STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

April 27, 2011

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

ATTN: Mr. John Thomas
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 14, Section 401 Water Quality Certification** for the widening of SR 2643 (Union Cross Road) to a multilane facility from SR 2691 (Wallburg Road) to SR 2632 (Sedge Garden Road), Forsyth County, WBS No. 40278.1.1, Federal Aid No. STP-2643(2), U-4909

Debit $240.00 from WBS No. 35871.1.1

Dear Sir,

The North Carolina Department of Transportation (NCDOT) proposes to widen of SR 2643 (Union Cross Road) to a multilane facility from SR 2691 (Wallburg Road) to SR 2632 (Sedge Garden Road) a distance of approximately 4.1 miles. Please see the enclosed copies of the Pre-Construction Notification (PCN), Ecosystem Enhancement Program (EEP) Concurrence Letter, Stormwater Management Plan, permit drawings, and the design plans for the above-referenced project.

The Environmental Assessment (EA) was completed for this project in November 2006; the Finding of No Significant Impact (FONSI) was completed in May 2008. Additional copies are available upon request.

This project calls for a letting date of December 20, 2011 and a review date of November 8, 2011. However, the let date may advance as additional funds become available.

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

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

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

A copy of this permit application will be posted on the NCDOT Website at: http://www.ncdot.org/doh/preconstruct/pe/. If you have any questions or need additional information, please call Sara Easterly at (919) 707-6113.

Sincerely,

E. D. Lucas

for Gregory J. Thorpe, Ph.D., Manager
Project Development & Environmental Analysis Branch

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 N WP 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:	SR 2643 (Union Cross Rd.) from SR 2691 (Wallburg Rd.) to SR 2632 (Sedge Garden Rd.)
2b. County·	Forsyth
2c. Nearest municipality / town:	Kernersville
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P or state project no:	U-4909

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 i f applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no..	(919) 707-6113
3g. Fax no..	(919) 212-5785
3h. Email address:	seeasterly@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):	Latitude: 36.0620 (DD.DDDDDD)	Longitude: - 80.1130 (-DD.DDDDDD)
1c. Property size:	20 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Fiddlers Creek	
2b. Water Quality Classification of nearest receiving water:	C	
2c. River basin:	Yadkin Pee-Dee	
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: Urban and Developed Land		
3b. List the total estimated acreage of all existing wetlands on the property: 0.015		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 187		
3d. Explain the purpose of the proposed project: The need for the proposed action is based on the projected failure in traffic operations on Union Cross Road before the year 2030. The project area and vicinity are experiencing continual growth and include many existing and planned residential, commercial, and industrial developments. The purpose for the proposed action is to provide sufficient capacity for the 20 year projected traffic by improving traffic flow through the study area.		
3e. Describe the overall project in detail, including the type of equipment to be used: The North Carolina Department of Transportation (NCDOT) proposes to widen Union Cross Road from an existing three-lane road to a multilane transportation facility for approximately 4.1 miles. The recommended improvements extend from the Wallburg Road intersection south of US 311 to the Sedge Garden/Old Salem Road intersection north of I-40. Two existing interchange modifications or reconstructions are included for the junctions with US 311 and I-40. Standard road building equipment, such as trucks, dozers, and cranes will be used.		
4. Jurisdictional Determinations		
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	☒ Yes	☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☒ Final	
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: RK&K Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. The initial verification was on January 23, 2006 with John Thomas of the U.S. Army Corp of Engineers. The NC Department of Transportation does not request the Corps to evaluate our site using the Rapanos Guidance. Instead, I am satisfied with the delineation as reviewed and approved in the field by John Thomas of the Corps prior to 6/5/2007, and ask that you approve the delineation submitted to you based on that field review by John Thomas of your staff.		

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 1 ☐ P ☐ T	Fill, Mechanized Clearing	Riverine	☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 2 ☐ P ☐ T	Mechanized Clearing	Riverine	☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 3 ☐ P ☐ T	Fill	Riverine	☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T	Mechanized Clearing	Riverine	☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 1 ☐ P ☐ T Utility Impacts			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0 Permanent 0 Temporary

2h. Comments:

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☐ P ☒ T	Fill	UT to Abbott's Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	18 (T)
Site 2 ☒ P ☒ T	Fill	UT to Mary Reich Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	6	24 (P) 11 (T)
Site 3 ☒ P ☒ T	Fill from Fill Slope	UT to Mary Reich Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	11 (P) 27 (T)
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	35 Perm 56 Temp

3i. Comments:

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
			4f. Total open water impacts	0 Permanent 0 Temporary

4g. Comments:

5. Pond or Lake Construction

If pond or lake construction proposed, then complete the chart below.

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
	5f. Total							

5g. Comments:

5h. Is a dam high hazard permit required?	☐ Yes ☐ No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?	☐ Neuse ☐ 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. See Stormwater Management Plan. Used asymmetrical widening alternative to minimize impacts.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. 2:1 slopes are to be used at jurisdictional sites,, and Best Management Practices for Surface Waters.		
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	
2b. If yes, mitigation is required by (check all that apply):	☒ DWQ ☒ Corps	
2c. If yes, which mitigat ion option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	☒ Yes	
4b. Stream mitigation requested:	70 linear feet	
4c. If using stream mitigation, stream temperature:	☒ warm ☐ cool ☐cold	
4d. Buffer mitigation requested (DWQ only):	0 square feet	
4e. Riparian wetland mitigation requested:	0 acres	
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?	☐ Yes ☒ No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.

Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1				
Zone 2				
	6f. **Total buffer mitigation required:**			

6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).

Jeffrey's Warehouse Mitigation Site Debit. See attached.

6h. Comments:

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

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☐ Yes	☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes	☒ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NHP, USFWS website, NCDOT field surveys on May 29, 2009 for red-cockaded woodpecker.		
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 A Memorandum of Agreement (MOA) with the NC Historic Preservation Office was signed 7/31, 2007 and is located in Appendix C of the Finding of No Significant Impact (FONSI)		
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. L. Luck Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	4.27.11 Date

Ecosystem Enhancement PROGRAM

April 26, 2011

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

U-4909, SR 2643 (Union Cross Road) from SR 2691 (Wallburg Road) to SR 2632 (Sedge Garden Road)), Forsyth County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on April 25, 2011, the impacts are located in CU 03040103 of the Yadkin River Basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Yadkin 03040103 CP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	35	0	0	0	0	0
Mitigation Units (Credits-up to 2:1)	0	0	70	0	0	0	0	0

EEP commits to implementing sufficient compensatory stream mitigation credits to offset the impacts associated with this project in accordance with 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 919-715-1929.

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. John Thomas, USACE – Raleigh Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: U-4909

Restoring... Enhancing... Protecting Our State

NCDENR

STORMWATER MANAGEMENT PLAN

Project: 40278.1.1, TIP No. U-4909 January 9, 2009
Forsyth County
Hydraulics Project Engineer: Matthew L. Cook P.E. (RKK Engineers)
Bill Zerman, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project consists of widening SR 2643 (Union Cross Rd.) in Forsyth County. This section runs from SR 2691 (Wallburg Rd.) to north of SR 2632 (Sedge Garden Rd.). The overall length of the project is approximately 4.11 mi. The existing SR 2643 will be widened to a divided highway with two or more lanes in each direction. The project will be controlled access at the US 311 interchange and the I-40 interchange with the rest of the project being standard right-of-way. Proposed typical sections consist of a raised grass median, 2 lanes each direction (one 12' and one 14') in 2'-6" curb and gutter. The project drainage system consists of cross pipes, grated inlets and associated pipe systems, and side and lateral stormwater ditches and swales.

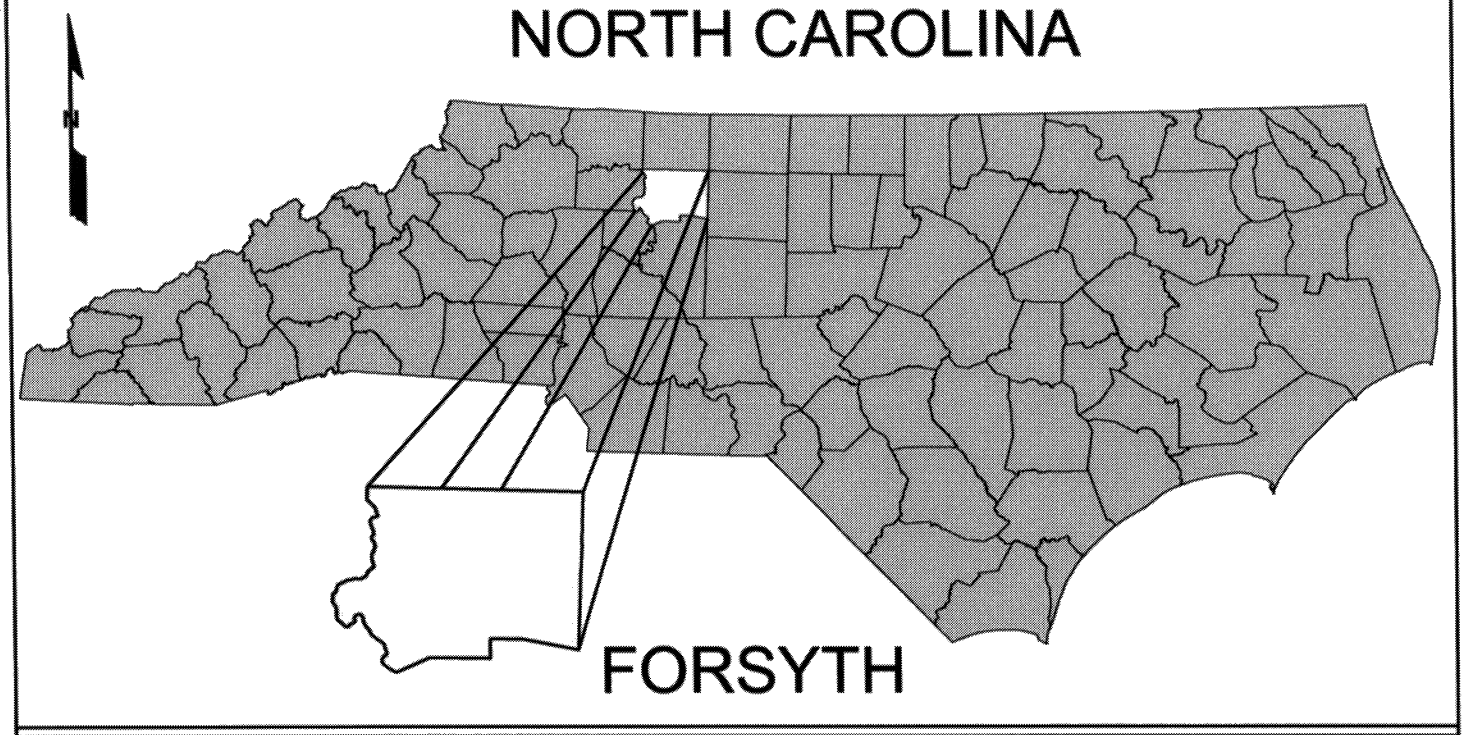
ENVIRONMENTAL DESCRIPTION

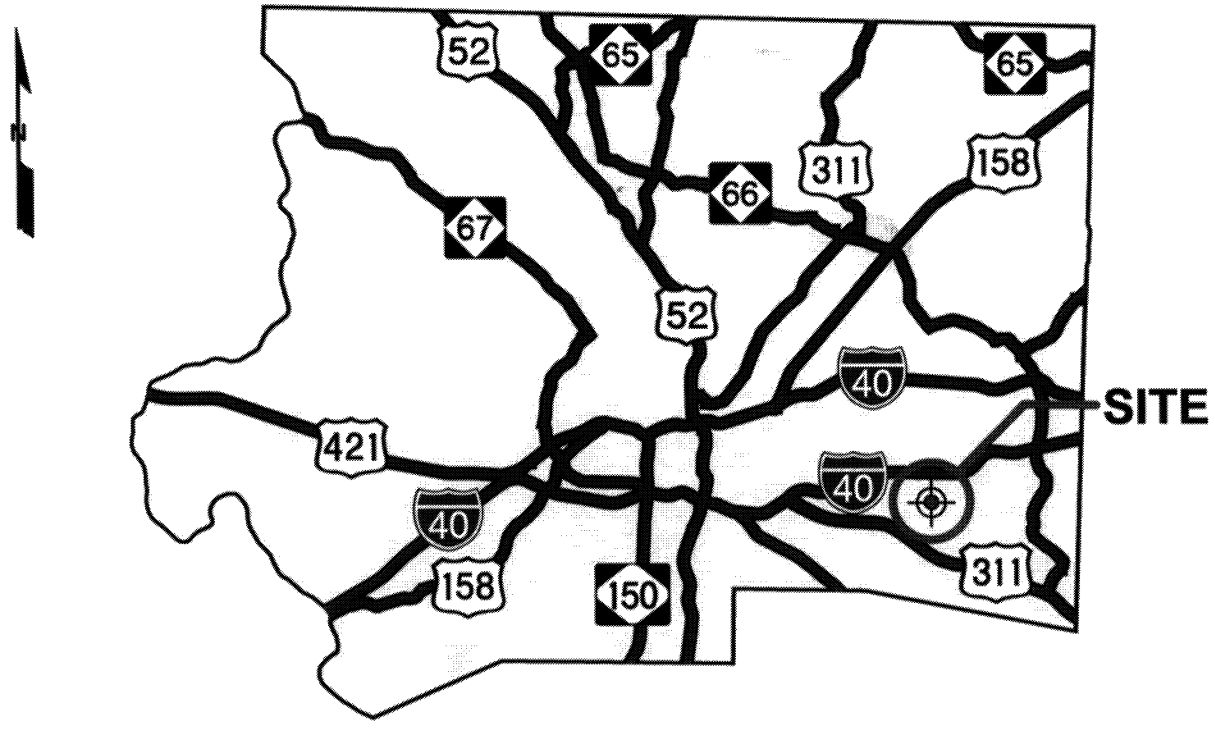
The project is located in the Yadkin River Basin. Therefore, it is not subject to North Carolina Department of Environment and Natural Resources (NCDENR) rules and regulations concerning stream buffers and filtration. There are three jurisdictional streams affected on the project and we are not affecting any wetlands. There are no major structure water crossings on the project.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the state's surface waters by the location, construction and operation of the highway system. BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution.

We are discharging to two open jurisdictional surface waters on this project. All outfalls were examined for Pre vs. Post conditions. Minimization measures were used at Sites 2 and 3 by using 2:1 fill slopes. The impact to Site 1 is due to replacing the existing pipe and using a riprap pad at the outlet to minimize the velocity as it enters the jurisdictional stream.



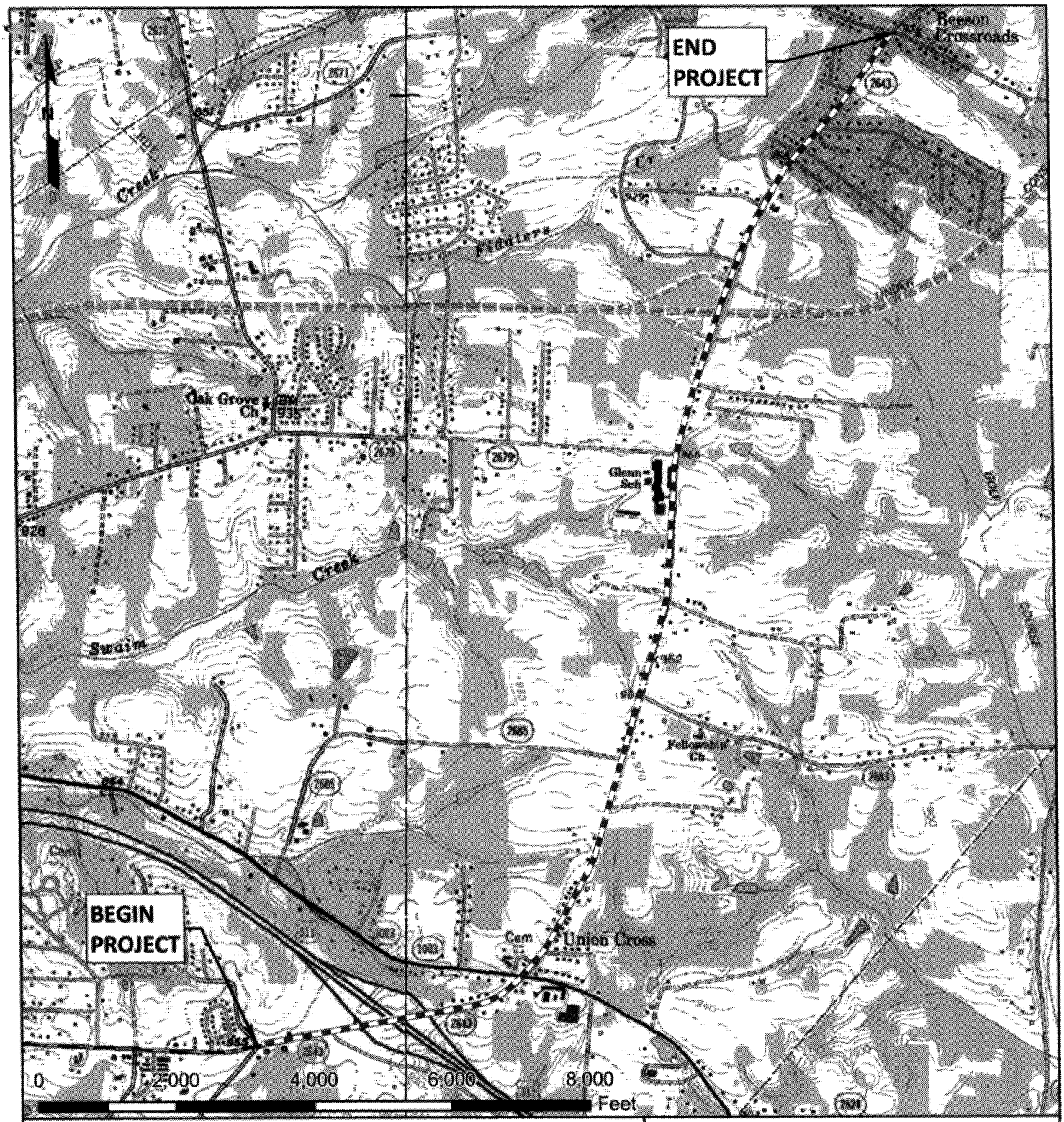


VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
FORSYTH COUNTY
PROJECT: 40278.1.1 (U-4909)
AR 2643 (UNION CROSS RD)
FROM SR 2691 (WALLBURG RD)
TO SR 2632 (SEDGE GARDEN RD)

Permit Drawing
Sheet 1 of 13



1 inch = 2,000 feet

LOCATION

NCDOT

DIVISION OF HIGHWAYS
FORSYTH COUNTY
PROJECT: 40278.1.1 (U-4909)
AR 2643 (UNION CROSS RD)
FROM SR 2691 (WALLBURG RD)
TO SR 2632 (SEDGE GARDEN RD)

Permit Drawing
Sheet 2 of 13

Source: USGS 7.5 Minute Quadrangle, Kernersville and Winston-Salem East, NC

SITE NO	PROP. NO.	PROPERTY OWNER NAME	PROP. OWNER ADDRESS
1	157	Gary D and Juandane S Smith	276 Tradewinds Drive, Apt 4 San Jose, CA 95123

N C DEPT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FORSYTH COUNTY
PROJECT 40278 1 1 (U-4909)
Permit Drawing
Sheet 3 of 13

R:/z-misc/Hydro/Wetprop xls

WETLAND PERMIT IMPACT SUMMARY

Site No	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	-L- 204+80 RT	30" RCP							0.00 *		18	
2	-Y3- 61+75 LT	54" CSP						0.00 *	0.00 *	24	11	
3	-Y3- 62+00 LT	FILL SLOPE						0.00 *	0.00 *	11	27	
TOTALS.			0.00	0.00	0.00	0.00	0.00	0.00 *	0.00 *	35	56	

NOTE
* < 0 01ac

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

FORSYTH COUNTY
PROJECT: 40278 1 1 (U-4909)

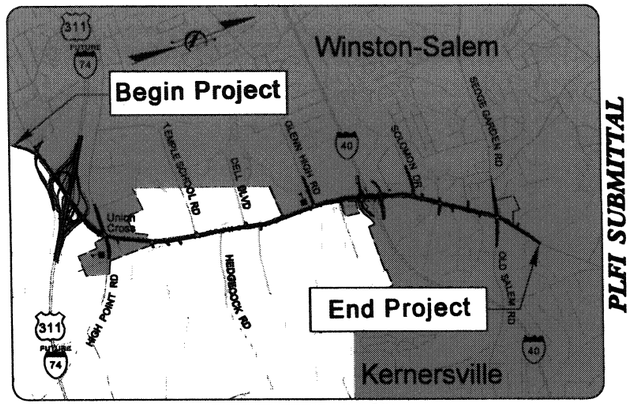
Permit Drawing
Sheet 4 of 13

ATN Revised 3/31/05
R:/z misc/Hydro/Permit/U 4909 wetland Summary xls

TIP PROJECT: U-4909

CONTRACT:

SEE SHEET 1-A FOR INDEX OF SHEETS
SEE SHEET 1-B FOR CONVENTIONAL SYMBOLS



VICINITY MAP

PLFI SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4909	1	

STATE PROJ NO.	F.A. PROJ NO.	DESCRIPTION
40278.1.1	STP-2643(2)	PE
40278.2.1	STP-2643(3)	RW

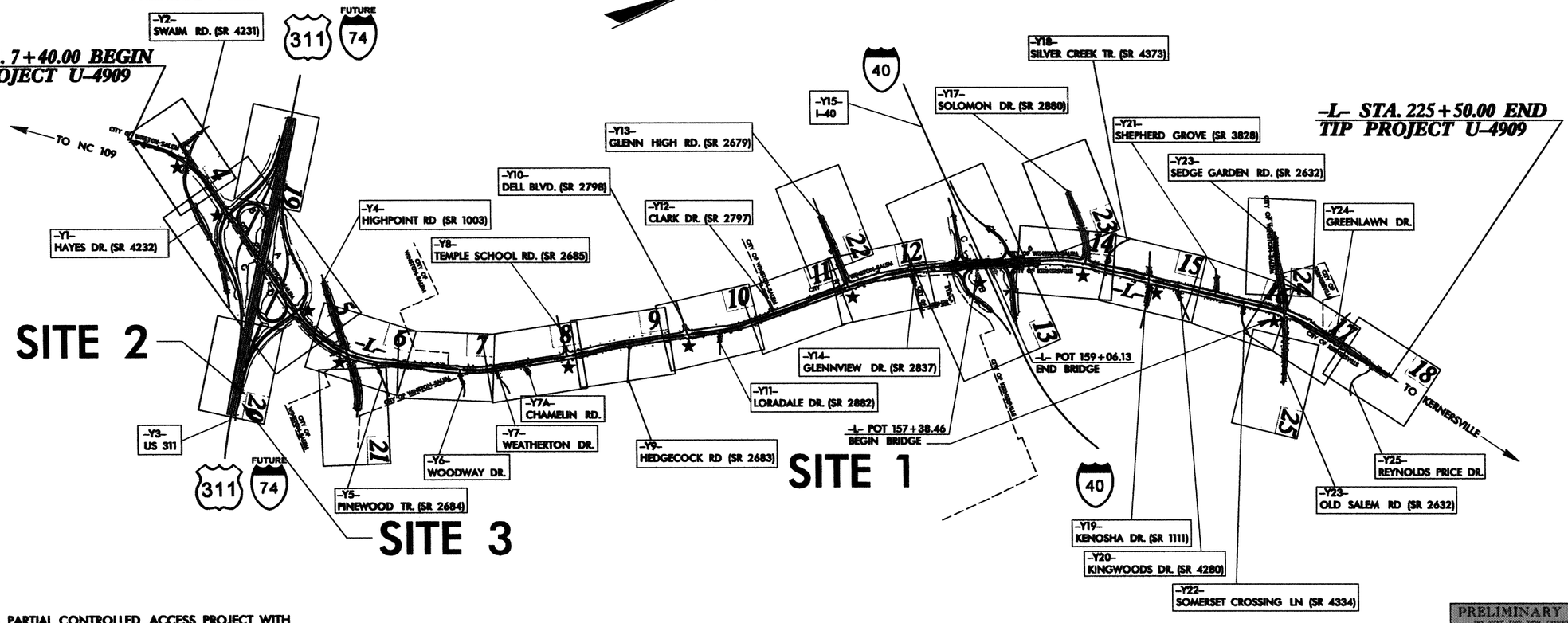
Permit Drawing
Sheet 5 of 13

LOCATION: *SR 2643 (UNION CROSS RD.) FROM SR 2691 (WALLBURG RD) TO SR 2632 (SEDGE GARDEN RD.)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, STRUCTURES, CULVERTS, SIGNING, AND SIGNALS*

–L– STA. 7+40.00 BEGIN TIP PROJECT U-4909

–L– STA. 225+50.00 END TIP PROJECT U-4909



NOTES:
1. THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS 50 0 50 100
PROFILE (HORIZONTAL) 50 0 50 100
PROFILE (VERTICAL) 10 0 10 20

DESIGN DATA

ADT 2011 = 25,120
ADT 2031 = 41,520
DHV = 10%
D = 60%
T = 9% *
V = 50 MPH
CLASS = URBAN COLLECTOR
* TTST = 3% DUAL = 6%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4909 ..... 4.031 mi
LENGTH STRUCTURE TIP PROJECT U-4909 .... 0.100 mi
TOTAL LENGTH TIP PROJECT U-4909 .... 4.131 mi

PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO F-0112

FOR
DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 15, 2008

LETTING DATE:
DECEMBER 20, 2011

J.T. PEACOCK, JR., P.E.
PROJECT ENGINEER
MICHAEL T. MERRITT, P.E.
PROJECT DESIGN ENGINEER
NCDOT CONTACT:
DOUG TAYLOR, P.E.
PROJECT ENGINEER – PROJECT SERVICES

HYDRAULICS ENGINEER
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
P.E.
SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
P.E.
STATE HIGHWAY DESIGN ENGINEER

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mmcook

PROJECT REFERENCE NO.	SHEET NO.
U-4909	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 6 of 13

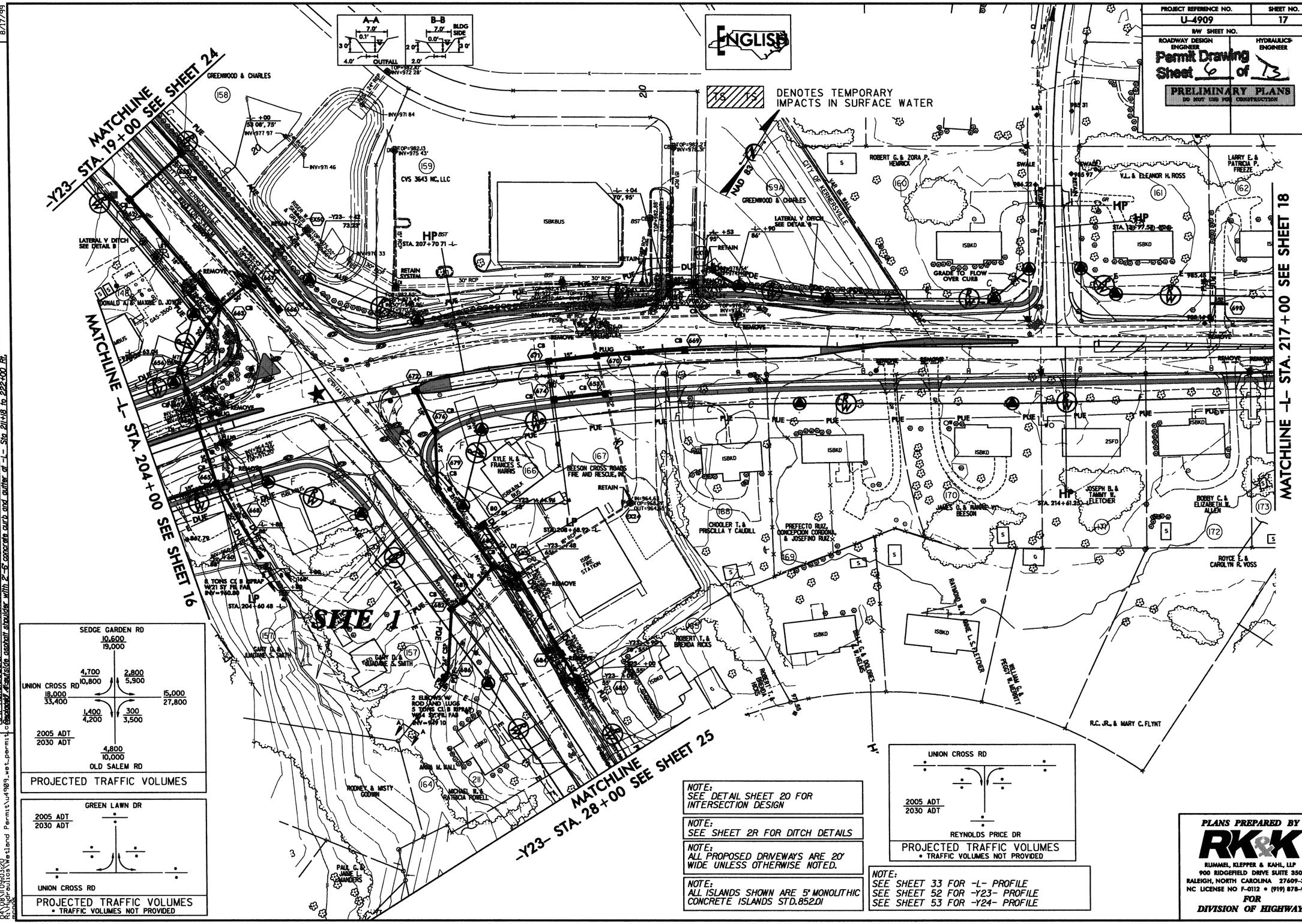
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

R/W Revision Date: 12/02/2008 – Revised PUE on Parcels 165 and 167 (-Y23- Sta.27+00 to 28+00 Left).
R/W Revision Date: – Revised PUE on Parcels 158 (-Y23- Sta.19+00 to 21+50 Left). Revised PDE and PUE on Parcels 159 and 160 (-L- Sta.207+00 to 213+00 Left).
– Revised Parcel 166 (-Y23- Sta.24+50 to 27+00 Left).
– Revised Construction Easement and PDE on Parcel 158 and 159 (-L- Sta.207+00 to 213+00 Left).
– Revised property owner names on Parcels 158 and 159. Combined Parcels 157 and 163. Eliminated Parcel 163. Added new Parcel 159A.

R/W Revision Date: – Revised ownership PDE and PUE to PUE for parcels 142,157,159,159A,166 and 167. Revised a portion of PDE to AUE for parcel 158.
Revised 4 outside asphalt shoulder with 2'-6" concrete curb and gutter at -L- Sta 211+18 to 222+00 Rt.



PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 7 of 13

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

R/W Revision Date: 12/02/2008 – Revised PUE on Parcels 165 and 167, (–Y23– Sta.27+00 to 28+00 Left), Revised PUE and PUE on Parcels 159 and 160 (–L– Sta.207+00 to 213+00 Left) R/W Revision Date: – Revised PUE on Parcels 158 (–Y23– Sta.19+00 to 21+50 Left), Revised PUE and PUE on Parcel 166 (–Y23– Sta.24+50 to 27+00 Left), – Revised Construction Easement and PDE on Parcel 164, Added new Parcel 159A, – Revised property owner names on Parcels 158 and 159, Combined Parcels 157 and 163, Eliminated Parcel 163, Added new Parcel 159A.

R/W Revision Date: – Revised overlapping PDE and PUE to PUE for parcels 148,157,159,159A,166 and 167. Revised a portion of PDE to AUE for parcel 158, – Revised 4' outside asphalt shoulder with 2'-6" concrete curb and gutter on –L– Sta.21+18 to 222+00 Rt.

04\08\10\910\2\roadway\wetland permit\u4909_wet_permit_plan.dgn

ENGLISH

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCHLINE –Y23– STA. 19+00 SEE SHEET 24

MATCHLINE –L– STA. 204+00 SEE SHEET 16

MATCHLINE –L– STA. 217+00 SEE SHEET 18

MATCHLINE –Y23– STA. 28+00 SEE SHEET 25

SITE 1

GREENWOOD & CHARLES

CVS 3643 NC, LLC

ISBKBUS

CITY OF KERNERSVILLE

VAR BK WALL

NAD 83

ROBERT G. & ZORA P HEMRICK

V.L. & ELEANOR H. ROSS

LARRY E. & PATRICIA P FREEZE

DONALD A. & MAXINE D JONES

GARY D. & JUADANE S SMITH

KYLE H. & FRANCES S. HARRIS

BEESON CROSS ROADS FIRE AND RESCUE, INC

ISBK FIRE STATION

CHOOLER T. & PRISCILLA Y CAUDILL

PREFECTO RUIZ, CONCEPCION CORDOVA, & JOSEFINO RUIZ

JAMES O. & NANCY W. BEESON

JOSEPH B. & TAMMY W. LETCHER

BOBBY C. & ELIZABETH W ALLEN

ROYCE E. & CAROLYN R. VOSS

ROBERT T. & BRENDA HICKS

RAYMOND W. & ANNE L. S. FLETCHER

WILLIAM G. & PEGGY W. ABBOTT

R C JR., & MARY C FLYNT

RODNEY & MISTY GODWIN

ANNA M. WALL

MICHAEL W. & PATRICIA POWELL

PAUL C. & JAIME L. SAUNDERS

SEDGE GARDEN RD
10,600 / 19,000
UNION CROSS RD
4,700 / 10,800 | 2,800 / 5,900
18,000 / 33,400 | 15,000 / 27,800
1,400 / 4,200 | 300 / 3,500
2005 ADT / 2030 ADT
4,800 / 10,000
OLD SALEM RD

PROJECTED TRAFFIC VOLUMES

GREEN LAWN DR
2005 ADT / 2030 ADT
UNION CROSS RD

PROJECTED TRAFFIC VOLUMES
• TRAFFIC VOLUMES NOT PROVIDED

UNION CROSS RD
2005 ADT / 2030 ADT
REYNOLDS PRICE DR

PROJECTED TRAFFIC VOLUMES
• TRAFFIC VOLUMES NOT PROVIDED

NOTE:
SEE DETAIL SHEET 20 FOR INTERSECTION DESIGN

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD.852.01

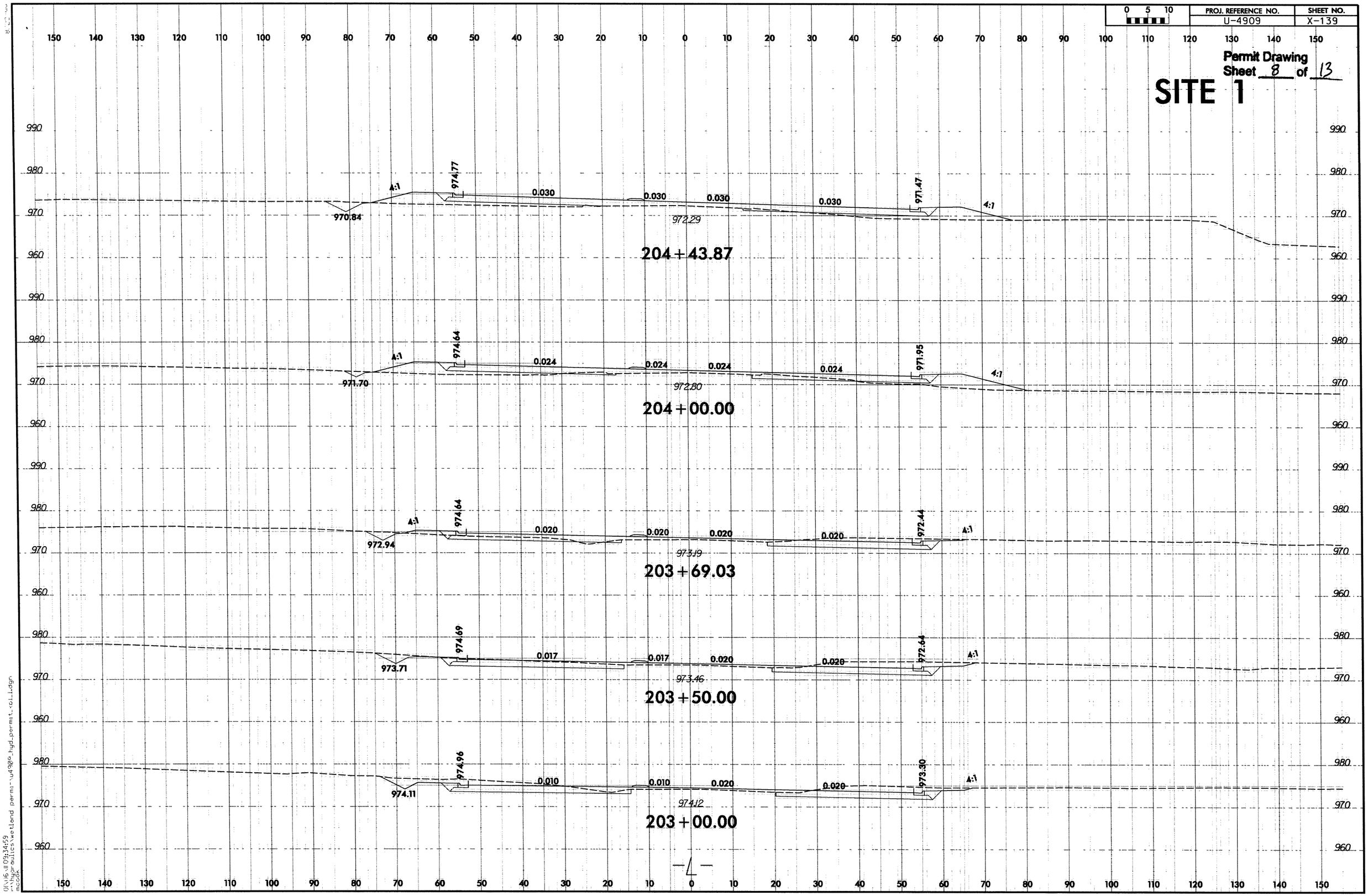
NOTE:
SEE SHEET 33 FOR –L– PROFILE
SEE SHEET 52 FOR –Y23– PROFILE
SEE SHEET 53 FOR –Y24– PROFILE

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4909	X-139

Permit Drawing
Sheet 8 of 13

SITE 1



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	U-4909	X-140

SITE 1

Permit Drawing Sheet 9 of 13

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

990 980 970 960

INTERSECTION -L- @ -Y23- SHEAR LINE

0.030 0.030 0.030 0.030

971.76

4:1

972.60

205+36.89

990 980 970 960

INTERSECTION -L- @ -Y23- SHEAR LINE

0.030 0.030 0.030 0.030

971.62

4:1

972.36

205+16.48

990 980 970 960

INTERSECTION -L- @ -Y23- SHEAR LINE

0.030 0.030 0.030 0.030

971.58

4:1

972.31

205+09.52

990 980 970 960 950

INTERSECTION -L- @ -Y23- SHEAR LINE

0.030 0.030 0.030 0.030

971.54

4:1

972.22

205+00.00

—L—

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mcook

PROJECT REFERENCE NO.	SHEET NO.
U-4909	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 10 of 13

REVISIONS

IMOGENE B. IDOL

ENGLISH

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

MAP 83

A-A 2.5' 0.1' 1.5' 1.5' INFALL

B-B 20.0'-40.0' 0.2' 10.0' 20.0' 5.0' OUTFALL

C-C 5.0' 0.0' 2.0' 2.0' CONCRETE

D-D 4.0' 0.5' 2.5' 4.0' OUTFALL

-Y3RPD- PT Sta. 10+00.00

GEORGIA B SMITH

JESSE G TAYLOR

MATCHLINE -Y3RPD- 21+00 SEE SHEET 5

MATCHLINE -Y3- 50+50 SEE SHEET 5

-Y3RPD- SC Sta. 15+41.98

-Y3RPD- TS Sta. 13+41.98

-Y3- TS Sta. 61+70.18

-Y3- SC Sta. 62+60.18

SITE 2

SITE 3

CUT/FILL TRANSITION 2 TONS CL B RIPRAP W7 SY FIL FAB

TIE TO EXIST. DITCH

REMOVE 24" 18" RCP AND DI

SPECIAL CUT DITCH SEE DETAIL A

INV=917.32 2 TONS CL B RIPRAP W7 SY FIL FAB

LATERAL V DITCH SEE DETAIL B

RETAIN

GRADE TO DRAIN

FS SEE DETAIL J

TIE TO EXIST SYSTEM

COLLAR

MATCH TO EXIST DITCH

HW

CAT-1

GRAU 350

N 50° 57' 00.0" W

S 54° 13' 30.3" E

S 53° 15' 05.4" E

S 55° 13' 54.6" E

RETAIN SYSTEM

-Y3RPC- POC Sta. 10+00.00

-Y3- POC Sta. 65+00.00

END CONSRUCTION

60" CMP, NOT 54" CMP

GOOD COND.

WILLIAM & ONEIDA THOMAS

CHRISTOPHER L GUYER

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
SEE SHEETS 36 & 37 FOR -Y3- PROFILE
SEE SHEET 40 FOR -Y3RPC- PROFILE
SEE SHEETS 40 & 41 FOR -Y3RPD- PROFILE

NOTE:
ALL PROP FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED.

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD 852.01

BM#10
-BL4 STA 61+74
443' RT
N 836033
E 1668360
ELEV = 878.52

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO	SHEET NO.
U-4909	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 11 of 13

REVISIONS

IMOGENE B. IDOL

ENGLISH

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

NAD 83

A–A: 2.5' | 0 1' | 1 5' | 1.5' INFALL
B–B: 20.0'-40.0' | 0 2' | 10.0'-20 0' | 5.0' OUTFALL
C–C: 5.0' | 0 0' | 2 0' | 2.0' CONCRETE
D–D: 4.0' | 0.5' | 2.5' | 4.0' OUTFALL

GEORGIA B SMITH

JESSE G. TAYLOR

-Y3RPD- PT Sta. 10+00.00

-Y3RPD- SC Sta. 15+41.98

-Y3RPD- TS Sta. 13+41.98

-Y3- TS Sta. 61+70.18

-Y3- SC Sta. 62+60.18

SITE 2

SITE 3

MATCHLINE -Y3RPD- 21+00 SEE SHEET 5

MATCHLINE -Y3- 50+50 SEE SHEET 5

CUT/FILL TRANSITION 2 TONS CL B RIPRAP W7 SY FIL FAB

TIE TO EXIST. DITCH

927.44

REMOVE 24' 18" RCP AND DI

SPECIAL CUT DITCH SEE DETAIL A

INV=917.32 2 TONS CL B RIPRAP W7 SY FIL FAB

TOP=922.29' INV=916.33'

2GI

3GI

TOP=916.52 INV=910.80' COLLAR

FS SEE DETAIL J

TIE TO EXIST SYSTEM

LATERAL V DITCH SEE DETAIL B

926.42

924.41

INV=915.87'

RETAIN

GRADE TO DRAIN

CUT/FILL TRANSITION 2 TONS CL B RIPRAP W7 SY FIL FAB

CAT-1

883.57

883.20

MATCH TO EXIST DITCH

880.24 COLLAR TIE TO EXIST SYSTEM

INV=880.33

GRAU 350

TOP=907.95 INV=904.38'

N 50° 57' 00.0" W

S 54° 13' 30.3" E

S 53° 15' 05.4" E

RETAIN SYSTEM

INV=915.17 TOP=921.97 INV=915.14'

18" RCP

INV=909.14 TOP=915.75

INV=909.13 INV=909.06'

TOP=908.00 INV=905.19'

INV=906.52

INV=901.19

36" RCP

TOP=877.10

END CONSRUCTION -Y3- POC Sta. 65+00.00

INV=876.80

60" CMP NOT 54" CMP

54" CMP

INV=876.31

-Y3RPC- POC Sta. 10+00.00

24" RCP

GOOD COND.

912.12

INV=912.63

907.53

INV=905.27

905.79

904.89

S 55° 13' 54.6" E

S 55° 13' 54.6" E

50.00'

GOOD COND.

RETAIN

36" RCP

893.49

INV=895.27

893.37

JS NEU

WILLIAM & ONEIDA THOMAS

CHRISTOPHER L GUYER

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

JESSE G TAYLOR

NOTE:
SEE SHEETS 36 & 37 FOR -Y3- PROFILE
SEE SHEET 40 FOR -Y3RPC- PROFILE
SEE SHEETS 40 & 41 FOR -Y3RPD- PROFILE

NOTE:
ALL PROP FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED.

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD 852.01

BM=10
-B-: 4 STA 61+74
449 RT
N 836033
E 1668960
ELEV = 878.52

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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mmoore

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4909	X-187

Permit Drawing
Sheet 12 of 13

SITE 2 & 3

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

930 920 910 900 890 880

2:1

910.34

61+57.21

930 920 910 900 890 880

2:1

911.04

61+00.00

940 930 920 910 900 890

-Y3RPD- Sta 11+07.30

0.019

912.01

60+50.00

-Y3-

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

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mcrook

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4909	X-188

Permit Drawing
Sheet 13 of 13

SITE 2 & 3

62 + 60.18

909.82

62 + 00.00

910.12

61 + 70.18

910.25

2:1

-Y3-

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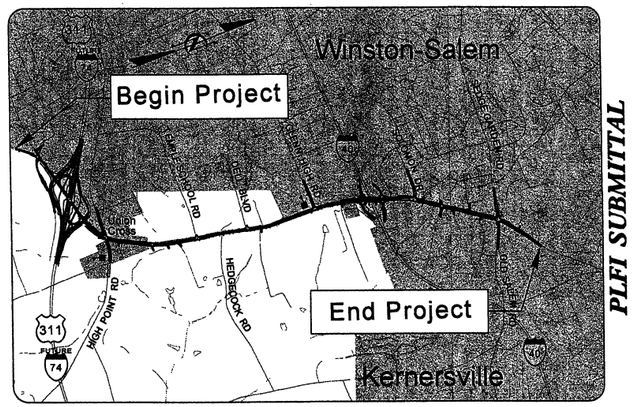
mcook

09/08/09

TIP PROJECT: U-4909

CONTRACT:

SEE SHEET 1-A FOR INDEX OF SHEETS
SEE SHEET 1-B FOR CONVENTIONAL SYMBOLS



VICINITY MAP

PLFI SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

STATE	STATE PROJECT REFERENCE NO	SHEET NO.	TOTAL SHEETS
N.C.	U-4909	1	

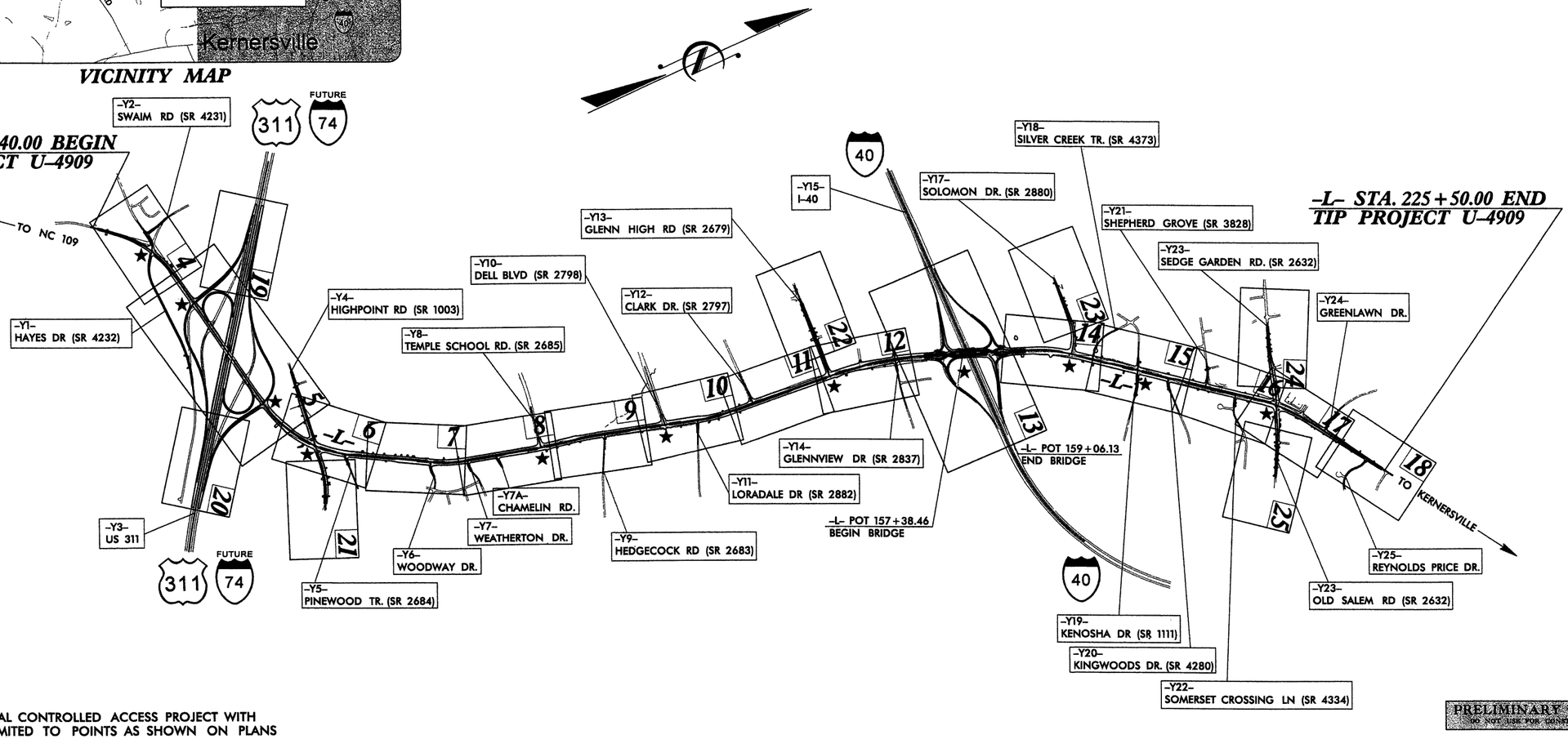
STATE PROJ NO	F A PROJ NO	DESCRIPTION
40278.1.1	STP-2643(2)	PE
40278.2.1	STP-2643(3)	R/W

LOCATION: SR 2643 (UNION CROSS RD.) FROM SR 2691 (WALLBURG RD) TO SR 2632 (SEDGE GARDEN RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES, CULVERTS, SIGNING, AND SIGNALS

-L- STA. 7+40.00 BEGIN TIP PROJECT U-4909

-L- STA. 225+50.00 END TIP PROJECT U-4909



NOTES:
1 THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS: 50 0 50 100
PROFILE (HORIZONTAL): 50 0 50 100
PROFILE (VERTICAL): 10 0 10 20

DESIGN DATA

ADT 2011 = 25,120
ADT 2031 = 41,520
DHV = 10%
D = 60%
T = 9% *
V = 50 MPH
CLASS = URBAN COLLECTOR
* TTST = 3% DUAL = 6%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4909	4 031 mi
LENGTH STRUCTURE TIP PROJECT U-4909	0 100 mi
TOTAL LENGTH TIP PROJECT U-4909	4 131 mi

PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO F-0112

FOR DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 15, 2008

LETTING DATE: DECEMBER 20, 2011

J.T. PEACOCK, JR., P.E.
PROJECT ENGINEER
MICHAEL T MERRITT, P.E
PROJECT DESIGN ENGINEER
NCDOT CONTACT:
DOUG TAYLOR, P E
PROJECT ENGINEER – PROJECT SERVICES

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

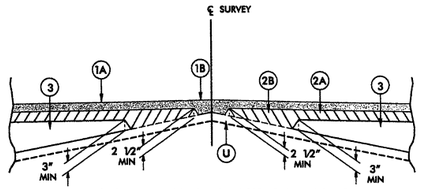
REVISED FOR SUBMITTAL

N:\22\0 14:51:30
N:\Roadway\Proj\u4909_rdy_tsh.dgn
sholden

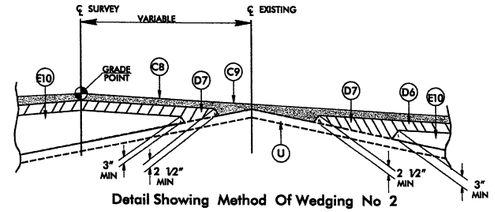
6/2/99

TO BE USED IN CONJUNCTION WITH WEDGING DETAIL NO 1:

LINE	1A	1B	2A	2B	3
-L- & ALL Y15 RAMPS	C8	C9	D6	D7	E10
-Y4- & -Y23-	C5	C6	D2	D3	E4
-Y5-, -Y6-, -Y7-, -Y11-, -Y17-, -Y19-, -Y20-, -Y21-, -Y22-, & -Y24-	C5	C6	N/A	N/A	E4
-Y13-	C5	C6	D1	D3	E4
-Y23-	C1	C3	D1	D3	E4



Detail Showing Method of Wedging No 1



Detail Showing Method Of Wedging No 2

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

PAVEMENT DESIGN ENGINEER

PAVEMENT SCHEDULE

A1	PROP 12" PORTLAND CEMENT CONCRETE PAVEMENT	D5	PROP APPROX 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19 0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ YD	J1	PROP 6" AGGREGATE BASE COURSE (FOR MAINTENANCE ASPHALT)
C1	PROP APPROX 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9 5A, AT AN AVERAGE RATE OF 137 5 LBS PER SQ YD.	D6	PROP APPROX 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19 0C, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD	J2	PROP 8" AGGREGATE BASE COURSE
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS PER SQ YD. IN EACH OF TWO LAYERS	D7	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH	J3	PROP VAR. DEPTH AGGREGATE BASE COURSE
C3	PROP VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH	E1	PROP APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25 0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD	R1	2'-6" CONCRETE CURB AND GUTTER
C4	PROP APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9 5B, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD.	E2	PROP APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25 0B, AT AN AVERAGE RATE OF 513 LBS PER SQ YD	R2	1'-6" CONCRETE CURB AND GUTTER
C5	PROP APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9 5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ YD IN EACH OF TWO LAYERS.	E3	PROP APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25 0B, AT AN AVERAGE RATE OF 570 LBS PER SQ. YD	R3	5" MONOLITHIC CONCRETE ISLAND
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH	E4	PROP VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25 0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH	S	4" CONCRETE SIDEWALK
C7	PROP APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9 5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD	E5	PROP APPROX. 3½" ASPHALT CONCRETE BASE COURSE, TYPE B25 0C, AT AN AVERAGE RATE OF 399 LBS PER SQ YD	T	EARTH MATERIAL
C8	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	E6	PROP APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25 0C, AT AN AVERAGE RATE OF 627 LBS PER SQ. YD.	U	EXISTING PAVEMENT
C9	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 2" IN DEPTH	E7	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS PER SQ. YD. IN EACH OF TWO LAYERS	W	WEDGING
D1	PROP APPROX 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD	E8	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	X1	4" PERMEABLE ASPHALT DRAINAGE LAYER
D2	PROP APPROX 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19 0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD	E9	PROP APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS PER SQ YD IN EACH OF TWO LAYERS.	Y1	MILLING (2 5")
D3	PROP VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	E10	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.	Y2	VARIABLE DEPTH MILLING
D4	PROP APPROX 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19 0C, AT AN AVERAGE RATE OF 285 LBS PER SQ YD.	G1	PROP 10" CEMENT TREATED BASE COURSE		

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

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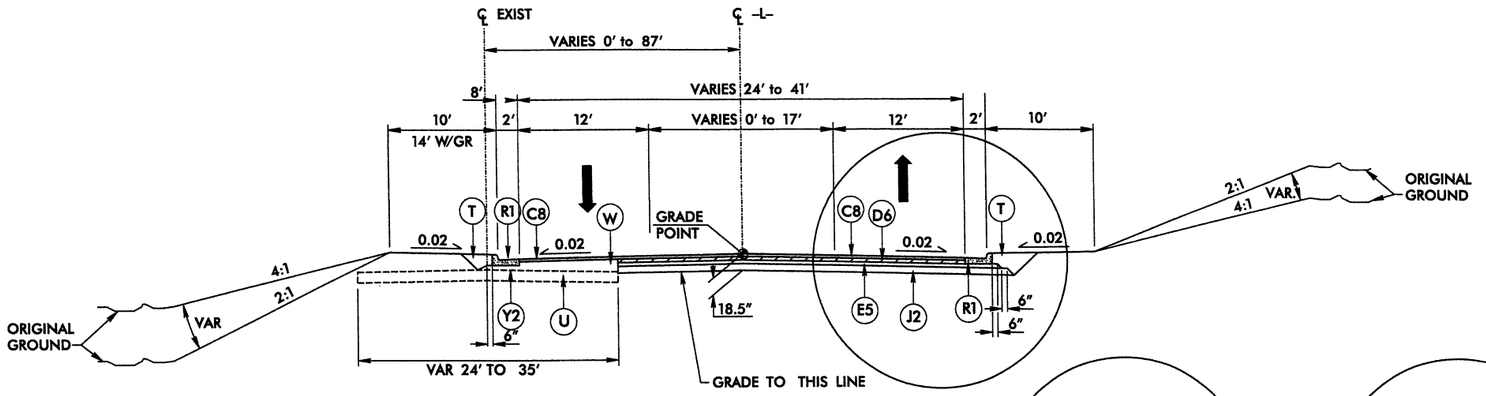
jmiller

6/2/99

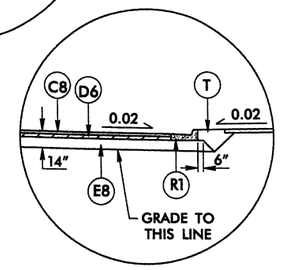
C8	3" S9.5C
D4	2 1/2" I19.0C
D6	4" I19.0C
E5	3 1/2" B25.0C
E8	7" B25.0C
G1	10" CTBC
J2	8" ABC
R1	2'-6" CURB
R3	5" MCI
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING
Y2	VAR. MILLING

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

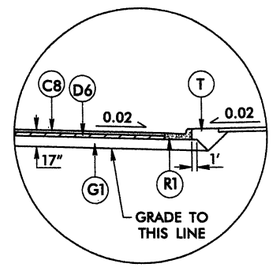
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT



TYPICAL SECTION NO. 1



DETAIL A



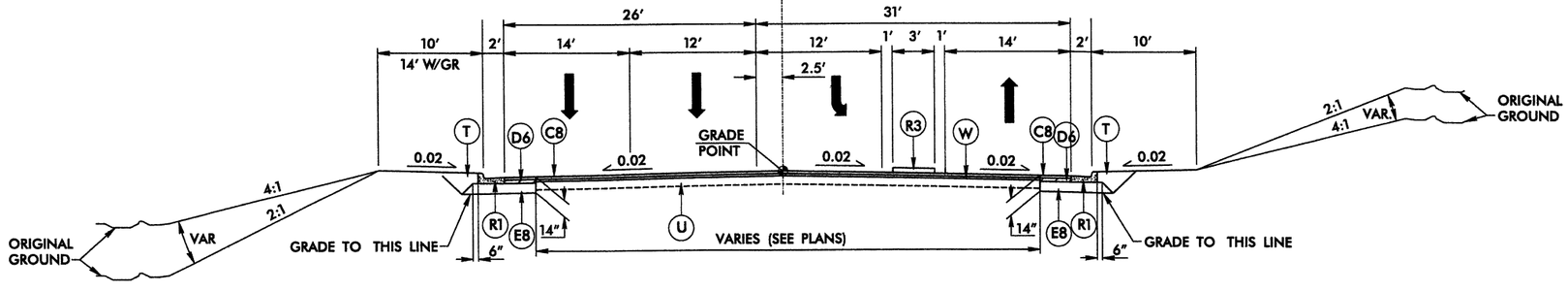
DETAIL B

ALTERNATE PAVEMENT DESIGN TO BE USED FOR ALL -L- LINE TYPICALS

USE TYPICAL SECTION NO. 1
AT THE FOLLOWING LOCATIONS:

-L- STA 8+15 00 TO 17+50 00

FOR TYPICAL SECTION NOS 1 THRU 6	
FILL OR CUT HEIGHTS	SLOPE
0' – 5'	4:1
5' – 10'	3:1
> 10'	2:1



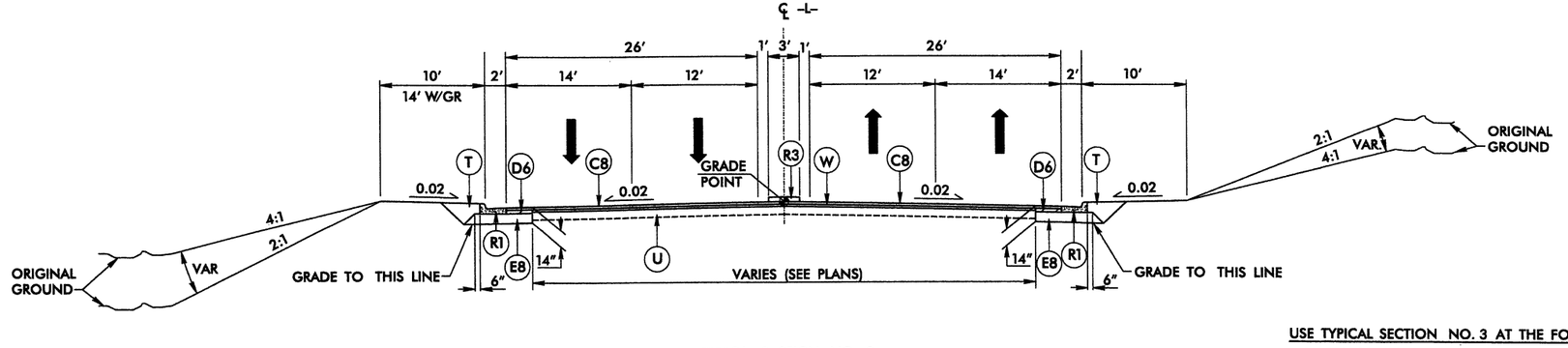
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
AT THE FOLLOWING LOCATIONS:

-L- STA 17+50 00 TO 22+16 75

TRANSITION FROM TYPICAL SECTION NO. 2 TO TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:

-L- STA 22+16 75 TO 23+16 75



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:

-L- STA 23+16 75 TO 34+91 88 (BEGIN EXIST BRIDGE)

-L- STA 38+27 88 (END EXIST BRIDGE) TO STA 46+35 00

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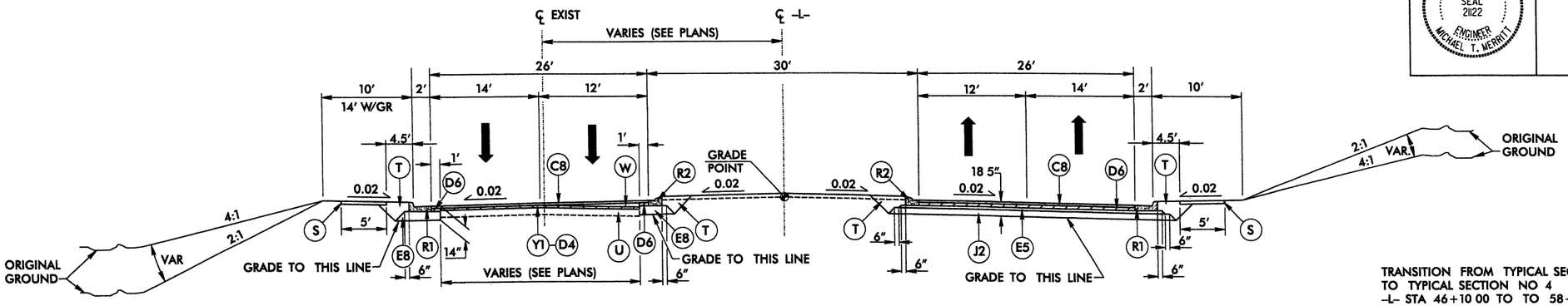
C8	3" S9.5C
D4	2 1/2" I19.0C
D6	4" I19.0C
E5	3 1/2" B25.0C
E8	7" B25.0C
J2	8" ABC
R1	2'-6" CURB
R2	1'-6" CURB
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING
Y1	2.5" MILLING

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2B

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

PAVEMENT DESIGN ENGINEER

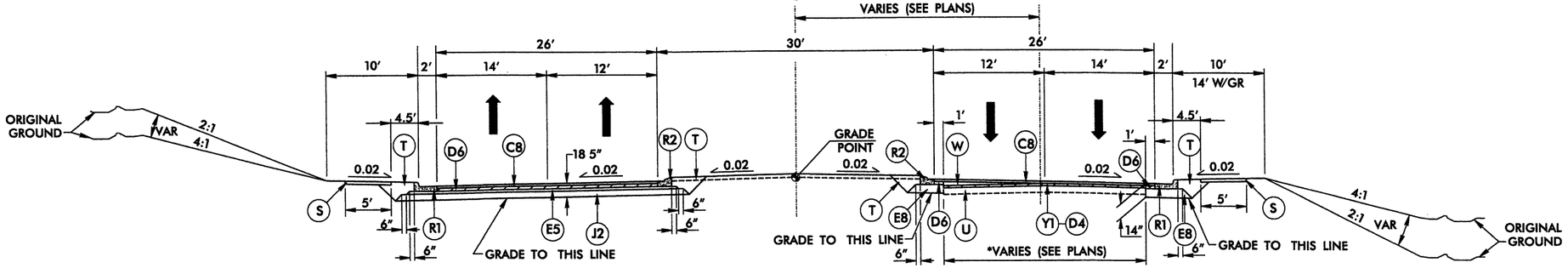


TYPICAL SECTION NO. 4

TRANSITION FROM TYPICAL SECTION NO 3
TO TYPICAL SECTION NO 4
-L- STA 46+10 00 TO TO 58+00 00

USE TYPICAL SECTION NO. 4
AT THE FOLLOWING LOCATIONS:
-L- STA 58+00 00 TO 93+00 00
-L- STA 119+00 00 TO 136+00 00
-L- STA 206+00 00 TO STA 210+60 00

FOR TYPICAL SECTION NOS 1 THRU 6	
FILL OR CUT HEIGHTS	SLOPE
0' – 5'	4:1
5' – 10'	3:1
> 10'	2:1



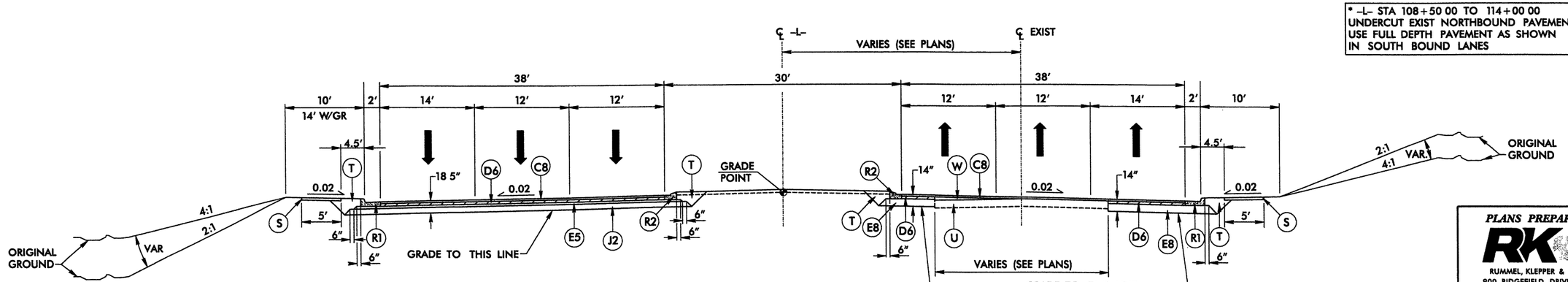
TYPICAL SECTION NO. 5

TRANSITION FROM TYPICAL SECTION NO 4
TO TYPICAL SECTION NO 5
-L- STA 93+00 00 TO TO 97+00 00
-L- STA 136+00 00 TO 141+00 00

USE TYPICAL SECTION NO. 5
AT THE FOLLOWING LOCATIONS:
*-L- STA 97+00 00 TO 116+00 00
-L- STA 141+00 00 TO 157+38 46 (BEGIN BRIDGE)
-L- STA 159+06 13 (END BRIDGE) TO STA 164+00 00

TRANSITION FROM TYPICAL SECTION NO 5
TO TYPICAL SECTION NO 4
-L- STA 116+00 00 TO TO 119+00 00

* -L- STA 108+50 00 TO 114+00 00
UNDERCUT EXIST NORTHBOUND PAVEMENT
USE FULL DEPTH PAVEMENT AS SHOWN
IN SOUTH BOUND LANES



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
AT THE FOLLOWING LOCATIONS:
-L- 164+00 00 TO STA 206+00 00

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6/2/99

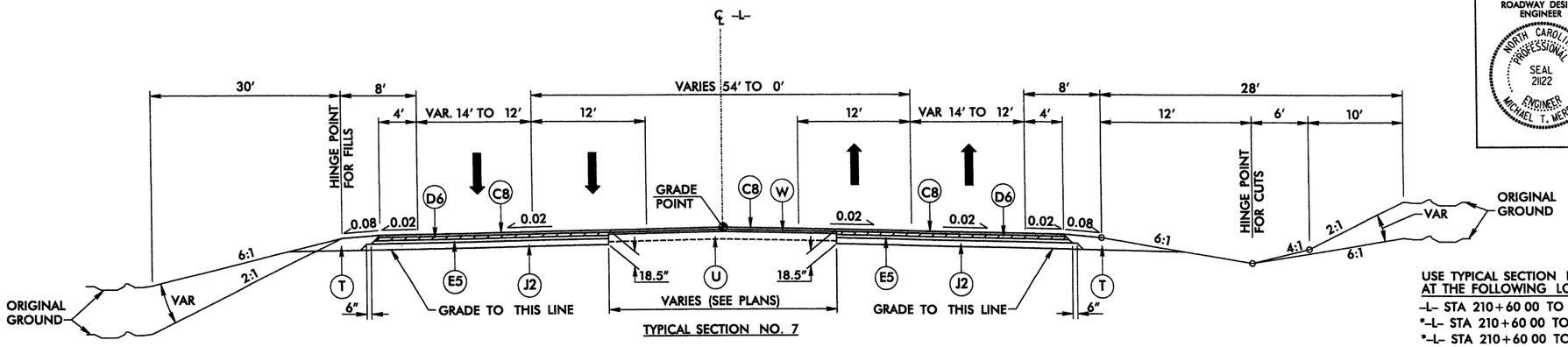
C5	3" S9.5B
C8	3" S9.5C
D2	4" I19.0B
D6	4" I19.0C
E1	4" B25.0B
E5	3 1/2" B25.0C
J2	8" ABC
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2C

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

PAVEMENT DESIGN ENGINEER

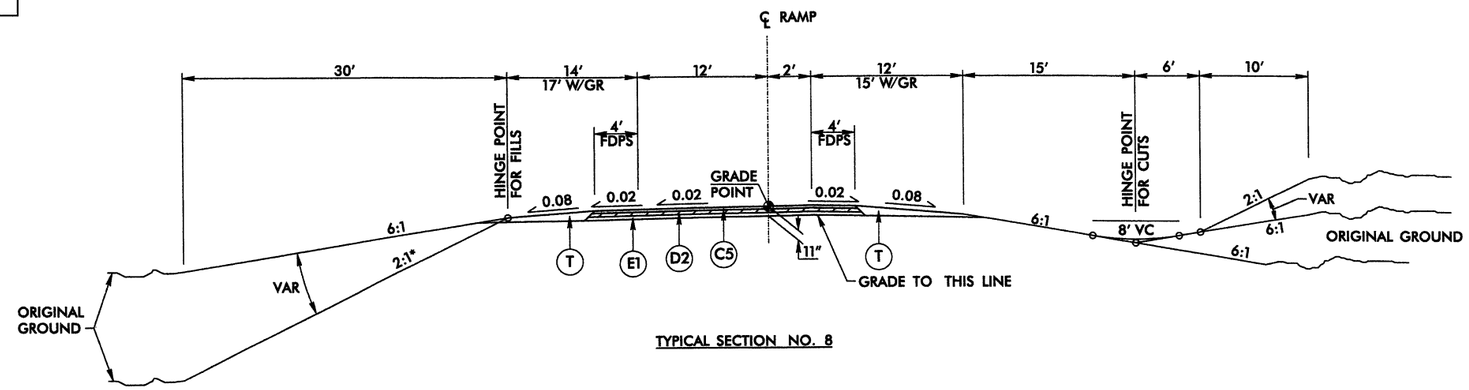


TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7
AT THE FOLLOWING LOCATIONS:

-L- STA 210+60 00 TO STA 225+10 00
*-L- STA 210+60 00 TO STA 214+35 83 LT
*-L- STA 210+60 00 TO STA 211+17 82 RT

*NOTE: USE 2'-6" CURB and GUTTER



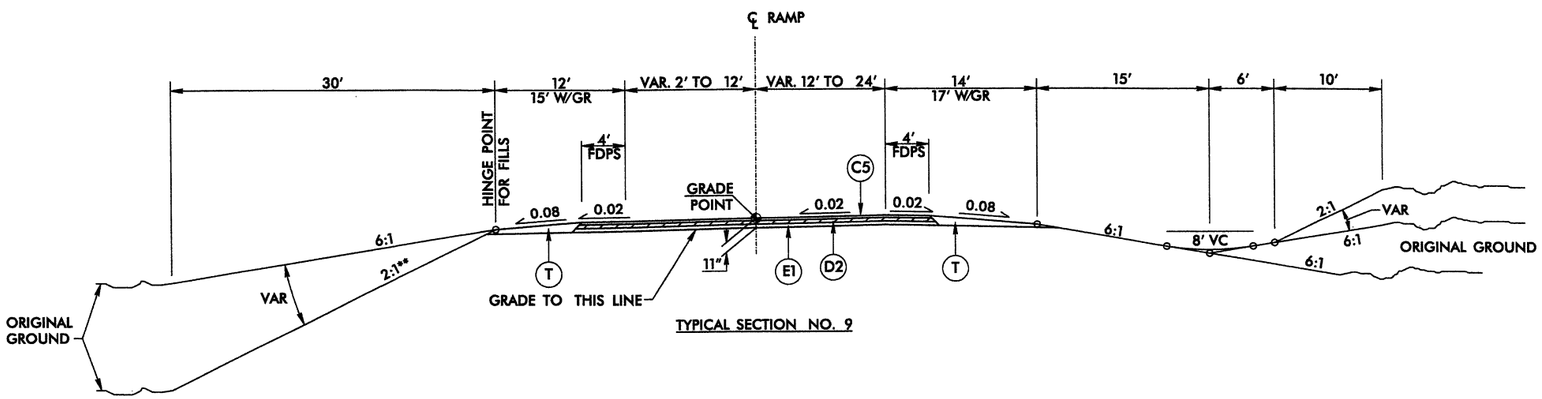
TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8
AT THE FOLLOWING LOCATIONS:

-Y3RPA- STA 10+00 00 TO 29+26 34
NOTE: RESURFACE ONLY -Y3RPA- STA 10+00 00 TO 13+10 27
WIDEN & RESURFACE -Y3RPA- STA 13+10 27 TO 16+45+/-

-Y3RPC- STA 10+00 00 TO 21+26 62
NOTE: RESURFACE ONLY -Y3RPC- STA 10+00 00 TO 14+41 09
WIDEN & RESURFACE -Y3RPC- STA 14+41 09 TO 18+20+/-

*4:1 MAX SLOPES INSIDE INTERCHANGE



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
AT THE FOLLOWING LOCATIONS:

-Y3RPB- STA 14+10 01 TO 26+49 10
-Y3RPD- STA 15+68 34 TO 26+82 65

NOTE: WIDEN & RESURFACE EXISTING GORE AREAS USING PAVEMENT DESIGN SHOWN IN TYPICAL SECTION NO 28 ON SHEET 2J

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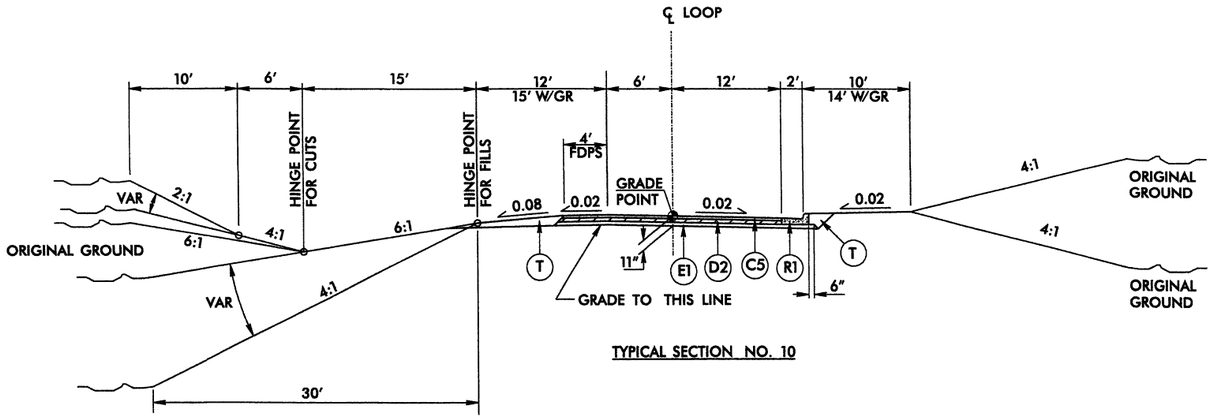
6/2/99

C5	3" S9.5B
C7	1 1/2" S9.5C
C8	3" S9.5C
D2	4" I19.0B
D6	4" I19.0C
E1	4" B25.0B
E7	6" B25.0C
R1	2'-6" CURB
T	EARTH MATERIAL
U	EXIST. PVMT
W	WEDGING

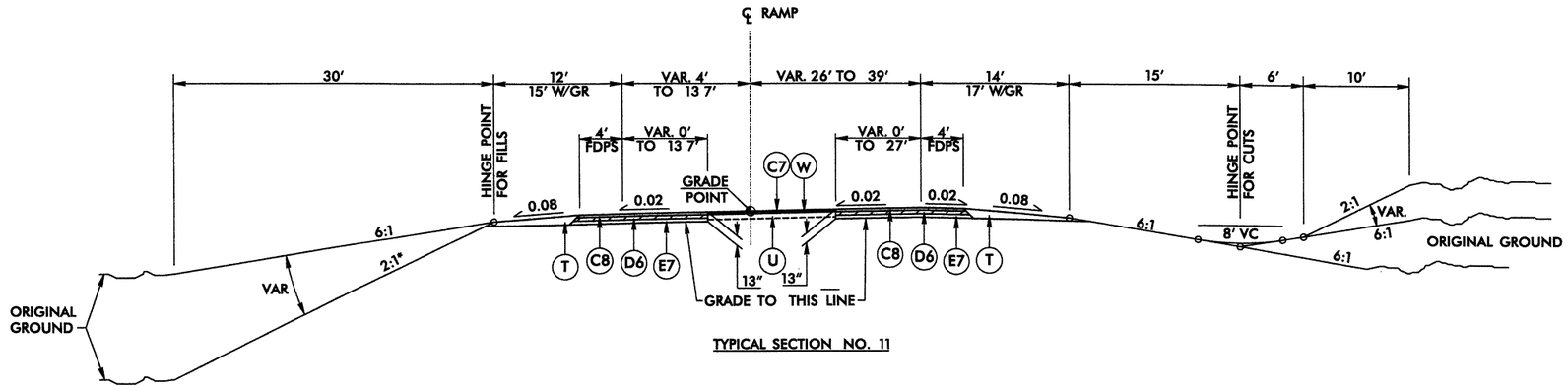
PROJECT REFERENCE NO.	SHEET NO.
U-4909	2D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT



TYPICAL SECTION NO. 10

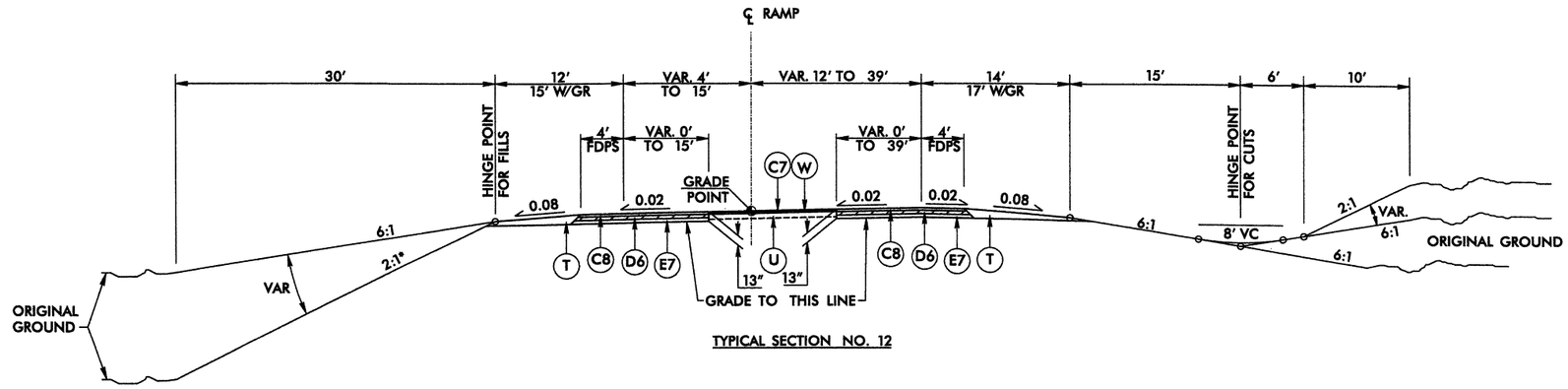
USE TYPICAL SECTION NO. 10
AT THE FOLLOWING LOCATIONS:
–Y3LPB– STA 10+00 00 TO 21+09 19
–Y3LPD– STA 10+00 00 TO 21+09 19



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
AT THE FOLLOWING LOCATIONS:
–Y15RPA– STA 11+38 61 TO 17+32 61

*4:1 MAX SLOPES INSIDE INTERCHANGE



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
AT THE FOLLOWING LOCATIONS:
–Y15RPC– STA 10+00 00 TO 16+99 89

*4:1 MAX SLOPES INSIDE INTERCHANGE

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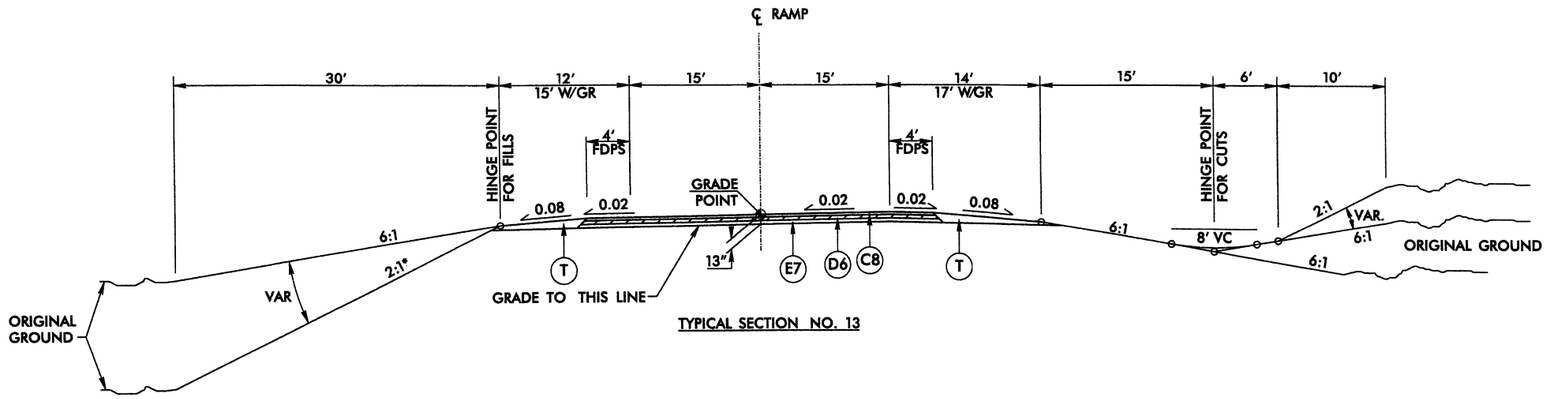
6/2/99

C7	1 1/2" S9 5C
C8	3" S9.5C
D6	4" I19.0C
E7	6" B25.0C
R1	2'-6" CURB
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2E
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

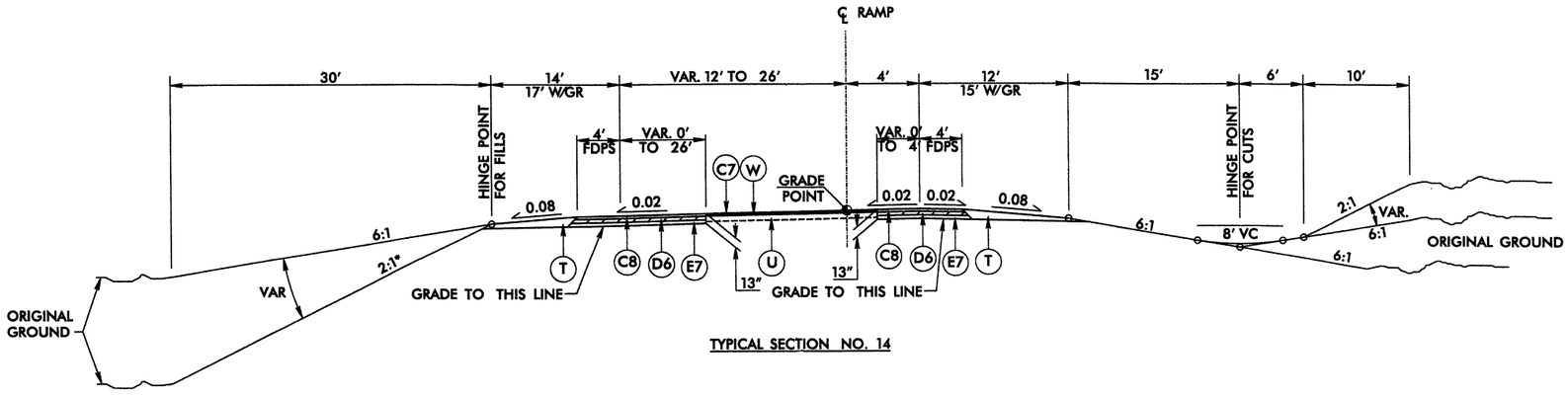
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
AT THE FOLLOWING LOCATIONS:
–Y15RPA– STA 17+32 61 TO 20+91 63
–Y15RPC– STA 16+99 89 TO 20+88 80

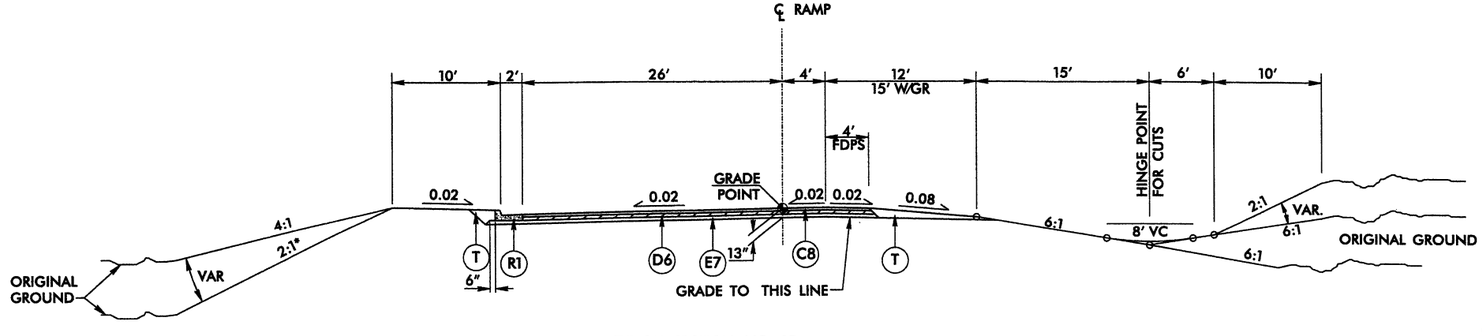
*4:1 MAX SLOPES INSIDE INTERCHANGE



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14
AT THE FOLLOWING LOCATIONS:
–Y15RPB– STA 10+75 00 TO 20+19 81
–Y15RPD– STA 10+75 00 TO 19+99 69

*4:1 MAX SLOPES INSIDE INTERCHANGE



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15
AT THE FOLLOWING LOCATIONS:
–Y15RPB– STA 20+19 81 TO 22+04 81
–Y15RPD– STA 19+99 69 TO 21+70 04

*4:1 MAX SLOPES INSIDE INTERCHANGE

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6/2/99

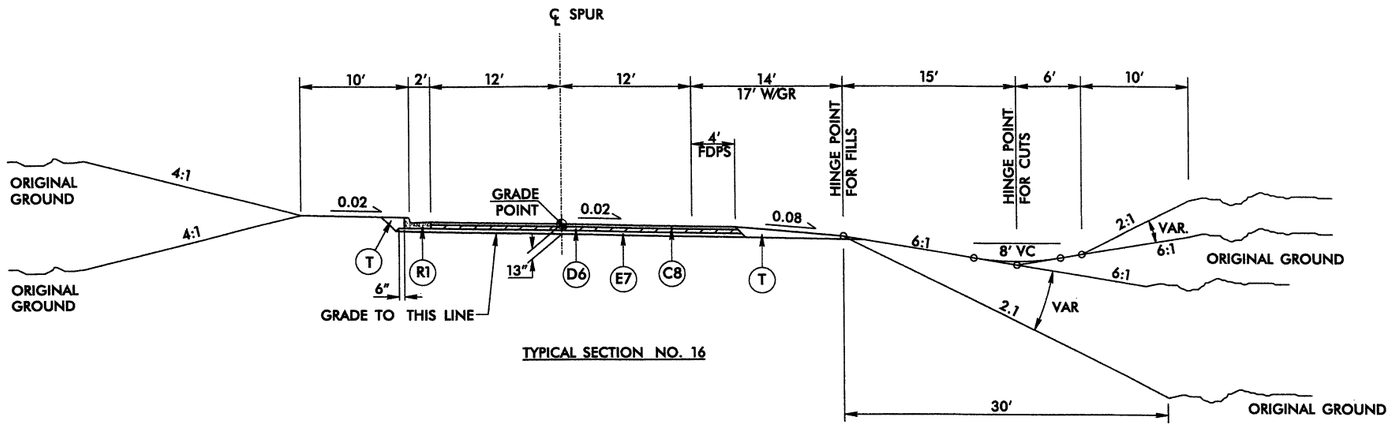
C4	1 1/2" S9.5B
C5	3" S9.5B
C8	3" S9.5C
D6	4" I19.0C
E1	4" B25 0B
E7	6" B25.0C
R1	2'-6" CURB
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2F

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

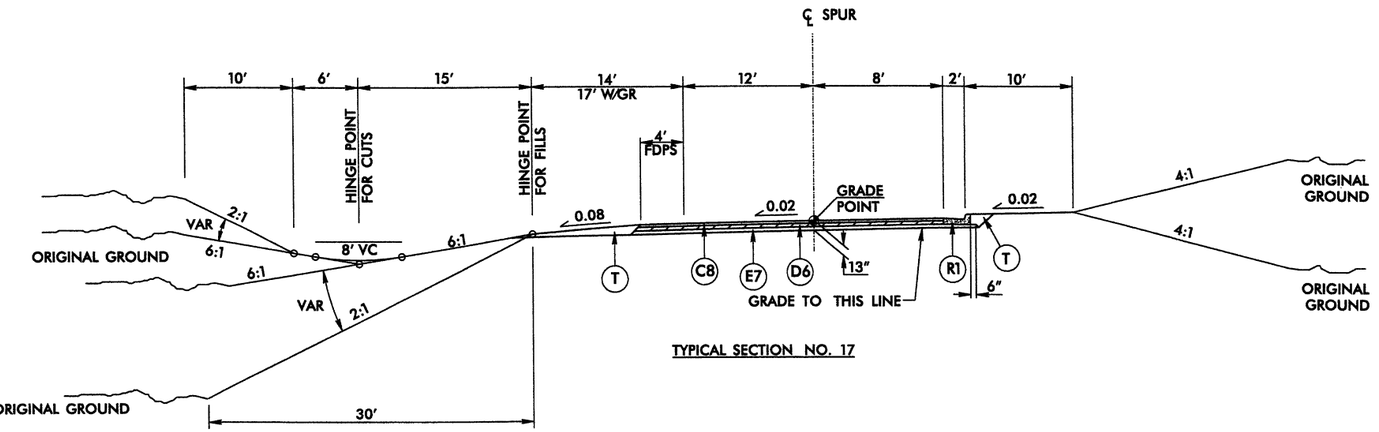
PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16
AT THE FOLLOWING LOCATIONS:

–Y15SPA– STA 10+00 00 TO 13+44 03
–Y15SPC– STA 10+00 00 TO 13+75 72

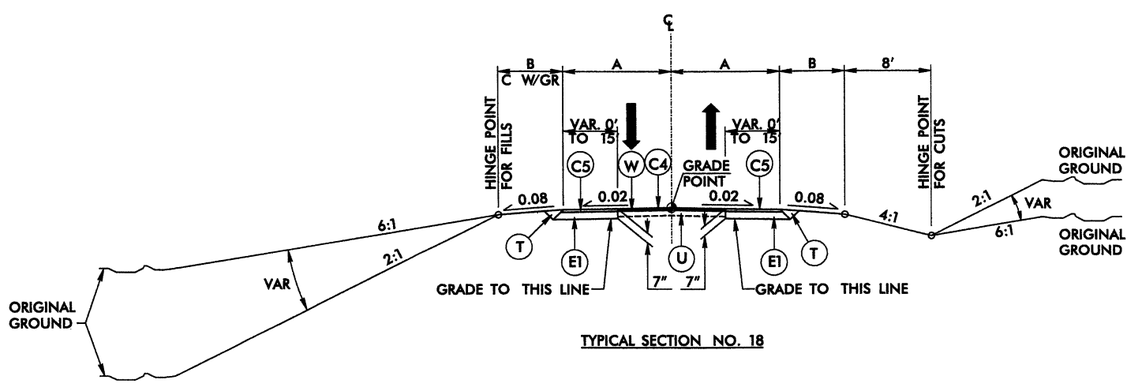


TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17
AT THE FOLLOWING LOCATIONS:

–Y15SPB– STA 10+00 00 TO 13+48 14
NOTE: –Y15SPB– PROFILE BEGINS AT STA 10+42 40

–Y15SPD– STA 10+00 00 TO 13+47 87
NOTE: –Y15SPC– PROFILE BEGINS AT STA 10+42 33



TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18
AT THE FOLLOWING LOCATIONS:

LINE	ROAD NAME	STA TO STA	A	B	C
–Y5–	PINEWOOD TR	10+47 07 TO 12+05 00	VAR 9' TO 15'	6'	9'
–Y11–	LORADALE RD	10+41 39 TO 12+00 00	VAR 10' TO 15'	6'	9'
–Y19–	BILOXI AVE	12+40 00 TO 13+83 41	VAR 9 5' TO 15'	6'	9'
–Y20–	KINGSWOOD DR	10+53 81 TO 12+20 00	VAR 10' TO 15'	6'	9'
–Y21–	SHEPHERD GROVE RD	11+00 00 TO 13+76 42	VAR 9 5' TO 15'	6'	9'
–Y24	GREEN LAWN DR	13+30 00 TO 14+81 25	VAR 9 5' TO 15'	6'	9'

PLANS PREPARED BY :

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FOR
DIVISION OF HIGHWAYS

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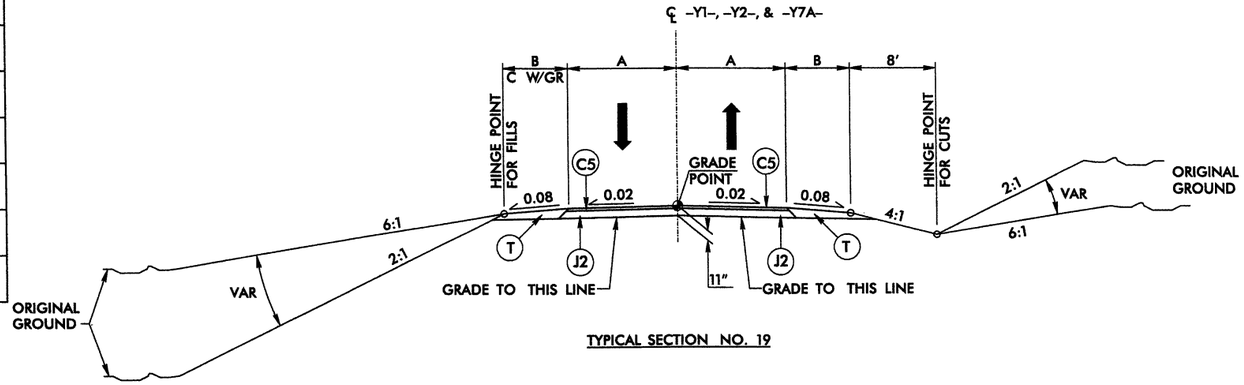
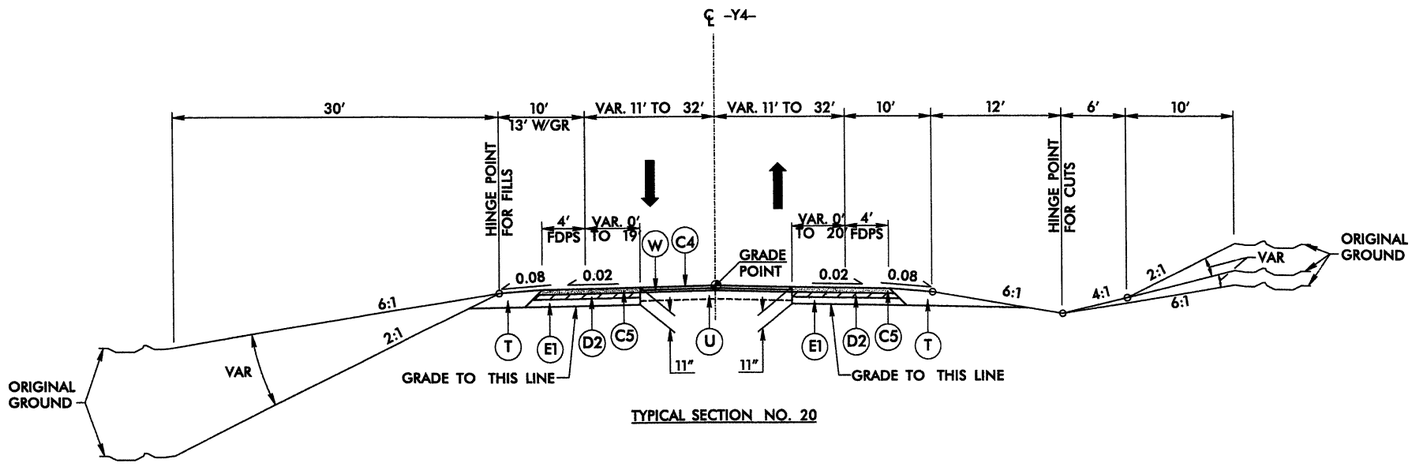
bester

6/2/99

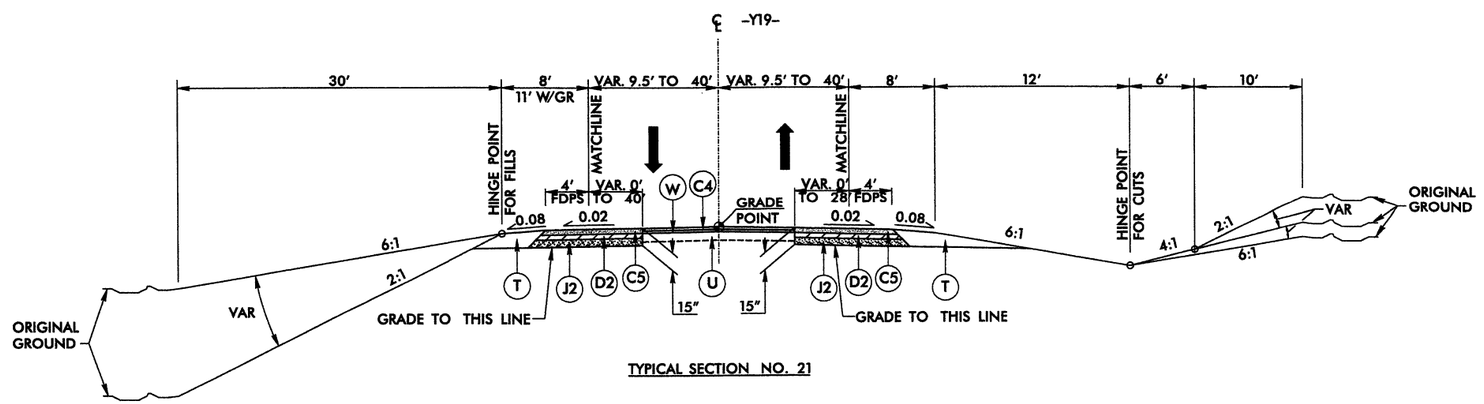
C4	1 1/2" S9.5B
C5	3" S9.5B
D2	4" I19.0B
E1	4" B25.0B
J2	8" ABC
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING



TYPICAL SECTION NO. 19



TYPICAL SECTION NO. 20



TYPICAL SECTION NO. 21

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2G

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

PAVEMENT DESIGN ENGINEER

USE TYPICAL SECTION NO. 19
AT THE FOLLOWING LOCATIONS:

LINE	ROAD NAME	STA TO STA	A	B	C
-Y1-	HAYNES RD	15+66 43 TO 33+75 00	VAR 10' TO 15'	6'	9'
*-Y1-	HAYNES RD	33+75 00 TO 37+05 00	VAR 10' TO 15'	6'	9'
-Y2-	SWAIN RD	10+19 15 TO 13+00 00	VAR 11' TO 17'	6'	9'
*-Y2-	SWAIN RD	13+00 00 TO 14+00 00	VAR 11' TO 17'	6'	9'
-Y7A-	CHAMELIN RD	10+43 58 TO 11+95 00	VAR 8' TO 15'	6'	9'

*RESURFACING AND WEDGING REQUIRED

USE TYPICAL SECTION NO. 20
AT THE FOLLOWING LOCATIONS:

-Y4- STA 11+00 00 TO 22+41 66
-Y4- STA 23+49 27 TO 32+00 00

USE TYPICAL SECTION NO. 21
AT THE FOLLOWING LOCATIONS:

-Y19- STA 14+91 41 TO 18+45 00

NOTE: USE E1 IN LIEU OF J2 IN AREAS OF NARROW WIDENING

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DIVISION OF HIGHWAYS

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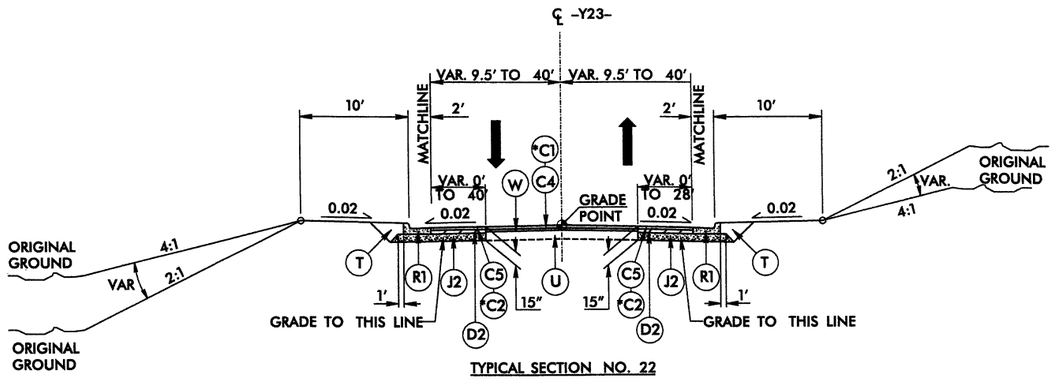
6/2/99

C1	1 1/2" SF9.5A
C2	3" SF9.5A
C4	1 1/2" S9.5B
C5	3" S9.5B
D1	3" I19.0B
D2	4" I19.0B
E1	4" B25.0B
J2	8" ABC
R1	2'-6" CURB
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING



TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22
AT THE FOLLOWING LOCATIONS:

–Y23– STA 10+60 00 TO 19+00 00
\+ –Y23– STA 19+00 00 TO 22+20 37
\+* –Y23– STA 23+21 73 TO 27+00 00
* –Y23– STA 27+00 00 TO 33+75 00

NOTE: USE E2 IN LIEU OF J2 IN AREAS OF NARROW WIDENING

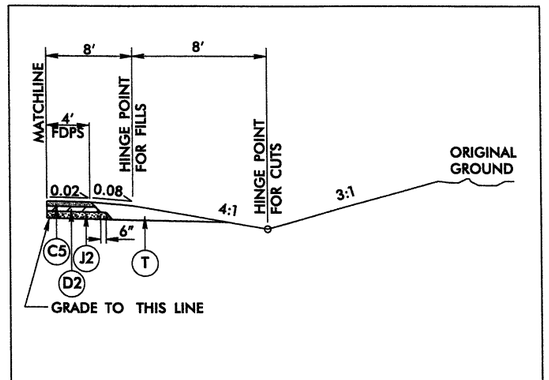
\+ NEW PAVEMENT STRUCTURE (NO WEDGING)

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2H
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

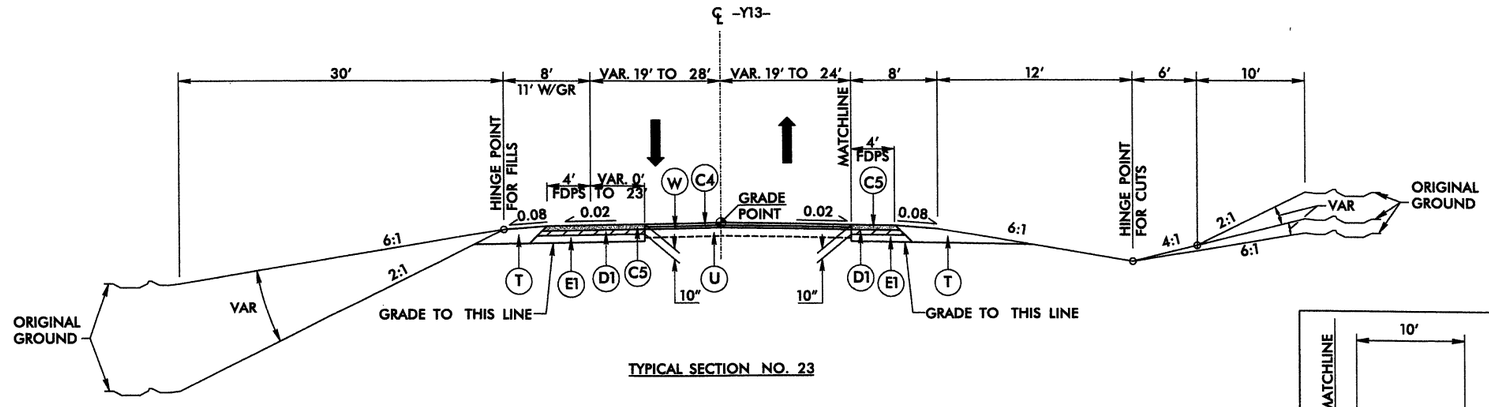
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

USE INSET A IN CONJUNCTION
WITH TYPICAL SECTION NO. 22

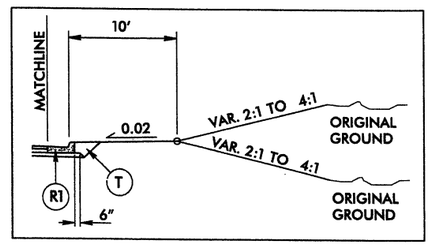
–Y23– STA 10+60 00 TO 16+45 00 RT & LT



INSET A



TYPICAL SECTION NO. 23



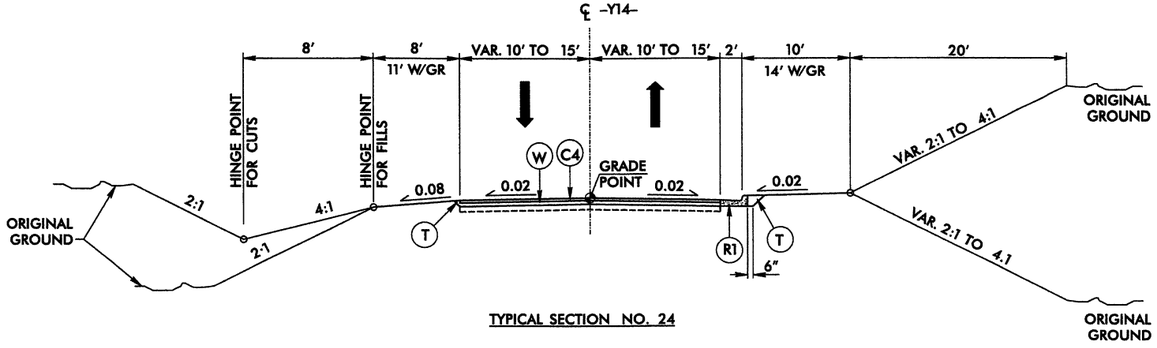
INSET B

USE TYPICAL SECTION NO. 23
AT THE FOLLOWING LOCATIONS:

–Y13– STA 12+10 00 TO 23+46 83

USE INSET B IN CONJUNCTION
WITH TYPICAL SECTION NO. 23

–Y13– STA 12+00 00 TO 23+00 00 RT



TYPICAL SECTION NO. 24

USE TYPICAL SECTION NO. 24
AT THE FOLLOWING LOCATIONS:

–Y14– STA 12+94 72 TO 14+50 00

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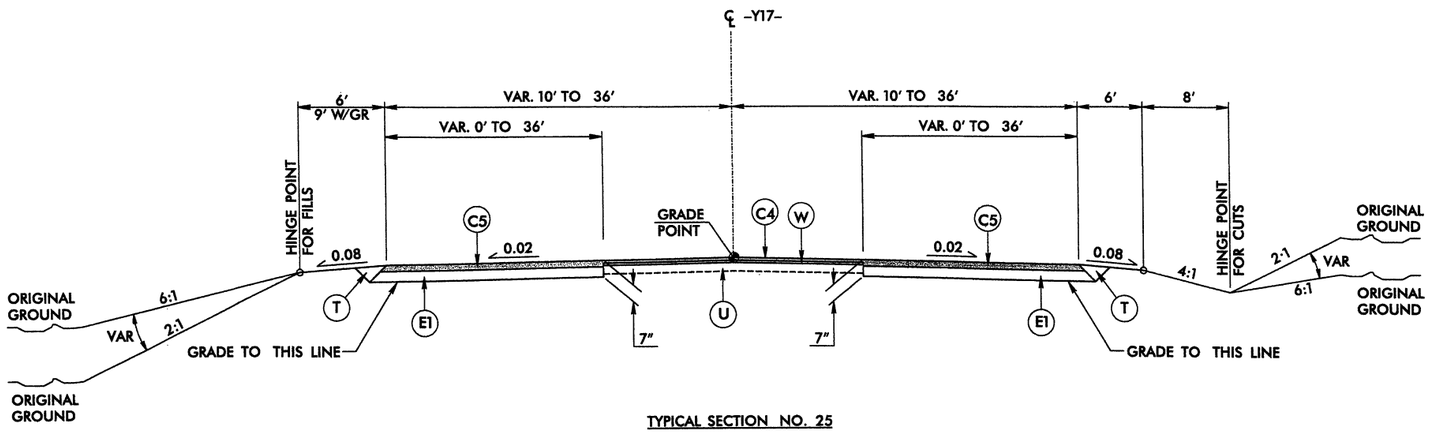
C4	1 1/2" S9.5B
C5	3" S9.5B
C7	1 1/2" S9.5C
C8	3" S9.5C
D2	4" I19.0B
D6	4" I19.0C
E1	4" B25.0B
R1	2'-6" CURB
T	EARTH MATERIAL
U	EXIST. PVMT.
W	WEDGING

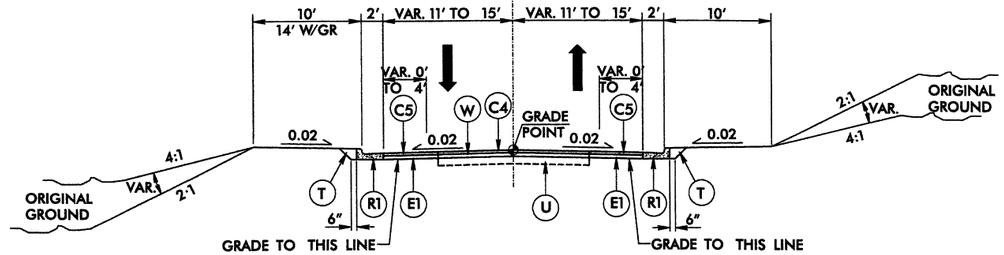
PROJECT REFERENCE NO.	SHEET NO.
U-4909	21
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT



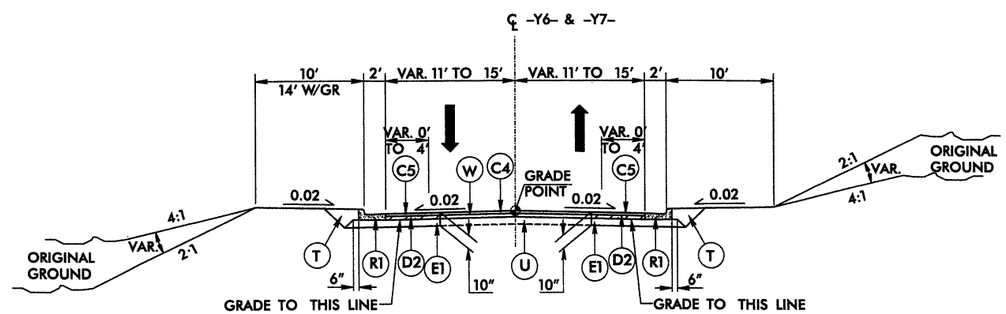
TYPICAL SECTION NO. 25

USE TYPICAL SECTION NO. 25
AT THE FOLLOWING LOCATIONS:
-Y17- STA 10+20 00 TO 21+65 13



TYPICAL SECTION NO. 26

USE TYPICAL SECTION NO. 26
AT THE FOLLOWING LOCATIONS:
-Y22- STA 10+53 28 TO 11+85 00



TYPICAL SECTION NO. 27

USE TYPICAL SECTION NO. 27
AT THE FOLLOWING LOCATIONS:
*-Y6- STA 10+53 35 TO 12+00 00
-Y6- STA 12+00 00 TO 12+40 00
*-Y7- STA 10+41 12 TO 11+00 00
-Y7- STA 11+00 00 TO 11+75 00

* NEW PAVEMENT STRUCTURE (NO WEDGING)

PLANS PREPARED BY :
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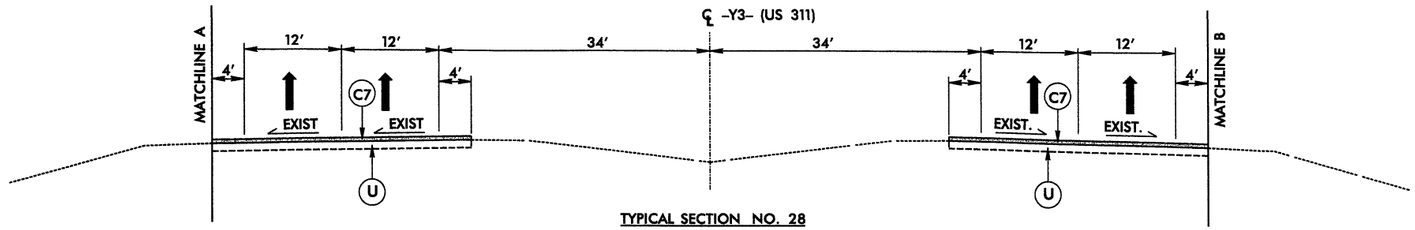
C5	3" S9.5B	C7	1 1/2" S9.5C	C8	3" S9.5C	D2	4" I19.0B	D6	4" I19.0C
E1	4" B25.0B	E9	8" B25.0C	U	EXIST. PVMT.	T	EARTH MATERIAL	W	WEDGING

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2J

ROADWAY DESIGN ENGINEER

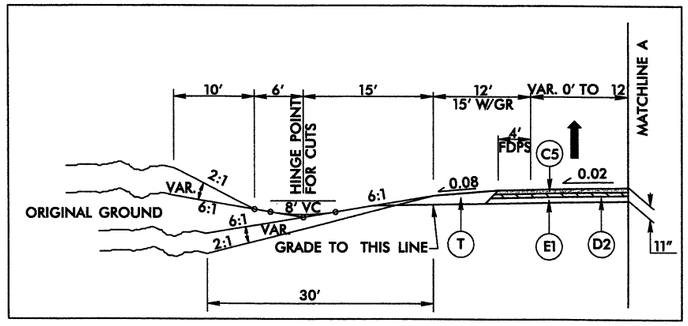
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 28

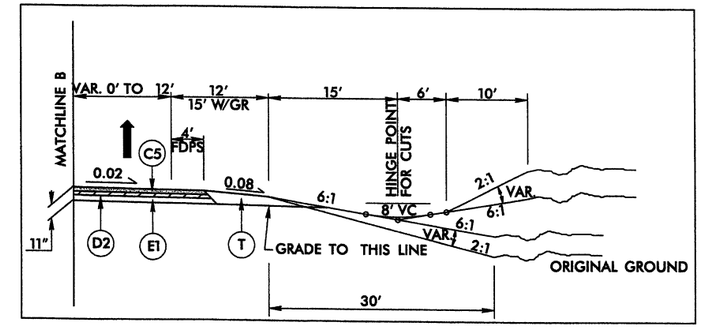
USE TYPICAL SECTION NO. 28
AT THE FOLLOWING LOCATIONS:
-Y3- STA 16+82 33 TO 64+19 97



INSET A

USE INSET A IN CONJUCTION
WITH TYPICAL SECTION 28

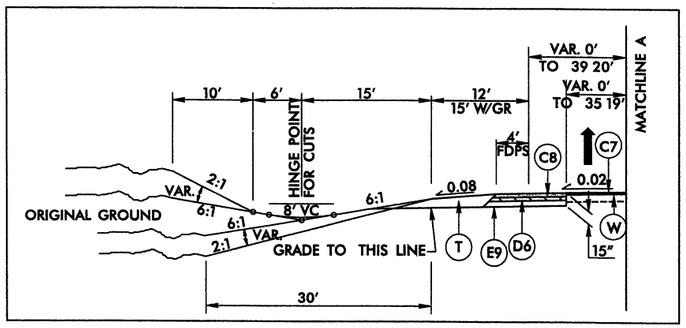
-Y3- STA 28+89 56 TO 45+39 56 LT



INSET C

USE INSET C IN CONJUCTION
WITH TYPICAL SECTION 28

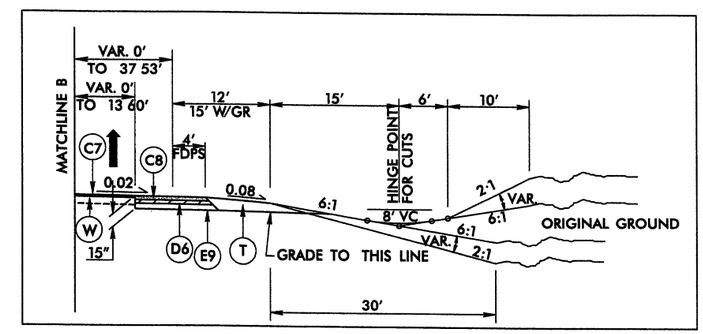
-Y3- STA 34+45 79 TO 50+95 79 RT



INSET B

USE INSET B IN CONJUCTION
WITH TYPICAL SECTION 28

-Y3- STA 55+89 78 TO 64+19 97 LT
(RAMP D GORE AREA)



INSET D

USE INSET D IN CONJUCTION
WITH TYPICAL SECTION 28

-Y3- STA 16+82 33 TO 22+62 51 RT
(RAMP B GORE AREA)

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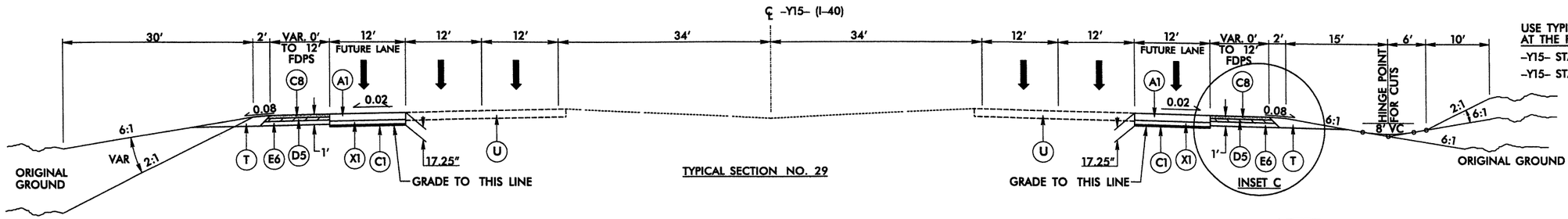
6/2/99

A1	12" PCCP	C1	1 1/2" SF9.5A	C4	1 1/2" S9.5B	C5	3" S9.5B	C8	3" S9.5C	D5	3 1/2" I19.0C	R1	2'-6" CONC. C & G
E6	5 1/2" B25.0C	J2	8" ABC	X1	4" PADL	T	EARTH MATERIAL	U	EXIST. PVMT.	W	WEDGING		

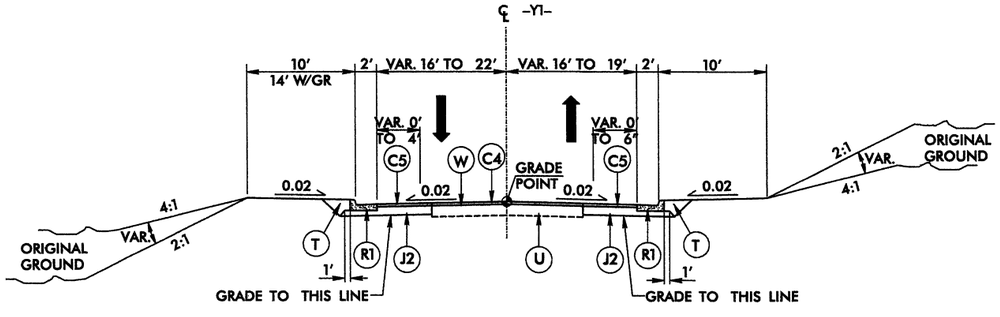
PROJECT REFERENCE NO.	SHEET NO.
U-4909	2K
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT



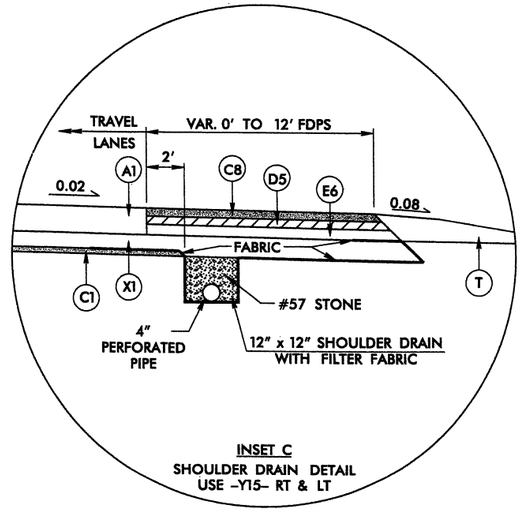
TYPICAL SECTION NO. 29

USE TYPICAL SECTION NO. 29
AT THE FOLLOWING LOCATIONS:
-Y15- STA 36+45 00 TO 43+85 00 RT
-Y15- STA 37+80 00 TO 45+30 00 LT



TYPICAL SECTION NO. 30

USE TYPICAL SECTION NO. 30
AT THE FOLLOWING LOCATIONS:
-Y1- STA 12+00 00 TO 15+16 68



INSET C
SHOULDER DRAIN DETAIL
USE -Y15- RT & LT

PLANS PREPARED BY :

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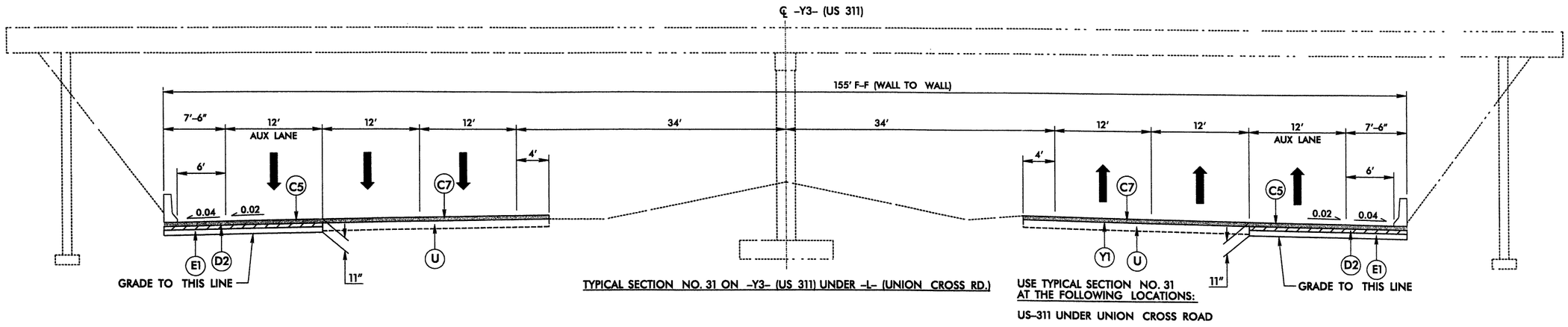
A1	12" PCCP	C1	1 1/2" SF9.5A	C5	3" S9.5B	C7	1 1/2" S9.5C	C8	3" S9.5C	D2	4" I19.0B
D5	3 1/2" I19.0C	E1	4" B25.0B	E6	5 1/2" B25.0C	U	EXIST. PVMT.	X1	4" PADL	Y1	2.5" MILLING

PROJECT REFERENCE NO.	SHEET NO.
U-4909	2L

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

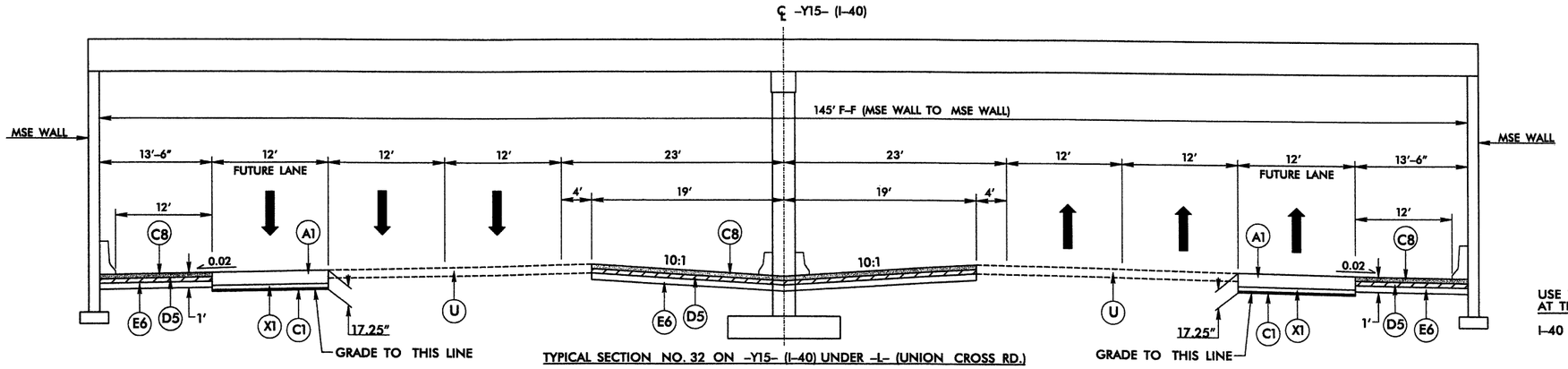
PAVEMENT DESIGN ENGINEER



TYPICAL SECTION NO. 31 ON -Y3- (US 311) UNDER -L- (UNION CROSS RD.)

USE TYPICAL SECTION NO. 31 AT THE FOLLOWING LOCATIONS:

US-311 UNDER UNION CROSS ROAD



TYPICAL SECTION NO. 32 ON -Y15- (I-40) UNDER -L- (UNION CROSS RD.)

USE TYPICAL SECTION NO. 32 AT THE FOLLOWING LOCATIONS:

I-40 UNDER UNION CROSS ROAD

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL — MICHAEL T. MERRITT — ENGINEER

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL — MATTHEW L. COOK — ENGINEER

8/17/99

REVISIONS

R/W Revision Date: — Revised property owner name for Parcel 8. Added PUE on Parcel 4. Revised PUE to tie to existing R/W at -L- Sta. 9+10 and 13+00 Lt.

R/W Revision Date: 9/17/99 — Eliminated Claim for Parcel 1.

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1-RICHARD W & KAREN A BARLOW DB 1858 PG 336
2-MIRRIAN K SOUTHARD DB 1629 PG 3251
3-MELODY K THOMASON DB 1686 PG 1404
4-SHEILA R MORTIMER DB 2038 PG 541
5-TRINIDAD O ZAVALA & ERNESTO OLIVARES DB 2015 PG 1897
6-FERNANDO BARRERA-MELCHOR DB 2385 PG 3965
7-RAFAEL & JOSEFINA GONZALEZ DB 1865 PG 1834
8-MONTY F DUMONT DB 2037 PG 2230

WOOD GATE HOMEOWNERS ASSOCIATION, INC. DB 1272 PG 1534

4 WILMA C W. SPACH DB 1273 PG 335

3 WILMA C.W. SPACH DB 1262 PG 59

JAMES M MECUM, JR DB 2321PG 835

JAMES M MECUM, JR DB 2321PG 832

7 FLETCHER WEAVIL DB 1210 PG 979

10 BOBBY JOE SMITH DB 1210 PG 981

8 TIMOTHY B. & LYNDA S HAMILTON DB 1986 PG 1590

9 MICHAEL G KIRKMAN & STEPHEN R KIRKMAN DB 2356 PG 505

FORSYTH COUNTY DB 1125 PG 1731

Abandon Existing Right-of-Way

NAD 83

-Y2- PI Sta 12+09.33 Δ = 9° 12' 47.7" (LT) D = 3° 49' 11.0" L = 241.20' T = 120.86' R = 1,500.00' Se = 0.04 Runoff = See Plans

-Y2- PI Sta 14+07.94 Δ = 12° 45' 32.7" (RT) D = 8° 11' 06.4" L = 155.88' T = 78.26' R = 700.00' Se = 0.02 Runoff = See Plans

-Y2- +00.00 EXIST R/W

END CONSTRUCTION -Y2- PC Sta. 14+00.00

-Y2- PRC Sta. 13+29.67

-Y2- PC Sta. 10+88.47

-Y1- PC Sta. 13+34.44

-Y1- PT Sta. 15+22.89

-Y1- PC Sta. 16+88.57

-L- PT Sta. 22+00.15

-Y1- PT Sta. 20+57.96

-Y1- POT Sta. 15+32.71 = -L- POC Sta. 17+13.55

-Y2- POT Sta. 10+00.00 = -Y1- POT Sta. 12+55.00

-Y1- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y1- POT Sta. 11+31.00

BEGIN CONSTRUCTION -L- POT Sta. 7+40.00

-BY2- 29 POT 13+02.01= -L- STA. 8+04.48 (22.91RT) EL. 947.38

-BL- 5 POT 5+00.00= -BY1- POT 11+83.45= -BY2- POT 5+00.00= -L- STA. 15+85.33 (90.38 LT)= -Y1- STA. 13+58.2 (41.06 RT) EL. 955.57

-L- PC Sta. 11+61.90

-L- Sta. 7+00.00 BEGIN TIP PROJECT U-4909

MATCHLINE -L- STA. 9+00

MATCHLINE -L- STA. 23+00 SEE SHEET 5

MATCHLINE -Y1- STA. 22+00 SEE SHEET 5

N 79° 55' 50.0" E

N 10° 04' 10.0" W

N 40° 36' 00.0" E

N 64° 07' 48" E 170.42'

S 08° 09' 44" E 232.65'

WOOD GATE CIR

SR 2691 WALLBURG RD

SR 2643 UNION CROSS RD

HISTORIC DISTRICT

CITY OF WINSTON-SALEM

PROP 2'6" CONC C&G

PROP 2'6" CONC C&G

LATERAL V DITCH SEE DETAIL C

LATERAL V DITCH SEE DETAIL K

LATERAL V DITCH SEE DETAIL L

LATERAL BASE DITCH SEE DETAIL F

SPECIAL CUT DITCH SEE DETAIL A

SPECIAL CUT DITCH SEE DETAIL A

TOE PROTECTION SEE DETAIL P

TIE EXIST. DITCH TO PROP DITCH

2 TONS CL B RIPRAP W/10 SY FIL FAB

2 TONS CL B RIPRAP W/7 SY FIL FAB

2 TONS CL B RIPRAP W/7 SY FIL FAB

2 TONS CL B RIPRAP W/7 SY FIL FAB

11 TONS CL B RIPRAP W/28 SY FIL FAB

2 ELBOWS W/ ROD AND LUGS

2 CBs

725' TAPER

100' TAPER

150' LEFT TURN LANE

180' TAPER GRAU 350

GRADE TO DRAIN

CUT/FILL TRANSITION 2 TONS CL B RIPRAP W/7 SY FIL FAB

REMOVE SYSTEM

RETAIN JB W MH

NOTE: ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE: ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE: SEE DETAIL SHEET 2M FOR INTERSECTION DESIGN

NOTE: SEE SHEET 26 FOR -L- PROFILE SEE SHEET 34 FOR -Y1- PROFILE SEE SHEET 35 FOR -Y2- PROFILE

NOTE: ALL PROP. FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED.

NOTE: SEE SHEET 2R FOR DITCH DETAILS

-L-
PI Sta 17+02.79 Δ = 39° 39' 30.0" (RT) D = 3° 49' 11.0" L = 1,038.25' T = 540.90' R = 1,500.00' Se = 0.04 Runoff = 150'

-Y1-
PI Sta 14+34.27 Δ = 46° 44' 30.0" (RT) D = 24° 48' 12.1" L = 188.45' T = 99.82' R = 231.00' Se = 0.02 Runoff = See Plans

PI Sta 18+80.53 Δ = 38° 28' 50.0" (LT) D = 10° 25' 02.7" L = 369.39' T = 191.96' R = 550.00' Se = 0.06 Runoff = 120'

PI Sta 36+89.02 Δ = 19° 47' 45.0" (RT) D = 2° 51' 53.2" L = 691.00' T = 348.98' R = 2,000.00' Se = 0.04 Runoff = 90'

SWAIM RD
600 / 1,000
100 / 100 — 500 / 800
UNION CROSS RD
3,200 / 7,400 — 13,000 / 26,200
100 / 300 — 9,500 / 18,400
2005 ADT / 2030 ADT
9,600 / 18,800
WALLBURG RD

PROJECTED TRAFFIC VOLUMES

PLANS PREPARED BY :

RKK

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

REVISIONS

R/W Revision Date: ---- Revised property owner names for Parcels 13, and 16, Added new Parcel 37A Combined Parcels 36 and 37, and eliminated Parcel 37. Revised PI/E to mention PI/E of -Y1- Sta.37+00 Rt.

R/W Revision Date: 4/17/19- Revised overlapping PI/E and PI/E to Out for parcel 34, Eliminated state for parcel 29.

US 311
25,000
50,500

UNION CROSS RD
2,100 8,500
L400 10,200
L300 26,200
L100 23,100
2,400 1,500
L400 2,700
2005 ADT
2030 ADT
25,000
42,000
US 311

PROJECTED TRAFFIC VOLUMES

NAD 83

MATCHLINE -Y3- STA. 30+00 SEE SHEET 19

MATCHLINE -Y4- STA. 16+00 SEE SHEET 6

MATCHLINE -L- STA. 51+00 SEE SHEET 6

MATCHLINE -L- STA. 23+00 SEE SHEET 4

MATCHLINE -Y1- STA. 22+00 SEE SHEET 4

MATCHLINE -Y3- 50+50 SEE SHEET 20

A

B

C

D

SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS

NOTE: ALL PROP. FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED.

NOTE: ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE: ALL ISLANDS SHOWN ARE 5 MONOLITHIC CONCRETE ISLANDS STD.862.01

NOTE: SEE SHEET 2A FOR DITCH DETAILS

NOTE:
SEE SHEETS 26 & 27 FOR -L- PROFILE
SEE SHEET 36 FOR -Y3- PROFILE
SEE SHEETS 37 & 38 FOR -Y3RPA- PROFILE
SEE SHEETS 38 & 39 FOR -Y3RPB- PROFILE
SEE SHEET 39 FOR -Y3LPB- PROFILE
SEE SHEET 40 FOR -Y3RPC- PROFILE
SEE SHEETS 40 & 41 FOR -Y3RPD- PROFILE
SEE SHEET 41 FOR -Y3LPD- PROFILE
SEE SHEET 42 FOR -Y4- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

PROJECT REFERENCE NO. U-4909
SHEET NO. 5
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
NOT TO BE USED FOR CONSTRUCTION

PLANS PREPARED BY:
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO P-0112 ■ (919) 878 9560
2018
DIVISION OF HIGHWAYS

LOCATION:
TIP NO.: U-4909 COUNTY: FORSYTH
DESIGNED BY:
CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
U-4909	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER MICHAEL T. MERRITT

NORTH CAROLINA PROFESSIONAL ENGINEER MATTHEW L. COX

PRELIMINARY PLANS
2112.20 NOT USE FOR CONSTRUCTION 27 JAN 99

REVISIONS

R/W Revision Date: 12/02/2008 – Revised PUE on Parcel 39, Revised R/W and Easements on Parcel 46 and 48, Eliminated claim on Parcel 47 by removing proposed construction easement.

R/W Revision Date: – Revised property owner names for Parcels 29 and 38.

R/W Revision Date: 4/1/10 – Eliminated claim for parcel 29, Added note "Do no disturb historic marker on parcel 43, Revised easement on Parcel 43.

8/17/99

NOTE:
ALL PROP FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED

NOTE:
SEE DETAIL SHEET 2M FOR INTERSECTION DESIGN

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

SMITH- TUCKER FARMS RURAL HISTORIC DISTRICT

HIGH POINT RD
3,900
7,900

	600	800	
UNION CROSS RD	3,200	1,100	
11,000			12,000
23,100			23,600
	1,700	2,500	
	2,400	5,000	

2005 ADT
2030 ADT

6,700
11 000
HIGH POINT RD

PROJECTED TRAFFIC VOLUMES

NAD 83

MATCHLINE -Y4- STA. 16+00 SEE SHEET 5

MATCHLINE -L- STA. 51+00 SEE SHEET 5

MATCHLINE -L- STA. 65+00 SEE SHEET 7

MATCHLINE -L- STA. 27+00 SEE SHEET 21

HISTORIC DISTRICT

ONEITA F. TUCKER DB 2840 PG 3194 (29)

JAMES & REDCOCK DB-2278 PG 1176 DB 2366 PG 4647 (20)

MICKEY D. & ZELMA P. REDDICK DB 1579 PG 629 (39)

RAYMOND C. & RACHEL S. McGEE DB 1452 PG 140 DB 1589 PG 473 DB 752 PG 9 (26)

JERRY R. & SHIRLEY A. DOWNEY DB 2065 PG 3726 (40)

GLENN D. HART DB 2535 PG 127 (38)

PHIL V. MAYS DB 1022 PG 760 (41)

JAMES L. HILL DB 1023 PG 504 (42)

WINSTON-SALEM/FORSYTH COUNTY BOARD OF EDUCATION DB 299 PG 260 (43)

UNION CROSS MORAVIAN CHURCH DB 494 PG 149 DB 885 PG 376 (404)

BK CHURCH

CEMETERY

R. WAYNE & GLENDA C. ELLER DB 2109 PG 3598 DB 1627 PG 451 (45)

GEORGE L. & ANN C. TOUNTZ DB 2304 PG 4634 (46)

WILLIAM F. & ONEIDA G. THOMAS DB 1638 PG 1491 (44)

DONNA C. PASQUR DB 2172 PG 1879 (49)

CHARLES BANKS III DB 2030 PG 2478 (48)

CLARENCE D. ROYALL DB 860 PG 165

SUSIE T. HAUSER PB 12 PG 124 (50)

ETHELENE C. SPAUCH DB 655 PG 1879 (51)

BARRY D. STAFFORD DB 2387 PG 2580 (47)

LARRY D. & DONNA A. HOLMAN DB 2395 PG 2186

RONALD G. & LEE B. HARTLEY DB 1502 PG 1685

HERMAN H. & BARBARA H. BROWN AND MONTY L. PETTIT DB 2396 PG 1821

SPECIAL CUT DITCH SEE DETAIL E

SPECIAL CUT DITCH SEE DETAIL A

LATERAL V. DITCH SEE DETAIL D

2 TONS CL B RIPRAP W/4 SY FIL FAB

5 TONS CL B RIPRAP W/14 SY FIL FAB

-Y4- POT Sta. 22+95.91 =
-L- POC Sta.56+32.70

-Y5- POT Sta. 10+00.00 =
-L- POC Sta.60+88.00

-BL- 10 PINC 50+70.12=
-BY6- POT 5+00.00=
-L- STA. 64+17.88 (64.99 LT)
EL. 969.49

-L- PT Sta. 61+90.76

-BL- 9 PINC 45+56.56=
-BY5- PINC 14+53.48=
-L- STA. 56+03.01 (19.76 RT)
-Y4- STA. 22+91.35 (35.51RT)
EL. 961.39

-Y4- TS Sta. 25+03.47

-Y4- SC Sta. 26+63.47

END CONSTRUCTION
-Y5- POT Sta.12+05.00

-BY6- 43 POT 8+33.17
-Y5- STA. 12+83+64 (11.62 RT)
EL.

Do Not Disturb Historic Marker

CITY OF WINSTON-SALEM

-L-	-Y4-	-Y4-
PI Sta 54+52.17	PIs Sta 26+10.15	PI Sta 28+73.48
Δ = 50° 35' 00.0" (LT)	Θs = 3° 03' 20.8"	Δ = 15° 56' 23.4" (RT)
D = 3° 10' 59.2"	Ls = 160.00'	D = 3° 49' 11.0"
L = 1,589.12'	LT = 106.68'	L = 417.30'
T = 850.54'	ST = 53.35'	T = 210.01'
R = 1,800.00'		R = 1,500.00'
Se= 0.03		Se= 0.06
Runoff = 160'		Runoff = 240'

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD.852.01

NOTE:
SEE SHEETS 27 & 28 FOR -L- PROFILE
SEE SHEET 42 FOR -Y4- PROFILE
SEE SHEET 43 FOR -Y5- PROFILE

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	7
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL — ENGINEER — MICHAEL T. MCRAE

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL — ENGINEER — MATTHEW L. COLE

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

UNION CROSS RD

12,000 / 23,600 — 12,000 / 23,800

900 / 900 — 900 / 1,100

2005 ADT / 2030 ADT — 1,800 / 2,000

WEATHERSTONE DEVELOPMENT

PROJECTED TRAFFIC VOLUMES

NAD 83

CITY OF WINSTON-SALEM

MATCHLINE -L- STA. 65+00 SEE SHEET 6

MATCHLINE -L- STA. 79+00 SEE SHEET 8

SR 2643 UNION CROSS RD

-L- PC Sta. 74+27.73

-Y6- POT Sta. 10+00.00 = -L- POT Sta 74+09.00

-Y6- PC Sta. 10+57.50

-Y6- PRC Sta. 11+93.69

-Y6- RT Sta 14+06.65

-Y6- POT Sta. 14+30.60

-BL- II PINC 62+59.25= -L- STA. 76+06 09 (25.50 RT) EL. 968.10

END CONSTRUCTION -Y6- POT Sta. 12+40.00

-Y6-	-Y6-	-L-
PI Sta 11+26.92	PI Sta 13+05.42	PI Sta 76+76.40
Δ = 27° 22' 47.2" (LT)	Δ = 42° 48' 47.2" (RT)	Δ = 14° 10' 30.0" (LT)
D = 20° 06' 13.6"	D = 20° 06' 13.6"	D = 2° 51' 53.2"
L = 136.19'	L = 212.96'	L = 494.80'
T = 69.42'	T = 111.73'	T = 248.67'
R = 285.00'	R = 285.00'	R = 2,000.00'
Se = 0.02	Se = 0.02	Se = 0.03
Runoff = See Plans	Runoff = See Plans	Runoff = 160'

NOTE: SEE SHEET 2R FOR DITCH DETAILS

NOTE: ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE: ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE: SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 43 FOR -Y6- PROFILE

PLANS PREPARED BY :

RKK

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

REVISIONS

8/17/99

R/W Revision Date: — Revised property owner names for Parcels 52,59 and 65. Added new Parcel 59A. Added PDE at -L- Sta.67+00 TO 67+90 Rt.
— Revised PUE to overlap PDE at -L- Sta.76+60 Rt.

R/W Revision Date: 4/12/00 — Revised overlapping PDE and PUE to DUE for parcels 61,62,63,and 69.

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL MICHAEL T. MERRILL ENGINEER

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL MATTHEW L. COOK ENGINEER

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

R/W Revision Date: 9/1/99 – Revised property owner names for Parcels 70 and 76. Combined Parcels 77 and 81. Eliminated Parcel 81.

R/W Revision Date: 9/1/99 – Revised PUE to tie to proposed R/W –L– Sta.88+70 Rt.

R/W Revision Date: 9/1/99 – Revised overlapping PDE and PUE to DUE for parcel 69 and 77. Revised PUE and CE for parcel 71.

SMITH- TUCKER FARMS
RURAL HISTORIC DISTRICT

PAUL & INA J.T. STEPHENS
DB 74 PG 90
DB 2840 PG 3188
(70)

TEMPLE SCHOOL RD
2005 ADT / 2030 ADT
1000 / 5,100
400 / 8,500
600 / 10,200
12,000 / 23,800
11,200 / 24,900
UNION CROSS RD

PROJECTED TRAFFIC VOLUMES

NAD 83

(59) ESTATE OF EARLIE F. LEONARD
DB 2284 PG 2034
DB 953 PG 591
DB 2159 PG 3654

(59A) CHARLES R LEONARD
DB 953 PG 591
DB 2159 PG 3654

40' WD ASSUMED PROPERTY LINE

HISTORIC DISTRICT

-BL- 12 PINC 73+82.43=
-BY7 POT 5+00.00=
-L- STA. 87+29.27 (8.92 RT)
EL 970.01

-Y7- PC Sta. 10+39.50

-Y7- POT Sta. 10+00.00 =
-L- POT Sta. 79+72.00

-L- PT Sta. 79+22.54

-Y7A- POT Sta. 10+00.00 =
-L- POC Sta. 84+07.42

-L- PC Sta. 88+72.28

-BY8- 45 POT 5+00.00=
-Y8- STA. 13+44.49 (32.19 LT)
EL. 964.50

BEGIN CONSTRUCTION
-Y8- POT Sta. 15+02.24

MATCHLINE -L- STA. 79+00 SEE SHEET 7

MATCHLINE -L- STA. 93+00 SEE SHEET 9

PROP. 5' CONC. SIDEWALK

PROP. 2'6" CONC. C&G

2 TONS CL B RIPRAP W/7 SY FIL FAB

SR 2643 UNION CROSS RD 38' BST

PROP. 6" CONC. C&G

100' TAPER

450' LEFT TURN LANE

450' RIGHT TURN LANE

155' TAPER

245' TAPER

90' TAPER

30' UTILITY EASEMENT

WEATHERSTONE TOWNHOMES HOA, INC
DB 2685 PG 3782
PB 50 PG 66

SHUGART ENTERPRISES, LLC
DB 2685 PG 3782
PB 50 PG 66
PB 53 PG 98
PB 51PG 136

END CONSTRUCTION
-Y7- POC Sta. 11+75.00

END CONSTRUCTION
-Y7A- POT Sta. 11+95.00

POT Sta. 12+22.90

-Y8- POT Sta. 16+50.00 =
-L- POC Sta. 91+03.00

-Y7- PRC Sta. 12+62.42

-Y7- PT Sta. 13+87.19

-Y7- POT Sta. 14+61.13

HELEN C. McELROY
DB 2753 PG 849
PB 51PG 114

BILLY R. LANKFORD, JR
DB 2741PG 3232
PB 51PG 114

(69) WEATHERSTONE TOWNHOMES HOA, INC
DB 2685 PG 3782
PB 50 PG 66

(76) WEATERSTONE TOWNHOMES HOA, INC
DB 2804 PG 2797

(77) PAUL & INA J.T. STEPHENS
DB 2840 PG 3188

(78) PAUL & INA J.T STEPHENS
DB 764 PG 10

WS INDUSTRIAL PROPERTIES SUB V LLC
DB 2842 PG 1361
(71)

LATERAL V DITCH SEE DETAIL B

UNION CROSS RD
12,000 / 23,600
12,000 / 23,800
900 / 900
900 / 1,100
2005 ADT / 2030 ADT
1,800 / 2,000
WEATHERSTONE DEVELOPMENT

PROJECTED TRAFFIC VOLUMES

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
SEE SHEET 28 & 29 FOR -L- PROFILE
SEE SHEET 43 FOR -Y7-, -Y7A-, & -Y8- PROFILE

-L-

PI Sta 76+76.40
Δ = 14° 10' 30.0" (LT)
D = 2° 51' 53.2"
L = 494.80'
T = 248.67'
R = 2,000.00'
Se = 0.03
Runoff = 160'

PI Sta 91+25.50
Δ = 4° 50' 00.0" (LT)
D = 0° 57' 17.7"
L = 506.15'
T = 253.22'
R = 6,000.00'
Se = 0.02
Runoff = 110'

-Y7-

PI Sta 11+53.94
Δ = 31° 55' 50.7" (LT)
D = 14° 19' 26.2"
L = 222.92'
T = 114.44'
R = 400.00'
Se = 0.02
Runoff = See Plans

PI Sta 13+25.56
Δ = 21° 39' 45.7" (RT)
D = 17° 21' 44.5"
L = 124.77'
T = 63.14'
R = 330.00'
Se = 0.02
Runoff = See Plans

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR
DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

SMITH- TUCKER FARMS
RURAL HISTORIC DISTRICT

WS INDUSTRIAL PROPERTIES
SUB V LLC
DB 2842 PG 1361
(71)

-BL- 13 PINC 82+93.46=
-BY8- POT 8+33.34=
-L- STA. 96+41.42 (48.69 LT)
EL. 963.76

-BL- 14 PINC 90+25.74=
-BY9- POT 5+00.00=
-L- STA. 100+70.99 (13.51 RT)
EL. 960.07

-L- PT Sta. 93+78.43

-L- PC Sta. 95+78.96

-L- PT Sta. 100+66.20

-Y9- POT Sta. 10+00.00 =
-L- POT Sta. 101+01.00

MATCHLINE -L- STA. 93+00 SEE SHEET 8

MATCHLINE -L- STA. 107+00 SEE SHEET 10

450' RIGHT TURN LANE

450' LEFT TURN LANE

100' TAPER

N 10° 20' 00.0" E

N 16° 15' 00.0" E

HISTORIC DISTRICT

S 62° 24' 34.8" E

-Y9-

SR 2643 UNION CROSS RD 38 BST

SR 2605 HEDGECOCK RD 20' BST

PROP 2'6 CONC C&G

PROP.16 CONC.C&G

PROP.5' CONC. SIDEWALK

PROP.5 CONC. SIDEWALK

LATERAL BASE DITCH SEE DETAIL H

LATERAL V DITCH SEE DETAIL B

LATERAL V DITCH SEE DETAIL C

SPECIAL BACK OF CURB SEE DETAIL G

LATERAL BASE DITCH SEE DETAIL B

5 TONS CL B RIPRAP W/14 SY FIL FAB

3 TONS CL B RIPRAP W/10 SY FIL FAB

2 ELBOWS W/ROD AND LUGS

Do Not Disturb Steps and House

ASSUMED PROPERTY LINE

S 74°25'54" E 264.89'

N 15.53.17 E 178 56'

78 PAUL & INA J.T. STEPHENS DB 764 PG 10

80 PAUL & INA J.T. STEPHENS DB 764 PG 9

77 PAUL & INA J.T. STEPHENS DB 2840 PG 3188

82 PAUL & INA J.T. STEPHENS DB 2840 PG 3188

15 CHARLES R. JR. & LEE M. HARBINSON DB 1896 PG 315

-BY9- 46 POT 10+55.05

N 03.20.06 E 471.91'

-L-

PI Sta 91+25.50	PI Sta 98+22.77
Δ = 4° 50' 00.0" (LT)	Δ = 5° 35' 00.0" (RT)
D = 0° 57' 17.7"	D = 1° 08' 45.3"
L = 506.15'	L = 487.24'
T = 253.22'	T = 243.81'
R = 6,000.00'	R = 5,000.00'
Se= 0.02	Se= 0.02
Runoff = 110'	Runoff = 110'

UNION CROSS RD
12,200 / 24,000 — 12,400 / 26,900
400 / 1,300 — 600 / 3,300
2005 ADT
2030 ADT
1,000 / 4,600
HEDGECOCK RD

PROJECTED TRAFFIC VOLUMES

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 44 FOR -Y9- PROFILE

REVISIONS

R/W Revision: Date: — Changed Construction Easement to PUE on Parcel 71 -L- STA.99+00 TO 101+30 Lt.
— Revised property owner name for Parcel 71, Combined Parcels 82 and 83, Eliminated Parcel 79 and 83.
— Revised PUE to tie to existing R/W at -L- Sta.98+50 Rt.

R/W Revision Date: — Revised PUE and CE for parcel 71. Added PUE to Parcel 78 at -L- Sta.93+20 Rt. Revised overlapping PDE and PUE to PUE for parcel 71. Added note "Do not disturb steps and house" on Parcel 71.

R/W Revision: Date: 11/03/2010 Revised drainage on Parcel 77 based on meeting with Historic Preservation Office (No Right Of Way or easement was affected by this change).

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PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR
DIVISION OF HIGHWAYS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	10
RW SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y10- POT Sta. 10+00.00

DELL BLVD
ADT 2030 ADT: 1,200 / 500 / 700 / 26,900 / 27,100
UNION CROSS RD

PROJECTED TRAFFIC VOLUMES
• TRAFFIC VOLUMES NOT PROVIDED

-L-
PI Sta 118+15.35
Δ = 11° 39' 30.0" (LT)
D = 2° 51' 53.2"
L = 406.95'
T = 204.18'
R = 2,000.00'
Se= 0.03
Runoff = 160'

NAD 83

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD.852.01

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

SMITH- TUCKER FARMS RURAL HISTORIC DISTRICT

HISTORIC DISTRICT

(71) WS INDUSTRIAL PROPERTIES SUB V LLC DB 2842 PG 1361

(85) WINSTON-SALEM ALLIANCE (1' STRIP) DB 2535 PG 1316

(86) WINSTON-SALEM ALLIANCE (1' STRIP) DB 2535 PG 1316

(87) EDNA C. EDWARDS DB 661PG 342 DB 2577 PG 895

(84) WILCONESS LLC DB 2111 PG 1236

(88) IGLESIA BAUTISTA HISPANA DE UNION CROSS DB 1885 PG 791

(89) VICKIE O. & TOMMY D. SAWYER DB 2353 PG 2499

(90) WILLIAM M. & LINDA BARNETT DB 1728 PG 2655

(91) DANNY R & FRANCES C. SINK DB 1632 PG 1711

(92) JIMMY D. & JOYCE G. SIDES DB 1201 PG 1193

DOUG SMITH DB 2435 PG 2175

CYNTHIA FULP BROWN DB 1751 PG 3485

RONNIE A. & SHARON B WINTERS DB 1558 PG 147

RONNIE A. & SHARON B WINTERS DB 1452 PG 424

HENRY E JR., & JEANETTE M. HEDGECOCK DB 1378 PG 590

LARRY W. & SANDRA E WILLIAMS DB 1749 PG 3233

KENNY W. & LYNN C. FULP DB 1324 PG 462

KENNY W & LYNN C FULP DB 1324 PG 461

BEGIN CONSTRUCTION -Y10- POT Sta. 13+05.00

BL 15 PINC 101+17.66=
BY11 POT 5+00.00=
BY10- POT 14+38.85=
-L- STA. 111+61.87 (61.19 RT)
EL 961.79

-Y11- POT Sta. 10+00.00 = -L- POT Sta.115+31.00

-L- PC Sta. 116+11.17

-L- PT Sta. 120+18.12

-Y10- POT Sta. 15+50.00 = -L- POT Sta.110+23.00

-Y11- POT Sta. 13+80.00

END CONSRUCTION -Y11- POT Sta. 12+00.00

BY11- 48°PIN 8143.25=
-Y11- STA. 10+91.54 (14.18 RT)
EL 957.57

MATCHLINE -L- STA. 107+00 SEE SHEET 9

MATCHLINE -L- STA. 121+00 SEE SHEET 11

S 84° 00' 05.0" E -Y10-

N 16° 15' 00.0" E

N 4° 35' 30.0" E

S 65° 51' 20.0" E

450' RIGHT TURN LANE
175' TAPER
450' LEFT TURN LANE
175' TAPER
550' LEFT TURN LANE -L-
100' TAPER
90' TAPER

PROP.5' CONC. SIDEWALK
PROP.2'6" CONC.C&G

5 TONS CL B RIPRAP W/4 SY FIL FAB
2 TONS CL B RIPRAP W/7 SY FIL FAB
2 CBs
REMOVE
RETAIN
TIE TO EXIST SYSTEM

R=200' 10' OFFSET
R=180' 2' OFFSET
R=150' 10' OFFSET
R=40'

EXIST R/W
EXISTING R/W
TO EIP
EIP
PLUG
TDE
PUE
CONC
ISBKD
ISFD
2SBKO
2SFD
CHURCH
DI
CB
WD GATE

NOTE:
SEE SHEET 29 & 30 FOR -L- PROFILE
SEE SHEET 44 FOR -Y10- & -Y11- PROFILE

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

UNION CROSS RD
12,500 / 27,100 — 12,500 / 27,200
200 / 300 — 300 / 400
2005 ADT / 2030 ADT
500 / 700
LORADALE DR

PROJECTED TRAFFIC VOLUMES

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

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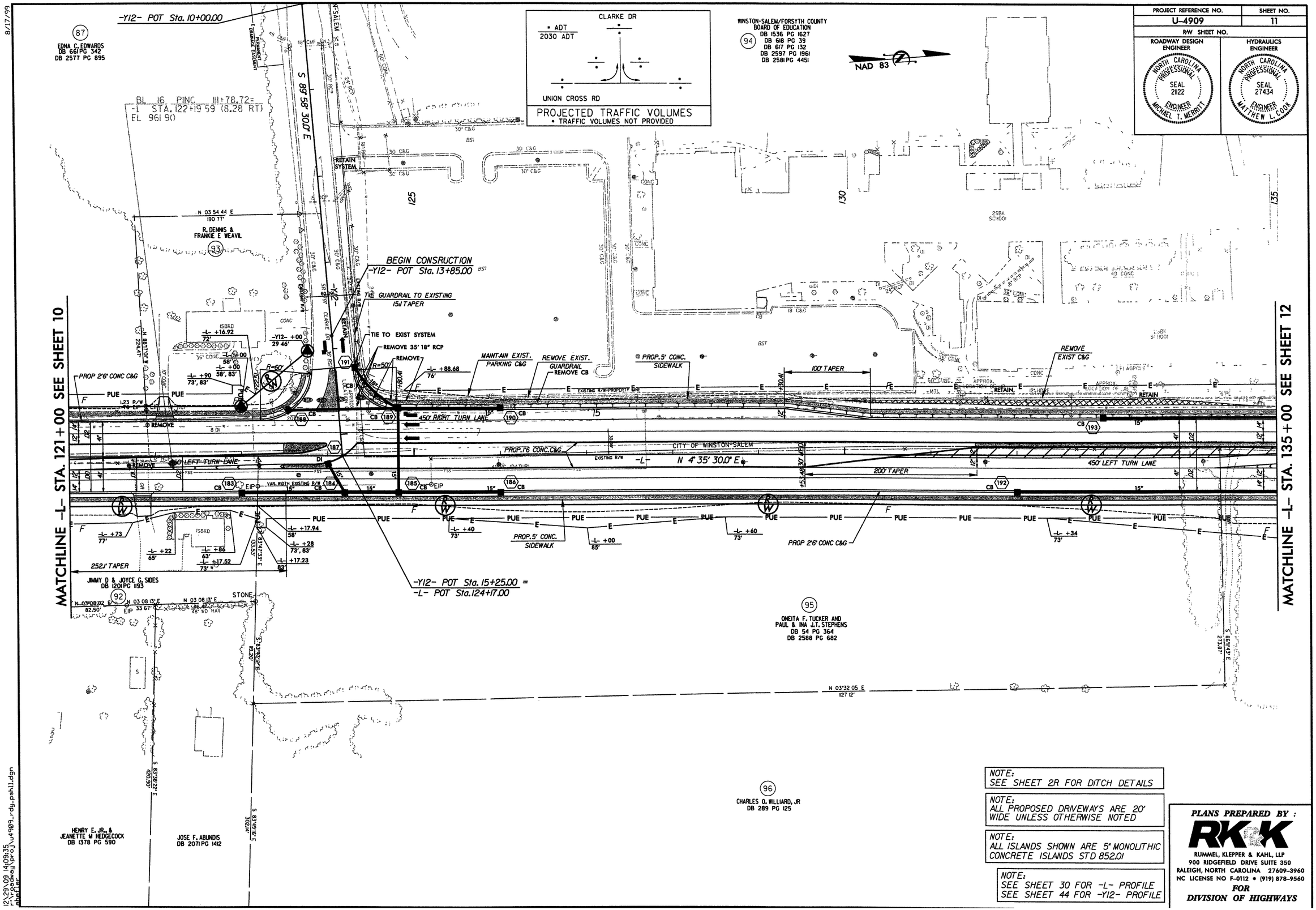
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK



NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 44 FOR -Y12- PROFILE

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	12
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

NOTE:
SEE DETAIL SHEET 2N FOR INTERSECTION DESIGN

MATCHLINE -Y13- STA.20+00 SEE SHEET 22

MATCHLINE -L- STA. 135+00 SEE SHEET 11

MATCHLINE -L- STA. 149+00 SEE SHEET 13

-L-
PI Sta 144+30.22
Δ = 16° 24' 30.0" (RT)
D = 1° 08' 45.3"
L = 1,431.90'
T = 720.88'
R = 5,000.00'
Se=0.02
Runoff = 110'

-Y14-
PI Sta 17+64.64
Δ = 6° 33' 58.0" (LT)
D = 2° 51' 53.2"
L = 229.20'
T = 114.73'
R = 2,000.00'
Se=0.03
Runoff = 110'

NAD 83

-Y14- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y14- POT Sta. 11+72.45

-Y14- POT Sta. 12+53.67 =
-L- POC Sta.146+89.27

-BL- 17 PINC 126+50.62=
-BY12- POT 12+20.13=
L STA. 136+89.65 (65.30 LT)=
Y13- STA. 23+22.75 (38.02 LT)=
EL 965.78

-BL- 18 PINC 136+67.86=
-BY13- POT 5+00.00=
L STA 147+00.87 (9.47 RT)=
Y14 STA 12+85.63 (9.96 LT)
EL 961.09

-Y13- POT Sta. 23+87.84 =
-L- POT Sta.136+52.00

-L- PC Sta. 137+09.34

-Y14- PC Sta. 16+49.91

END CONSTRUCTION
-Y14- POT Sta. 14+50.00

-BY13- 51 POT 9+79.86

97 GLENN CROSSING ASSOCIATES, LLC DB 2770 PG 1473 PB 52 PG 85

98 GLENN CROSSING ASSOCIATES, LLC DB 2770 PG 1473 PB 52 PG 85

99 GLENN CROSSING ASSOCIATES, LLC DB 2770 PG 1473 PB 52 PG 85

94 WINSTON-SALEM/FORSYTH COUNTY BOARD OF EDUCATION DB 1536 PG 1627 DB 618 PG 39 DB 617 PG 132 DB 2597 PG 1961 DB 2581 PG 4451

96 CHARLES O. WILLIARD, JR DB 289 PG 125

101 CHARLES O. JR. & RILLA W WILLARD DB 1018 PG 439

102 C STANLEY & KIMBERLY P TART DB 1969 PG 470 DB 2244 PG 3736

103 ROBERT H. & TREVA BOYLES DB 778 PG 312 DB 723 PG 90 DB 831 PG 345

104 LARRY W. & KATHRYN H. BOYLES DN 927 PG 569

105 LARRY D. SR. & DONNA HOLMAN DB 2337 PG 5617

106 UNION CROSS, LLC DB 2592 PG 111

107 PRIME PROPERTY, LLC DB 2770 PG 1477 PB 52 PG 85

GLENN CROSSING ASSOCIATES, LLC DB 2770 PG 1473 PB 52 PG 85

WEST POINT VILLAGE ASSOCIATES DB 2770 PG 1479 PB 52 PG 85

ROBERT H BOYLES DB 859 PG 93

HELEN G. WOOD DB 2156 PG 1086

CITY OF WINSTON-SALEM

SHOPS AT GLENN CROSSING
UNION CROSS RD
10,000 / 50,500
8,500 • 10,200
15,700 / 34,200 — 15,700 / 35,200
200 / 1,300 — 200 / 1,400
2005 ADT / 2030 ADT
400 / 3,000
GLENNVIEW DR
PROJECTED TRAFFIC VOLUMES
• TRAFFIC VOLUMES NOT PROVIDED

GLENN HIGH RD
2005 ADT / 2030 ADT
7,000 / 13,000
1,900 / 3,000 — 5,100 / 10,000
12,500 / 27,200 — 15,700 / 34,200
UNION CROSS RD
PROJECTED TRAFFIC VOLUMES

NOTE:
ALL PROP. FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
SEE SHEET 30 & 31 FOR -L- PROFILE
SEE SHEET 45 FOR -Y13- & -Y14- PROFILE

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

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dlp: Plotted by: jpeterson

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4909	13

SW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS

NAD 83

MATCHLINE -L- STA. 164+00 SEE SHEET 14

MATCHLINE -L- STA. 149+00 SEE SHEET 12

D

A

C

B

BRIDGE ON -L- OVER -Y15-

UNION CROSS RD
10,900
40 700
7,800
13 500
2,800
10 100
INTERSTATE 40
61,600
79 000
60,000
76 900
1,500
8 400
4,800
9 700
2005 ADT
2030 ADT
15,700
33,200
UNION CROSS RD

PROJECTED TRAFFIC VOLUMES

NOTE:
ALL PROP. FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED.

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE:
ALL ISLANDS SHOWN ARE 9" MONOLITHIC CONCRETE ISLANDS STD.862.01

NOTE:
SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 45 FOR -Y15- PROFILE
SEE SHEET 47 FOR -Y15APA- & -Y15RPB PROFILES
SEE SHEET 48 FOR -Y15RPC- & -Y15RPD- PROFILES
SEE SHEET 49 FOR -Y15SPA-,Y15SPB, -Y15SPC-, & -Y15SPD- PROFILES

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

GRAPHIC SCALE
50 25 0 50 100
PLANS

PLANS PREPARED BY :
RK&K
BUMMEL, KLEPPER & KAHL, LLP
300 WINSMITH DRIVE SUITE 300
RALEIGH, NORTH CAROLINA 27609-3990
NC LICENSE NO P-0312 ■ (919) 878-9560
FOR
DIVISION OF HIGHWAYS

LOCATION:
TIP NO.: U-4909 COUNTY: FORSYTH
DESIGNED BY:
CHECKED BY: DATE:

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y16-
PI Sta 11+92.78
Δ = 20° 47' 50.0" (RT)
D = 11° 01' 06.3"
L = 188.75'
T = 95.42'
R = 520.00'

-Y17-
PI Sta 19+30.72
Δ = 34° 20' 20.0" (RT)
D = 7° 38' 22.0"
L = 449.50'
T = 231.73'
R = 750.00'
Se = 0.06
Runoff = 1.90'

-L-
PI Sta 171+16.05
Δ = 17° 00' 00.0" (RT)
D = 2° 51' 53.2"
L = 593.41'
T = 298.90'
R = 2,000.00'
Se = 0.03
Runoff = 1.10'

-Y18-
PI Sta 13+61.14
Δ = 50° 34' 13.0" (LT)
D = 11° 41' 34.9"
L = 432.48'
T = 231.41'
R = 490.00'
Se = 0.05
Runoff = 1.00'

NAD 83

MATCHLINE -Y17- STA. 18+00 SEE SHEET 23

MATCHLINE -L- STA. 164+00 SEE SHEET 13

MATCHLINE -L- STA. 178+00 SEE SHEET 15

-L_SB- PT Sta. 165+30.30

-L- PT Sta. 167+00.00 =
-L_NB- POT Sta. 167+41.30 (27' RT)
-L_SB- POT Sta. 167+29.12 (27' LT)

-L- PC Sta. 168+17.35

-Y17- PT Sta. 21+48.49

-BY16- 57 PINC 12+65.05=
-Y17- STA. 19+31.20 (34.94 LT)
EL. 976.56

BEGIN CONSTRUCTION
-Y18- POT Sta. 13+60.00

-Y18- PT Sta. 15+62.15

-L_NB- PT Sta. 165+59.03

-BL- 21 PINC 158+26.84=
-BY15- POT 15+76.61=
-BY16- POT 19+30.06=
-L- STA. 168+58.71 (64.47 RT)
EL. 967.95

-Y17- POT Sta. 22+18.13 =
-L- POC Sta. 174+05.00

-L- PT Sta. 174+10.56

-Y18- POT Sta. 16+62.75 =
-L- POT Sta. 180+31.50
-BL- 22 PINC 166+68.27=
-BY17- POT 13+89.09=
-L- STA. 177+02.10 (55.97' LT)
EL. 967.35

SOUTHBOUND
NORTHBOUND
CITY OF WINSTON-SALEM
CITY OF KERNERSVILLE
SR 2643 UNION CROSS RD 36' BST
PROP 2'6" CONC C&G
PROP.5' CONC. SIDEWALK
550' LEFT TURN LANE
245' TAPER
100' TAPER
LATERAL V DITCH SEE DETAIL B
SPECIAL CUT DITCH SEE DETAIL A
SPECIAL BACK OF CURB CUT-DITCH SEE DETAIL G
STANDARD BASE DITCH SEE DETAIL S
5 TONS CL B RIPRAP W/14 SY FIL FAB
REMOVE
PROP 2'-6" CONC C&G REMOVE
ACCESS BREAK
RETAIN REMAINDER OF SYSTEM

ROBERT H. & TREVA H. BOYLES
DB 1000 PG 578 (114)

HAROLD D. & MARY A. SPAINHOUR
DB 873 PG 36 (115)

REX C. JR. & CINDY L. HOYLE
DB 2020 PG 2152

DAVID A. & PHILIPPA H KING
DB 1554 PG 238 (116)

SAMUEL H. & BOBBIE R. HENSDALE
DB 902 PG 298
DB 935 PG 310 (117)

D.H HORTON, INC
DB 1953 PG 781 (118)

T. WRAY & ESTIE M. CHARLES
DB 780 PG 320 (112)

MARY E.S. SOLOMON
DB 1905 PG 2489 (113)

T. WRAY & ESTIE M. CHARLES
DB 780 PG 320 (110)

TRIAD HOLDING COMPANY, LLC
DB 2059 PG 2652 (119)

JAY T. PROPERTIES, LLC
DB 1814 PG 964 (122)

MARK & DEBRA OVERBY
DB 2549 PG 2021 (121)

BEGIN FENCE GREENWOOD & CHARLES, INC.
DB 1935 PG 1194 (120)

UNION CROSS STATION LLC
DB 1982 PG 781 (111)

BYRON W. SMITH
DB 2707 PG 3620 (123)

SOLOMON DR

2005 ADT / 2030 ADT			
20,200 / 38,700	500 / 8,500	200 / 1,000	100 / 10,200
	20,200 / 38,500		

UNION CROSS RD

PROJECTED TRAFFIC VOLUMES

SILVER CREEK TR

2005 ADT / 2030 ADT			
20,200 / 38,500	1,400 / 1,600	2,000 / 13,000	100 / 400
	18,900 / 37,300		

UNION CROSS RD

PROJECTED TRAFFIC VOLUMES

NOTE:
SEE DETAIL SHEET 2N FOR INTERSECTION DESIGN

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROP. FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED.

NOTE:
SEE SHEET 31 & 32 FOR -L- PROFILE
SEE SHEET 50 FOR -Y16, -Y17- & -Y18- PROFILES

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

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ssmith (Microstation 8.5)

PROJECT REFERENCE NO.	SHEET NO.
U-4909	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER MICHAEL T. MERRITT

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER MATTHEW L. COOK

REVISIONS

8/17/99

R/W Revision Date: - Revised Construction Easement on Parcel 136, Revised PDE and Construction Easement on Parcel 140, Revised PUE and PDE on Parcel 131, = Combined Parcels 123, 124 and 134, Eliminated Parcel 125, Revised Parcels 124 and 134, Revised PUE to tie to proposed R/W at -L- Sta. 187+10 and 190+30 Rt.
= Revised PUE to overlap PDE at -L- Sta. 179+30, 182+60 Rt. and 186+30 Lt.
= Revised PUE to overlap PDE at -L- Sta. 204+70 Rt.

R/W Revision Date: 4/15/00 - Revised overlapping PDE and PUE to DUE for parcels 123, 130, 131, 135, 136, 138, 140 and 142. Added easement for Parcel 130 at -L- 185+00 Lt. and added note "Do not disturb historic well" at -L- Sta. 180+00 Lt.

MATCHLINE -L- STA. 178+00 SEE SHEET 14

MATCHLINE -L- STA. 192+00 SEE SHEET 16

-Y19- PI Sta 16+91.50
Δ = 11° 32' 15.0" (RT)
D = 5° 43' 46.5"
L = 201.37'
T = 101.03'
R = 1,000.00'
Se = 0.04
Runoff = See Plans

-Y20- PI Sta 11+19.09
Δ = 25° 46' 00.0" (LT)
D = 21° 13' 14.4"
L = 121.42'
T = 61.76'
R = 270.00'
Se = 0.04
Runoff = See Plans

-Y21- PI Sta 12+43.26
Δ = 21° 03' 45.0" (RT)
D = 11° 27' 33.0"
L = 183.80'
T = 92.95'
R = 500.00'
Se = 0.02
Runoff = See Plans

-BL- 23 PINC 174+23.75=
-BY18- POT 9+36 28=
-BY19- POT 5+00.00=
-L- STA. 184+56.52 (16.04' LT)=
-Y19- STA 14+25 08 (20.57 LT)
EL. 964.92

-BY18- 61 POT 5+00.00

-Y19- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y19- POT Sta. 11+90.00

-Y20- POT Sta. 10+00.00 =
-L- POT Sta. 189+16.50

-Y19- PC Sta. 11+29.67

-BY17- 59 PINC 9+69.33=
-BY18- STA. 11+90.90 (12.20 RT)
EL. 959.54

-Y19- PT Sta. 14+37.41 =
-L- POT Sta. 184+38.69

-Y19- PC Sta. 15+90.47

-Y19- PT Sta. 17+91.84

-Y20- PC Sta. 10+57.34

-Y20- PT Sta. 11+78.76

END CONSTRUCTION
-Y19- POT Sta. 19+20.00

END CONSTRUCTION
-Y20- POT Sta. 12+20.00

-BY20- 63 PINC 7+33.08=
-Y20- STA. 12+91.73 (12.40 RT)
EL. 967.09

-BL- 24 PINC 179+98.67=
-BY20- POT 5+00.00=
-L- STA. 190+29.31 (33.36' RT)
EL. 965.34

SHEPHERD GROVE RD

2005 ADT / 2030 ADT		
	700 / 900	
500 / 600		200 / 300
18,600 / 34,000		18,300 / 33,700

UNION CROSS RD

PROJECTED TRAFFIC VOLUMES

BILOXI AVE

	200 / 900	
100 / 400		100 / 100
UNION CROSS RD 18,900 / 37,300		18,800 / 34,200
200 / 8,700		100 / 5,900
2005 ADT / 2030 ADT	300 / 15,000	

KENOSHA DR

PROJECTED TRAFFIC VOLUMES

UNION CROSS RD

18,800 / 34,200		18,600 / 34,000
300 / 400		100 / 200
2005 ADT / 2030 ADT	400 / 600	

KINGSWOOD DR

PROJECTED TRAFFIC VOLUMES

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD. 852.01

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 51 FOR -Y19- & -Y20- PROFILES

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

Do Not Disturb Historic Well House (within 10' boundary)

PLANS PREPARED BY :

RKK

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

03/15/10 08:45:34
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8/17/99

REVISIONS

R/W Revision Date: 12/02/2008 – Revised PUE on Parcel 146 at Sta.197+80 Left.
R/W Revision Date: – Revised property owner name for Parcel 146. Combined Parcels 157 and 163. Eliminated Parcel 163. Added PDE -L- STA.196+00 to 197+70 LT.
– Revised PUE to tie to proposed R/W at -L- Sta.193+20 and 194+20 Rt.
R/W Revision Date: 8/15/09 – Revised overlapping PDE and PUE to DUE for parcels 142,146,147,148,149,150 and 157.

-Y23-
PI Sta 20+64.65
Δ = 6° 56' 58.1" (RT)
D = 1° 54' 35.5"
L = 363.87'
T = 182.16'
R = 3,000.00'
Se= 0.03
Runoff = See Plans

-Y23-
PI Sta 27+97.55
Δ = 5° 57' 35.9" (RT)
D = 1° 54' 35.5"
L = 312.06'
T = 156.17'
R = 3,000.00'
Se= 0.03
Runoff = See Plans

-L-
PI Sta 207+66.48
Δ = 19° 36' 30.0" (RT)
D = 2° 29' 28.0"
L = 787.13'
T = 397.45'
R = 2,300.00'
Se= 0.03
Runoff = 210'

-Y22-
PI Sta 13+02.85
Δ = 36° 27' 25.0" (LT)
D = 22° 55' 05.9"
L = 159.07'
T = 82.33'
R = 250.00'

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

UNION CROSS RD
18,300 / 33,700 — 18,000 / 33,400
700 / 800 — 400 / 500
2005 ADT / 2030 ADT
1,100 / 1,300
SOMERSET CROSSING LN

PROJECTED TRAFFIC VOLUMES

PROJECT REFERENCE NO.	SHEET NO.
U-4909	16
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL — MICHAEL T. MERRITT — ENGINEER

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL — MATTHEW L. COLE — ENGINEER

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

NAD 83

MATCHLINE -L- STA. 192+00 SEE SHEET 15

MATCHLINE -L- STA. 204+00 SEE SHEET 17

BEGIN CONSTRUCTION
-Y21- POT Sta. 11+00.00

-Y21- PC Sta. 11+50.31

-Y21- PT Sta. 13+34.13

-Y22- POT Sta. 10+00.00 = -L- POT Sta. 199+71.50

-BY21- 65 PINC 11+36.43=
-Y21- STA. 11+56.37 (19.45 RT)
EL. 974.12

-BY22- 67 PINC 6+86.42=
-L- STA. 199+52.19 (67.87 RT)=
-Y22- STA. 10+65.52 (26.19 RT)
EL. 976.25

-BL- 25 PINC 187+50.17=
-BY21- POT 15+34.11=
-BY22- POT 5+00.00=
-L- STA. 197+79.91 (3.36' LT)
EL. 974.81

-Y21- POT Sta. 14+29.42=
-L- POT Sta. 195+00.00

END CONSTRUCTION
-Y22- POT Sta. 11+85.00

-Y22- PC Sta. 12+20.52

-Y22- PT Sta. 13+79.59

-Y22- POT Sta. 15+69.60

PC Sta. 203+69.03

-BY22- 68 PINC 9+03.29=
-Y22- STA. 9+78.68 (15.03 RT)
EL. 969.87

S 57° 53' 55.0" E

N 85° 38' 40.0" E

PROP. 5' CONC. SIDEWALK

PROP. 26' CONC. C&G

PROP. 15' CONC. C&G

GRADE TO DRAIN

400' LEFT TURN LANE

200' TAPER

250' TAPER

450' LEFT TURN LANE

REMOVE

SPECIAL BACK OF CURB CUT DITCH SEE DETAIL G

LATERAL V DITCH SEE DETAIL B

LATERAL V DITCH SEE DETAIL C

EXIST. R/W 86.08'

NOTE: IMPROVEMENTS HAVE NOT BEEN SHOWN FOR ENTIRE PARCEL

JAMES M. & JANELL B BROWN DB 2072 PG 285

CLARA J. THOMPSON DB 2084 PG 1748

THOMAS A. & MARY C. DAREZZO DB 2512 PG 2606

R H. WOFFORD DB 1029 PG 343

(145) CHARLES T. LONG DB 1630 PG 3408

(143) RONALD K. BOONE DB 1974 PG 3753

(144) CHARLES A & ELAINE C TRICOLI DB 1874 PG 3013

(313) LEO O. WHICKER, JR DB 991PG 616

JAN WALLIN, DIANE TAYLOR, & JEFF DAVIS DB 2327 PG 724

(146) SUGAR & SPICE CHILD ENRICHMENT CENTER, INC DB 2756 PG 4037

(147) RACHAEL JOYCE & BRYANT TAYLOR DB 996 PG 438 DB 1324 PG 1014

DONALD A & MAXINE D JOYCE DB 1918 PG 2831

(148) 95', 84.46'

95', 85'

(142) DONALD & FAYE B. JACKSON DB 1673 PG 1007

(149) MARK O. & LEESA S. YATES DB 2313 PG 2225

(151) ROBERT W. & RIZZA L SANTUCCI DB 1895 PG 1752

(152) PETER & CHARLENE AQUINO DB 2487 PG 915

(153) DUNG ZUAN & THU LIEN T. LE DB 2032 PG 2544

(154) JASON E. CHASE DB 2243 PG 3265

FREDRICK K ISAACSON & SALLY A SPRAGUE DB 1957 PG 1707

(156) RODNEY & MISTY GODWIN DB 2156 PG 1279

(157) GARY D. & JUADANE S. SMITH DB 2013 PG 1441

THAD H. & SHERRIL L. VALENTINE DB 2017 PG 2650

DOMINIC S & PATRICIA J. ROBERTAZZI DB 2295 PG 4591

AMY R. ADAMS DB 2259 PG 1243

TIMOTHY A. & GWENDOLYN HEDGPETH DB 1933 PG 114

VINCENT L AVERA DB 1933 PG 2122

ANGELO J & MARY ANN BRICOLO DB 1310 PG 1535

JAMES C. HOLLAND & CHELSA BOSWELL DB 2553 PG 274

EDWARD & PATRICIA K. SPRAGUE DB 1886 PG 3264

(150) MICHAEL S. & TRINA S RANSOM DB 1970 PG 3656

JAE H & JIN HAN KIM DB 2406 PG 913

KIMBERLY A. DANCH DB 2597 PG 2758

ANNA MARIE DUROY & DORTHY L HEIKS DB 1902 PG 2475

RICHARD A. & SHIRLEY J. RAMSEY DB 2135 PG 2658

BUNRITH & CHANTA NONG DB 2125 PG 812

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
SEE SHEETS 32 & 33 FOR -L- PROFILE
SEE SHEET 5I FOR -Y21- & -Y22- PROFILES

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR
DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	17
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL — MICHAEL T. MERRIN — ENGINEER

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL — MATTHEW L. COOK — ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

R/W Revision Date: 12/02/2008 – Revised PUE on Parcels 165 and 167 (-Y23- Sta.27+00 to 28+00 Left).
R/W Revision Date: – Revised PUE on Parcels 158 (-Y23- Sta.19+00 to 21+50 Left).Revised PDE and PUE on Parcels 159 and 160 (-L- Sta.207+00 to 213+00 Left)
– Revised Construction Easement and PDE on Parcel 166 (-Y23- Sta.24+50 to 27+00 Left).
– Revised property owner names on Parcels 158 and 159. Combined Parcels 157 and 163. Eliminated Parcel 163. Added new Parcel 159A
R/W Revision Date: – Revised overlapping PDE and PUE to PUE for parcels 148,157,159,159A,166 and 167. Revised a portion of PDE to AUE for parcel 158.
Replaced 4' outside asphalt shoulder with 2'-6" concrete curb and gutter at -L- Sta 211+18 to 222+00 Rt.

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MATCHLINE -L- STA. 204+00 SEE SHEET 16

MATCHLINE -Y23- STA. 19+00 SEE SHEET 24

MATCHLINE -L- STA. 217+00 SEE SHEET 18

MATCHLINE -Y23- STA. 28+00 SEE SHEET 25

-L-
PI Sta 207+66.48
Δ = 19° 36' 30.0" (RT)
D = 2° 29' 28.0"
L = 787.13'
T = 397.45'
R = 2,300.00'
Se = 0.03
Runoff = 2.10'

-Y24-
PI Sta 11+49.03
Δ = 19° 00' 45.0" (LT)
D = 6° 26' 15.8"
L = 295.33'
T = 149.03'
R = 890.00'
Se = 0.02

-BL- 26 PINC 203+95.30=
-BY24- POT 11+25.53=
-L- STA. 214+26.40 (23.81 LT)
EL. 985.37

-BY23- 71 PINC 11+66.53=
-Y23- STA. 18+33.99 (51.62 RT)
EL. 976.19

U4909-3 "GPS"
-BL- PINC 196+56.25=
-BY23- PINC 15+56.48=
-L- STA. 206+87.12 (4.35 RT)
EL. 973.41

-Y23- PT Sta. 22+46.36
-Y23- POT Sta. 22+77.46 =
-L- POC Sta. 206+18.74

-Y23- PC Sta. 26+41.38

-L- PT Sta. 211+56.16

-Y24- POT Sta. 12+95.33

BEGIN CONSTRUCTION
-Y24- POT Sta. 13+30.00

-Y24- POT Sta. 15+14.35 =
-L- POT Sta. 214+51.50

NAD 83

GREENWOOD & CHARLES DB 2712 PG 1981 (158)
CVS 3643 NC, LLC DB 2833 PG 619 (159)
GREENWOOD & CHARLES DB 2712 PG 1981 (159A)
ROBERT G. & ZORA P HEMRICK DB 955 PG 321 (160)
V.L. & ELEANOR H. ROSS DB 948 PG 203 (161)
LARRY E & PATRICIA P. FREEZE DB 2614 PG 213 (162)
DONALD A. & MAXINE D. JONES DB 1918 PG 283 (148)
GARY D. & JUADANE S. SMITH DB 2013 PG 1441 (157)
GARY D. & JUADANE S. SMITH DB 2458 PG 2850 (157)
KYLE H. & FRANCES S. HARRIS DB 1174 PG 1123 (166)
BEESON CROSS ROADS FIRE AND RESCUE, INC DB 1296 PG 47 RETAIN
CHOOLER T. & PRISCILLA Y. CAUDILL DB 1350 PG 1353 (168)
PREFECTO RUIZ, CONCEPCION CORDONA, & JOSEFINO RUIZ DB 2437 PG 1737 (169)
JAMES O. & NANNIE V. BEESON DB 926 PG 609 DB 1032 PG 548 (170)
JOSEPH B. & TAMMY W. FLETCHER DB 2178 PG 3071 (171)
BOBBY C. & ELIZABETH W. ALLEN DB 950 PG 475 (173)
ROYCE E. & CAROLYN R VOSS DB 1997 PG 78
WAYNE D. & ARGYLE C. BROWN DB 1826 PG 1258
ROBERT T. & BRENDA HICKS DB 1001 PG 576 (165)
RODNEY & MISTY GODWIN DB 2256 PG 1279 (164)
ANNA M. WALL DB 2474 PG 1396 (211)
MICHAEL W. & PATRICIA POWELL DB 1243 PG 833
PAUL C. & JAIME L. MANDERS DB 2365 PG 592
R.C JR. & MARY C. FLYNT DB 1787 PG 3051
RAYMOND R. & JANE L. FLETCHER DB 1011 PG 238
BILLY G. & DELORES ALLEN DB 1631 PG 2517
WILLIAM G. & PEGGY R. SCOTT DB 1027 PG 164

CITY OF KERNERSVILLE 30' ACCESS EASEMENT
CITY OF KERNERSVILLE 30' PERM. DRAINAGE ESMT.
20' PERM. DRAINAGE ESMT.
20' PRIVATE ACCESS & UTILITY ESMT.
20' SIDEWALK & UTILITY ESMT.
10' SIDEWALK & UTILITY ESMT.
EXISTING R/W
PROPERTY LINE
GREEN LAWN
SEDIMENT BASIN
RISER W/ SKIMMER ORIFICE
RETAIN
RETAIN SYSTEM
LATERAL V DITCH SEE DETAIL B
GRASS AREA
GRADE TO FLOW OVER CURB
REMOVE
PLUG
DUE
PDE
PUE
AUE
ISBKD
EIP
BST
CONC
RCP
CMP
CB
DI
SSMH
GSP
FES
TYP
PROP. 2'6 CONC C&G
PROP 5' CONC SIDEWALK
PROP. 5' CONC. SIDEWALK
PROP 2'6' CONC C&G
PROP. 1'6 CONC.C&G
400' RIGHT TURN LANE
450' LEFT TURN LANE
150' LEFT TURN LANE
145' TAPER LT & RT
100' TAPER
300' TAPER
600' TAPER
75' TAPER
70' TYP.
OLD SALEM RD
UNION CROSS RD
SEDGE GARDEN RD
GREEN LAWN DR
REYNOLDS PRICE DR

SEDGE GARDEN RD
10,600 / 19,000
UNION CROSS RD: 4,700 / 10,800 (2,800 / 5,900) (15,000 / 27,800) 18,000 / 33,400 (1,400 / 4,200) (300 / 3,500) 4,800 / 10,000
2005 ADT / 2030 ADT
OLD SALEM RD

PROJECTED TRAFFIC VOLUMES

GREEN LAWN DR
2005 ADT / 2030 ADT
UNION CROSS RD

PROJECTED TRAFFIC VOLUMES
• TRAFFIC VOLUMES NOT PROVIDED

UNION CROSS RD
2005 ADT / 2030 ADT
REYNOLDS PRICE DR

PROJECTED TRAFFIC VOLUMES
• TRAFFIC VOLUMES NOT PROVIDED

NOTE:
SEE DETAIL SHEET 20 FOR INTERSECTION DESIGN

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD.852.01

NOTE:
SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 52 FOR -Y23- PROFILE
SEE SHEET 53 FOR -Y24- PROFILE

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-4909	18
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024434 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 024434 ENGINEER MATTHEW L. COOK

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99 R/W Revision Date: -- Added Parcel 175A.

8/17/99 R/W Revision Date: -Added note "Do not disturb brick walls" on parcels 179 and 180. Changed parcel 179 owner name to Richard and Judith Hall. Replaced 4' outside asphalt shoulder with 2'-6" concrete curb and gutter at -L- Sta 211+18 to 222+00 Rt.

07-JAN-2010 08:30
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MATCHLINE -L- STA. 217+00 SEE SHEET 17

-L- Sta. 226+97.80
END TIP PROJECT U-4909

-L- PI Sta 224+12.82
Δ = 1° 13' 56.5" (LT)
D = 0° 12' 58.4"
L = 569.98'
T = 285.00'
R = 26,500.00'
Se= 0.02

-L- PC Sta. 221+27.82

-Y25- POT Sta. 10+00.00 = -L- POC Sta. 222+27.50

END CONSTRUCTION
-L- POC Sta. 225+50.00

-Y25- POC Sta. 10+51.33

-Y25- PT Sta. 11+92.34

-Y25- PC Sta. 12+44.53

-BL- 27 POT 212+29.20=
-BY25- POT 5+00.00=
-L- STA. 222+58.35 (31.45 RT)
EL. 969.83

-BY25- 74 POT 9+41.46=
-Y25- STA. 14+55.15 (33.13 RT)
EL. 963.90

-Y25-

PI Sta 11+23.77	PI Sta 14+80.63
Δ = 32° 19' 00.0" (RT)	Δ = 84° 29' 09.3" (LT)
D = 22° 55' 05.9"	D = 22° 02' 12.6"
L = 141.01'	L = 383.38'
T = 72.43'	T = 236.11'
R = 250.00'	R = 260.00'

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 53 FOR -Y25- PROFILE

PLANS PREPARED BY :
RK&K
RUMMEL KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	19
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

FLETCHER WEAVIL DB 1210 PG 979

FLETCHER WEAVIL DB 1681 PG 1876

KENNETH R. & JEANNE COCHRAN DB 2396 PG 4167

RALPH G HAYES DB 849 PG 464

NLME C. & COLLEEN M. PARRISH DB 952 PG 311

DB 1238 PG 117

N 00°11'49" W 40.19'

0.85 EIP TO R/W

S 59°34'24" E 197.98'

S 58°29'54" E 111.07'

N 47°09'56" E 46.57'

N 18°19'12" E 45.57'

48 WN W/ISBW

VAR/WDTH EXISTING R/W

48 CHL & ISBW

U4909 "GPS" BY4 PINC 14+15.30= Y3 STA 17+38.16 (17.77 LT) El 916.29

-Y3RPA- POC Sta. 10+00.00

RETAIN DI

36 RCP

30" RCP

36 CABLE

RETAIN REMAINDER OF SYSTEM

-Y3-

S 53°15'05.4" E

4'05'05"

S 49°10'00.0" E

BEGIN CONSRUCTION -Y3- POT Sta. 16+82.33

-Y3RPB- POT Sta. 10+00.00

-Y3RPB- TS Sta. 13+44.04

-Y3RPB- SC Sta. 15+44.04

-Y3RPB- CS Sta. 20+68.87

SPECIAL CUT DITCH SEE DETAIL A

REMOVE DI COLLAR

TIE TO EXIST SYSTEM

FS SEE DETAIL J

CUT /FILL TRANSITION 2 TONS CL B RIPRAP W/7 SY FIL FAB

GRADE TO DRAIN

REMOVE

DIRECT PROP. DITCH TO EXIST DI

U4909 2 "GPS" BY4- PINC 25+12.08

-Y3RPB- +28.37 118.72' TIE PROP FENCE TO EXIST

-Y3RPB- +44.04 120'

-Y3RPB- +68.87 120'

300' TAPER

40' TYP.

US 311 SBL 24 BST

US 311 NBL 24 BST

4 BST

2 BST

4" P.S.

24" P.S.

RETAIN

FLETCHER WEAVIL DB 1210 PG 979

DENNIE O. & CAROL L. WEAVIL DB 2353 PG 1740

S 03°32'34" E 188.00'

N 88°55'49" W 168.93'

N 88°55'49" W 24.00'

EIP

-Y3RPB-

PI Sta 18+10.72
Δ = 25°03'32.5" (RT)
D = 4°46'28.7"
L = 524.84'
T = 266.68'
R = 1,200.00'
Se = 0.02
Runoff = 200'

Pls Sta 14+77.42
Θs = 4°46'28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

-Y3RPA-

PI Sta 11+55.30
Δ = 6°24'39.3" (LT)
D = 2°03'58.3"
L = 310.27'
T = 155.30'
R = 2,773.00'

NOTE: ALL PROP FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED

NOTE: SEE SHEET 2R FOR DITCH DETAILS

NOTE: ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE: ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD.852.01

NOTE: SEE SHEETS 35 & 36 FOR -Y3- PROFILE SEE SHEET 37 FOR -Y3RPA- PROFILE SEE SHEET 38 FOR -Y3RPB- PROFILE

MATCHLINE -Y3- STA. 30+00 SEE SHEET 5

MATCHLINE -Y3RPB- STA. 22+00 SEE SHEET 5

PLANS PREPARED BY :

RKK

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	20
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y3-
PIs Sta 62+30.18
Θs = 0° 15' 07.8"
Ls = 90.00'
LT = 60.00'
ST = 30.00'

PI Sta 67+02.10
Δ = 4° 56' 58.2" (LT)
D = 0° 33' 37.3"
L = 883.29'
T = 441.92'
R = 10,225.00'

-Y3RPC-
PI Sta 12+21.02
Δ = 9° 09' 24.3" (LT)
D = 2° 04' 33.4"
L = 441.09'
T = 221.02'
R = 2,760.00'

-Y3RPD-
PIs Sta 14+75.36
Θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

PI Sta 18+82.78
Δ = 31° 42' 32.5" (RT)
D = 4° 46' 28.7"
L = 664.11'
T = 340.80'
R = 1,200.00'
Se = 0.02
Runoff = 200'

MATCHLINE -Y3RPD- 21+00 SEE SHEET 5

MATCHLINE -Y3- 50+50 SEE SHEET 5

IMOGENE B. IDOL DB 2144 PG 261

S 86°27' 49" E 175.34'

EIP

N 06°27'14" E 158.09'

-Y3RPD- +88.55 100' BEGIN FENCE

JESSE G TAYLOR DB 804 PG 135

37

48"WW W/SBW

0.32 EIP TO R/W

GEORGIA B. SMITH DB 1912 PG 1045

NAD 83

-Y3RPD- PT Sta. 10+00.00

N 87°09'10" W 403.81'

-Y3RPD- SC Sta. 15+41.98

-Y3RPD- TS Sta. 13+41.98

-Y3- TS Sta. 61+70.18

-Y3- SC Sta. 62+60.18

CUT /FILL TRANSITION 2 TONS CL B RIPRAP W/7 SY FIL FAB

TIE TO EXIST DITCH

REMOVE 24' 18" RCP AND DI

300' TAPER

SPECIAL CUT DITCH SEE DETAIL A

2 TONS CL B RIPRAP W/7 SY FIL FAB

372

374

373

376

377

3GI

2GI

FS SEE DETAIL J

TIE TO EXIST SYSTEM

COLLAR

40' TYP.

RIP RAP

CAT-1

MTL

CONC

GRAU 350

MATCH TO EXIST DITCH

HW

LATERAL V DITCH SEE DETAIL B

RETAIN / GRADE TO DRAIN

GRADE TO DRAIN

N 50° 57' 00.0" W

2' 18' 05.0"

4 BST

US 311 NBL 24 BST

3' BST

36 CABLE

RETAIN SYSTEM

EX 375

8" RCP

4" P.S.

24"

S 53° 15' 05.4" E

-Y3-

US 311 SBL 24 BST

4 BST

24" RCP

-BY4- 38 PINC 58+14.09=
-Y3- STA 59+15.24 (5.59 RT)
EL. 914 06

END CONSRUCTION
-Y3- POC Sta. 65+00.00

-Y3RPC- POC Sta. 10+00.00

BY3 33 PINC 25+95.23

BY3 34 POT 32+18.33

HOUSE 2 MOBILE

CONC HDW

72" CONC DITCH

DRAINAGE EASEMENT

50.00' EXISTING R/W

EXISTING R/W

PERMANENT DRAINAGE EASEMENT

SR 4232 HAYES DR 2 BST

S 55 08 47 E 189 04'

S 02 31 17 W 21 43'

S 80 29 54 E 34.42'

WILLIAM & ONEIDA THOMAS DB 1633 PG 1671

S 02°29'34" W 189.30'

S 07°54'40" W 139.25'

S 25°26'08" W 375.22'

CHRISTOPHER L. GUYER DB 1724 PG 3590

GP

ISF(1)

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
SEE SHEETS 36 & 37 FOR -Y3- PROFILE
SEE SHEET 40 FOR -Y3RPC- PROFILE
SEE SHEETS 40 & 41 FOR -Y3RPD- PROFILE

NOTE:
ALL PROP FENCE IS 48" WOVEN WIRE UNLESS OTHERWISE NOTED.

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-9360
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	21
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

NAD 83

-Y4-

PI Sta 28+73.48
Δ = 15° 56' 23.4" (RT)
D = 3° 49' 11.0"
L = 417.30'
T = 210.01'
R = 1,500.00'
Se = 0.06
Runoff = 2.40"

PIs Sta 31+34.12
Θs = 3° 03' 20.8"
Ls = 160.00'
LT = 106.68'
ST = 53.35'

MATCHLINE -Y4- STA. 27+00
SEE SHEET 6

-Y4- POT Sta. 33+04.60

-Y4- CS Sta. 30+80.78

-Y4- ST Sta. 32+40.78

END CONSTRUCTION
-Y4- POT Sta. 32+50.00

-BY5 42 POI Y4 STA 32+63.39 (27.12 RT)
El. 945.44

BY5 41 PINC Y4 STA 27+37.06 (25.79 LT)
El. 961.61

ARNOLD C. & BETTY JO SNYDER
DB 1955 PG 2291

ARNOLD C. & BETTY JO SNYDER
DB 1576 PG 1129

RONALD G & LEE B. HARTLEY
DB 1502 PG 1685

LARRY D. & DONNA A HOLMAN
DB 2395 PG 2186

BARRY D. STAFFORD
DB 2397 PG 2580

JOSE L. GARCIA
DB 2648 PG 1959

WILLIAM F. & ONEIDA C. THOMAS
DB 1638 PG 1491

CHAD E & KIMBERLY GREENE
DB 2358 PG 1986

MARK STOEHR & DEBRA MAIDEN
DB 2302 PG 13

MARK STOEHR
DB 2030 PG 2746

CITY OF WINSTON-SALEM

JADE ASSOCIATES II, LLC
DB 2478 PG 2603
TRACT I

WINSTON-SALEM/FORSYTH COUNTY BOARD OF EDUCATION
DB 299 PG 260

WINSTON-SALEM/FORSYTH COUNTY BOARD OF EDUCATION
DB 1672 PG 1930

SR 1003 HIGH POINT RD

NOTE:
SEE SHEET 42 FOR -Y4- PROFILE

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED.

NOTE:
ALL ISLANDS SHOWN ARE 5" MONOLITHIC CONCRETE ISLANDS STD 852.01

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR
DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL — ENGINEER — MICHAEL T. MERRITT

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL — ENGINEER — MATTHEW L. COOK

8/17/99

REVISIONS

R/W Revision Date: - Added Parcel 188A

R/W Revision Date: 8/10/00 - Eliminated PUE for parcel 94.

-Y13-

PI Sta 15+05.83
Δ = 2° 16' 33.3" (LT)
D = 1° 09' 27.0"
L = 196.63'
T = 98.33'
R = 4,950.00'
Se = 0.02
Runoff = 80'

PI Sta 17+26.70
Δ = 2° 50' 13.3" (RT)
D = 1° 09' 27.0"
L = 245.10'
T = 122.58'
R = 4,950.00'
Se = 0.02
Runoff = 80'

NAD 83

CHARLES O. WILLIARD, JR
DB 1211 PG 1524
DB 1037 PG 1008
(187)

WANELL W. WALL
DB 797 PG 451

10

15

S 86 45 39 E
306 76'

EIP

N 03°53'37" E
235.00'

WANELL W. WALL
DB 1225 PG 850

-Y13- POT Sta. 10+00.00

EDWARD P. WEAVER, JR
DB 940 PG 161

-Y13- PC Sta. 14+07.50

-Y13- PRC Sta. 16+04.13

-Y13- PT Sta. 18+49.23

-Y13- +06.64 75'
-Y13- +12 85', 75'
-Y13- +22 85', 75'
-Y13- +06.42 60'
-Y13- +05.98 30 12'
-Y13- +07.50 60'
-Y13- +04.13 60'
-Y13- +49.23 61 03'
-Y13- +95 86', 76'
-Y13- +85 86', 76'
-Y13- +77 31 99'
-Y13- +87.45 31 91'
-Y13- +70 83'
-Y13- +80 84 06'
-Y13- +40 47', 30 57'
-Y13- +00 29 91'
-Y13- +00 42'
-Y13- +20 55'
-Y13- +50 80'
-Y13- +90 80'
-Y13- +10 60'

N 04°53'37" E
235.24'

N 05°18'46" E
434.45'

S 87°59.29 E
31.38'
N 05 09 15 E
23 92'
N 05 14 06 E
20 37'
N 04°26 05 E
39 51'
N 04°14'52 E
38 59'

SPECIAL CUT DITCH SEE DETAIL A

500' TAPER

40' TYP.

5S ELEC

18" RCP

18" RCP 15°

REMOVE 12" CPP

6" STL HP

S 86°17' 50.0" E

8 VC

36" DI

T FO

EIP

PDE

2 TONS CL B RIPRAP W/ 5Y FILTER

CONC. PAD 8' CHL FNC

TENNIS COURTS

8"CY APPROX. DIR.

36" BST

BEGIN CONSTRUCTION
-Y13- POT Sta. 11+40.00

-BY12- 50 POT 5+00.00=
-Y13- STA. 16+04.75 (27.90 RT)
EL. 959.12

S 04°28'07" W
409.06'

S 11°50'11" W
204.55'

S 33°31'42" W
184.27'

S 70°12'18" W
203.22'

94A

REID W. DAVIS AND WIFE CAROLYN DAVIS
DB 982 PG 660
DB 1481 PG 1414

94

WINSTON-SALEM/FORSYTH COUNTY BOARD OF EDUCATION
DB 1536 PG 1627
DB 618 PG 39
DB 617 PG 132
DB 2597 PG 1961
DB 2581 PG 445

15' TYPE III LANDSCAPE BUFFER

30' UTILITY EASEMENT

188A

WEST POINT VILLIAGE ASSOCIATES
DB 2770 PG 1479
PB 52 PG 85

RADIUS = 264.81
CHORD = 293.71
CHORD BEARING = N 37 58 58 E

10' UTILITY EASEMENT

FINAL PAVT. LAYER NOT COMPLETE AS OF DATE OF SURVEY

10' UTILITY EASEMENT

RADIUS = 275.00
CHORD = 69.38
CHORD BEARING = S 64 25 01 W

RADIUS = 214.81
CHORD = 238.25
CHORD BEARING = N 37 59 00 E

188

WEST POINT VILLIAGE ASSOCIATES
DB 2770 PG 1479
PB 52 PG 85

GLENN CENTER DRIVE EP EST

RETAIN SYSTEM

181 RCP

S 86°40'33" E
54.98'

+02.56

+50

DI 391

6 PL

CB 392

CB 393

CB 394

CB 395

CB 396

DI 397

CB 398

GLEN HIGH RD 36' BST

15" RCP

12" RCP

REMOVE

PROP 2'6' CONC. C&G

50' TAPER

300' TAPER

PROP. 5' CONC. SIDEWALK

MTL BLEACHERS

72' CHL

20' CHL

25' BST

AREA U/C

MATCHLINE -Y13- STA.20+00 SEE SHEET 12

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
SEE SHEET 45 FOR -Y13- PROFILE

PLANS PREPARED BY :

RKK

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	23
RW SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT	NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y17-
PI Sta 19+30.72
Δ = 34° 20' 20.0" (RT)
D = 7° 38' 22.0"
L = 449.50'
T = 231.73'
R = 750.00'
Se = 0.06
Runoff = 190'

NAD 83

BY16- 58 POI 5100.00=
Y17 STA 117283 (13 61 LT)
EI 962.60

10

15

S 86°19'27" E 100.00'
N 03°37'56" E 200.26'
JOAN HART GRANT
DB 1720 PG 4178

S 86°19'27" E 100.00'
N 03°39'40" E 200.07'
(189)
ANTHONY S DANIEL
DB 2792 PG 4041

S 86°19'27" E 100.00'
N 03°39'28" E 200.45'
(190)
MARSHALL G. CHEEK AND WIFE EDNA W CHEEK
DB 1235 PG 991

S 86°19'27" E 100.29'
N 03°47'18" E 200.00'
(191)
TIMOTHY D. SMITH AND WIFE JENNIFER D SMITH
DB 2659 PG 2885

S 86°19'27" E 100.06'
N 03°47'18" E 200.05'
MICHAEL & SANDY ZIELINSKI
DB 2110 PG 4787
(192)

S 86°19'27" E 60.20'
EXISTING R/W=PROPERTY LINE

S 86°19'27" E 172.33'
SANDRA R WARD (P/A) ELLIS R & CATHERINE E RUNIONS
DB 893 PG 73
(193)

S 86°19'27" E 172.43'
MARTY W & CHRISTY A. WHICKER
DB 2134 PG 2372
(194)

(115)
HAROLD D & MARY A. SPAINHOUR
DB 873 PG 36
N 03°47'18" E 199.85'

BEGIN CONSTRUCTION
-Y17- POT Sta. 10+00.00

-Y17- +20.00
29.52'

-Y17- +63.69
50'

-Y17- +63.63
29.35'

SPECIAL CUT DITCH SEE DETAIL A

-Y17- +69
75', 50'

800' TAPER

-Y17- +59
75', 50'

-Y17- +63.64
50'

-Y17- +23.84
50'

-Y17- +65.00
65'

-Y17- +99.00
50'

-Y17- +50.00
50'

3 @ 67' TYP.

-Y17- +50.75
30.94'

SPECIAL CUT DITCH SEE DETAIL A

-Y17- +20.00
30.80'

3 @ 67' TYP.

-Y17- +50.68
50'

-Y17- +50.39
65'

-Y17- +23
75', 65'
1080' TAPER

-Y17- +33
75', 65'

-Y17- +99.00
50'

-Y17- +45
70'

-Y17- +50.44
50'

(195)
JERYY L WHITTUM
LINDA E WHITTUM
DB 1905 PG 3257

(196)
MARGIE W HARRIS
DB 902 PG 166

(114)
ROBERT H. & TREVA H. BOYLES
DB 1000 PG 578

-Y17- PC Sta. 16+99.00

MATCHLINE -Y17- STA. 18+00 SEE SHEET 14

S 03°38'49" W 200.13'
S 03°47'25" W 140.00'
S 03°42'25" W 200.00'
S 03°42'25" W 200.00'

S 86°17'35" E 165.10'
S 86°17'35" E 199.76'
S 85°58'35" E 188.10'

NOTE:
SEE SHEET 50 FOR -Y17- PROFILE

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD 852.01

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RKK
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560
FOR DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y23-

PI Sta 14+95.73	PI Sta 20+64.65
Δ = 5° 16' 34.0" (LT)	Δ = 6° 56' 58.0" (RT)
D = 1° 54' 35.5"	D = 1° 54' 35.5"
L = 267.26'	L = 363.87'
T = 138.23'	T = 182.16'
R = 3,000.00'	R = 3,000.00'
Se = 0.02	Se = 0.02
Runoff = See Plans	Runoff = See Plans

-BY23- 70 POT 5+00.00=
-Y23- STA. 11+70.46 (19.19 LT)
EL. 973.98

BEGIN CONSTRUCTION
-Y23- POT Sta. 10+00.00

-Y23- PC Sta. 18+82.49

-Y23- PT Sta. 16+33.76

-Y23- PCSta. 13+57.51

MATCHLINE -Y23- STA. 19+00 SEE SHEET 17

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD.85201

NOTE:
SEE SHEET 52 FOR -Y23- PROFILE

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

REVISIONS

R/W Revision: Date: 12/02/2008 – Removed Construction Easement and added PUE on Parcels 148,202,203,204 and 205.
R/W Revision: Date: – Revised Easements on Parcels 158,197,198,199,200 and 201.
– Revised property owner name for Parcel 158. Added Parcel 159A.
R/W Revision: Date: 11/03/2010 – Added Drive on Parcel 199.

8/17/99

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PLANS PREPARED BY :
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900 RIDGEFIELD DRIVE SUITE 350
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NC LICENSE NO F-0112 • (919) 878-9560
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PROJECT REFERENCE NO.	SHEET NO.
U-4909	25
RW SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT	NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y23-
PI Sta 27+97.56
Δ = 5° 57' 36.0" (RT)
D = 1° 54' 35.5"
L = 312.06'
T = 156.17'
R = 3,000.00'
Se = 0.02
Runoff = See Plans

NAD 83

-Y23- PT Sta. 29+53.45

END CONSTRUCTION
-Y23- POT Sta. 33+75.00

U4909_4 "GPS"
BY24 POT 29+23.28

-Y23- POT Sta. 34+00.00

MATCHLINE -Y23- STA. 28+00 SEE SHEET 17

ROBERT T & BRENDA HICKS DB 1001 PG 576 (185)

JAMES E. MESSICK, III DB 1838 PG 1801 (206)

FLOYD E. & MARTHA S. MABE DB 1569 PG 1031 (207)

KRISTOPHER & EMILY R. ABERNATHY DB 2507 PG 732 (208)

BOBBY L. & EDNA C BOND DB 953 PG 342 (209)

SHELBA J. TALLEY DB 2530 PG 4257 (210)

MICHAEL W & PATRICIA POWELL DB 1243 PG 833 (211)

ROBERT J SKOTCHER DB 2226 PG 3542 (212)

ELNORA M. JONES DB 1458 G 1417 (213)

STEVEN C WILLIAMS DB 2330 PG 3061 (214)

MAYAN PROPERTIES, LLC DB 2609 PG 815 (215)

(216) NO PROPERTY NAME

-B23 12 PINC 214 31.19=
Y23 STA 27+77.55 (17.00)
EL 961.11

PROP 2'6" CONC C&G

3 TONS CL B RIPRAP W/10 SY FIL FAB

NOTE:
SEE SHEET 52 FOR -Y23- PROFILE

NOTE:
SEE SHEET 2R FOR DITCH DETAILS

NOTE:
ALL PROPOSED DRIVEWAYS ARE 20' WIDE UNLESS OTHERWISE NOTED

NOTE:
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLANDS STD 852.01

PLANS PREPARED BY :
RKK
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
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PROJECT REFERENCE NO.	SHEET NO.
U-4909	26

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

BM 1
CHISELED SQUARE ON SE CORNER OF CONCRETE SLAB FOR A GREEN POWER TRANSFORMER AT FIELD NUMBER 2 AT THE OLD RADAR BASE -BY2- STA 9+11.78 56' RIGHT 956.57'

-L-

BEG. LAT. BASE DITCH -L- STA. 8+15.00 LT EL. 948.30

BEGIN GRADE -L- Sta. 8+15.00 EL. 949.23

PI -L- STA. 8+50.00 LT EL. 946.77

PI = 13+35.00
EL = 956.23'
VC = 250'
K = 117

PI -L- STA. 12+61.90 LT EL. 953.13

-M- STA. 15+32.71=
-L- STA. 17+13.55

PI = 20+85.00
EL = 950.23'
VC = 200'
K = 500

PROPOSED GRADE

EXISTING GROUND

(+)1.3459%

(-)0.8000%

(+)0.30% LT

(+)2.00% LT

(+)1.34% LT

(+)2.20% LT

(+)1.13% LT

(+)2.46% RT

(-)2.64% LT

(-)0.71% LT

END. LAT. V DITCH -L- STA. 13+50.00 LT EL. 954.01

PI -L- STA. 12+00.00 LT EL. 953.56

PI -L- STA. 11+00.00 LT EL. 954.77

BEG. LAT. V DITCH -L- STA. 7+44.00 RT EL. 938.70

END. LAT. V DITCH -L- STA. 8+77.00 RT EL. 942.00

BEG. LAT. V DITCH -L- STA. 19+50.00 LT EL. 949.02

PI -L- STA. 20+00.00 LT EL. 947.70

990 980 970 960 950 940 930 920

7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00

BM 2
RR SPIKE IN SW ROOT OF A 30" RED OAK,+/- 50' FROM END OF CA FENCE -BL- STA 17+98.46 123' LEFT 955.42'

-L-

PI = 20+85.00
EL = 950.23'
VC = 200'
K = 500

PI = 23+55.00
EL = 946.99'
VC = 245'
K = 107

-Y3RPB- STA. 26+77.70=
-Y3RPC- STA. 31+57.25=
-L- STA. 27+35.00

PI = 27+44.00
EL = 951.27'
VC = 350'
K = 700

PI = 33+60.00
EL = 961.12'
VC = 260'
K = 226

END GRADE -L- Sta. 34+91.87 EL. 961.72

PROPOSED GRADE

EXISTING GROUND

(-)1.2000%

(+)1.1000%

(+)1.6000%

(+)0.4500%

(-)0.71% LT

(+)1.43% LT

(-)0.57% LT

PI -L- STA. 24+20.00 LT EL. 944.21

END. LAT. V DITCH -L- STA. 26+50.00 LT EL. 948.00

BEG. SPECIAL CUT DITCH -L- STA. 27+72.22 LT EL. 948.90

END SPECIAL CUT DITCH -L- STA. 28+43.00 LT EL. 948.50

990 980 970 960 950 940 930 920

21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	27

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

BM 12
RAIL ROAD SPIKE IN THE NORTH EAST ROOT 956.00'
OF A TWIN CHERRY TREE RIGHT OF -L-.
-BL- STATION 35+19.21 186' RIGHT

-L-

-Y3- STA. 39+92.17 =
-L- STA. 36+55.48

BEGIN GRADE
-L- Sta. 38+27.88 EL. 963.85

PI = 39+55.00
EL = 964.99'
VC = 195'
K = 156

PI = 42+80.00
EL = 963.85'
VC = 135'
K = 150

-Y3RPA- STA. 29+56.58=
-Y3RPD- STA. 27+11.15=
-L- STA. 44+00.00

PI = 47+50.00
EL = 966.44'
VC = 230'
K = 159

(+)0.9000% (-)0.3500% (-)0.3500% (+)0.5500% (+)0.5500% (-)0.9000%

US 311

EXISTING GROUND

990 980 970 960 950 940 930

35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00

BM 3
RR SPIKE IN THE SOUTH ROOT 960.96'
OF A 36" OAK WEST OF OLD 311
ACROSS FROM OLD 311 CURB MARKET
ON SCHOOL PROPERTY. +/-100' NW
OF DANIEL BOONE ARROWHEAD HISTORIC
MARKER -BY5- STA 16+13.98 138' RIGHT

-L-

-Y4- STA. 22+95.91=
-L- STA. 56+32.70

-Y5- STA. 10+00.00=
-L- STA. 60+88.00

PI = 54+60.00
EL = 960.05'
VC = 400'
K = 138

PI = 62+25.00
EL = 975.35'
VC = 380'
K = 84

PROPOSED GRADE

EXISTING GROUND

(-)0.9000% (+)2.0000% (+)2.0000% (-)2.5000%

(-) 0.53% LT

BEG. LAT. V DITCH
-L- STA.53+84.00 LT
EL. 956.26

END. LAT. V DITCH
-L- STA.54+57.00 LT
EL. 955.87

990 980 970 960 950 940 930 920

49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00

PLANS PREPARED BY :

RKK

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO F-0112 • (919) 878-9560

FOR DIVISION OF HIGHWAYS

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	28

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

BM 13
NORTH EAST BOLT IN FIRE HYDRANT EAST OF WOODWAY DRIVE. 959.56'
-BL- STATION 63+94.36 131' RIGHT

-L-

PI = 66+75.00
EL = 964.10'
VC = 450'
K = 130

PROPOSED GRADE

(-)2.5000%

(+)0.9500%

EXISTING GROUND

PI = 72+95.00
EL = 969.99'
VC = 360'
K = 99

(+)0.9500%

(-)2.7000%

-Y6- STA. 10+00.00 = -L- STA. 74+09.00 EL. 966.51

(-)2.7000%

990 980 970 960 950 940 930 920

63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00

BM-4
RR SPIKE SE ROOTOF A 14" GUM ON THE WEST SIDE OF TEMPLE SCHOOL RD. 117.2' LT OF -BL- STA. 79+34.34 EL 952.06' LEFT

-L-

PLANS PREPARED BY :
RKK
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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FOR
DIVISION OF HIGHWAYS

PI = 77+30.00
EL = 958.24'
VC = 380'
K = 96

-Y7- STA. 10+00.00 = -L- STA. 79+72.00

(+)1.2500%

PROPOSED GRADE

EXISTING GROUND

PI = 82+15.00
EL = 964.30'
VC = 200'
K = 114

(+)1.2500%

(+)3.0000%

PI = 85+30.00
EL = 973.75'
VC = 415'
K = 86

(+)3.0000%

(-)1.8500%

BEG. LAT. V. DITCH -L- STA. 85+78.00 RT EL. 966.50

(-) 1.22% RT

PI = 88+85.00
EL = 967.19'
VC = 255'
K = 96

(-)1.8500%

PT. -L- STA. 88+00.00 RT EL. 965.80

(+)1.8000%

(-) 0.30% RT

PT -L- STA. 89+84.00 RT EL. 965.40

(+) 0.44% RT

990 980 970 960 950 940 930 920

77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00

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5/26/99

PROJECT REFERENCE NO.	SHEET NO.
U-4909	29

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-L-

NB - STA. 16+50.00
-L- STA. 91+02.00

PI = 91+85.00
EL = 969.59'
VC = 270'
K = 84

(+)0.8000%

(-)2.4000%

(+) 0.44% RT

END. LAT. V DITCH
-L- STA. 91+40.00 RT
EL. 966.30

PI = 94+30.00
EL = 963.71'
VC = 175'
K = 97

(-) 1.74% RT

BEG. SPECIAL BACK OF CURB CUT DITCH
-L- STA. 93+60.00 RT
EL. 964.80

(-) 1.11% RT

END SPECIAL BACK OF CURB CUT DITCH
BEG. LAT. V DITCH
-L- STA. 95+50.00 RT
EL. 961.50

END. LAT. V DITCH
-L- STA. 96+85.00 RT
EL. 960.00

PROPOSED GRADE

EXISTING GROUND

BEG. LAT. V DITCH
-L- STA. 97+75.00 RT
EL. 958.56

PI = 98+75.00
EL = 961.04'
VC = 150'
K = 167

(-)0.6000%

(+)0.3000%

(-) 1.02% RT

BEG. LAT. BASE DITCH
-L- STA. 99+00.00 LT
EL. 953.00

PI -L- STA. 99+00.00 RT
EL. 957.28

(+) 0.30% RT

(-) 0.96% LT

END LAT. BASE DITCH
-L- STA. 100+97.00 LT
EL. 951.10

BEG. LAT. BASE DITCH
-L- STA. 101+09.00 RT
EL. 960.37

(-) 9.00% RT

PI -L- STA. 100+40.64 RT
EL. 957.70

(+) 6.71% RT

END. LAT. V DITCH
-L- STA. 100+83.00 RT
EL. 959.20

-Y9- STA. 10+00.00=
-L- STA. 101+36.00

24" RCP

PI -L- STA. 101+39.00 RT
EL. 957.67

PI = 103+35.00
EL = 962.42'
VC = 175'
K = 167

(+)0.3000%

(-)0.7500%

(+) 0.30% RT

(+) 0.48% RT

(-) 0.56% RT

PI -L- STA. 102+50.00 RT
EL. 958.00

END LAT. BASE DITCH
BEG. LAT. V DITCH
-L- STA. 104+15.00 RT
EL. 958.80

990 980 970 960 950 940 930 920

91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00

BM 14
CHISELED SQUARE IN NORTH EAST CORNER 963.25'
OF SIDEWALK AT THE IGLESIA BAUTISTA HISPANA CHURCH
-BL- STATION 99+28.46 164' RIGHT

-L-

PI = 108+10.00
EL = 958.85'
VC = 150'
K = 130

-Y10- STA. 15+50.00=
-L- STA. 110+23.00

PI = 113+00.00
EL = 960.81'
VC = 150'
K = 88

-Y11- STA. 10+00.00=
-L- STA. 115+31.00

PI = 115+80.00
EL = 957.14'
VC = 400'
K = 97

PROPOSED GRADE

END. LAT. V DITCH
-L- STA. 106+50.00 RT
EL. 957.91

(-) 0.56% RT

(-)0.7500%

(+)0.4000%

(+)0.4000%

(-)1.3107%

(-)1.3107%

(+)2.8000%

(+)2.8000%

(+) 0.30% RT

EXISTING GROUND

PI -L- STA. 106+00.00 LT
EL. 957.76

990 980 970 960 950 940 930 920

105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00

PLANS PREPARED BY :

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	30

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-L-

PI = 120+10.00
EL = 969.18'
VC = 400'
K = 85

PI = 124+00.00
EL = 961.77'
VC = 330'
K = 97

-Y12- STA. 15+25.00 =
-L- STA. 124+17.00

PI = 129+10.00
EL = 969.43'
VC = 300'
K = 167

PROPOSED GRADE

EXISTING GROUND

(+)2.5000%
(-)1.9000%
(-)1.9000%
(+)1.5000%
(+)1.5000%
(-)0.3000%

990 980 970 960 950 940 930 920

119+00 120+00 121+00 122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00

-L-

PI = 135+50.00
EL = 967.51'
VC = 150'
K = 167

-Y13- STA. 23+87.84 =
-L- STA. 136+52.00

PI = 137+90.00
EL = 964.63'
VC = 150'
K = 100

PI = 140+10.00
EL = 965.29'
VC = 100'
K = 154

-Y14- STA. 12+53.67 =
-L- STA. 146+89.27

PROPOSED GRADE

EXISTING GROUND

(-)0.3000%
(-)1.2000%
(-)1.2000%
(+)0.3000%
(+)0.3000%
(-)0.3500%
(-)0.3500%

990 980 970 960 950 940 930 920

133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00 141+00 142+00 143+00 144+00 145+00 146+00 147+00

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FOR DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	31

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-L-

PI = 147+20.00
EL = 962.80'
VC = 170'
K = 97

PI = 149+35.00
EL = 965.81'
VC = 240'
K = 89

PI = 153+00.00
EL = 961.07'
VC = 150'
K = 187

PI = 155+50.00
EL = 959.82'
VC = 240'
K = 102

PI = 157+75.00
EL = 963.98'
VC = 210'
K = 89

PI = 160+45.00
EL = 962.63'
VC = 145'
K = 103

-Y15PC- STA. 14+16.79
-L- STA. 155+11.18

-Y15- STA. 40+77.71
-L- STA. 158+22.28

PROPOSED GRADE

EXISTING GROUND

(+)1.4000%
(+)1.4000%
(-)1.3000%
(-)1.3000%
(-)0.5000%
(-)0.5000%
(+)1.8511%
(+)1.8511%
(-)0.5000%
(-)0.5000%
(+)0.9018%
963.11

I-40

990 980 970 960 950 940 930 920

147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00

BM 15
RAIL ROAD SPIKE IN EASTERN BASE OF 959.81'
A POWER POLE WITH A LIGHT OWNED BY THE DUKE POWER COMPANY ON PECAN ROAD -BL- STATION 151+1470
EL.1056' LEFT

BM-6
RR SPIKE IN SEAM OF CONCRETE GUTTER AT SHOPPING IN FRONT OF AUTO CREDIT AND BETWEEN BURGER KING AND A CLEANER
WORLD 262' RT OF -BL- STA.159+04.07
EL 962.52' LEFT

-L-

PI = 165+90.00
EL = 967.55'
VC = 150'
K = 377

PI = 171+40.00
EL = 974.70'
VC = 265'
K = 85

PI = 173+90.00
EL = 970.20'
VC = 150'
K = 115

-Y15PA- STA. 13+85.66
-L- STA. 161+26.22

-Y16- STA. 14+39.00
-L- STA. 165+78.53

-Y17- STA. 22+11.82
-L- STA. 173+91.50

PROPOSED GRADE

EXISTING GROUND

(+)0.9018%
(+)1.3000%
(+)1.3000%
(-)0.30% RT
(+) 3.44% RT
(+)1.3000%
(-)1.8000%
(-) 1.31% LT
(+) 0.30% LT
(-)1.8000%
(-)0.5000%
(-) 3.03% LT

BEG. LAT. V DITCH
-L- STA. 167+05.00 RT
EL. 963.41

PI -L- STA. 168+17.84 RT
EL. 963.75

END. LAT. V DITCH
-L- STA.169+50.00 RT
EL. 968.30

BEG. LAT. V DITCH
-L- STA.171+00.00 LT
EL. 973.70

PI -L- STA. 172+55.00 LT
EL. 971.67

END. LAT. V DITCH
-L- STA.173+25.00 LT
EL. 971.88

SPECIAL BACK OF CURB DITCH
-L- STA.174+65.00 LT
EL. 970.50

990 980 970 960 950 940 930 920

161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00

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PROJECT REFERENCE NO	SHEET NO.
U-4909	32

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-L-

BM-11
CHISELED CROSS IN WEST END OF A 15" CONCRETE PIPE FOR A CONCRETE DRIVEWAY. PIPE IS LOCATED AT 1156 KENOSHA DR 1909' RT OF -BL- STA 176+08 45 EL. 929.23' LEFT

PI = 176+55.00
EL = 968.87'
VC = 180'
K = 129

PI = 180+45.00
EL = 972.38'
VC = 185'
K = 84

PI = 186+35.00
EL = 964.71'
VC = 200'
K = 100

-Y18- STA. 16+62.75=
-L- STA. 180+31.50

-Y19- STA. 14+37.41=
-L- STA. 184+38.69'

PROPOSED GRADE

EXISTING GROUND

(+)0.9000%

(-)1.3000%

(-) 3.03% LT

(-)0.5000%

(+)0.9000%

(-) 3.25% LT

(-) 2.40% LT

(-)1.60% LT

(-) 0.52% LT

(-)1.3000%

(+)0.7000%

(+) 1.04% RT

STANDARD BASE DITCH
-L- STA. 176+91.00 LT
S=0.30%
L=80'
BEG. EL. 963.44
END EL. 963.20

END SPECIAL BACK OF CURB DITCH
BEG. LAT. V DITCH
-L- STA. 176+00.00 LT
EL. 966.40

END LAT. V DITCH
-L- STA. 176+91.00 LT
EL. 963.44

BEG. LAT. V DITCH
-L- STA. 181+50.00 LT
EL. 969.40

PI -L- STA. 182+50.00 LT
EL. 967.00

PI -L- STA. 183+00.00 LT
EL. 966.20

END LAT. V DITCH
-L- STA. 183+76.64 LT
EL. 965.80

BEG. LAT. V DITCH
-L- STA. 186+65.00 RT
EL. 961.62

END LAT. V DITCH
-L- STA. 187+50.00 RT
EL. 962.50

990 980 970 960 950 940 930 920

175+00 176+00 177+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

-L-

BM-7
CHISELED SQUARE AT THE BEGINNING OF THE CONRETE CURB ON SHEPARDS GROVE RD.
969' LT OF -BL- STA 182+17 14
EL 953 98' LEFT

PI = 191+10.00
EL = 968.04'
VC = 160'
K = 400

PI = 195+80.00
EL = 973.21'
VC = 150'
K = 214

PI = 199+05.00
EL = 979.06'
VC = 245'
K = 84

PI = 202+25.00
EL = 975.54'
VC = 190'
K = 633

-Y20- STA. 10+00.00=
-L- STA. 189+16.50

-Y21- STA. 14+29.42=
-L- STA. 195+00.00

-Y22- STA. 10+00.00=
-L- STA. 199+71.50

PROPOSED GRADE

EXISTING GROUND

(+)0.7000%

(+)1.1000%

(-) 0.46% RT

(+) 1.48% RT

(+) 2.06% RT

(+) 1.28% RT

(+)1.1000%

(+)1.8000%

(+)1.8000%

(-)1.1000%

(-) 0.79% LT

(-)1.1000%

(-)1.4000%

PI -L- STA. 191+00.00 RT
EL. 963.76

PI -L- STA. 194+00.00 RT
EL. 968.21

BEG. LAT. V DITCH
-L- STA. 189+92.00 RT
EL. 964.26

PI -L- STA. 194+48.08 RT
EL. 969.20

END. LAT. V DITCH
-L- STA. 195+50.00 RT
EL. 970.50

BEG. SPECIAL BACK OF CURB DITCH
-L- STA. 201+20.00 LT
EL. 975.53

990 980 970 960 950 940 930 920

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+00 202+00 203+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	33

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

BM 16
RAIL ROAD SPIKE IN WESTERN ROOT OF 983.67'
A 24" MAPLE IN NORTH EAST QUADRANT
OF THE INTERSECTION OF SEDGE GARDEN
UNION CROSS, AND SALEM ROAD
-BL- STATION 196+59.36 232' LEFT

-L-

PI = 204+75.00
EL = 972.04'
VC = 300'
K = 97

PI = 207+15.00
EL = 976.12'
VC = 180'
K = 86

PI = 210+10.00
EL = 974.94'
VC = 360'
K = 97

PI = 214+55.00
EL = 989.62'
VC = 400'
K = 63

Y23 -L- STA. 22+77.46
-L- STA. 206+18.74

Y24 STA. 16+14.35=
-L- STA. 214+51.50

PROPOSED GRADE

EXISTING GROUND

(-)1.4000% (+)1.7000% (-)1.0400% (+)3.3000% (-)3.0000%

(-)3.01% LT (-)1.97% LT (+)1.60% LT (+)0.30% LT (+)2.49% LT

END SPECIAL BACK OF CURB DITCH
BEGIN LAT. V DITCH
-L- STA. 203+50.00 LT
EL. 973.71

PI -L- STA. 204+00.00 LT
EL. 971.70

PI -L- STA. 204+60.00 LT
EL. 970.52

END LAT. V DITCH
-L- STA. 205+06.00 LT
EL. 971.26

BEG. LAT. V DITCH
-L- STA. 210+62.00 LT
EL. 978.54

PI -L- STA. 211+00.00 LT
EL. 978.65

END LAT. V DITCH
-L- STA. 212+75.00 LT
EL. 983.00

990 980 970 960 950 940 930 920

203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00 215+00 216+00 217+00

-L-

PI = 219+20.00
EL = 975.21'
VC = 180'
K = 100

PI = 222+90.00
EL = 970.40'
VC = 325'
K = 149

Y25 -L- STA. 10+00.00=
-L- STA. 222+27.50

END GRADE
-L- Sta. 225+10.00 EL. 972.35

PROPOSED GRADE

EXISTING GROUND

(-)3.1000% (-)1.3000% (-)1.5000% (+)0.8867%

(-)3.63% LT (-)1.93% LT (+)0.30% RT (+)4.43% RT

BEG. LAT. V DITCH
-L- STA. 221+27.82 LT
EL. 969.71

PI -L- STA. 222+00.00 LT
EL. 967.10

END LAT. V DITCH
-L- STA. 222+75.00 LT
EL. 965.65

BEG. SPECIAL CUT DITCH
-L- STA. 222+69.12 RT
EL. 968.34

END SPECIAL CUT DITCH
-L- STA. 223+50.00 RT
EL. 968.58

BEG. SPECIAL CUT DITCH
-L- STA. 225+10.00 RT
EL. 969.95

END SPECIAL CUT DITCH
-L- STA. 225+50.00 RT
EL. 971.72

STANDARD BASE DITCH
-L- STA. 222+75.00 LT
L=60'
S=1.43%
BEG. EL. 965.65
END EL. 964.79

990 980 970 960 950 940 930 920

217+00 218+00 219+00 220+00 221+00 222+00 223+00 224+00 225+00 226+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	34

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y1-

BM 8
NCGS MONUMENT "SNOW" 13.5' RIGHT 972.62'
OF CENTERLINE OF UNION CROSS RD (DOT ELEVATION)
BEARING FROM BL-27: N 54°03'57"E
HORIZONTAL DISTANCE 551.86'

BEGIN GRADE
-Y1- Sta.12+00.00 EL. 960.17'

END GRADE
-Y1- Sta.15+16.68 EL. 953.83'=
-L- Sta.17+06.77 (14.5' LT)

PI = 14+65.00
EL = 955.93'
VC = 100'
K = 41

-Y2- STA.10+00.00=
-Y1- STA.12+55.00

-Y1- STA.15+32.71'=
-L- STA.17+13.55'

BEGIN GRADE
-Y1- Sta.15+66.43 EL. 951.86'=
-L- Sta.17+28.10 (30.5' LT)

-Y1- 20+86 CL
36" RCP
DESIGN Q = 41.1 cfs
DESIGN FREQ = 25 yr
DESIGN EL = 924.1 ft
BASE FLOOD Q = 51.0 cfs
BASE FLOOD FREQ = 100 yr
BASE FLOOD EL = 924.7 ft
OT Q = 129.3 cfs
OT FREQ = 500+ yr
OT EL = 932.9 ft

PI = 21+40.00
EL = 923.18'
VC = 870'
K = 96

(-)4.28% LT

BEG. SPECIAL CUT DITCH
-Y1- STA.11+31.00 LT
EL. 959.79

END SPECIAL CUT DITCH
-Y1- STA.12+26.00 LT
EL. 955.72

(-)11.6000%

(-)4.0635%

.039 .040

BEG. SPECIAL CUT DITCH
-Y1- STA.15+62.00 RT
EL. 948.99

(+)1.87% RT

(-)15.0900%

END SPECIAL CUT DITCH
-Y1- STA.16+00.00 RT
EL. 948.28

EXISTING GROUND

PROPOSED GRADE

END LAT. V DITCH
-Y1- STA.22+00.00 RT
EL. 930.23

BEG. LAT. V DITCH
-Y1- STA.18+00.00 LT
EL. 928.00

(-)3.40% LT

END LAT. V DITCH
BEG LAT. V DITCH
-Y1- STA.19+00.00 LT
EL. 924.60

(-)1.53% LT

BEG. LAT. V DITCH
-Y1- STA.20+25.00 RT
EL. 912.20

(-)10.30% RT

36" RCP

(+)8.20% LT

END LAT. V DITCH
BEG LAT. BASE DITCH
-Y1- STA.21+35.00 LT
EL. 921.00

END LAT. BASE DITCH
-Y1- STA.22+50.00 LT
EL. 930.43

970 960 950 940 930 920 910 900

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

-Y1-

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PI = 32+45.00
EL = 967.93'
VC = 895'
K = 84

PROPOSED GRADE

END GRADE
-Y1- Sta.37+05.00 EL. 937.62'

(-)6.5900%

EXISTING GROUND

(+)4.0500%

(+)0.44% LT

(+)1.0.44% LT

BEG. SPECIAL CUT DITCH
-Y1- STA.27+00.00 LT
EL. 943.16

18" RCP

END SPECIAL CUT DITCH
BEG LAT. V DITCH
-Y1- STA.27+50.00 LT
EL. 943.38

STANDARD V DITCH
-Y1- STA. 27+00.00 RT
S=1.64%, L=55'
BEG. EL. 942.90
END EL. 942.00

END LAT. V DITCH
-Y1- STA.29+50.00 LT
EL. 944.25

BEG. SPECIAL CUT DITCH
-Y1- STA.36+50.00 RT
EL. 938.44

(-)4.68% RT

PT -Y1- STA.37+00.00 RT
EL. 936.10

(-)1.00% RT

END SPECIAL CUT DITCH
-Y1- STA.37+35.00 RT
EL. 935.75

980 970 960 950 940 930 920 910 900

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	35

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y1-

970 960 950 940 930 920 910

38+00 39+00

-Y2-

970 960 950 940 930 910

10+00 11+00 12+00 13+00 14+00 15+00

BEGIN GRADE
-Y2- Sta.10+19.15 EL. 958.67' =
-Y1- Sta.12+55.00 (19.15' LT)

PI = 11+45.00
EL = 956.15'
VC = 150'
K = 214

END GRADE
-Y2- Sta.14+00.00 EL. 950.59'

PI = 13+30.00
EL = 951.16'
VC = 140'
K = 74

.032

(-)1.20000%

(-)2.70000%

PROPOSED GRADE

18" RCP

(-)2.70000%

(-)0.80517%

EXISTING GROUND

BEG. SPECIAL CUT DITCH
-Y2- STA.13+00.00 LT
EL. 949.40

(-) 0.82% LT

PI -Y2- STA.13+50.00 LT
EL. 948.99

(+) 1.51% LT

END SPECIAL CUT DITCH
-Y2- STA.14+00.00 LT
EL. 949.74

NOTE: MIN. RESURFACING -Y3- STA. 16+82.33 TO 64+10.00

-Y3-

950 940 930 920 910 900 890

15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	36

ROADWAY DESIGN ENGINEER

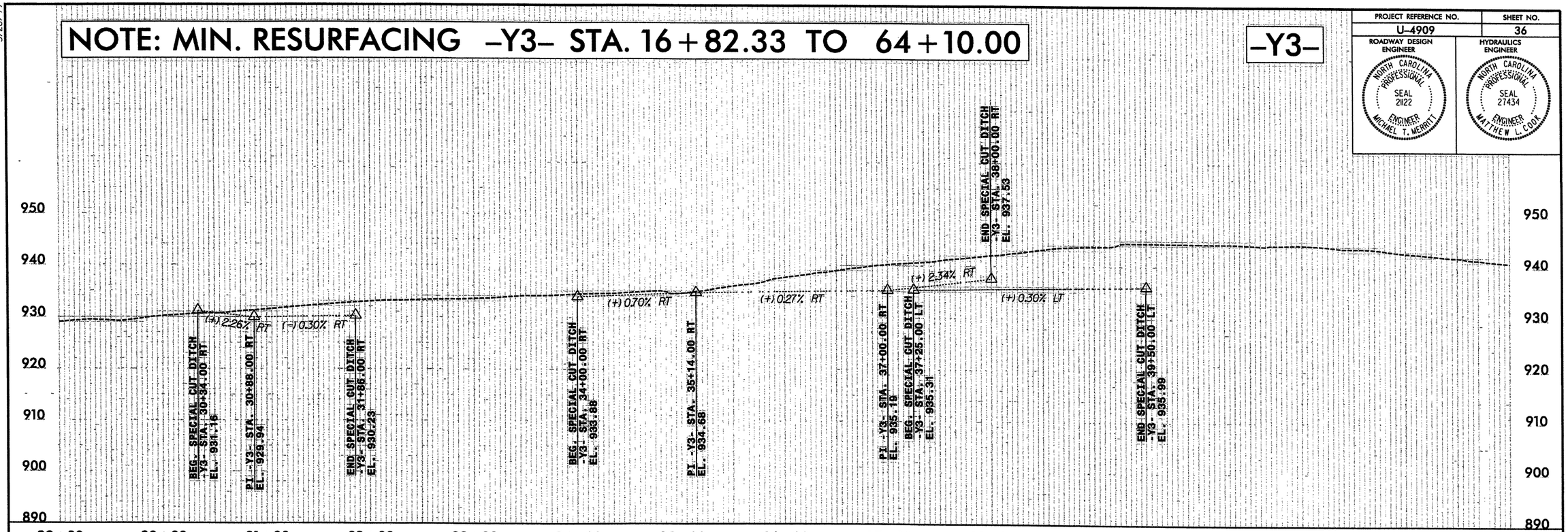
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

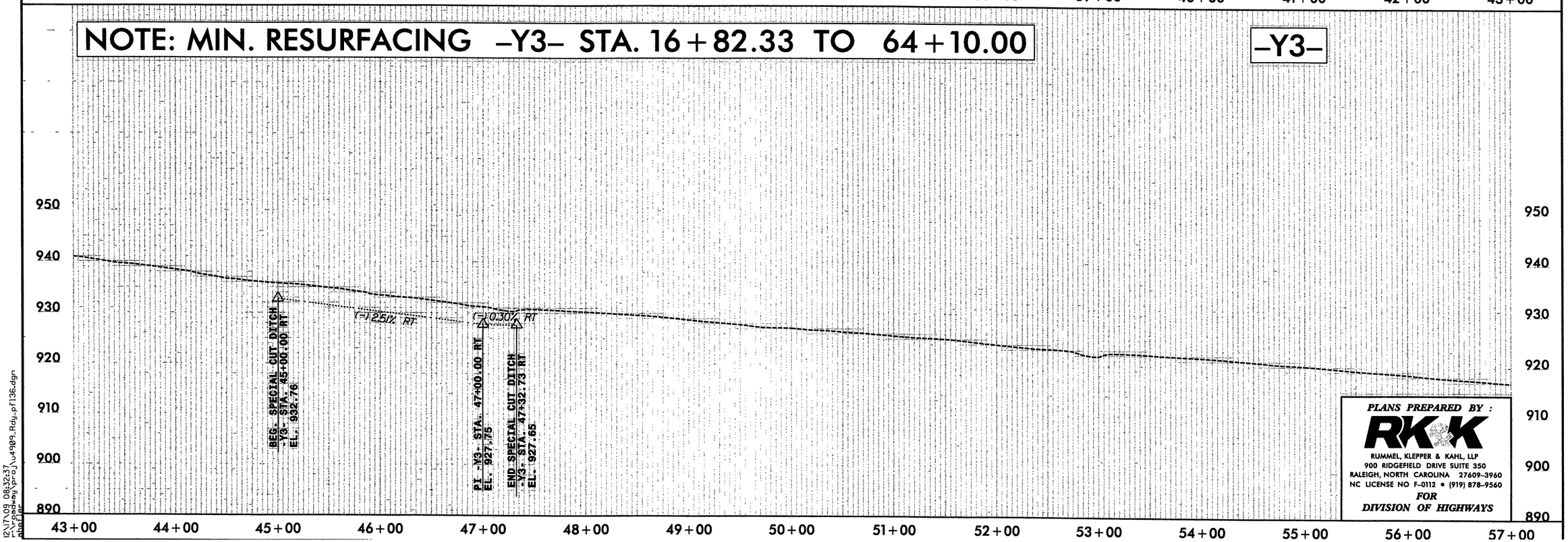
NOTE: MIN. RESURFACING –Y3– STA. 16+82.33 TO 64+10.00

–Y3–



NOTE: MIN. RESURFACING –Y3– STA. 16+82.33 TO 64+10.00

–Y3–



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chaffin

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NOTE: MIN. RESURFACING –Y3– STA. 16+82.33 TO 64+10.00

–Y3–

PROJECT REFERENCE NO.	SHEET NO.
U-4909	37

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y2- 62+61 CL
EXIST. 54" CMP
DESIGN Q = 240 cfs
DESIGN FREQ = 25 yr
DESIGN EL = 891.6 ft
BASE FLOOD Q = 280 cfs
BASE FLOOD FREQ = 100 yr
BASE FLOOD EL = 894.0 ft
OT Q = 469 cfs
OT FREQ = 500+ yr
OT EL = 912.2 ft

NOTE:
EXISTING 54" CMP IS UNDERSIZED, SHOULD BE A 72"

EXIST. 54" CMP

950 940 930 920 910 900 890

57+00 58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00

–Y3RPA–

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BEGIN GRADE
-Y3RPA- Sta.13+10.27 EL.933.29

PI = 13+95.80
EL = 934.85'
VC = 160'
K = 219

PI = 17+85.00
EL = 944.77'
VC = 300'
K = 385

(+)0.56% LT
(+)1.8200%
(+)2.5500%
(+)1.7715%
(-)4.28% RT
(+)0.30% RT
(+)0.79% RT
(+)4.87% RT
(+)2.11% LT

PROPOSED GRADE
EXISTING GROUND
24" BCCS

BEG. SPECIAL CUT DITCH
-Y3RPA- STA. 12+50.00 LT
EL. 929.00

BEG. SPECIAL CUT DITCH
-Y3RPA- STA. 13+10.27 LT
EL. 929.35

BEG. LAT. BASE DITCH
-Y3RPA- STA. 19+60.00 RT
EL. 943.80

PI -Y3RPA- STA. 20+80.00 RT
EL. 938.24

PI -Y3RPA- STA. 22+00.00 RT
EL. 938.60

BEG. LAT. BASE DITCH
-Y3RPA- STA. 20+73.00 LT
EL. 926.85

END LAT. BASE DITCH
-Y3RPA- STA. 22+67.00 LT
EL. 930.74

PI -Y3RPA- STA. 23+50.00 RT
EL. 939.79

970 960 950 940 930 920 910 900

950 940 930 920 910 900 890

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

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jdrake

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	38

ROADWAY DESIGN ENGINEER

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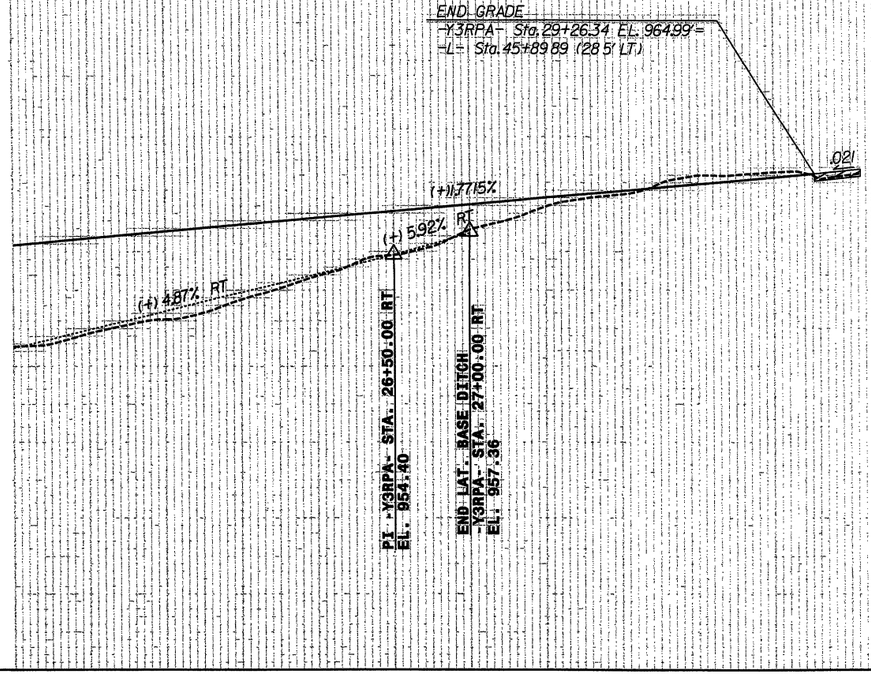
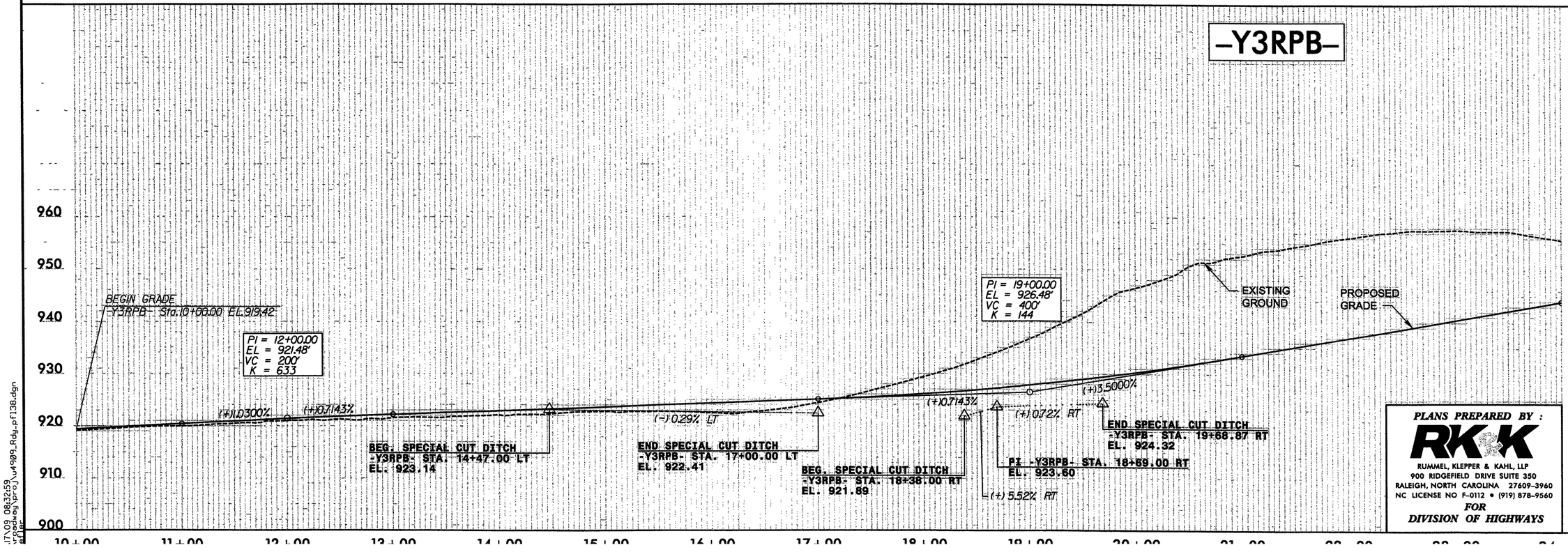
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y3RPA-



-Y3RPB-



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PROJECT REFERENCE NO.	SHEET NO.
U-4909	39

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y3RPB-

END GRADE
-Y3RPB- Sta. 26+49.10 EL. 950.76
-L- Sta. 27+32.60 (28.5' RT)

PI = 25+00.00
EL = 947.48'
VC = 200'
K = 154

EXISTING GROUND

PROPOSED GRADE

(+)3.5000%

(+)2.2000%

960 950 940 930 920 910 900

24+00 25+00 26+00

-Y3LPB-

BEGIN GRADE
-Y3LPB- Sta 10+00.00 EL. 956.34

PI = 10+80.00
EL = 955.25'
VC = 150'
K = 98

(-)1.3625%

(-)2.9000%

PROPOSED GRADE

EXISTING GROUND

PI = 18+20.00
EL = 933.79'
VC = 300'
K = 66

(-)2.9000%

(+)1.6566%

BEG. SPECIAL CUT DITCH
-Y3LPB- STA. 18+19.00 LT
EL. 933.32

(-)7.37% LT

BEG. SPECIAL CUT DITCH
-Y3LPB- STA. 18+61.00 LT
EL. 930.23

END GRADE
-Y3LPB- Sta. 21+09.19 EL. 937.80
-Y3- Sta. 34+45.79 (57' RT)

PI = 20+50.00
EL = 937.60'
VC = 100'
K = 76

(+)1.6566%

(+)0.3379%

960 950 940 930 920 910 900

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	40

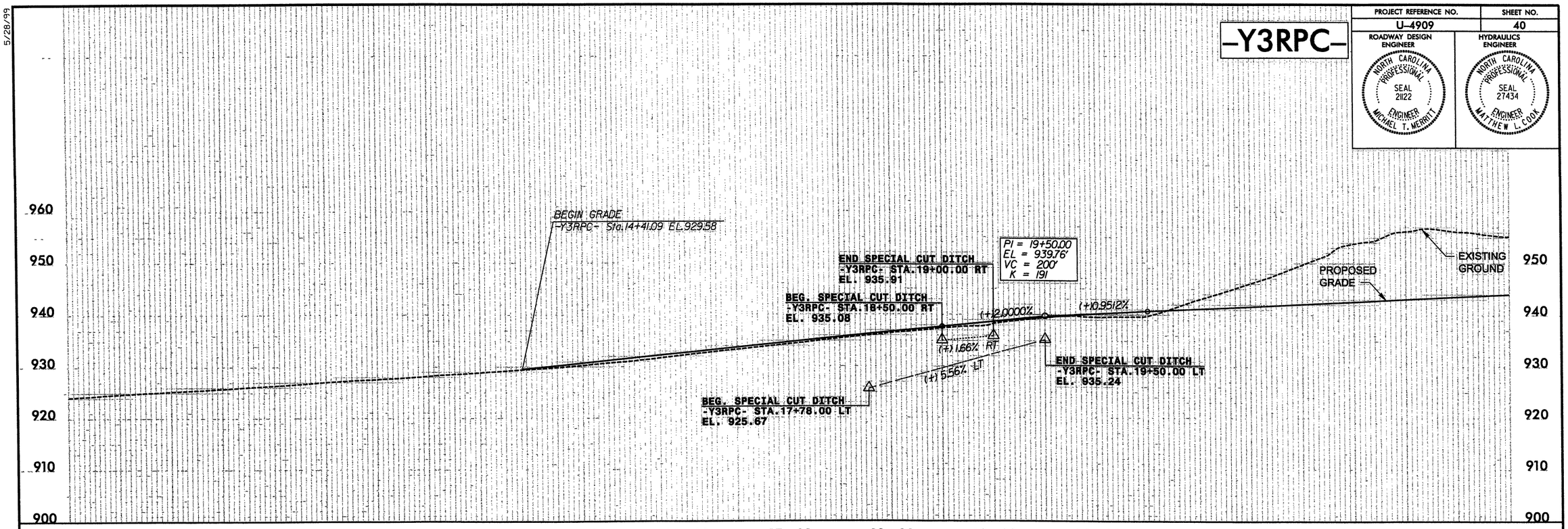
ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

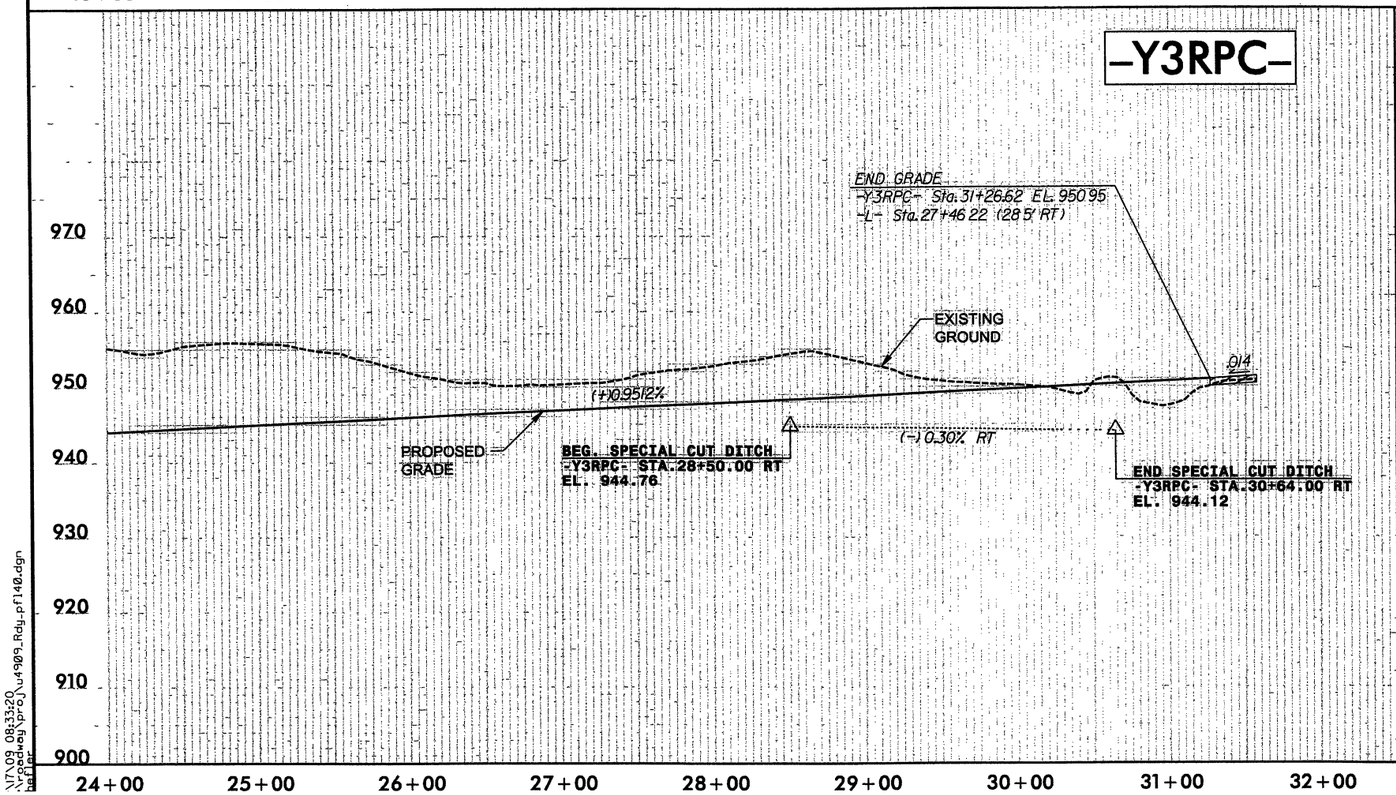
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

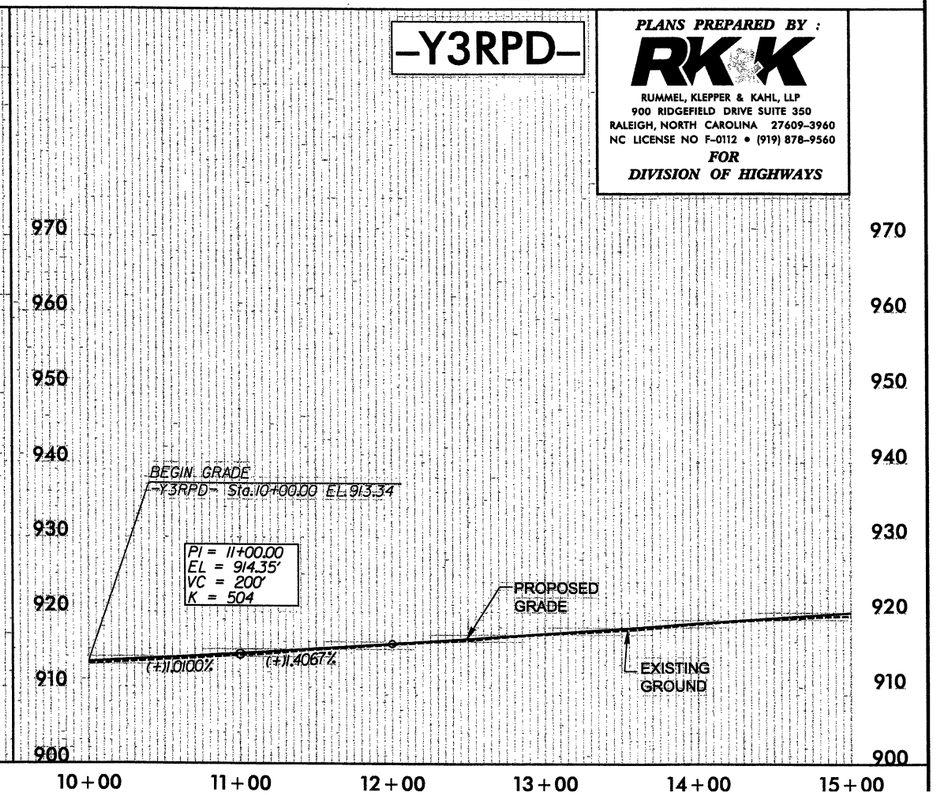
-Y3RPC-



-Y3RPC-



-Y3RPD-



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PROJECT REFERENCE NO.	SHEET NO.
U-4909	41

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y3RPD-

END GRADE
-Y3RPD- Sta 26+82.65 EL. 965.04
-L- Sta. 45+99.98(28.5' RT)

PI = 26+32.00
EL = 964.00'
VC = 100'
K = 34

(+)5.0000%

(+)2.1053%

.020

PROPOSED GRADE

(+) 5.50% RT

END SPECIAL CUT DITCH
-Y3RPD- STA. 26+35.00 RT
EL. 959.75

BEG. SPECIAL CUT DITCH
-Y3RPD- STA. 24+06.09 RT
EL. 947.16

EXISTING GROUND

EXISTING GROUND

PROPOSED GRADE

PI = 18+50.00
EL = 924.90'
VC = 400'
K = 111

BEG. LAT. V DITCH
-Y3RPD- STA. 17+03.00 LT
EL. 919.69

(+)1.4067%

(+) 2.07% LT

(+)5.0000%

(+) 0.64% RT

END LAT. V DITCH
-Y3RPD- STA. 19+96.00 LT
EL. 926.98

(+) 4.74% LT

END SPECIAL CUT DITCH
-Y3RPD- STA. 17+03.00 RT
EL. 918.54

(+) 2.30% RT

PI -Y3RPD- STA. 19+50.00 LT
EL. 924.80

PI -Y3RPD- STA. 16+50.00 RT
EL. 917.32

BEG. SPECIAL CUT DITCH
-Y3RPD- STA. 16+05.00 RT
EL. 917.03

960 950 940 930 920 910 900

15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00

-Y3LPD-

BEGIN GRADE
-Y3LPD- Sta.10+00.00 EL 963.51

PI = 12+40.00
EL = 963.15'
VC = 200'
K = 38

(-)0.5002%

(-)5.3761%

(-)6.96% LT

PROPOSED GRADE

BEG. STANDARD V DITCH
-Y3LPD- STA. 12+50.00 LT
EL. 960.64

PI -Y3LPD- STA. 13+06.68 LT
EL. 957.70

EXISTING GROUND

(-) 4.27% LT

END STANDARD V DITCH
-Y3LPD- STA. 15+50.00 LT
EL. 946.32

PI = 18+25.00
EL = 931.70'
VC = 280'
K = 39

PI = 20+50.00
EL = 935.70'
VC = 100'
K = 109

END GRADE
-Y3LPD- Sta.21+09.19 EL. 936.21
-L- Sta 43+59.56 (58' LT)

(-)5.3761%

(+)1.7778%

(+)1.7778%

(+)0.8616%

BEG. SPECIAL CUT DITCH
-Y3LPD- STA. 18+00.00 LT
EL. 932.55

(-)8.43% LT

END SPECIAL CUT DITCH
-Y3LPD- STA. 18+35.00 LT
EL. 929.60

960 950 940 930 920 910 900

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

PLANS PREPARED BY :

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	42

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y4-

BEGIN GRADE
-Y4- Sta.11+00.00 EL. 947.64'

PI = 11+50.00
EL = 948.22'

BEG. SPECIAL CUT DITCH
-Y4- STA. 11+00.00 LT
EL. 945.59

END SPECIAL CUT DITCH
-Y4- STA. 12+50.00 LT
EL. 946.12

PI = 13+91.00
EL = 950.02'
VC = 245'
K = 377

(+)1.580% (+)0.7500% (+)0.7500% (+)1.4000%

(+) 0.35% LT

(+) 0.24% RT

(+) 1.93% RT

PROPOSED GRADE

EXISTING GROUND

30" RCP RUNS PARALLEL TO -Y4-

BEG. SPECIAL CUT BASE DITCH
-Y4- STA. 10+40.00 RT
EL. 944.87

END SPECIAL CUT BASE DITCH
-Y4- STA. 14+00.00 RT
EL. 947.42

PI -Y4- STA. 13+00.00 RT
EL. 945.49

BEGIN GRADE
-Y4- Sta.23+49.27 EL. 965.41'
-L- Sta 56+66.48 (41.00' RT)

END GRADE
-Y4- Sta. 22+41.66 EL. 961.70'
-L- Sta. 55+96.76 (41.00' LT)

-Y4- STA. 22+95.91
-L- STA. 56+32.70

PI = 20+85.00
EL = 959.74'
VC = 250'
K = 1667

(+)1.4000% (+)1.2500%

034 035

(+) 0.50% RT

BEG. SPECIAL CUT DITCH
-Y4- STA. 20+00.00 RT
EL. 955.34

END SPECIAL CUT DITCH
-Y4- STA. 21+05.00 RT
EL. 955.87

970 960 950 940 930

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

-Y4-

PI = 25+05.00
EL = 966.15'
VC = 310'
K = 106

(+)0.4764% (-)2.4500%

PROPOSED GRADE

(+) 0.69% RT

EXISTING GROUND

BEG. SPECIAL CUT DITCH
-Y4- STA. 28+45.00 RT
EL. 952.93

END SPECIAL CUT DITCH
-Y4- STA. 29+00.00 RT
EL. 952.55

END GRADE
-Y4- Sta.32+00.00 EL.948.23

PI = 30+65.00
EL = 952.43'
VC = 115'
K = 121

PI = 31+50.00
EL = 949.54'

BEG. SPECIAL CUT DITCH
-Y4- STA. 31+50.00 LT
EL. 947.21

(-)2.4500% (-)3.4000% (-)2.6266%

(-)1.62% LT

(-) 0.80% RT

BEG. SPECIAL CUT DITCH
-Y4- STA. 32+00.00 RT
EL. 945.31

BEG. SPECIAL CUT DITCH
-Y4- STA. 32+50.00 RT
EL. 944.91

END SPECIAL CUT DITCH
-Y4- STA. 32+50.00 LT
EL. 945.59

970 960 950 940 930

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	43

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y5-

BEGIN GRADE
-Y5- Sta.10+47.07 EL. 973.95=
-L- Sta.61+10.87 (41.0' RT)

END GRADE
-Y5- Sta.12+05.00 EL.974.52

PI = 10+90.00
EL = 973.33'
VC = 80'
K = 27

PI = 11+75.00
EL = 974.61'
VC = 60'
K = 33

032 (-)1.4500% (+)1.5000% (-)0.3000%

PROPOSED GRADE

EXISTING GROUND

-Y6-

BEGIN GRADE
-Y6- Sta.10+53.35 EL. 967.50'=
-L- Sta.74+15.10 (53.0' RT)

PI = 10+95.00
EL = 966.04'
VC = 80'
K = 12

PI = 12+05.00
EL = 955.04'
VC = 70'
K = 11

END GRADE
-Y6- Sta.12+40.00 EL.953.87'

015 (-)3.5000% (-)10.0000% (-)3.3550%

PROPOSED GRADE

EXISTING GROUND

-Y7-

END GRADE
-Y7- Sta.11+75.00 EL. 960.99'

BEGIN GRADE
-Y7- Sta.10+41.12 EL. 961.72'=
-L- Sta.79+75.17 (41.0' RT)

PI = 11+05.00
EL = 960.22'
VC = 100'
K = 29

011 (-)2.3500% (+)1.1017%

PROPOSED GRADE

EXISTING GROUND

-Y7A-

END GRADE
-Y7A- Sta.11+95.00 EL.968.58'

BEGIN GRADE
-Y7A- Sta.10+43.58 EL. 969.12'=
-L- Sta.84+22.19 (41.0' RT)

PROPOSED GRADE

02 (-)0.7050% (+)0.3500%

PI = 11+45.00
EL = 968.40'
VC = 100'
K = 95

EXISTING GROUND

-Y8-

EXISTING GROUND

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	44

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y9-

970
960
950
940
10+00 11+00 12+00 13+00 14+00 15+00 16+00

-Y10-

960
950
940
930
920
13+00 14+00 15+00 16+00

EXISTING GROUND

END SPECIAL CUT DITCH
-Y10- STA. 13+75.00 LT
EL. 950.65

BEG. SPECIAL CUT DITCH
-Y10- STA. 13+25.00 LT
EL. 950.36

-Y11-

END GRADE
-Y11- Sta. 12+00.00 EL. 960.30

BEGIN GRADE
-Y11- Sta. 10+41.39 EL. 959.11=
-L- Sta. 115+25.31 (41.0' RT)

PI = 11+20.00
EL = 958.32'
VC = 130'
K = 37

PROPOSED GROUND

.004

(-)11.0000%

(+)2.4760%

EXISTING GROUND

970
960
950
940
930
920
10+00 11+00 12+00 13+00 14+00

LAT. BASE DITCH
-Y11- STA. 10+67.00 - 10+77.92 LT
S=0.30%
BEG. EL. 956.08
END EL. 956.11

SPECIAL CUT DITCH
-Y11- STA. 11+50.00 - 12+00.00 LT
S=5.10%
BEG. EL. 956.50
END EL. 959.05

LAT. BASE DITCH
-Y11- STA. 10+75.00 - 11+00.00 RT
S=0.30%
BEG. EL. 955.94
END EL. 956.01

SPECIAL CUT DITCH
-Y11- STA. 11+50.00 - 12+00.00 RT
S=4.50%
BEG. EL. 956.50
END EL. 958.75

-Y12-

970
960
950
940
930
13+00 14+00 15+00

PLANS PREPARED BY :

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	45

ROADWAY DESIGN ENGINEER

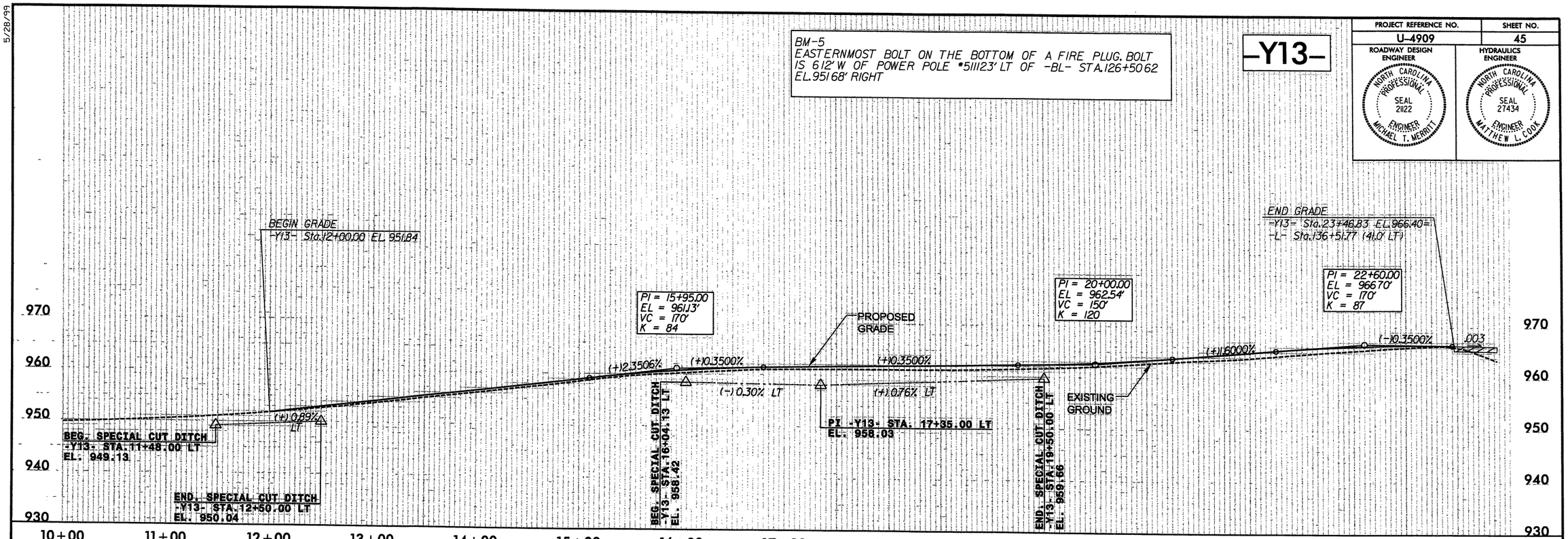
NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

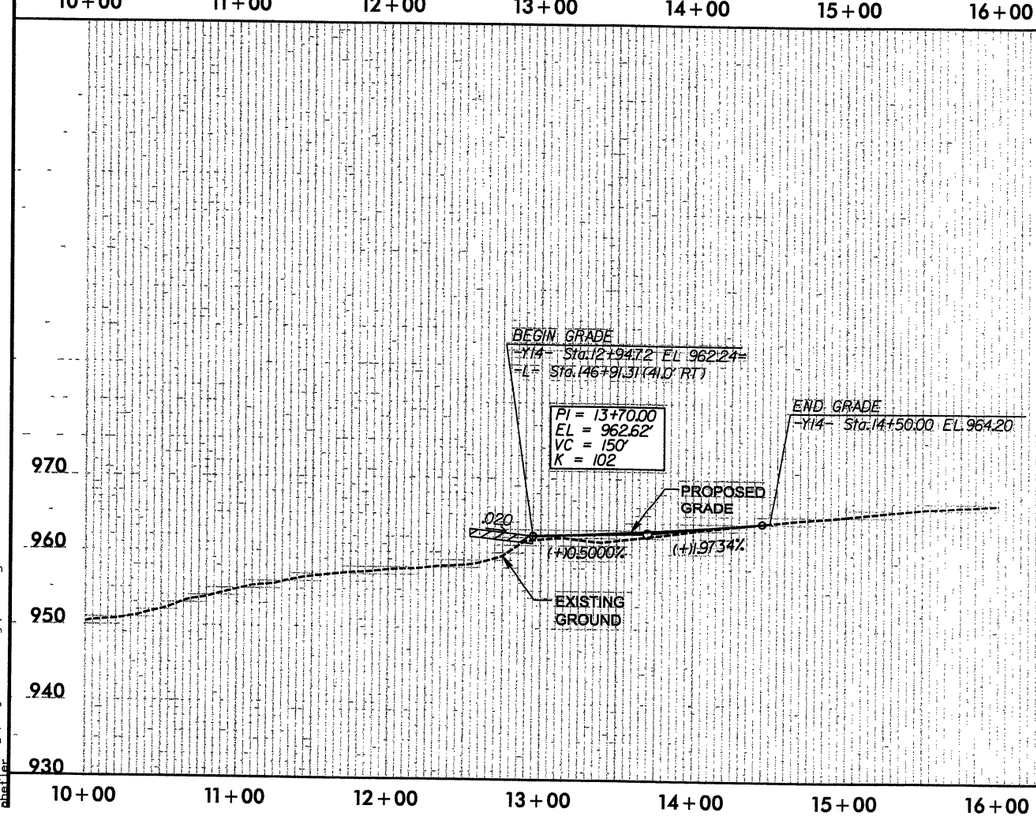
NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

BM-5
EASTERNMOST BOLT ON THE BOTTOM OF A FIRE PLUG. BOLT IS 6.12' W OF POWER POLE #511123' LT OF -BL- STA.126+50.62 EL.951.68' RIGHT

-Y13-



-Y14-



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FOR DIVISION OF HIGHWAYS

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	46

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y15-

EXISTING GROUND

(+) 0.63% RT

BEG. SPECIAL CUT DITCH -Y15- STA. 36+45.00 RT EL. 934.65

END SPECIAL CUT DITCH -Y15- STA. 38+30.00 RT EL. 935.82

940 930 920 910 900 890

28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00

-Y15-

(-) 0.36% LT

BEG. SPECIAL CUT DITCH -Y15- STA. 44+10.00 LT EL. 931.97

END SPECIAL CUT DITCH -Y15- STA. 45+00.00 LT EL. 931.65

EXISTING GROUND

940 930 920 910 900 890

42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00

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PROJECT REFERENCE NO	SHEET NO.
U-4909	47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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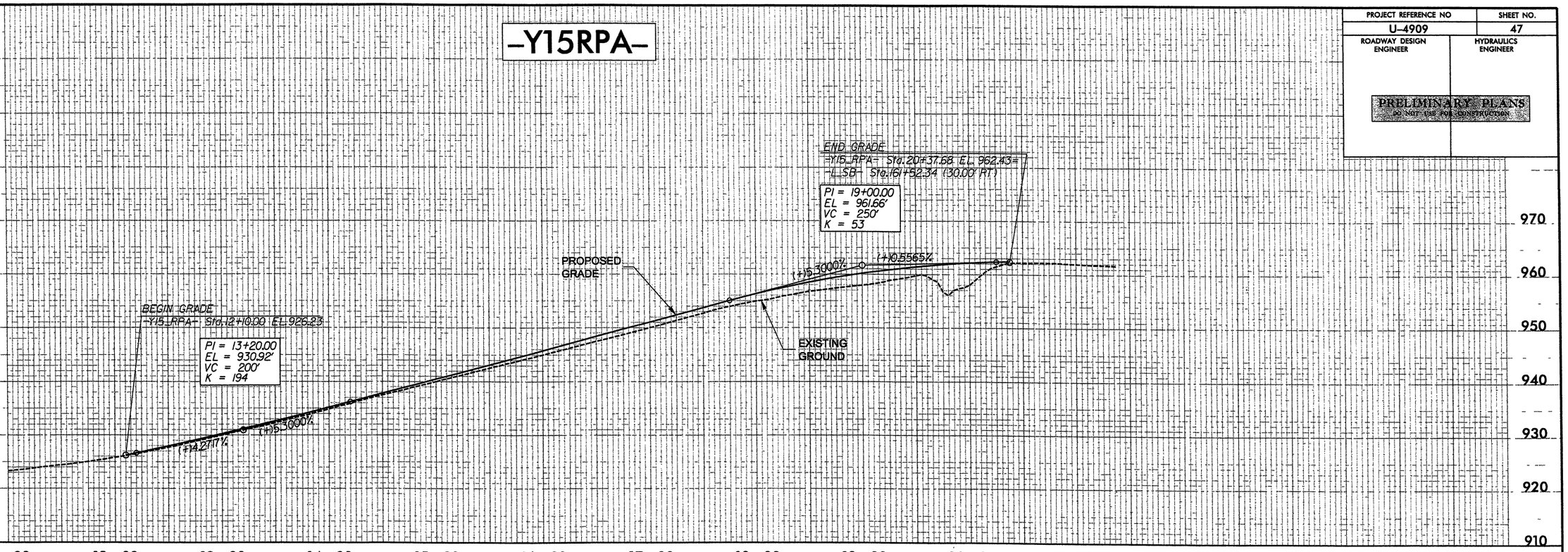
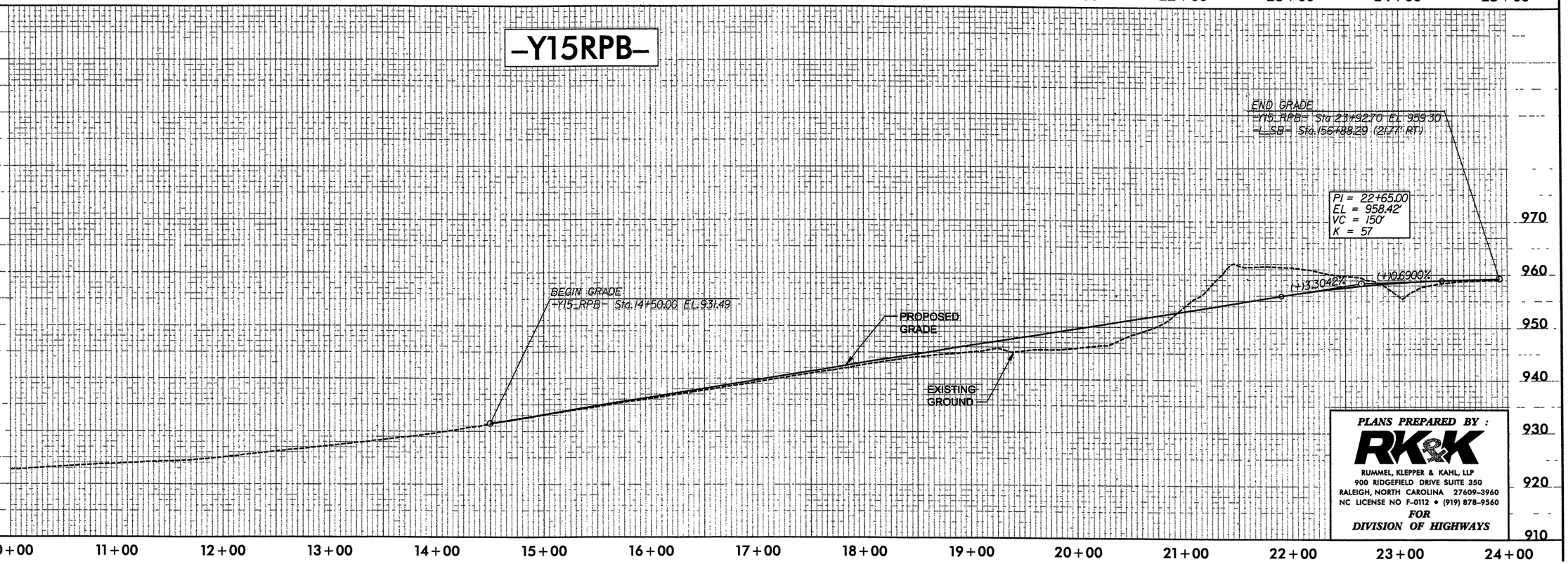
-Y15RPA-



-Y15RPB-



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PROJECT REFERENCE NO.	SHEET NO.
U-4909	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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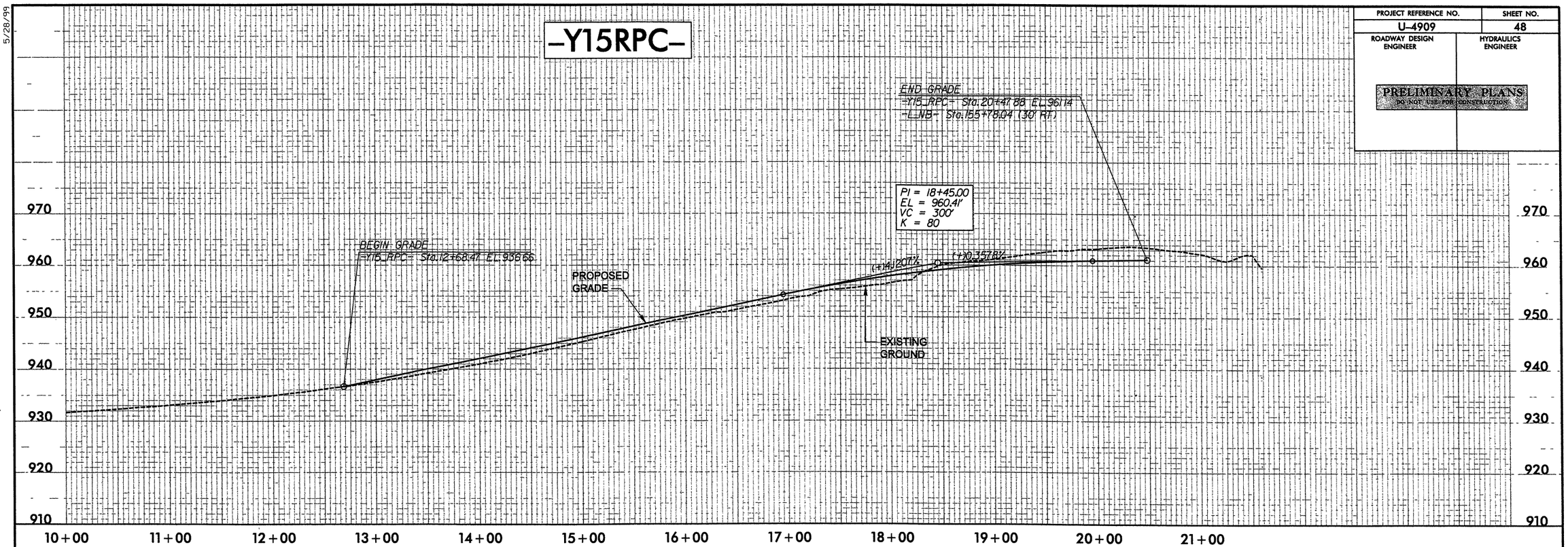
-Y15RPC-



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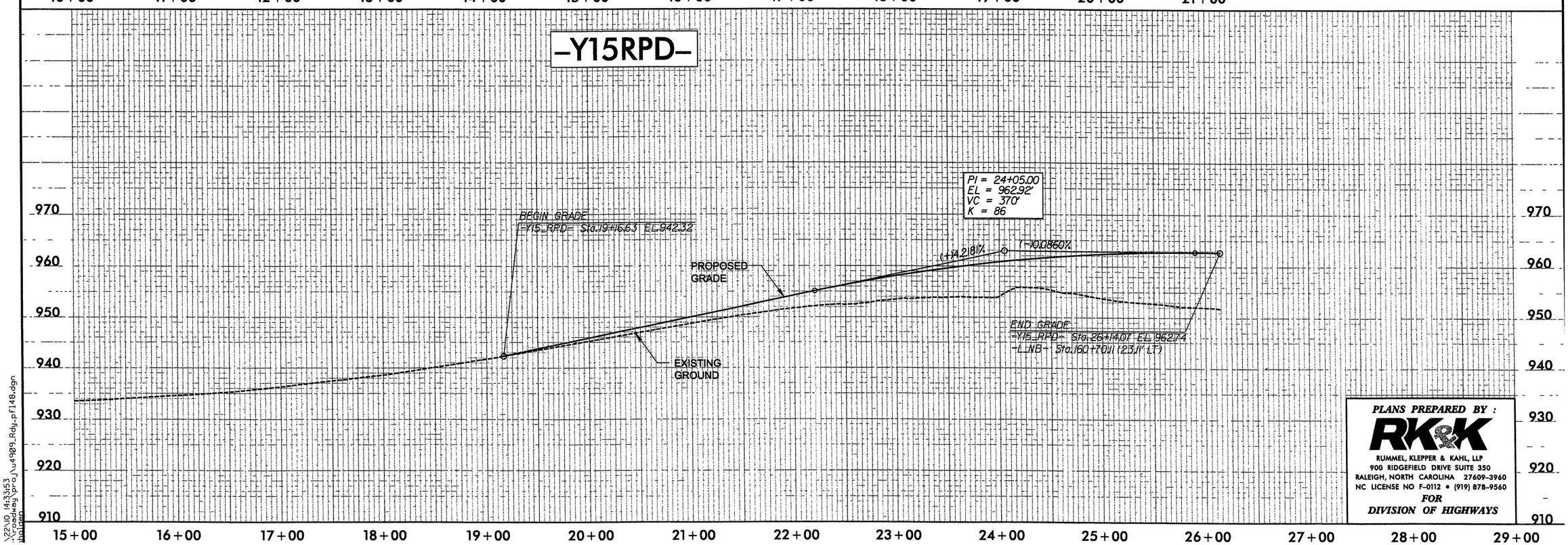

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PROJECT REFERENCE NO.	SHEET NO.
U-4909	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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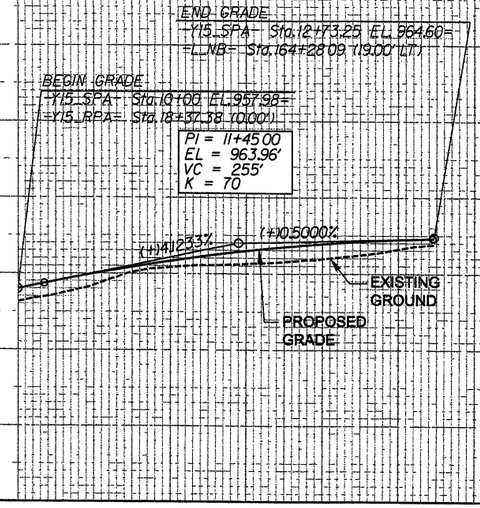
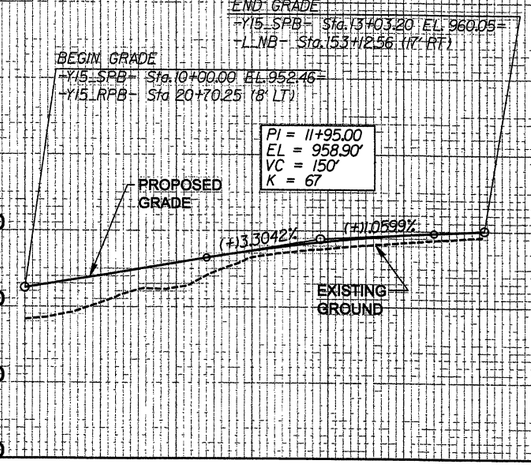
-Y15SPA-



-Y15SPB-



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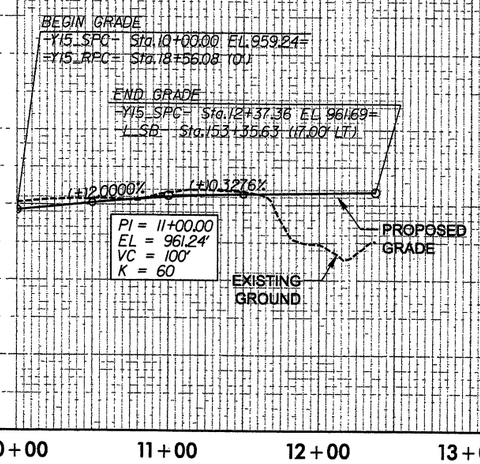

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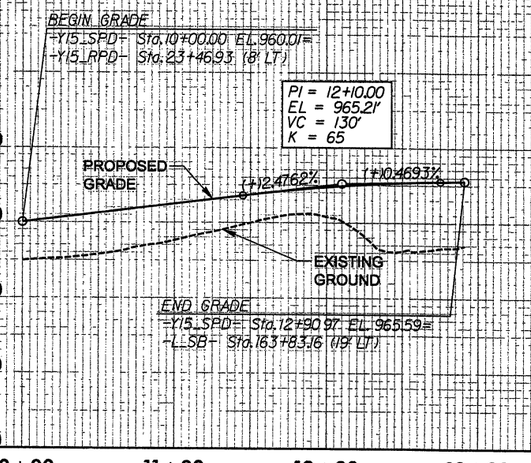

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PROJECT REFERENCE NO	SHEET NO
U-4909	50

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y16-

970
960
950
940

EXISTING GROUND

12+00 13+00

-Y18-

970
960
950
940

EXISTING GROUND

13+00 14+00 15+00 16+00

-Y17-

980
970
960
950
940

BEGIN GRADE
-Y17- Sta.10+20.00 EL. 956.99

BEG. SPECIAL CUT DITCH
-Y17- STA.10+00.00 RT
EL. 954.47

PI = 10+70.00
EL = 959.62'

PI = 12+20.00
EL = 967.12'
VC = 300'
K = 64

END. SPECIAL CUT DITCH
-Y17- STA.10+50.00 RT
EL. 956.26

(+)3.58% RT

(+)15.2515%

(+)15.0000%

(+)0.3000%

(+)3.22% LT

BEG. SPECIAL CUT DITCH
-Y17- STA.10+00.00 LT
EL. 954.27

END. SPECIAL CUT DITCH
-Y17- STA.10+50.00 LT
EL. 955.88

PROPOSED GRADE

PI = 16+20.00
EL = 968.32'
VC = 185'
K = 65

(+)0.3000%

(+)3.1500%

EXISTING GROUND

PI = 19+65.00
EL = 979.18'
VC = 360'
K = 51

END GRADE
-Y17- Sta.21+65.13 EL 971.38=
-L- Sta.174+05.00 (53.0' LT)

(+)3.1500%

(-)3.9000%

(+) 0.30% RT

(-)3.15% LT

BEG. SPECIAL CUT DITCH
-Y17- STA.20+00.00 RT
EL. 971.87

END SPECIAL CUT DITCH
-Y17- STA.20+50.00 RT
EL. 972.02

BEG. SP. BACK OF CURB DITCH
-Y17- STA.21+10.00 LT
EL. 971.32

END SP. BACK OF CURB DITCH
-Y17- STA.21+36.00 LT
EL. 970.50

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

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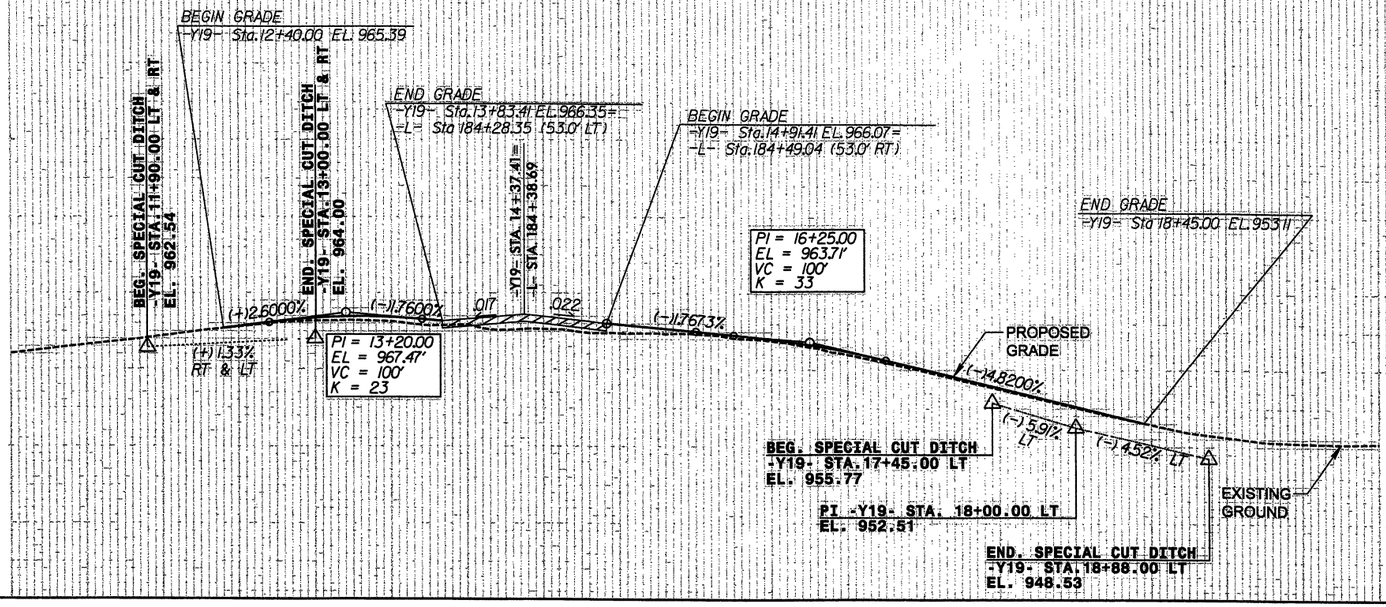
PROJECT REFERENCE NO.	SHEET NO.
U-4909	51

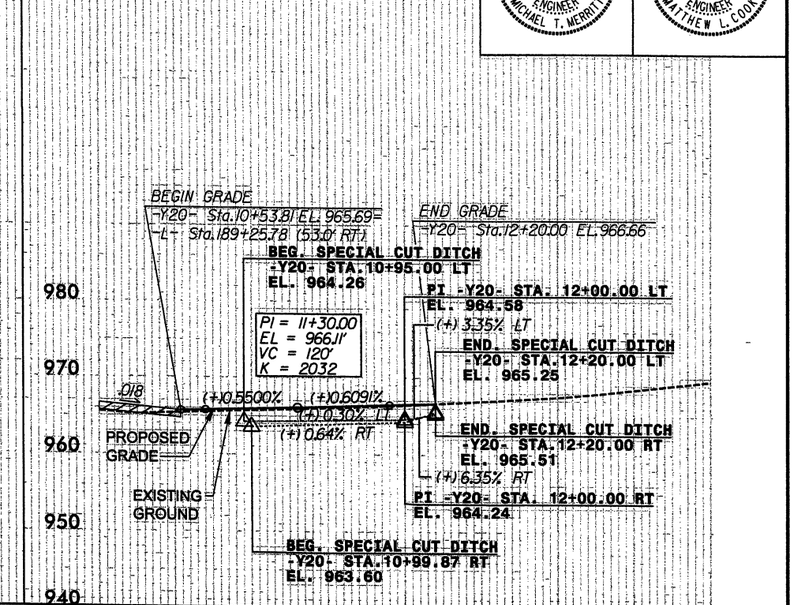
ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

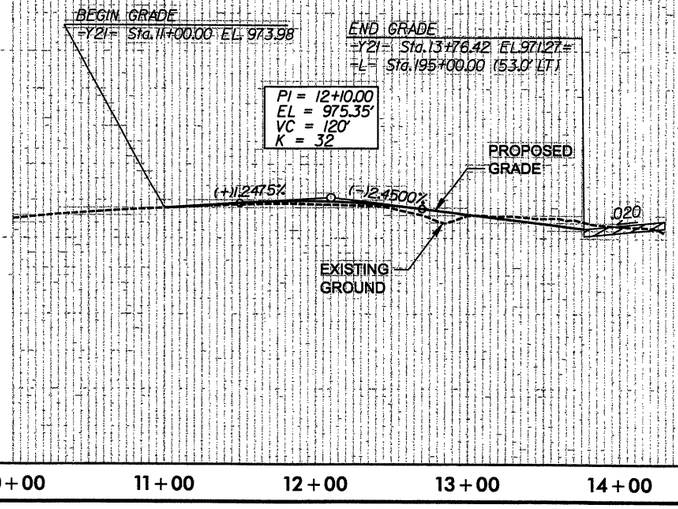
-Y19-



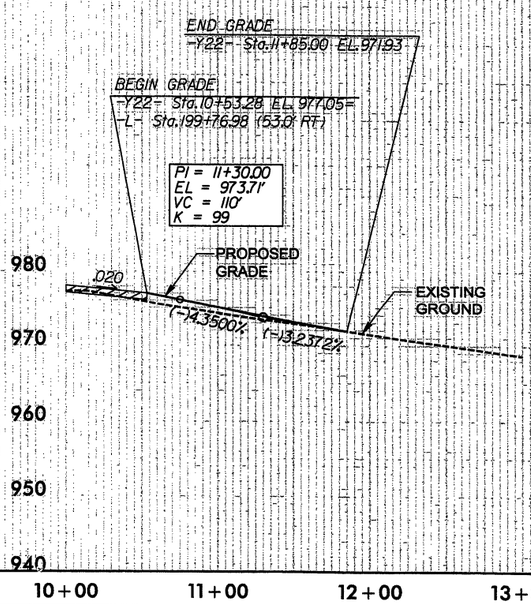
-Y20-



-Y21-



-Y22-



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PROJECT REFERENCE NO.	SHEET NO.
U-4909	52

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 21122 ENGINEER MICHAEL T. MERRITT

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 27434 ENGINEER MATTHEW L. COOK

-Y23-

BEGIN GRADE
-Y23- Sta. 10+60.00 EL. 973.60

PI = 11+10.00
EL = 974.26'

PI = 13+75.00
EL = 975.45'
VC = 285'
K = 438

PI = 17+80.00
EL = 979.91'
VC = 270'
K = 110

PI = 20+50.00
EL = 976.26'
VC = 150'
K = 143

END GRADE
-Y23- Sta. 22+20.37 EL. 975.75=
=L- Sta. 205+97.77 (53.0' LT)

BEGIN GRADE
-Y23- Sta. 23+21.73 EL. 973.53=
=L- Sta. 206+35.60 (41.0' RT)

(+)1.3208%
(+)0.4500%
(+)0.4500%
(+)0.30% LT
(+)1.1000%
(+)0.76% LT
(-)1.3500%
(+)2.90% RT
(-)2.260% LT
(-)1.3500%
(-)1.180% RT
(-)0.3000%
(+)1.16% LT
(+)1.16% LT
(-)4.7500%

BEG. SP. CUT BASE DITCH -Y23- STA. 10+00.00 LT EL. 972.09

PI -L- STA. 15+00.00 LT EL. 973.59

END SP. CUT BASE DITCH -L- STA. 16+00.00 LT EL. 974.35

BEG. LAT. V DITCH -Y23- STA. 18+25.00 RT EL. 977.83

BEG. LAT. BASE DITCH -Y23- STA. 19+00.00 LT EL. 974.30

PI -Y23- STA. 19+50.00 RT EL. 974.20

PI -Y23- STA. 19+50.00 LT EL. 973.00

END LAT. BASE DITCH BEG. SPECIAL BACK OF CURB DITCH -Y23- STA. 21+34.00 LT EL. 975.13

END LAT. V DITCH -Y23- STA. 21+34.00 RT EL. 971.26

END SPECIAL BACK OF CURB DITCH -Y23- STA. 22+24.00 LT EL. 976.17

-Y23- STA. 22+77.46=
-L- STA. 206+18.74

.022

EXISTING GROUND

980 / 970 / 960 / 950 / 940

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

-Y23-

PI = 25+35.00
EL = 963.40'
VC = 425'
K = 96

PROPOSED GRADE

PI = 29+20.00
EL = 962.24'
VC = 280'
K = 86

PI = 32+00.00
EL = 952.30'
VC = 150'
K = 200

PI = 33+00.00
EL = 949.50'

END GRADE
-Y23- Sta. 33+75.00 EL. 947.04

(-)4.7600%
(-)0.3000%
(-)0.3000%
(-)3.5500%
(-)3.5500%
(-)3.286%

980 / 970 / 960 / 950 / 940 / 930

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00

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PROJECT REFERENCE NO	SHEET NO.
U-4909	53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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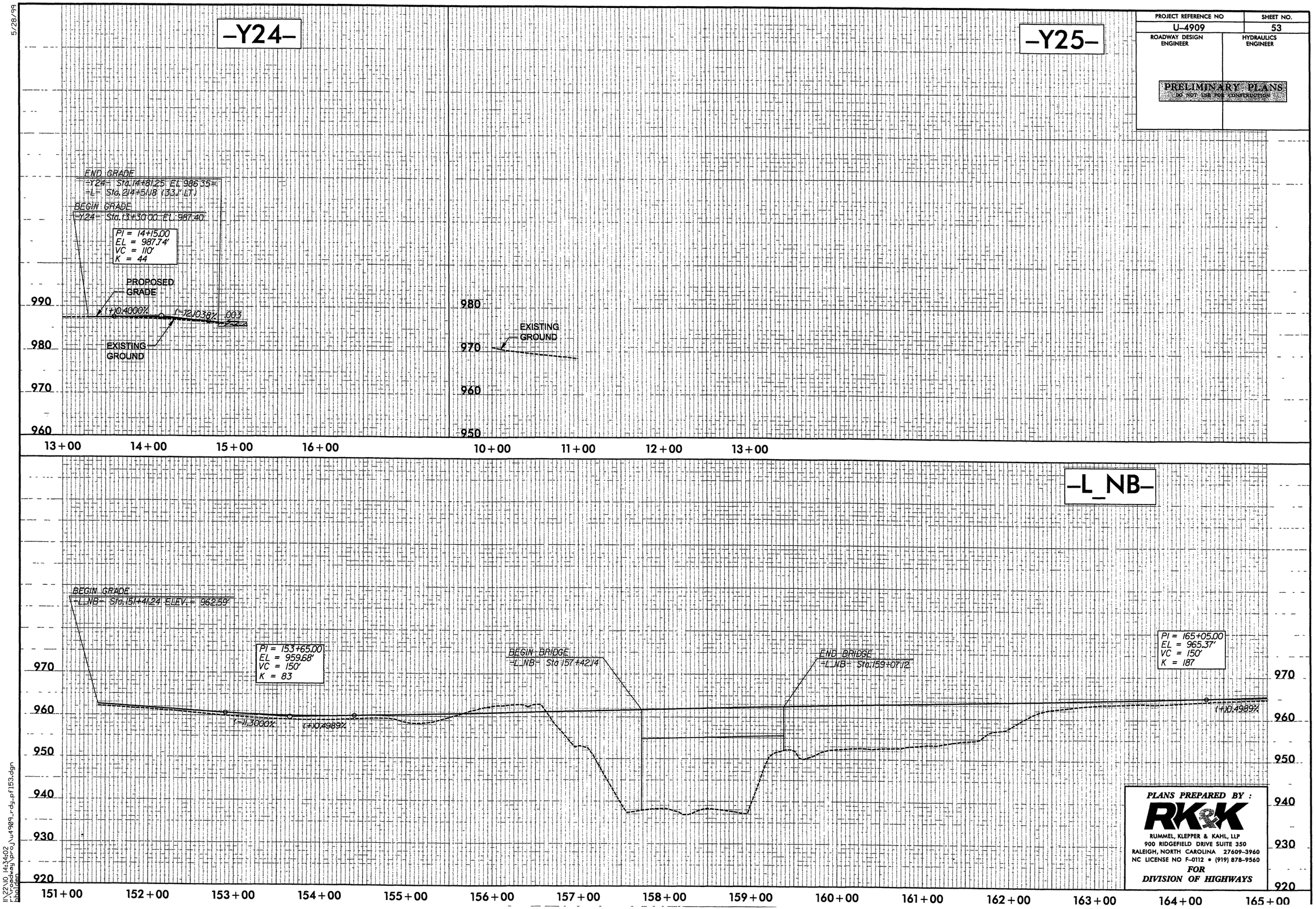

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PROJECT REFERENCE NO	SHEET NO.
U-4909	54
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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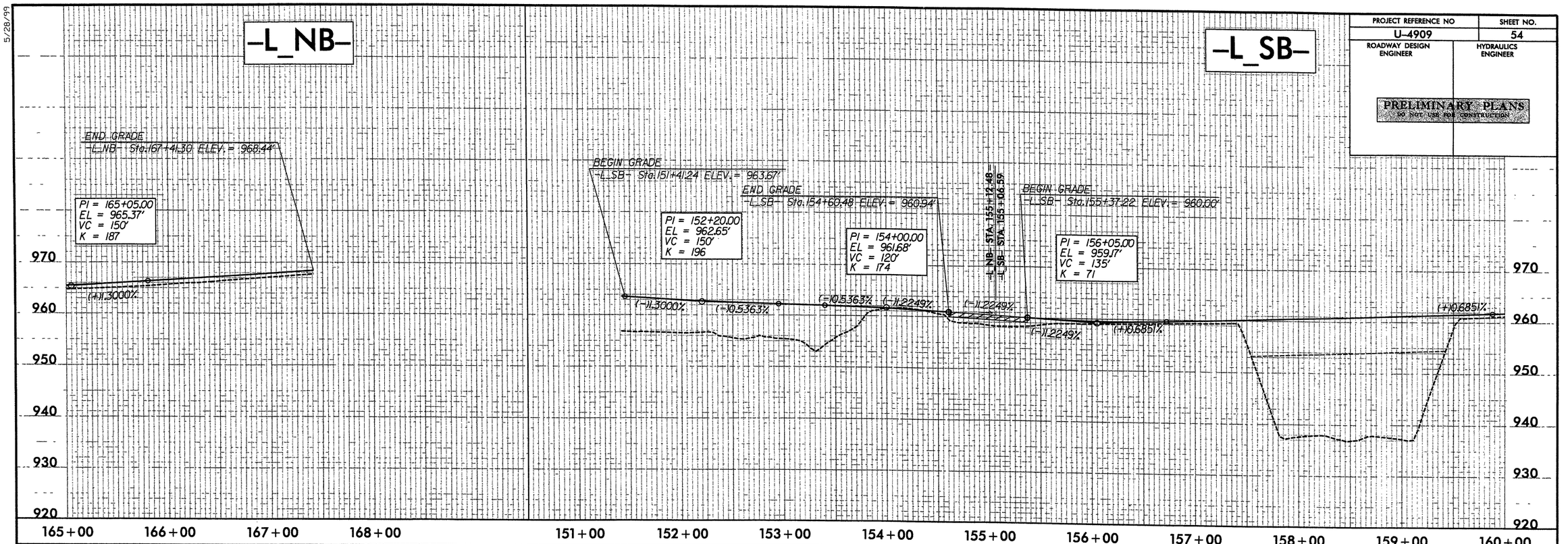

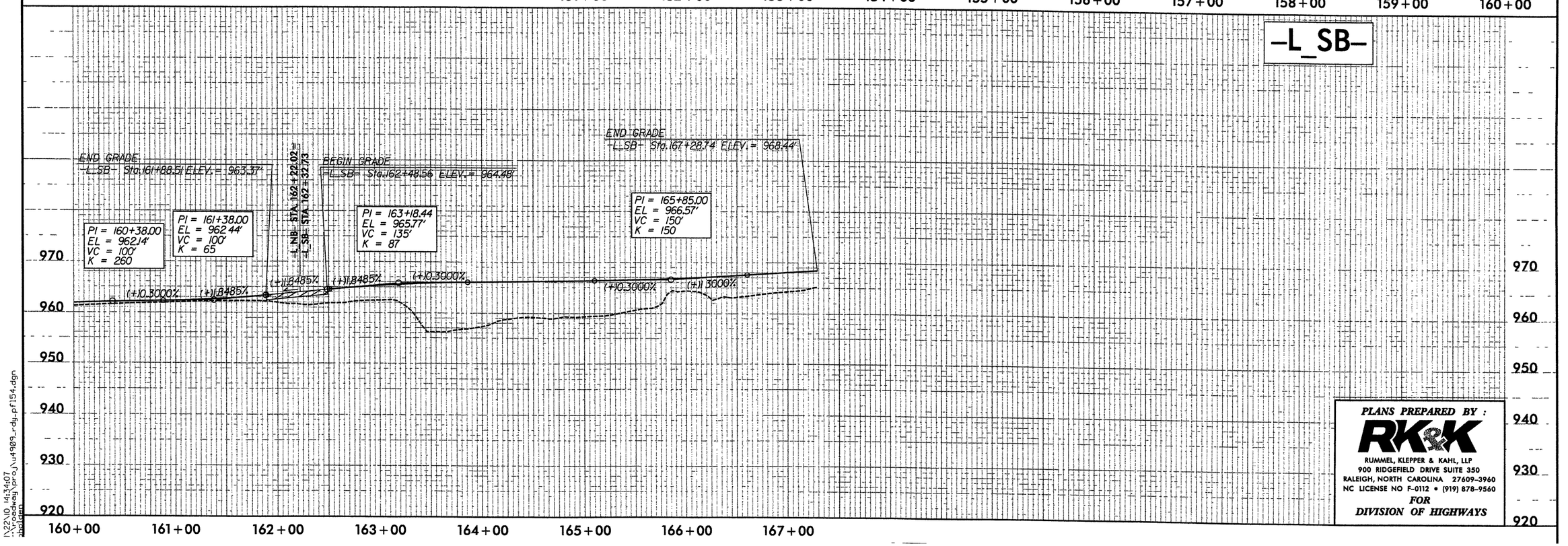

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