



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

November 5, 2009

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

ATTN: Mr. Steve Lund  
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 23 and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 145 over Wiley Branch Creek on SR 1121 (Cabarrus Station Road) in Cabarrus County, Federal Aid Project No. BRZ-1121(8); Division 10; TIP No. B-4048; \$570.00 debit WBS 33414.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 145 over Wiley Branch Creek on Cabarrus Station Road (SR 1121), with a three barrel reinforced concrete box culvert (RCBC). There will be 238 feet of permanent stream impacts due to installation of the culvert.

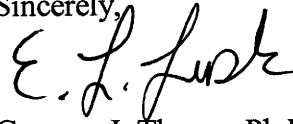
Please see enclosed copies of the Pre-Construction Notification (PCN) Form, Ecosystem Enhancement Program Acceptance Letter, Stormwater Management Plan and Permit drawings. The Categorical Exclusion (CE) was completed on April 2009, documents were distributed shortly thereafter. Additional copies are available upon request.

Please note that this project is an accelerated bridge project on NCDOT's Maintenance of Effort list. The NCDOT Administration has deemed these projects highest priority.

This project calls for a letting date of March 16, 2010 and a review date of January 26, 2010, however the let date may advance as additional funding becomes available.

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 Jennifer Harrod at (919) 431-6672.

Sincerely,



Gregory J. Thorpe, Ph.D.  
Environmental Management Director, PDEA

w/attachment

Mr. Brian Wrenn, NCDWQ (5 copies)  
Ms. Marla Chambers, NCWRC  
Ms. Marella Buncick, USFWS

w/o attachment (see permit website for attachments)

Dr. David Chang, P.E., Hydraulics  
Mr. Mark Staley, Roadside Environmental  
Mr. Victor Barbour, P.E., Project Services Unit  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Barry Moose, P.E., Division 10 Engineer  
Mr. Larry Thompson, Division 10 Environmental Officer  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Majed Alghandour, P. E., Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Mr. Scott McLendon, USACE, Wilmington  
Ms. Natalie Lockhart, Project Planning Engineer  
Ms. Beth Harmon, EEP  
Mr. Phillip Ayscue, NCDOT External Audit Branch



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: 23 or General Permit (GP) number:		
1c. Has the NWP 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 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 type="checkbox"/> No

#### 2. Project Information

2a. Name of project:	Replacment of Bridge 145 over Wiley Branch Creek on SR 1121 (Cabarrus Station Road)
2b. County:	Cabarrus
2c. Nearest municipality / town:	Midland
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4048

#### 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) 431-6672
3g. Fax no.:	(919) 431-2002
3h. Email address:	jwharrod@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: 35.22 (DD.DDDDDD) Longitude: - 80.57 (-DD.DDDDDD)
1c. Property size:	555.27'L x 85.46' W = 47,453.37 sq. ft. (47,453.37) / (43,650) = 1.09 acres
<b>2. Surface Waters</b>	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Wiley Branch Creek
2b. Water Quality Classification of nearest receiving water:	C
2c. River basin:	Yadkin-Pee Dee
<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: Medium Density Detached Dwellings; Hay and Pasture Land; Oak-Pine	
3b. List the total estimated acreage of all existing wetlands on the property: 0	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 238 feet	
3d. Explain the purpose of the proposed project: The bridge's structural appraisal scored 2 out of 9 and the deck geometry is 3 out of 9 making this bridge considered structurally deficient and functionally obsolete. The purpose of this project is to replace the bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 40-foot bridge with a 63-foot, 3-barrel reinforced concrete box culvert of which the third barrel will be used as a high flow channel. There will be widening of the stream above and below the culvert to accommodate the culvert. Traffic will be maintained utilizing an off site detour. The roadway grade of the new structure will be approximately 2 feet higher than the existing grade. Standard road building equipment, such as trucks, dozers, 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:	<input type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> 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.	
<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.

### 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 <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:

#### 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 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Installation of RCBC	Wiley Branch Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	19	238
Site 2 <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 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		
Site 5 <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 6 <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>						238 Perm 0 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 <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.

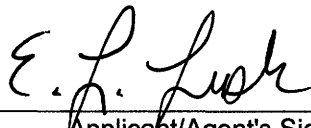
6a. Project is in which protected basin?		<input type="checkbox"/> Neuse <input type="checkbox"/> Catawba		<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman		<input type="checkbox"/> Other:	
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)		
B1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No				
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No				
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No				
<b>6h. Total buffer impacts</b>							
6i. Comments:							

<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. The third barrel has a low flow sill; the culvert is designed to accommodate aquatic life passage; an off site detour will be used; The project's drainage consists of closed storm drain systems and grass lined road side ditches.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Bridge No. 145 is constructed entirely of timber and should be possible to remove with no resulting debris in the water based on standard demolition.		
<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:	238 linear feet	
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):	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:		
<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?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
<b>6f. Total buffer mitigation required:</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).				
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	<input 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 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: Categorical Exclusion dated April 2009	<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.  Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.	
<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 checked="" type="checkbox"/> Yes	<input 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?  <a href="http://www.fws.gov/nc-es/es/countyfr.html">http://www.fws.gov/nc-es/es/countyfr.html</a> ; Field investigations within the project study area were conducted by EcoScience Corporation for NCDOT on July 9, 2004 and September 13, 2004. Two T/E species are listed for Cabarrus county. The Carolina Heelsplitter and Schweinitz's Sunflower both with a Bio. Conclusion is No Effect.		
<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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
<b>8. Flood Zone Designation (Corps Requirement)</b>		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements:		
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 <small>(Agent's signature is valid only if an authorization letter from the applicant is provided.)</small>	11.5.09 Date



November 3, 2009

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

**B-4048**, Replace Bridge Number 145 over Clear Creek on SR 1121 (Cabarrus Station Road), Cabarrus 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 November 3, 2009, the impacts are located in CU 03040105 of the Yadkin River Basin in the Southern Piedmont (SP) Eco-Region, and are as follows:

Yadkin 03040105 SP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	238	0	0	0	0	0
Mitigation Units (Credits-up to 2:1)	0	0	476	0	0	0	0	0

EEP commits to implementing sufficient compensatory stream mitigation credits to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the North Carolina 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. 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. Steve Lund, USACE – Asheville Regulatory Field Office  
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit  
File: B-4048

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



# STORMWATER MANAGEMENT PLAN

October 27, 2009

Project: 33414.1.1

TIP No.: B-4048

County: Cabarrus

Hydraulics Project Manager: Kevin Alford, PE (Mulkey Engineers and Consultants)  
Marshall W. Clawson, PE (NCDOT Hydraulics Unit)

## ROADWAY DESCRIPTION

The project B-4048 consists of constructing a new 3@11'x11' RCBC culvert to replace the existing bridge #145 in Cabarrus County on SR 1121 (Cabarrus Station Road) over Wiley Branch Creek. The total project length is 0.104 miles. The project creates impacts to Wiley Branch Creek (which is located in the Yadkin River Basin). The project drainage consists of closed storm drain systems and road side ditches.

## ENVIRONMENTAL DESCRIPTION

The project is located within the Yadkin River Basin, which no buffer regulations have been implemented. Wiley Branch Creek is the only stream crossing on this project. Wiley Branch Creek is listed on the NCDENR classifications list as a Class C. Wiley Branch Creek is not listed on the 303(d) list for impaired streams. There are no wetland sites on this project. Impacts to the stream have been minimized by using grass lined road side ditches and designing the culvert for aquatic life passage.

## BEST MANGEMENT PRACTICES AND MAJOR STRUCTURE

The primary goal of Best Management Practices (BMP's) is to prevent degradation of the states surface waters by location, construction and operation of the highway system. The BMP's are activities, practices and procedures taken to prevent or reduce stormwater pollution. The BMP measures used on this project to reduce stormwater impacts are:

- ***Grass lined ditches***

Grass lined ditches stabilized with PSRM were used to treat the water before entering into the stream.

- ***Major Structure***

A 3@11'x11' RCBC will be placed at 22+52 -L- in order to replace the existing bridge that is constructed of steel I-beams. The existing bridge has vertical timber abutments with support piers next to the abutments. The proposed culvert will have a sill in one cell and two low flow cells to replicate the normal depth of flow in the stream. The inlet and outlet channel will be benched and lined with coir fiber matting



8/7/08/44

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

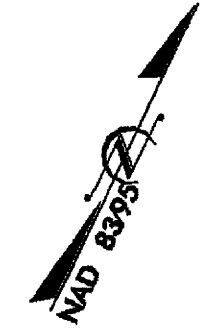
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4048	1	
STATE PROJECT	P.A. REFERENCE	DESCRIPTION	
33414.1.1	BRZ-1121(8)	PE	
33414.2.1	BRZ-1121(8)	RAW & UTILITIES	

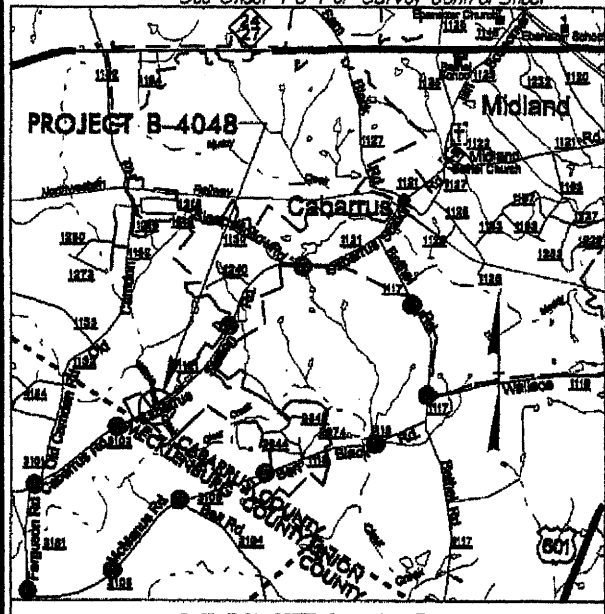
**CABARRUS COUNTY**

LOCATION: BRIDGE NO. 145 OVER WILEY BRANCH CREEK ON  
 SR 1121 (CABARRUS STATION ROAD)

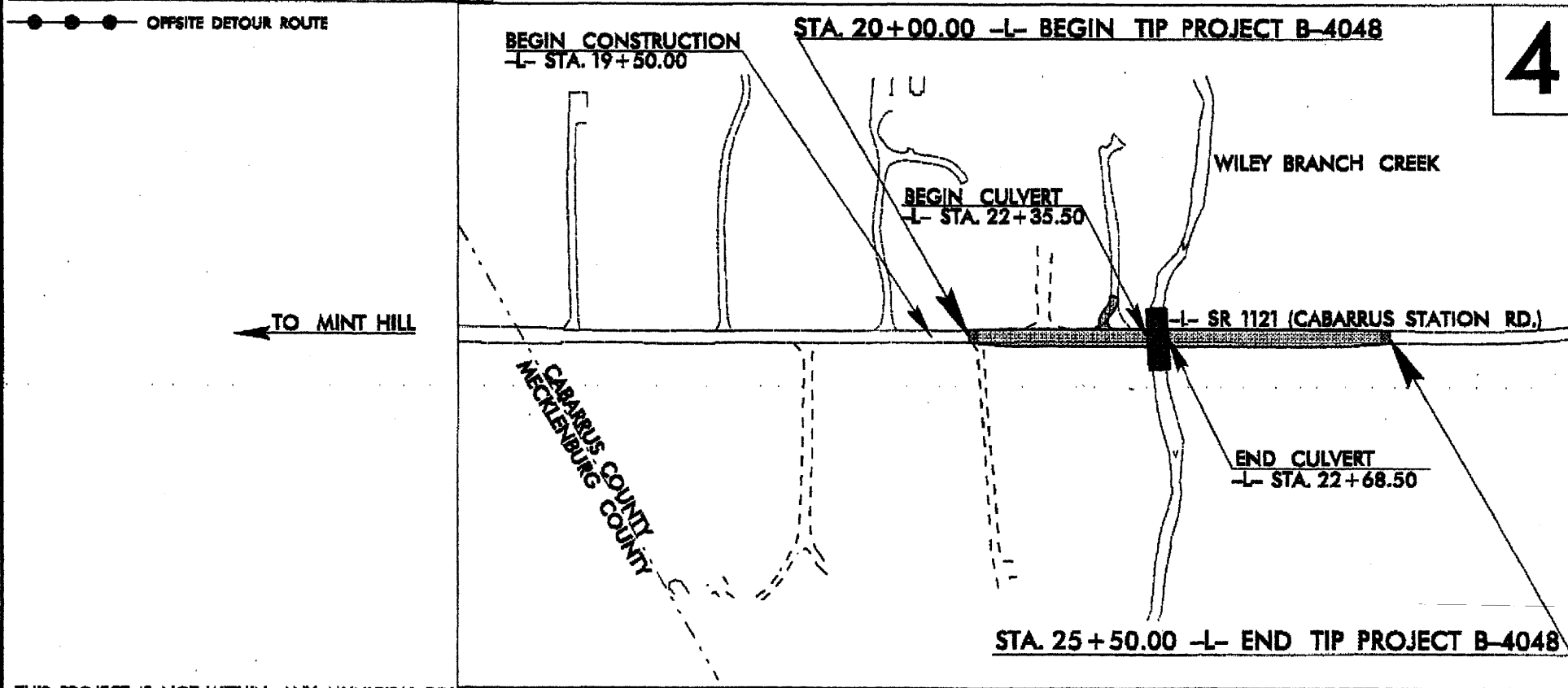
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT



TIP PROJECT: B-4048

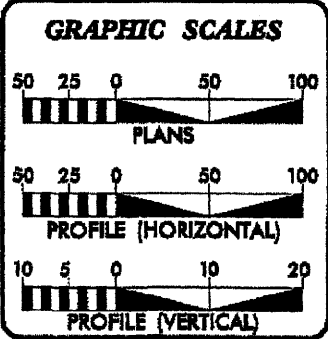


VICINITY MAP



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
 DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL AND STOPPING SIGHT DISTANCE.  
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

INCOMPLETE PLANS  
 DO NOT USE FOR R/W ACQUISITION  
 PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION



**DESIGN DATA**

ADT 2010 = 1145
ADT 2025 = 1600
DHV = 10 %
D = 60 %
T = 3 %
V = 50 MPH
" TTST 1% DUAL 2%
"SUB-REGIONAL TIER"

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4048 = 0.098 MI.
LENGTH STRUCTURE TIP PROJECT B-4048 = 0.006 MI.
TOTAL LENGTH OF TIP PROJECT B-4048 = 0.104 MI.

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
 1890 Birch Ridge Dr., Raleigh NC, 27618

2004 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
 NOVEMBER 2, 2009

LETTING DATE:  
 MARCH 16, 2010

JAMES A. SPEER, PE  
 PROJECT ENGINEER

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

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

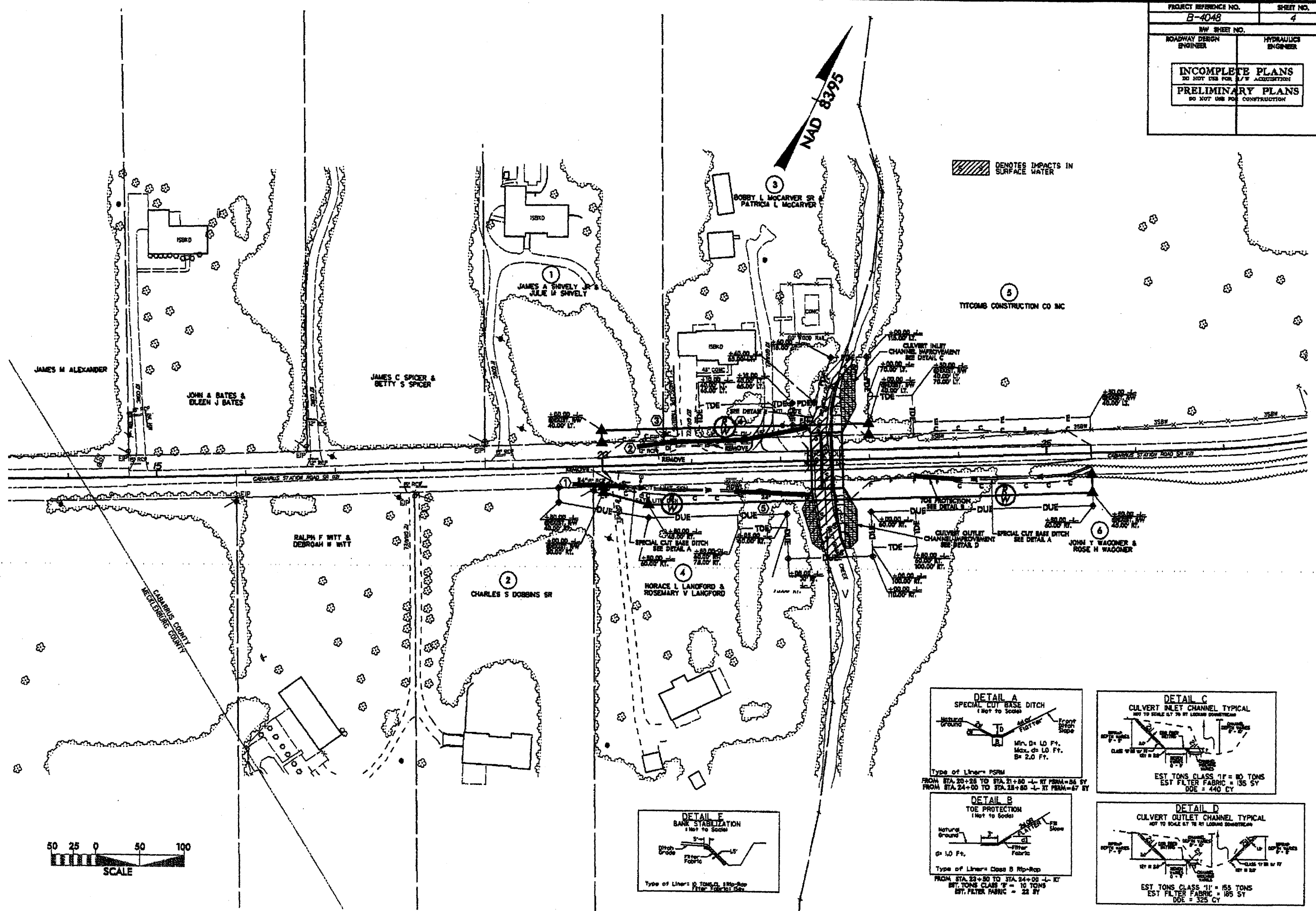
STATE HIGHWAY DESIGN ENGINEER

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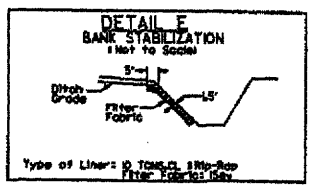
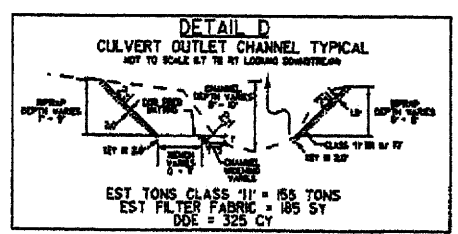
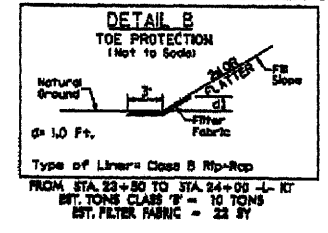
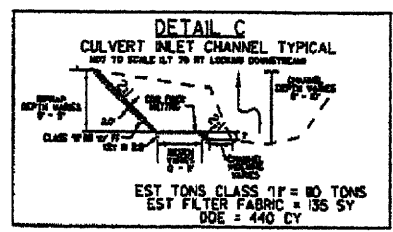
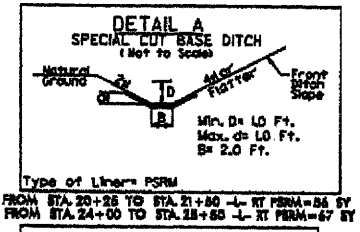
CONTRACT:

8/17/99

PROJECT REFERENCE NO. B-4048	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/E/T ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



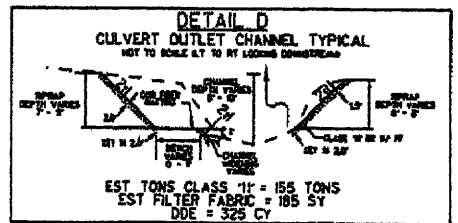
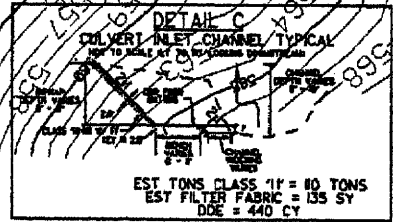
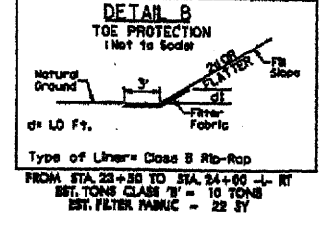
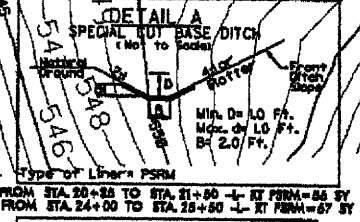
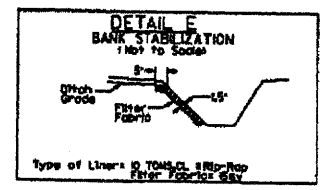
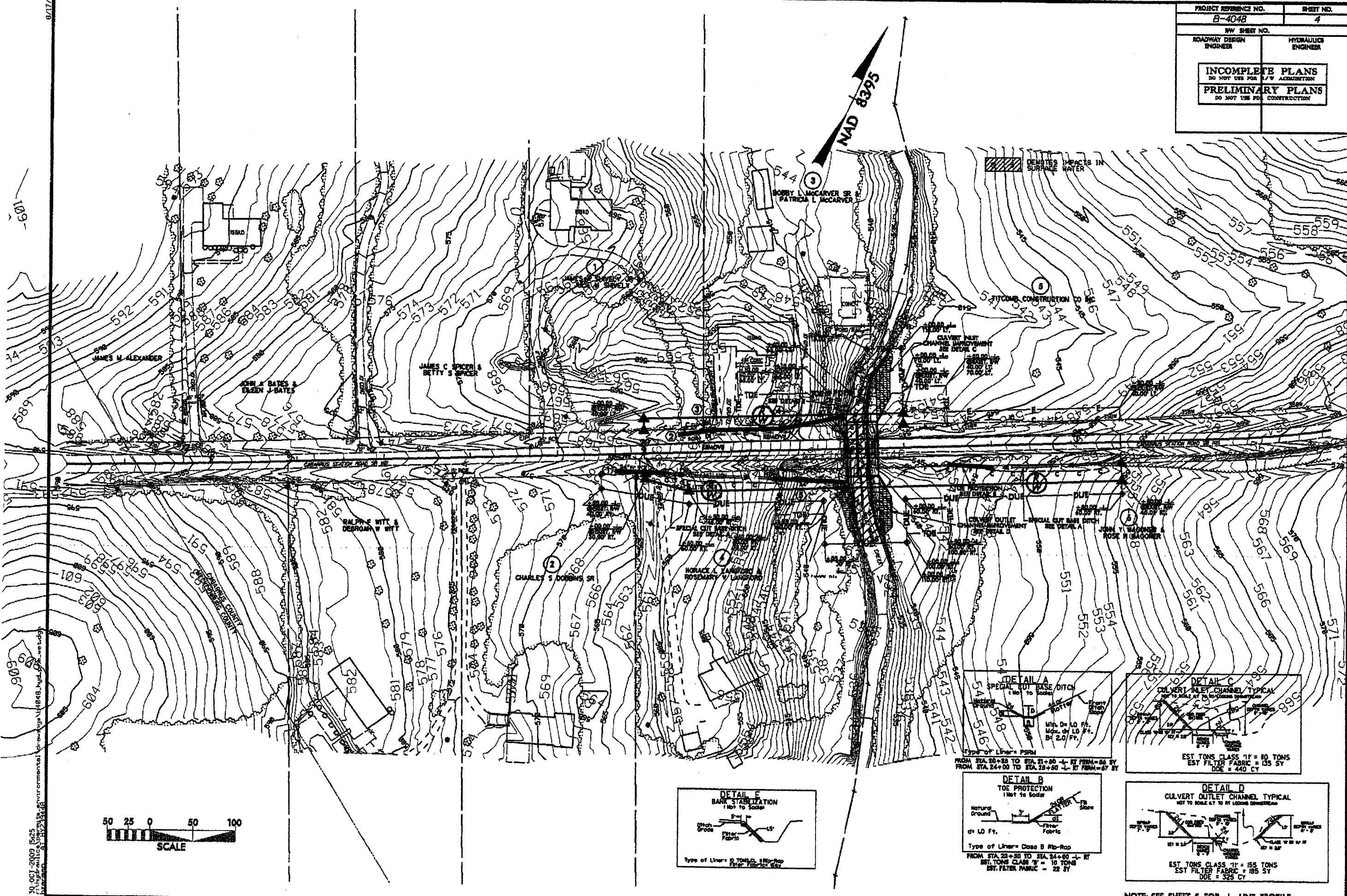
/// DENOTES IMPACTS IN SURFACE WATER



NOTE: SEE SHEET 5 FOR -L- LINE PROFILE  
SEE SHEETS C-1 THRU C- FOR CULVERT PLANS

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jag

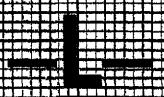
PROJECT REFERENCE NO. B-4048	SHEET NO. 4
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/E/W ADJUSTMENT <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



NOTE: SEE SHEET 5 FOR -L- LINE PROFILE  
SEE SHEETS C-1 THRU C- FOR CULVERT PLANS

5/14/99

PROJECT REFERENCE NO. <b>B-4048</b>	SHEET NO. <b>5</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



BM ELEVATION = 682.24  
 N 837897 E 1591095  
 M STATION 5+26.58 LEFT  
 I STATION 10+74.40 30.77' LEFT  
 NO SPIKE IN POWER POLE

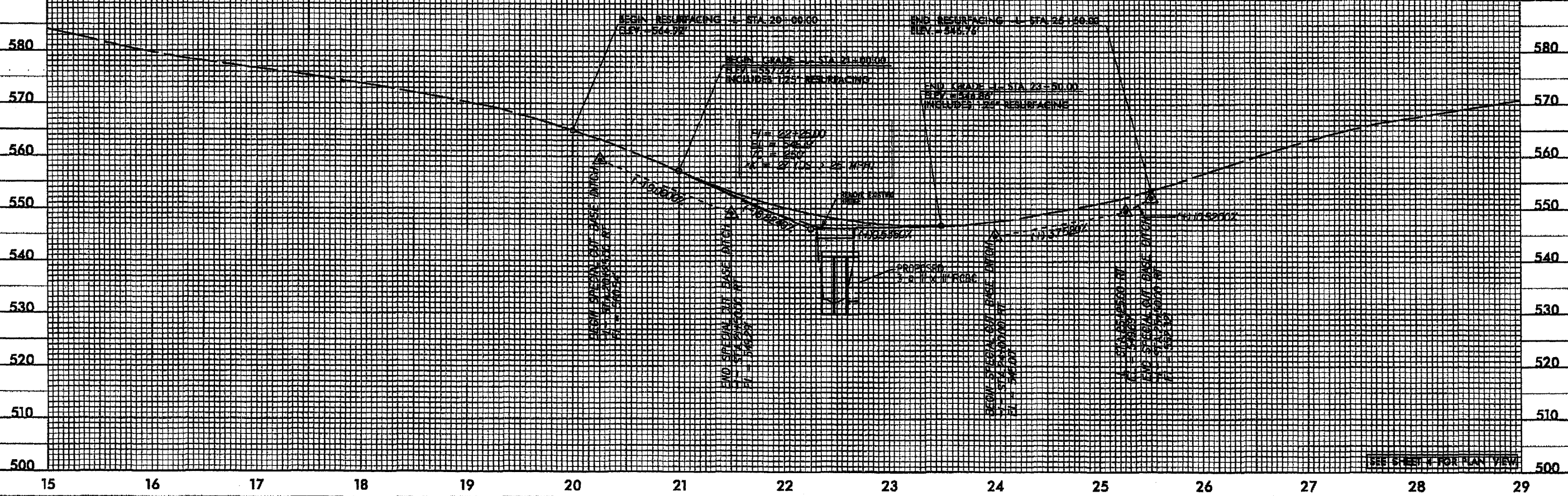
**CULVERT HYDRAULIC DATA**

DESIGN DISCHARGE	=	2200	CFS
DESIGN FREQUENCY	=	1%	YES
DESIGN HW ELEVATION	=	543.8	FT
BASE DISCHARGE	=	2100	CFS
BASE FREQUENCY	=	1%	YES
BASE HW ELEVATION	=	542.0	FT
OVERTOPPING DISCHARGE	=	1000	CFS
OVERTOPPING FREQUENCY	=	10%	YES
OVERTOPPING ELEVATION	=	546.0	FT

BM ELEVATION = 682.68  
 N 588660 E 632830  
 M STATION 25+14.36 LEFT  
 I STATION 30+42.47 22.12' LEFT  
 NO SPIKE IN BASE OF 15 INCH DAW

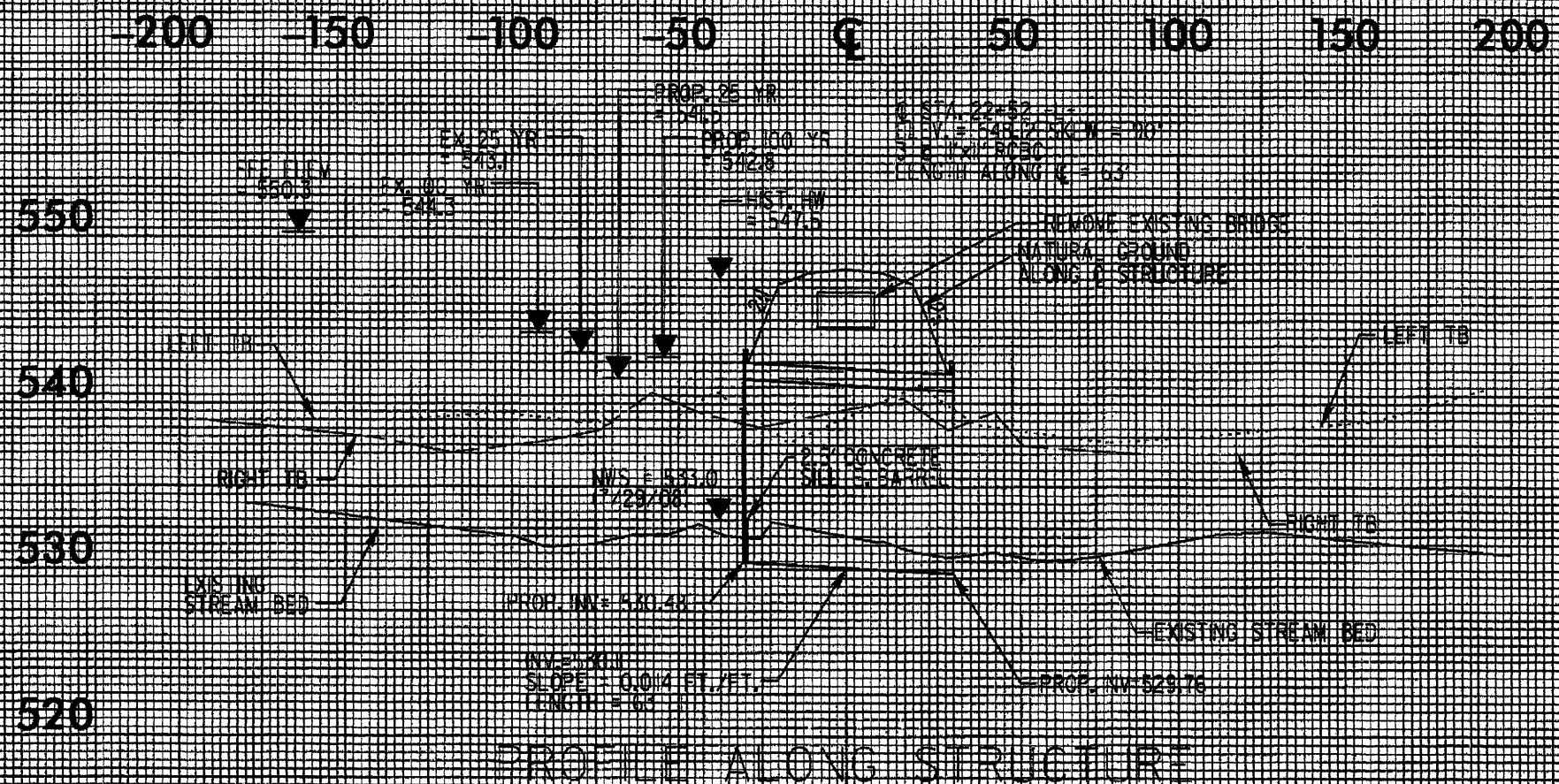
BM ELEVATION = 526.18  
 N 458407 E 1553086  
 M STATION 20+21.50 LEFT  
 I STATION 22+02.27 39.44' LEFT  
 NO SPIKE IN POWER POLE

**TOPSOIL PROTECTION REQUIRED FOR DAG VERTICAL CURVE**



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 5/14/99

SEE SHEET 4 FOR PLAN VIEW



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# PROPERTY OWNERS

## NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
3	BOBBY L McCARVER SR & PATRICIA L McCARVER	14450 Cabarrus Station Rd. Midland, NC 28107
4	HORACE L LANGFORD & ROSEMARY V LANGFORD	14455 Cabarrus Station Rd. Midland, NC 28107
5	TITCOMB CONSTRUCTION CO INC	6401 Orr Rd. Charlotte, NC 28213
6	JOHN Y WAGONER & ROSE H WAGONER	405 13th Avenue South North Myrtle Beach, SC 29852
1	JAMES A. SHIVELY, JR & JULIE M. SHIVELY	14470 CABARRIS STATION ROAD MIDLAND, NC 28107
2	CHARLES S. DOBBINS, SR	14475 CABARRUS STATION ROAD MIDLAND, NC 28107

NCDOT

DIVISION OF HIGHWAYS

CABARRUS COUNTY

PROJECT: 33414.1.1 (B-4048)

CULVERT OVER

WILEY BRANCH CREEK ON SR 1121

(CABARRUS STATION ROAD)

Permit Drawing

Sheet 6 of 7

SHEET

OF

10/23/09



69,785/99

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

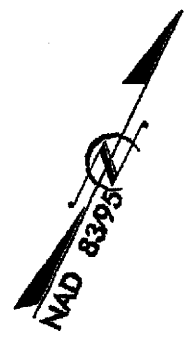
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4048	1	
STATE FUNDING	F.A.F. FUNDING	DESCRIPTION	
33414.1.1	BRZ-1121(B)	PE	
33414.2.1	BRZ-1121(B)	RW & UTILITIES	

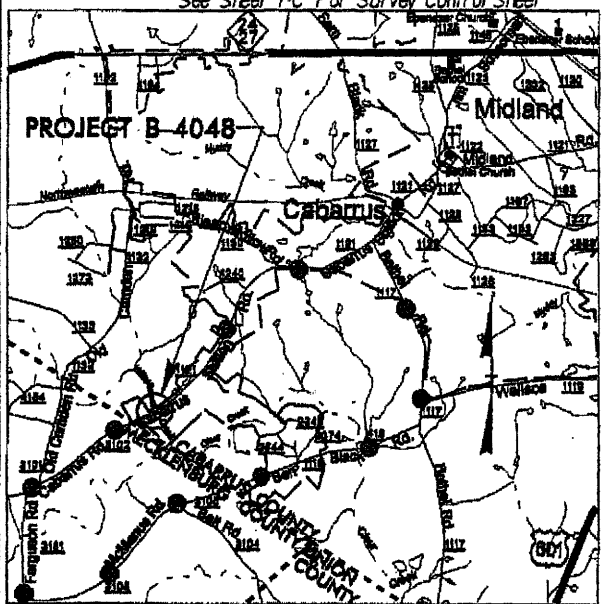
**CABARRUS COUNTY**

LOCATION: BRIDGE NO. 145 OVER WILEY BRANCH CREEK ON  
SR 1121 (CABARRUS STATION ROAD)

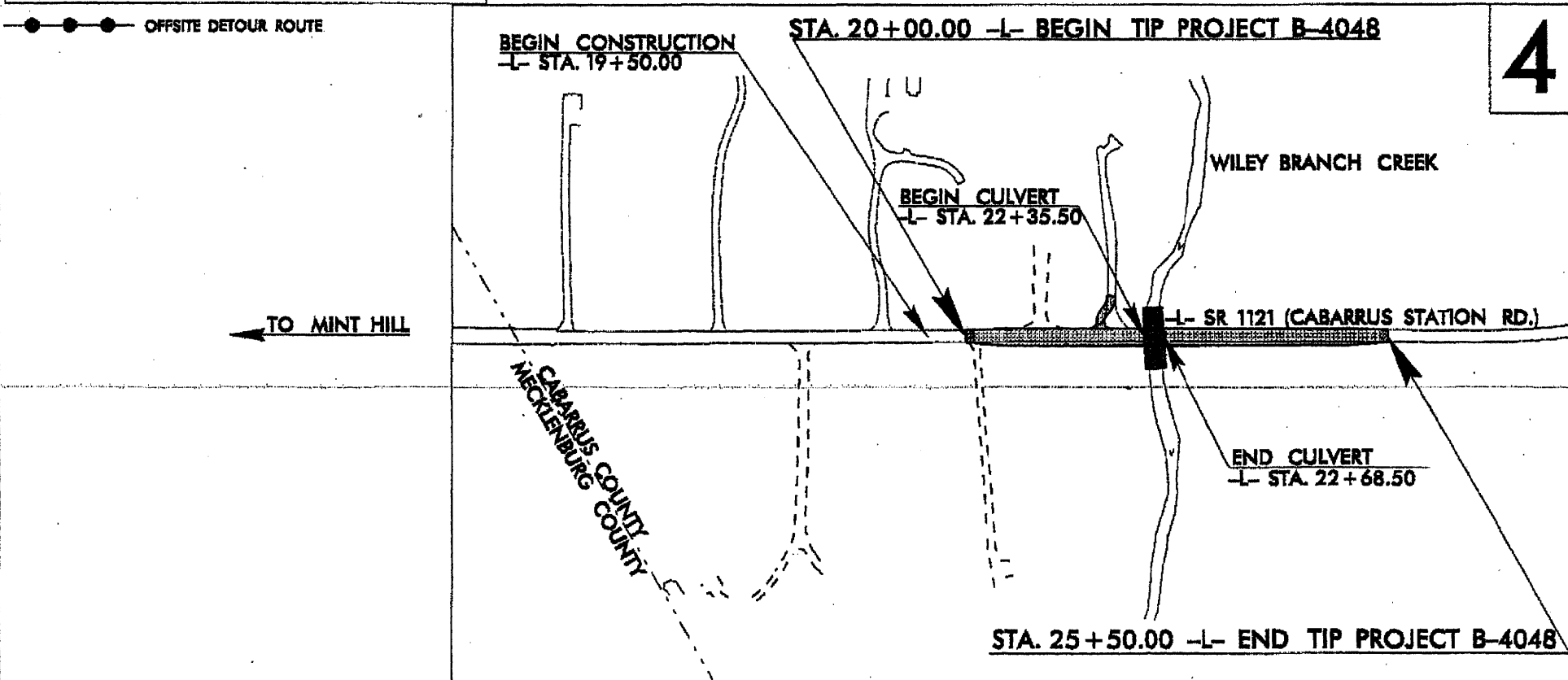
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT



**TIP PROJECT: B-4048**



VICINITY MAP

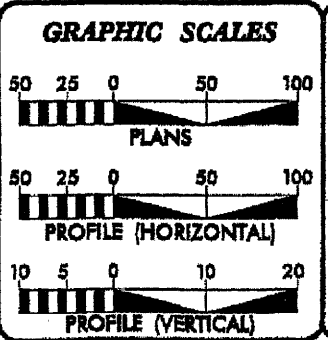


THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL AND STOPPING SIGHT DISTANCE.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

27-OCT-2009 13:05  
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**CONTRACT:**



**DESIGN DATA**

ADT 2010 =	1145
ADT 2025 =	1600
DHV =	10 %
D =	60 %
T =	3 %
V =	50 MPH
* TTST 1% DUAL 2%	
"SUB-REGIONAL TIER"	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4048 =	0.098 MI.
LENGTH STRUCTURE TIP PROJECT B-4048 =	0.006 MI.
TOTAL LENGTH OF TIP PROJECT B-4048 =	0.104 MI.

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1800 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
NOVEMBER 2, 2009

LETTING DATE:  
MARCH 16, 2010

JAMES A. SPEER, PE  
PROJECT ENGINEER

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

**HYDRAULICS ENGINEER**

\_\_\_\_\_  
P.E.

**ROADWAY DESIGN ENGINEER**

\_\_\_\_\_  
P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

\_\_\_\_\_  
STATE HIGHWAY DESIGN ENGINEER P.E.



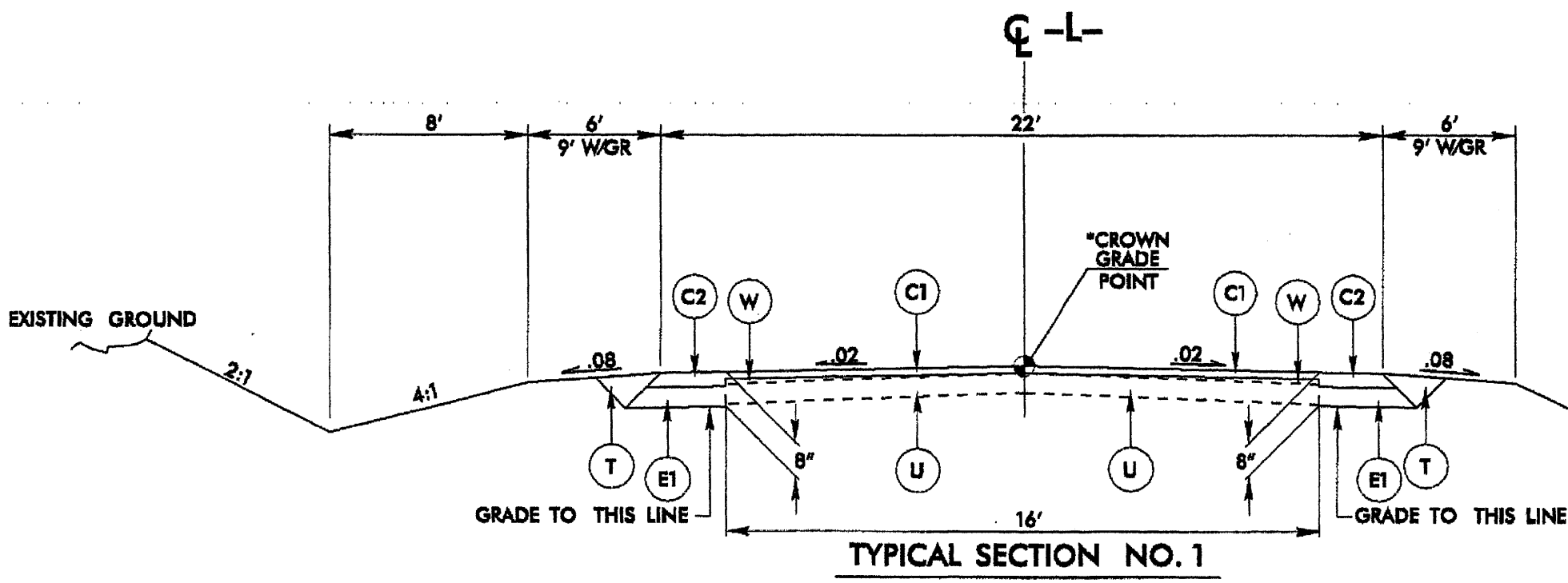
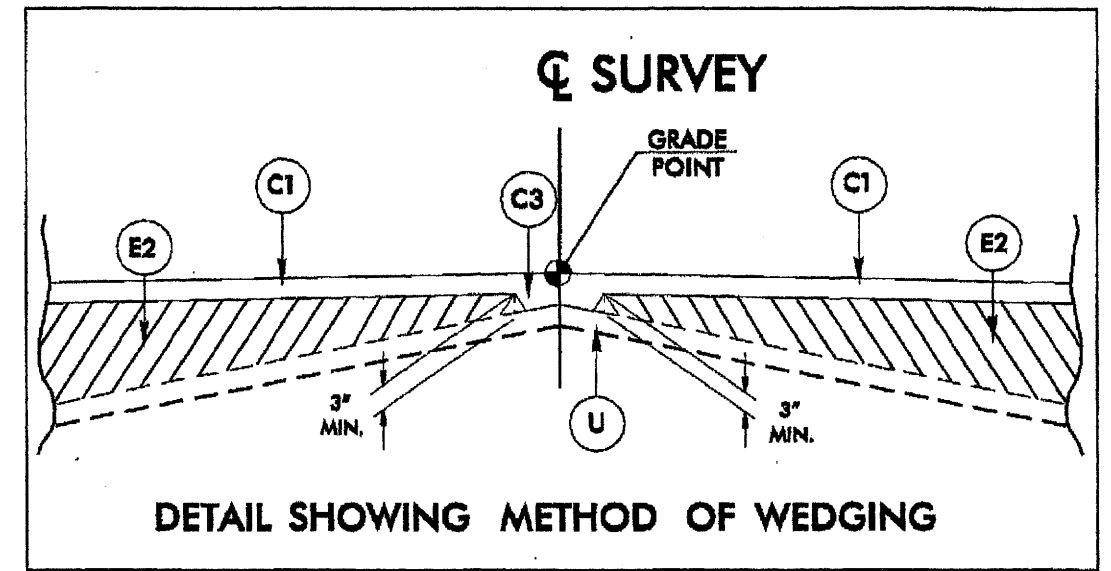
8/17/99

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PROJECT REFERENCE NO. B-4048	SHEET NO. 2
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<div style="border: 1px solid black; padding: 2px; display: inline-block;">           INCOMPLETE PLANS  <small>DO NOT BE USED FOR CONSTRUCTION</small> </div> <div style="border: 1px solid black; padding: 2px; display: inline-block;">           PRELIMINARY PLANS  <small>DO NOT BE USED FOR CONSTRUCTION</small> </div>	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SFB.5A, AT AN AVERAGE RATE OF 197.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SFB.5A, AT AN AVERAGE RATE OF 197.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SFB.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 8 1/4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
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 6 1/2" IN DEPTH.
J	6" AGGREGATE BASE COURSE
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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



NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1  
 -L- STA. 20+00.00 TO STA. 20+50.00

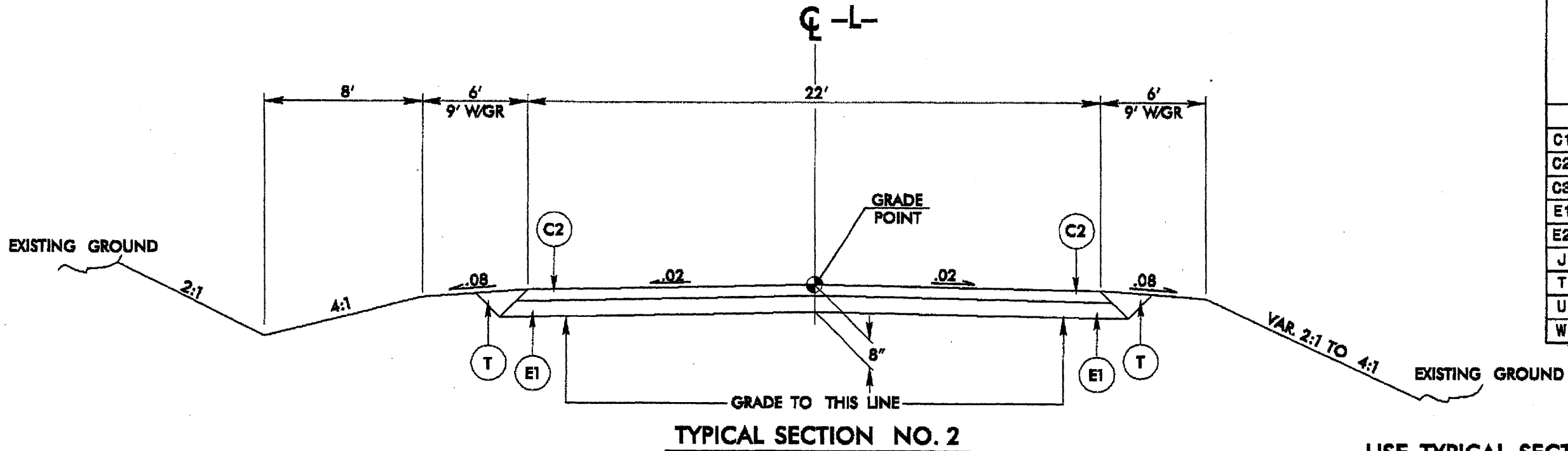
**USE TYPICAL SECTION NO. 1**

- \*-L- STA. 20+50.00 TO STA. 21+00.00
- L- STA. 21+00.00 TO STA. 22+00.00
- L- STA. 22+75.00 TO STA. 23+50.00
- \*-L- STA. 23+50.00 TO STA. 25+00.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING  
 -L- STA. 25+00.00 TO STA. 25+50.00

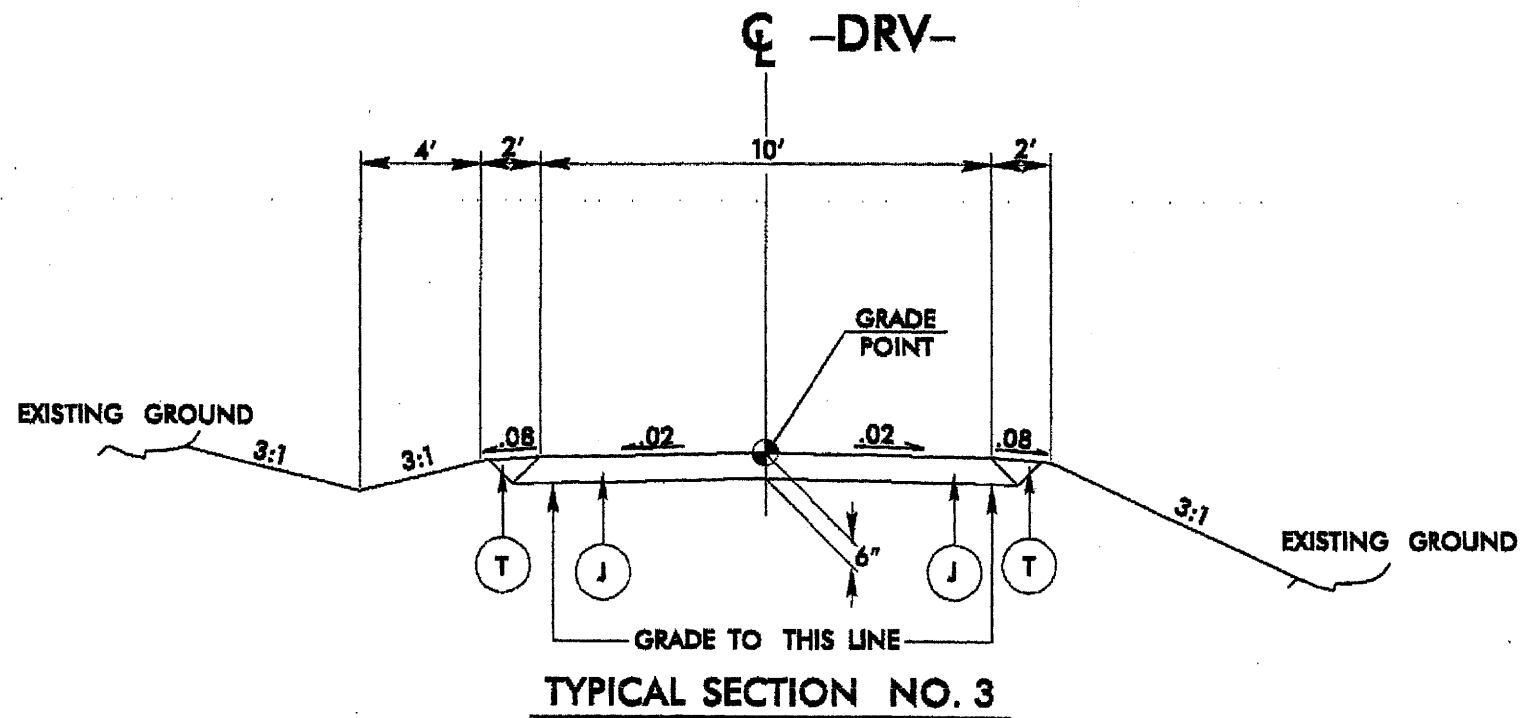
8/17/79

PROJECT REFERENCE NO. B-4048		SHEET NO. 2-A	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
INCOMPLETE PLANS <small>NO. 300 SPEC. FOR CONSTRUCTION</small>		PRELIMINARY PLANS <small>NO. 300 SPEC. FOR CONSTRUCTION</small>	
PAVEMENT SCHEDULE			
C1	1 1/4"	SF9.5A	
C2	2 1/2"	SF9.5A	
C3	VAR. DEPTH SF9.5A		
E1	5 1/2"	B25.0B	
E2	VAR. DEPTH B25.0B		
J	6"	ABC	
T	EARTH MATERIAL		
U	EXISTING PAVEMENT		
W	VAR. DEPTH WEDGING		



**TYPICAL SECTION NO. 2**

**USE TYPICAL SECTION NO. 2**  
-L- STA. 22+00.00 TO STA. 22+75.00



**TYPICAL SECTION NO. 3**

**USE TYPICAL SECTION NO. 3**  
-DRV- STA. 21+75.00 LT.

27-OCT-2009 13:00 B-4048.rvt typ.dgn

Permit Drawing  
Sheet of

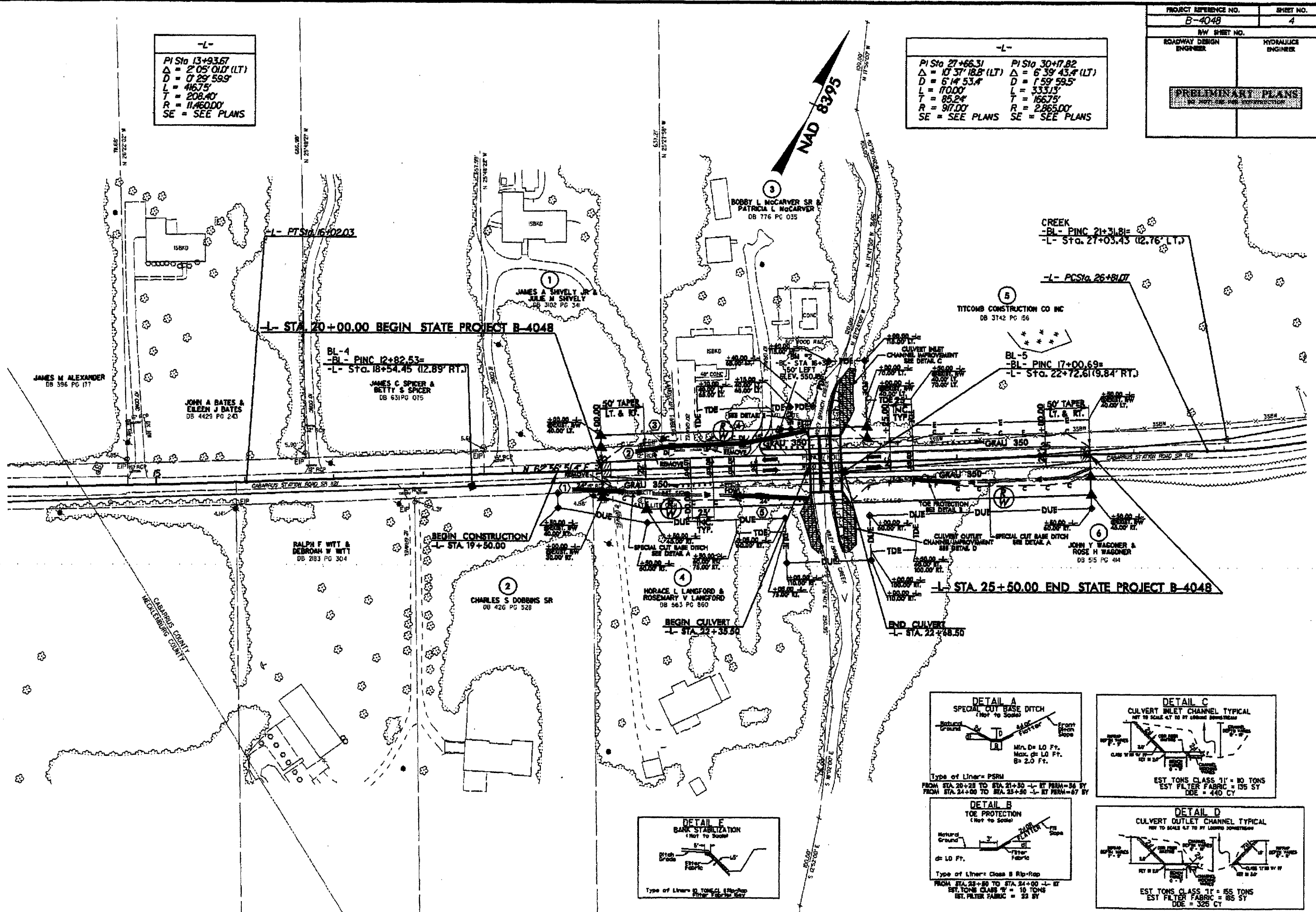
8/17/99

PROJECT REFERENCE NO. B-4048		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b>			
DO NOT SCALE FOR CONSTRUCTION			

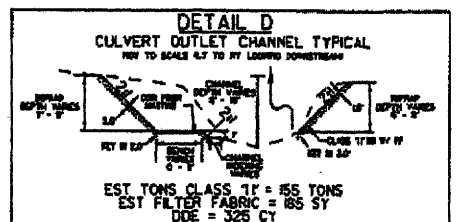
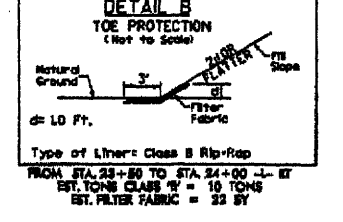
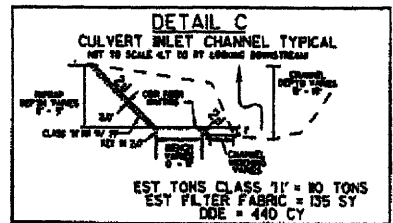
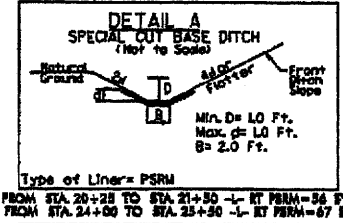
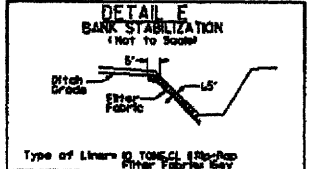
-L-  
 PI Sta 13+93.67  
 $\Delta = 2' 05" \text{ Old (LT)}$   
 $D = 0' 29' 59.9"$   
 $L = 416.75'$   
 $T = 208.40'$   
 $R = 11,460.00'$   
 SE = SEE PLANS

-L-  
 PI Sta 27+66.31    PI Sta 30+17.82  
 $\Delta = 10' 37' 18.8" \text{ (LT)}$      $\Delta = 6' 39' 43.4" \text{ (LT)}$   
 $D = 6' 14' 53.4"$      $D = 1' 59' 59.5"$   
 $L = 170.00'$      $L = 333.13'$   
 $T = 85.24'$      $T = 166.75'$   
 $R = 917.00'$      $R = 2,865.00'$   
 SE = SEE PLANS    SE = SEE PLANS

REVISIONS



30-OCT-2008 15:40 154848-dj-ph.dgn



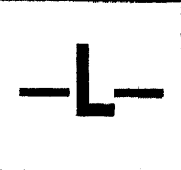
NOTE: SEE SHEET 5 FOR -L- LINE PROFILE  
SEE SHEETS C-1 THRU C- FOR CULVERT PLANS

Permit Drawing  
Sheet

5/14/99

27-OCT-2009 15:00  
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R:\PROJECTS\4048\_rdu.pfl.dgn

PROJECT REFERENCE NO. <b>B-4048</b>	SHEET NO. <b>5</b>
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR A/V ACQUISITION</small>	
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	



**CULVERT HYDRAULIC DATA**

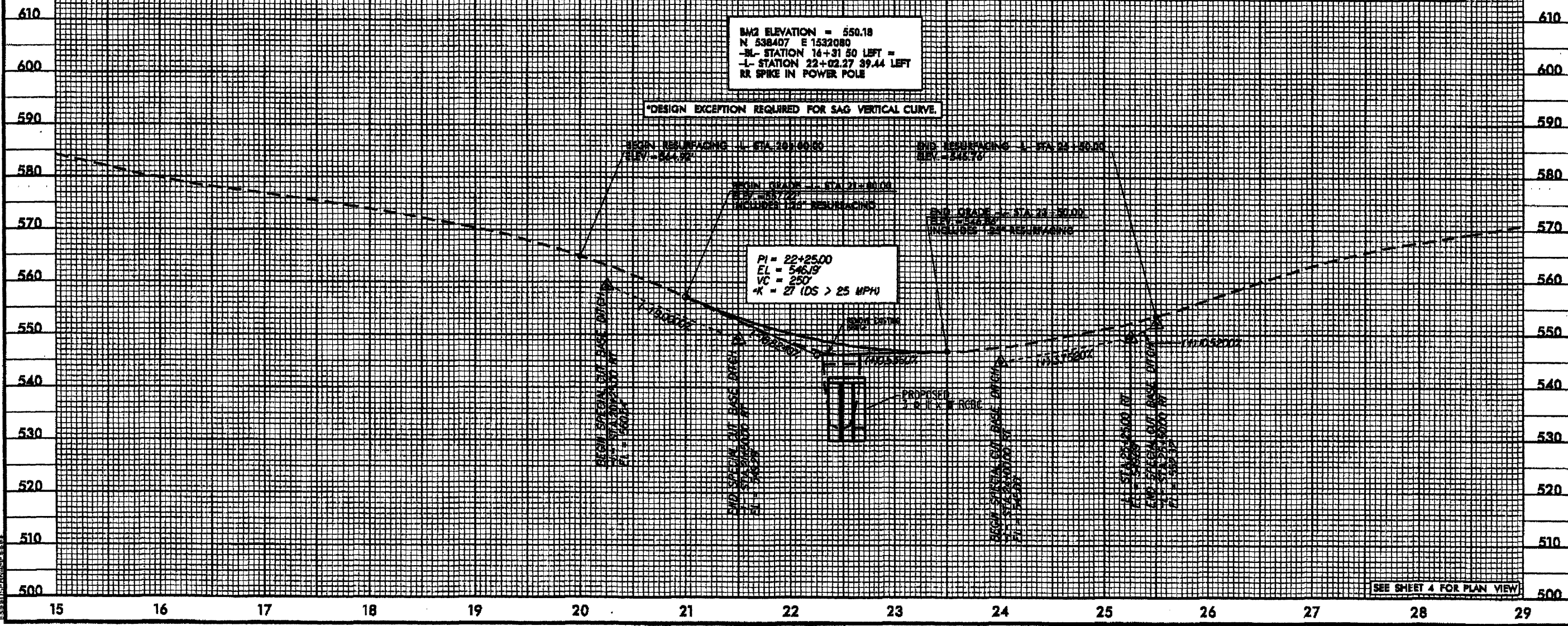
DESIGN DISCHARGE	=	2200	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	541.5	FT
BASE DISCHARGE	=	2700	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	542.8	FT
OVERTOPPING DISCHARGE	=	400	CFS
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING ELEVATION	=	546.8	FT

BM1 ELEVATION = 599.24  
 N 537897 E 1531075  
 -BL- STATION 3+00 8.58 LEFT =  
 -L- STATION 10+74.40 30.77 LEFT  
 RR SPIKE IN POWER POLE

BM3 ELEVATION = 582.68  
 N 538860 E 1532830  
 -BL- STATION 25+14 35 LEFT =  
 -L- STATION 30+92.48 32.69 LEFT  
 RR SPIKE IN BASE OF 15 INCH OAK

BM2 ELEVATION = 550.18  
 N 538407 E 1532080  
 -BL- STATION 16+31 50 LEFT =  
 -L- STATION 22+02.27 39.44 LEFT  
 RR SPIKE IN POWER POLE

\*DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE.



SEE SHEET 4 FOR PLAN VIEW