



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 15, 2004

MEMORANDUM TO: Mr. J. J. Swain, Jr., P.E.
Division 13 Engineer

FROM: Philip S. Harris, III, P.E., Manager *PHH*
Office of the Natural Environment
Project Development and
Environmental Analysis Branch

SUBJECT: Madison County, Replace Bridge Number 259 over Big Laurel
Creek on SR 1345; State Work Order Number 8.2860501; TIP
Number B-3490

No permits from the U. S. Army Corps of Engineers or the Division of Water Quality are required for the above referenced project. Documentation from the USACE is attached.

PSH/ang

Attachment

cc: Mr. Art McMillan, P.E.
Mr. Omar Sultan
Mr. Jay Bennett, P.E.
Mr. David Chang, P.E.
Mr. Randy Garris, P.E.
Mr. Greg Perfetti, P.E.
Mr. Mark Staley
Mr. John F. Sullivan, III, FHWA
Mr. Roger Bryan, Division 13 DEO



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
151 PATTON AVENUE
ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006

March 5, 2004

REPLY TO
ATTENTION OF:

Regulatory Division

Action ID 200430338, TIP B-3490

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

Dear Dr. Thorpe:

Reference your letter of October 31, 2003, received on December 15, 2003, regarding the proposed replacement of Bridge No. 259 on SR 1345 over Big Laurel Creek near Mars Hill, Madison County, North Carolina (State Project No. 8.2860501, TIP No. B-3490).

According to the referenced letter and attached Categorical Exclusion Document, the existing bridge will be replaced with a new 75-foot long bridge at the same location as the existing structure. Traffic will be maintained with a temporary onsite bridge just upstream (north) of the existing bridge. Although Big Laurel Creek is a surface water under the Corps of Engineers' regulatory jurisdiction, no waters or wetlands would be impacted by construction of the proposed project. Best Management Practices for Bridge Demolition and Removal will be applied to prevent any debris from falling into the river. As such, no Department of the Army permit will be required for the proposed work.

If you have any questions or if there are any changes in the design or construction methods of the proposed project, please contact me at telephone (828) 271-7980, extension 223.

Sincerely,

Steven W. Lund
Regulatory Project Manager

PROJECT COMMITMENTS

Madison County
Bridge No. 259 on SR 1345 Over Big Laurel Creek
Federal-aid Project No. BRZ-1345(2)
State Project No. 8.2860501
T.I.P. No. B-3490

In addition to the Nationwide Permit No. 3, No. 14 and No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, NCDOT's Best Management Practices for Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Division 13, Design Services Unit, Project Development and Environmental Analysis Branch

No in-stream work will be conducted between November 1 and April 15 to avoid impacts to trout reproduction.

***ACTION:** The contract special provisions will contain a construction moratorium for in-stream work activities between November 1 and April 15.*

Highway Design Branch

The bridge design will include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the affected stream.

***ACTION:** The design plans for the structure do not provide for deck drains. All deck drainage is directed to a funnel drain and filtered through rip rap and a vegetated stream bank.*

Any new piers or bents will be placed outside the bank-full width of the stream.

***ACTION:** The structure interior bent is located outside the stream banks.*

Project Development and Environmental Analysis Branch

Approval under Section 26a of the Tennessee Valley Authority (TVA) Act will be required for the bridge replacement project. A copy of the CE will be forwarded to TVA.

***ACTION:** A copy of the approved CE was provided to the TVA on September 12, 2002.*

The stream impacts associated with the project will likely be lower than the 150 linear-foot (45.7 m) threshold. If it becomes apparent during final design that more than 150 linear feet (45.7 m) of stream will be impacted, mitigation measures will be considered.

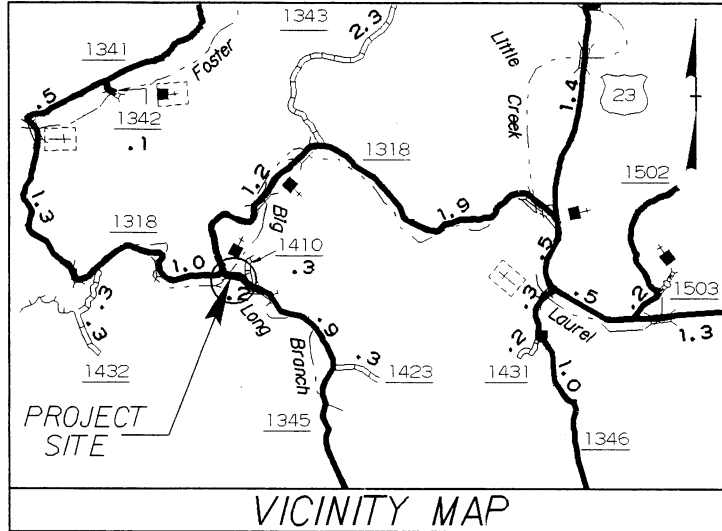
ACTION: *The final design plans indicate that more than 150 feet of Big Laurel Creek will be impacted. Mitigation will be provided for the stream impacts.*

09/08/99

CONTRACT: TIP PROJECT: B-3490

CONTRACT: TIP PROJECT: B-3490

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



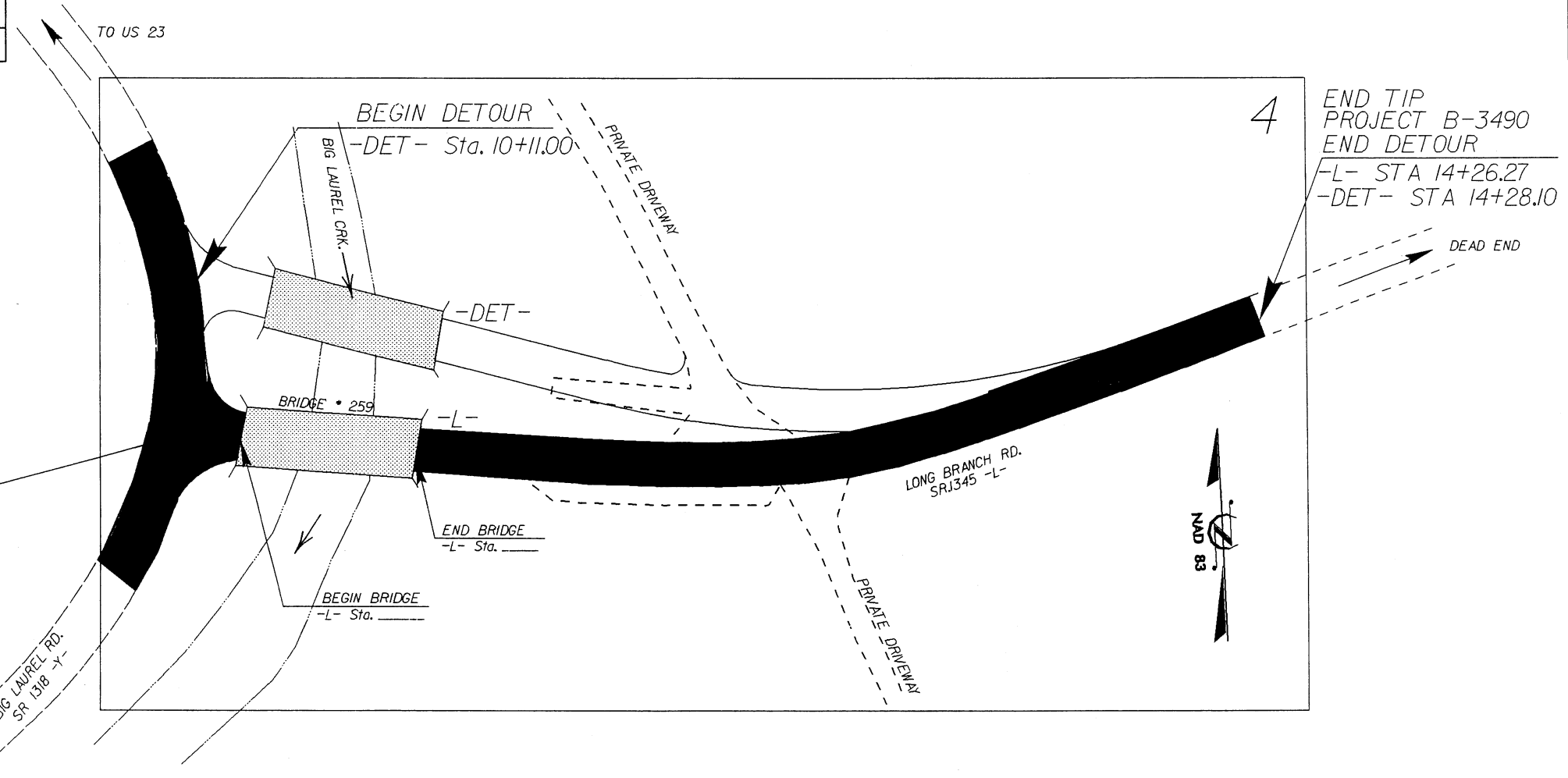
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MADISON COUNTY

**LOCATION: BRIDGE NO. 259 OVER BIG LAUREL CREEK ON
SR 1345**

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE & DETOUR

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3490	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33106.1.1	BRZ-1345(2)	PE	
33106.2.2	BRZ-1345(2)	RW, UTIL	
33106.3.2	BRZ-1345(3)	CONST.	



BEGIN TIP PROJECT B-3490
-L- Sta. 10+00.00

4
END TIP PROJECT B-3490
END DETOUR
-L- STA 14+26.27
-DET- STA 14+28.10

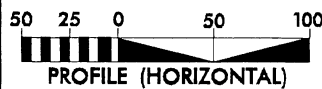
METHOD OF CLEARING II

** DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED

THIS PROJECT IS NOT IN THE CITY LIMITS OF ANY MUNICIPALITY.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2002 = 340 vpd
 ADT 2025 = 600 vpd
 DHV = 15 %
 D = 70 %
 T = 2 % *
 ** V = 30 MPH
 * TTST 1 % DUAL 1 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3490 = MILES
 LENGTH STRUCTURE TIP PROJECT B-3490 = MILES
 TOTAL LENGTH TIP PROJECT B-3490 = 0.081 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 FEBRUARY 3, 2003

LETTING DATE:
 FEBRUARY 17, 2004

JAMES A. SPEER, PE
 PROJECT ENGINEER

JOHN C. LANSFORD, PE
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____
 ROADWAY DESIGN ENGINEER

SIGNATURE: _____
 P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER
 DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED
 DIVISION ADMINISTRATOR DATE

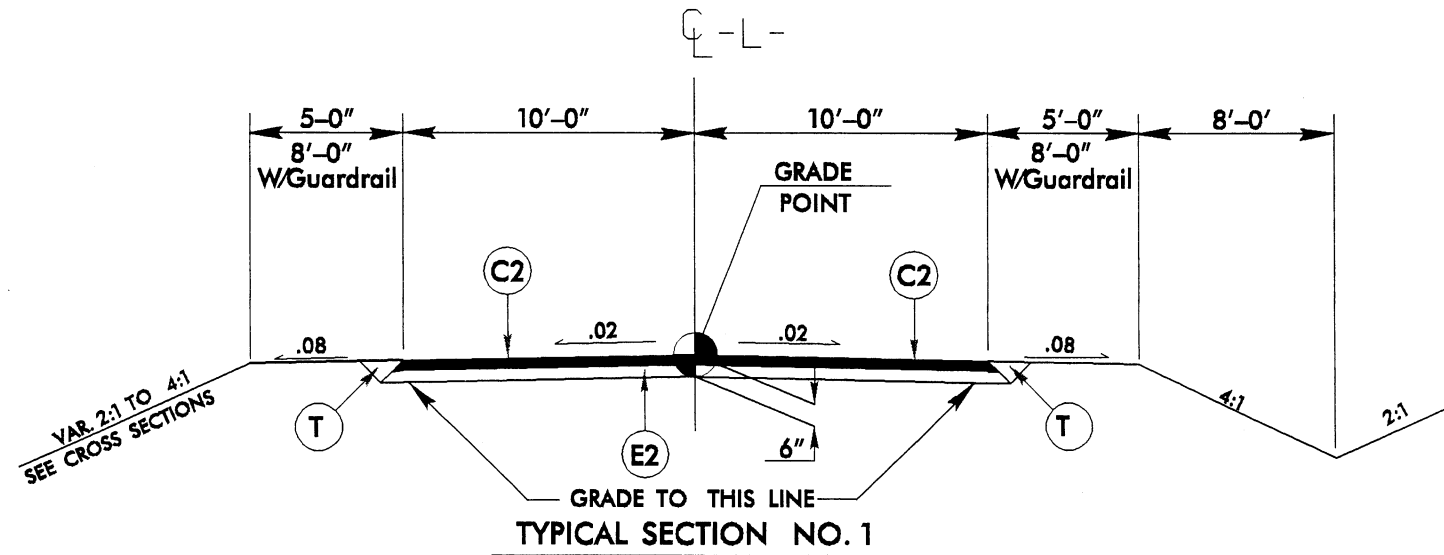
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6/2/99

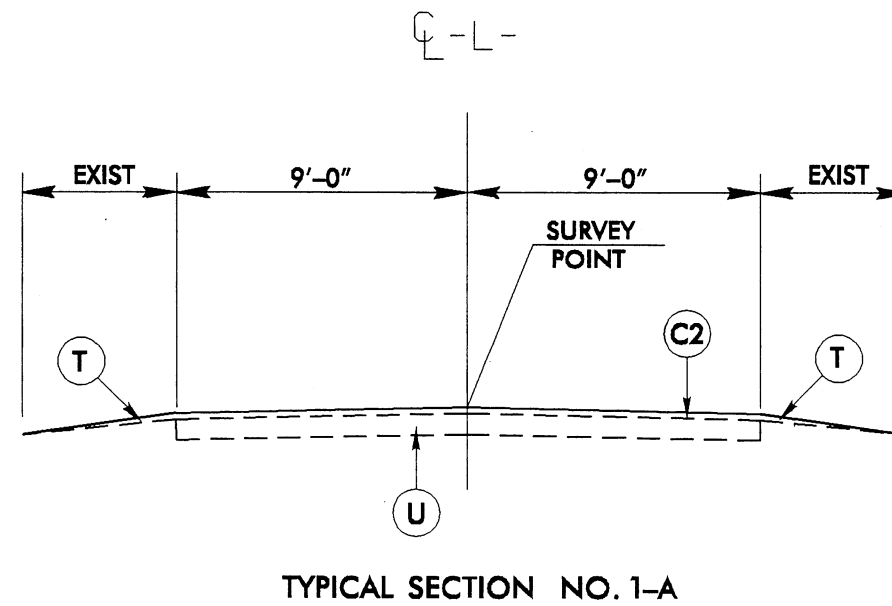
PROJECT REFERENCE NO. B-3490	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. APPROX. 3 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
E3	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 256.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
R	PROPOSED CONCRETE EXPRESSWAY GUTTER
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

NOTE: ALL SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



USE TYPICAL SECTION NO.1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 10+09.00 TO BEGIN BRIDGE
 END BRIDGE TO -L- STA. 12+00.00



USE TYPICAL SECTION NO.1-A AT THE FOLLOWING LOCATIONS:
 STA. 12+00.00 TO 14+26.27 -L-

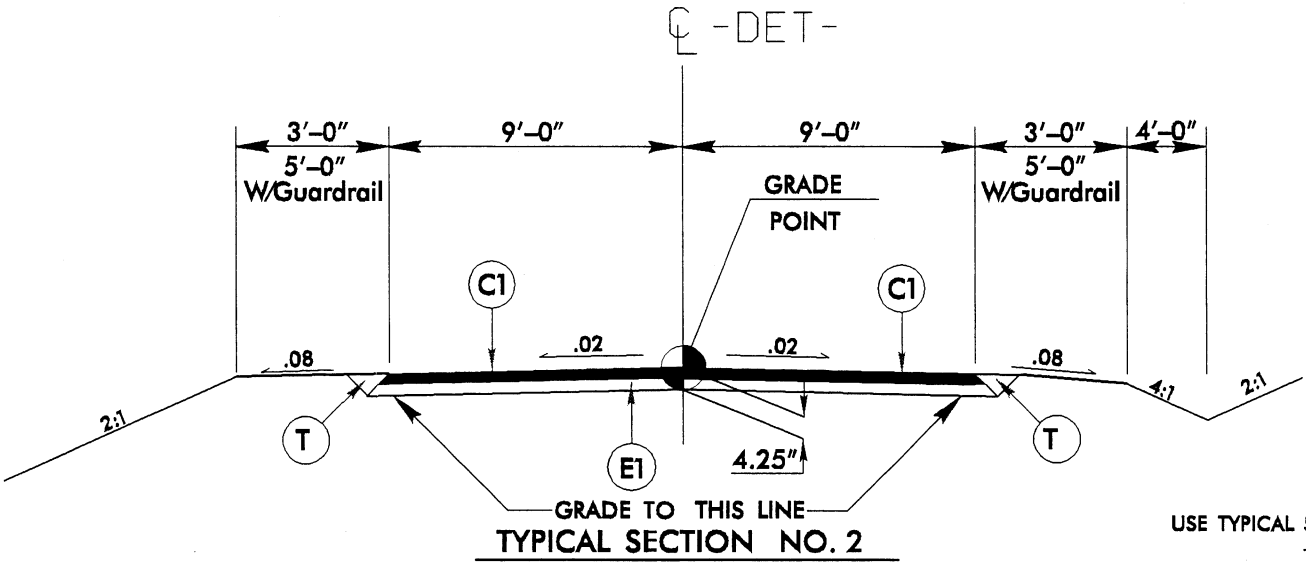
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6/2/99

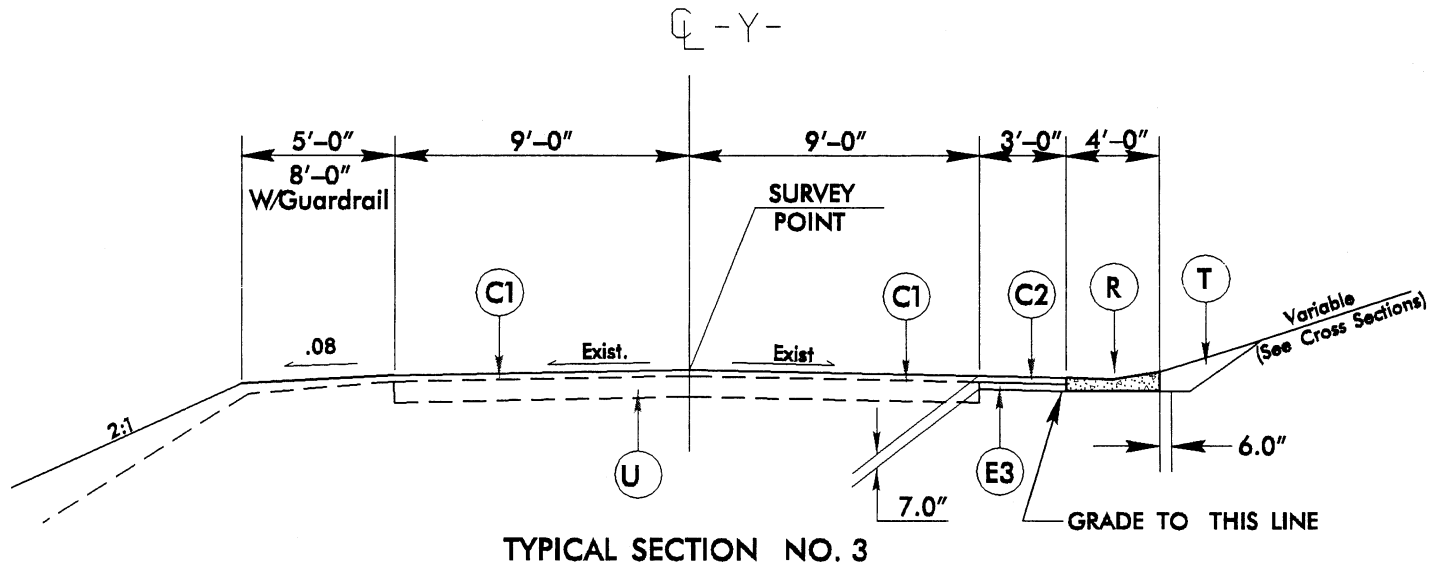
PROJECT REFERENCE NO. B-3490	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. APPROX. 3 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
E3	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 256.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
R	PROPOSED CONCRETE EXPRESSWAY GUTTER
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

NOTE: ALL SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
 -DET- STA. 10+11.00 TO BEGIN BRIDGE
 END BRIDGE TO -DET- STA. 13+37.75
 TIE DETOUR TO -L-
 RESURFACE WITH 1 1/4" S9.5A
 -DET- STA. 13+37.75 TO STA. 14+28.10



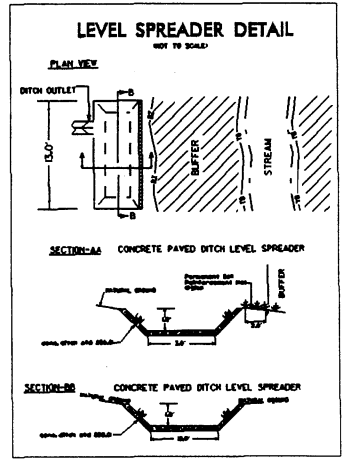
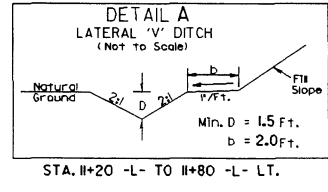
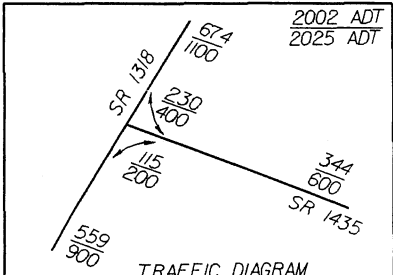
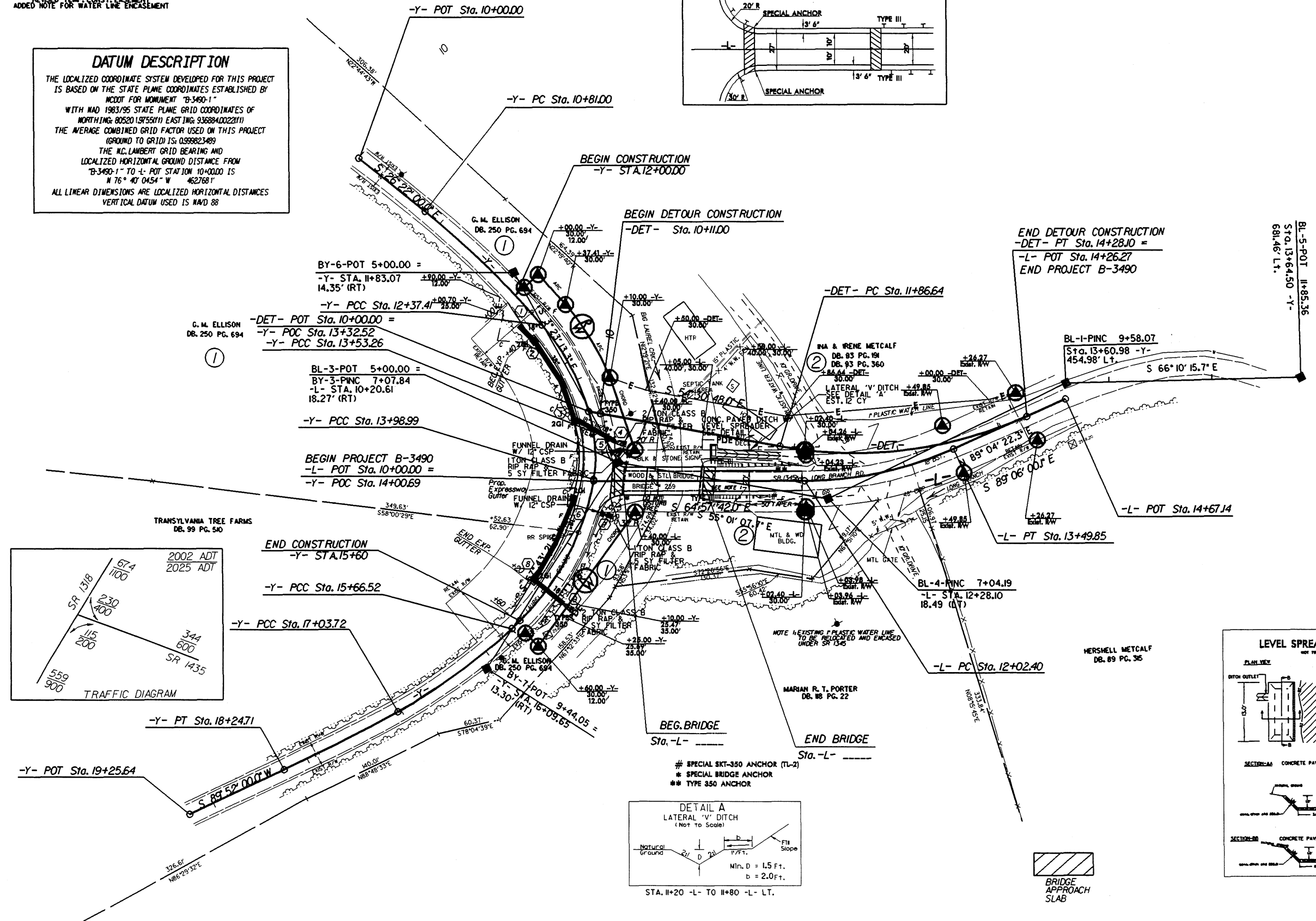
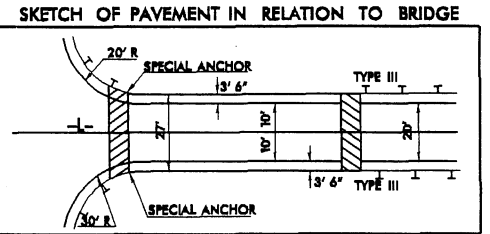
USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATIONS:
 Sta. 12+40 to 15+20 -Y-

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R/W REVISION JCL 6/02/03
 PARCEL #2 OWNER NAME REVISED
 REVISION TEMP CONST PLACEMENT
 ADDED NOTE FOR WATER LINE ENCASMENT

PROJECT REFERENCE NO. B-3490	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDDOT FOR MONUMENT "B-3490-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTING: 8052015755(11) EASTING: 9368840022(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99823489 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-3490-1" TO -L- POT STATION 10+00.00 IS N 76° 40' 04.54" W 4627681' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAD 88



-Y-						-L-
PI Sta 11+59.44	PI Sta 12+96.71	PI Sta 13+76.38	PI Sta 14+85.84	PI Sta 16+35.43	PI Sta 17+64.24	PI Sta 12+77.24
$\Delta = 10' 56'' 56.1''$ (RT)	$\Delta = 30' 07'' 17.2''$ (RT)	$\Delta = 20' 34'' 46.0''$ (RT)	$\Delta = 37' 16'' 25.8''$ (RT)	$\Delta = 13' 22'' 38.7''$ (RT)	$\Delta = 3' 55'' 56.2''$ (RT)	$\Delta = 24' 08'' 18.1''$ (LT)
D = 7' 00' 00.0'	D = 26' 00' 00.0'	D = 45' 00' 00.0'	D = 22' 15' 00.0'	D = 9' 45' 00.0'	D = 3' 15' 00.0'	D = 16' 22' 12.8'
L = 156.4'	L = 115.85'	L = 45.73'	L = 167.52'	L = 137.20'	L = 120.99'	L = 147.45'
T = 78.45'	T = 59.30'	T = 23.12'	T = 86.85'	T = 68.92'	T = 60.52'	T = 350.00'
R = 818.5'	R = 220.37'	R = 127.32'	R = 257.5'	R = 587.65'	R = 1762.95'	R = 350.00'
SE = EXIST	SE = EXIST	SE = EXIST	SE = EXIST			SE = EXIST

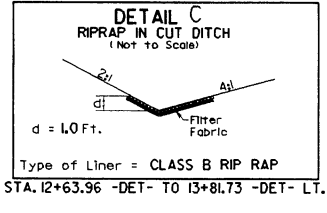
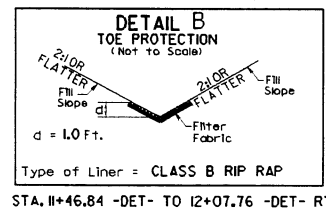
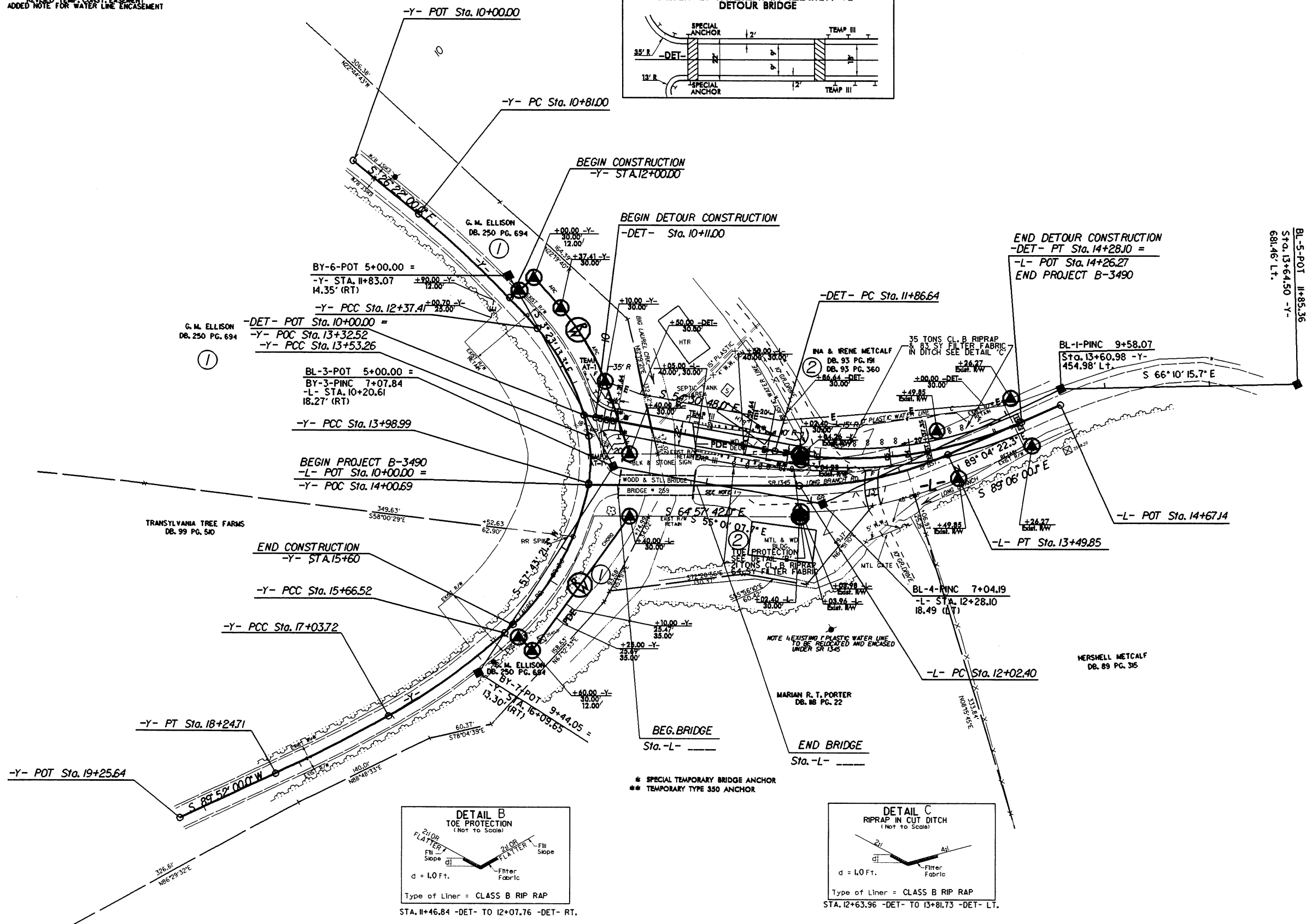
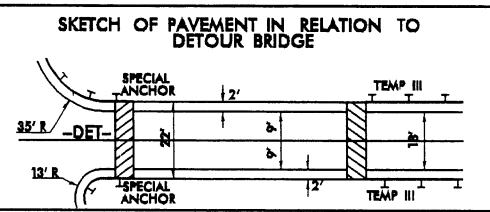
DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED

NOTES:
 1. FOR -DET- PLANS SEE SHEET 4A
 2. FOR -DET- PROFILE SEE PLAN SHEET 5
 3. FOR -L- PROFILE SEE PLAN SHEET 5
 4. SEE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

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R/W REVISION JCL 6/02/03
 PARCEL #2 OWNER NAME REVISED
 REVISED TEMP. CONST. EASEMENT
 ADDED NOTE FOR WATER LINE ENCASEMENT

PROJECT REFERENCE NO. B-3490	SHEET NO. 4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



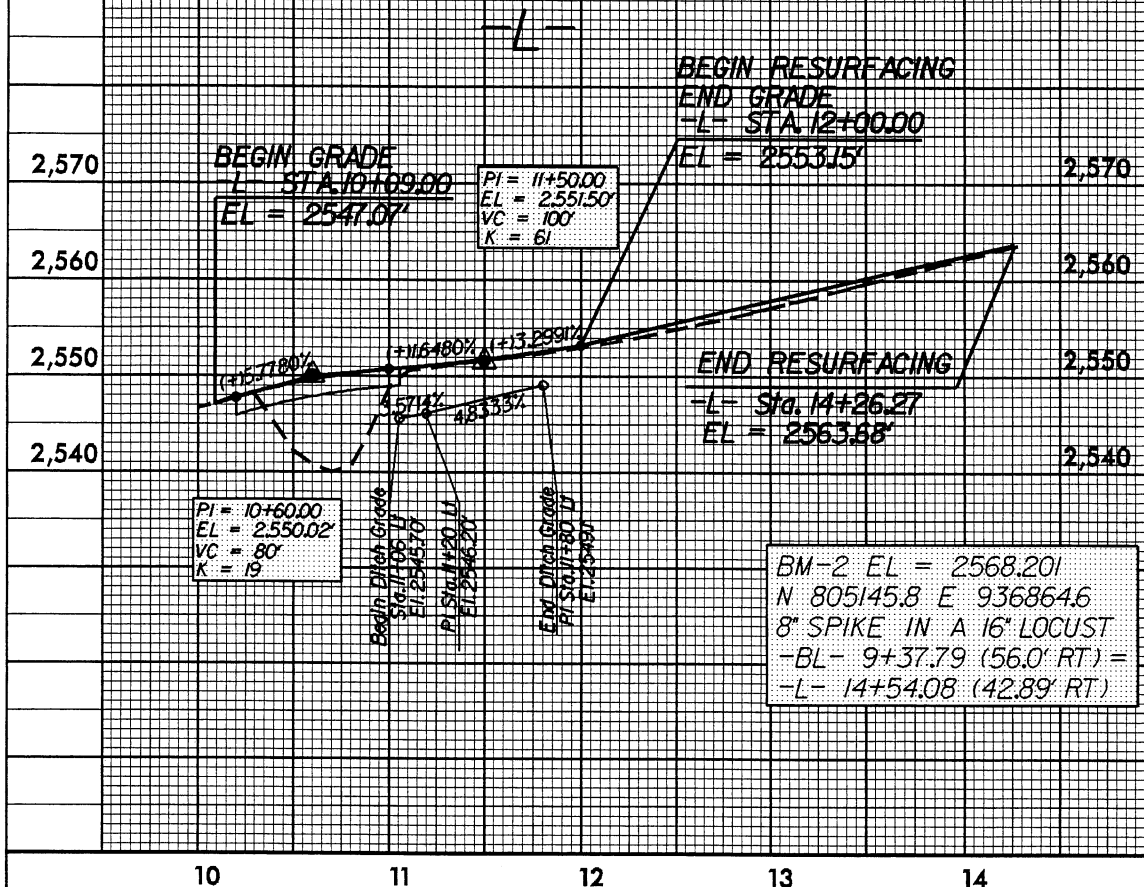
-Y-			-DET-			-L-		
PI Sta 11+59.44	PI Sta 12+96.71	PI Sta 13+76.38	PI Sta 14+85.84	PI Sta 16+35.43	PI Sta 17+64.24	PI Sta 13+111.8	PI Sta 12+77.24	
$\Delta = 10' 56' 56.1$ (RT)	$\Delta = 30' 07' 17.2$ (RT)	$\Delta = 20' 34' 46.0$ (RT)	$\Delta = 37' 16' 25.8$ (RT)	$\Delta = 13' 22' 38.7$ (RT)	$\Delta = 3' 55' 56.2$ (RT)	$\Delta = 34' 35' 12.1$ (LT)	$\Delta = 24' 08' 18.1$ (LT)	
$D = 7' 00' 00.0$	$D = 26' 00' 00.0$	$D = 45' 00' 00.0$	$D = 22' 15' 00.0$	$D = 9' 45' 00.0$	$D = 3' 15' 00.0$	$D = 14' 19' 26.2$	$D = 16' 22' 12.8$	
$L = 156.41'$	$L = 115.85'$	$L = 45.73'$	$L = 167.52'$	$L = 137.20'$	$L = 120.99'$	$T = 124.54'$	$T = 74.84'$	
$T = 78.45'$	$T = 59.30'$	$T = 23.12'$	$T = 86.85'$	$T = 68.92'$	$T = 60.52'$	$L = 241.46'$	$L = 147.45'$	
$R = 818.51'$	$R = 220.37'$	$R = 127.32'$	$R = 257.51'$	$R = 587.65'$	$R = 1,762.95'$	$R = 400.00'$	$R = 350.00'$	
SE = EXIST	SE = EXIST	SE = EXIST	SE = EXIST			SE = 0.05	SE = EXIST	
						RO = 100.00'		

NOTES:
 1. FOR -L- PLAN VIEW SEE PLAN SHEET 4
 2. FOR -L- PROFILE SEE PLAN SHEET 5
 3. FOR -DET- PROFILE SEE PLAN SHEET 5
 4. SEE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

REVISIONS

8/17/99
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5/28/99

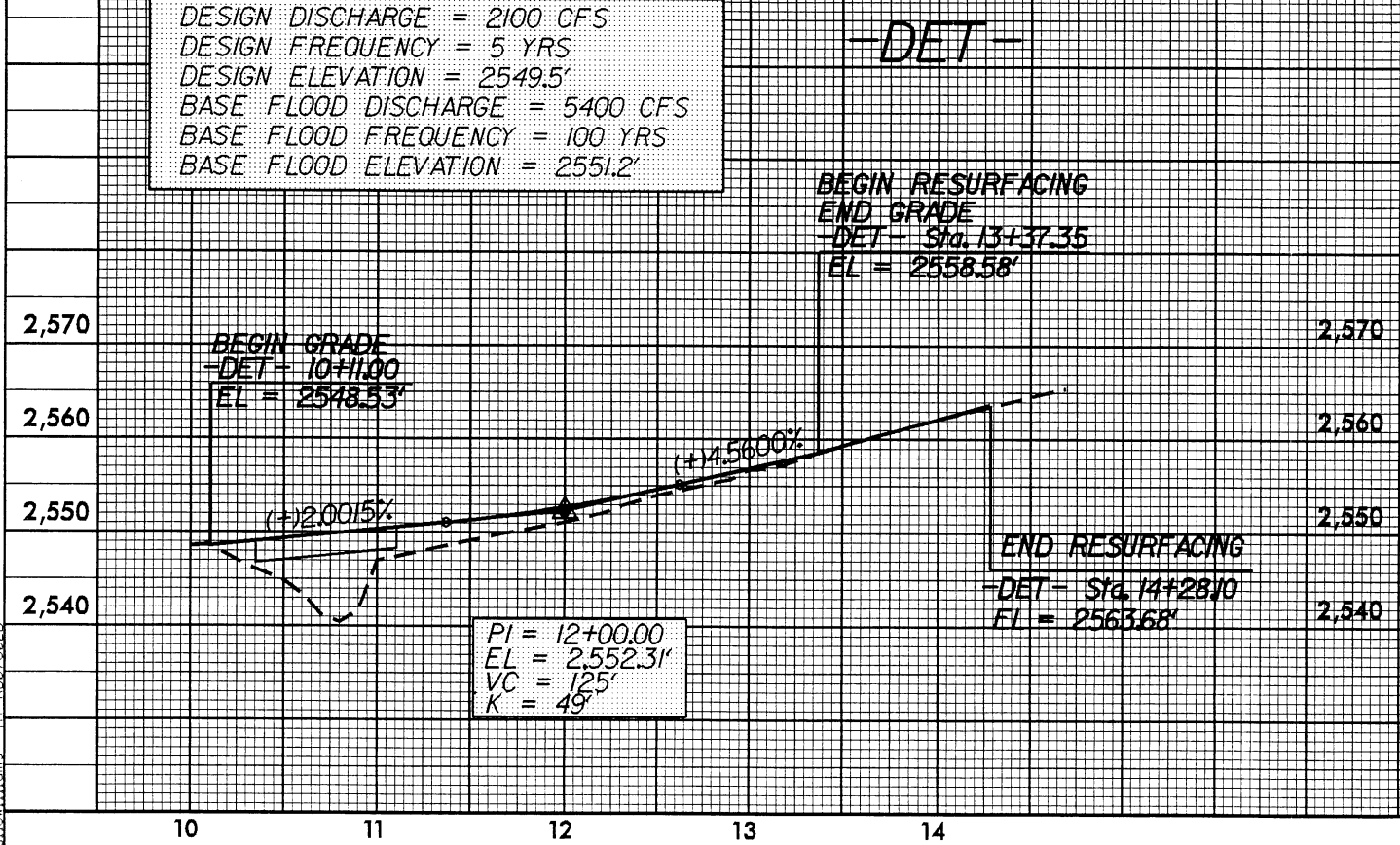


HYDRAULIC DATA FOR
BRIDGE OVER LAUREL CREEK ON SR 1423

DESIGN DISCHARGE = 3700 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN ELEVATION = 2547.8'
 BASE FLOOD DISCHARGE = 5400 CFS
 BASE FLOOD FREQUENCY = 100 YRS
 BASE FLOOD ELEVATION = 2552.4'
 OVERTOPPING DISCHARGE = 4000 CFS
 OVERTOPPING FREQUENCY = 25 YR+
 OVERTOPPING ELEVATION = 2548.0'

HYDRAULIC DATA FOR
BRIDGE OVER LAUREL CREEK ON DETOUR

DESIGN DISCHARGE = 2100 CFS
 DESIGN FREQUENCY = 5 YRS
 DESIGN ELEVATION = 2549.5'
 BASE FLOOD DISCHARGE = 5400 CFS
 BASE FLOOD FREQUENCY = 100 YRS
 BASE FLOOD ELEVATION = 2551.2'



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