STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

May 24, 2012

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 and Section 401 Water Quality Certification** for the widening of SR 1919 (Smith Level Road) to a multilane facility from south of Rock Haven Road to Bridge No. 88 over Morgan Creek, Orange County, WBS No. 34860.1.1, T.I.P. U-2803

Debit $240.00 from WBS No. 34860.1.1

Dear Sir,

The North Carolina Department of Transportation (NCDOT) proposes to widen of SR 1919 (Smith Level Road) from Rock Haven Road to Bridge No. 88 over Morgan Creek, a distance of approximately 0.8 miles. Construction of this project will account for 232 linear feet of permanent stream impact to an unnamed tributary of Morgan Creek.

Please see the enclosed copies of the Pre-Construction Notification (PCN), Ecosystem Enhancement Program (EEP) Acceptance Letter, jurisdictional determination forms, Stormwater Management Plan, permit drawings, and the design plans for the above-referenced project. The State Environmental Assessment (SEA)/Finding of No Significant Impact (FONSI) was completed for this project in November 2008. Additional copies are available upon request.

This project calls for a letting date of December 18, 2012 and a review date of October 30, 2012. 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 Jason Dilday at (919) 707-6111.

Sincerely,

E. L. Lush

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 NWP or GP number been verified by the Corps?	☒ Yes	☐ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes	☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes	☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes	☒ No

2. Project Information

2a. Name of project:	SR 1919 (Smith Level Rd.) from Rock Haven Rd. to Bridge No. 88 over Morgan Creek
2b. County:	Orange
2c. Nearest municipality / town:	Carrboro
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	U-2803

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Responsible Party (for LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6111
3g. Fax no.:	(919) 212-5785
3h. Email address:	jldilday@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: 35.896702 (DD.DDDDDD)	Longitude: - 79.075892 (-DD.DDDDDD)
1c. Property size:	20 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Morgan Creek	
2b. Water Quality Classification of nearest receiving water:	WS-IV, NSW	
2c. River basin:	Cape Fear	
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: 0.0 acre		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 250 linear feet		
3d. Explain the purpose of the proposed project: The purpose of the project is to improve traffic capacity, bicycle and pedestrian access, and improve vehicle, pedestrian and bicycle safety.		
3e. Describe the overall project in detail, including the type of equipment to be used: The North Carolina Department of Transportation (NCDOT) proposes to improve Smith Level Road to a 3-lane/4-lane cross section with a roundabout at the intersection of Smith Level Road with Rock Haven Road. Sidewalks and bicycle lanes are proposed to be installed throughout the length of the project. 1)Section A:Widen to southern section of Smith Level Road between Rock Haven Road to Culbreth Road to three-lanes, 2)Section B: Widen the central section of Smith Level Road between Culbreth Road and BPW Club Road to 3-4 lanes. This will be a transition area. 3)Section C: Widen the northern section Of Smith Level Road between Morgan Creek and BPW Club Road to a four-lane, median divided roadway. 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: A final JD will be requested at the time of permitting.	☐ Yes	☒ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☐ Final	
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.		
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			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 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 Morgan Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	222
Site 2 ☒ P ☐ T	Bank Stabilization	UT to Morgan Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	10
Site 3 ☐ P ☒ T	Fill	UT to Morgan Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	7
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**	232 Perm 7 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: Jordan
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**			0

6i. Comments: U-2803 is considered a "grandfathered" project in terms of the Jordan Lake Riparian Buffer Rules. In a letter dated August 20, 2010, U-2803 was identified as a project that had an approved FONSI prior to the adoption of the Jordan Lake Riparian Buffer Rules. Thus, buffer impacts were not calculated for the project.

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. The project is a widening project in an urban setting, with a limited available corridor for project improvements. Impacts to surface water bodies are limited to one stream along the project. The project was stopped short of the bridge over Morgan Creek to avoid impacts to the creek. Handling of stormwater for the project will be greatly enhanced as opposed to current condition. A curb and gutter will be installed to handle stormwater along the roadway, previously site had only a shoulder section. A dry detention basin will be installed to handle stormwater that originates at –L- 39+50. Preformed scour holes will be used at stormwater pipe outlets, when needed.

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

Best Management Practices for Surface Waters will be used during all phases of construction.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☒ Yes ☐ No
2b. If yes, mitigation is required by (check all that apply):	☒ DWQ ☒ Corps
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank: not applicable

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

3c. Comments:

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

4a. Approval letter from in-lieu fee program is attached.	☒ Yes
4b. Stream mitigation requested:	444 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).				
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: Buffer impact calculations not done, due to being a '"grandfathered" project.	☐ 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 NA
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes NA ☐ No NA

F. Supplementary Information		
1. Environmental Documentation (DWQ Requirement)		
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes	☐ No
2. Violations (DWQ Requirement)		
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):		
3. Cumulative Impacts (DWQ Requirement)		
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No	
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. An ICE assessment conducted in 2007 concluded that the project will not result in indirect effects in the form of change in land use or growth. The project will not result in cumulative impacts in the study area.		
4. Sewage Disposal (DWQ Requirement)		
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. not applicable		

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☐ Yes	☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes	☒ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? N.C. Natural Heritage Program database; USFWS-Raleigh Field Office website; biological surveys for protected species listed for Orange County, which include dwarf wedgemussel, red-cockaded woodpecker, Michaux's sumac, and smooth coneflower. All species received a Biological Conclusion of "No Effect". No habitat is present of dwarf wedgemussel and red-cockaded woodpecker. Habitat is present for Michaux's sumac and smooth coneflower, however surveys conducted of the study area (updated 5/15/2012) resulted in no specimens being found.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	E. L. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	5-24-12 Date

Ecosystem Enhancement PROGRAM

May 22, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

U-2803, Carrboro – SR 1919 (Smith Level Road) from Rock Haven Road to Bridge Number 88, Orange 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 May 22, 2012, the impacts are located in CU 03030002 of the Cape Fear River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Cape Fear 03030002 CP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	232	0	0	0	0	0

EEP commits to implementing sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies 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,

James B. Stanfill for

Michael Ellison
EEP Deputy Director

cc: Mr. Andy Williams, USACE – Raleigh Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: U-2803

UT to Morgan Creek

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: U-2803 (Widening of SR 1919-Smith Level Road)

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State:NC County/parish/borough: Orange City: Carrboro
Center coordinates of site (lat/long in degree decimal format): Lat. 35.896702° N, Long. -79.075892° W.
Universal Transverse Mercator:
Name of nearest waterbody: Morgan Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Jordan Lake
Name of watershed or Hydrologic Unit Code (HUC): 03030002
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Appear to be no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: 250 linear feet: 2-6 width (ft) and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
      Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: Pick List
   Drainage area: Pick List
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☒ Tributary flows directly into TNW.
   ☐ Tributary flows through Pick List tributaries before entering TNW.

   Project waters are Pick List river miles from TNW.
   Project waters are Pick List river miles from RPW.
   Project waters are Pick List aerial (straight) miles from TNW.
   Project waters are Pick List aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: .
   Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☐ Artificial (man-made). Explain: .
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
- Average width: feet
- Average depth: feet
- Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
- ☐ Silts
- ☐ Sands
- ☐ Concrete
- ☐ Cobbles
- ☐ Gravel
- ☐ Muck
- ☐ Bedrock
- ☐ Vegetation. Type/% cover:
- ☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):
  - ☐ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

---

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain: .

Surface flow is: Pick List

Characteristics: .

Subsurface flow: Pick List. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

Project waters are Pick List aerial (straight) miles from TNW.

Flow is from: Pick List.

Estimate approximate location of wetland as within the Pick List floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: Pick List

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: UT to Morgan Creek in the impact area has a NCDWQ stream rating score as a high intermittent stream, but also exhibits strong biology suggesting a perennial status for the stream.
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☒ Tributary waters: **250** linear feet **2-6** width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   - ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   - ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   - ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   - ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   - ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

---

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name: .
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date): .
  - or ☐ Other (Name & Date): .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Released: July 2010 (DRAFT)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

Version 1.1

General Project Information

Project No.:	U-2803		**Date:**	6-Jun-11			
City/Town:	Town of Carrboro		**Designer:**	David Fuh			
County(ies):	Orange County		**Project Manager:**	Herb Turner			
River Basin(s):	**Cape Fear**		**CAMA County?**	no	**TVA County?**	no	
Primary Receiving Water:	UT to Morgan Creek		**NCDWQ Stream Index:**	16-41-2-(5)			
NCDWQ Surface Water Classification for Primary Receiving Water		**C;NSW**					
		Supplemental:					
Other Stream Classification:							
303(d) Stream?	no	**Type(s) of Impairment:**					
State Stormwater Permit Required?	no	**If yes, why?**					
Could the Project Impact Threatened or Endangered Species?			no				
Description:							
Anadromous Fish Present?	**no**						
Description:							
Buffer Rules in Effect?	no		**Buffer Rules:**				

Existing Site

Description of Existing Project Area:	piedmont urban area, gently rolling hills with narrow, level floodplains along streams
Average Daily Traffic (existing):	18152
Existing Cross Section:	two lane undivided open shoudler section, 10' to 12' paved travel lanes, 6' to 8' unpaved soil shoulder on both sides
Surrounding Land Use:	industrial and commercial
General Comments:	

Project Description

Description of Proposed Project:	improvements to SR 1919 (Smith Level Road) from south of Rock Haven Road to Bridge No. 88 over Morgan Creek		
Average Daily Traffic (proposed):	21992		
Proposed Cross-Section:	2-3 (11') lane curb & gutter with sidewalks and 5' bicycle lanes		
Interchange Modification:		**Median Type:**	
Terminus:			
Terminus:			
Project Length (lin. miles/feet):	0.809 miles	**Added Impervious Area (ac.):**	2.6 acre
General Comments:			

Environmental Summary

Riparian Buffer and Jurisdictional Stream Impacts and Associated SCMs

Station	Stream Name	Stream Type	Jurisdict. Stream	Buffer?	Classific-ation?	Proposed Structure	SCM Type	Checklist Complete?	DA (ac.)	Q_2 (ft^3/s)	Q_{10} (ft^3/s)	WQv^c (ft^3)
-L- 51+00 RT	UT to Morgan Creek	Perennial	RPW	No	Class C	96'x14'x3'	dry detention basin	yes	4.7	10.2	14.2	7,320
-L- 53+00 LT	UT to Morgan Creek	Perennial	RPW	No	Class C	4'x4'x2'	preformed scour hole	yes	0.27	0.5	0.7	
-L- 54+34 LT	UT to Morgan Creek	Perennial	RPW	No	Class C	4'x4'x2'	preformed scour hole	yes	0.15	0.6	0.8	
-L- 54+75 RT	UT to Morgan Creek	Perennial	RPW	No	Class C	4'x4'x2'	preformed scour hole	yes	0.74	2.7	3.8	

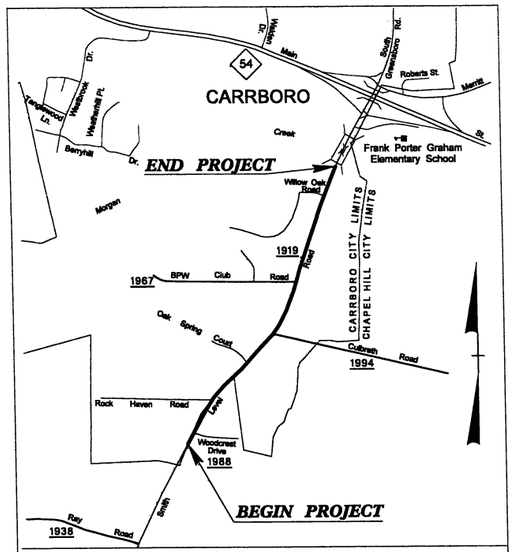
General Comments:

06/28/99

TIP PROJECT: U-2803

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ORANGE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2803	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34860.1.1		P.E.
34860.2.1		R/W & UTILITIES

LOCATION: *CARRBORO – SR 1919 (SMITH LEVEL ROAD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, CURB & GUTTER AND SIGNALS*

Permit Drawing Sheet 1 of 6

NAD 83/95

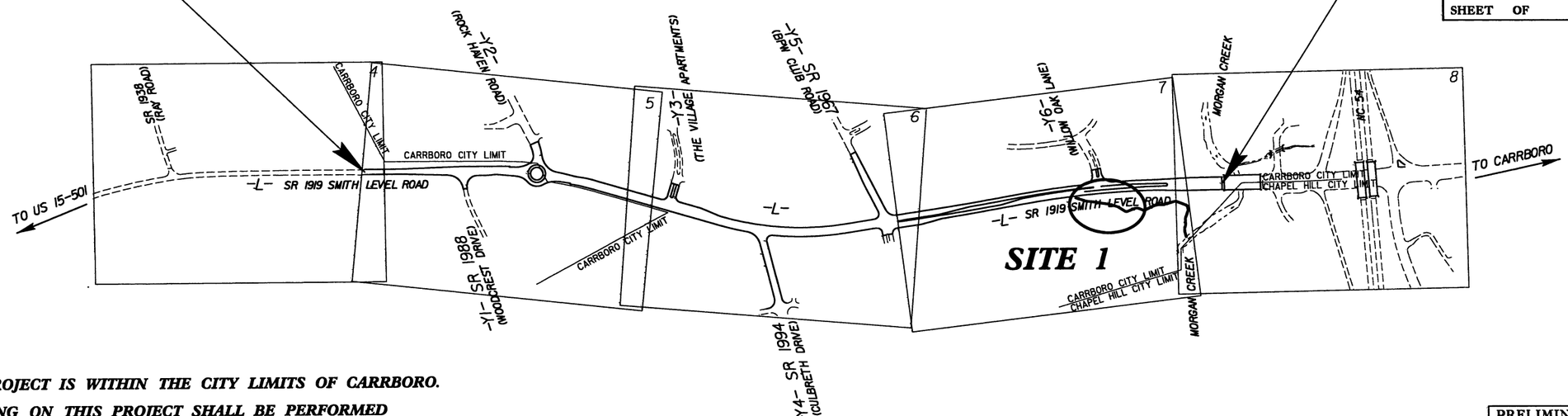
WETLAND & STREAM IMPACTS

ENGLISH

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
ORANGE COUNTY
PROJECT: 34860.1.1 (U-2803)
SR 1919 (SMITH LEVEL RD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK
SHEET OF

STA. 13+00.00 –L– BEGIN TIP PROJECT U-2803

STA. 55+73.27 –L– END TIP PROJECT U-2803



THIS PROJECT IS WITHIN THE CITY LIMITS OF CARRBORO.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 20,200
ADT 2032 = 24,500
DHV = 10 %
D = 60 %
T = 4 % *
V = 50 MPH
* TTST 1% DUAL 3%
FUNC. CLASS = MINOR ARTERIAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2803 = 0.809 MILES
TOTAL LENGTH STATE TIP PROJECT U-2803 = 0.809 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 29, 2011

LETTING DATE: DECEMBER 18, 2012

BRENDA MOORE, PE
PROJECT ENGINEER

TATIA L. WHITE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

2/2/2012
P:\Hydro\U-2803\Hydraulics\PERMITS_Environmental\drawings\u2803_hyd_prm_tsh.dgn
Florance & Hutcheson, Inc.

REVISIONS

02/07/12 R/W REVISION (PJS) – THE PDE WAS CHANGED TO TCE FROM -L- STA. 46+28.00 TO STA. 49+04.00 LT. ON PARCELS 33 THROUGH 36.
01/05/12 R/W REVISION (TLW) – ADDED "DO NOT DISTURB" NOTE TO THE ISLAND AT THE ENTRANCE OF -Y6-.
12/20/11 R/W REVISION (PJS) – THE AUE WAS ELIMINATED ON PARCEL 28, PARCEL 30, PARCEL 31, PARCEL 32 AND PARCEL 33. THE PUE WAS ELIMINATED ON PARCEL 37B AND PARCEL 38. THE PUE WAS CHANGED TO AUE FROM -L- STA. 52+53.72 TO STA. 52+76.00 LT. ON PARCEL 39. THE PUE WAS REVISED AND TCE WAS ELIMINATED ON PARCEL 29. THE TCE WAS ADDED ON PARCEL 32 AND PARCEL 33. THE DUE WAS CHANGED TO PDE ON PARCEL 34 THRU PARCEL 36. THE CLAIM WAS ELIMINATED ON PARCEL 30, PARCEL 31, AND PARCEL 37B.

8/17/99

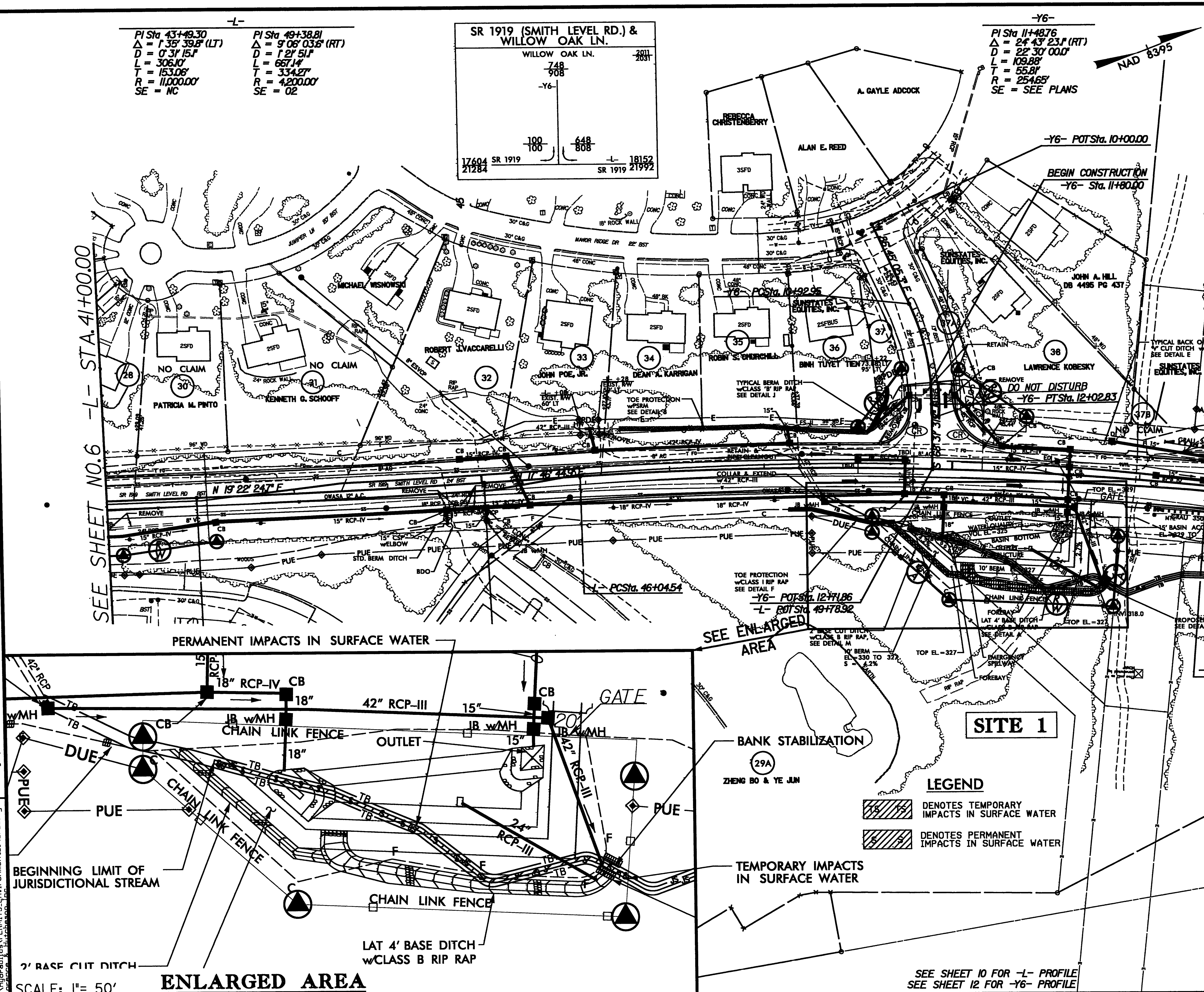
PROJECT REFERENCE NO.	SHEET NO.
U-2803	7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 2 of 6



N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
ORANGE COUNTY
PROJECT: 34860.1.1 (U-2803)
SR 1919 (SMITH LEVEL RD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK

SHEET OF

PROJECT REFERENCE NO.	SHEET NO.
U-2803	7

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 3 of 6

REVISIONS

02/07/12 R/W REVISION (PJS) - THE PDE WAS CHANGED TO TCE FROM -L- STA. 46+28.00 TO STA. 49+04.00 LT. ON PARCELS 33 THROUGH 36.

01/05/12 R/W REVISION (TJW) - ADDED 'DO NOT DISTURB' NOTE TO THE ISLAND AT THE ENTRANCE OF -Y6-.

12/20/11 R/W REVISION (PJS) - THE AUE WAS ELIMINATED ON PARCEL 28, PARCEL 30, PARCEL 31, PARCEL 32 AND PARCEL 33. THE PUE WAS ELIMINATED ON PARCEL 37B AND PARCEL 38. THE PUE WAS CHANGED TO AUE FROM -L- STA 52+53.72 TO STA. 52+76.00 LT. ON PARCEL 39. THE PUE WAS REVISED AND TCE WAS ELIMINATED ON PARCEL 29. THE TCE WAS ADDED ON PARCEL 32 AND PARCEL 33. THE DUE WAS CHANGED TO PDE ON PARCEL 34 THRU PARCEL 36. THE CLAIM WAS ELIMINATED ON PARCEL 30, PARCEL 31, AND PARCEL 37B.

8/17/99

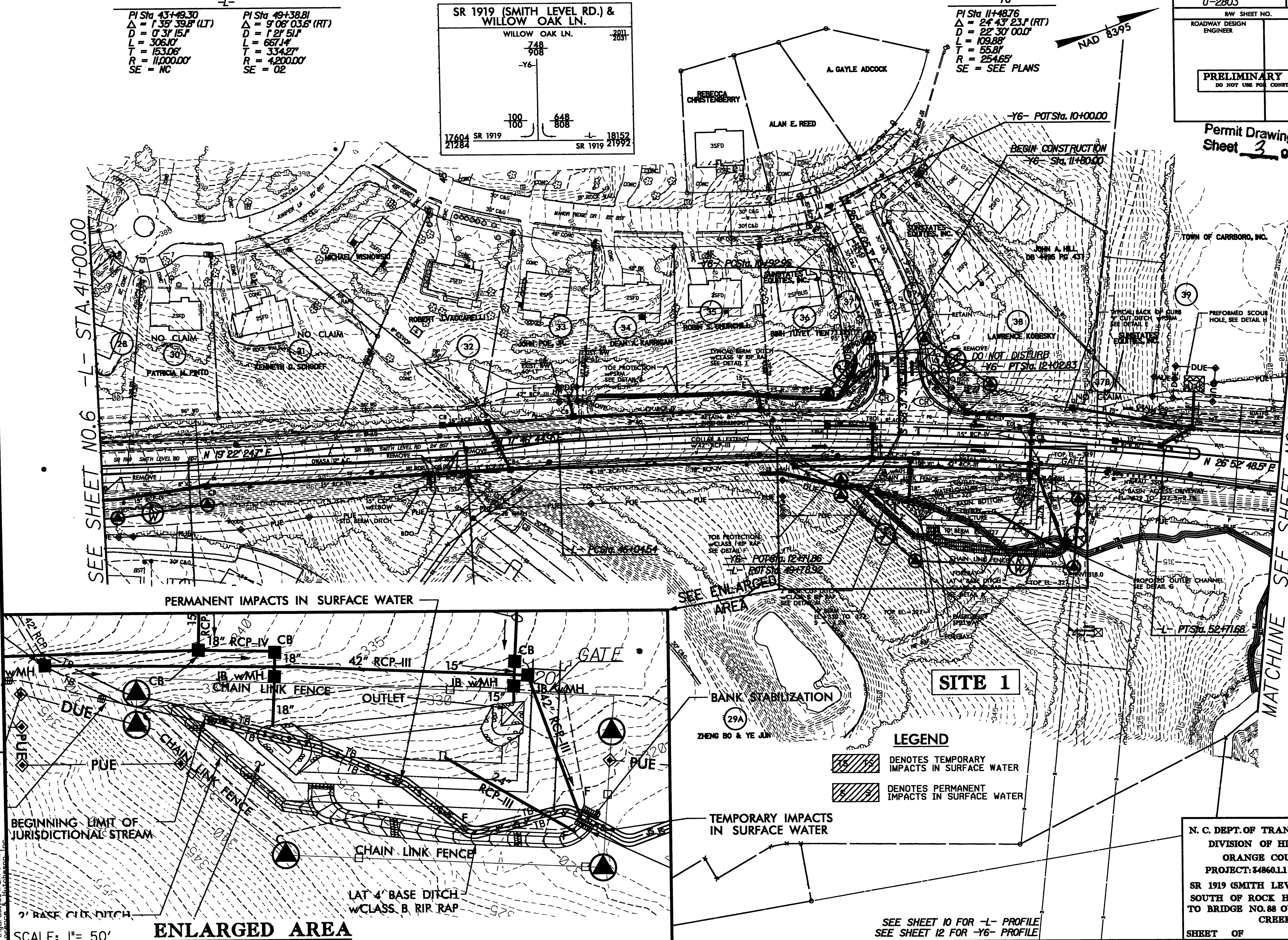
-L-

PI Sta 43+49.30	PI Sta 49+38.81
Δ = 1° 35' 39.8" (LT)	Δ = 9° 06' 03.6" (RT)
D = 0° 31' 15.1"	D = 1° 21' 51.1"
L = 306.10'	L = 667.14'
T = 153.06'	T = 334.27'
R = 11,000.00'	R = 4,200.00'
SE = NC	SE = .02

-Y6-

PI Sta 11+48.76
Δ = 24° 43' 23.1" (RT)
D = 22° 30' 00.0"
L = 109.88'
T = 55.81'
R = 254.65'
SE = SEE PLANS

SR 1919 (SMITH LEVEL RD.) & WILLOW OAK LN.



SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 12 FOR -Y6- PROFILE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
ORANGE COUNTY
PROJECT: 34860.1.1 (U-2803)
SR 1919 (SMITH LEVEL RD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK

SHEET OF

5/3/2012 R:\Hydraulics\PERMITS_Environmental\drawings\u2803_hyd_prm_wet_psh7.dgn

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2803	10

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 4 of 6

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
ORANGE COUNTY
PROJECT: 34860.1.1 (U-2803)
SR 1919 (SMITH LEVEL RD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK

SHEET OF

ENGLISH

PI = 30+22.00
EL = 453.57'
VC = 200'
K = 409

PI = 35+45.00
EL = 441.90'
VC = 360'
K = 80

PI = 43+90.00
EL = 388.60'
VC = 530'
K = 485

PI = 47+80.00
EL = 354.29'
VC = 330'
K = 311

PI = 52+80.00
EL = 320.80'
VC = 410'
K = 64

(-)27.2067%
(-)2.2314%
(-)2.2314%
(-)5.7044%
(-)5.7044%
(-)11.1977%
(-)11.1977%
(-)7.3807%
(-)7.3807%
(-)10.3000%

PERMANENT IMPACT IN SURFACE WATER

LEGEND
DENOTES PERMANENT IMPACTS IN SURFACE WATER

2/21/2002
C:\Projects\U-2803\Hydraulics\PERMITS_Environmental\drawings\u-2803_hyd_prm_pfl.dgn
Florence & Hutcheson, Inc.

WETLAND IMPACTS
SUMMARY OF AFFECTED PROPERTY OWNERS

TRACT NO.	PROPERTY OWNER	ADDRESS	SITE NO.
29A	BO ZHENG & YE JUN	107 KENILWORTH PL CHAPEL HILL NC, 27516	1

Permit Drawing
Sheet 5 of 6

ENGLISH

NCDOT
DIVISION OF HIGHWAYS
ORANGE COUNTY
PROJECT: 34860.1.1 (U-2803)

SR 1919 (SMITH LEVEL ROAD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK

SHEET OF

2/21/202
6:48:22 AM
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WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	49+54 TO 51+65 RT	96'x14'X3' DRY DETENTION BASIN						0.01		222		
1	51+65 TO 51+75 RT	BANK STABILIZATION						<0.01		10		
1	51+75 TO 15+81 RT	96'x14'X3' DRY DETENTION BASIN							<0.01		7	
TOTALS:								0.01	<0.01	232	7	

...nit Drawing
...neet 6 of 6

ATN Revised 3/31/05

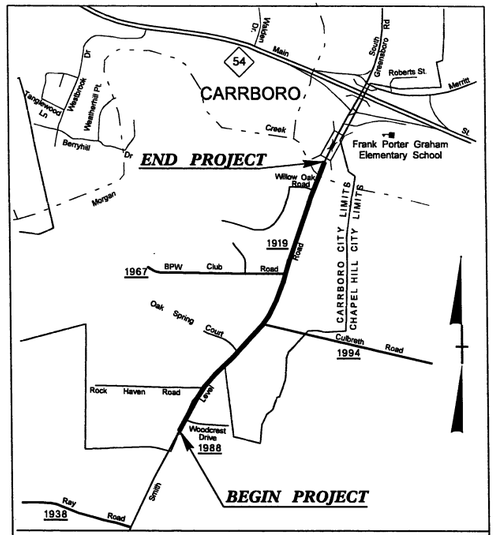
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ORANGE COUNTY, PROJECT: 34860.1.1 (U-2803)
SR 1919 (SMITH LEVEL ROAD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK
SHEET OF

09/08/99

TIP PROJECT: U-2803

CONTRACT: C203028

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ORANGE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2803	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34860.1.1		P.E.
34860.2.1		R/W & UTILITIES

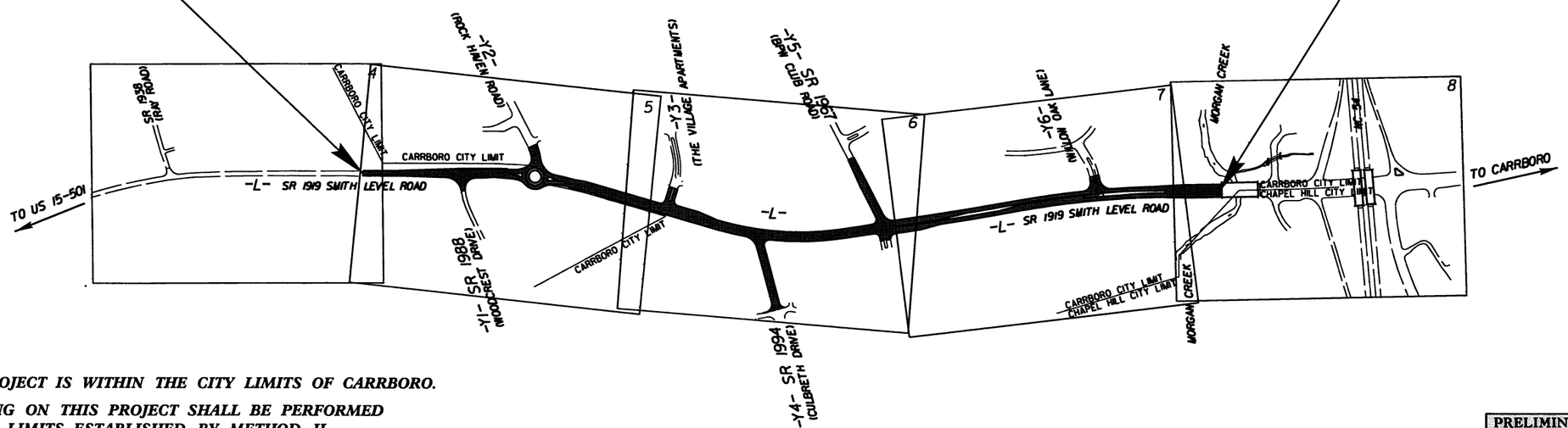
LOCATION: *CARRBORO – SR 1919 (SMITH LEVEL ROAD) FROM SOUTH OF ROCK HAVEN ROAD TO BRIDGE NO. 88 OVER MORGAN CREEK*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, CURB & GUTTER AND SIGNALS*

NAD 83/95

STA. 13+00.00 –L– BEGIN TIP PROJECT U-2803

STA. 55+73.27 –L– END TIP PROJECT U-2803



THIS PROJECT IS WITHIN THE CITY LIMITS OF CARRBORO.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 20,200
ADT 2032 = 24,500
DHV = 10 %
D = 60 %
T = 4 % *
V = 50 MPH
* TTST 1% DUAL 3%
FUNC. CLASS = MINOR ARTERIAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2803 = 0.809 MILES
TOTAL LENGTH STATE TIP PROJECT U-2803 = 0.809 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 29, 2011

LETTING DATE: DECEMBER 18, 2012

BRENDA MOORE, PE
PROJECT ENGINEER

TATIA L. WHITE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

27-FEB-2012 12:06
f:\roadway\proj\u2803_rdy_tsh.dgn
$$$$USERNAME$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
U-2803	1-B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Curb Cut Future Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line

- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — PH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — PH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — PH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

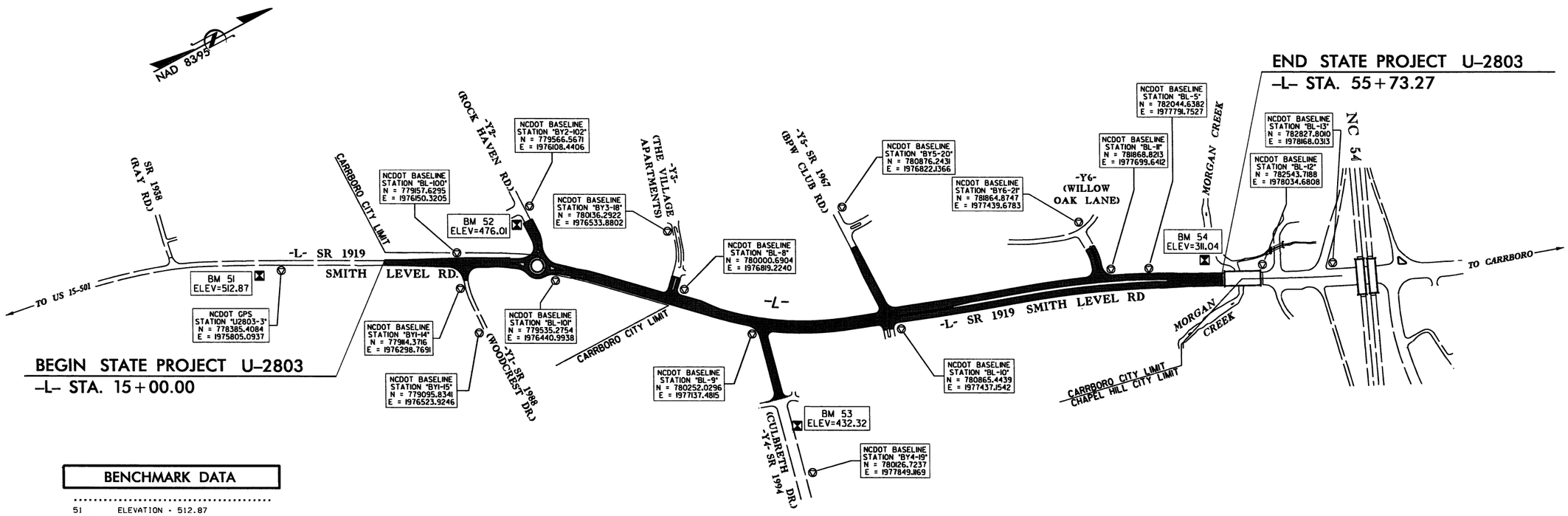
MISCELLANEOUS:

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

12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
U-2803	1C
Location and Surveys	

U-2803 SURVEY CONTROL SHEET



BENCHMARK DATA

```
51       ELEVATION = 512.87
N 778274      E 1975792
L STATION 10+00
 S 3° 01' 36.7" E  DIST    119.06
RR SPIKE IN BASE OF LIGHT POLE
*****************************************
*****************************************
52       ELEVATION = 476.01
N 779514      E 1976149
Y2 STATION 11+37 22 RIGHT
RR SPIKE IN BASE OF POWER POLE
*****************************************
*****************************************
53       ELEVATION = 432.32
N 780210      E 1977633
Y4 STATION 15+38 47 LEFT
RR SPIKE IN BASE OF POWER POLE
*****************************************
*****************************************
54       ELEVATION = 311.04
N 782318      E 1977855
L STATION 54+86 93 LEFT
RR SPIKE IN BASE OF POWER POLE
*****************************************
```

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR THE NCGS MONUMENT "INN" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 785189.0038(ft) EASTING: 1993666.1012(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999918159 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM NCGS MONUMENT "INN" TO -L- STATION 15+00.00 IS S 70° 11' 40" W 18754.9013ft ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	U2803-3	778385.4084	1975805.0937	510.29	10+02.44	20.63 RT
100	BL-100	779157.6295	1976150.3205	483.25	18+46.34	37.77 LT
101	BL-101	779535.2754	1976440.9938	471.21	23+20.48	16.52 RT
8	BL-8	780000.6904	1976819.2240	455.19	29+20.12	25.87 LT
9	BL-9	780252.0296	1977137.4815	445.55	33+15.17	53.49 RT
10	BL-10	780865.4439	1977437.1542	414.14	39+85.59	52.63 RT
11	BL-11	781868.8213	1977699.6412	337.96	50+17.34	35.19 LT
5	U2803-5	782044.6382	1977791.7527	324.61	52+13.81	26.30 LT
12	BL-12	782543.7188	1978034.6808	320.00	57+68.77	35.26 LT
13	BL-13	782827.8010	1978168.0313	326.24	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
A100	BL-100	779157.6295	1976150.3205	483.25	OUTSIDE PROJECT LIMITS	
14	BY1-14	779114.3716	1976298.7691	486.98	11+10.87	15.85 RT
15	BY1-15	779095.8341	1976523.9246	493.84	OUTSIDE PROJECT LIMITS	

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
102	BY1-102	779566.5671	1976108.4406	473.36	10+95.55	29.83 LT
A101	BL-101	779535.2754	1976440.9938	471.21	OUTSIDE PROJECT LIMITS	

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
18	BY3-18	780136.2922	1976533.8802	447.40	10+02.17	6.83 RT
A8	BL-8	780000.6904	1976819.2240	455.19	13+16.56	34.50 LT

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
A9	BL-9	780252.0296	1977137.4815	445.55	10+46.22	28.65 RT
19	BY4-19	780126.7237	1977849.1169	422.61	17+67.34	17.32 LT

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
20	BY5-20	780876.2431	1976822.1366	406.26	10+00.10	17.45 LT
A10	BL-10	780865.4439	1977437.1542	414.14	OUTSIDE PROJECT LIMITS	

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
21	BY6-21	781864.8747	1977439.6783	350.77	OUTSIDE PROJECT LIMITS	
A11	BL-11	781868.8213	1977699.6412	337.96	12+36.77	44.87 LT

NOTES

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

   HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:

   U2803_LS_CONTROL_090430.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

▽ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM FROM EXISTING NCGS MONUMENTATION.

NOTE: DRAWING NOT TO SCALE

27-FEB-2012 12:06
r:\projects\proj\u2803_ls_lc_090430.dgn
ls$$SITECHANGES$$

6/2/99

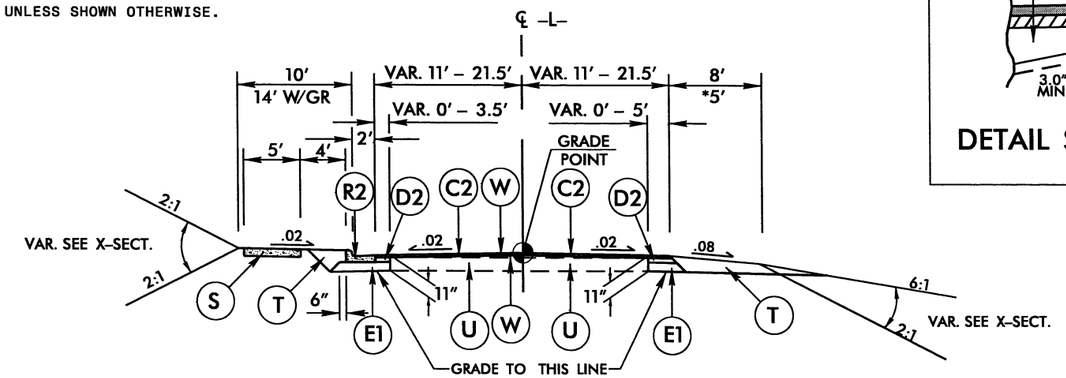
PROJECT REFERENCE NO.	SHEET NO.
U-2803	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

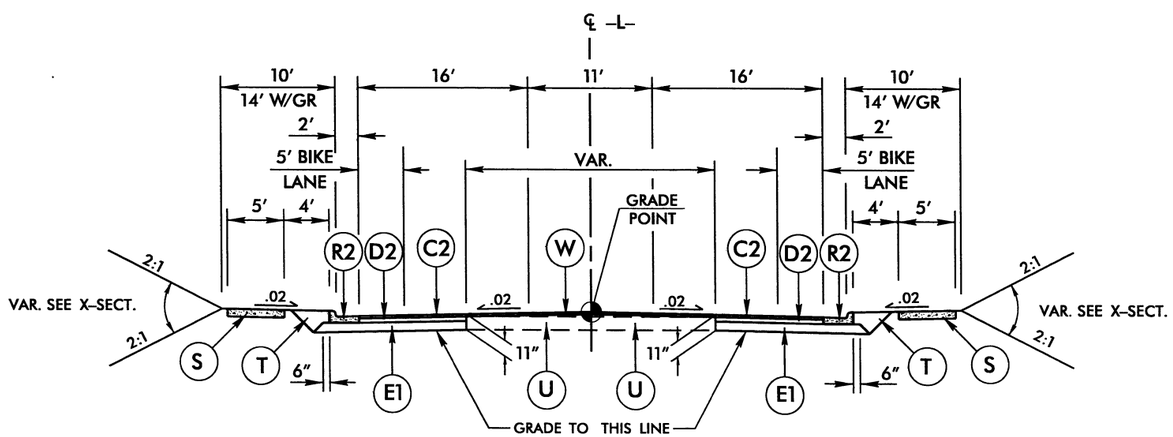
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	R2	2'-6" CONCRETE CURB AND GUTTER.
C2	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.	R3	5" MONOLITHIC CONRETE ISLAND (KEYED IN).
C3	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 LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.	R4	12" CONCRETE ISLAND COVER
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R5	8" x 18" CONCRETE CURB.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK.
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 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E2	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.	V	MILLING ASPHALT PAVEMENT, 2½" DEPTH (SEE DETAIL THIS SHEET).
R1	1'-6" CONCRETE CURB AND GUTTER.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL THIS SHEET).

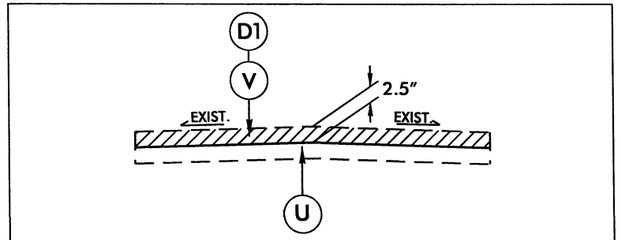
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1



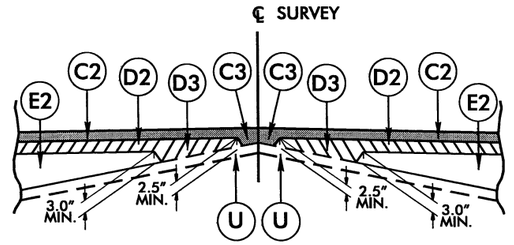
TYPICAL SECTION NO. 2



DETAIL OF MILLING

USE IN CONJUNCTION WITH –L– LINE TYPICAL SECTIONS

NOTE: MILL EXISTING PAVEMENT FROM STA. 15+50 TO STA 50+00 RT.
MILL EXISTING PAVEMENT FROM STA. 15+50 TO STA. 22+00 LT.
MILL EXISTING PAVEMENT FROM STA. 23+00 TO STA. 50+00 LT.



DETAIL SHOWING METHOD OF WEDGING

USE TYPICAL SECTION NO. 1

–L– STA. 13+00.00 TO STA. 16+00.00
* –L– STA. 16+00.00 TO STA. 18+81.59

USE TYPICAL SECTION NO. 2

–L– STA. 18+81.59 TO STA. 21+73.22
–L– STA. 22+93.22 TO STA. 39+56.28

NOTE: REMOVE EXISTING PAVEMENT AND REPLACE WITH NEW PAVEMENT
–L– STA. 22+00.00 TO STA. 23+00.00 LT.

REMOVE EXISTING PAVED SHOULDER PRIOR TO WIDENING
–L– STA. 18+80.00 TO STA. 24+80.00 LT.

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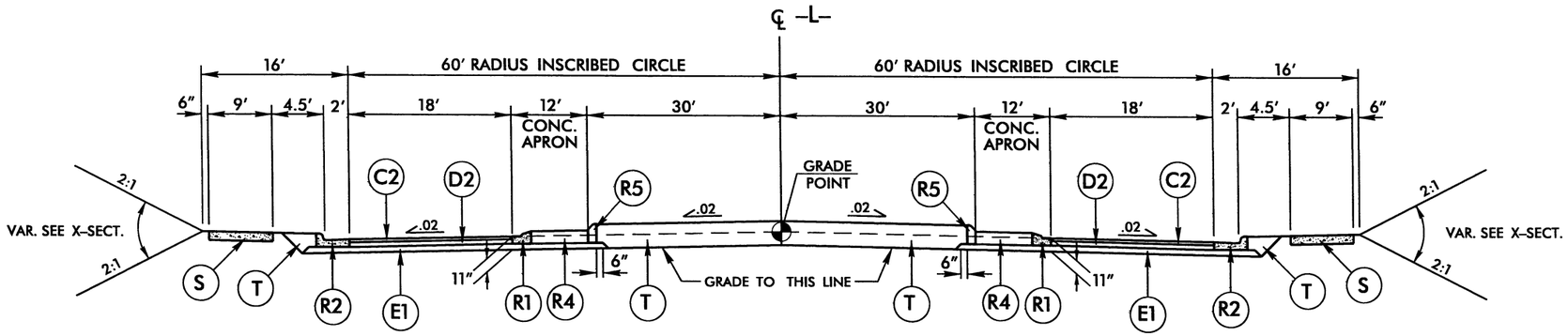
6/2/99

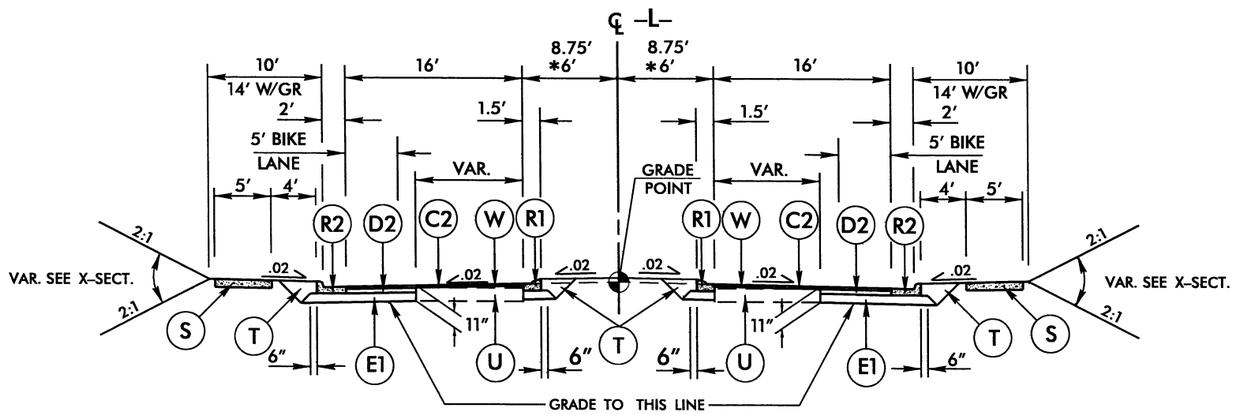
PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

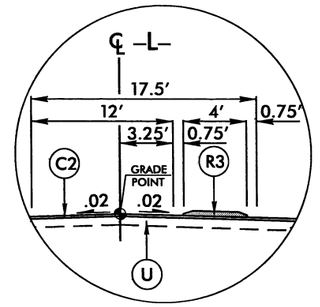


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
–L– STA. 21+73.22 TO STA. 22+93.22



TYPICAL SECTION NO. 4



USE INSET A WITH TYPICAL SECTION NO. 4
–L– STA. 40+00.00 TO STA. 42+63.91

USE TYPICAL SECTION NO. 4

–L– STA. 39+56.28 TO STA. 51+05.00

*–L– STA. 52+55.00 TO STA. 53+11.27

NOTE: TRANSITION FROM 17.5′ MEDIAN TO 12′ MEDIAN
–L– STA. 51+05.00 TO STA. 52+55.00

NOTE: BIKE LANE TRANSITIONS FROM 5′ TO 0′
–L– STA. 53+05.27 TO STA. 54+05.27

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C2	3″ S9.5B
C3	VAR. S9.5B
D2	4″ I19.0B
E1	4″ B25.0B
R1	1′-6″ C&G
R2	2′-6″ C&G
R3	5″ MONO. ISLAND
R4	12″ CONC. ISL. COVER
R5	8″ x 18″ CONC. CURB
S	4″ CONC. SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

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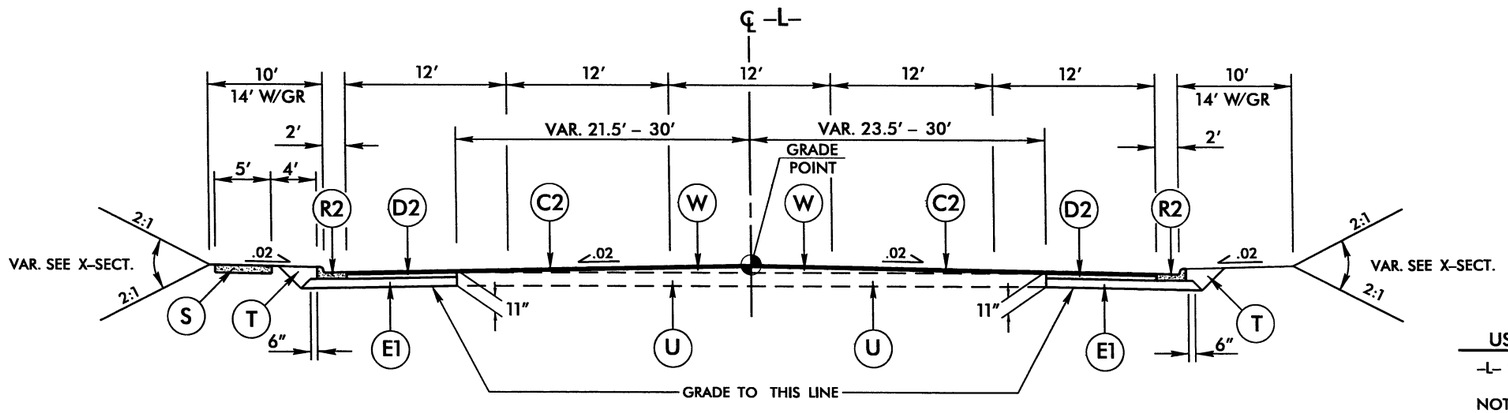
PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

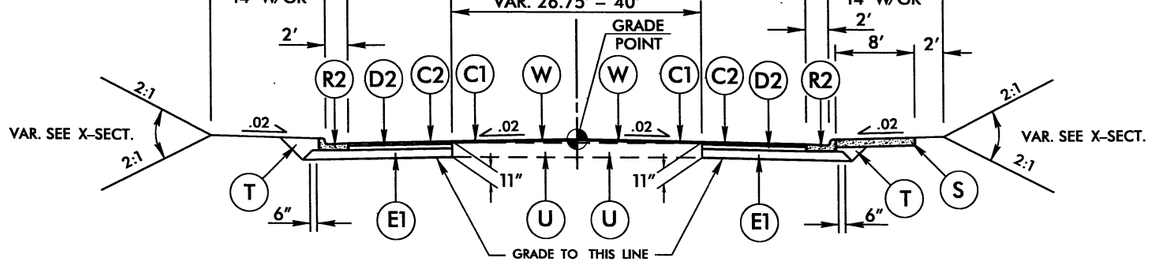


TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

–L– STA. 53+11.27 TO STA. 55+73.27

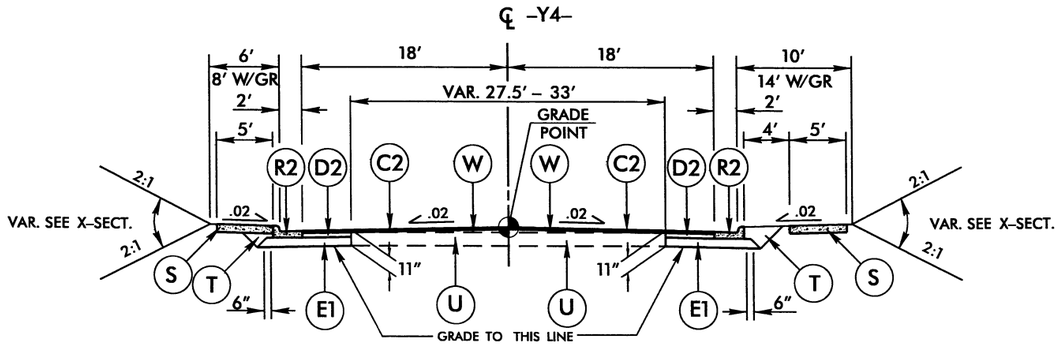
NOTE: REMOVE EXISTING PAVEMENT AND REPLACE WITH NEW PAVEMENT –L– STA. 53+40.00 TO STA. 53+90.00 LT.



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

–Y2– STA. 12+30.00 TO STA. 13+36.13



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

–Y4– STA. 13+78.00 TO STA. 17+28.69

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1½" S9.5B
C2	3" S9.5B
D2	4" I19.0B
E1	4" B25.0B
R2	2′-6" C&G
S	4" CONC. SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

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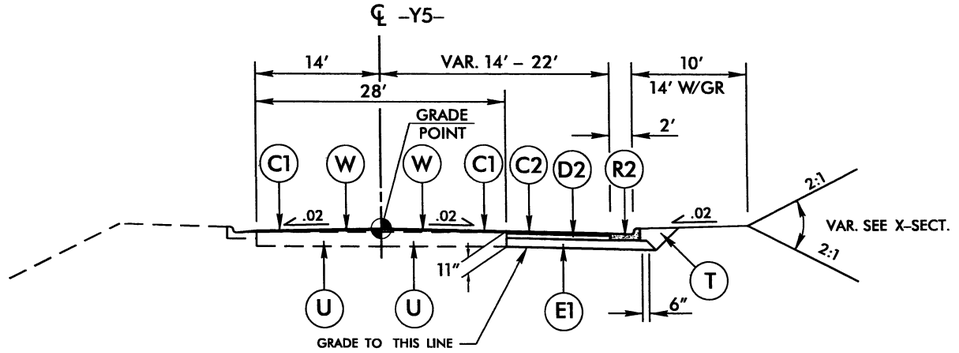
PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

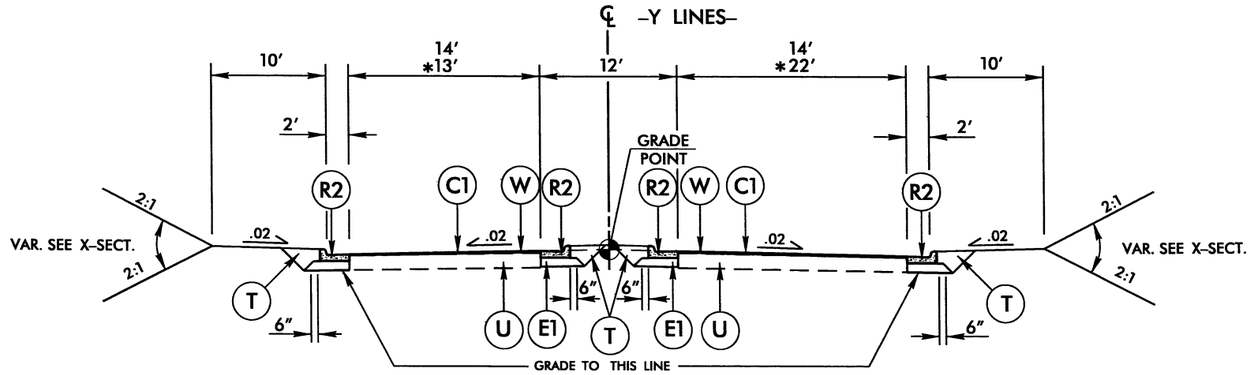
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

–Y5– STA. 11+88.00 TO STA. 15+31.56

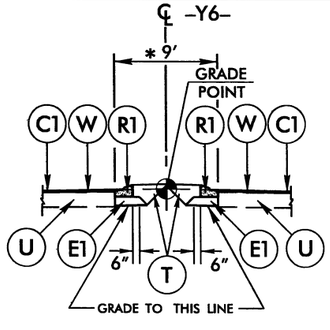


TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

–Y3– STA. 12+33.00 TO STA. 13+00.00

* –Y6– STA. 11+80.00 TO STA. 12+47.10
(SEE PARTIAL SECTION NO. 8A)



PARTIAL SECTION NO. 9A

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 9

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1½″ S9.5B
C2	3″ S9.5B
D2	4″ I19.0B
E1	4″ B25.0B
R1	1′-6″ C&G
R2	2′-6″ C&G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

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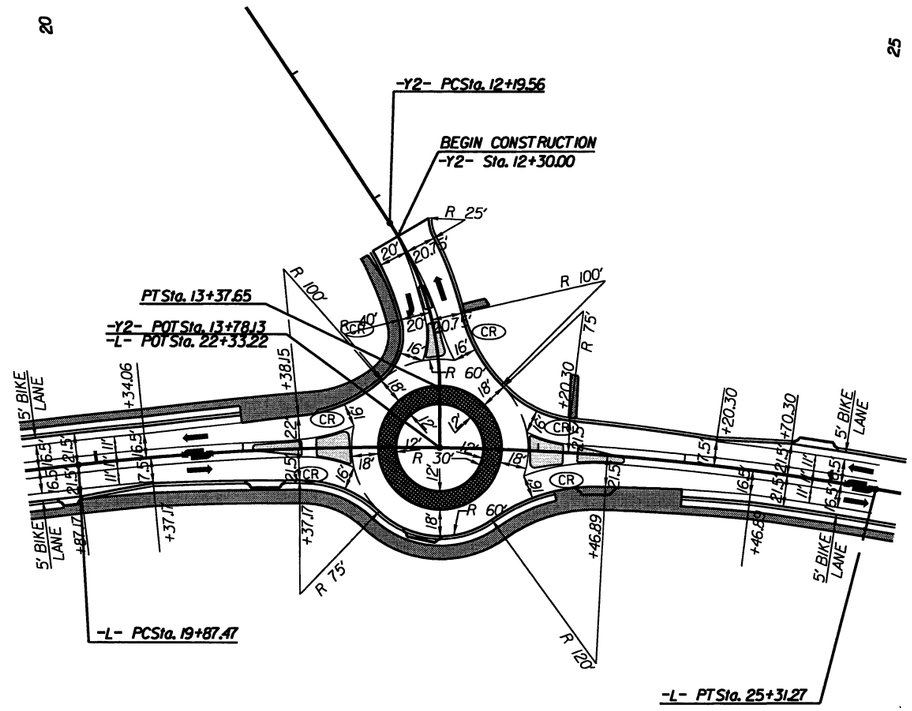
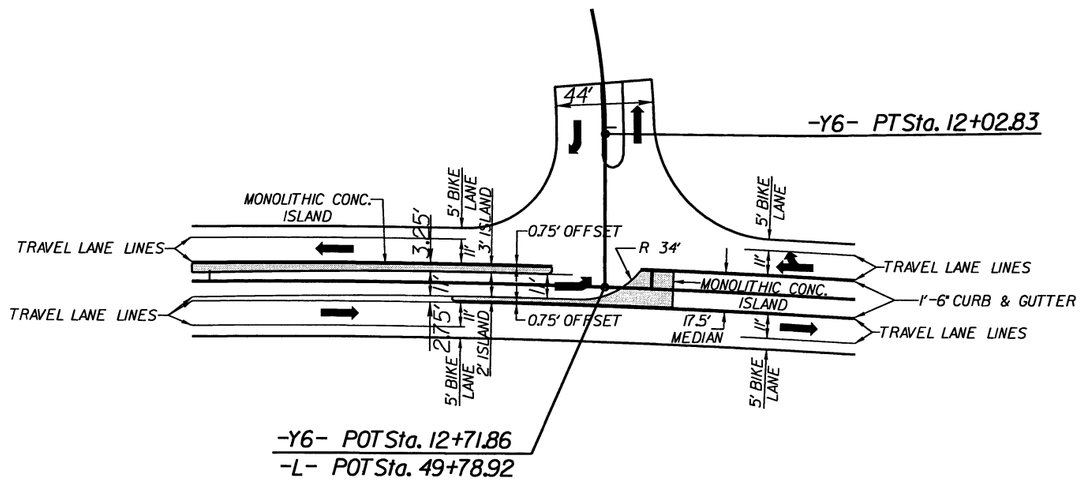
PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DETAIL OF ROUNDABOUT @ -Y2-



DETAIL OF LEFTOVER @ -Y6-

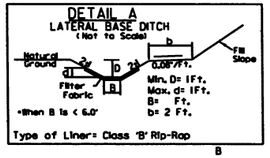
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-E
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

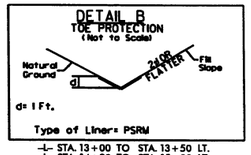
DETAIL A
LATERAL BASE DITCH
(Not to Scale)



B
4'

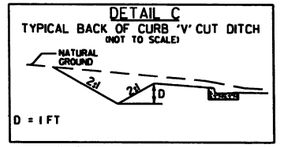
-L- STA. 50+18 TO STA. 51+69 RT.

DETAIL B
TOE PROTECTION
(Not to Scale)



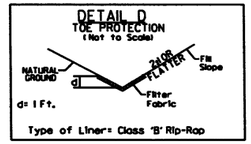
-L- STA. 13+00 TO STA. 13+50 LT.
-L- STA. 14+30 TO STA. 15+00 LT.
-L- STA. 18+00 RT. TO -Y1- STA. 12+70 LT.
-L- STA. 27+50 RT. TO -Y4- STA. 17+00 LT.
-Y4- STA. 16+65 RT. TO -L- STA. 34+00 RT.
-L- STA. 37+00 TO STA. 38+25 LT.
L- STA. 46+50 TO 49+10 LT.

DETAIL C
TYPICAL BACK OF CURB 'V' CUT DITCH
(NOT TO SCALE)



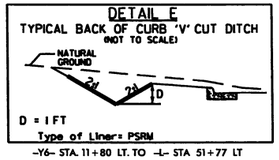
-L- STA. 20+00 TO STA. 21+10 RT.
-Y6- STA. 11+80 LT. TO -L- STA. 51+77 LT.

DETAIL D
TOE PROTECTION
(Not to Scale)



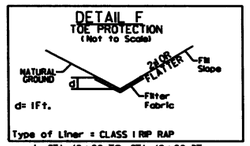
-L- STA. 37+70 TO STA. 38+45 RT.
-Y5- STA. 13+50 TO STA. 14+55 RT.

DETAIL E
TYPICAL BACK OF CURB 'V' CUT DITCH
(NOT TO SCALE)



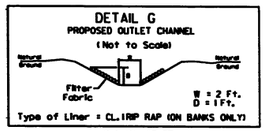
-Y6- STA. 11+80 LT. TO -L- STA 51+77 LT

DETAIL F
TOE PROTECTION
(Not to Scale)



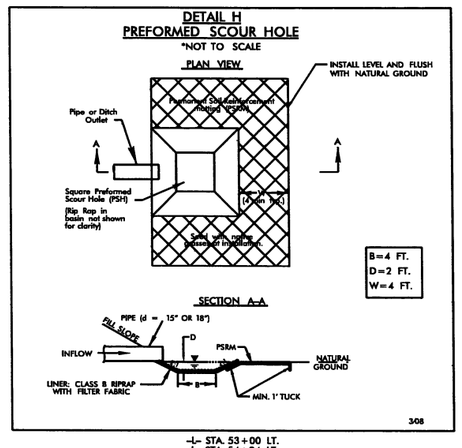
-L- STA. 48+30 TO STA. 49+38 RT.

DETAIL G
PROPOSED OUTLET CHANNEL
(Not to Scale)



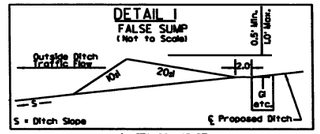
-L- STA. 51+65 RT.

DETAIL H
PREFORMED SCOUR HOLE
*NOT TO SCALE



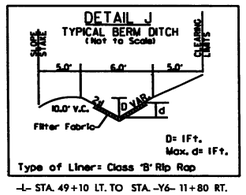
-L- STA. 53+00 LT.
-L- STA. 54+34 LT.
-L- STA. 54+75 RT.

DETAIL I
FALSE SUMP
(Not to Scale)



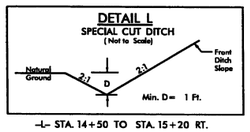
-L- STA. 30+45 RT.

DETAIL J
TYPICAL BERM DITCH
(Not to Scale)



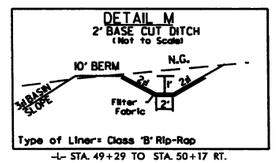
-L- STA. 49+10 LT. TO STA. -Y6- 11+80 RT.

DETAIL L
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 14+50 TO STA. 15+20 RT.

DETAIL M
2' BASE CUT DITCH
(Not to Scale)



-L- STA. 49+29 TO STA. 50+17 RT.

8/17/99

REVISIONS

MATERIALS	
A	GEOTEXTILE FABRIC
D	24" OUTLET PIPE
F	PRECAST DI BOX
H	PERMANENT SOIL REINFORCEMENT MAT TO BE USED ON ALL 2:1 SLOPES THAT ARE NOT RIP RAPPED EST 200 SY FF
I	IMPERVIOUS LINER

NOTE:

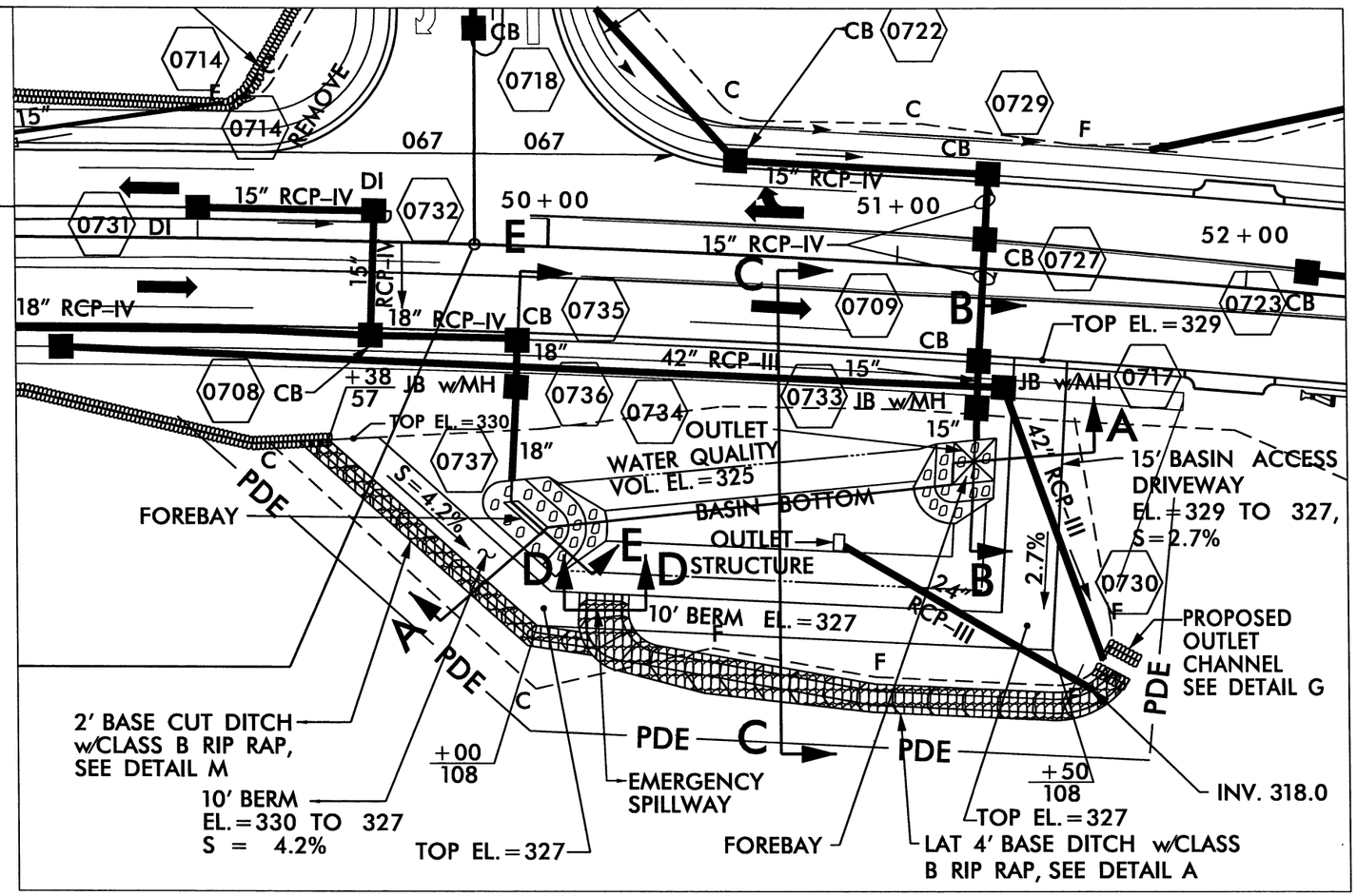
BOTTOM OF TOTAL BASIN SURFACE AREA AT ELEV. 322 = 1430 SF
BOTTOM OF TOTAL FOREBAY SURFACE AREA AT ELEV. 322 = 42 SF

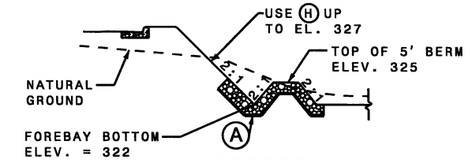
Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: P-0256

PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-F
RW SHEET NO.	
HYDRAULICS ENGINEER	

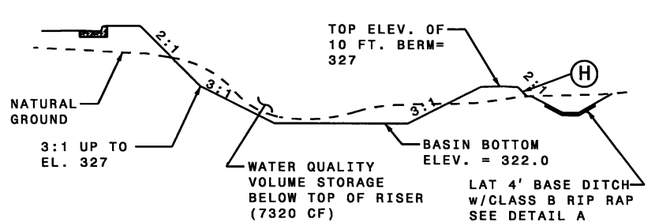
DRY DETENTION BASIN DETAIL (-L- 51+00 RT.)

SCALE: 1" = 20'

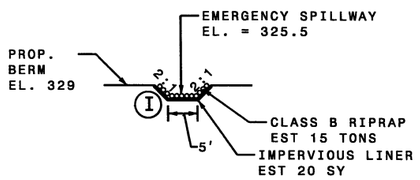




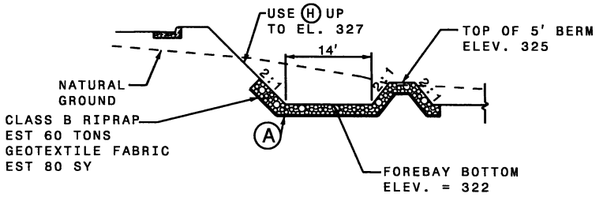
SECTION B-B



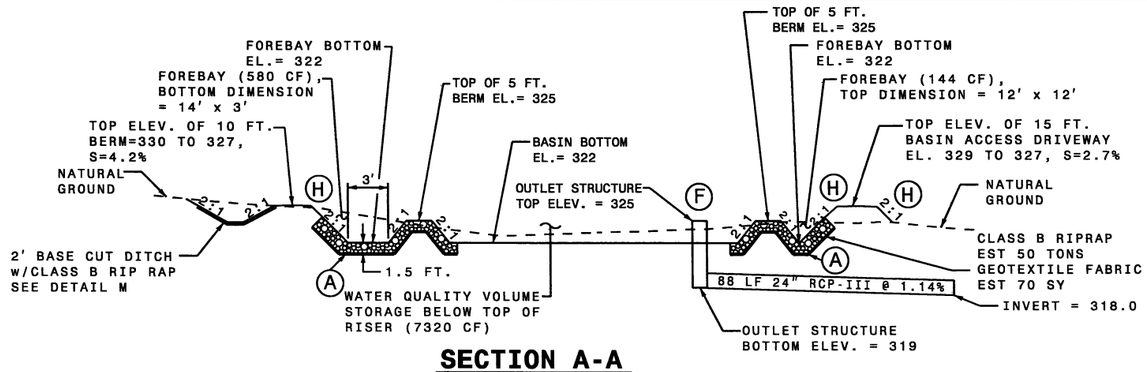
SECTION C-C



SECTION D-D



SECTION E-E



SECTION A-A

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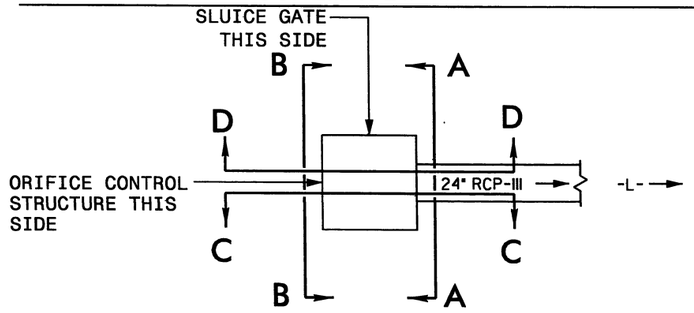
NC License No: P-0258

PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-G
R/W SHEET NO.	

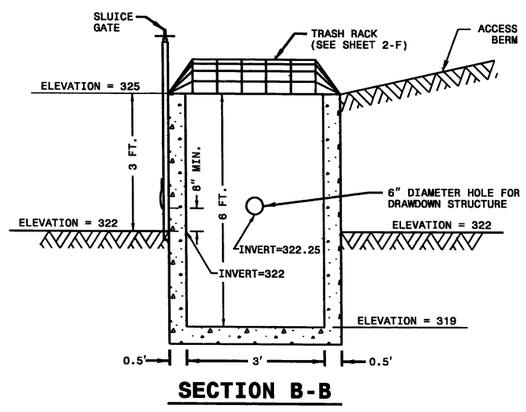
HYDRAULICS ENGINEER

SECTION VIEW SCHEMATIC OF OUTLET STRUCTURE

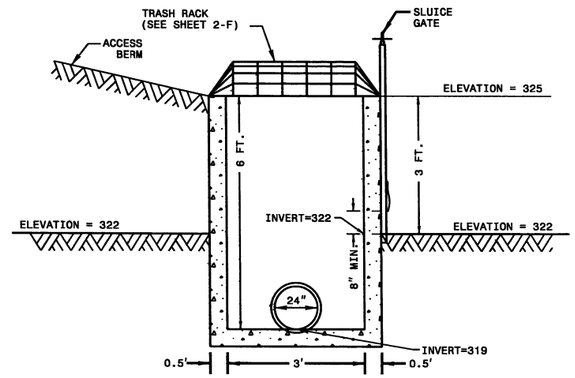


* NOT TO SCALE

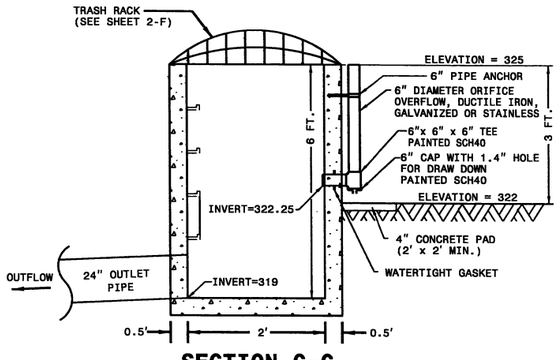
-L- STA. 51+00 RT.
DRY DETENTION BASIN
OUTLET CONTROL STRUCTURE



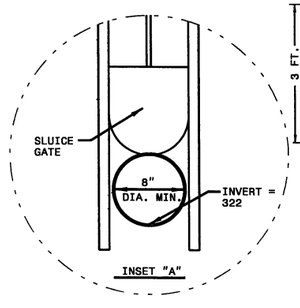
SECTION B-B



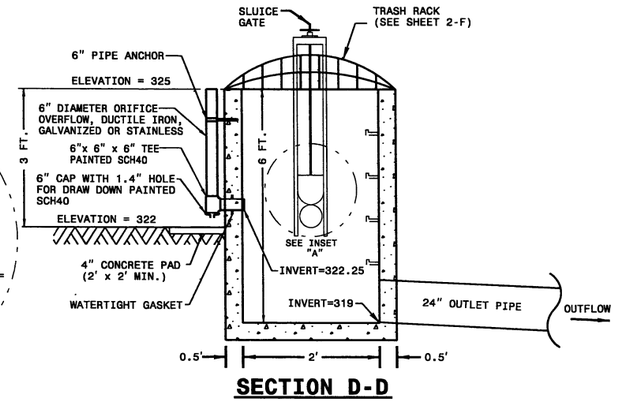
SECTION A-A



SECTION C-C



INSET "A"



SECTION D-D

NOTES

1. 8" MIN. SLUICE GATE IS FOR MAINTENANCE AND SHOULD REMAIN CLOSED DURING NORMAL OPERATION.

* NOT TO SCALE

DRY DETENTION BASIN
OUTLET CONTROL STRUCTURE

DRY DETENTION BASIN
OUTLET CONTROL STRUCTURE

27-FEB-2012 12:06
R:\Drainage\u2803_hyd_basin_details.dgn
$$$$USERNAME$$$$

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NC License No: P-0258

PROJECT REFERENCE NO.	SHEET NO.
U-2803	2-H
R/W SHEET NO.	

HYDRAULICS ENGINEER

DRY DETENTION BASIN NOTES

SEQUENCE OF CONSTRUCTION FOR DRY DETENTION BASIN

1. INSTALL ALL EROSION CONTROL MEASURES (AS NEEDED THROUGH CONSTRUCTION STAGES).
2. EXCAVATE FOR THE BASIN AND FOREBAY. PREPARE THE BASIN FLOOR AT THE GIVEN GRADE.
3. CONSTRUCT FOREBAY.
4. CONSTRUCT MAIN POND.
5. CONSTRUCT AND INSTALL BOXES. CREATE OPENINGS IN BOXES AND CONNECT PIPES WITH BOXES.
6. ADD GRATES/TRASH RACK ON ALL BOXES.

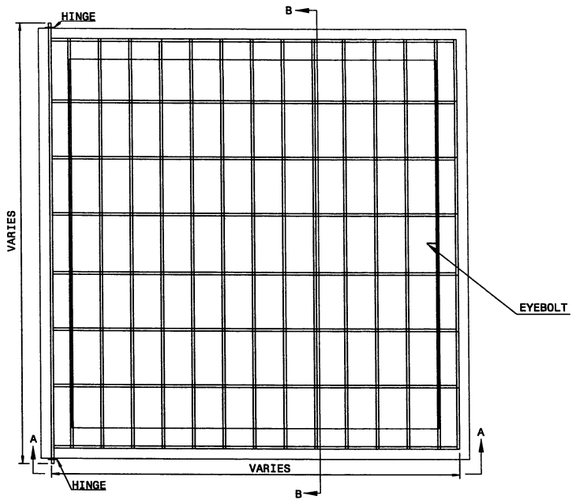
GENERAL NOTES FOR DRY DETENTION BASIN

1. APPLY SEEDING OVER THE SIDE SLOPES AND ANY EXPOSED SURFACE THAT NEEDS TO BE PROTECTED AGAINST IMMEDIATE POTENTIAL STORM EVENT.
2. THE SURVEYOR SHALL VERIFY THE INVERTS AND ELEVATIONS AT THE FOLLOWING POINTS AT THE END OF EACH PHASE OF CONSTRUCTION:
   -INVERTS IN THE PIPE AND THE BOXES.
3. THE BERM SHALL BE CONSTRUCTED WITH SUITABLE FILL MATERIAL PER THE ENGINEER.
4. ANY FILL MATERIAL SHALL BE COMPACTED.

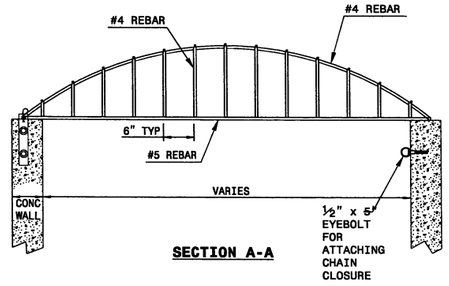
MAINTENANCE RECOMMENDATIONS

1. REMOVE DEBRIS, TRASH AND SEDIMENT BUILDUP FROM THE BASIN AS NECESSARY TO MINIMIZE OUTLET CLOGGING AND IMPROVE AESTHETICS.
2. REPAIR AND REVEGETATE ERODED AREAS AS NEEDED.
3. CHECK INLETS AND OUTLETS FOR STRUCTURAL REPAIR TO CONFIRM THAT THEY ARE OPERATIONAL.
4. MOW AS NECESSARY TO LIMIT UNWANTED VEGETATION AND REMOVE CLIPPINGS AS PRACTICAL.
5. NO PORTION OF THE DRY DETENTION POND SHOULD BE FERTILIZED AFTER THE FIRST INITIAL FERTILIZATION THAT IS REQUIRED TO ESTABLISH VEGETATION.
6. STABLE GROUNDCOVER SHOULD BE MAINTAINED IN THE DRAINAGE AREA TO REDUCE THE SEDIMENT LOAD TO THE DRY DETENTION POND.
7. ONCE A YEAR, A DAM SAFETY EXPERT SHOULD INSPECT THE EMBANKMENT (IF APPLICABLE).
8. RECORDS OF OPERATION AND MAINTENANCE SHOULD BE KEPT IN A KNOWN SET LOCATION AND MUST BE AVAILABLE UPON REQUEST.

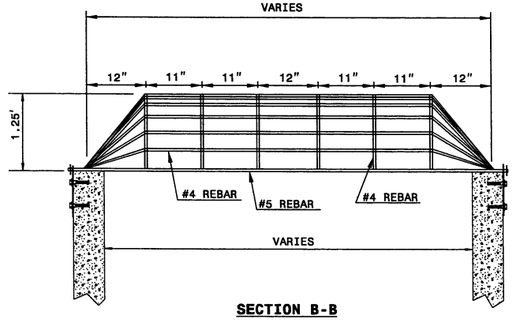
TRASH RACKS FOR OUTLET STRUCTURES



PLAN



SECTION A-A

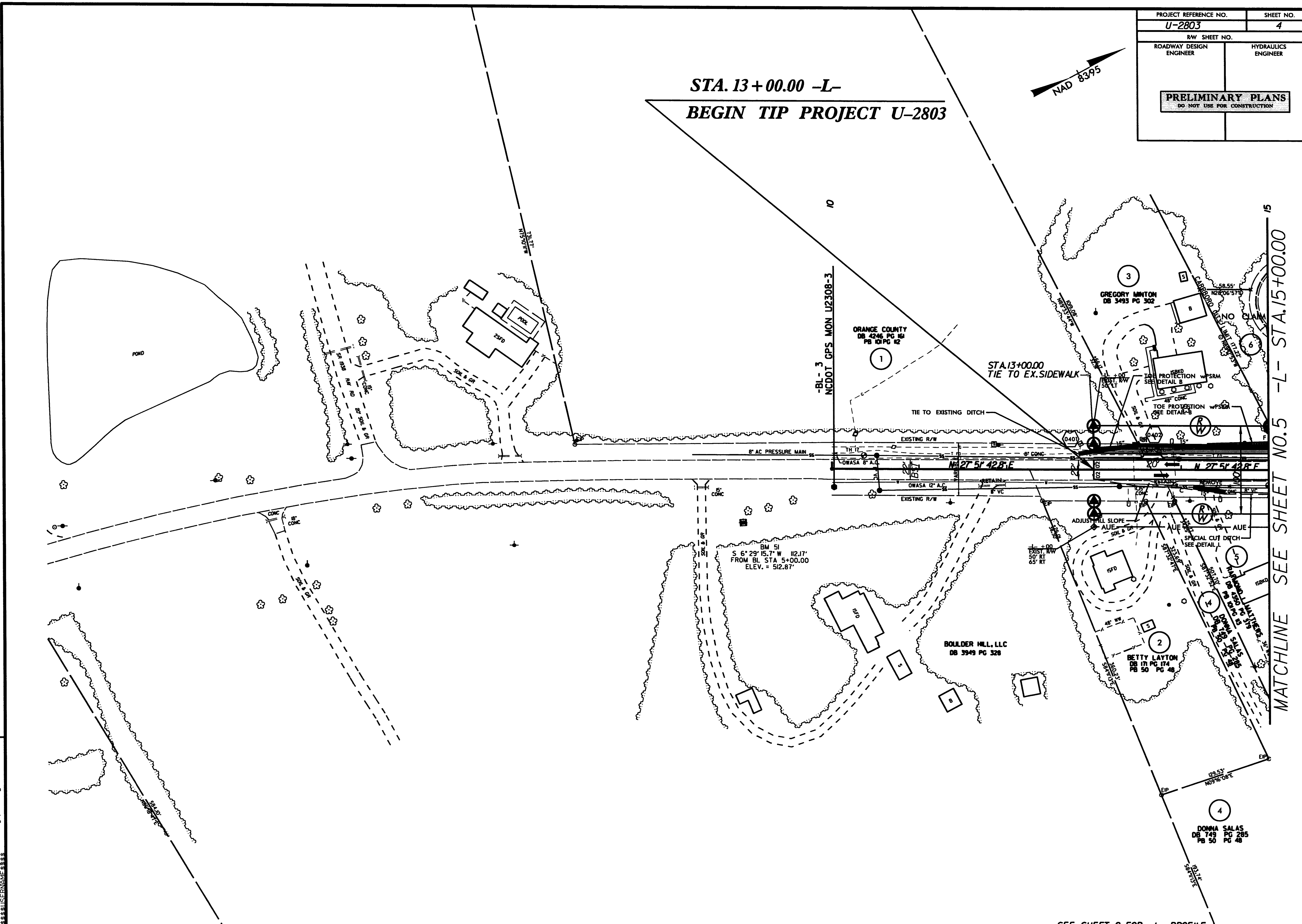


SECTION B-B

RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A ¼" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4. RACK AND HARDWARE SHALL BE REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.

PROJECT REFERENCE NO.	SHEET NO.
U-2803	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



SEE SHEET 9 FOR -L- PROFILE

REVISIONS

PENDING R/W REVISION (PJS) - ELIMINATED AUE ON PARCEL 1, 3, AND 6.

8/17/99

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-L-	-Y1-	-Y2-
PI Sta 22+61.24	PI Sta 12+08.42	PI Sta 12+80.36
Δ = 16° 23' 55.1" (RT)	Δ = 21° 01' 09.9" (RT)	Δ = 33° 39' 18.2" (RT)
D = 3° 00' 56.0"	D = 16° 00' 00.0"	D = 28° 30' 00.0"
L = 543.80'	L = 131.37'	L = 118.09'
T = 273.71'	T = 66.43'	T = 60.80'
R = 1,900.00'	R = 358.10'	R = 201.04'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2803	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

PENDING R/W REVISION (PJS) - REVISED THE R/W ON PARCEL 10, ELIMINATED THE DUE ON PARCELS 8 AND 10, AND ELIMINATED THE AUE ON PARCELS 6, 8, 9, AND 10.
01/05/12 R/W REVISION (TLW) - REVISED PUE ON PARCEL 18.
12/20/11 R/W REVISION (PJS) - THE AUE WAS ELIMINATED ON PARCEL 15. THE STATION OFFSET WAS CORRECTED AT -Y2- STA. 12+38.00 RT. ON PARCEL 11. CLAIM WAS ELIMINATED ON PARCEL 15.
10/14/11 R/W REVISION (PJS) - THE R/W WAS REVISED AND THE AUE AND PUE WERE ELIMINATED TO MINIMIZE IMPACTS ON PARCEL 11(CEDAR PLANK LLC). DRIVEWAY CONNECTION WAS PROVIDED ON PARCEL 13 (JAMES B. ETAL & MONICA P. DOSS) FOR ACCESS ROAD.

8/17/99

NAD 83/95

-Y2- POT Sta. 10+00.00

-BY2- 102

SHERYL MAR CO., LLC
DB 2229 PG 578

area under construction

SAMUEL ZELL
DB 1534 PG 67

-Y2- PCS Sta. 12+19.56

BEGIN CONSTRUCTION
-Y2- Sta. 12+30.00
TIE 60' CONC. RAMP TO EXIST.

RAI DEVELOPMENT CORPORATION
DB 1753 PG 4
PB 75 PG 32

-BL- 100
-BY1- 100

-Y1- POT Sta. 13+34.25
-L- POT Sta. 18+81.59

TIE TO EXIST. 48" SIDEWALK
-Y2- STA. 12+33.38

CEDAR PLANK LLC.
DB 5080 PG 39

PT Sta. 13+37.65

-Y2- POT Sta. 13+78.13
-L- POT Sta. 22+33.22

REMOVE 24" RCP
TIE 60' CONC. RAMP TO EXIST.

ADJUST FILL SLOPE TO RETAIN CB

SHERYL MAR CO., LLC
DB 2229 PG 578

STA 25+73.00
TIE TO EX. SIDEWALK

THE VILLAGES OF CHAPEL HILL LIMITED PARTNERSHIP
DB 4951 PG 78
PB 21 PG 54

CONNECT PLASTIC ROOF DRAIN TO DI

NO CLAIM

SHERYL MAR CO., LLC
DB 4351 PG 42
PB 82 PG 170

THE HARKRADER LIMITED PARTNERSHIP
DB 4351 PG 42
PB 82 PG 170

CLASS "B" RIP RAP W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRICO

300' TAPER LEFT TO WIDEN TO 3-LANE

CANNONS POND

N 27° 51' 42.8" E

N 65° 59' 24.8" W

REMOVE 4" CONC. CURB & GUTTER

N 44° 15' 38.0" E

-L- PC Sta. 19+87.47

TOE PROTECTION w/PSRM SEE DETAIL B

RESIDENTIAL SERVICES, INC
DB 883 PG 46
PB 22 PG 32

JAMES B. ETAL & MONICA P. DOSS
DB 3974 PG 556
PB 11 PG 10

THOMAS J. CARR III
DB 877 PG 354

-L- PT Sta. 25+31.27

ZHIMIN ETAL GAO & JIE LIU
DB 4055 PG 41

JEFFREY DANIEL MUEHLBAUER
DB 4728 PG 529
PB 103 PG 84-86

NO CLAIM

THOMAS SCHOBLER
PB 46 PG 32
DB 1542 PG 58

SPECIAL CUT DITCH SEE DETAIL L

-BY1- 15

-Y1- PT Sta. 12+73.36

-Y1- PCS Sta. 11+41.98

BEGIN CONSTRUCTION
-Y1- POT Sta. 12+50.00

GEORGE CLAYTON
DB 471 PG 545
PB 11 PG 10

RUFUS MINOR
DB 3331 PG 580
PB 11 PG 10

CURTIS JACKSON, JR.
DB 4241 PG 3612
PB 11 PG 10

CAZCO, INC.
DB 1506 PG 172
PB 81 PG 132
PB 75 PG 74

RAYMOND L. MATTHEWS
DB 4350 PG 379
PB 101 PG 113

ZACHARIAH W. KOHN
DB 2247 PG 529
PB 11 PG 10

-Y1- POT Sta. 10+00.00

SONJA ARGENTINA ROJO
DB 329 PG 262
PB 11 PG 10

DONNA SALAS
DB 749 PG 285
PB 50 PG 48

-L- SR 1919 (SMITH LEVEL RD.) & -Y2- ROCK HAVEN RD.

-Y2- ROCK HAVEN RD. 2011 2031

2856 4372		
512 1552	2344 2824	
9092 13732	-L- SR 1919	10924 15004
	-L- SR 1919	

MATCHLINE SEE SHEET NO.4 -L- STA. 15+00.00

MATCHLINE SEE SHEET NO.6 -L- STA. 28+00.00

SEE SHEET 9 FOR -L- PROFILE
SEE SHEET 11 FOR -Y1- PROFILE
SEE SHEET 11 FOR -Y2- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-2803	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

PENDING R/W REVISION (PJS) - REVISED THE R/W ON PARCELS 20 AND 22. REVISED THE PUE ON PARCELS 20, 22, 23, 25, AND 26. ADDED THE DUE FROM -L- STA. 30+28.00 TO STA. 30+48.00 RT. AND -L- STA. 32+10.00 TO STA. 32+90.00 TO STA. 32+48.00 RT. ON PARCEL 20. ADDED A STRUCTURE ON PARCEL 25.

01/05/12 R/W REVISION (TLW) - ADDED DUE TO PARCEL 29.

12/20/11 R/W REVISION (PJS) - THE AUE WAS ELIMINATED ON PARCEL 19, PARCEL 21, AND PARCEL 21A, AND WAS REVISED ON PARCEL 24. THE TCE WAS REVISED ON PARCEL 2I AND PARCEL 24. THE PUE WAS REVISED FROM -L- STA. 34+20.00 TO STA. 35+27.00 RT. ON PARCEL 23. THE DUE WAS EXTENDED FROM -Y5- STA. 14+34.00 TO STA. 14+55.55 RT. ON PARCEL 25. THE DUE WAS CHANGED TO PDE FROM -L- STA. 37+46.21 TO -Y5- STA. 14+34.00 RT. ON PARCEL 2IA. PARCEL 25, AND PARCEL 26. THE TCE WAS ADDED ON PARCEL 2IA. PARCEL 25, AND PARCEL 26. THE PUE WAS REPLACED WITH PDE FROM -Y4- STA. 15+10.00 ON PARCEL 22. THE PUE WAS ELIMINATED FROM -Y4- STA. 14+11.00 TO STA. 16+99.00 LT. AND WAS REPLACED WITH PDE FROM -Y4- STA. 15+10.00 TO STA. 14+05.00 TO STA. 14+50.00 LT. AND -Y4- STA. 15+50.00 TO STA. 16+50.00 LT.

-Y3-
PI Sta 11+43.20
Δ = 28° 16' 10.4" (RT)
D = 21° 00' 00.0"
L = 134.62'
T = 68.71'
R = 272.84'
SE = SEE PLANS

-L-
PI Sta 34+47.03
Δ = 24° 53' 13.2" (LT)
D = 4° 05' 33.2"
L = 608.10'
T = 308.92'
R = 1,400.00'
SE = 04

-L- SR 1919 (SMITH LEVEL RD.) & -Y5- SR 1967 (BPW CLUB RD.)

SR 1967 3924/4004 -Y5- 600/600 3324/3404 13756/17274 SR 1919 -L- 17604/21284 SR 1919 100/100 1224/1304 1324/1404 APT. DRIVEWAY 2011/2031

-L- SR 1919 (SMITH LEVEL RD.) & -Y3- APT. DRIVEWAY

2011/2031 APT. DRIVEWAY 1124/1204 THE VILLAGES ENTRANCE 100/100 1024/1104 10924/15004 -L- SR 1919 -L- 11848/16008

-L- SR 1919 (SMITH LEVEL RD.) & -Y4- SR 1994 (CULBRETH RD.)

11848/16008 SR 1919 -L- 13756/17278 SR 1919 1864/2744 3772/4012 -Y4- 5636/6756 2011/2031

MATCHLINE SEE SHEET NO.5

MATCHLINE SEE SHEET NO.7

-L- POT Sta. 10+00.00

-Y3- POT Sta. 10+00.00

-BY3- 18

-Y3- PC Sta. 10+74.49

-L- PC Sta. 28+00.00

-Y3- PT Sta. 12+09.41

BEGIN CONSTRUCTION -Y3- POT Sta. 12+33.00

-BL- 8 -BY3- 8

-Y3- POT Sta. 13+43.05

-L- POT Sta. 28+85.37

-L- PC Sta. 31+38.10

-Y4- POT Sta. 17+51.96

-L- POT Sta. 33+32.61

BEGIN CONSTRUCTION -Y5- POT Sta. 11+88.00

-L- POT Sta. 41+00.00

-Y5- POT Sta. 15+55.84

-L- POT Sta. 39+56.28

-L- PT Sta. 37+46.21

BEGIN CONSTRUCTION -Y4- POT Sta. 13+78.00

-BL- 9 -BY4- 9

-BL- 10 -BY5- 10

-BY5- 20

NAD 83/95

PROPOSED SIGNAL

SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 11 FOR -Y3- PROFILE
SEE SHEET 12 FOR -Y4- PROFILE
SEE SHEET 12 FOR -Y5- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-2803	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

PENDING R/W REVISION (PJS) - THE TCE WAS ELIMINATED ON PARCEL 32, AND THE PDE WAS CHANGED TO TCE FROM -L- STA. 46+28.00 TO STA. 49+04.00 LT. ON PARCELS 33 THROUGH 36.

01/05/12 R/W REVISION (TLW) - ADDED 'DO NOT DISTURB' NOTE TO THE ISLAND AT THE ENTRANCE OF -Y6-.

12/20/11 R/W REVISION (PJS) - THE AUE WAS ELIMINATED ON PARCEL 28, PARCEL 30, PARCEL 31, PARCEL 32 AND PARCEL 33. THE PUE WAS ELIMINATED ON PARCEL 37B AND PARCEL 38. THE PUE WAS CHANGED TO AUE FROM -L- STA. 52+53.72 TO STA. 52+76.00 LT. ON PARCEL 39. THE PUE WAS REVISED AND TCE WAS ELIMINATED ON PARCEL 29. THE TCE WAS ADDED ON PARCEL 31 AND PARCEL 33. THE DUE WAS CHANGED TO PDE ON PARCEL 34 THRU PARCEL 36. THE CLAIM WAS ELIMINATED ON PARCEL 30, PARCEL 31, AND PARCEL 37B.

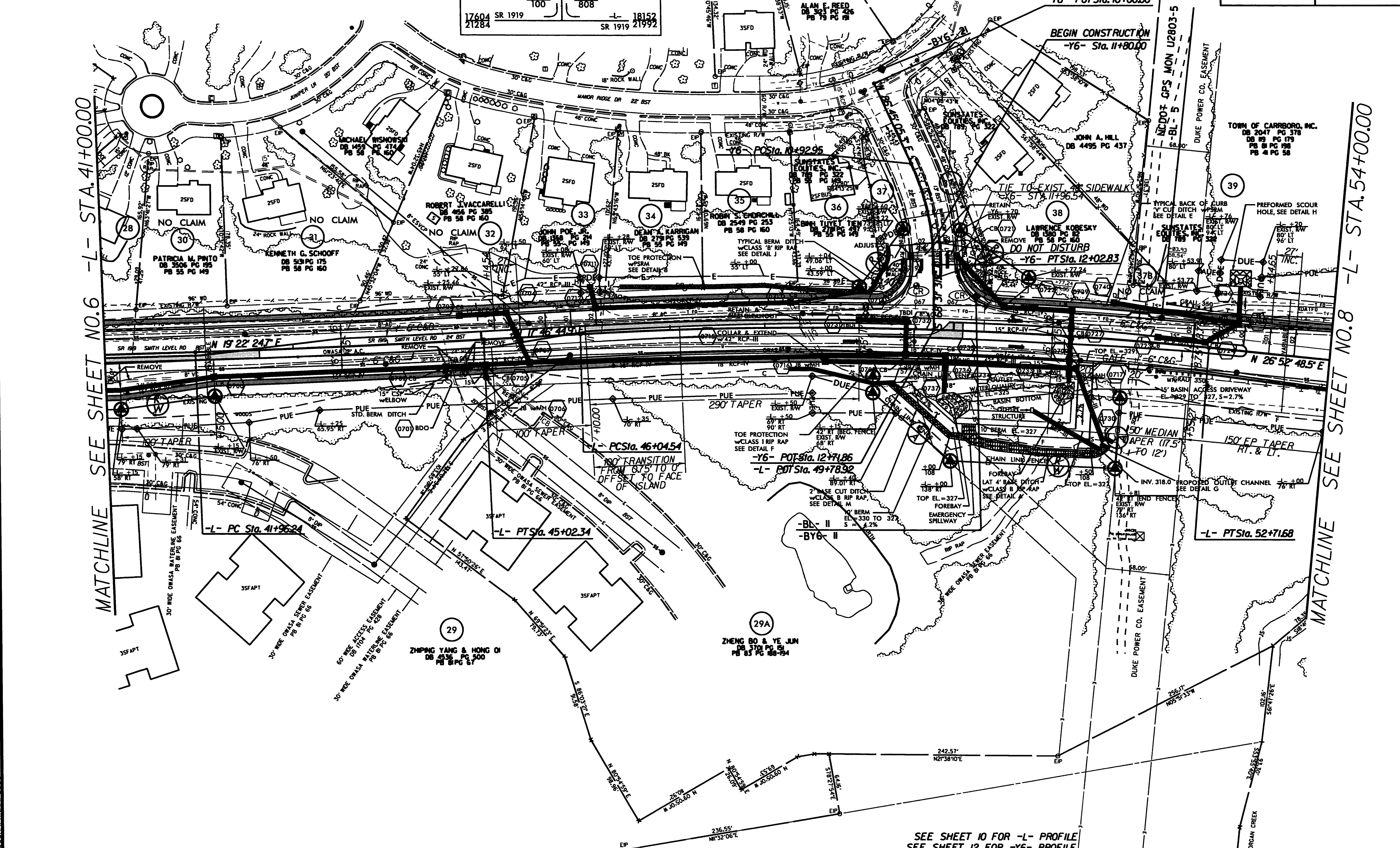
-L-

PI Sta 43+49.30	PI Sta 49+38.81
Δ = 1° 35' 39.8" (LT)	Δ = 9° 06' 03.6" (RT)
D = 0° 31' 15.1"	D = 1° 21' 51.1"
L = 306.10'	L = 667.14'
T = 153.06'	T = 334.27'
R = 11,000.00'	R = 4,200.00'
SE = NC	SE = .02

-Y6-

PI Sta 11+48.76
Δ = 24° 43' 23.1" (RT)
D = 22° 30' 00.0"
L = 109.88'
T = 55.81'
R = 254.65'
SE = SEE PLANS

SR 1919 (SMITH LEVEL RD.) & WILLOW OAK LN.



SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 12 FOR -Y6- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-2803	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

REVISIONS

8/17/99

PENDING R/W REVISION (PJS) - REVISED THE PUE ON PARCELS 29 AND 30. ELIMINATED THE PUE ON PARCEL 40.

MATCHLINE SEE SHEET NO.7 -L- STA.54+00.00

STA. 55+73.27 -L-
END TIP PROJECT U-2803

TOWN OF CARRBORO, INC.
DB 2047 PG 378
DB 93 PG 179
PB 81 PG 198
PB 4 PG 58

TIE TO EXISTING SIDEWALK & GUARDRAIL 73.27 LT.

TIE TO EXIST. C&G @ +00.00 LT.

TIE TO EXIST. C&G AND GUARDRAIL +00.00 RT.

BM 54
BL STA 50+19.02
63.03' LEFT
ELEV. = 318.04'

JAY COLE
DB 389 PG 450
DB 253 PG 400

CARRBORO CITY LIMIT

CHAPEL HILL CITY LIMIT

SR 1919 SMITH LEVEL RD

GAP (NO OWNER)
PB 8 PG 72

CHAPEL HILL BOARD OF EDUCATION
DB 188 PG 451

UNIVERSITY OF NORTH CAROLINA
DB 222 PG 661

PROPERTY LINE FOLLOWS CENTERLINE OF MORGAN CREEK

Culvert system under roadways

SEE SHEET 11 FOR -L- PROFILE

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2803	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM #5I
S 6°59'7" W 1127'
FROM BL STA 5+00.00
ELEV. 511.04'

BEGIN GRADE
BL STA 13+30.00
EL 502.25

PI # 15+00.00
EL = 493.84'
VC = 300'
K = 180

PI = 18+75.00
EL = 481.20'
VC = 200'
K = 245

PI = 22+35.00
EL = 474.93'
VC = 200'
K = 170

PI = 24+35.00
EL = 469.24'
VC = 600'
K = 422

END SPECIAL CUT DITCH
STA 25+30.00
EL = 468.30

DITCH LEGEND
RIGHT DITCH - - - - - - -

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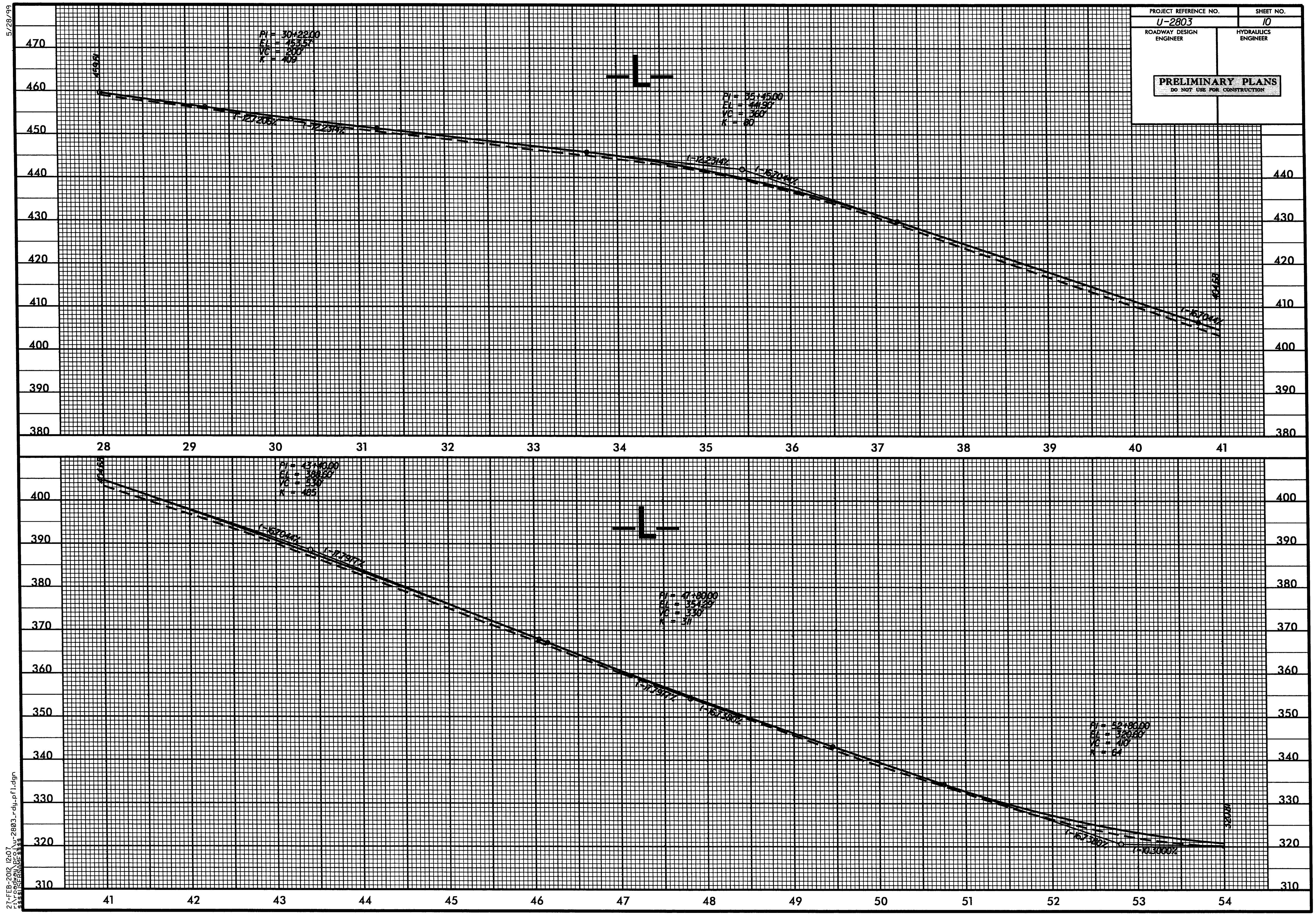
PROJECT REFERENCE NO.
U-2803
SHEET NO.
10
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5/28/99
-L-
PI = 30+22.00
EL = 453.57'
VC = 200'
K = 409
459.61
(-1.27206%
(-1.22314%
PI = 35+45.00
EL = 441.90'
VC = 360'
K = 80
(-1.22314%
(-1.67044%
404.68
(-1.67044%
-L-
404.68
PI = 43+10.00
EL = 388.60'
VC = 530'
K = 485
(-1.67044%
(-1.79177%
PI = 47+80.00
EL = 354.29'
VC = 330'
K = 311
(-1.79177%
(-1.67380%
PI = 52+80.00
EL = 320.60'
VC = 410'
K = 64
(-1.67380%
(-0.3000%
320.81
470
460
450
440
430
420
410
400
390
380
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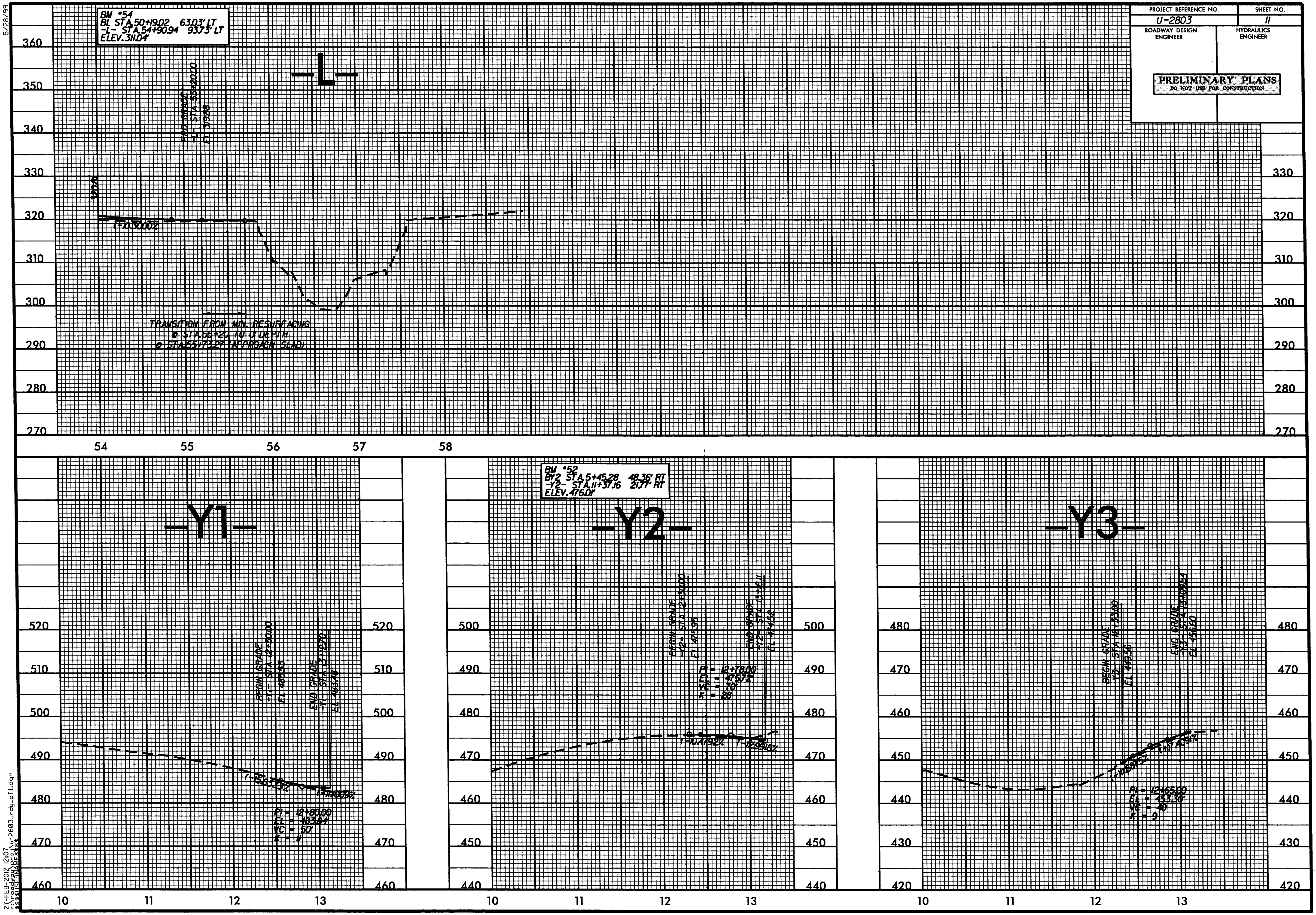
PROJECT REFERENCE NO.	SHEET NO.
U-2803	11

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

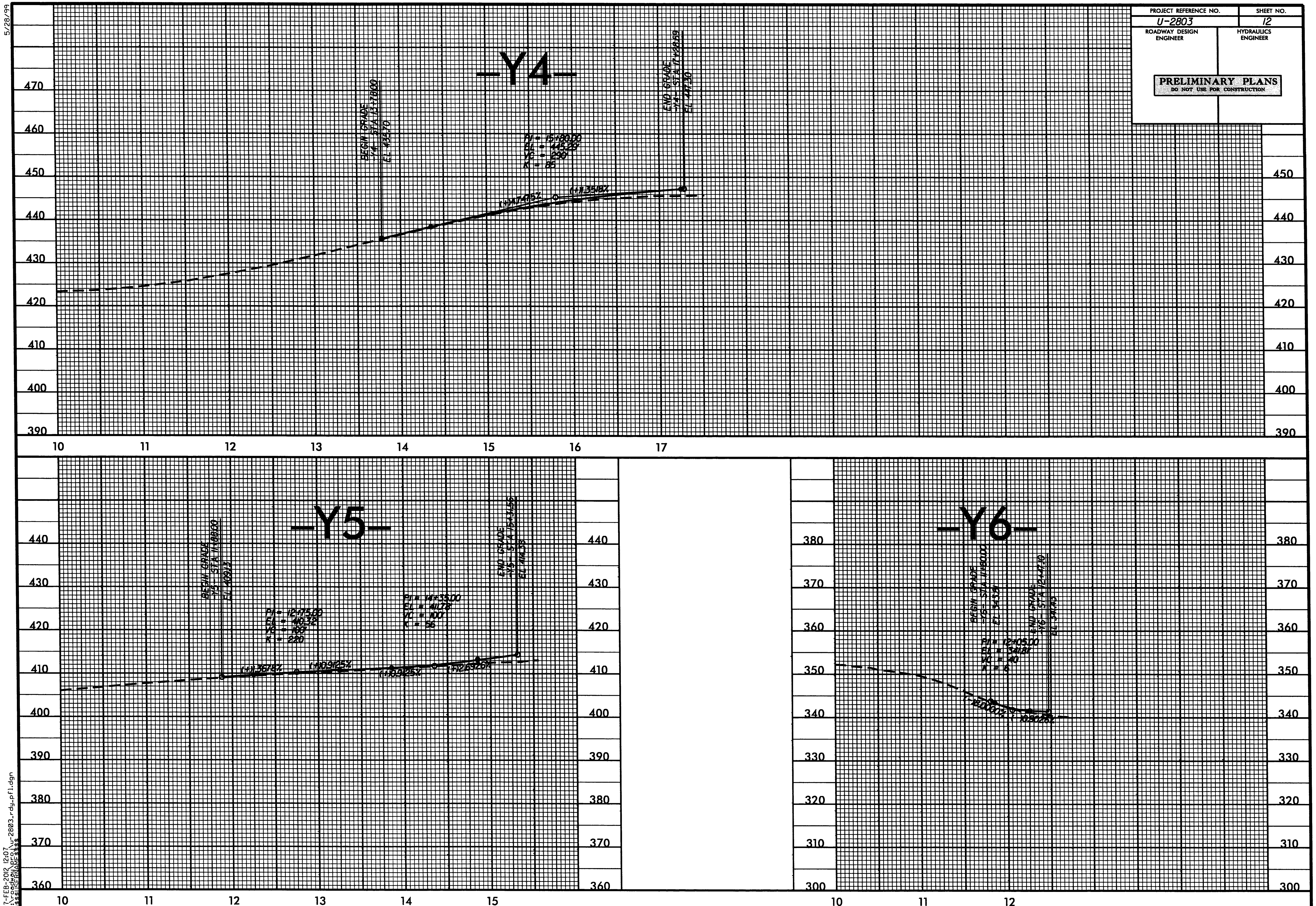
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2803	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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