0	CFS
DESIGN HW ELEVATION	=	2758.39	FT
100 YEAR DISCHARGE	=	3.63	CFS
100 YEAR HW ELEVATION	=	2758.51	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	6.27	CFS
OVERTOPPING ELEVATION	=	2758.95	FT

PI = 10+14.45
EL = 2759.55'
PI = 10+29.45
EL = 2759.51'
PI = 11+00.00
EL = 2763.70'
2759.59
2764.30
I=12.2648%
I=9.1388%
I=10.2768%
I=10.2768%
18" RCP



19-JUL-2013 12:46
$$$$USER:[DWG]
d:\projects\r3101\design\r3101_dde_pfl_y6_to_y10_sheet70.dgn

5/28/99

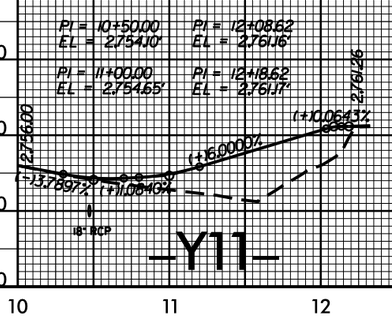
PROJECT REFERENCE NO.	SHEET NO.
R3101	71
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

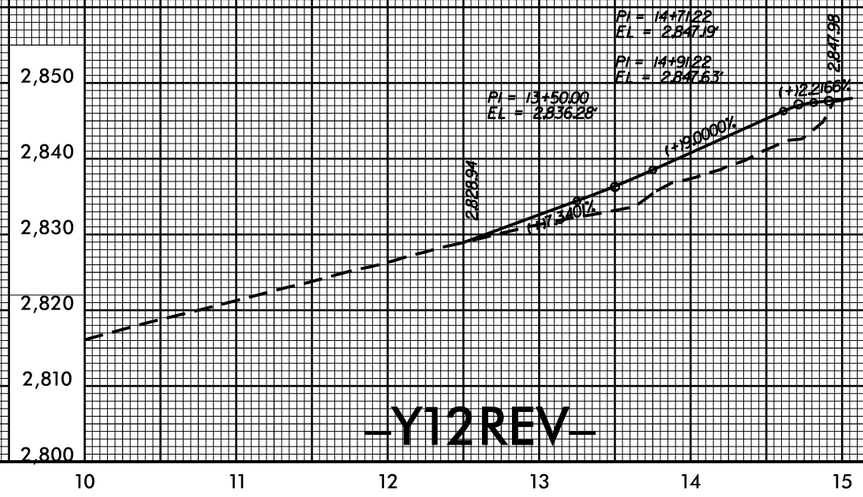
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

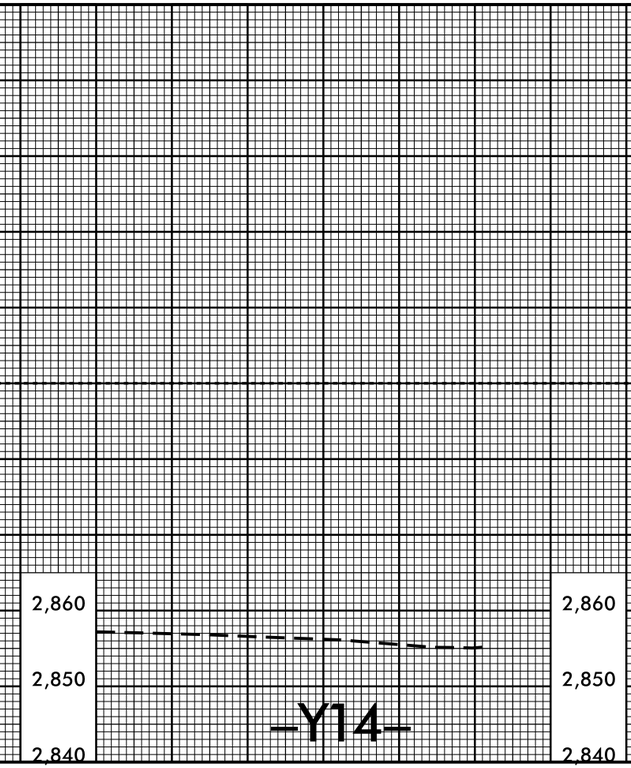
PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 20-4

DRAINAGE AREA	=	10.75 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	11.3 CFS
DESIGN HW ELEVATION	=	2752.80 FT
100 YEAR DISCHARGE	=	13.67 CFS
100 YEAR HW ELEVATION	=	2753.56 FT
OVERTOPPING FREQUENCY	=	100 YRS
OVERTOPPING DISCHARGE	=	13.67 CFS
OVERTOPPING ELEVATION	=	2753.56 FT





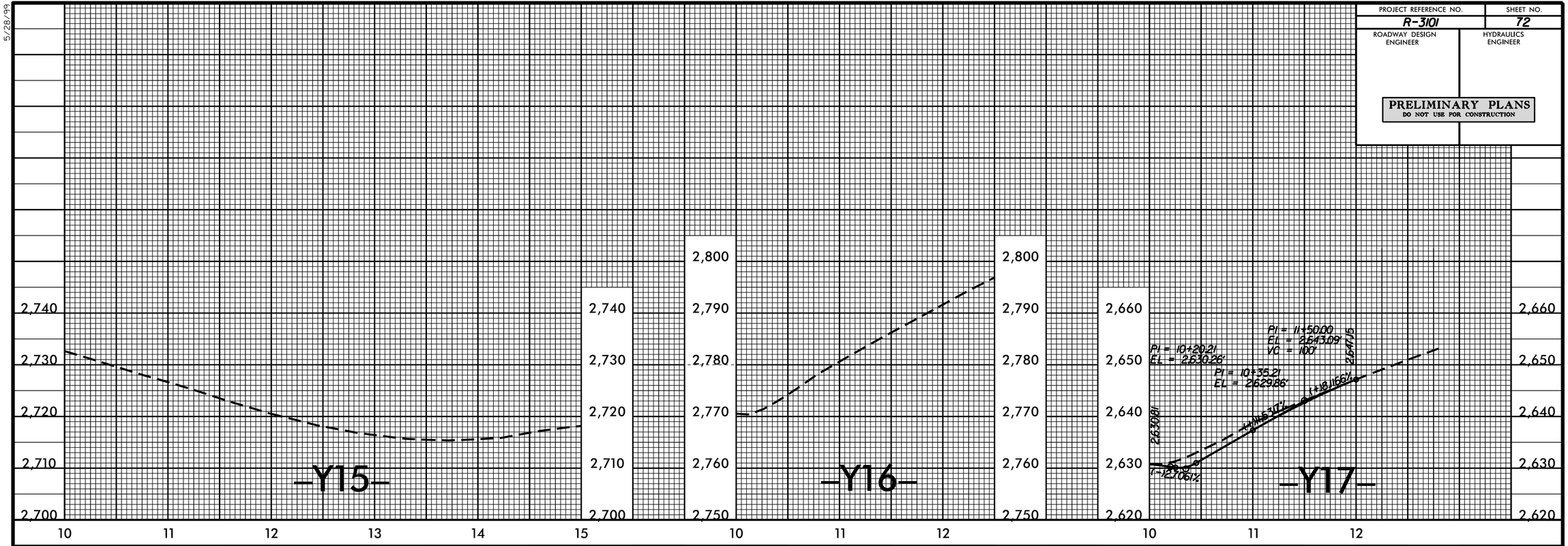


19-JUL-2013 12:46
N:\rdd\c\Design\r3101_dde_pfl-y11_to_y14_sheet71.dgn
$$$$USER

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	72
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 36-1

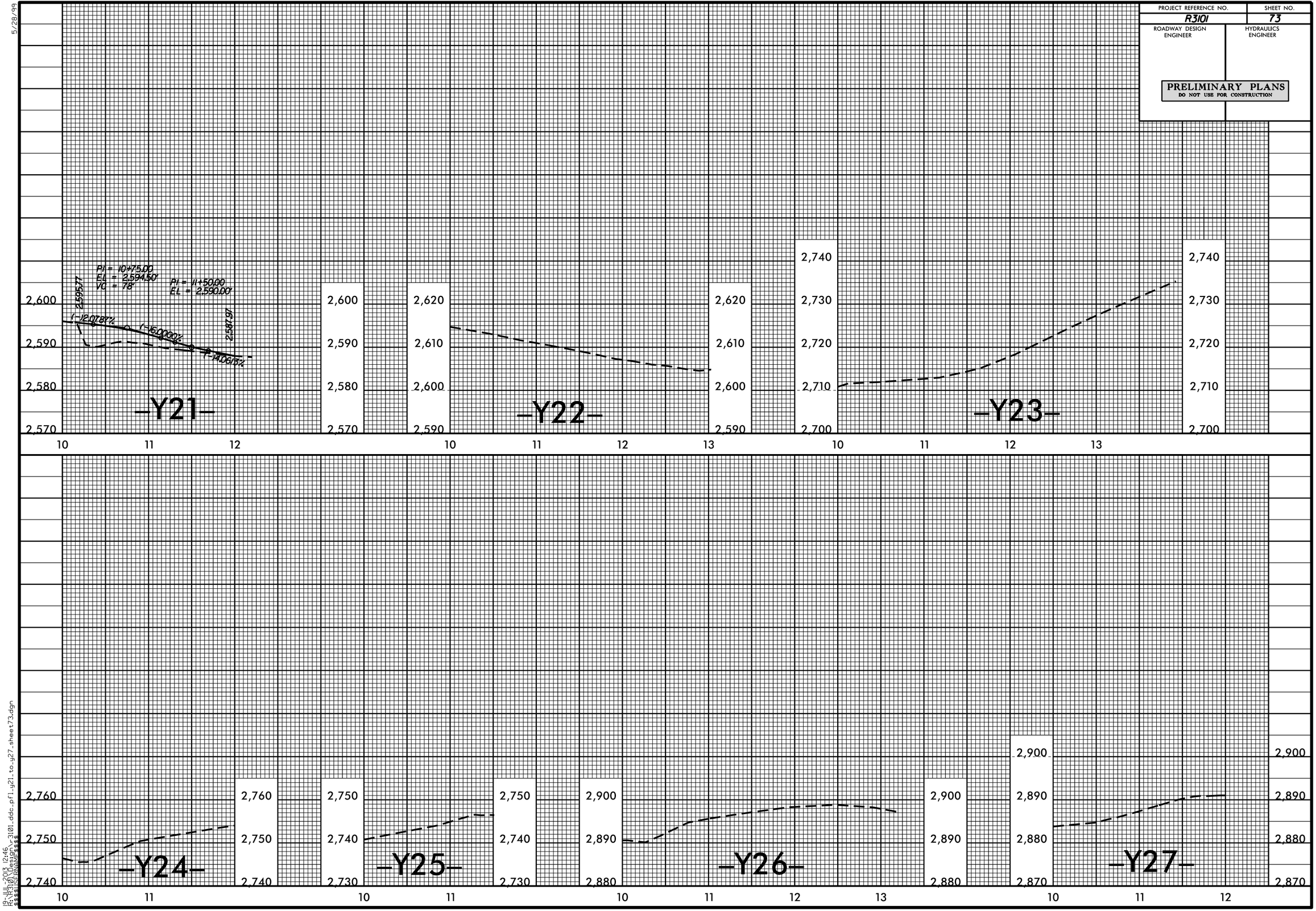
DRAINAGE AREA	=	0.77	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3.0	CFS
DESIGN HW ELEVATION	=	2594.67	FT
100 YEAR DISCHARGE	=	3.63	CFS
100 YEAR HW ELEVATION	=	2594.79	FT
OVERTOPPING FREQUENCY	=	500	YRS
OVERTOPPING DISCHARGE	=	6.23	CFS
OVERTOPPING ELEVATION	=	2595.23	FT

19-JUL-2013 12:46
N:\RDG\Projects\R-3101_dde.pf1_y15_to_y20_sheet72.dgn
$$$$USER$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R3101	73
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



19-JUL-2013 12:46
$cell_library
$$$$USER
c:\projects\r3101\design\r3101_dde.pfi-y21_to_y27-sheet73.dgn

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-49

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2820
2810
2800
2790
2780

2790.06
69+00.00

2820
2810
2800
2790
2780

2790.22
68+50.00

2850
2840
2830
2820
2810
2800
2790
2780

2790.60
68+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

19-JUL-2013 13:08
R:\R3101\Design\R3101_ddc_xpl_10-13950.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-50

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2800
2790
2780
2770

4:1

2789.86

71+00.00

2:1

PROP. BRIDGE WING WALL

2800
2790
2780

2:1

2789.81

70+50.00

2810
2800
2790
2780

DRIVE TIE

2:1

2789.85

70+00.00

2820
2810
2800
2790
2780

2:1

2789.90

69+50.00

—4—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

19-JUL-2013 13:08
R:\R3101\Design\R3101_ddc_xpl_10-13950.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-70

97+50.00

97+00.00

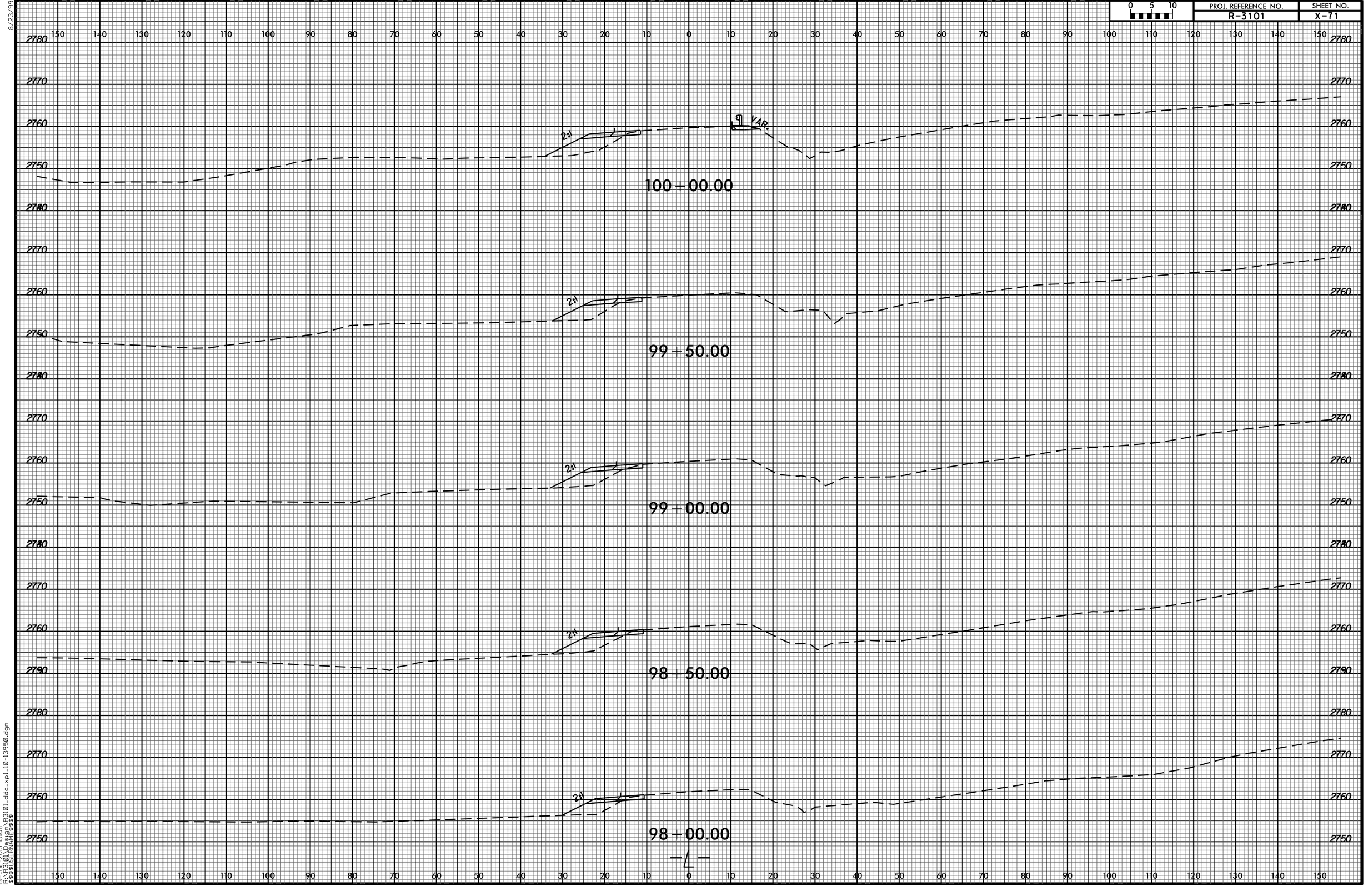
96+50.00

19-JUL-2013 13:08
R:\R3101\Design\R3101_ddc_xpl_10-13950.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-3101	X-71



19-JUL-2013 13:08
$$$$USERNAME$$$$
R:\R3101\Design\R3101_ddc_xpl_10-13950.dgn

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-102

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2770
2760
2750
2740
2730
2720
2710

2.4%
4.1%
2721.47
131+50.00
2718.664

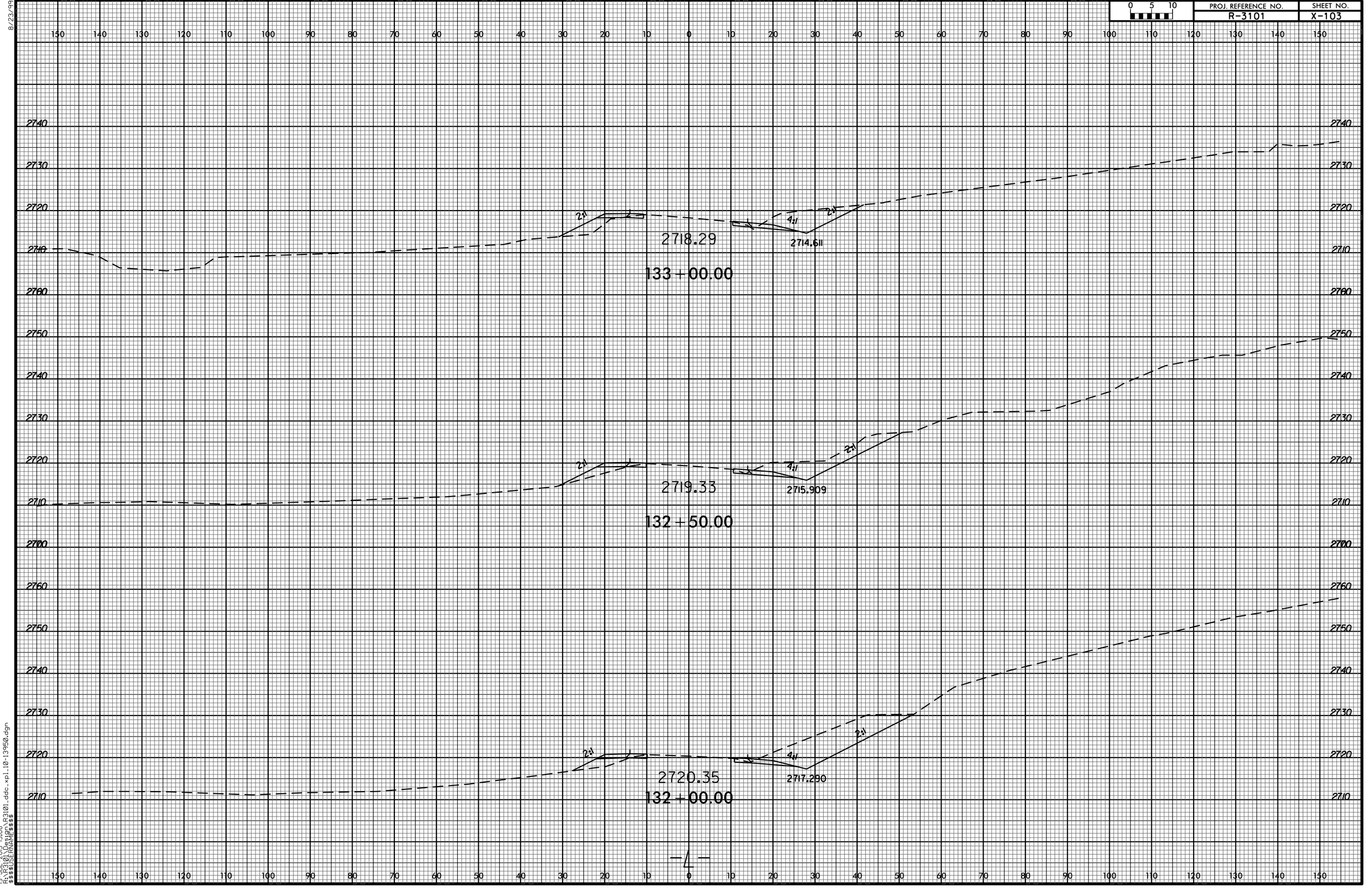
2.4%
4.1%
2722.75
131+00.00
2719.891
—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

19-JUL-2013 13:08
$USER
$DGN_FILE
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-103



19-JUL-2013 13:08
R:\R3101\Design\R3101_ddc_xpl_10-13950.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-105

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2780 2770 2760 2750 2740 2730 2720 2710 2700

2:1

4:1

2713.88

2710.584

135+00.00

2:1

4:1

2714.93

2711.510

134+50.00

—L—

19-JUL-2013 13:08
$USER$
R:\R3101\Design\R3101_ddc_xpl_10-13950.dgn

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-106

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2780 2770 2760 2750 2740 2730 2720 2710 2700

2:1 4:1 2:1

2711.90
136+00.00
2709.278

2:1 4:1 2:1

2712.86
135+50.00
2709.606

—L—

19-JUL-2013 13:08
$$$$USERNAME$$$$
R:\R3101\Design\R3101_ddc_xpl_10-13950.dgn

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-113

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2770 2760 2750 2740 2730 2720 2710 2700 2690

2707.05

143+50.00

2705.973

2707.80

143+00.00

DRIVE TIE

2706.959

—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2770 2760 2750 2740 2730 2720 2710 2700 2690

19-JUL-2013 13:08
R:\R3101\Design\R3101_ddc_xpl_140-25950.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-114

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2770 2760 2750 2740 2730 2720 2710 2700 2690

2:1

2705.54
144+50.00

4:1 2:1

2704.213

2:1

2706.34
144+00.00

4:1 2:1

2704.908

19-JUL-2013 13:08
R:\R3101\Design\R3101_ddc_xpl_140-25950.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-193

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2840 2830 2820 2810 2800 2850 2840 2830 2820 2810 2800

4:1 1.5:1 2805.04

235+00.00

4:1 2:1 2808.88

234+50.00

4:1 2:1 2813.25

234+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

19-JUL-2013 13:08
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-194

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2820
2810
2800
2790
2780
2770

4:1 2:1

2793.43

236+50.00

2820
2810
2800
2790
2780
2770

4:1 2:1

2797.07

236+00.00

2830
2820
2810
2800
2790

4:1 2:1

2801.23

235+50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

19-JUL-2013 13:08
$$$$USERNAME$$$$
R:\R3101\Design\R3101_ddc_xpl_140-25950.dgn

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-232

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2780 2770 2760 2750 2740 2730 2720

2739.08

291+00.00

2737.565

2737.14

290+50.00

2735.242

2735.56

290+00.00

2733.772

—/—

19-JUL-2013 13:08
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-233

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2790 2780 2770 2760 2750 2740 2730 2720

2:1 4:1 2:1

2744.17

2742.533

292+00.00

2:1 4:1 2:1

2741.50

2735.50

291+50.00

—L—

19-JUL-2013 13:08
R:\R3101\Design\R3101_ddc_xpl_260-39450.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-238

297+50.00

2762.37

2760.252

297+00.00

2762.17

2760.247

19-JUL-2013 13:08
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-239

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2790 2780 2770 2760 2750 2740

2763.04

299+00.00

2762.78

2760.730

298+50.00

2762.53

2760.376

298+00.00

—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

19-JUL-2013 13:09
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-240

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2810 2800 2790 2780 2770 2760 2750 2740

2:1 2:1 4:1

2764.03

2761.634

300+00.00

2:1 2:1 4:1

2763.42

2761.211

299+50.00

—L—

19-JUL-2013 13:09
\\rcs1\Projects\Design\R3101_ddc_xpl_260-39450.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-251

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2830 2820 2810 2800 2790 2780 2770 2760 2750

2:1

2:1

4:1

2768.71

2765.827

313+00.00

2:1

2:1

4:1

2770.90

2767.634

312+50.00

—L—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

19-JUL-2013 13:09
$$$$USERNAME$$$$
R-3101 Design.R3101_ddc_xpl_260-39450.dgn

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-252

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2820 2810 2800 2790 2780 2770 2760 2750

2%

4%

2764.39

2761.535

314+00.00

2%

2%

4%

2766.59

2763.694

313+50.00

—/—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2820 2810 2800 2790 2780 2770 2760 2750

19-JUL-2013 13:09
R:\R3101\Design\R3101_ddc_xpl_260-39450.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-270

2694.77

335+50.00

2692.582

2695.96

335+00.00

2692.308

—/—

2693.79

336+00.00

2691.806

19-JUL-2013 13:09
R:\R3101\Design\R3101_ddc_xpl_260-39450.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-271

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2770 2760 2750 2740 2730 2720 2710 2700 2690 2680

2691.264

2692.79

336+50.00

—L—

19-JUL-2013 13:09
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-394

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2930 2920 2910 2900 2890 2880 2870 2860

DRIVE TIE

4:1 2:1

2889.43

2886.664

2:1

501+50.00

2:1 2:1

2889.45

501+00.00

19-JUL-2013 13:09
R:\R3101\Design\R3101_ddc_xpl_395-521.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3101	X-395

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

2920 2910 2900 2890 2880 2870

2% 4% 2%

2891.56

2889.000

503+00.00

2% 4% 2%

2890.47

2887.802

502+50.00

2% 4% 2%

2889.78

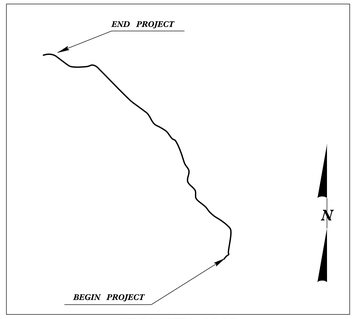
2887.069

502+00.00

19-JUL-2013 13:09
R:\R3101\Design\R3101_ddc_xpl_395-521.dgn
$$$$USERNAME$$$$

09/08/99

TIP PROJECT: R-3101



VICINITY MAP
(NO SCALE)

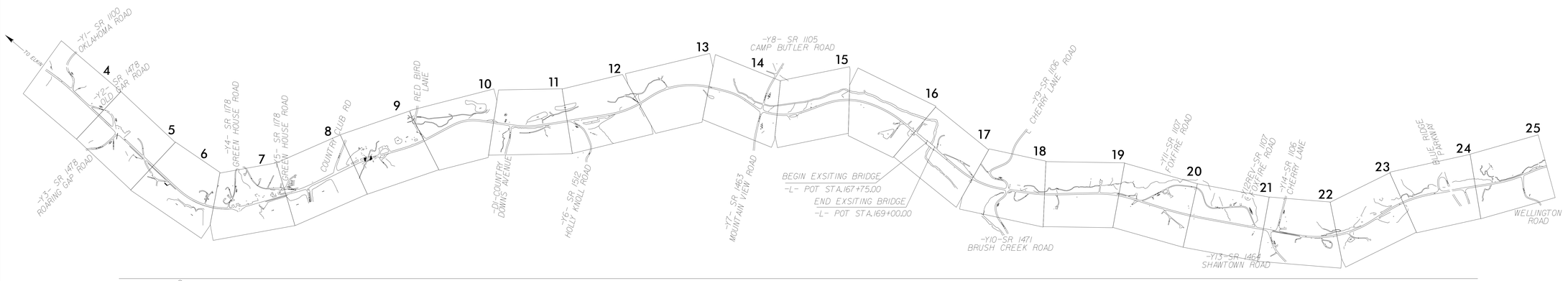
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NES PERMIT PLANS
ALLEGHANY COUNTY

T.I.P. NO.	SHEET NO.
R-3101	UC-1

UTILITY SHEET 1 OF 4

LOCATION: US-21 FROM ROARING GAP TO SPARTA
TYPE OF WORK: UTILITY RELOCATIONS



PLAN DATE: 08-20-2012

GRAPHIC SCALES

50 25 0 50 100
PLANS
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UC-1	*TITLE SHEET*
UC-31	*WETLAND IMPACT SITES U1, U2*
UC-45	*WETLAND IMPACT SITE U3*

SHEET NUMBERING NOTE

PLAN SHEETS HAVE BEEN NUMBERED TO CORRESPOND WITH ROADWAY PLAN SHEETS...INDEX LISTS ONLY SHEETS THAT CONTAIN ENVIRONMENTAL IMPACTS DUE TO UTILITY RELOCATIONS

SEAL

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. — *UTILITIES SECTION ENGINEER*
Ron Wilkins, P.E. — *UTILITIES SQUAD LEADER PROJECT ENGINEER*
Eric Haugaard — *UTILITIES PROJECT DESIGNER*

17-JUL-2013 10:40
R:\Utilities\Rdy_Ut\Proj\NEU permit stuff\R-3101_NEU_title_sheet.dgn
$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	UC-31
DESIGNED BY: EWH	
DRAWN BY: EWH	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC.	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION
PLAN DATE 08-20-2012

UTILITY SHEET 2 OF 4

SITE U1:

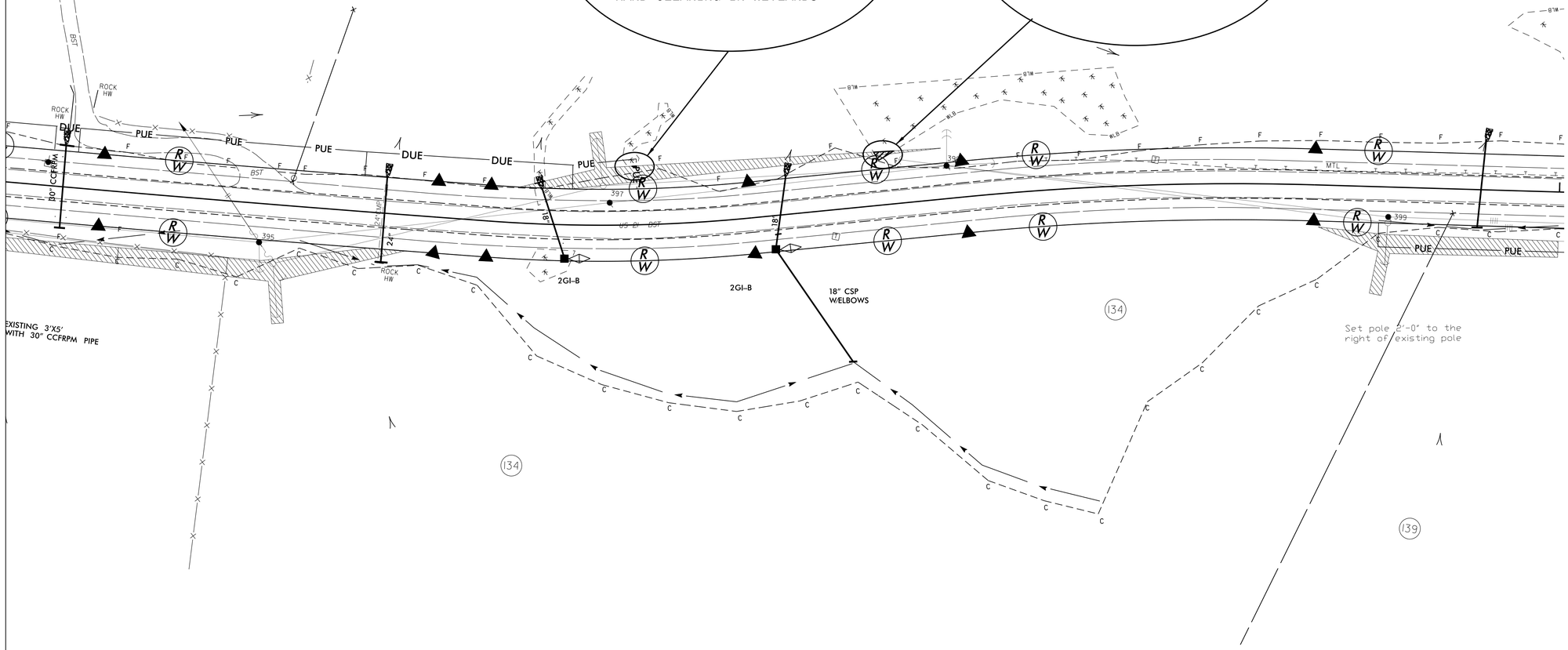
STA 337+25L TO STA 337+30L
PROPOSED OVERHEAD POWER LINE
CROSSING THROUGH WETLAND WITH
HAND CLEARING INSIDE EASEMENT
(15' EACH SIDE OF POWER LINE)

IMPACT AREA = 3 SQFT (<0.0001 AC)
"HAND CLEARING IN WETLANDS"

SITE U2:

STA 339+30L TO STA 339+50L
PROPOSED OVERHEAD POWER LINE
CROSSING THROUGH WETLAND WITH
HAND CLEARING INSIDE EASEMENT
(15' EACH SIDE OF POWER LINE)

IMPACT AREA = 60 SQFT (0.0014 AC)
"HAND CLEARING IN WETLANDS"



PLAN SCALE:

1"=50' (FULL-SIZE SHEET)
1"=100' (HALF-SIZE SHEET)

NCDOT PROJECT R-3101
NES PERMIT DRAWING...SHEET 31
US-21 FROM ROARING GAP TO SPARTA

17-JUL-2013 10:40
$$$$USERNAME$$$$
$$$$FILENAME$$$$
J:\Proj\NEU permit stuff\R-3101 NEU sheet UC-31.dgn

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3101	UC-45
DESIGNED BY: EWH	
DRAWN BY: EWH	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC.	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION
PLAN DATE 08-20-2012

UTILITY SHEET 3 OF 4

NCDOT PROJECT R-3101
NES PERMIT DRAWING...SHEET 45
US-21 FROM ROARING GAP TO SPARTA

ABANDON EXISTING 4" SEWER PIPE
SEE PROJECT SPECIAL PROVISIONS

4" FORCE MAIN
SEWER...745 LF

L-STA 508+23/35L
PROFILE "SL-1" STA 11+37
INSTALL 11° HORIZ BEND

L-STA 508+45/30L
PROFILE "SL-1" STA 11+61
TIE PROP 4" FM ("SL-1")
TO EXIST 4" FM
INSTALL 11° HORIZ BEND

PROP FM SEWER

PROP WATER MAIN

REMOVE & REPLACE

EXIST 10" DI WATER LINE

10" WATER LINE
974 LF

INSTALL "WL-1"
(10" WATER LINE)
FROM L-STA 501+00
TO L-STA 510+74

STA 504+00/47R TO
STA 504+53/44R
DEFLECT PIPE JOINTS
(HORIZONTALLY)

ABANDON 10"
UTILITY PIPE
974 LF

ABANDON EXIST
10" WATER PIPE
FROM L-STA 501+00
TO L-STA 510+74

RELOCATE FIRE
HYDRANT...1 EA

RELOCATE FIRE HYDRANT
TO BACKSIDE OF R/W

L-STA 510+74/25R
PROFILE "WL-1" STA 27+35
TIE PROP 10" WATER LINE ("WL
TO EXIST 10" WATER LINE
INSTALL 22° HORIZ BEND

L-STA 510+19/43R
PROFILE "WL-1" STA 26+79
INSTALL 22° HORIZ BEND

SITE U3:

STA 501+00R TO STA 501+20R
PROPOSED 10" WATER LINE
CROSSING THROUGH WETLAND WITH
OPEN-TRENCH INSTALLATION

IMPACT AREA = 161 SQFT (0.0037 AC)
"TEMPORARY EXCAVATION IN WETLAND"
NOTE: NO EXCAVATED FILL IS TO BE
PLACED INSIDE WETLAND BOUNDARY

PLAN SCALE:

1"=50' (FULL-SIZE SHEET)
1"=100' (HALF-SIZE SHEET)

17-JUL-2013 10:40 U:\Proj\NEU permit stuff\R-3101 NEU sheet UC-45.dgn
$$$$USERNAME$$$$

UTILITY WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS						SURFACE WATER IMPACTS				
						Temp.		Hand			Existing	Existing	
			Permanent	Temp.	Excavation	Excavation	Mechanized	Clearing	Permanent	Temp.	Channel	Channel	Natural
Site	-L- Station	Structure	Fill In	Fill In	in	in	Clearing	in	SW	SW	Impacts	Impacts	Stream
No.	(From/To)	Size / Type	Wetlands	Wetlands	Wetlands	Wetlands	in Wetlands	Wetlands	impacts	impacts	Permanent	Temp.	Design
			(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ft)	(ft)	(ft)
U1	Sta 337+25L to Sta 337+30L	overhead power lines						< 0.01					
	clear inside utility easement												
U2	Sta 339+50L to Sta 339+50L	overhead power lines						< 0.01					
	clear inside utility easement												
U3	Sta 501+00R to Sta 501+20R	10" water main				< 0.01							
	open-trench pipe installation												
TOTALS:						<0.01		<0.01					

note-1: no excavated fill is to be placed inside wetland boundaries
note-2: impacts at each site calculated to one ten-thousandth of an acre (x.xxxx); summed; and then rounded to one hundredth of an acre (x.xx)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ALLEGHANY COUNTY
WBS - 37044.1.1 (R-3101)

ATN Revised 3/31/05