



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

June 18, 2010

Mr. Tom Steffens  
U.S. Army Corps of Engineers  
Regulatory Field Office  
Post Office Box 1000  
Washington, NC 27889-1000

Dear Sir:

**Subject: Application for Section 404 Nationwide Permits 13 and 14, Section 401 Water Quality Certification, and Tar-Pamlico Riparian Buffer Authorization** for the widening of SR 1604 (Hunter Hill Road) from SR 1616 (Country Club Road) to NC 43 / 48 (Benvenue Road) in Nash County. State Project No. 34964. Federal Aid Project Number STP-1604(1). Debit \$570.00 from WBS 34964.1.1.; **TIP No. U-3621B.**

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to widen SR 1604 in Nash County from SR 1616 (Hunter Hill Road) from SR 1616 (Country Club Road) to NC 43 / 48 (Benvenue Road). The project involves widening the existing roadway to a four-lane, median-divided facility. Additionally, the project will involve replacing Bridge No. 181 (over the US 301 Bypass) with a new structure, and access onto SR 1604 at several points will be closed. Permanent impacts to 386 linear feet of stream and 30,348 square feet of riparian buffer are proposed as a result of project construction. The proposed let date for the project is March 15, 2011 with a review date of January 25, 2011; however, the let date may advance as additional funds become available.

Please find enclosed the Pre-Construction Notification (PCN) form, permit drawings, roadway plans, Stormwater Management Plan, and Ecosystem Enhancement Program (EEP) acceptance letter for the above referenced project. An Environmental Assessment (EA) was completed for this project on May 15, 2007 and a Finding of No Significant Impact (FONSI) was completed on May 30, 2008; copies of both documents were distributed shortly after their respective completion dates. Additional copies are available upon request.

### Regulatory Approvals

**Section 404 Permit:** The NCDOT requests that a Nationwide Permit 13 and Nationwide Permit 14 authorize these activities (72 CFR; 11092-11198, March 12, 2007).

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

TELEPHONE: 919-431-2000  
FAX: 919-431-2002

WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

**LOCATION:**  
4701 ATLANTIC AVENUE  
SUITE 116  
RALEIGH NC 27604

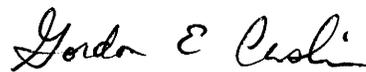
Section 401 Permit: We anticipate 401 General Certification numbers 3689 and 3820 will apply to this project. All general conditions of the Water Quality Certifications will be met and we are requesting written approval from NCDWQ. In accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the NCDWQ for their approval. Authorization to debit the \$570.00 Permit Application Fee from WBS Element 34964.1.1 is hereby given.

Tar-Pamlico Riparian Buffer: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Tar-Pamlico Riparian Buffer Authorization.

A copy of this permit application will be posted on the NCDOT website at:  
<http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>

If you have any questions or need additional information, please call or email:  
Dr. Lance P. Fontaine at 919-431-6667 or [lpfontaine@ncdot.gov](mailto:lpfontaine@ncdot.gov).

Sincerely,



for Gregory J. Thorpe, Ph.D. Environmental Management Director  
Project Development and Environmental Analysis Branch

W/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)

W/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Victor Barbour, P.E., Project Services Unit  
Mr. Mark Staley, Roadside Environmental  
Mr. Robert W. Lewis, P.E. Div. 4 Engineer  
Mr. Chad Coggins, Div. 4 Environmental Officer  
Mr. Scott McLendon, USACE, Wilmington  
Mr. Gary Jordan, USFWS  
Mr. Travis Wilson, NCWRC  
Mr. Ron Sechler, NMFS  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Majed Alghandour, P. E., Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Ms. Michele James, PDEA Project Planning Engineer  
Ms. Beth Harmon, EEP  
Mr. Phillip Ayscue, NCDOT External Audit Branch  
Ms. Leilani Paugh, NEU  
Mr. Randy Griffin, NEU



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:	<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 13 14 or General Permit (GP) number:		
1c. Has the N WP or GP number been verified by the Corps?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <span style="margin-left: 100px;"><input type="checkbox"/> Non-404 Jurisdictional General Permit</span> <input type="checkbox"/> 401 Water Quality Certification – Express <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Riparian Buffer Authorization</span>		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### 2. Project Information

2a. Name of project:	Widening of SR 1604 (Hunter Hill Rd) from SR 1616 (Country Club Rd) to NC 43/48 (Benvenue Rd)
2b. County:	Nash
2c. Nearest municipality / town:	Rocky Mount
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no.:	U-3621 B

#### 3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	<i>not applicable</i>
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 431-6667
3g. Fax no.:	(919) 431-2002
3h. Email address:	lpfontaine@ncdot.gov

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

<b>B. Project Information and Prior Project History</b>	
<b>1. Property Identification</b>	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.9664 (DD.DDDDDD) Longitude: - 77.8052 (-DD.DDDDDD)
1c. Property size:	33 acres
<b>2. Surface Waters</b>	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Goose Branch
2b. Water Quality Classification of nearest receiving water:	C; NSW
2c. River basin:	Tar Pamlico
<b>3. Project Description</b>	
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: Project involves improvements to an existing road facility with dense commercial and residential development.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.00	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 1400	
3d. Explain the purpose of the proposed project: The purpose of the proposed action is to reduce congestion, improve safety, and improve connectivity of SR 1604.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves widening the existing roadway to a four-lane, median-divided facility. Additionally, the project will involve replacing Bridge No. 181 (over the US 301 Bypass) with a new structure. Also, access onto SR 1604 at several points will be closed. Standard road building equipment, such as trucks, dozers, excavators, and cranes will be used.	
<b>4. Jurisdictional Determinations</b>	
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: USACE Action ID: 2004-10311 issued by M. Bell on Oct. 20, 2003 with expiration of Oct. 20, 2008. On Nov. 30, 2009, NEU submitted request to USACE to renew expired JD.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input type="checkbox"/> Preliminary <input checked="" type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: ESI, Inc. Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. October 20, 2003	
<b>5. Project History</b>	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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.

The remaining section of the U-3621 project, U-3621A currently has no proposed impacts to jurisdictional resources. The scheduled let date for U-3621A is July 16, 2019 however, the let date may advance as additional funds become available. If final designs result in impacts, the appropriate permit applications will be submitted at that time.

<b>C. Proposed Impacts Inventory</b>						
<b>1. Impacts Summary</b>						
1a. Which sections were completed below for your project (check all that apply):						
<input type="checkbox"/> Wetlands		<input checked="" type="checkbox"/> Streams - tributaries		<input checked="" type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> Pond Construction				
<b>2. Wetland Impacts</b>						
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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>2g. Total wetland impacts</b>					0 Permanent 0 Temporary	
2h. Comments:						
<b>3. Stream Impacts</b>						
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 <input checked="" type="checkbox"/> P <input checked="" type="checkbox"/> T	Rdwy Embankment	Ut to Goose Branch	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	3	187 Perm; 23 Temp
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bank Stabilization	Ut to Goose Branch	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	3	10 Perm
Site 2 <input checked="" type="checkbox"/> P <input checked="" type="checkbox"/> T	Rdwy Embankment	Ut to Goose Branch	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	3.5	100 Perm; 12 Temp
Site 2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bank Stabilization	Ut to Goose Branch	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	3.5	89 Perm
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>3h. Total stream and tributary impacts</b>					386 Perm 35 Temp	
3i. Comments: Bank stabilization accounts for 99 feet of permanent impacts (combined project Sites 1 and 2), therefore project total mitigable permanent impacts are 287 feet. The term "Rdwy Embankment" encompasses fill and pipe extensions.						

**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 <input type="checkbox"/> P <input type="checkbox"/> T				
O2 <input type="checkbox"/> P <input type="checkbox"/> T				
O3 <input type="checkbox"/> P <input type="checkbox"/> T				
O4 <input type="checkbox"/> P <input type="checkbox"/> T				
<b>4f. Total open water impacts</b>				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								
<b>5f. Total</b>								

5g. Comments:

5h. Is a dam high hazard permit required?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?			<input type="checkbox"/> Neuse <input checked="" type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Other: <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman		
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Site 1; Road Crossing	Ut to Goose Branch	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12,810	7,951
B2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Site 2; Parallel Impact	Ut to Goose Branch	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7,736	1,851
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>6h. Total buffer impacts</b>				<b>20,546</b>	<b>9,802</b>
6i. Comments: Impacts as per onsite field meeting with Rob Ridings NC-DWQ - April 15, 2010.					

<b>D. Impact Justification and Mitigation</b>		
<b>1. Avoidance and Minimization</b>		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. Alignment of stream designed to minimize flow velocity to reduce erosion and bank failure. 3:1 fill slopes where practicable. Existing traffic maintained, therefore no onsite detour.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Design Standards in Sensitive Watersheds will be used during construction to minimize adverse effects on surface waters. Grass swales (non-structural BMP's) utilized as much as practical for the treatment of roadway runoff. Bank stabilization utilized to minimize flow velocity, repair existing stream bank failure, and prevent additional erosion. 3:1 fill slopes used where practicable.		
<b>2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State</b>		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:	
2b. If yes, mitigation is required by (check all that apply):	<input checked="" type="checkbox"/> DWQ <input checked="" type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input checked="" type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> Permittee Responsible Mitigation	
<b>3. Complete if Using a Mitigation Bank</b>		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
<b>4. Complete if Making a Payment to In-lieu Fee Program</b>		
4a. Approval letter from in-lieu fee program is attached.	<input checked="" type="checkbox"/> Yes	
4b. Stream mitigation requested:	386 linear feet (287 @ 2:1, 99 @ 1:1)	
4c. If using stream mitigation, stream temperature:	<input checked="" type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	30,348 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:		
<b>5. Complete if Using a Permittee Responsible Mitigation Plan</b>		
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	Road Crossing and Parallel Impact; Rdwy Embankment	20,546	3 (2 for Catawba)	61,638
Zone 2	Road Crossing and Parallel Impact; Rdwy Embankment	9,802	1.5	14,703
<b>6f. Total buffer mitigation required:</b>				<b>76,341</b>

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).

Payment into an approved in-lieu fee fund, Ecosystem Enhancement Program.

6h. Comments:

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

<b>F. Supplementary Information</b>	
<b>1. Environmental Documentation (DWQ Requirement)</b>	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Violations (DWQ Requirement)</b>	
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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
<b>3. Cumulative Impacts (DWQ Requirement)</b>	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.  As per the Environmental Assessment (May 16, 2007), most of the land in the Hunter Hill Road area is fairly mature and stable with only a few large parcels available for development. The area is dominated by residential land use with commercial use occupying much of the eastern end. While some vacant land and parcels are available, development potential is limited as much of it lies within the 100-year floodplain of Goose Branch. The ICE analysis from the EA concludes that the likelihood that land use change will result from the proposed project is low. As such, a detailed indirect or cumulative impacts analysis will not be necessary.	
<b>4. Sewage Disposal (DWQ Requirement)</b>	
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	

<b>5. Endangered Species and Designated Critical Habitat (Corps Requirement)</b>		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input type="checkbox"/> Raleigh	<input type="checkbox"/> Asheville
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCNHP, USFWS, field surveys		
<b>6. Essential Fish Habitat (Corps Requirement)</b>		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
<b>7. Historic or Prehistoric Cultural Resources (Corps Requirement)</b>		
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)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? Environmental Assessment (dated: May 16, 2010) and Finding of No Significant Impact (dated: May 30, 2008); Federal Highways Administration and the State Historic Preservation Office concur that there are no adverse effects to the properties.		
<b>8. Flood Zone Designation (Corps Requirement)</b>		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	6/18/10 Date

# STORMWATER MANAGEMENT PLAN

Project: 34964.1.1 (TIP No. U-3621B)

Nash County

Prepared By: Herb Turner – Florence & Hutcheson  
Bill Zerman – NCDOT Hydraulics Unit

*WHT*

*3/27/2010*

## ROADWAY DESCRIPTION

The purpose of this project is to reduce congestion, improve safety and improve connectivity by upgrading the existing facility to a four-lane raised-median facility. The overall length of the project is approximately 1.4 miles. The existing 2-lane facility will be upgraded with curb & gutter, 12-foot inside lanes, 14-foot outside lanes, and 10-foot berms which will accommodate sidewalk along one side. The project drainage design consists of cross drainage, grated inlets with associated pipe systems, tail ditch, roadside ditches, and grass swales.

## ENVIROMENTAL DESCRIPTION

The project is located in the Tar-Pamlico River Basin. Project outfalls flow to UT to Stony Creek and to UT to Goose Branch. Stony Creek and Goose Branch in the project area are both classified C, NSW. According to the NCDWQ's 303(d) Impaired Waters List, Stony Creek is classified as "Impaired" due to biological impairment.

## BEST MANAGEMENT PRACTICES (BMP's)

The primary goal of Best Management Practices (BMP) is to prevent degradation of the state's surface waters through the location, construction and operation of the highway system. BMP's are activities, practices and procedures undertaken to prevent or reduce stormwater pollution. In addition to the non-Structural BMPs, grass swales have been used as Structural BMP, as much as practical, on this project for treatment of roadway runoff.

### GRASS SWALES

A grass swale is a type of biofilter because the vegetation on the swale takes up some pollutants and helps filter sediment and other solid particles out of the runoff. They convey stormwater and provide stormwater management by retarding peak flow rates, lowering velocities of runoff and by infiltrating runoff water into the soil. The grass swale provides treatment for the discharge before entering the stream. They have been utilized at the following locations:

-L-	10+57	to	15+50	LT
-L-	10+57	to	15+69	RT
-L-	61+30	to	65+50	RT
-L-	70+50	to	73+00	RT
-L-	75+70	to	77+10	RT
-L-	79+00	to	80+00	RT

-EY22-	13+60	to	14+20	LT



**Ecosystem  
Enhancement**  
PROGRAM

June 16, 2010

Mr. Tom Steffens  
U. S. Army Corps of Engineers  
Washington Regulatory Field Office  
Post Office Box 1000  
Washington, North Carolina 27889-1000

Dear Mr. Steffens:

Subject: EEP Mitigation Acceptance Letter:

**U-3621B, Rocky Mount – SR 1604 (Hunter Hill Road) from SR 1616 (Country Club Road) to NC 43/48 (Benvenue Road), Nash County**

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation and buffer mitigation for the unavoidable impacts associated with the above referenced project. Based on the information supplied by the NCDOT on June 9, 2010, the impacts are located in CU 03020101 of the Tar-Pamlico River Basin in the Northern Inner Coastal Plain (NICP) Eco-Region, and the anticipated mitigation credits needed to offset the impacts are as follows:

Tar-Pamlico 03020101 NICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1 (at 3:1)	Zone 2 (at 1.5:1)
Impacts (feet/acres)	0	0	386	0	0	0	20,546	9,802
Mitigation Units (Credits – at 2:1)	0	0	574	0	0	0	61,638	14,703
Mitigation Units (Credits – at 1:1)	0	0	99	0	0	0	0	0
<b>Mitigation Units (TOTAL)</b>	<b>0</b>	<b>0</b>	<b>673</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>76,341</b>	

The NCDOT will be responsible to ensure that the appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization Certification, EEP will transfer funds from Fund 2984 (Tri-Party MOA Account) into Fund 2982 and commit to provide the appropriate buffer mitigation to offset the impacts associated with this project. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for the portion provided by EEP for U-3621B. If the amount of buffer mitigation required from EEP increases for this project, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required. All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Program.

Mitigation associated with this project will be provided in accordance with Section X of Amendment No. 2 to the Memorandum of Agreement between the N. C. Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers fully executed on March 8, 2007 (Tri-Party MOA). EEP commits to implement sufficient compensatory stream mitigation in the appropriate cataloging unit in the amount listed in the above table to offset the impacts associated with this project by the end of the MOA year in which this project is permitted. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,



William D. Gilmore, P.E.  
EEP Director

cc: Mr. Gregory J. Thorpe, Ph, D, NCDOT – PDEA  
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit  
File: U-3621B

*Restoring... Enhancing... Protecting Our State*



# STORMWATER MANAGEMENT PLAN

Project: 34964.1.1 (TIP No. U-3621B)

Nash County

Prepared By: Herb Turner – Florence & Hutcheson  
Bill Zerman – NCDOT Hydraulics Unit

*WXC*

*3/27/2010*

## ROADWAY DESCRIPTION

The purpose of this project is to reduce congestion, improve safety and improve connectivity by upgrading the existing facility to a four-lane raised-median facility. The overall length of the project is approximately 1.4 miles. The existing 2-lane facility will be upgraded with curb & gutter, 12-foot inside lanes, 14-foot outside lanes, and 10-foot berms which will accommodate sidewalk along one side. The project drainage design consists of cross drainage, grated inlets with associated pipe systems, tail ditch, roadside ditches, and grass swales.

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### GRASS SWALES

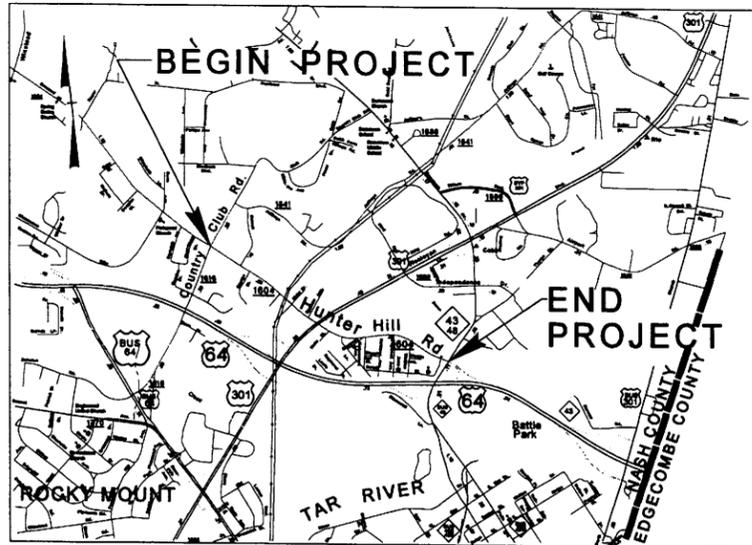
A grass swale is a type of biofilter because the vegetation on the swale takes up some pollutants and helps filter sediment and other solid particles out of the runoff. They convey stormwater and provide stormwater management by retarding peak flow rates, lowering velocities of runoff and by infiltrating runoff water into the soil. The grass swale provides treatment for the discharge before entering the stream. They have been utilized at the following locations:

-L-	10+57	to	15+50	LT
-L-	10+57	to	15+69	RT
-L-	61+30	to	65+50	RT
-L-	70+50	to	73+00	RT
-L-	75+70	to	77+10	RT
-L-	79+00	to	80+00	RT

-EY22-	13+60	to	14+20	LT

09/08/99

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# NASH COUNTY

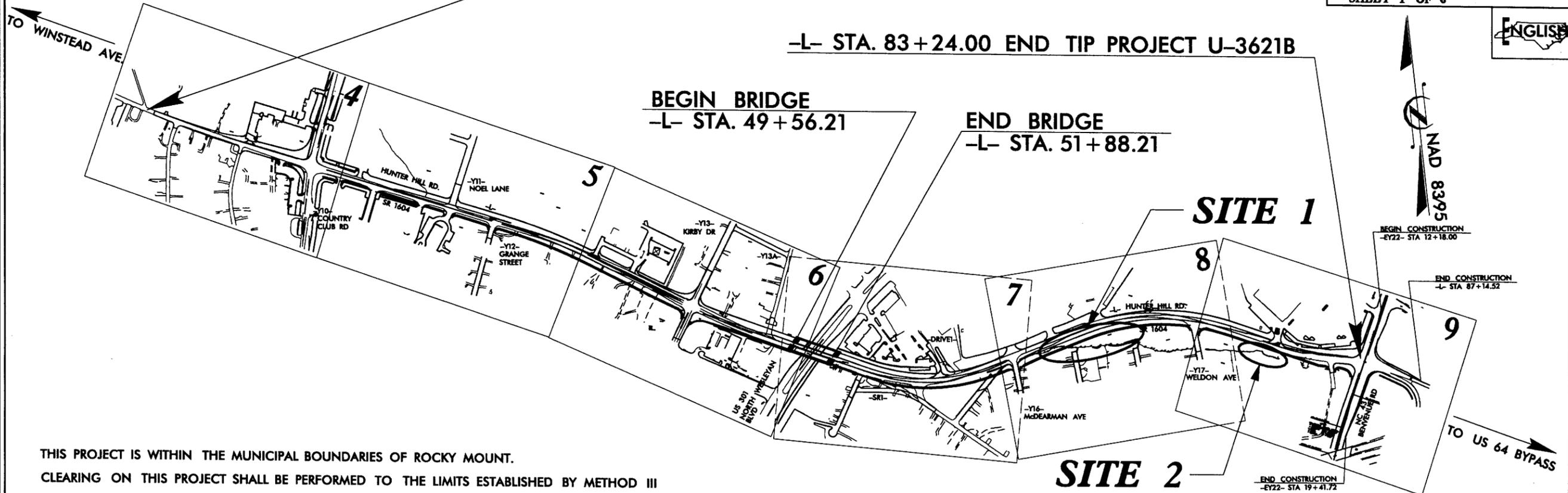
LOCATION: SR 1604 (HUNTER HILL RD) IN ROCKY MOUNT FROM  
SR 1616 (COUNTRY CLUB RD) TO NC 43/48 (BENVENUE RD)

TYPE OF WORK: GRADING, WIDENING, PAVING, DRAINAGE,  
STRUCTURES, SIGNALS AND GUARDRAIL.

## WETLAND & STREAM IMPACTS

-L- STA. 10+00.00 BEGIN TIP PROJECT U-3621B

-L- STA. 83+24.00 END TIP PROJECT U-3621B



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ROCKY MOUNT.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3621B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34964.1.1	STP-1604(1)	PE	
34964.3.1	STP-1604(5)	R/W, UTIL	

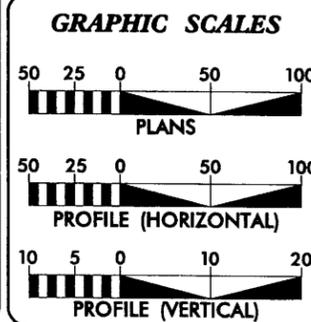
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
NASH COUNTY  
PROJECT: 34964.1.1 (U-3621B)  
SR 1604 (HUNTER HILL RD) FROM  
SR 1616 (COUNTRY CLUB RD)  
TO NC 43 / 48 (BENVENUE RD)  
SHEET 1 OF 6

ENGLISH

CONTRACT: TIP PROJECT: U-3621B

CONTRACT: TIP PROJECT: U-3621B



**DESIGN DATA**

ADT 2009 =	10,090
ADT 2035 =	22,860
DHV =	11%
D =	55%
T =	2% *
V =	50 MPH
* TTST = 1%	DUAL = 1%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-3621B =	1.343 MILES
LENGTH STRUCTURE TIP PROJECT U-3621B =	0.044 MILES
TOTAL LENGTH TIP PROJECT U-3621B =	1.387 MILES

Permit Drawing Sheet 1 of 8

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

2006 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: DECEMBER 11, 2008	TED S. WALLS PROJECT ENGINEER
LETTING DATE: SEPTEMBER 21, 2010	ALLISON K. WHITE PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

3/23/2010 R:\Hydraulics\PERMITS\Environmental\Drawings\U3621b\_hyd.prm\_wet\_tsh.dgn Florence & Hutcheson, Inc.

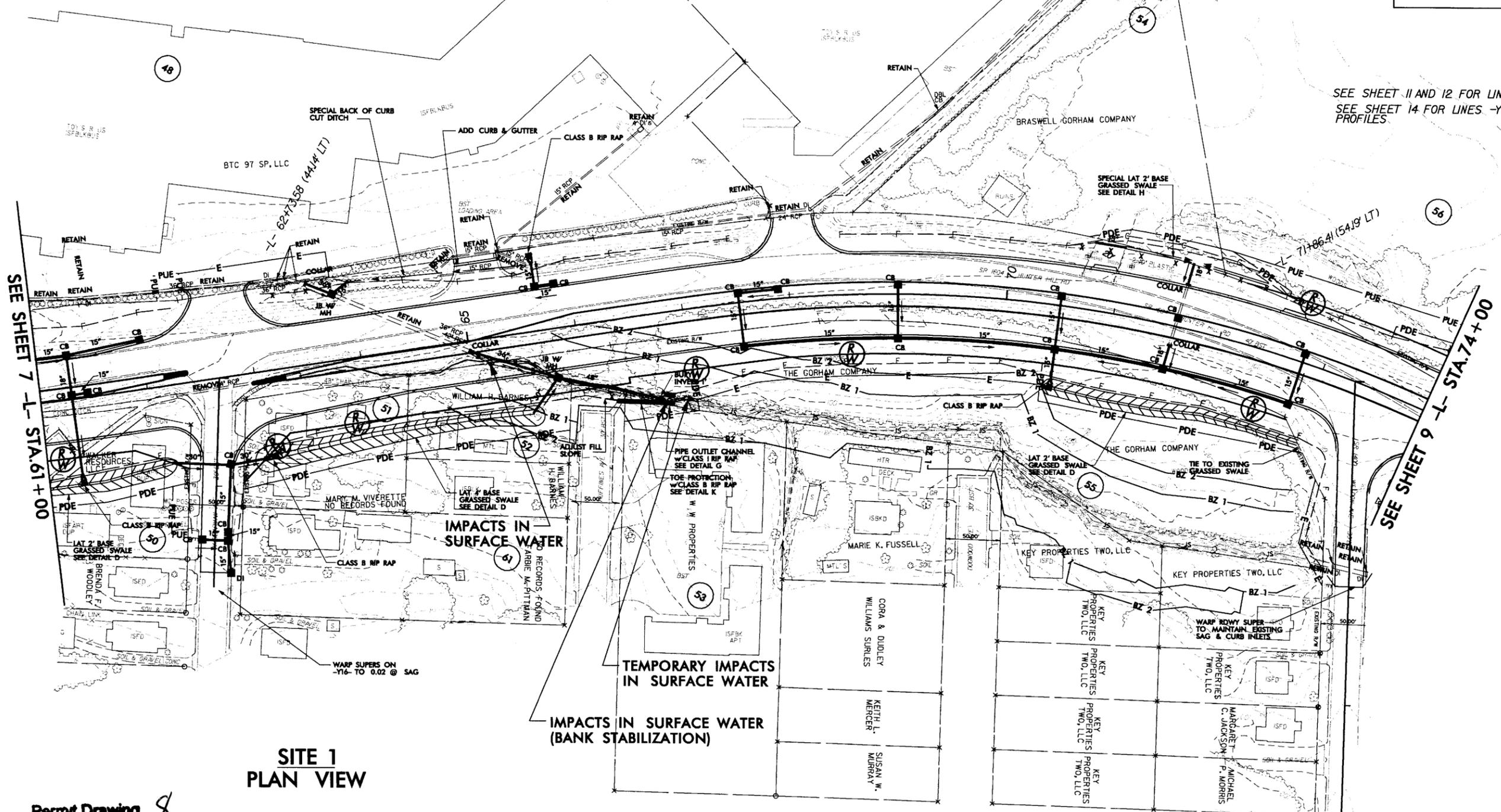
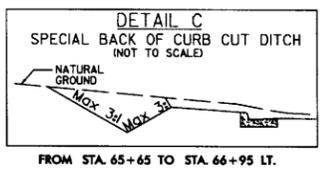
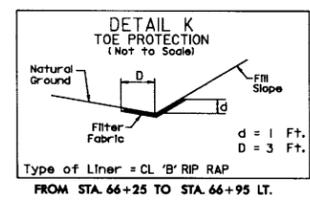


PROJECT REFERENCE NO. <b>U-3621B</b>	SHEET NO. <b>8</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

NAD 83 / 95

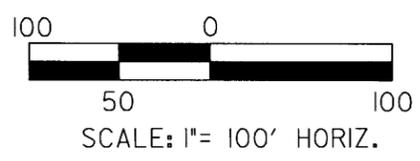
TEN THIRTY DEARBORN LTD. PARTNERSHIP

REVISIONS  
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 \*Removed TCE labeled +17.42/73.77 RT-Removed TCE labeled -Y16- +50.00/30.67 RT & EXIST R/W  
 \*Removed TCE labeled +17.42/73.77 RT-Removed TCE labeled +48.61/61.34 LT / 55 LT  
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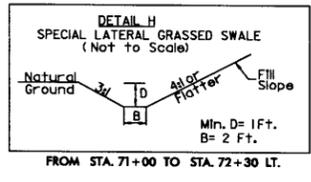
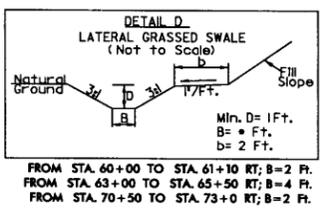
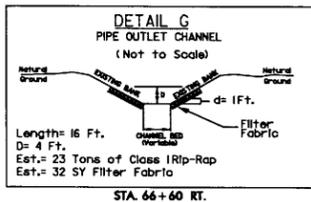


**SITE 1  
PLAN VIEW**

Permit Drawing  
Sheet 3 of 8



- LEGEND**
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
  - DENOTES IMPACTS IN SURFACE WATER



SEE SHEET 11 AND 12 FOR LINE -L- PROFILE  
SEE SHEET 14 FOR LINES -Y16- AND -Y17- PROFILES.

SEE SHEET 7 -L- STA.61+00

SEE SHEET 9 -L- STA.74+00

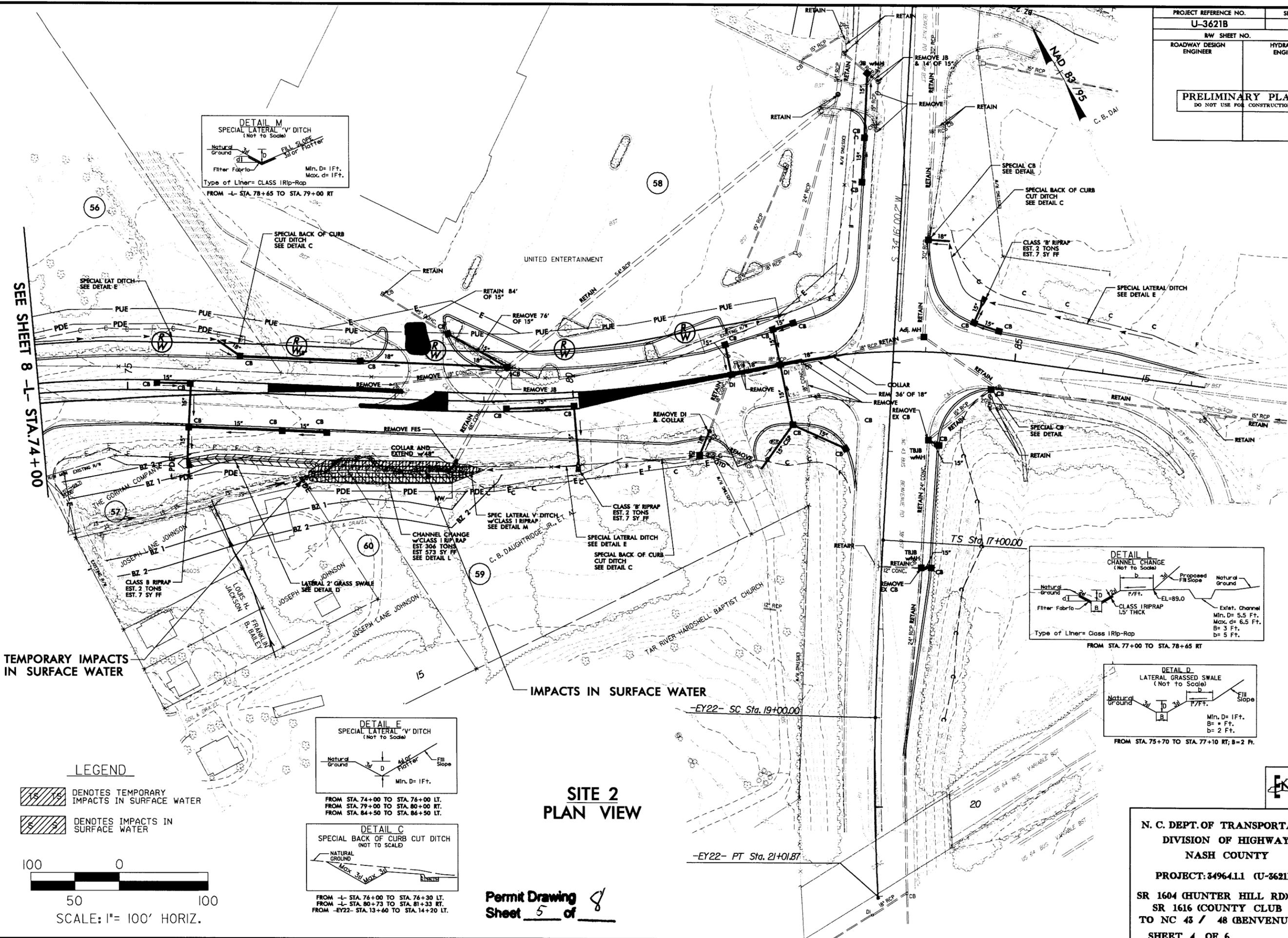
N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
NASH COUNTY  
PROJECT: 34964.11 (U-3621B)  
SR 1604 (HUNTER HILL RD) FROM  
SR 1616 (COUNTY CLUB RD)  
TO NC 43 / 48 (BENVENUE RD)  
SHEET 3 OF 6

ENGLISH



4/30/2010, Lisa PERMITS, Environmental Drawings, 3621B, p. 1  
 ROW REVISION 6/30/2009, dkv, +Added PUE labeled +1100/75 LT and PUE labeled +7700/75 LT  
 +Added PUE labeled +3800/92 LT and +4800/92 LT and PUE labeled +7200/75 LT  
 +Added PUE labeled +2500/75 LT and PUE labeled +4600/75 LT  
 +Removed and Modified TCE as Needed  
 8/17/99

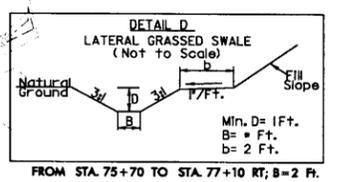
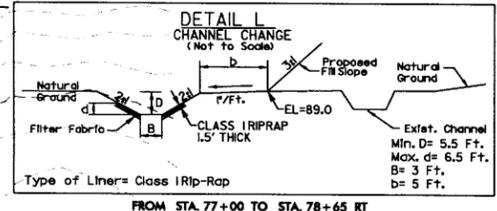
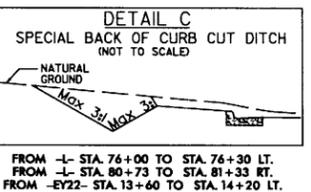
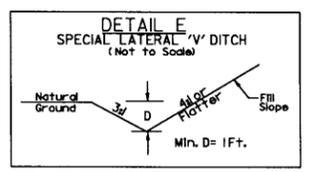
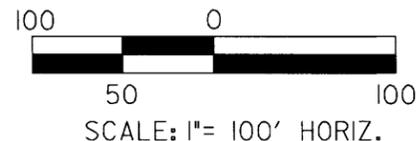
PROJECT REFERENCE NO. <b>U-3621B</b>	SHEET NO. <b>9</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**TEMPORARY IMPACTS IN SURFACE WATER**

**IMPACTS IN SURFACE WATER**

- LEGEND**
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
  - DENOTES IMPACTS IN SURFACE WATER



**SITE 2  
PLAN VIEW**

Permit Drawing  
Sheet 5 of 8

**N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
NASH COUNTY**

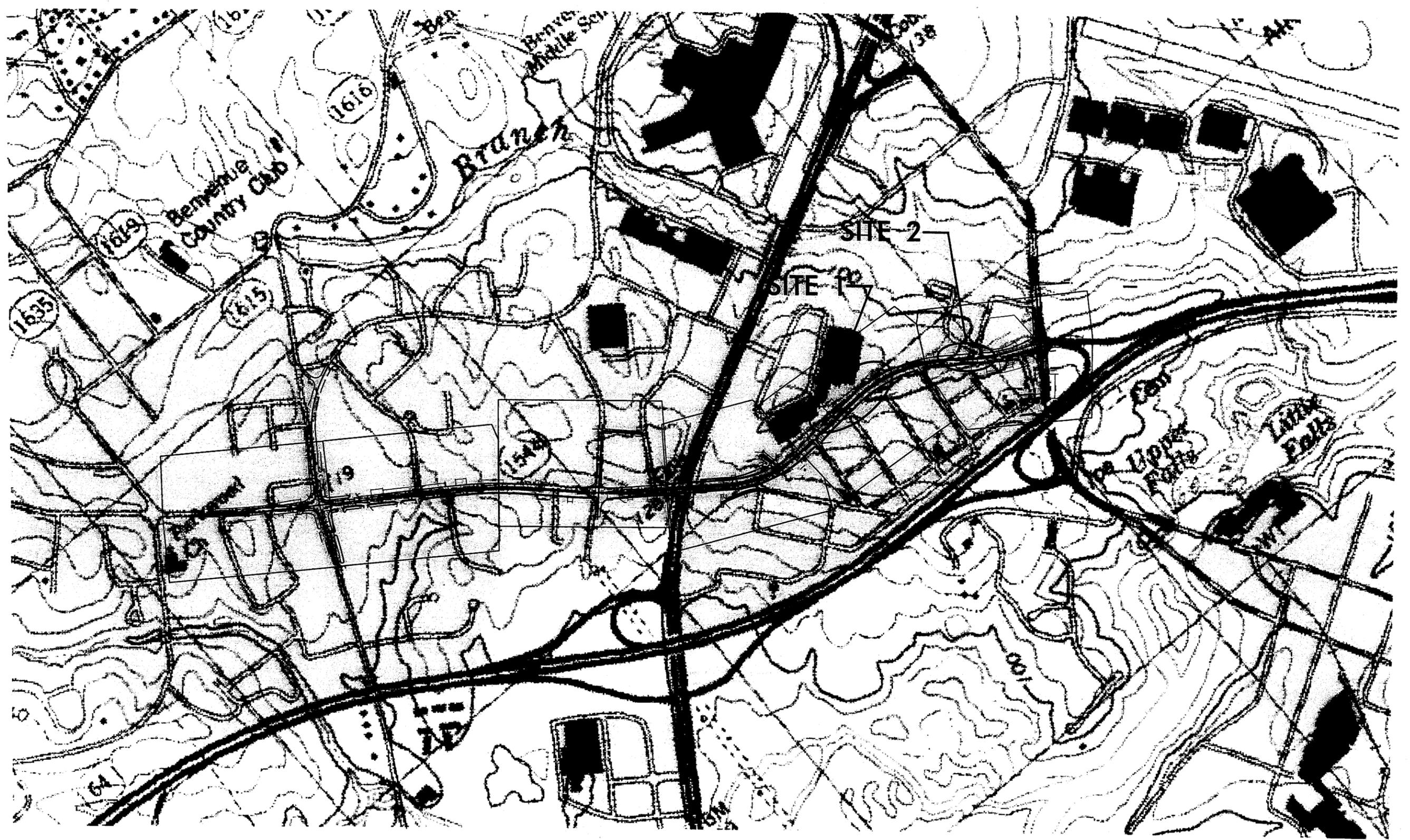
**PROJECT: 34964.11 (U-3621B)**

**SR 1604 (HUNTER HILL RD) FROM  
SR 1616 (COUNTY CLUB RD)  
TO NC 43 / 48 (BENVENUE RD)**

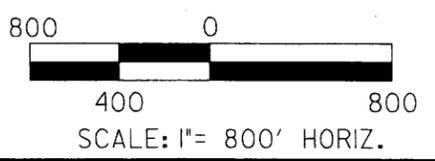
**SHEET 4 OF 6**



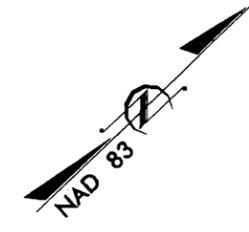
5/14/95



**WETLAND & STREAM IMPACTS**  
**TOPO MAP**



Permit Drawing  
 Sheet 6 of 8



N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 NASH COUNTY  
 PROJECT: 34964.11 (U-3621B)  
 SR 1604 (HUNTER HILL RD) FROM  
 SR 1616 (COUNTY CLUB RD)  
 TO NC 43 / 48 (BENVENUE RD)  
 SHEET 2 OF 6

3/23/2006  
 ERMIT'S Environmental Drawings\nu3621b\_hyd\_wet\_quod.dgn  
 source: thiribson



# WETLAND IMPACTS SUMMARY OF AFFECTED PROPERTY OWNERS

TRACT NO.	PROPERTY OWNER	ADDRESS	SITE NO.
(51)	MARY M. VIRETTE	2717 WINSTEAD ROAD ROCKY MOUNT, NC 27803	1
(52)	WILLIAM H. BARNES	1420 HUFFINES AVE. ROCKY MOUNT, NC 27804	1
(53)	W. W. PROPERTIES	2156 JOELENE DRIVE ROCKY MOUNT, NC 27803	1
(55)	THE GORHAM COMPANY	P.O. BOX 912 ROCKY MOUNT, NC 27802	1
(57)	THE GORHAM COMPANY	P.O. BOX 912 ROCKY MOUNT, NC 27802	2
(59)	C. B. DAUGHTRIDGE	4419 MEADOWBROOK ROAD ROCKY MOUNT, NC 27801	2
(60)	JOSEPH LANE JOHNSON	825 CHRISTINA LANE ROCKY MOUNT, NC 27804	2

4/30/2010 8:18:52 AM R:\Hydro\ulices\PERMITS\_Environmental\Drawings\PERMITCOVERSHEETS.dgn

Permit Drawing Sheet 5 of 8

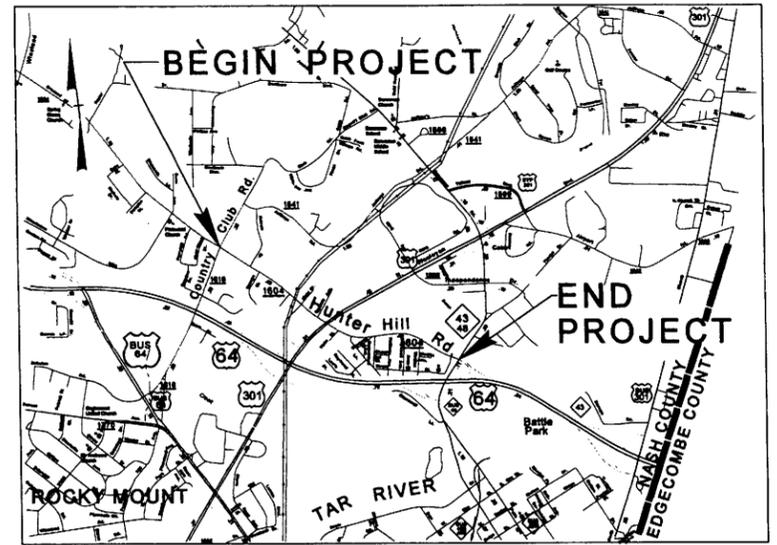


**NCDOT**  
 DIVISION OF HIGHWAYS  
 NASH COUNTY  
 PROJECT: 34964.1.1 (U-3612B)  
 SR 1604 (HUNTER HILL RD) FROM  
 SR 1616 (COUNTRY CLUB RD)  
 TO NC 43/48 (BENVENUE RD)  
  
**SHEET 5 OF 6**

09/08/09  
 3/23/2010  
 R:\Hydraulics\PERMITS\Environmental\Drawings\U3621b\_Hyd\_prm\_buf\_tsh.dgn  
 Florence & Hutcheson, Inc.

**CONTRACT: U-3621B**

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**NASH COUNTY**

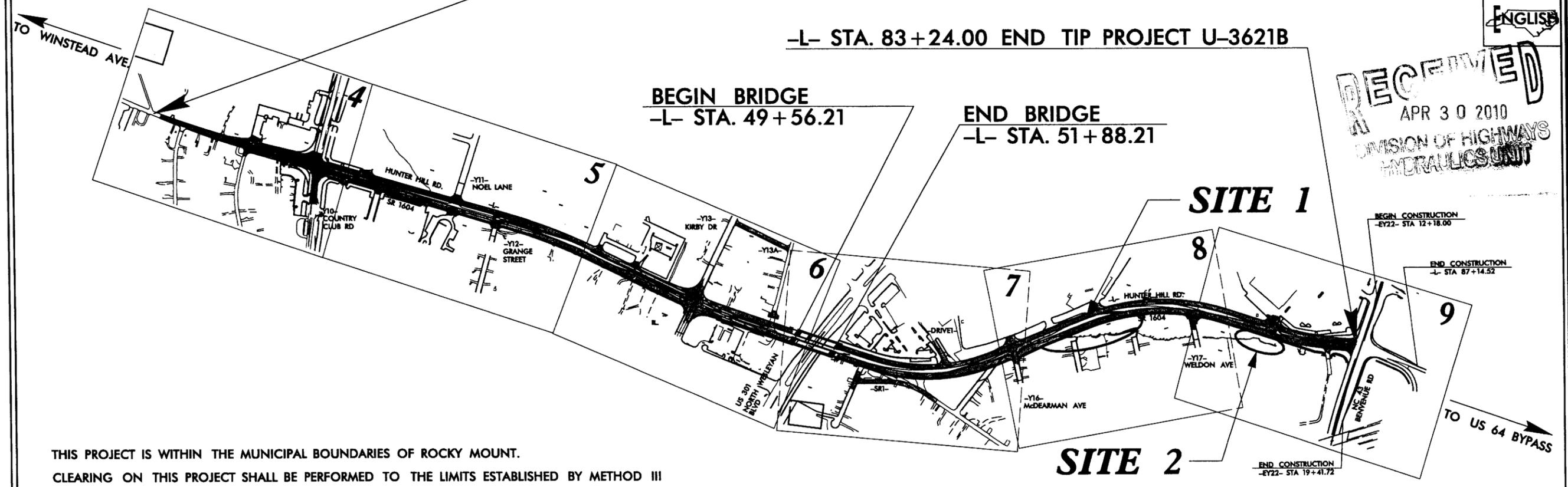
**LOCATION: SR 1604 (HUNTER HILL RD) IN ROCKY MOUNT FROM  
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**TYPE OF WORK: GRADING, WIDENING, PAVING, DRAINAGE,  
 STRUCTURES, SIGNALS AND GUARDRAIL.**

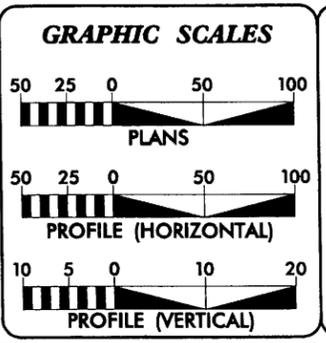
**BUFFER IMPACTS**

-L- STA. 10+00.00 BEGIN TIP PROJECT U-3621B

-L- STA. 83+24.00 END TIP PROJECT U-3621B



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ROCKY MOUNT.  
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III



**DESIGN DATA**

ADT 2009	=	10,090
ADT 2035	=	22,860
DHV	=	11%
D	=	55%
T	=	2% *
V	=	50 MPH
* TTST	=	1%
DUAL	=	1%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-3621B	=	1.343 MILES
LENGTH STRUCTURE TIP PROJECT U-3621B	=	0.044 MILES
TOTAL LENGTH TIP PROJECT U-3621B	=	1.387 MILES

Buffer Drawing Sheet 1 of 7

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

2006 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: DECEMBER 11, 2008	TED S. WALLS PROJECT ENGINEER
LETTING DATE: SEPTEMBER 21, 2010	ALLISON K. WHITE PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

**DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3621B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34964.1.1	STP-1604(1)	PE	
34964.3.1	STP-1604(5)	RW, UTIL	

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION

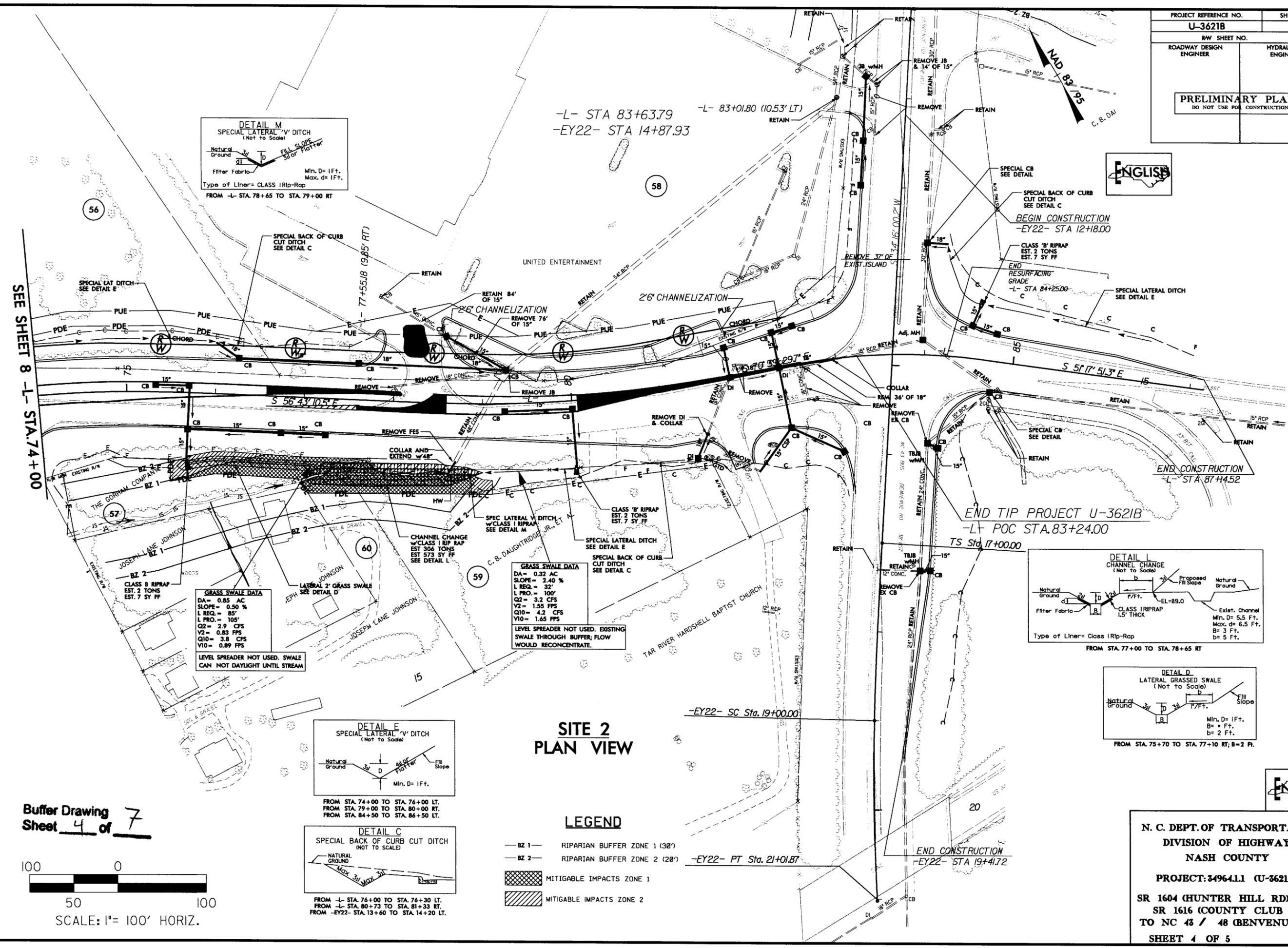
N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 NASH COUNTY  
 PROJECT: 34964.1.1 (U-3621B)  
 SR 1604 (HUNTER HILL RD) FROM  
 SR 1616 (COUNTRY CLUB RD)  
 TO NC 43 / 48 (BENVENUE RD)  
 SHEET 1 OF 5





8/17/99  
 ROW REVISION 6/30/2008 dlv  
 \*Added PUE labeled +100.75' LT and +48.00/92' LT  
 \*Added PUE labeled +58.00/92' LT and +29.00/75' LT  
 \*Added PUE labeled +72.00/75' LT and +46.00/75' LT  
 \*Removed and Modified TCE as Needed  
 4/30/2010 Uca PERMITS-Environmental\LD-Drawings\3621B-Drawings\3621B.dwg  
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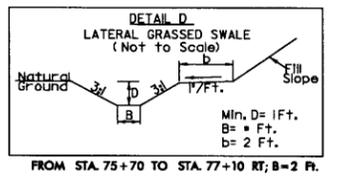
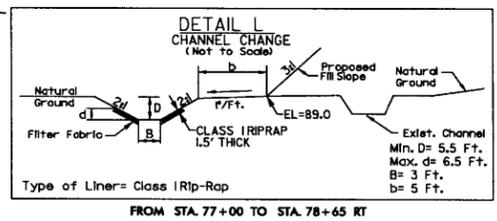
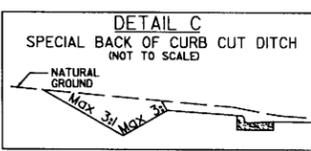
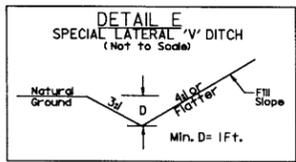
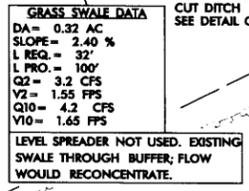
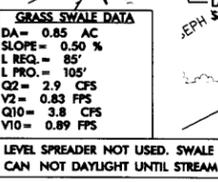
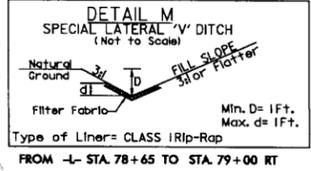
PROJECT REFERENCE NO. <b>U-3621B</b>	SHEET NO. <b>9</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**SITE 2  
PLAN VIEW**

**LEGEND**

- BZ 1 — RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 — RIPARIAN BUFFER ZONE 2 (20')
- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2



Buffer Drawing  
Sheet **4** of **7**



**N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
NASH COUNTY**

**PROJECT: 2496.1.1 (U-3621B)**

**SR 1604 (HUNTER HILL RD) FROM  
SR 1616 (COUNTY CLUB RD)  
TO NC 43 / 48 (BENVENUE RD)**

**SHEET 4 OF 5**



BEGIN CONSTRUCTION  
-EY22- STA 12+18.00

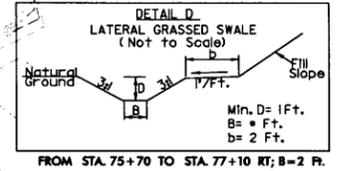
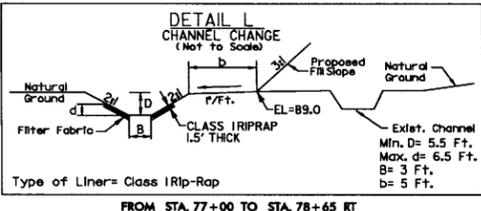
CLASS 'B' RIPRAP  
EST. 2 TONS  
EST. 7 SY FF

END RESURFACING  
GRADE  
-L- STA 84+25.00

END CONSTRUCTION  
-L- STA 87+44.52

END TIP PROJECT U-3621B  
-L- POC STA. 83+24.00

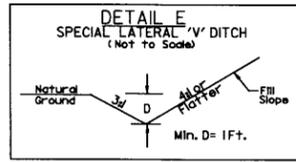
TS Sta. 17+00.00



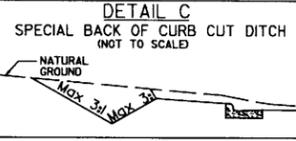
-L- STA 83+63.79  
-EY22- STA 14+87.93

**GRASS SWALE DATA**  
DA = 0.32 AC  
SLOPE = 2.40 %  
L REQ. = 32'  
L PRO. = 100'  
Q2 = 3.2 CFS  
V2 = 1.55 FPS  
Q10 = 4.2 CFS  
V10 = 1.65 FPS  
LEVEL SPREADER NOT USED. EXISTING SWALE THROUGH BUFFER; FLOW WOULD RECONCENTRATE.

**GRASS SWALE DATA**  
DA = 0.85 AC  
SLOPE = 0.50 %  
L REQ. = 85'  
L PRO. = 105'  
Q2 = 2.9 CFS  
V2 = 0.83 FPS  
Q10 = 3.8 CFS  
V10 = 0.89 FPS  
LEVEL SPREADER NOT USED. SWALE CAN NOT DAYLIGHT UNTIL STREAM



FROM STA. 74+00 TO STA. 76+00 LT.  
FROM STA. 79+00 TO STA. 80+00 RT.  
FROM STA. 84+50 TO STA. 86+50 LT.



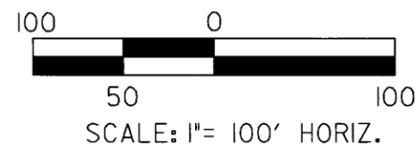
FROM -L- STA. 76+00 TO STA. 76+30 LT.  
FROM -L- STA. 80+73 TO STA. 81+33 RT.  
FROM -EY22- STA. 13+60 TO STA. 14+20 LT.

### SITE 2 PLAN VIEW

### LEGEND

- BZ 1 - RIPARIAN BUFFER ZONE 1 (30')
- BZ 2 - RIPARIAN BUFFER ZONE 2 (20')
- [Cross-hatched] MITIGABLE IMPACTS ZONE 1
- [Diagonal lines] MITIGABLE IMPACTS ZONE 2

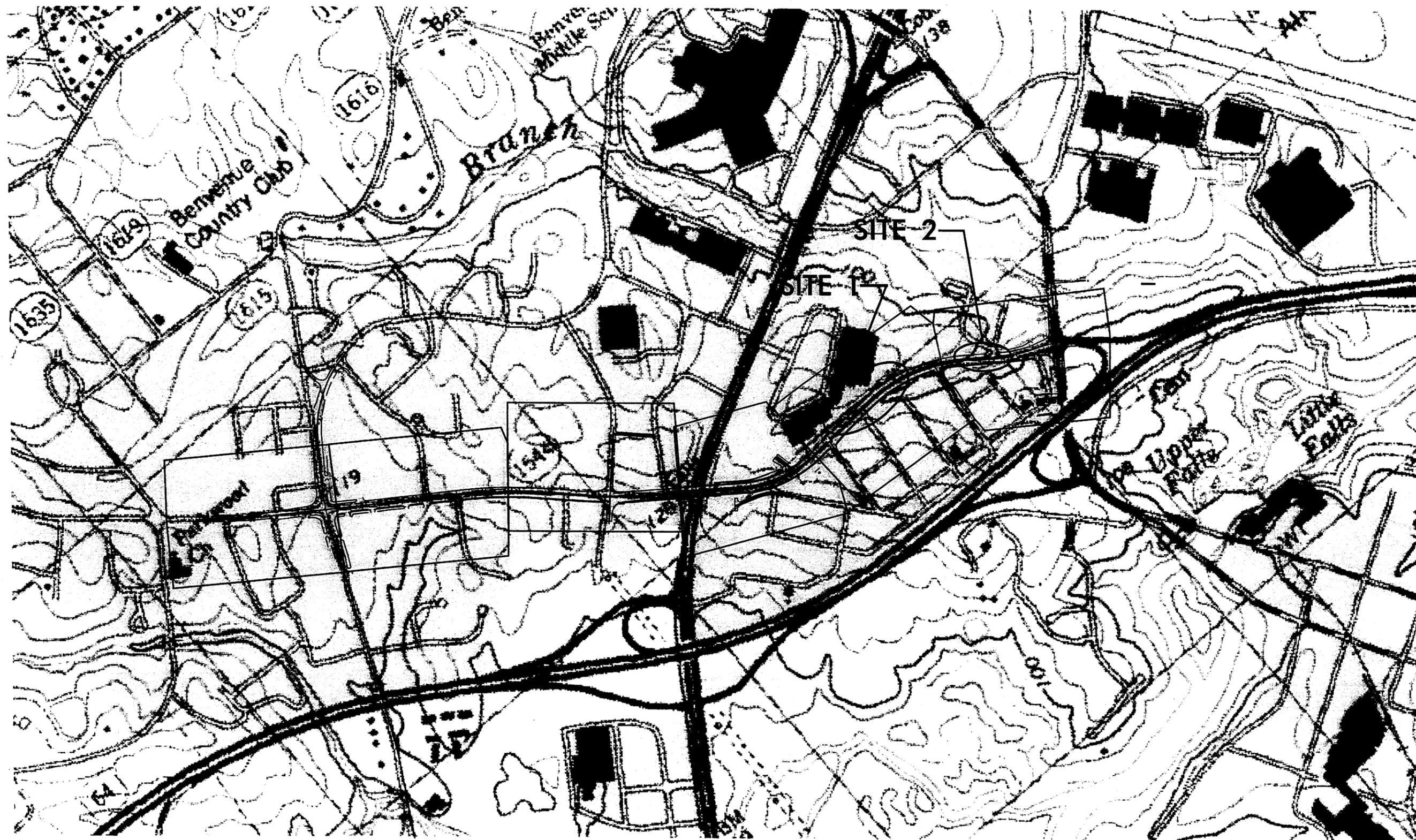
Buffer Drawing  
Sheet 5 of 7



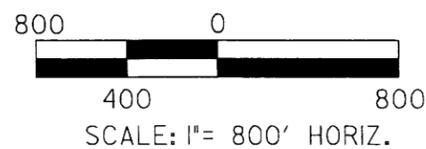
REVISIONS  
 ROW REVISION 6/30/2009 dky  
 +Added PUE labeled +100.00/75' LT and +48.00/92' LT and +48.00/92' LT and +48.00/92' LT and +48.00/92' LT  
 +Added PUE labeled +38.00/75' LT and +29.00/75' LT and +29.00/75' LT and +29.00/75' LT  
 +Added PUE labeled +72.00/75' LT and +60.00/75' LT and +60.00/75' LT and +60.00/75' LT  
 +Removed and Modified TCE as Needed  
 8/17/99  
 4/30/2010 Lisa PERMITTS, Environmental Drawings, U-3621B-10.dwg  
 4/30/2010 Lisa PERMITTS, Environmental Drawings, U-3621B-10.dwg

SEE SHEET 8 -L- STA. 74+00

N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
NASH COUNTY  
PROJECT: 34964.1.1 (U-3621B)  
SR 1604 (HUNTER HILL RD) FROM  
SR 1616 (COUNTY CLUB RD)  
TO NC 43 / 48 (BENVENUE RD)  
SHEET 4 OF 5

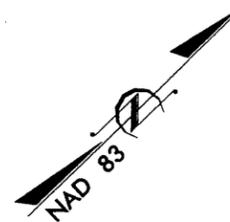


3/23/2010  
SMITS Environmental Drawings V:\3621b-hyd\_buffer-quad.dgn  
SMITS & Associates, Inc.



Buffer Drawing  
Sheet 6 of 7

# **BUFFER IMPACTS** **TOPO MAP**



N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
NASH COUNTY

PROJECT: 34964.11 (U-3621B)

SR 1604 (HUNTER HILL RD) FROM  
SR 1616 (COUNTY CLUB RD)  
TO NC 48 / 46 (BENVENUE RD)

SHEET 2 OF 5



09/08/09

See Sheet 1-A For Index of Sheets

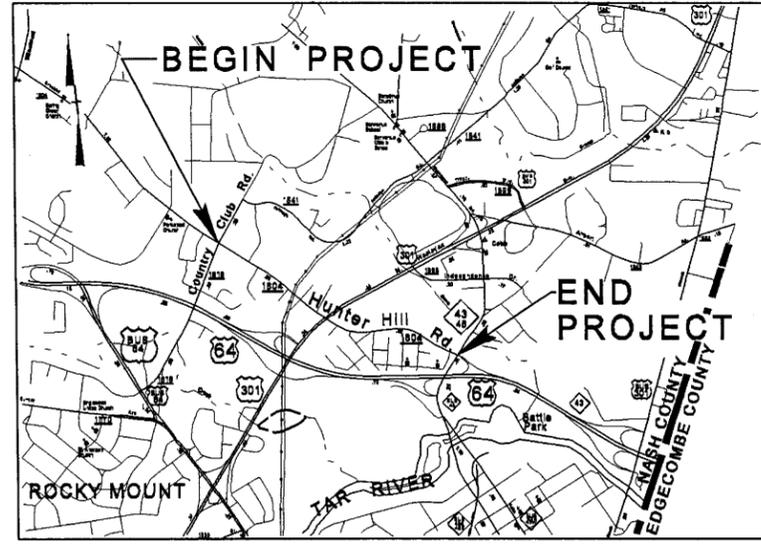
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**NASH COUNTY**

LOCATION: SR 1604 (HUNTER HILL RD) IN ROCKY MOUNT FROM  
SR 1616 (COUNTRY CLUB RD) TO NC 43/48 (BENVENUE RD)

TYPE OF WORK: GRADING, WIDENING, PAVING, DRAINAGE,  
STRUCTURES, SIGNALS AND GUARDRAIL.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3621B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34964.1.1	STP-1604(1)	PE	
34964.3.1	STP-1604(5)	R/W, UTIL	



VICINITY MAP

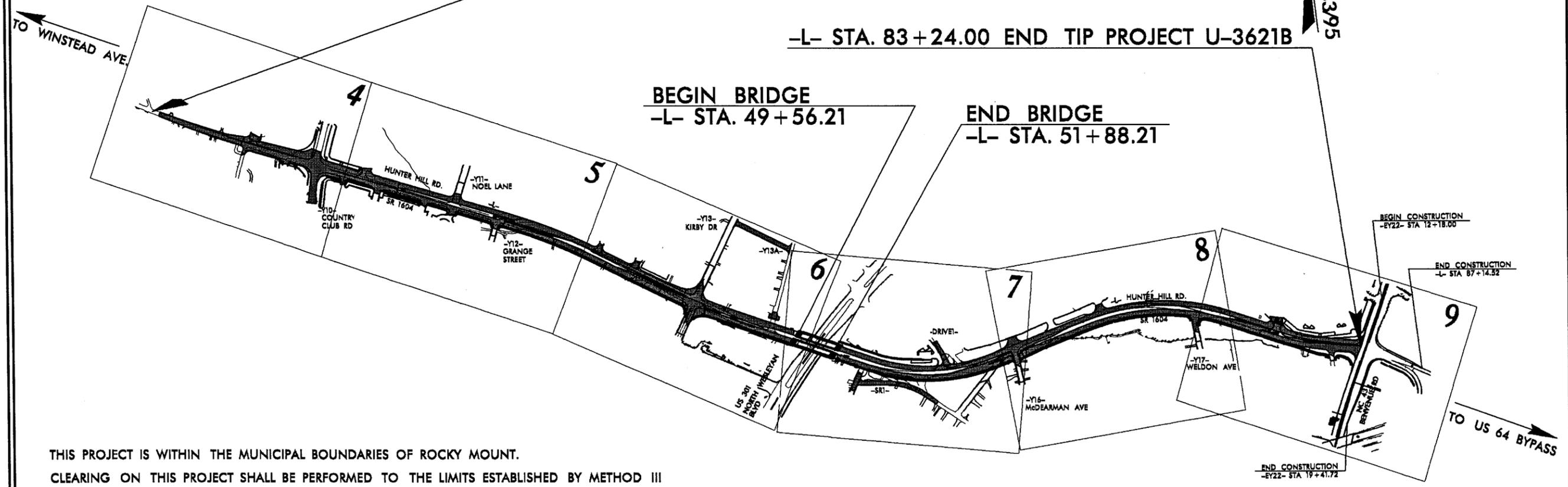
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



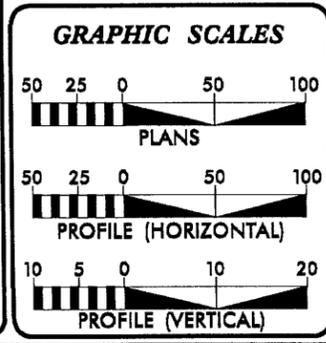
TIP PROJECT: U-3621B

-L- STA. 10+00.00 BEGIN TIP PROJECT U-3621B

-L- STA. 83+24.00 END TIP PROJECT U-3621B



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ROCKY MOUNT.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III



**DESIGN DATA**

ADT 2009 =	10,090
ADT 2035 =	22,860
DHV =	11%
D =	55%
T =	2% *
V =	50 MPH
* TTST = 1%	DUAL = 1%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-3621B =	1.343 MILES
LENGTH STRUCTURE TIP PROJECT U-3621B =	0.044 MILES
TOTAL LENGTH TIP PROJECT U-3621B =	1.387 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 11, 2008	TED S. WALLS PROJECT ENGINEER
LETTING DATE: SEPTEMBER 21, 2010	ALLISON K. WHITE PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

03-MAY-2010 08:32 r:\p0000000\p0000000\U3621B\_rdy\_tsh.dgn \$\$\$USERNAME\$\$\$

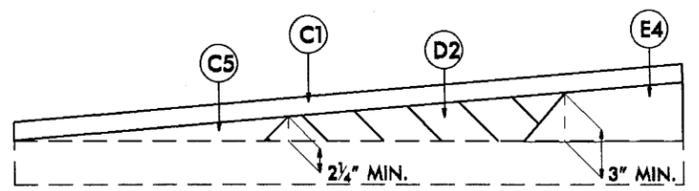
CONTRACT:

6/2/99

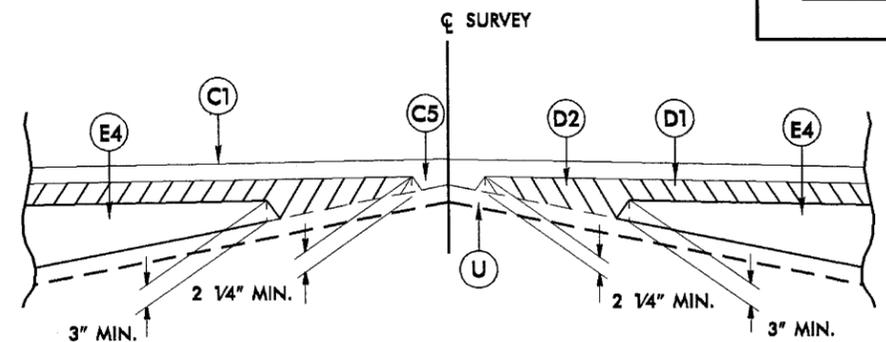
PROJECT REFERENCE NO. U-3621B	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

PAVEMENT SCHEDULE			
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.	E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R1	1'-8" CONCRETE CURB AND GUTTER.
C3	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	2'-8" CONCRETE CURB AND GUTTER.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	R3	7" MONOLITHIC CONCRETE ISLAND
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R4	EXISTING CONCRETE ISLAND
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R5	EXISTING CURB & GUTTER
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E2	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E3	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	W	WEDGING

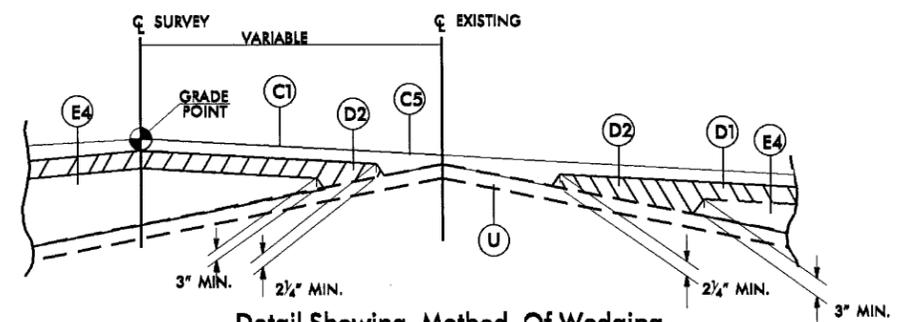
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



Wedging Detail For Resurfacing

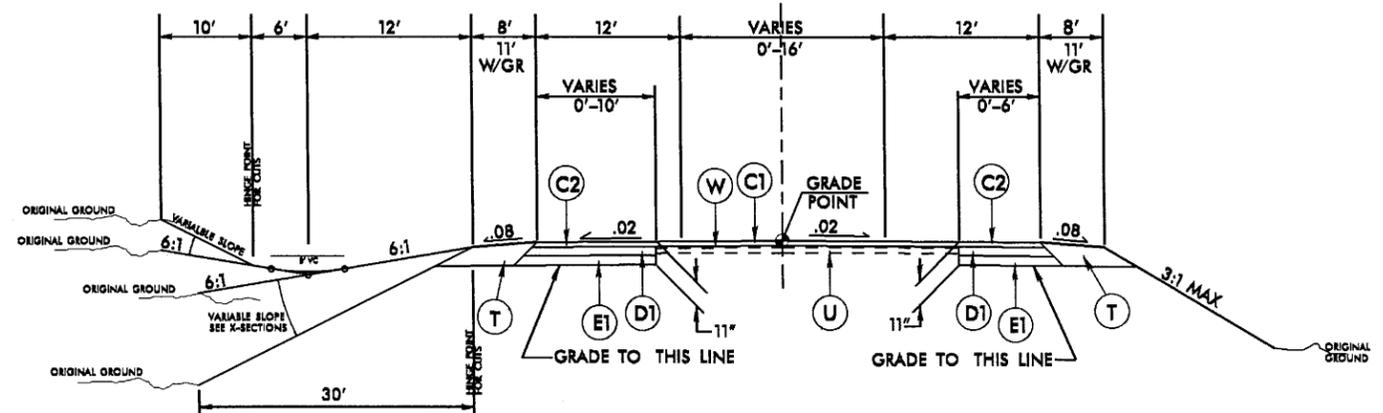


Detail Showing Method of Wedging



Detail Showing Method Of Wedging

CL -L- (HUNTER HILL ROAD)



TYPICAL SECTION NO. 1

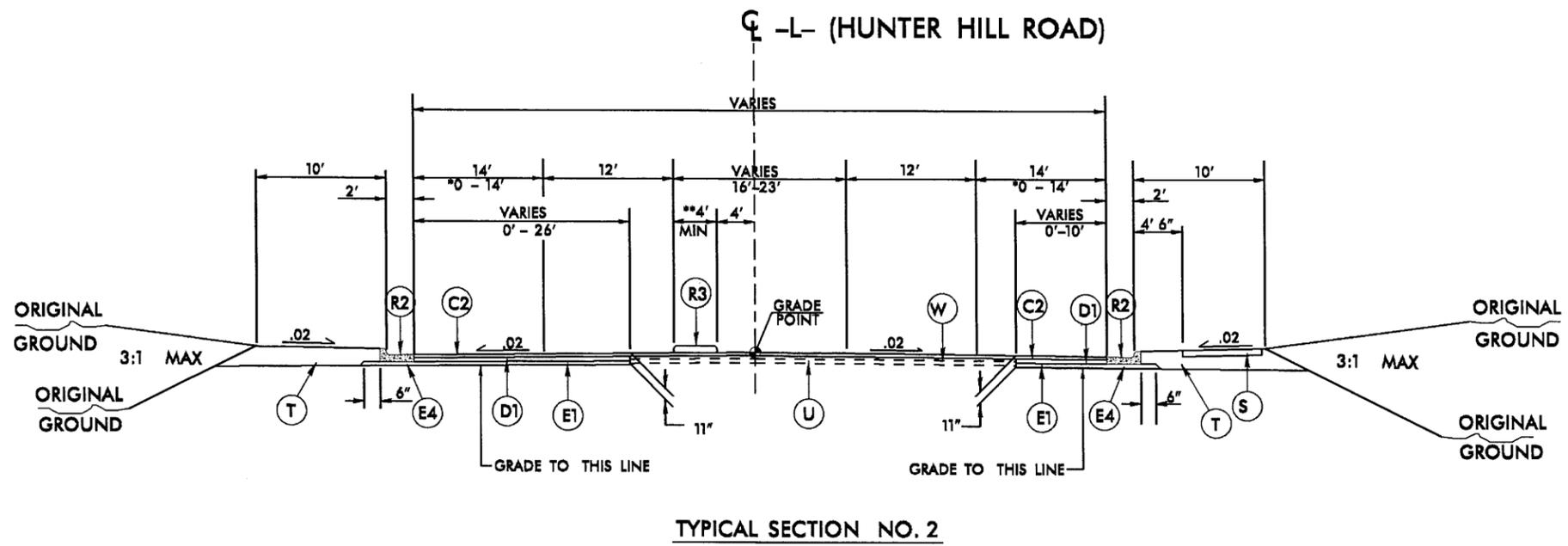
USE TYPICAL NO. 1 AS FOLLOWS :  
-L- STA. 10+56.82 TO STA. 14+66.82

C3-MAY-2010 08:32 3621b.rdl - tujp.dgn

6/2/99

PAVEMENT SCHEDULE	
C1	1 1/2" SF9.5B
C2	3" SF9.5B
C3	2 1/2" SF9.5A
C4	VAR. SF9.5A
C5	VAR. SF9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	4 1/2" B25.0B
E3	5 1/2" B25.0B
E4	VAR. B25.0B
R1	1'-8" C & G
R2	2'-8" C & G
R3	7" MCI
R4	EXIST. ISLAND
R5	EXIST. C&G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

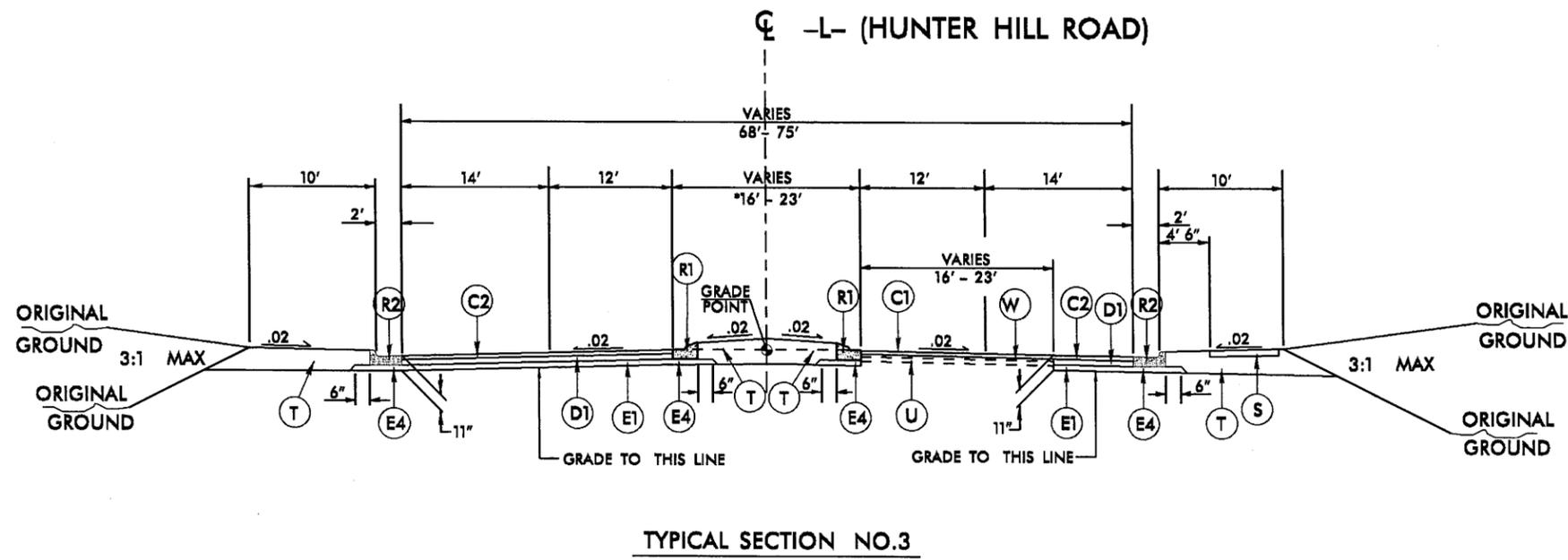
PROJECT REFERENCE NO.	SHEET NO.
U-3621B	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



USE TYPICAL NO. 2 AS FOLLOWS :

- \*-L- STA. 14+66.82 TO STA. 16+69.00
- L- STA. 16+69.00 TO STA. 25+00.00
- L- STA. 30+92.13 TO STA. 33+58.95
- L- STA. 42+27.64 TO STA. 45+00.57
- L- STA. 62+16.63 TO STA. 63+28.73
- L- STA. 76+57.51 TO STA. 78+59.52

\*\*SEE PLANS FOR ISLAND LOCATION AND DIMENSIONS



USE TYPICAL NO. 3 AS FOLLOWS :

- L- STA. 25+00.00 TO STA. 30+92.13
- L- STA. 33+58.95 TO STA. 42+27.64
- L- STA. 45+00.57 TO STA. 48+38.76
- L- STA. 58+67.27 TO STA. 62+16.63
- L- STA. 63+28.73 TO STA. 65+99.91
- L- STA. 74+77.51 TO STA. 76+57.51
- L- STA. 78+59.52 TO STA. 80+06.00

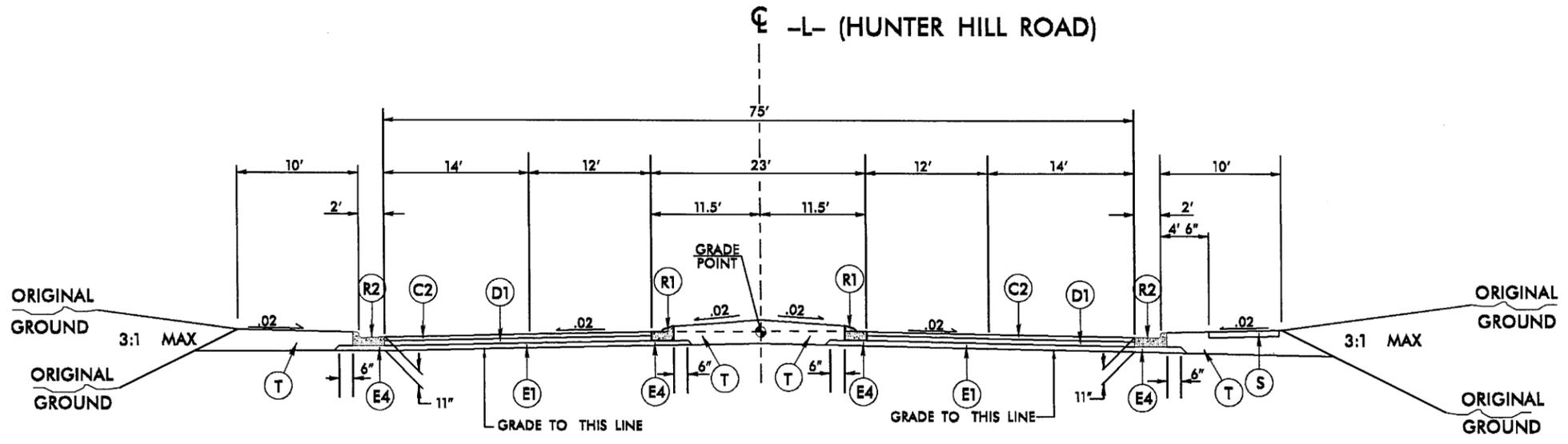
\*SEE PLANS FOR MEDIAN TRANSITIONS

03-MAY-2010 08:12 C:\3621b\_rdy\_tjpl.dgn

6/2/09

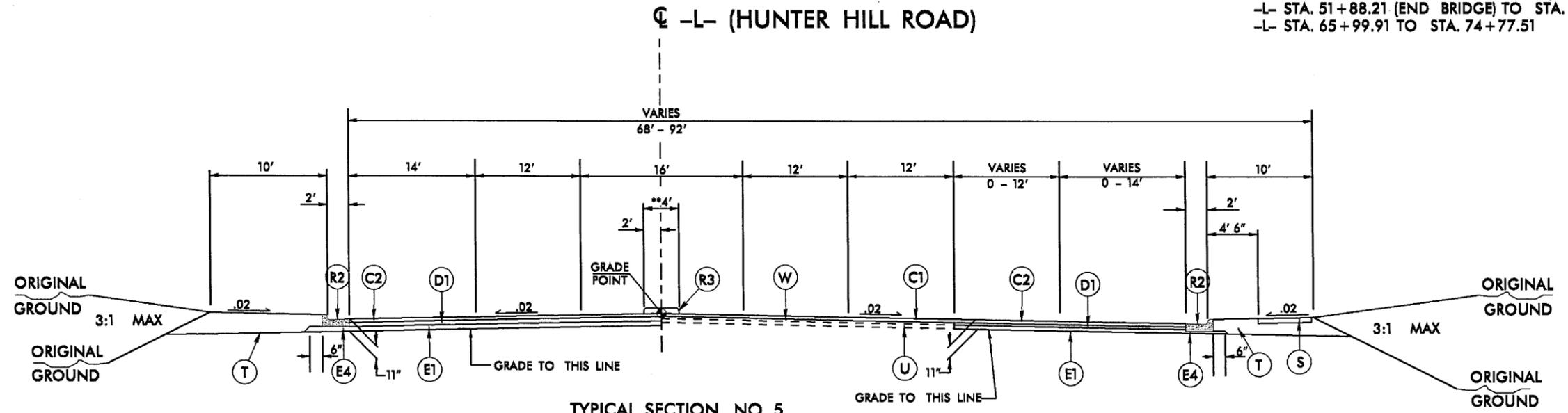
PROJECT REFERENCE NO. U-3621 B	SHEET NO. 2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE	
C1	1 1/2" SF9.5B
C2	3" SF9.5B
C3	2 1/2" SF9.5A
C4	VAR. SF9.5A
C5	VAR. SF9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	4 1/2" B25.0B
E3	5 1/2" B25.0B
E4	VAR. B25.0B
R1	1'-6" C & G
R2	2'-8" C & G
R3	7" MCI
R4	EXIST. ISLAND
R5	EXIST. C&G
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING



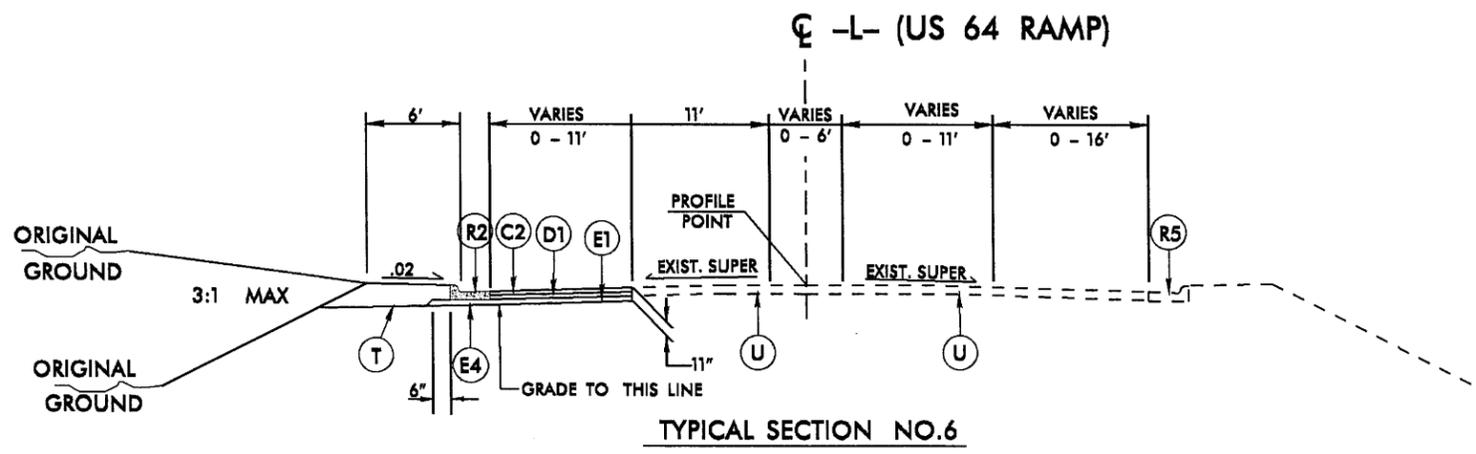
TYPICAL SECTION NO. 4

USE TYPICAL NO. 4 AS FOLLOWS :  
 -L- STA. 48+38.76 TO STA. 49+56.21 (BEGIN BRIDGE)  
 -L- STA. 51+88.21 (END BRIDGE) TO STA. 58+67.27  
 -L- STA. 65+99.91 TO STA. 74+77.51



TYPICAL SECTION NO. 5

USE TYPICAL NO. 5 AS FOLLOWS :  
 -L- STA. 80+06.00 TO STA. 83+24.00  
 \*\*SEE PLANS FOR ISLAND LOCATION AND DIMENSIONS



TYPICAL SECTION NO. 6

USE TYPICAL NO. 6 AS FOLLOWS :  
 -L- STA. 83+24.00 TO STA. 87+14.52

03-MAY-2010 08:32  
 C:\PROJ\CON\PCS\13621b\_rdy\_tup.dgn  
 \$\$\$SUSIFRAME\$\$\$\$



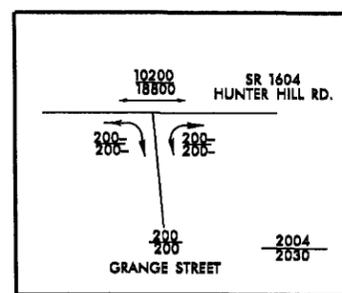
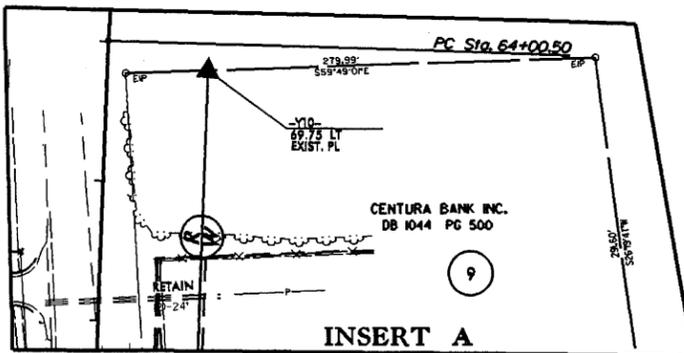




8/17/99

SEE SHEET 10 FOR LINE -L- PROFILE  
SEE SHEET 13 FOR LINES -Y11- AND -Y12- PROFILES

PROJECT REFERENCE NO. U-3621B	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



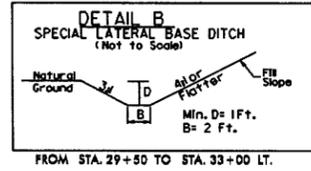
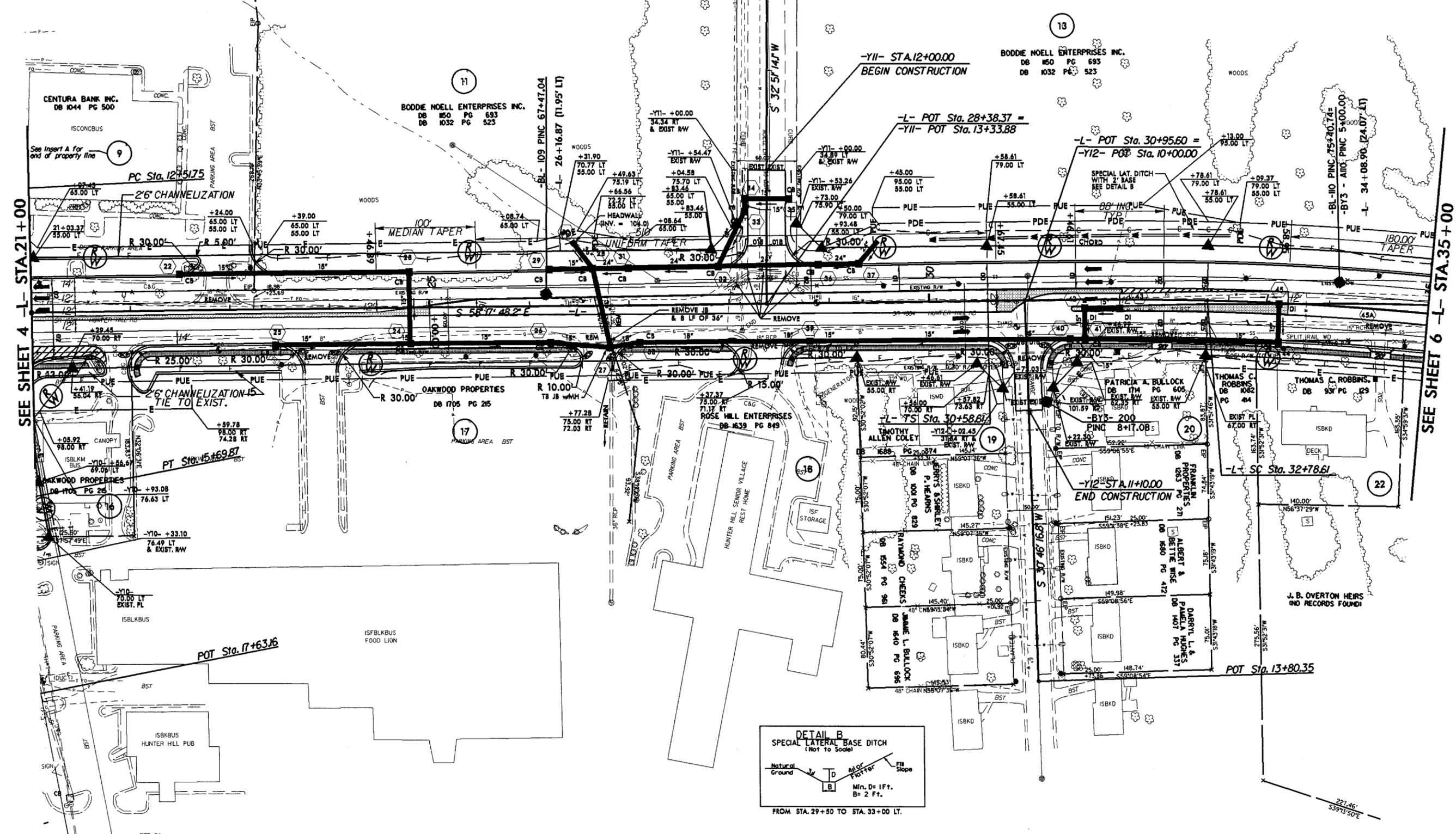
-L- Pis Sta 32+05.29 Os = 2'06'03.0" Ls = 220.00' LT = 146.68' ST = 73.34'	-L- PI Sta 34+30.95 Δ = 5'48'50.0" (RT) D = 154'35.5" L = 304.41' T = 152.34' R = 3,000.00' RO = SEE PLANS	-L- Pis Sta 36+56.37 Os = 2'06'03.0" Ls = 220.00' LT = 146.68' ST = 73.34'
---	---	---



REVISIONS

ROW REVISION 5/3/2010

- Added TCE labeled -Y10- +33.10 / 76.49 LT & EXIST R/W
- Added TCE labeled -Y10- +93.08 / 76.63 LT
- Relabeled R/W monument U3331 -L- 70' RT & EXIST PL
- Added PDE labeled +50.00 / 79 LT and TCE labeled +93.48 / 55' LT
- Relabeled R/W monument U3331 -L- 70' RT & EXIST PL
- Removed PDE labeled +98.56 / 79 LT



SEE SHEET 4 -L- STA. 21+00

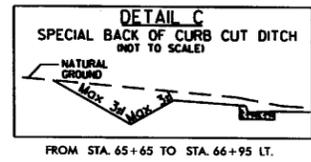
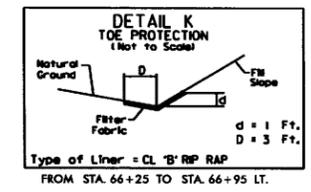
SEE SHEET 6 -L- STA. 35+00





PROJECT REFERENCE NO.	SHEET NO.
U-3621B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

SEE SHEET 11 AND 12 FOR LINE -L- PROFILE  
SEE SHEET 14 FOR LINES -Y16- AND -Y17- PROFILES



TEN THIRTY DEARBORN LTD. PARTNERSHIP  
DB 1276 PG 305  
-L-

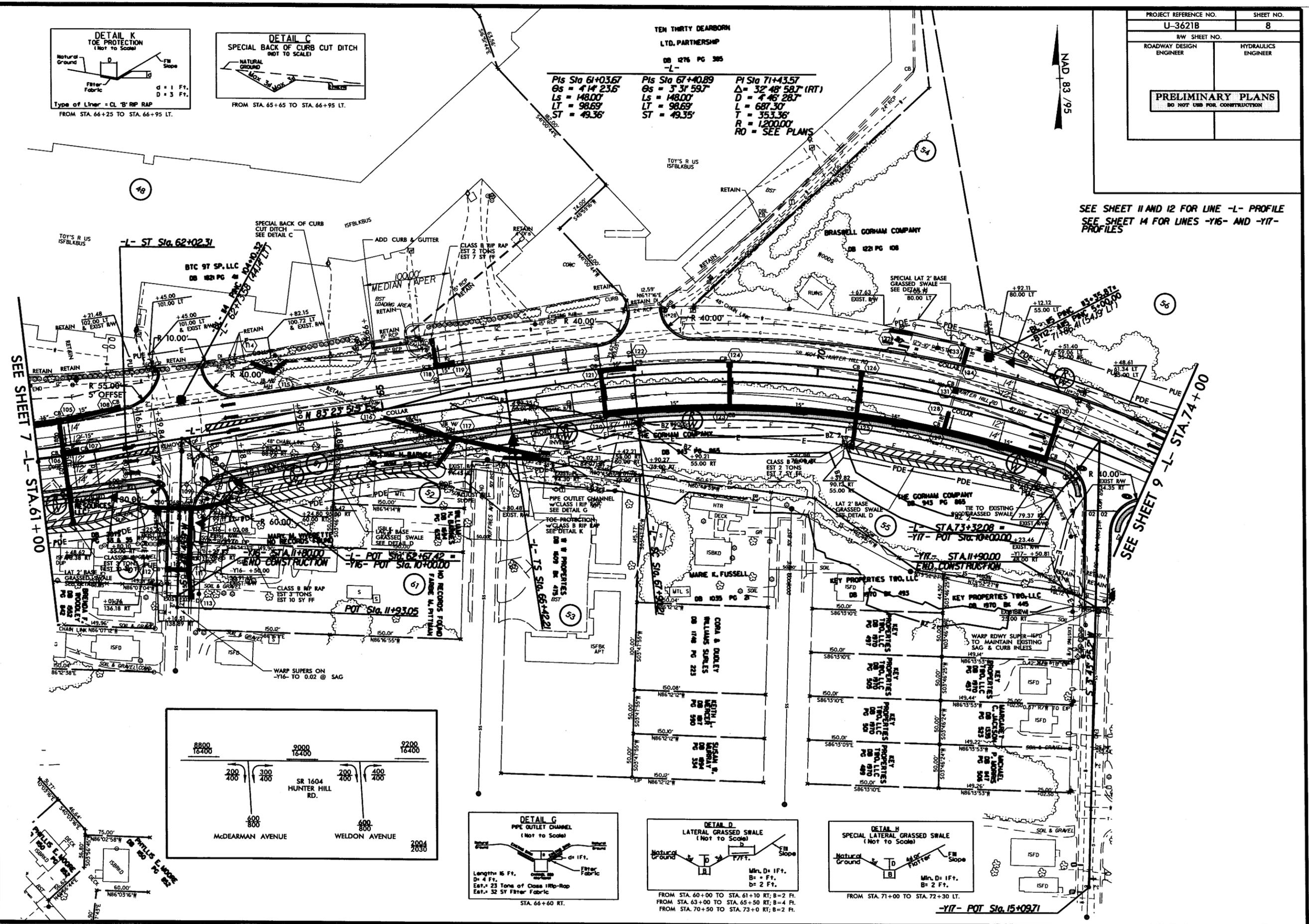
PIS Sta 61+03.67  
 Gs = 4'14" 23.6'  
 Ls = 148.00'  
 LT = 98.69'  
 ST = 49.36'

PIS Sta 67+40.89  
 Gs = 5'3" 59.7'  
 Ls = 148.00'  
 LT = 98.69'  
 ST = 49.35'

PIS Sta 71+43.57  
 Δ = 32'48" 58.7' (RT)  
 D = 4'46" 28.7'  
 L = 687.30'  
 T = 353.36'  
 R = 1200.00'  
 RO = SEE PLANS

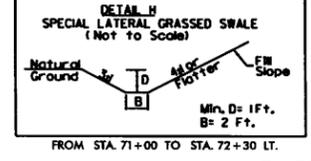
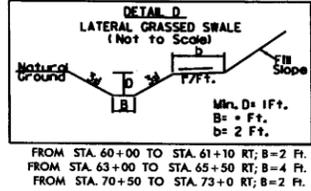
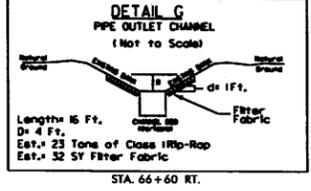
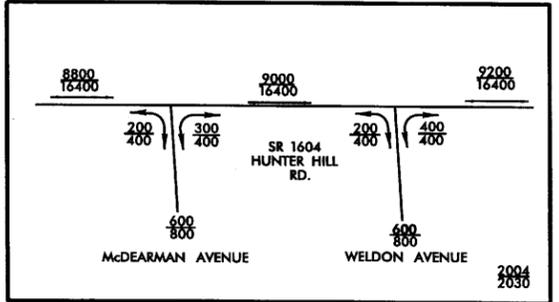
NAD 83 /95

REVISIONS  
 ROW REVISION 6/30/09 ARW-Added PUE labeled +2148/102 LT EXIST R/W and +45.00/101 LT EXIST R/W-Added PUE labeled +0971/92.87 RT and +45.00/101 LT and +0176/136.8 RT-Added PUE labeled +1651/138.89 LT-Added PUE labeled +921/80.00 LT-Changed TCE labeled +2148/102 LT & EXIST R/W to +45.00/101 LT  
 \*Removed TCE labeled +17.42/73.77 RT-Removed TCE labeled -Y16- +50.00/30.67 RT & EXIST R/W  
 \*Removed TCE labeled +51.40/59.06' /55' LT and TCE labeled +48.61/61.34' LT/55' LT



SEE SHEET 7 -L- STA. 61+00

SEE SHEET 9 -L- STA. 74+00



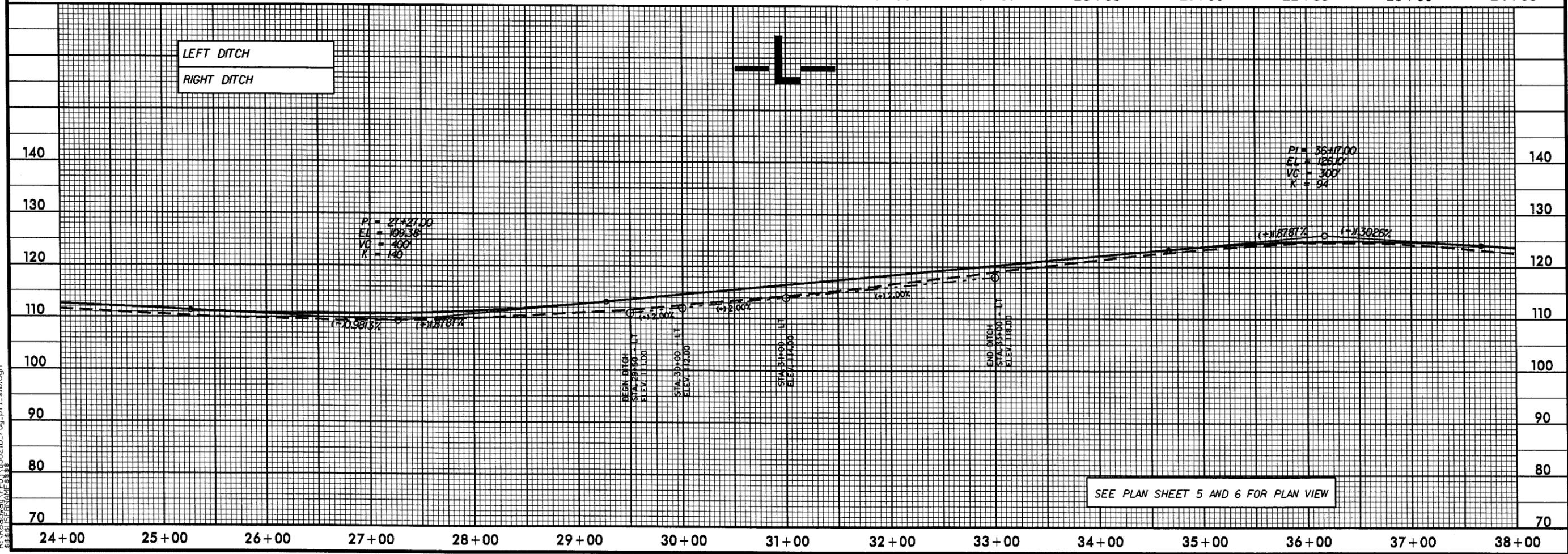
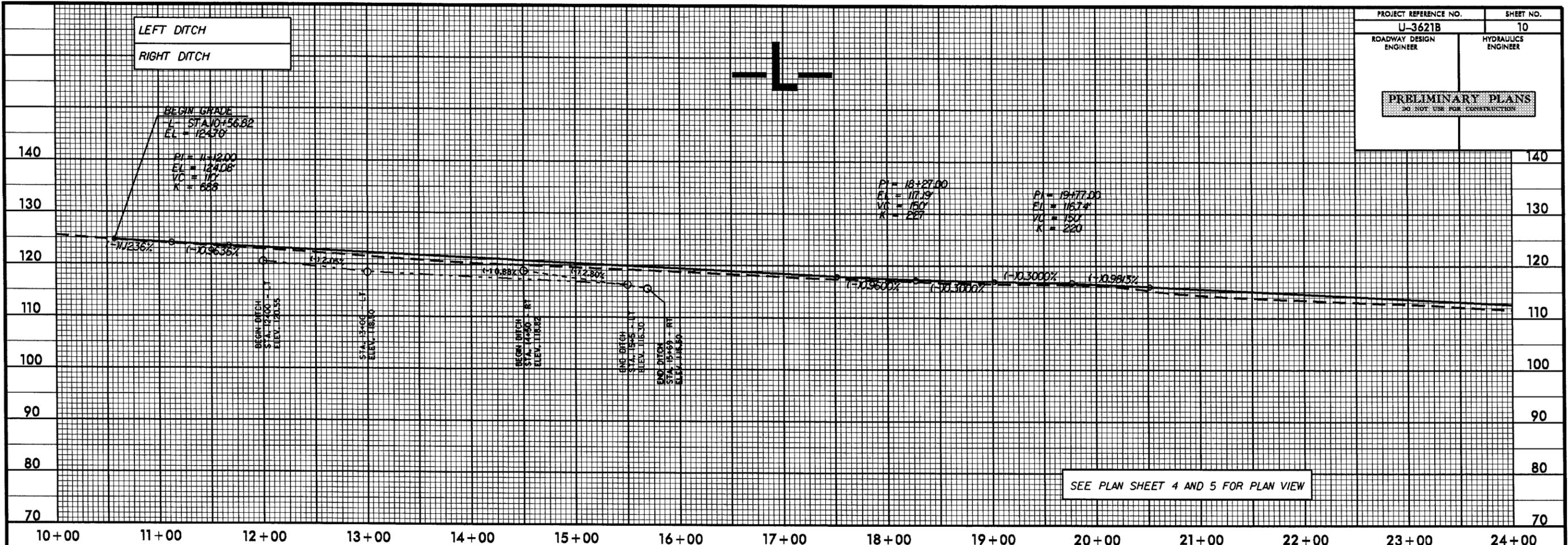
-Y17- POT Sta. 15+09.71

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PROJECT REFERENCE NO. <b>U-3621B</b>	SHEET NO. <b>10</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	



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88351518.dwg

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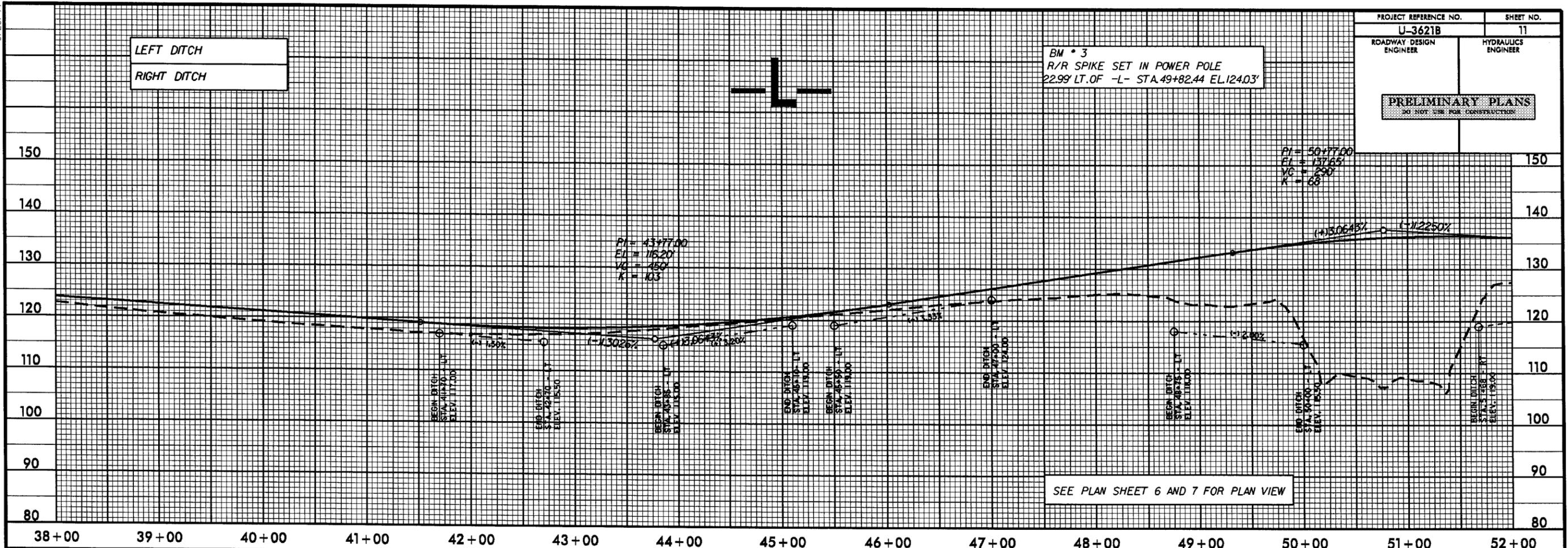
PROJECT REFERENCE NO. <b>U-3621B</b>	SHEET NO. <b>11</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

BM \* 3  
R/R SPIKE SET IN POWER POLE  
22.99' LT. OF -L- STA. 49+82.44 EL. 124.03'

PI = 50+77.00  
EI = 137.65'  
VC = 290'  
K = 68

PI = 43+77.00  
EI = 116.20'  
VC = 450'  
K = 103

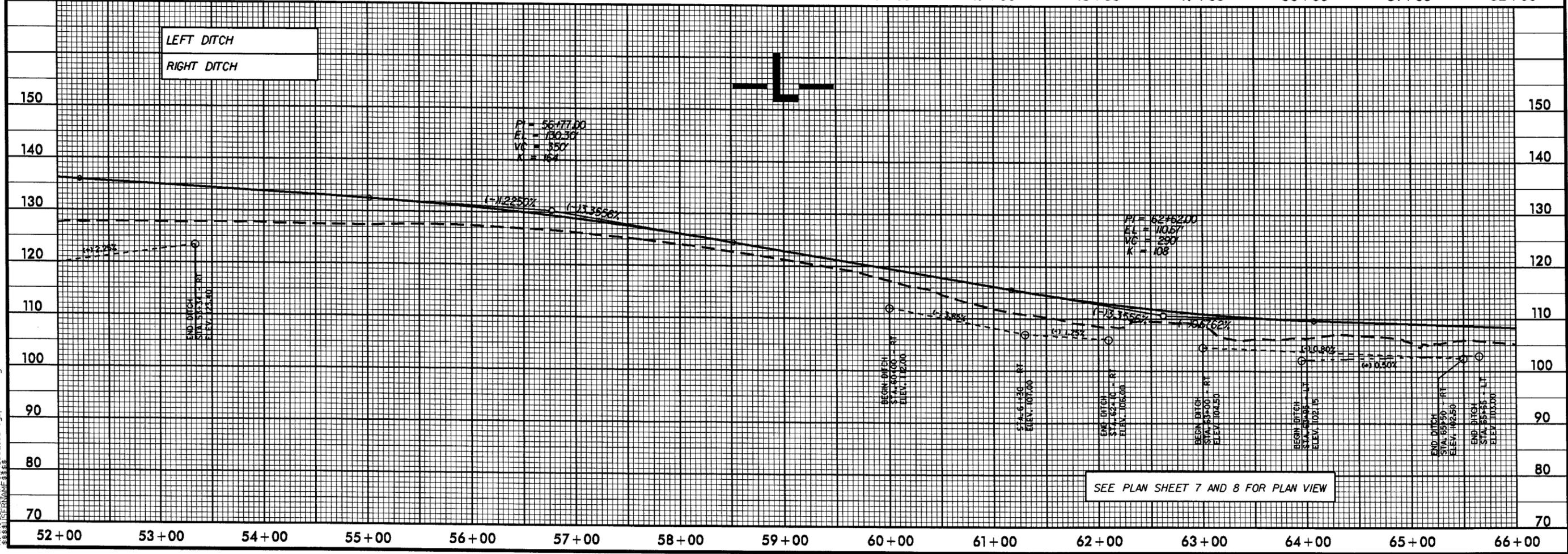
LEFT DITCH  
RIGHT DITCH



LEFT DITCH  
RIGHT DITCH

PI = 56+77.00  
EI = 130.30'  
VC = 350'  
K = 164

PI = 62+76.20  
EI = 110.67'  
VC = 290'  
K = 108



SEE PLAN SHEET 7 AND 8 FOR PLAN VIEW

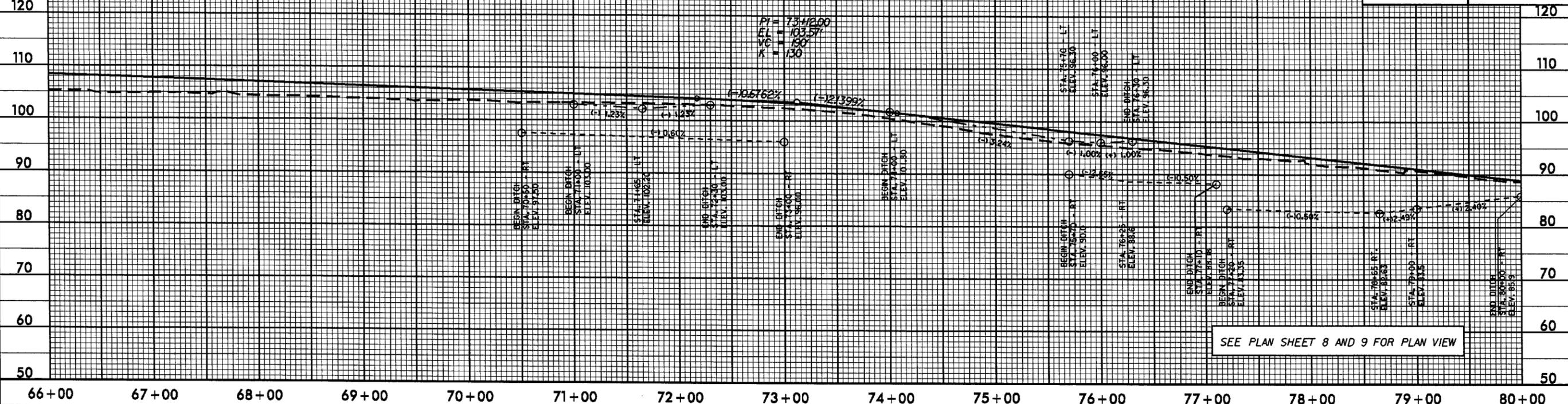
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5/28/99

PROJECT REFERENCE NO. <b>U-3621B</b>	SHEET NO. <b>12</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

LEFT DITCH  
RIGHT DITCH

BM \* 4  
R/R SPIKE SET IN POWER POLE  
23.96' LT. OF -L- STA.77+92.18 EL.91.87'

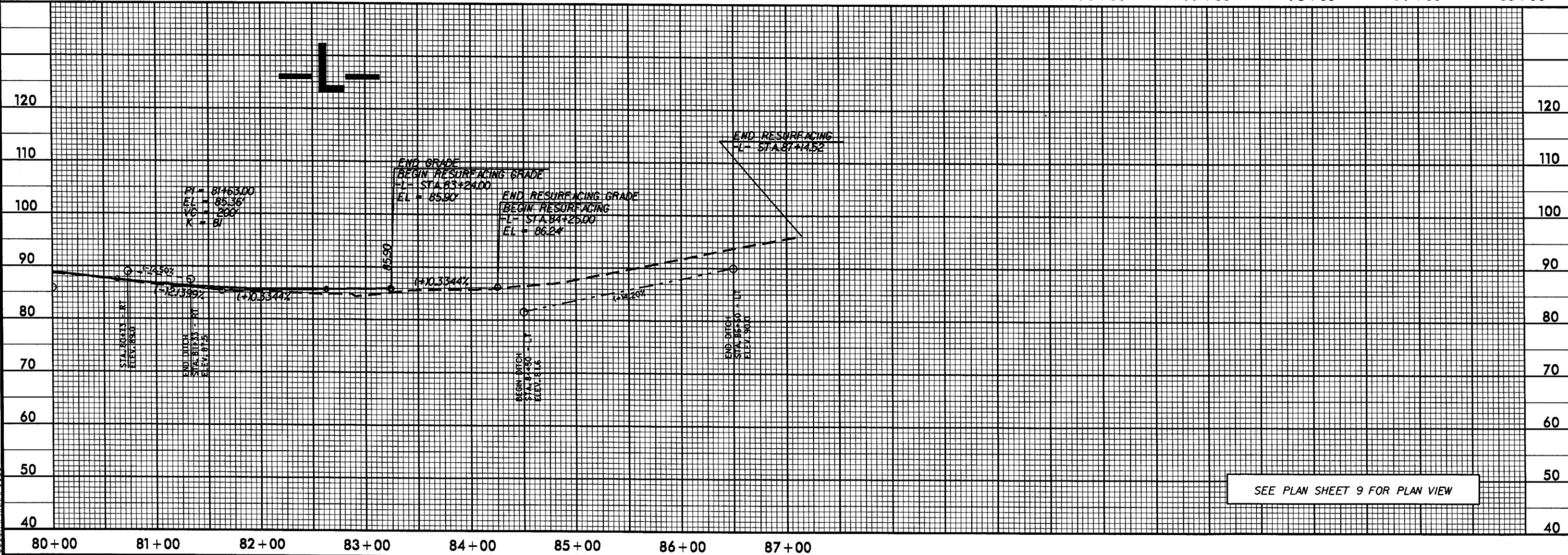


PI = 81+63.00  
EL = 95.36'  
VC = 200'  
K = 81

END GRADE  
BEGIN RESURFACING GRADE  
L- STA.83+24.00  
EL = 85.90

END RESURFACING GRADE  
BEGIN RESURFACING  
L- STA.84+29.00  
EL = 86.24

END RESURFACING  
L- STA.87+14.52



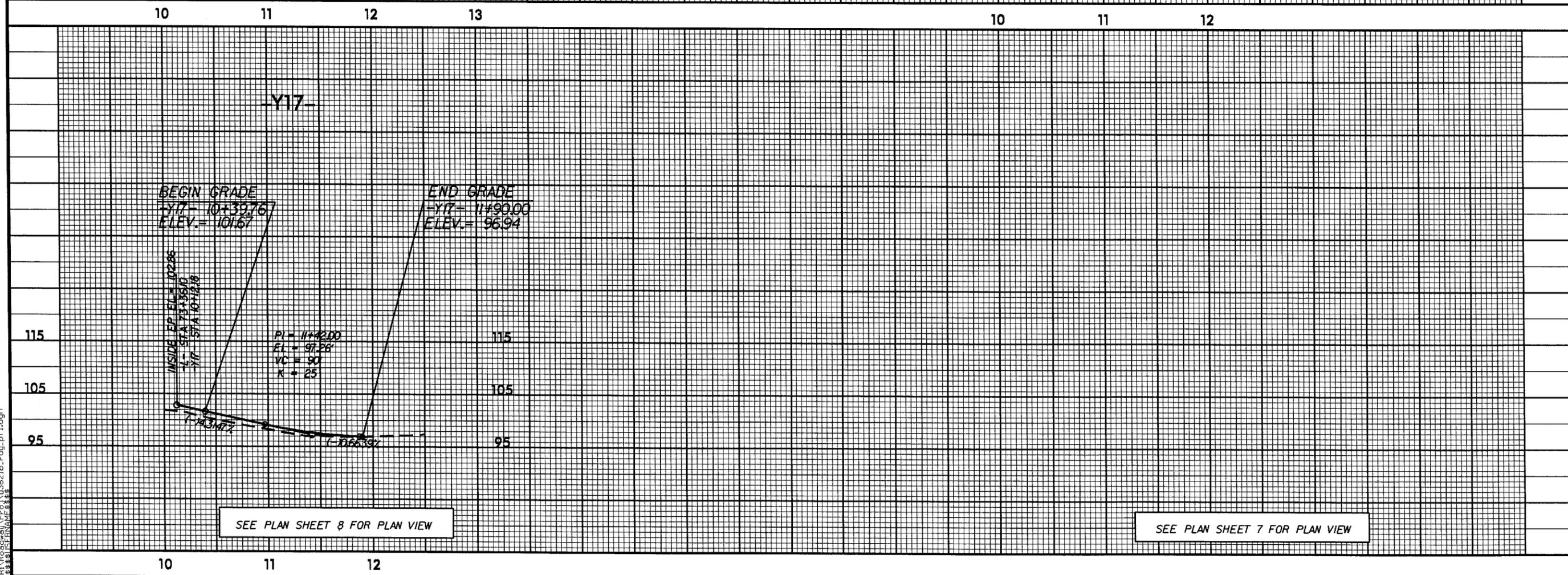
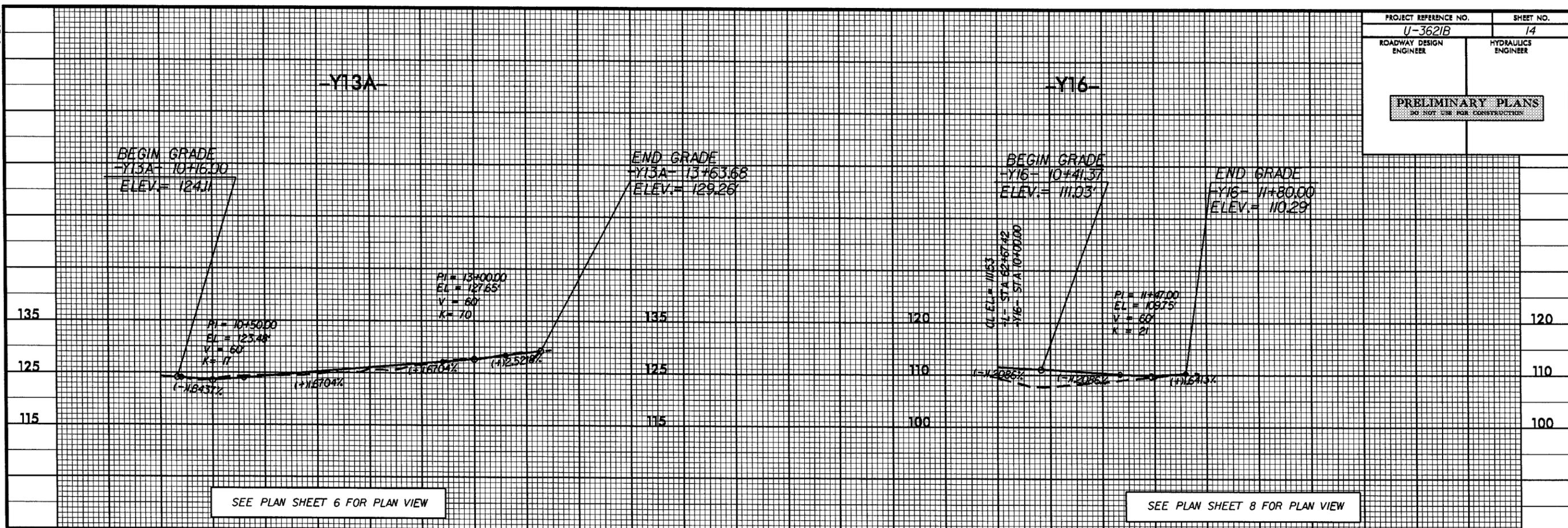
SEE PLAN SHEET 9 FOR PLAN VIEW

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5/28/99

PROJECT REFERENCE NO. U-3621B	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	



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