



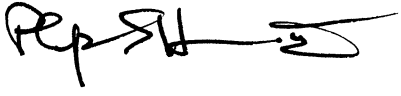
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

March 18, 2005

MEMORANDUM TO: Mr. Jon G. Nance, P.E.  
Division 5 Engineer

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

SUBJECT: Wake County; Division 5; Replace Bridge No. 246 on SR 2564 over  
Little Arm Branch; State Project No. 8.2406301; TIP Project No. B-3376

Attached is the NC 401 Water Quality Certification and Neuse River Buffer Rules Authorization for the above referenced project. All environmental permits have been received .

PSH/gyb

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. Chris Murray, Division 5 DEO  
Ms. Cathy Houser, PE

## **Project Commitments**

Wake County  
Bridge No. 246  
Over Little Arm Branch on SR 2564  
Federal Project BRSTP-2564(1)  
State Project 8.2406301  
TIP B-3376

In addition to the Neuse Buffer Rules General Certification 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, the following special commitments have been agreed to by NCDOT:

### **Highway Division 5, Hydraulics Unit, Roadside Environmental Unit**

NCDOT's Best Management Practices (BMP) for the Protection of Surface Waters and Sedimentation Control guidelines in Sensitive Watersheds will be strictly enforced during the construction stage of the project. Provisions to preclude contamination by toxic substances during the construction interval will also be strictly enforced.

### **Roadway Design Unit, Project Development and Environmental Analysis Branch, Roadside Environmental Unit, Highway Division 5**

Upon completion of the new bridge, the temporary detour bridge will be removed. The temporary approach fill will be removed to natural grade and the area will be planted with native grasses and/or tree species as appropriate.

The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by orange fabric fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.

### **Roadway Design Unit, Project Development and Environmental Analysis Branch, Highway Division 5, Structure Design Unit**

The bridge rail, deck and substructure of both bridges will be removed without dropping them into Waters of the United States. During and after bridge demolition no bridge debris will be allowed to enter Waters of the United States.

**NORTH CAROLINA 401 WATER QUALITY CERTIFICATION and Neuse River Buffer Rules  
Authorization**

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of replacing Bridge No. 246 over Little Arm Branch on SR 2564 (Creech Road) in Wake County.

Impact Locations	Original Authorized Riparian Buffer Impacts (Square Feet)	Modified Riparian Buffer Impacts (Square Feet)
STA -L- 12+66 to 12+85 (Allowable)	2,265 (697 Zone 1 + 1,568 Zone 2)	2,283 (695 Zone 1 + 1,588 Zone 2)
STA -L- 12+99 to 13+10 (Allowable)	2,178 (697 Zone 1 + 1,481 Zone 2)	2,204 (710 Zone 1 + 1,494 Zone 2)
DET STA 11+68 to 12+24 (Temporary)	5,794 (1,525 Zone 1 + 4,269 Zone 2)	5,816 (1,535 Zone 1 + 4,281 Zone 2)
DET STA 12+39 to 12+54 (Temporary)	2,352 (697 Zone 1 + 1,655 Zone 2)	2,382 (706 Zone 1 + 1,676 Zone 2)
Sewer -L- STA 12+77 to 12+93 (Mitigation Required)	1,219 (653 Zone 1 + 566 Zone 2)	1,240 ( 674 Zone 1 + 566 Zone 2) *only Zone 1 requires Mitigation
Sewer -L- STA 12+38 to 12+48 (Allowable)	523 (0 Zone 1 + 523 Zone 2)	531 (0 Zone 1 + 531 Zone 2)
DRIVE Sta. 10+05 (Mitigation Required)		544 (197 Zone 1 + 347 Zone 2)
<b>Total</b>	<b>14,331 (4,269 Zone 1 + 10,062 Zone 2)</b>	<b>15,000(4,517 Zone 1 + 10,483)</b>

The project shall be constructed in accordance with your application dated received September 1, 2004, your amended application dated received September 15, 2004 and your modified application dated received February 7, 2005. This approval shall act as your Authorization Certificate as required within the Neuse River Riparian Buffer Rules (15A NCAC 2B .0233). In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control.

This approval is only valid for the purpose and design that you described in your application dated received September 1, 2004, your amended application dated received September 15, 2004 and your modified application dated received February 7, 2005. If you change your project, you must notify us and you may be required to send us a new application. If the property is sold, the new owner must be given a copy of this authorization and approval letter and is thereby responsible for complying with all conditions. For this approval to be valid, you must follow the conditions listed below.

This approval is only valid for the purpose and design that you submitted in your application, as described in the Public Notice. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future exceed one acre, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations.

**Condition(s) of Certification:**

1. Construction will be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard.
  - a. The erosion and sediment control measures for the project must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the North Carolina Sediment and Erosion Control Planning and Design Manual. These devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
  - b. For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper

design, installation, operation and maintenance outlined in the most recent version of the North Carolina Surface Mining Manual. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

2. All sediment and erosion control measures placed in wetlands or waters shall be removed and the natural grade restored after the Division of Land Resources has released the project.
3. Upon completion of the project, the NCDOT shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.
4. Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the state until the concrete has hardened.
5. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit. Should waste or borrow sites be located in wetlands or stream, compensatory mitigation will be required since it is a direct impact from road construction activities;
6. No additional compensatory mitigation shall be done in accordance with this modification.
7. All other conditions written into previous Water Quality Certifications for this project still apply.

Violations of any condition herein set forth shall result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or coastal Area Management Act Permit. This Certification shall expire upon expiration of the 404 or CAMA permit.

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, P.O. Box 27447, Raleigh, N.C. 27611-7447. This certification and its conditions are final and binding unless you ask for a hearing.

This letter completes the review of the Division of Water Quality under Section 401 of the Clean Water Act. If you have any questions, please contact Nicole Thomson at 919-715-3415.

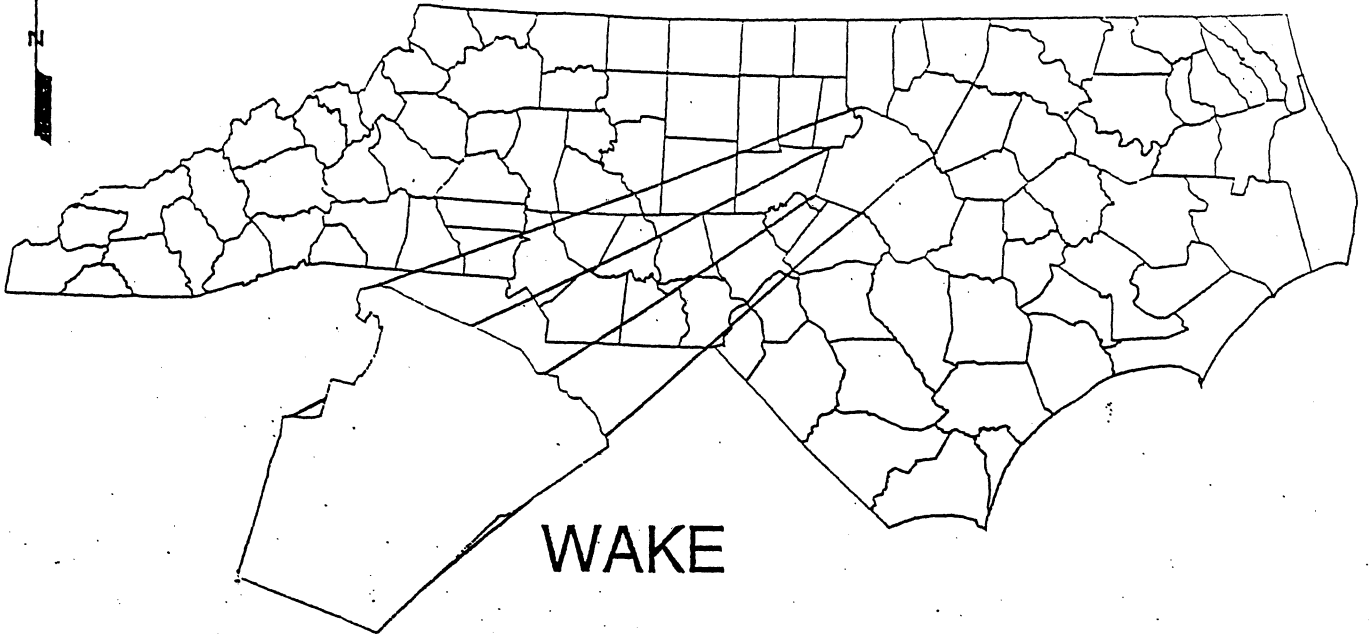
Sincerely,

Alan W. Klimek, P.E.

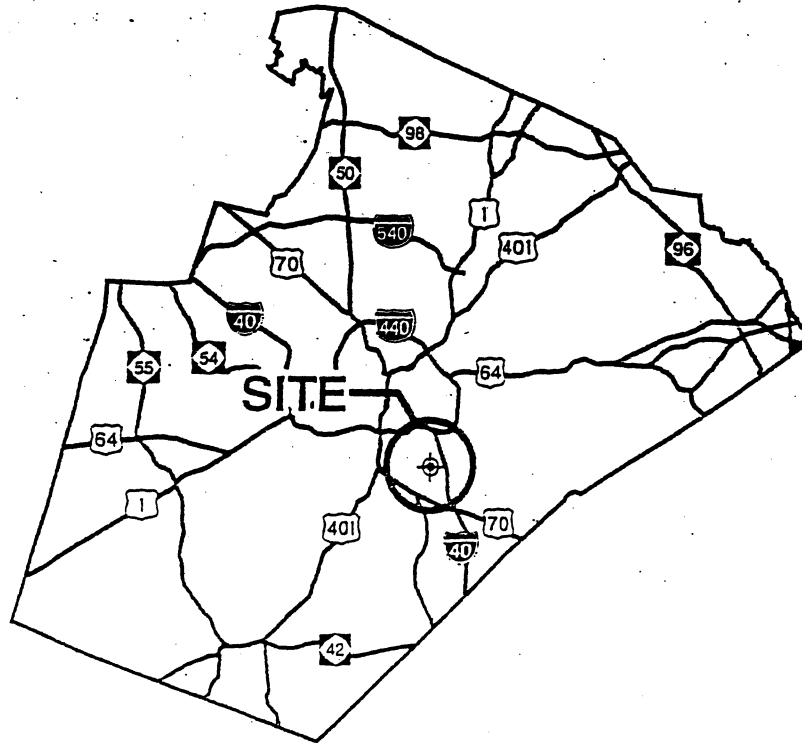
**Attachment**

cc: Wilmington District US Army Corps of Engineers  
Mr. Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office  
Mr. Jon G. Nance, PE, Division 5 Engineer, 2612 N. Duke Street, Durham, NC 27704  
Mr. Chris Murray, Division 5 Environmental Officer, 2612 N. Duke Street, Durham, NC 27704  
NCDWQ Raleigh Regional Office  
File Copy  
Central Files

# NORTH CAROLINA



## WAKE



SITE

# VICINITY MAPS

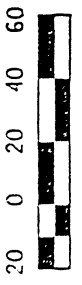
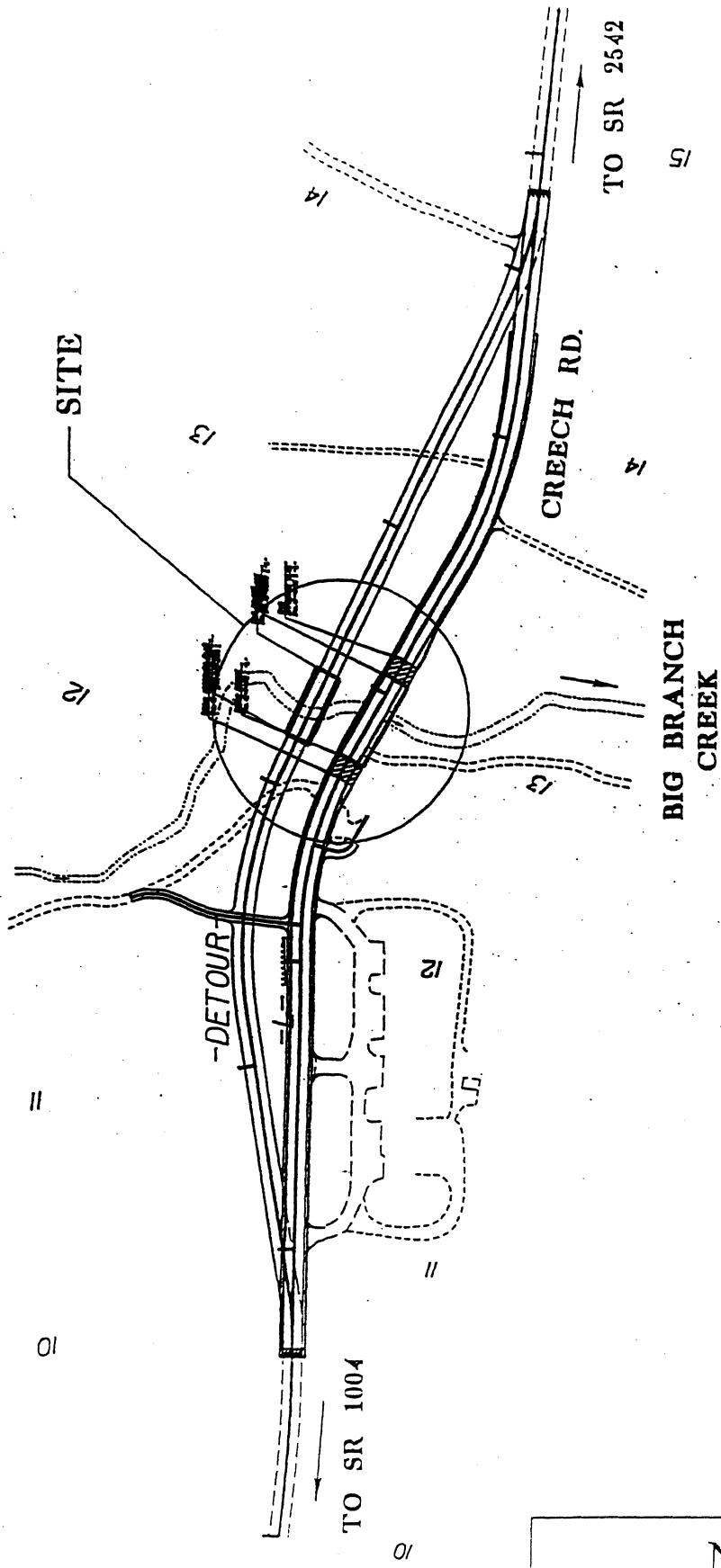
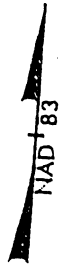
NCDOT

DIVISION OF HIGHWAYS  
WAKE COUNTY

PROJECT: 8.2406301 (B-3376)

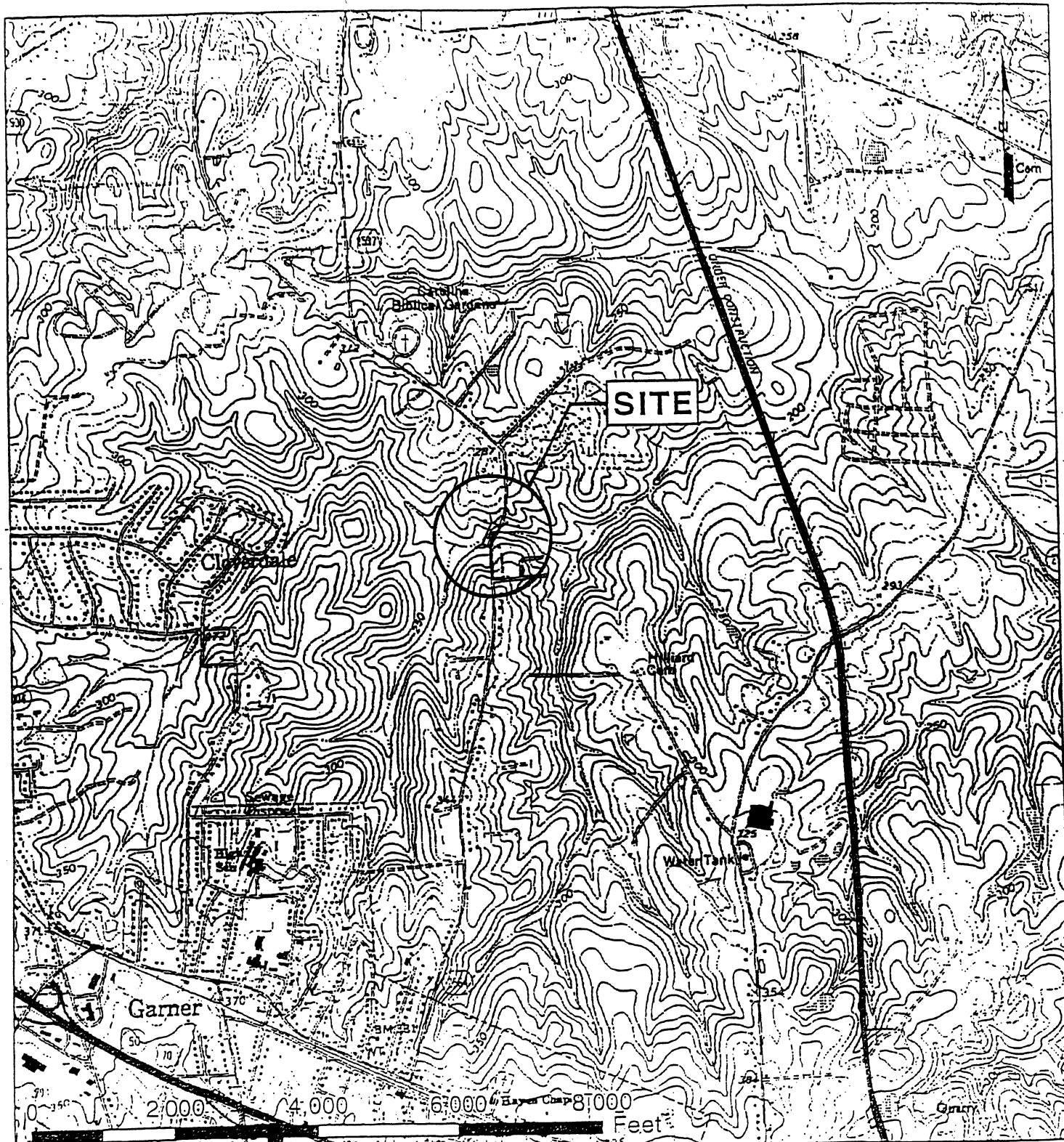
BRIDGE NO. 246 ON SR 2564

OVER BIG BRANCH CREEK



# SITE MAP

**NCDOT**  
DIVISION OF HIGHWAYS  
WAKE COUNTY  
PROJECT: 22406301 (B-3376)  
BRIDGE NO. 246 ON SR. 2542  
OVER BIG BRANCH CREEK  
2 OF 13



1 inch equals 2,000 feet

# LOCATION

**NCDOT**  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 8.2406301 (B-3376)  
 BRIDGE NO. 246 ON SR 2564  
 OVER BIG BRANCH CREEK

PROPERTY NO.	PROPERTY OWNER NAME	PROP. OWNER MAILING ADDRESS
(12)	BETTY C. & BILLY T. WILDER	3425 ARTHUR PIERCE RD APEX, NC 27539
(42)	MARC C. YOUNG	4127 8th ST. NW WASHINGTON D.C. 20011
(7)	MARGARET B. COLEMAN	4408 WILMINGTON RD GARNER, NC 27529
(8)	JOAN E. BUJOL	140B CREECH RD. GARNER, NC 2752

N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
  
 PROJECT 8.2406301 (B-3376)  
 BRIDGE NO. 246 AND APPROACHES  
 ON SR 2564 OVER BIG BRANCH CREEK  
  
 08/18/04      SHEET 4 OF 13

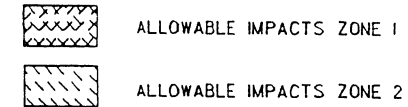


**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT B3376-1 WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 218812.248 EASTING: 845880.488 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9989708 THE NC LAMBERT GRID BEARING LOCALIZED HORIZONTAL DISTANCE FROM B3376-1 TO -L- STA. 12+00.000 IS N 4° 20' 37.1" E DISTANCE 582.873m ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

-DET-

PI Sta 10+11.615 PI Sta 11+62.483  
 $\Delta = 10' 37' 01.6" (LT)$   $\Delta = 36' 08' 59.6" (RT)$   
 L = 23163 L = 94640  
 T = 11.615 T = 48.955  
 R = 125.000 R = 150.000



**METRIC**

PROJECT REFERENCE NO. B-3376 SHEET NO. 4  
 R/W SHEET NO. 6 OF 13  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

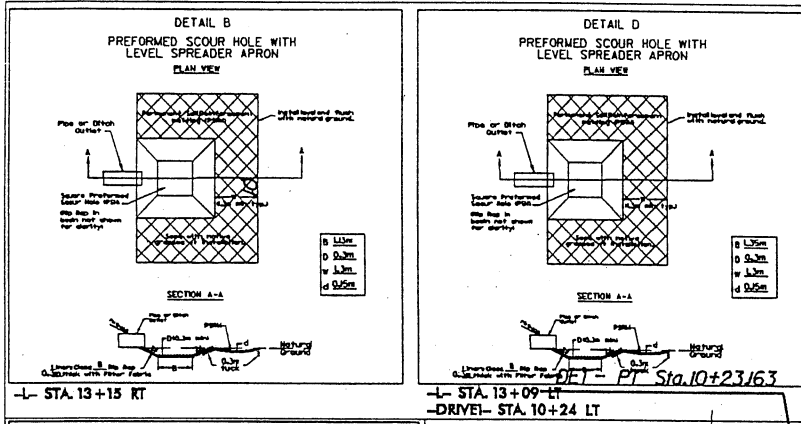
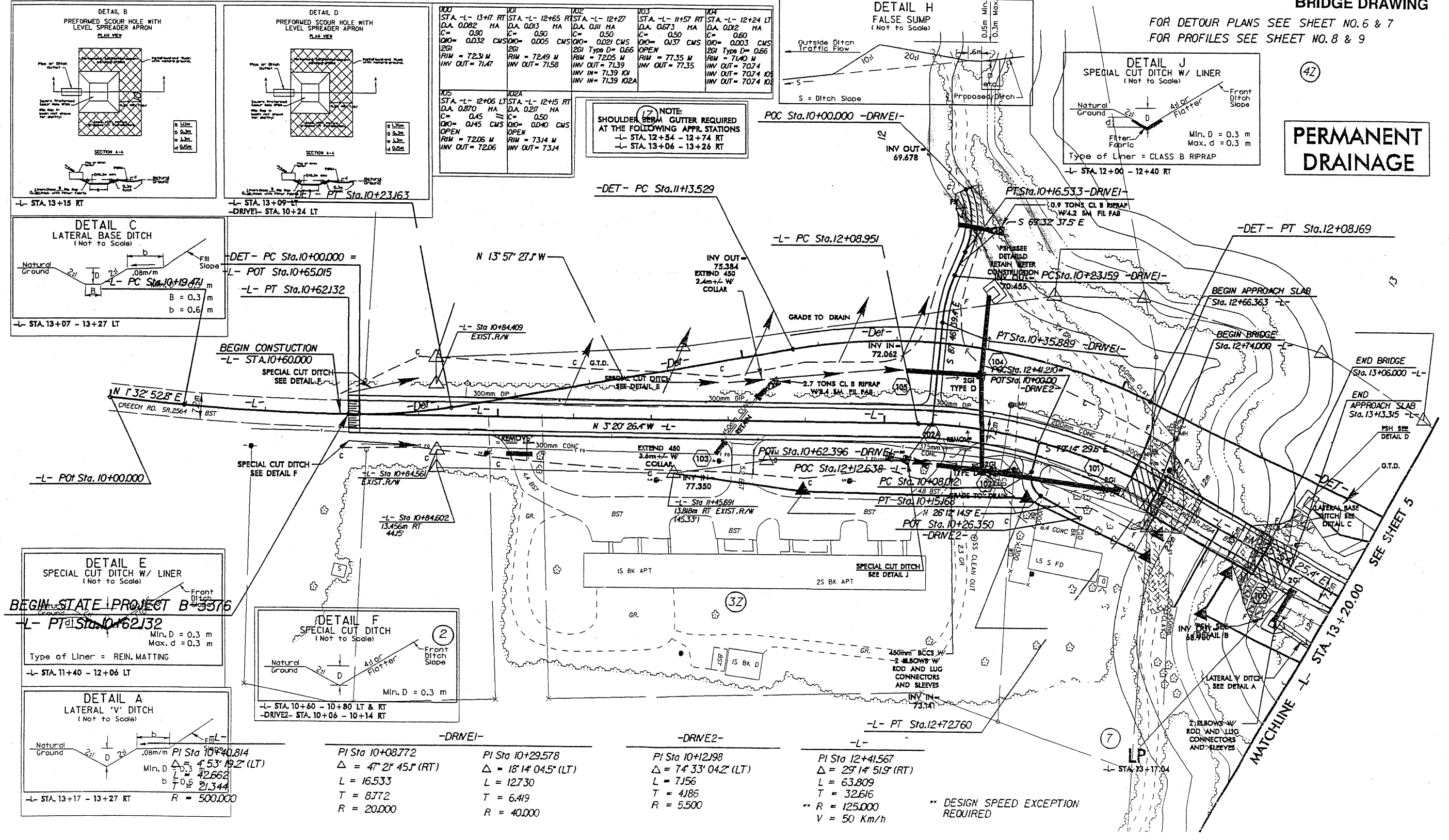
INCOMPLETE PLANS  
 PRELIMINARY PLANS

CONST. REV.  
 R/W REV.

**BRIDGE DRAWING**

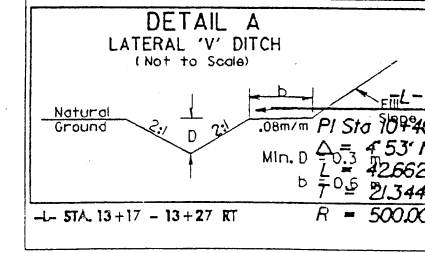
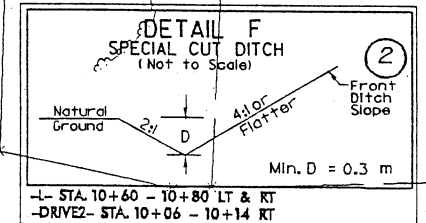
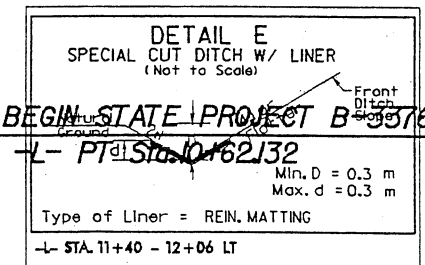
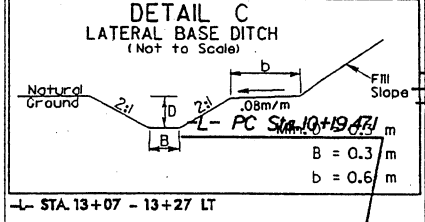
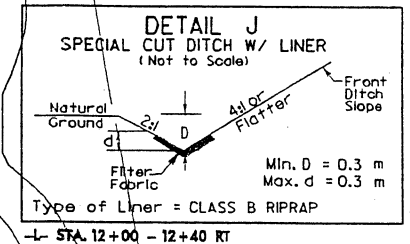
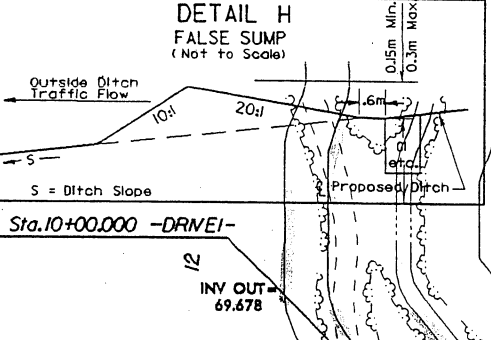
FOR DETOUR PLANS SEE SHEET NO. 6 & 7  
 FOR PROFILES SEE SHEET NO. 8 & 9

**PERMANENT DRAINAGE**



100 STA -L- 13+17 RT D.A. 0.082 HA C = 0.30 Q10 = 0.032 CMS 261 RIM = 72.31 M INV OUT = 71.47	101 STA -L- 12+65 RT D.A. 0.013 HA C = 0.50 Q10 = 0.005 CMS 261 RIM = 72.49 M INV OUT = 71.58	102 STA -L- 12+27 RT D.A. 0.111 HA C = 0.50 Q10 = 0.021 CMS 261 Type D = 0.65 RIM = 72.05 M INV IN = 71.39 IOA	103 STA -L- 11+57 RT D.A. 0.073 HA C = 0.50 Q10 = 0.037 CMS 261 Type D = 0.66 RIM = 71.40 M INV OUT = 70.74 IOA	104 STA -L- 12+24 LT D.A. 0.012 HA C = 0.60 Q10 = 0.003 CMS 261 Type D = 0.66 RIM = 71.40 M INV OUT = 70.74 IOA
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**NOTE:**  
 SHOULDER GUTTER REQUIRED AT THE FOLLOWING APPR. STATIONS  
 -L- STA. 12+54 - 12+74 RT  
 -L- STA. 13+06 - 13+26 RT



-DRIVE1-  
 PI Sta 10+08.772 PI Sta 10+29.578  
 $\Delta = 47' 21' 45.1" (RT)$   $\Delta = 18' 14' 04.5" (LT)$   
 L = 16533 L = 12730  
 T = 8.772 T = 6.419  
 R = 20.000 R = 40.000

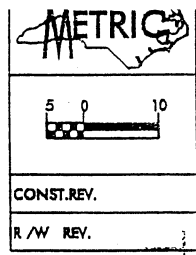
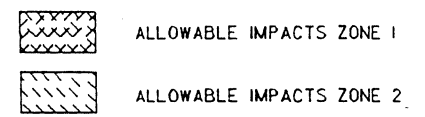
-DRIVE2-  
 PI Sta 10+12.98 PI Sta 10+12.98  
 $\Delta = 74' 33' 04.2" (LT)$   
 L = 7156  
 T = 4.186  
 R = 5.500

-L-  
 PI Sta 12+41.567 PI Sta 12+41.567  
 $\Delta = 29' 14' 51.9" (RT)$   
 L = 63.809  
 T = 32.616  
 R = 125.000  
 V = 50 Km/h  
 \*\* DESIGN SPEED EXCEPTION REQUIRED

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 10/15/2015 10:15:15 AM

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3376-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 218812.248 EASTING: 645690.488 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989708 THE NC LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3376-1" TO -L- STATION 12+00.000 IS N 4° 20' 37.11" E DISTANCE 582.873m ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 28

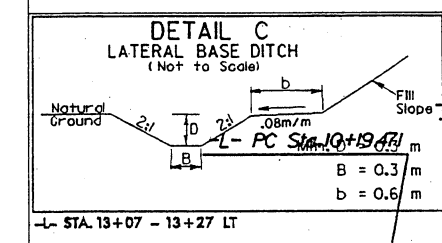
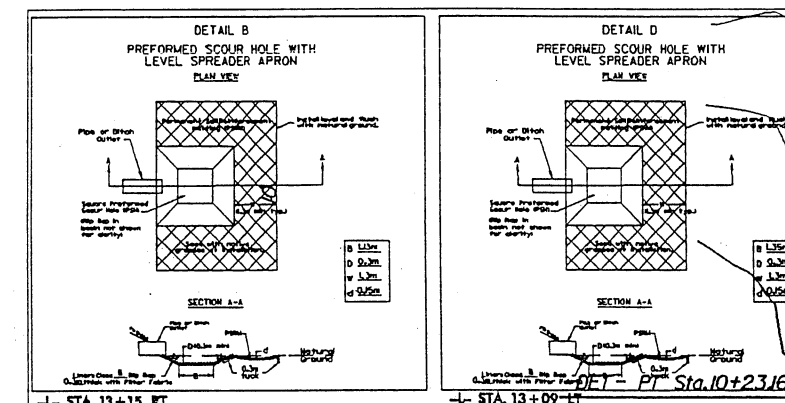
-DET-  
 PI Sta 10+11.615    PI Sta 11+62.483  
 $\Delta = 10' 37' 01.6" (LT)$      $\Delta = 36' 08' 59.6" (RT)$   
 $L = 231.63$      $L = 94.640$   
 $T = 11.615$      $T = 48.955$   
 $R = 125.000$      $R = 150.000$



B-3376		4
R/W SHEET NO. 7 of 13		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS		
PRELIMINARY PLANS		

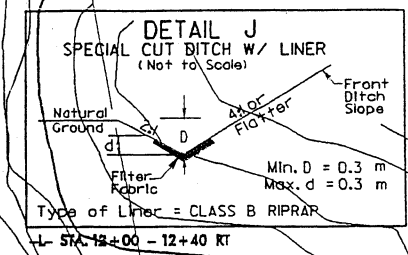
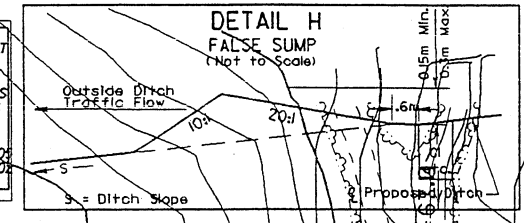
**BRIDGE DRAWING**

FOR DETOUR PLANS SEE SHEET NO. 6 & 7  
 FOR PROFILES SEE SHEET NO. 8 & 9

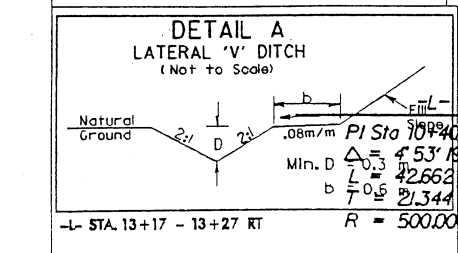
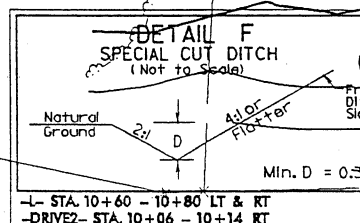
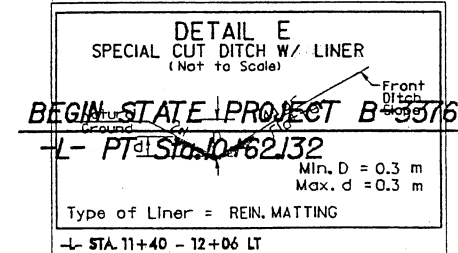
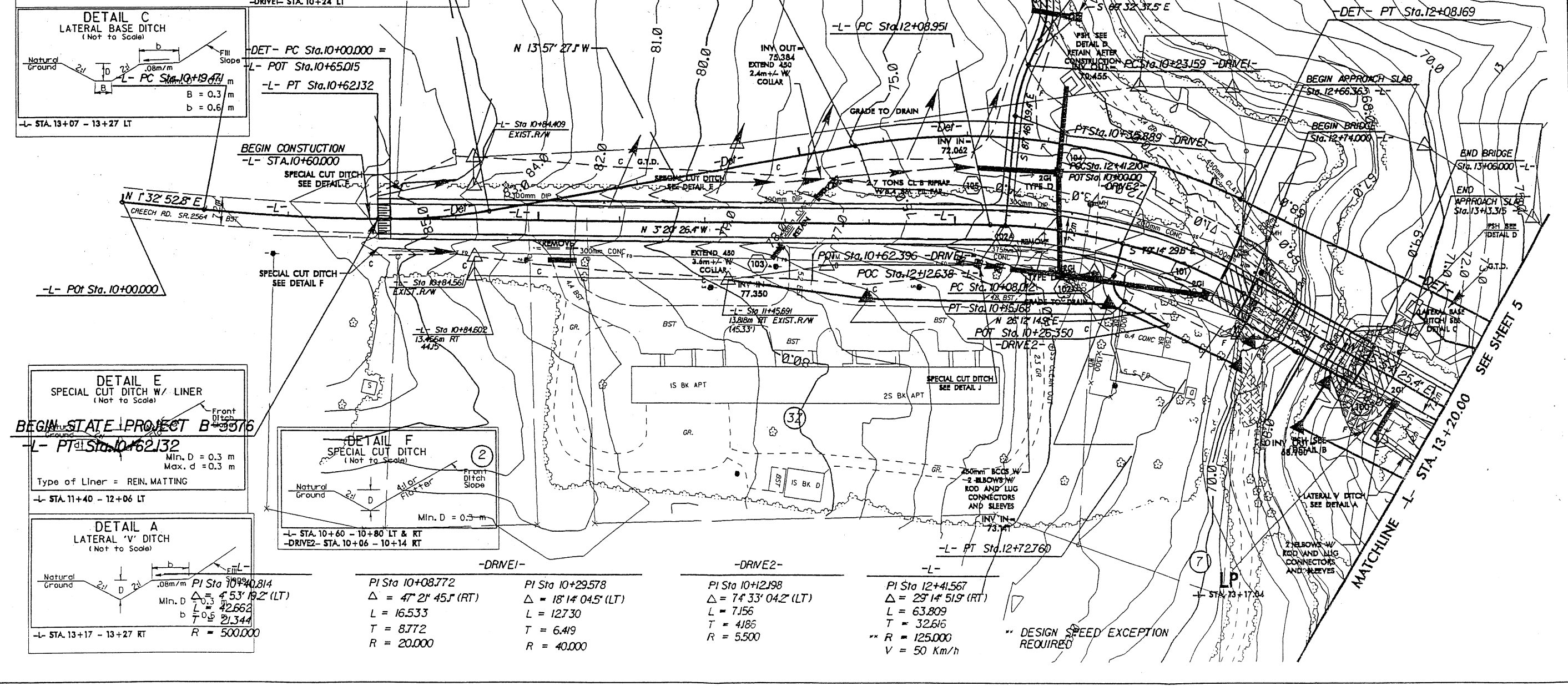


NOTE:  
 SHOULDER BERM - GUTTER REQUIRED AT THE FOLLOWING APPR. STATIONS  
 -L- STA. 12+54 - 12+74 RT  
 -L- STA. 13+06 - 13+26 RT

100 STA -L- 10+17 RT D.A. 0.082 HA C= 0.90 IOW= 0.032 CMS RIM = 72.31 M INV OUT = 71.47	101 STA -L- 10+45 RT D.A. 0.013 HA C= 0.50 IOW= 0.005 CMS RIM = 72.49 M INV OUT = 71.58	102 STA -L- 10+27 RT D.A. 0.111 HA C= 0.50 IOW= 0.022 CMS RIM = 72.05 M INV OUT = 71.39	103 STA -L- 11+57 RT D.A. 0.073 HA C= 0.50 IOW= 0.037 CMS RIM = 77.35 M INV OUT = 77.35	104 STA -L- 12+24 LT D.A. 0.002 HA C= 0.60 IOW= 0.008 CMS RIM = 71.40 M INV OUT = 70.74
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**PERMANENT DRAINAGE**



-DRIVE1-  
 PI Sta 10+08.772    PI Sta 10+29.578  
 $\Delta = 47' 21' 45.1" (RT)$      $\Delta = 18' 14' 04.5" (LT)$   
 $L = 16.533$      $L = 127.30$   
 $T = 8.772$      $T = 6.419$   
 $R = 20.000$      $R = 40.000$

-DRIVE2-  
 PI Sta 10+12.198    PI Sta 10+12.198  
 $\Delta = 74' 33' 04.2" (LT)$   
 $L = 127.30$   
 $T = 41.85$   
 $R = 5.500$

-L-  
 PI Sta 12+41.567    PI Sta 12+41.567  
 $\Delta = 29' 14' 51.9" (RT)$   
 $L = 63.809$   
 $T = 32.616$   
 $R = 125.000$   
 \*\* DESIGN SPEED EXCEPTION REQUIRED  
 V = 50 Km/h

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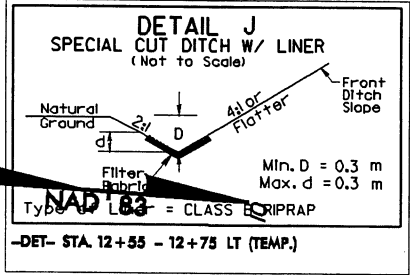
**DATUM DESCRIPTION**

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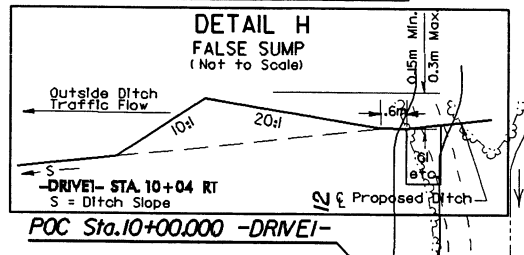
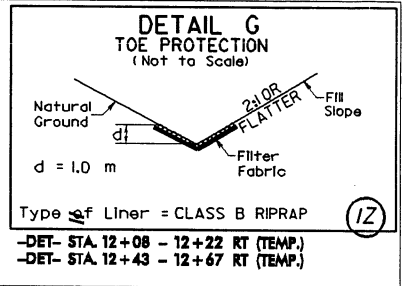
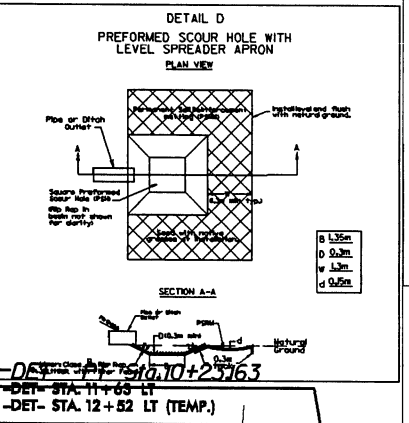
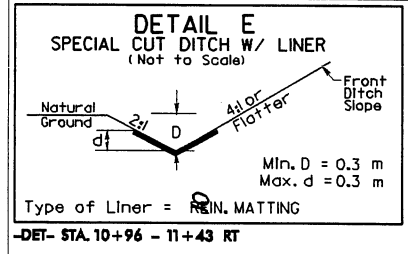
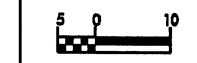
PROJECT REFERENCE NO. B-3376		SHEET NO. 4	
R/W SHEET NO. 8 OF 13		ROADWAY DESIGN ENGINEER	
HYDRAULICS ENGINEER		INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		CONST.REV.	
R/W REV.			

**-DET-**

PI Sta 10+11.615	PI Sta 11+62.483
$\Delta = 10' 37' 01.6" (LT)$	$\Delta = 36' 08' 59.6" (RT)$
L = 23.163	L = 94.640
T = 11.615	T = 48.955
R = 125.000	R = 150.000



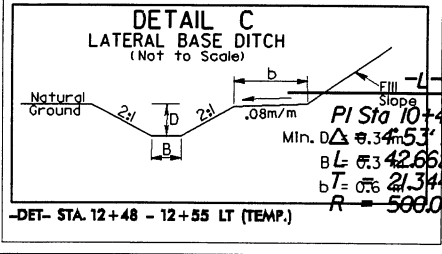
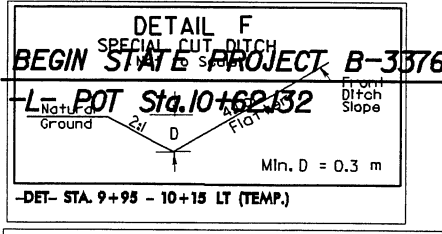
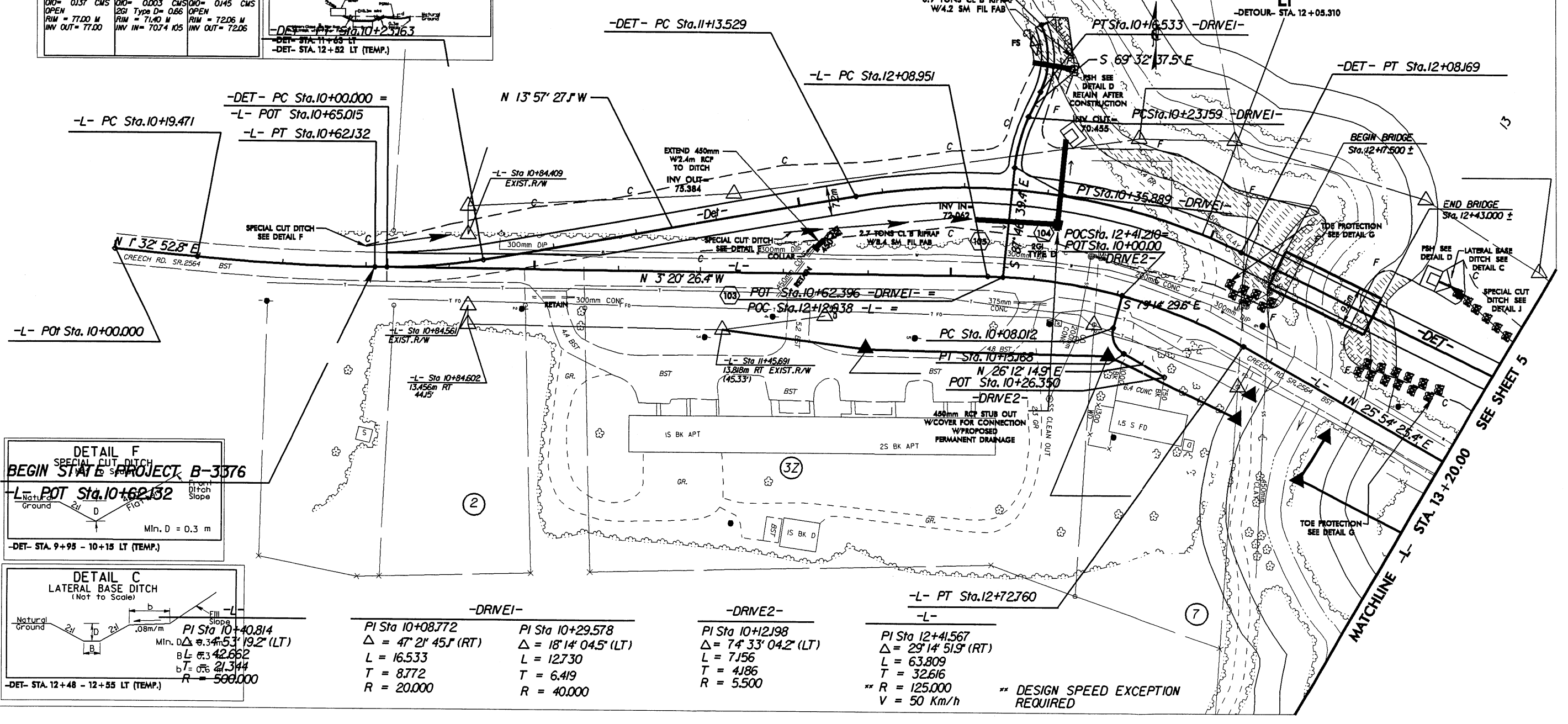
ALLOWABLE IMPACTS ZONE 1  
ALLOWABLE IMPACTS ZONE 2



103 STA -L- 11+57 RT D.A. 0.673 HA C= 0.50 O.D= 0.137 CMS OPEN RIM = 77.00 M INV OUT= 77.00	104 STA -L- 12+24 LT D.A. 0.012 HA C= 0.60 O.D= 0.003 CMS 261 Type D= 0.66 OPEN RIM = 71.40 M INV IN= 70.74 M	105 STA -L- 12+06 LT D.A. 0.870 HA C= 0.45 O.D= 0.145 CMS OPEN RIM = 72.06 M INV OUT= 72.06
--	--	--

FOR DETOUR PLANS SEE SHEET NO. 6 & 7  
FOR PROFILES SEE SHEET NO. 8 & 9

**DETOUR DRAINAGE**



**-DRVE1-**

PI Sta 10+08.772	PI Sta 10+29.578
$\Delta = 47' 21' 45.1" (RT)$	$\Delta = 18' 14' 04.5" (LT)$
L = 16.533	L = 12.730
T = 8.772	T = 6.419
R = 20.000	R = 40.000

**-DRVE2-**

PI Sta 10+12.198	PI Sta 12+41.567
$\Delta = 74' 33' 04.2" (LT)$	$\Delta = 29' 14' 51.9" (RT)$
L = 7.156	L = 63.809
T = 4.186	T = 32.616
R = 5.500	R = 125.000

**-L-**

PI Sta 12+41.567	$\Delta = 29' 14' 51.9" (RT)$
L = 63.809	
T = 32.616	
R = 125.000	

\*\* DESIGN SPEED EXCEPTION REQUIRED  
V = 50 Km/h

B:\Projects\B3376\Drawings\Sheet\4.dwg

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT B3376-1 WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 218812.248 EASTING: 845880.488 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989708 THE NC LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM B3376-1 TO -L- STATION 12+00.000 IS N 4° 20' 37.11" E DISTANCE 582.673m ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

**METRIC**

PROJECT REFERENCE NO. B-3376 SHEET NO. 4

R/W SHEET NO. 9 OF 13

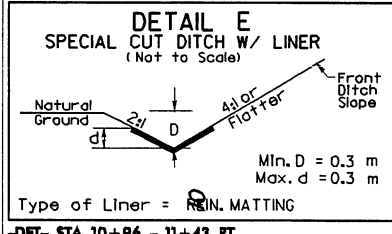
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

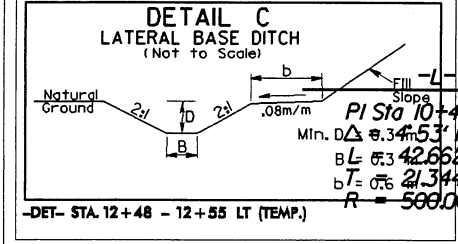
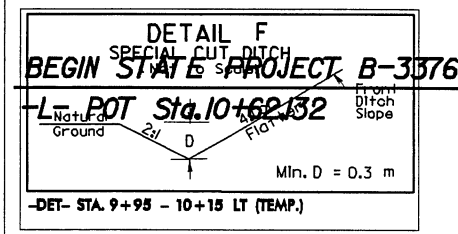
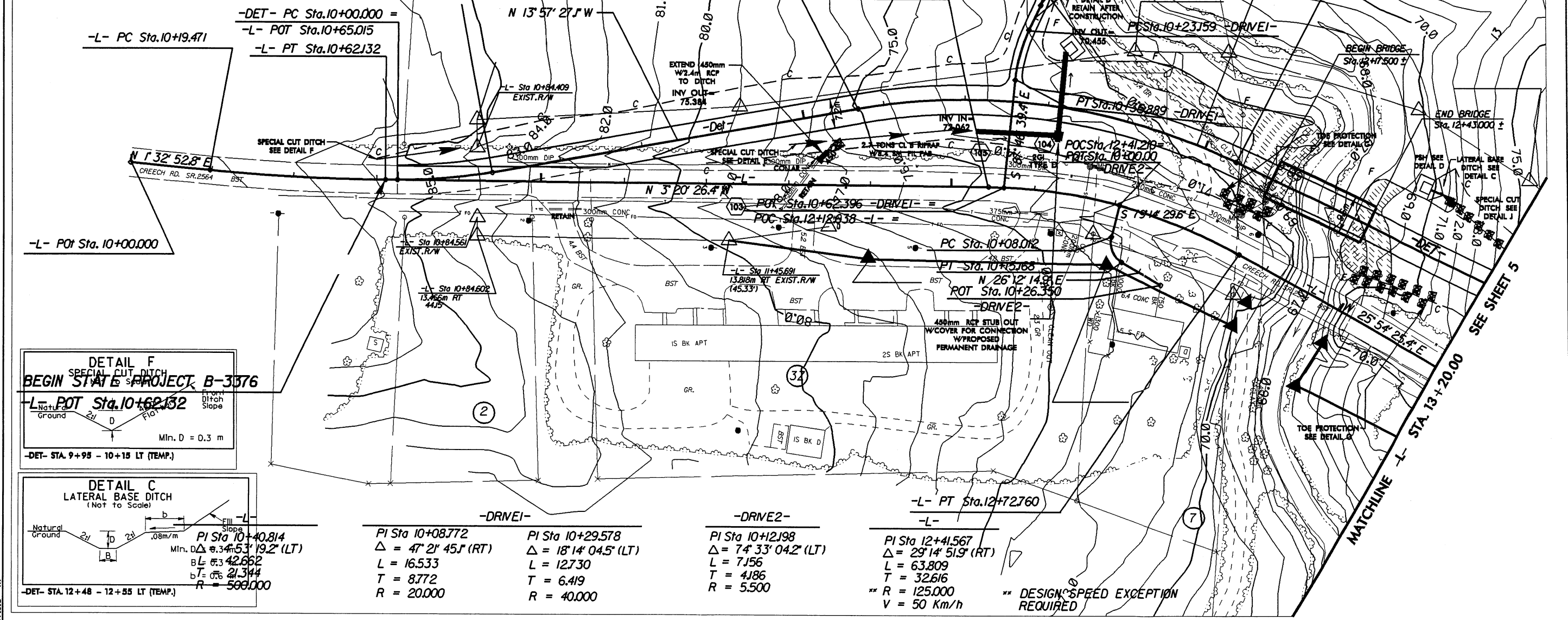
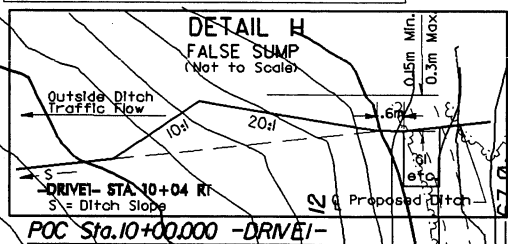
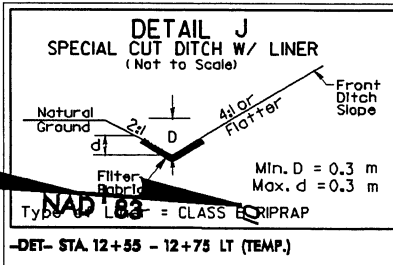
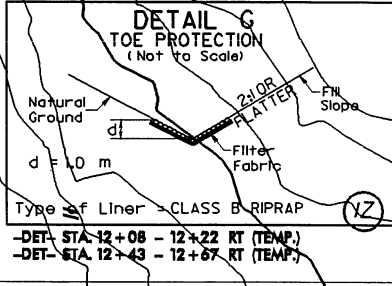
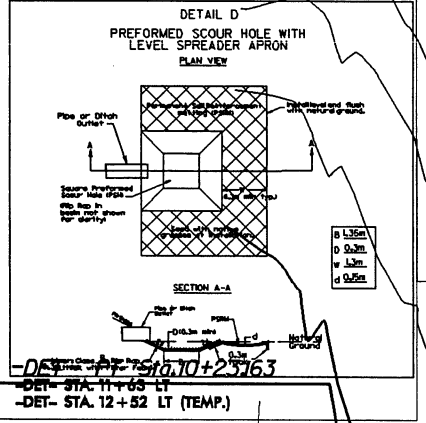
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

CONST. REV.  
R/W REV.

5 0 10



103	104	105
STA -L- 11+57 RT	STA -L- 12+24 LT	STA -L- 12+06 LT
D.A. 0.673 HA	D.A. 0.012 HA	D.A. 0.870 HA
C = 0.50	C = 0.60	C = 0.45
Q10 = 0.37 CMS	Q10 = 0.003 CMS	Q10 = 0.145 CMS
OPEN	2G1 Type D = 0.66	OPEN
RIM = 77.00 M	RIM = 71.40 M	RIM = 72.05 M
INV OUT = 77.00	INV IN = 70.74 105	INV OUT = 72.05



**-DRIVE1-**

PI Sta 10+08.772	PI Sta 10+29.578
Δ = 47° 21' 45.1" (RT)	Δ = 18° 14' 04.5" (LT)
L = 16.533	L = 12.730
T = 8.772	T = 6.419
R = 20.000	R = 40.000

**-DRIVE2-**

PI Sta 10+12.98	PI Sta 12+41.567
Δ = 74° 33' 04.2" (LT)	Δ = 29° 14' 51.9" (RT)
L = 7.156	L = 63.809
T = 4.186	T = 32.616
R = 5.500	R = 125.000

**-L-**

PI Sta 12+41.567	PI Sta 12+41.567
Δ = 29° 14' 51.9" (RT)	Δ = 29° 14' 51.9" (RT)
L = 63.809	L = 63.809
T = 32.616	T = 32.616
R = 125.000	R = 125.000

\*\* DESIGN SPEED EXCEPTION REQUIRED  
V = 50 Km/h

FOR DETOUR PLANS SEE SHEET NO. 6 & 7  
FOR PROFILES SEE SHEET NO. 8 & 9

**DETOUR DRAINAGE**

MATCHLINE - STA. 13+20.00 SEE SHEET 5

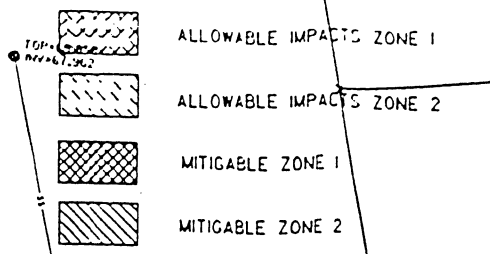
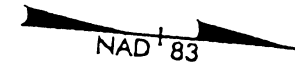
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DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT B3376-1 WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 218812.248 EASTING: 645890.488  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989708  
 THE NC LAMBERT GRID BEARING  
 LOCALIZED HORIZONTAL GROUND DISTANCE FROM B3376-1 TO L- STATION 12+00.000 IS  
 N 4° 20' 37.11" E DISTANCE 882.873m  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NGVD 29

-DET-  
 PI Sta 10+11.615 PI Sta 11+62.483  
 $\Delta = 10' 37" 01.6" (LT)$   $\Delta = 36' 08" 59.6" (RT)$   
 L = 23163 L = 94.640  
 T = 11615 T = 48.955  
 R = 125.000 R = 150.000



PROJECT REFERENCE NO. R-3376 SHEET NO. 13 OF 13  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
 INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION  
 PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION  
 CONST. REV. R/W REV.

UTILITY DRAWING

FOR DETOUR PLANS SEE SHEET NO. 6 & 7  
 FOR PROFILES SEE SHEET NO. 8 & 9

(42)  
 MARC C. YOUNG  
 2008-E-2497

NOTE:  
 SHOULDER BERM GUTTER REQUIRED AT THE FOLLOWING APPR. STATIONS  
 -L- STA. 12+58 TO 12+64.38+- RT  
 -L- STA. 13+13.62+- TO 13+26 RT

FRANCES W. UNDERHILL GRANDCHILDREN TRUST DB 5491 PG 804

BETTY C. & BILLY T. WILDER DB 1804 PG 267

-DET- PC Sta. 10+00.000 =  
 -L- POT Sta. 10+65.015  
 -L- PT Sta. 10+62.132

-DET- PC Sta. 11+35.229

POC Sta. 10+00.000 -DRIVE1-

PT Sta. 10+65.33 -DRIVE1-

-DET- PT Sta. 12+08.169

-L- PC Sta. 10+19.471

BEGIN CONSTRUCTION  
 -L- STA. 10+60.000  
 SPECIAL CUT DITCH SEE DETAIL E

-L- STA. 11+50.000  
 27.50m LT, 90.22'

-L- PC Sta. 12+08.951

PT Sta. 10+35.85 -DRIVE1-

BEGIN BRIDGE

-L- POT Sta. 10+00.000

SPECIAL CUT DITCH SEE DETAIL F

POC Sta. 12+12.338 -L-

POT Sta. 10+62.396 -DRIVE1-

PT Sta. 10+15.168

BEGIN BRIDGE

END BRIDGE  
 Sta. 13+06.000

BEGIN STATE PROJECT B-3376  
 -L- PT Sta. 10+62.132

KENNETH V. & REBECCA W. HOLMES DB 3645 PG 182

JOHN W. WINTERS DB 3126 PG 502

CHARLIE C. & JESSIE M. WATSON DB 1786 PG 141

MARGARET B. COLEMAN DB 3126 PG 502

JOAN E. BUOL DB 1890 PG 16334 DB 8076 PG 615

-L-  
 PI Sta 10+40.814  
 $\Delta = 4' 53" 19.2" (LT)$   
 L = 42.662  
 T = 21.344  
 R = 500.000

-DRIVE1-  
 PI Sta 10+08.772  
 $\Delta = 4' 21" 45.1" (RT)$   
 L = 16.533  
 T = 8.772  
 R = 20.000

PI Sta 10+29.578  
 $\Delta = 18' 14" 04.5" (LT)$   
 L = 12.730  
 T = 6.419  
 R = 40.000

-DRIVE2-  
 PI Sta 10+12.198  
 $\Delta = 74' 33" 04.2" (LT)$   
 L = 71.56  
 T = 41.86  
 R = 5.500

-L-  
 PI Sta 12+41.567  
 $\Delta = 29' 14" 51.8" (RTM)$   
 L = 63.809  
 T = 32.616  
 R = 125.000  
 V = 50 Km/h

\*\* DESIGN SPEED EXCEPTION REQUIRED

MATCHLINE -L- STA. 13+20.00 SEE SHEET 5

DATE: 05/04/2011 09:55:11 D:\mrc\p1111011011.dwg  
 PLOT: 05/04/2011 10:00:00 PLOT: 05/04/2011 10:00:00  
 USER: mrc

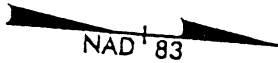
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT B3376-1 WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 218812.248 EASTING: 645690.466 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989708 THE NC LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM B3376-1 TO -L- STATION 12+00.000 IS N 4° 20' 37.11" E DISTANCE 882.673m ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

METRIC PROJECT REFERENCE NO. R-3376 SHEET NO. 10 OF 13 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER INCOMPLETE PLANS PRELIMINARY PLANS CONST. REV. R/W REV. UTILITY DRAWING FOR DETOUR PLANS SEE SHEET NO. 6 & 7 FOR PROFILES SEE SHEET NO. 8 & 9 MARC C. YOUNG 2001-E-2497

-DET- PI Sta 10+11.615 PI Sta 11+62.493 Δ = 10° 37' 01.6" (LT) Δ = 36° 08' 59.6" (RT) L = 23.163 L = 94.640 T = 11.615 T = 48.955 R = 125.000 R = 150.000

- ALLOWABLE IMPACTS ZONE 1 ALLOWABLE IMPACTS ZONE 2 MITIGABLE ZONE 1 MITIGABLE ZONE 2

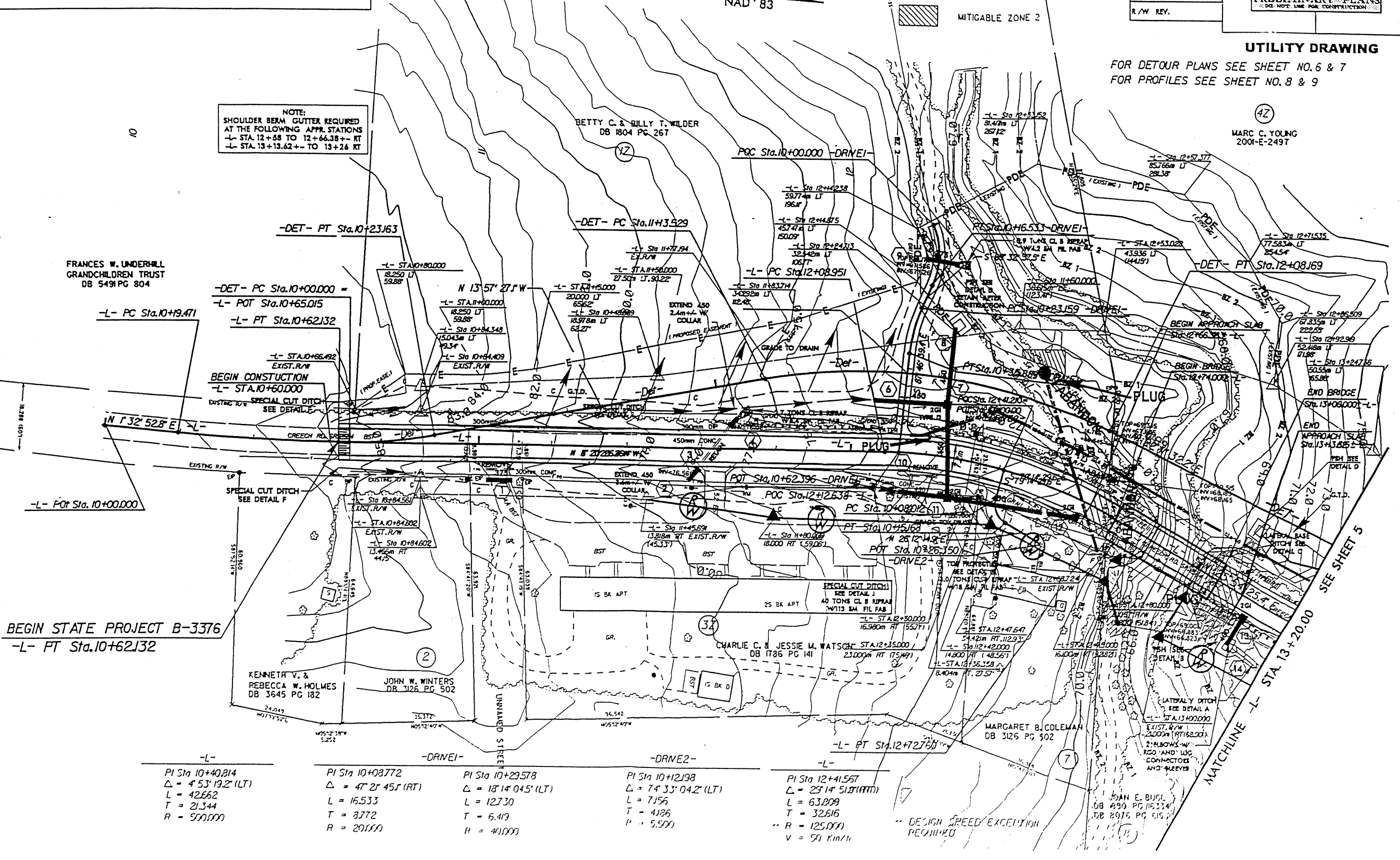


NOTE: SHOULDER BERM GUTTER REQUIRED AT THE FOLLOWING APPR. STATIONS -L- STA 12+58 TO 12+64.38+- RT -L- STA 13+13.62+- TO 13+26 RT

FRANCES W. UNDERHILL GRANDCHILDREN TRUST DB 5491 PG 804

BETTY C. & BILLY T. WILDER DB 1804 PG 267

42 MARC C. YOUNG 2001-E-2497



BEGIN STATE PROJECT B-3376 -L- PT Sta. 10+62.132

Table with 5 columns of curve data: PI Sta 10+40.814, PI Sta 10+08.772, PI Sta 10+29.578, PI Sta 10+12.198, PI Sta 12+41.567. Includes Δ, L, T, R values for each curve.

DESIGN SPEED EXCEPTION MAINTAINED

SEE SHEET 5 STA 13+20.00

ALL WATER AND SEWER LINES OWNED BY THE CITY OF RALEIGH

**METRIC**

SCALE 1:24 = 7.3

DESIGNED BY: JH  
 DRAWN BY: JH  
 CHECKED BY: CDB  
 APPROVED BY: CDB  
 REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DESIGN SERVICES UNIT  
 PHONE: (919) 250-4128  
 FAX: (919) 250-4119

UTILITY CONSTRUCTION PLANS ONLY

FOR PROFILE OF -L- SEE SHEET 5  
 FOR PROFILE OF DRIVE 1 SEE SHEET 6  
 FOR DETOUR PLANS SEE SHEET NO. 3 & 4  
 FOR PROFILES SEE SHEET NO. 3 & 4

SKETCH SHOWING BRIDGE PAVEMENT RELATIONSHIP

PROP. FILL OR REMOVE 76M OF 450 MM ABANDONED SEWER PIPES

PROP. MANHOLE "EQ1"  
 STA. 0+69.4 LINE 1  
 STA. 0+00 LINE 2  
 STA. 12+44.24, LINE -L- 28.21 LT

EXIST. MANHOLE "B2"  
 STA. 0+24.8, LINE 2  
 STA. 12+32.19, LINE -L- 7.51 LT

PROP. BREAK DOWN AND PLUG AND FILL 2 ABANDONED UTILITY MANHOLES

FRANCES W. UNDERHILL GRANDCHILDREN TRUST  
 DB 549 PG 804

BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

BETTY C. & SALLY T. WILDER  
 DB 804 PG 267

THE COOPER, W. BROWN  
 DB 3074 PG 284

BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

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BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

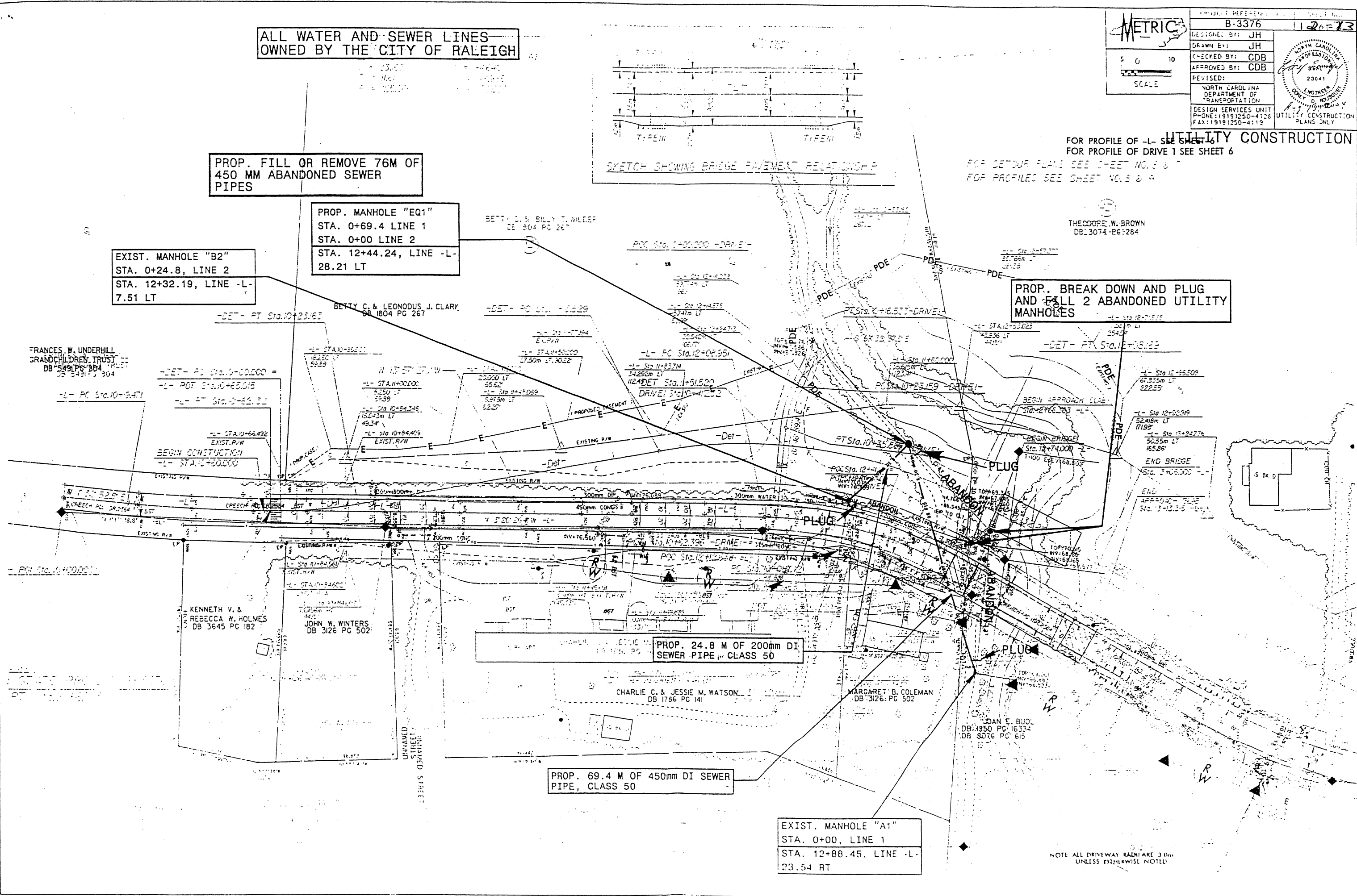
BETTY C. & LEONODUS J. CLARY  
 DB 1804 PG 267

PROP. 24.8 M OF 200mm DI SEWER PIPE CLASS 50

PROP. 69.4 M OF 450mm DI SEWER PIPE, CLASS 50

EXIST. MANHOLE "A1"  
 STA. 0+00, LINE 1  
 STA. 12+88.45, LINE -L- 23.54 RT

NOTE ALL DRIVEWAY RADII ARE 3.0m UNLESS OTHERWISE NOTED







## WQC #3366

**GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE  
FOR CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER 33  
(TEMPORARY CONSTRUCTION, ACCESS AND DEWATERING)  
AND RIPARIAN AREA PROTECTION RULES (BUFFER RULES)**

This General Certification is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality Regulations in 15A NCAC 2H, Section .0500 and 15A NCAC 2B .0200 for the discharge of fill material to waters and wetland areas as described in 33 CFR 330 Appendix A (B) (33) of the Corps of Engineers regulations (i.e., Nationwide Permit No. 33) and for the Riparian Area Protection Rules (Buffer Rules) in 15A NCAC 2B .0200. The category of activities shall include any fill activity for temporary construction, access and de-watering. This Certification replaces Water Quality Certification Number 2727 issued on May 1, 1992 and Certification Number 3114 issued on February 11, 1997. This WQC is rescinded when the Corps of Engineers reauthorize Nationwide Permit 33 or when deemed appropriate by the Director of the DWQ.

The State of North Carolina certifies that the specified category of activity will not violate appropriate portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Conditions of Certification:

1. These activities do not require written concurrence from the Division of Water Quality as long as they comply with all conditions of this General Certification. If any condition in this Certification cannot be met, application to and written concurrence from DWQ are required. Also, Condition No. 2 is applicable to all streams in basins with riparian area protection rules;
2. Impacts to any stream length in the Neuse, Tar-Pamlico and Randleman River Basins (or any other major river basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) requires written concurrence from DWQ in accordance with 15A NCAC 2B.0200. Activities listed as "exempt" from these rules do not need to apply for written concurrence under this Certification. New development activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse, Tar-Pamlico, Randleman and Catawba River Basins shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0200. All new development shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices;
3. Appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" whichever is more appropriate (available from the Division of Land Resources (DLR) in the DENR Regional or Central Offices) shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard;

## WQC #3366

4. All sediment and erosion control measures placed in wetlands or waters shall be removed and the original grade restored within two months after the Division of Land Resources has released the project;
5. If an environmental document is required, this Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse;
6. Placement of culverts and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts including open bottom or bottomless arch culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in aggradation, degradation or significant changes in hydrology of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ. Additionally, when roadways, causeways or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges must be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in aggradation, degradation or significant changes in hydrology of streams or wetlands;
7. Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the state until the concrete has hardened;
8. All temporary fill shall be removed to the original grade after construction is complete and the site shall be stabilized to prevent erosion;
9. Pipes shall be installed under the road or causeway in all streams to carry at least the 25 year storm event as outlined in the most recent edition of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" so as not to restrict stream flow during use of this Certification;
10. In accordance with North Carolina General Statute Section 143-215.3D(e), any request for written concurrence for a 401 Water Quality Certification must include the appropriate fee. If a project also requires a CAMA Permit, one payment to both agencies shall be submitted and will be the higher of the two fees;
11. Additional site-specific conditions may be added to projects for which written concurrence is required or requested under this Certification in order to ensure compliance with all applicable water quality and effluent standards;
12. Concurrence from DWQ that this Certification applies to an individual project shall expire three years from the date of the cover letter from DWQ or on the same day as the expiration date of these corresponding Nationwide and Regional General Permits, whichever is sooner;

## WQC #3366

13. When written concurrence is required, the applicant is required to use the most recent version of the Certification of Completion form to notify DWQ when all work included in the 401 Certification has been completed.

Non-compliance with or violation of the conditions herein set forth by a specific fill project shall result in revocation of this Certification for the project and may result in criminal and/or civil penalties.

The Director of the North Carolina Division of Water Quality may require submission of a formal application for individual certification for any project in this category of activity that requires written concurrence under this certification, if it is determined that the project is likely to have a significant adverse effect upon water quality or degrade the waters so that existing uses of the wetland, stream or downstream waters are precluded.

Public hearings may be held for specific applications or group of applications prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Quality.

Effective date: 18 March 2002

DIVISION OF WATER QUALITY

By

Gregory J. Thorpe, Ph.D.

Acting Director

WQC # 3366

## WQC #3403

### **GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBER 23 (APPROVED CATEGORICAL EXCLUSIONS) AND RIPARIAN AREA PROTECTION RULES (BUFFER RULES)**

This General Certification is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality Regulations in 15A NCAC 2H, Section .0500 and 15A NCAC 2B .0200 for the discharge of fill material to waters and wetland areas as described in 33 CFR 330 Appendix A (B) (23) and for the Riparian Area Protection Rules (Buffer Rules) in 15A NCAC 2B .0200. This Certification replaces Water Quality Certification Number 2670 issued on January 21, 1992, Certification Number 2734 issued on May 1 1993, Certification Number 3107 issued on February 11, 1997 and Water Quality Certification Number 3361 issued March 18, 2002. This WQC is rescinded when the Corps of Engineers re-authorizes Nationwide Permit 23 or when deemed appropriate by the Director of the DWQ.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

#### Conditions of Certification:

1. Proposed fill or substantial modification of wetlands or waters (including streams) under this General Certification requires notification to the Division of Water Quality. Two copies shall be submitted to DWQ at the time of notification in accordance with 15A NCAC 2H .0501(a). Written concurrence from DWQ is not required unless any standard conditions of this Certification cannot be met;
2. Appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" whichever is more appropriate (available from the Division of Land Resources (DLR) in the DENR Regional or Central Offices) shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard;
3. In accordance with 15A NCAC 2H .0506 (h) compensatory mitigation may be required for impacts to 150 linear feet or more of streams and/or one acre or more of wetlands. In addition, buffer mitigation may be required for any project with Buffer Rules in effect at the time of application for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A determination of buffer, wetland and stream mitigation requirements shall be made for any Certification for this Nationwide Permit. The most current design and monitoring protocols from DWQ shall be followed and written plans submitted for DWQ approval as required in those protocols. When compensatory mitigation is required for a project, the mitigation plans must be approved by DWQ in writing before the impacts approved by the Certification occur. The mitigation plan must be implemented and/or constructed before any permanent building or structure on

## WQC #3403

site is occupied. In the case of public road projects, the mitigation plan must be implemented before the road is opened to the travelling public;

4. Compensatory stream mitigation shall be required at a 1:1 ratio for not only perennial but also intermittent stream impacts equal to or exceeding 150 feet and that require application to DWQ in watersheds classified as ORW, HQW, Tr, WS-I and WS-II unless the project is a linear, publicly-funded transportation project, which has a 150-foot per-stream impact allowance;
5. All sediment and erosion control measures placed in wetlands or waters shall be removed and the original grade restored within two months after the Division of Land Resources has released the project;
6. Measures shall be taken to prevent live or fresh concrete from coming into contact with freshwaters of the state until the concrete has hardened;
7. In accordance with North Carolina General Statute Section 143-215.3D(e), any request for written concurrence for a 401 Water Quality Certification must include the appropriate fee. If a project also requires a CAMA Permit, one payment to both agencies shall be submitted and will be the higher of the two fees;
8. Impacts to any stream length in the Neuse, Tar-Pamlico, Randleman and Catawba River Basins (or any other river basins with Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) requires written concurrence from DWQ in accordance with 15A NCAC 2B.0200. Activities listed as "exempt" from these rules do not need to apply for written concurrence under this Certification. New development activities located in the protected 50-foot wide riparian areas (whether jurisdictional wetlands or not) within the Neuse, Tar-Pamlico, Randleman and Catawba River Basins shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0200. All new development shall be located, designed, constructed, and maintained to have minimal disturbance to protect water quality to the maximum extent practicable through the use of best management practices;
9. Additional site-specific conditions may be added to projects for which written concurrence is required or requested under this Certification in order to ensure compliance with all applicable water quality and effluent standards;
10. Concurrence from DWQ that this Certification applies to an individual project shall expire three years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Nationwide and Regional General Permits, whichever is sooner;
11. When written concurrence is required, the applicant is required to use the most recent version of the Certification of Completion form to notify DWQ when all work included in the 401 Certification has been completed.

Non-compliance with or violation of the conditions herein set forth by a specific fill project shall result in revocation of this Certification for the project and may result in criminal and/or civil penalties.

## WQC #3403

The Director of the North Carolina Division of Water Quality may require submission of a formal application for individual certification for any project in this category of activity that requires written concurrence under this certification, if it is determined that the project is likely to have a significant adverse effect upon water quality or degrade the waters so that existing uses of the wetland, stream or downstream waters are precluded.

Public hearings may be held for specific applications or group of applications prior to a Certification decision if deemed in the public's best interest by the Director of the North Carolina Division of Water Quality.

Effective date: March 2003

DIVISION OF WATER QUALITY

By

Alan W. Klimek, P.E.

Director

WQC # 3403

DWQ Project No.: \_\_\_\_\_

County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

**Certificate of Completion**

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1621 Mail Service Center, Raleigh, NC, 27699-1621. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

**Applicant's Certification**

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Agent's Certification**

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Engineer's Certification**

\_\_\_\_\_ Partial \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_

Date \_\_\_\_\_

