STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 3, 2005

DENR Division of Water Quality
1650 Mail Service Center
Raleigh, NC 27699-1650

ATTENTION: Ms. Nicole Thomson
NCDOT Coordinator

SUBJECT: **Permit Modification Request to Riparian Buffer Certification** for the proposed replacement of Bridge No. 246 over Little Arm Branch on SR 2564 (Creech Road) in Wake County, Division 5. Federal Aid Project No. BRSTP-2564(1), State Project No. 8.2406901, T.I.P. B-3376.

Dear Madam:

On October 27, 2004, a Neuse Buffer Rules Authorization Certificate (DWQ No. 041464) was issued. Permitted activities included impacts to protected riparian buffers associated with NCDOT's proposed replacement of Bridge No. 246 over Little Arm Branch on SR 2564 (Creech Road) in Wake County. The proposed bridge will be approximately 105 feet in length and 35 feet in width, with a 24 foot travel way and with 4 - 7 foot offsets. Traffic will be detoured onsite, using a temporary bridge located upstream of the existing bridge during construction. The detour bridge will be approximately 80 feet in length. The new bridge will be constructed to span Little Arm Branch, [DWQ Index #27-34-11(2)].

In the original application dated, August 30, 2004, impacts associated with Driveway 1 Sta. 10+05 in Riparian Buffer Zones 1 and 2 were not addressed. The additional impacts to Neuse River Riparian Buffers are as follows: an additional 197 ft^2 of Zone 1 impacts and 347 ft^2 of Zone 2 impacts will be associated with installing a 375mm pipe related to driveway work from Sta. 10+00 to ~10+05 -DRIVE1- within the Neuse River Basin (03-04-03, HUC 03020201). These impacts are depicted in the attached revised permit drawings sheet 8 and sheet 9 of 13. Additionally, in the buffer certification dated October 27, 2004, utility impacts associated with Buffer Zone 2 were incorrectly classified as impacts requiring mitigation. Only impacts to buffers in Zone 1 for the construction of the sewer line and the above-mentioned additional impacts to Zone 1 and 2 from the driveway work will require mitigation. Project plan sheets and the CE document were distributed along with the original application.

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501
WEBSITE: WWW. NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
PLB SUITE 168
RALEIGH NC 27604

Additionally, the impact table that was received for the original buffer application was shown in square meters. It was converted to acres for the buffer application, then DWQ converted the impacts into square feet. When the numbers were converted from square meters to acres then again to square feet, they deviated anywhere from 0-30 square feet from the original impact amounts the hydraulic engineers calculated (Table 1).

Table 1. Conversion Deviation Totals

Impact Locations	Original Amount (Zones 1 & 2)	Conversion Deviation*	Deviation Total (ft^2)
STA -L- 12+66-12+85	2,265	2,283	18
STA -L- 12+99-13+10	2,178	2,204	26
DET STA 11+68-12+24	5,794	5,816	22
DET STA 12+39-12+54	2,352	2,382	30
STA -L- 12+38-12+48	523	531	0
STA -L- 12+77-12+93	1,219	1,240	21
Total	**14,331**	**14,456***	**117**

*not including additional roadway impacts (544 ft^2)

New Impacts to Waters of the United States

There will be no impacts to Waters of the United States.

New Impacts to Wetlands

There will be no impacts to wetlands.

Impacts to Neuse River Basin Buffers

Table 2. Neuse Riparian Buffer Impacts (Square Feet) as reported in 10/27/04 Buffer Certification

	Sewer Line/MH Parallel Impact	Bridge Construction
Zone 1 Impact (sq. ft.)	653	3,616
Zone 2 Impact (sq. ft.)	1,089	8,973
TOTAL IMPACTS	**1,742**	**12,589**
Mitigation requirements (exempt, allowable or allowable with mitigation)	Zone 1: Allowable with Mitigation Zone 2: Allowable with Mitigation	Allowable Allowable
Mitigable Impacts (using 3:1 ratio) for Zones 1	1,959	N/A
Mitigable Impacts (using 1:1.5 ratio) for Zones 2	1,634	N/A
TOTAL MITIGATION REQUIRED	**3,593**	**N/A**

NCDOT has previously made payment for buffer impacts associated with the October 27, 2004 buffer certification. Impacts previously mitigated for in Zone 1 total 1,959 ft^2 and 1,634 ft^2 in Zone 2 equaling 3,593 ft^2 (see Table 2). Additional impacts from the roadway will require a total of 1,112 ft^2 of mitigation (see Table 3). Additional impacts associated with conversion deviations total 63 ft^2. Since we have already mitigated for 1,634 ft^2 of impacts for the sewer line, which is not required, we have a net reduction in required mitigation of 459 ft^2. Therefore, no additional mitigation will be required.

Table 3. Revised amount Neuse Riparian Buffer Impacts (Square Feet)

	Sewer Line/MH Parallel Impact	**Bridge Construction**	**Roadway**
Zone 1 Impact (sq. ft.)	674	3,646	197
Zone 2 Impact (sq. ft.)	1,097	9,039	347
TOTAL IMPACTS	**1,771**	**12,685**	**544**
Mitigation requirements (exempt, allowable or allowable with mitigation)	Zone 1: Allowable with Mitigation Zone 2: Allowable	Allowable Allowable	Zone 1: Allowable with Mitigation Zone 2: Allowable with Mitigation
Mitigable Impacts (using 3:1 ratio) for Zone 1	2,022	N/A	591
Mitigable Impacts (using 1:1.5 ratio) for Zone 2	N/A	N/A	521
TOTAL MITIGATION REQUIRED	**2,022**	**N/A**	**1,112**

Protected riparian buffer impacts for the entire project now total 4,517 ft^2 for Zone 1 and 10,483 ft^2 for Zone 2 (see Table 3 Total Impacts row).

Regulatory Approvals

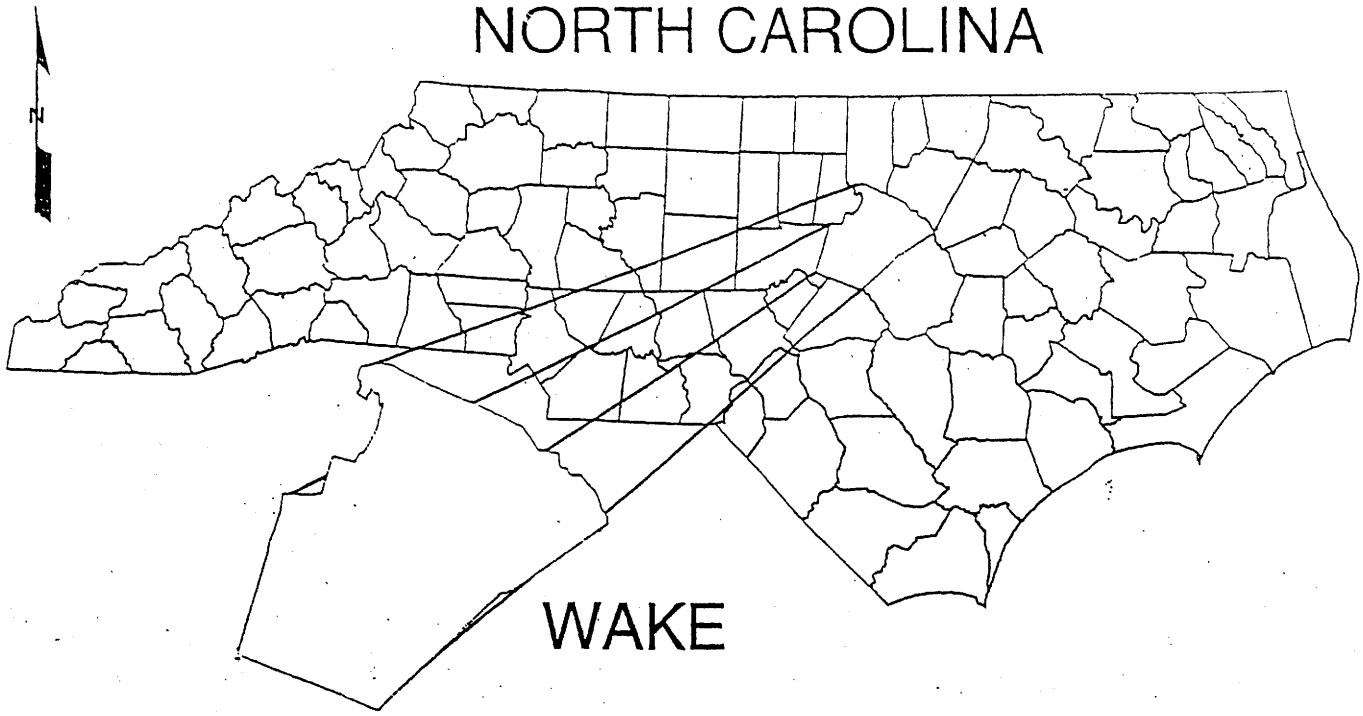
By copy of this application, the NCDOT requests that the NC Division of Water Quality review the proposal for modification to the approval of the Neuse Buffer Rules Authorization Certificate (DWQ No. 041464).

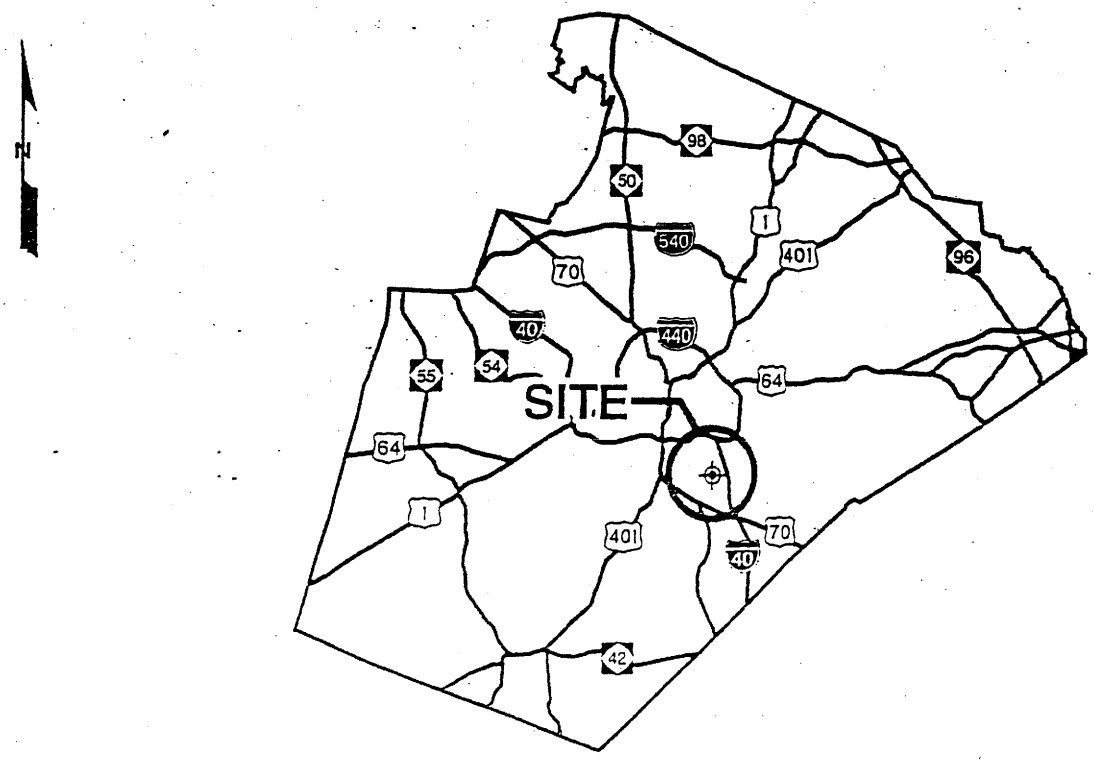
Thank you for your assistance with this project. If you have any questions or need additional information please call Ms. Cheryl Knepp at (919) 715-1489.

Sincerely,

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

GJT/clk
cc:
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Ron Hancock, P.E., Bridge Construction
Mr. Mark Staley, Roadside Environmental
Mr. Jon Nance, P.E., Division Engineer
Mr. Chris Murray, DEO
Mr. David Franklin, USACE, Wilmington
Ms. Beth Harmon, EEP
Ms. Laurie P. Smith, CPA



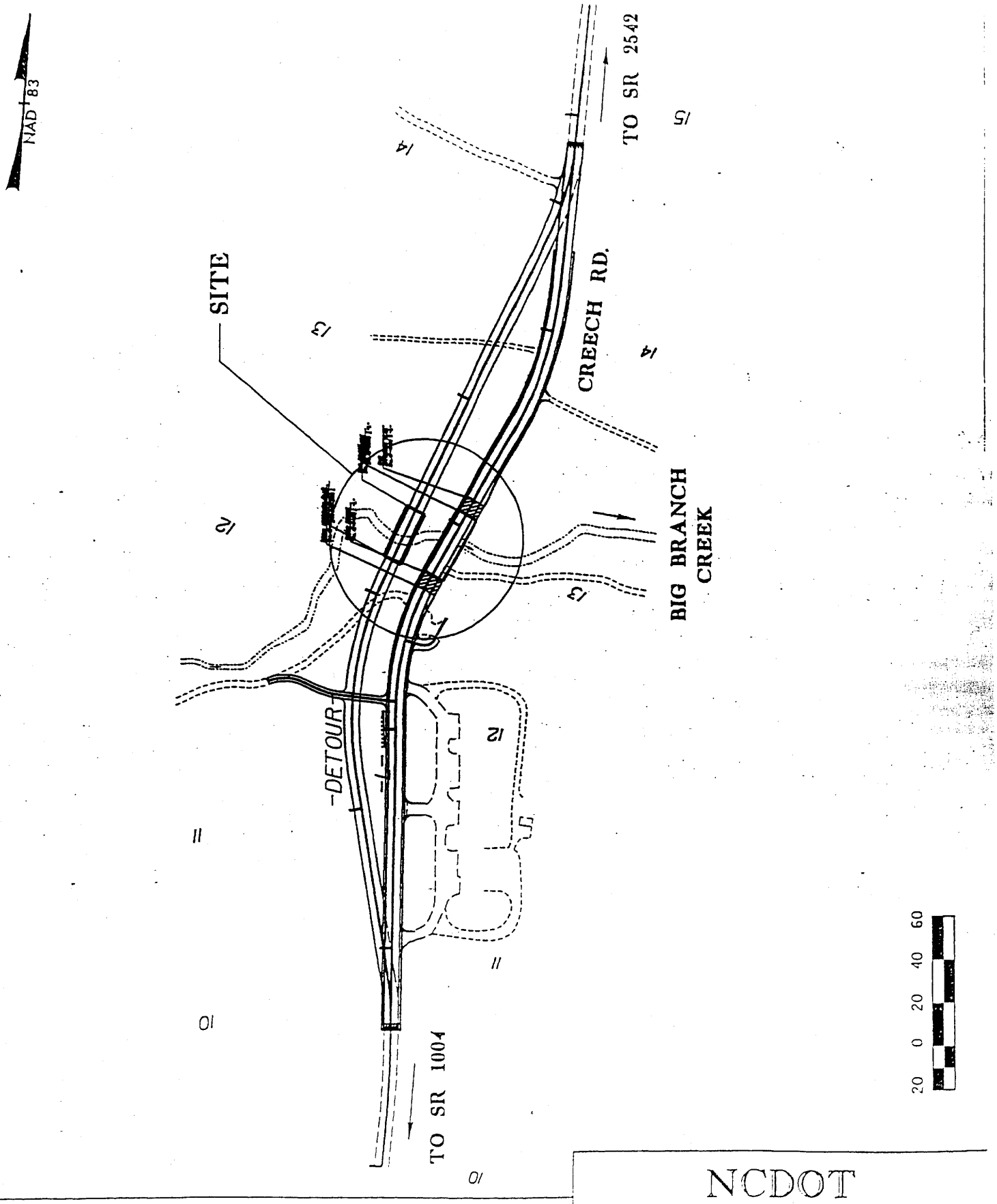


VICINITY MAPS

NCDOT

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

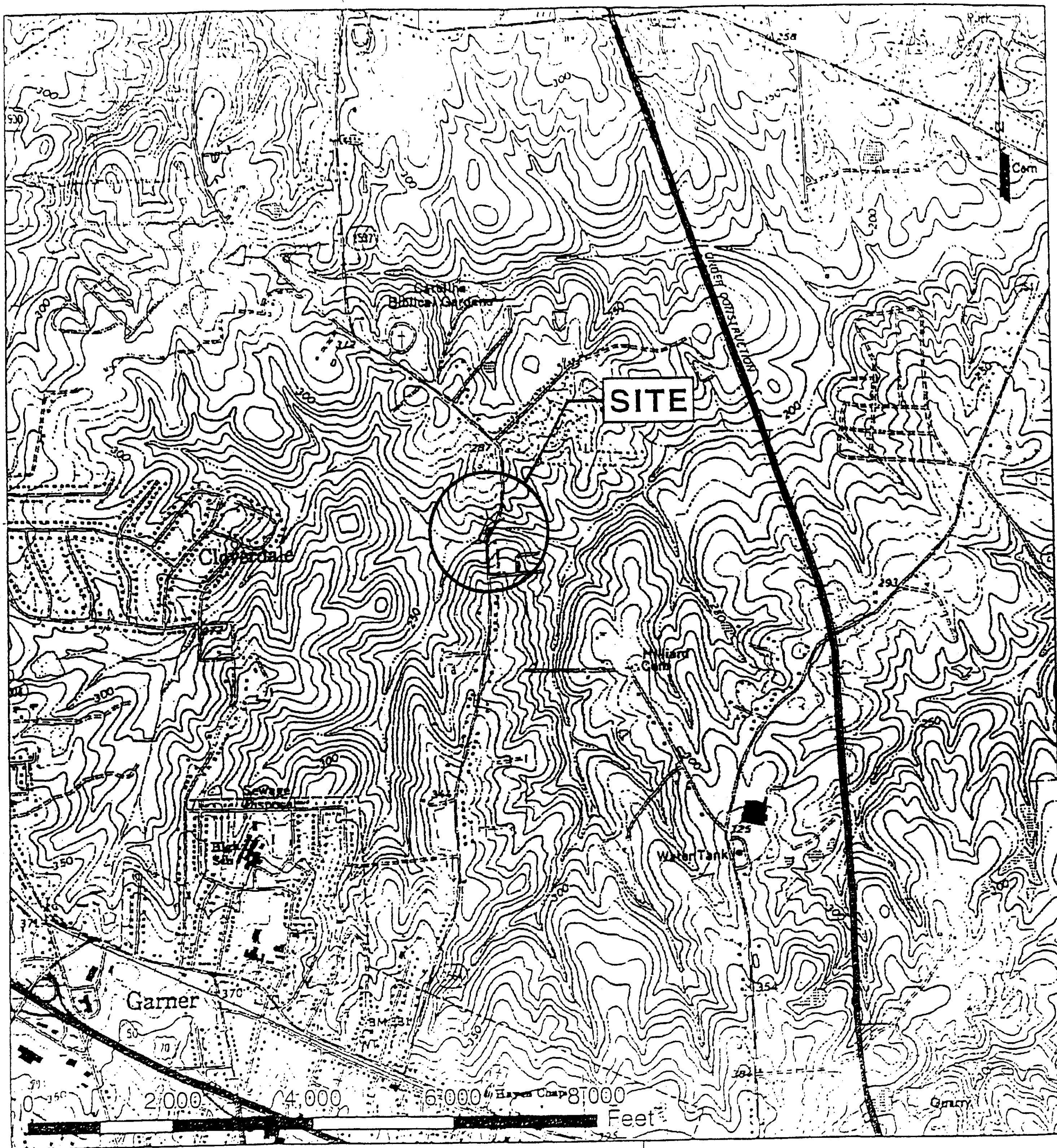
4/06/04



SITE MAP

NCDOT

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



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

4/06/04

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. BUOL	1408 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

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 582.673m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

-DET-

PI Sta 10+11.615	PI Sta 11+62.483
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

NAD 83

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

METRIC

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

CONST.REV.

R/W REV.

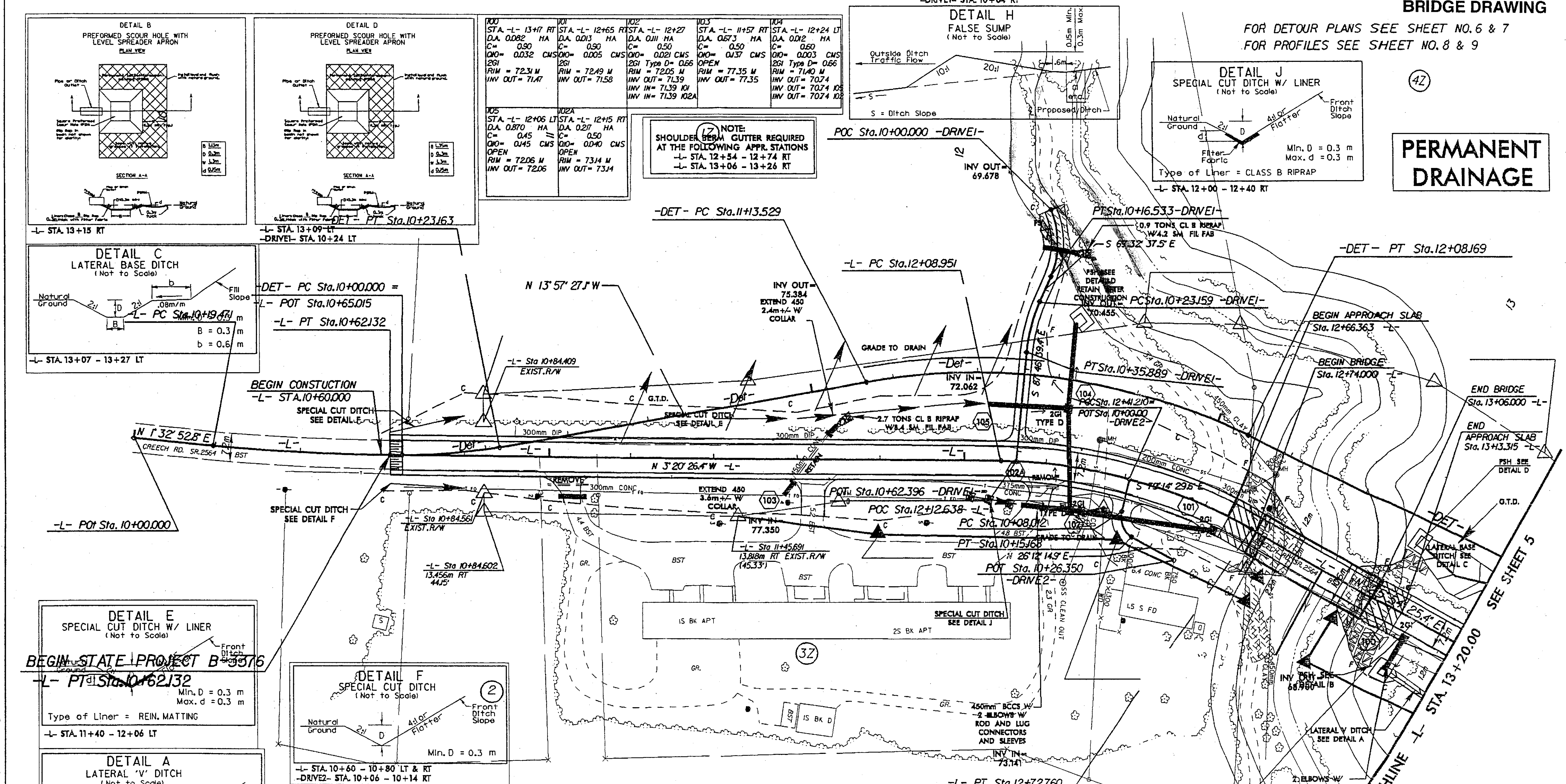
INCOMPLETE PLANS — DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

BRIDGE DRAWING

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

PERMANENT DRAINAGE



-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+12.198
Δ = 74° 33' 04.2" (LT)
L = 7.156
T = 4.186
R = 5.500

-L-

PI Sta 12+41.567
Δ = 29° 14' 51.9" (RT)
L = 63.809
T = 32.616
** R = 125.000
V = 50 Km/h

** DESIGN SPEED EXCEPTION REQUIRED

PI Sta 10+40.814
Δ = 4° 53' 19.2" (LT)
L = 42.662
T = 21.344
R = 500.000

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 582.673m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

PROJECT REFERENCE NO.	SHEET NO.
B-3376	4
R/W SHEET NO.	7 of 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

CONST. REV.

R/W REV.

INCOMPLETE PLANS — DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

BRIDGE DRAWING

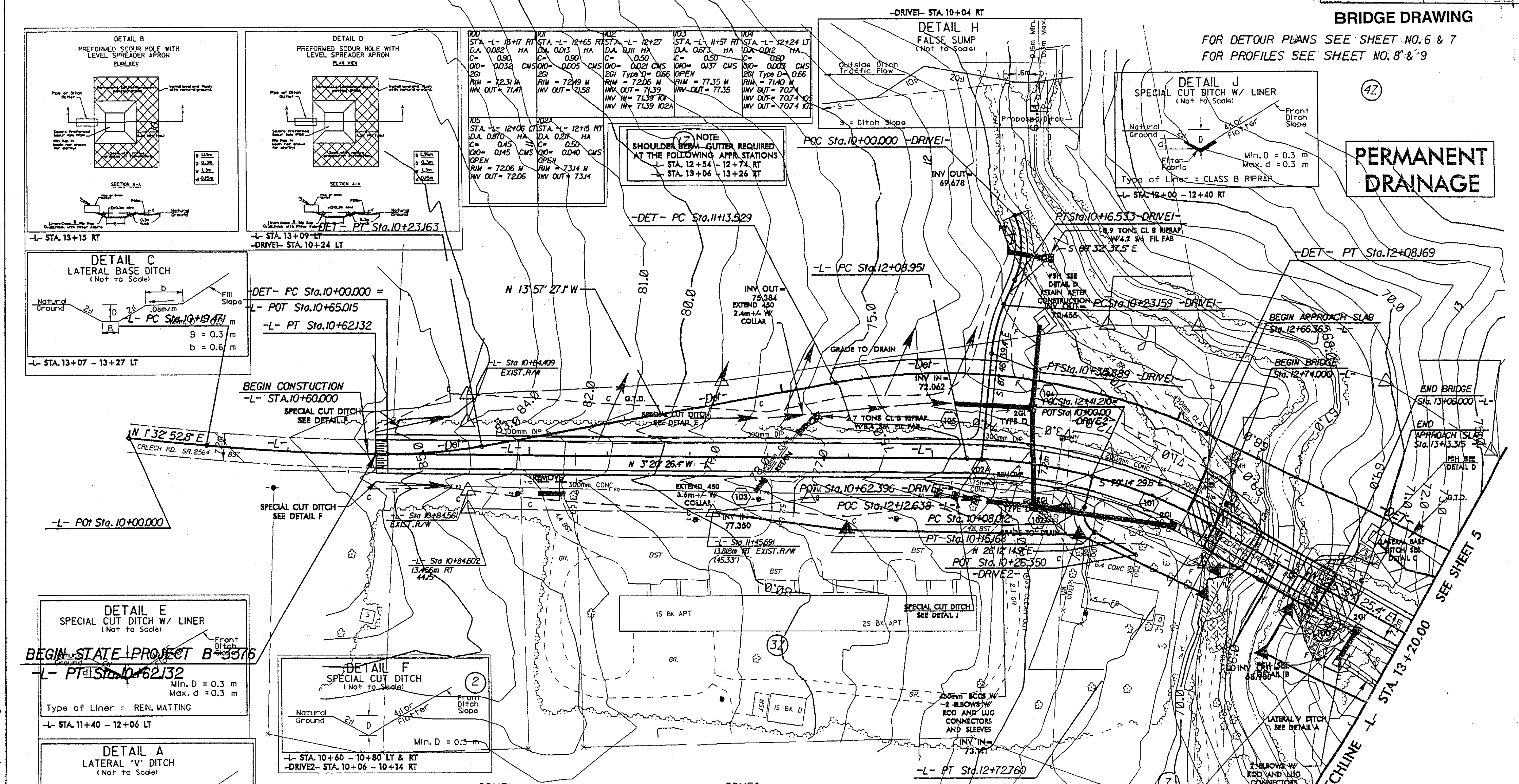
FOR DETOUR PLANS SEE SHEET NO. 6 & 7
FOR PROFILES SEE SHEET NO. 8 & 9

PERMANENT DRAINAGE

-DET-

PI Sta 10+11.615
Δ = 10° 37' 01.6" (LT)
L = 23.163
T = 11.615
R = 125.000

PI Sta 11+62.483
Δ = 36° 08' 59.6" (RT)
L = 94.640
T = 48.955
R = 150.000



-L-

PI Sta 10+40.814
Δ = 4° 53' 19.2" (LT)
L = 42.662
T = 21.344
R = 500.000

-DRIVE1-

PI Sta 10+08.772
Δ = 47° 21' 45.1" (RT)
L = 16.533
T = 8.772
R = 20.000

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

-DRIVE2-

PI Sta 10+12.198
Δ = 74° 33' 04.2" (LT)
L = 7.156
T = 4.186
R = 5.500

-L-

PI Sta 12+41.567
Δ = 29° 14' 51.9" (RT)
L = 63.809
T = 32.616
** R = 125.000
V = 50 Km/h

** DESIGN SPEED EXCEPTION REQUIRED

8/17/99

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 582.673m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

-DET-

PI Sta 10+11.615	PI Sta 11+62.483
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

-DET- STA. 12+55 - 12+75 LT (TEMP.)

▨ ALLOWABLE IMPACTS ZONE 1

▨ ALLOWABLE IMPACTS ZONE 2

METRIC

5 0 10

CONST.REV.

R/W REV.

PROJECT REFERENCE NO.	SHEET NO.
B-3376	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

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

DETOUR DRAINAGE

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= 0.137 CMS	Q10= 0.003 CMS	Q10= 0.145 CMS
OPEN	2GI Type D= 0.66	OPEN
RIM = 77.00 M	RIM = 71.40 M	RIM = 72.06 M
INV OUT= 77.00	INV IN= 70.74 105	INV OUT= 72.06

-DET- STA. 12+48 - 12+55 LT (TEMP.)

-L-

PI Sta 10+40.814
Δ = 4° 53' 19.2" (LT)
L = 42.662
T = 21.344
R = 500.000

-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+12.198
Δ = 74° 33' 04.2" (LT)
L = 7.156
T = 4.186
R = 5.500

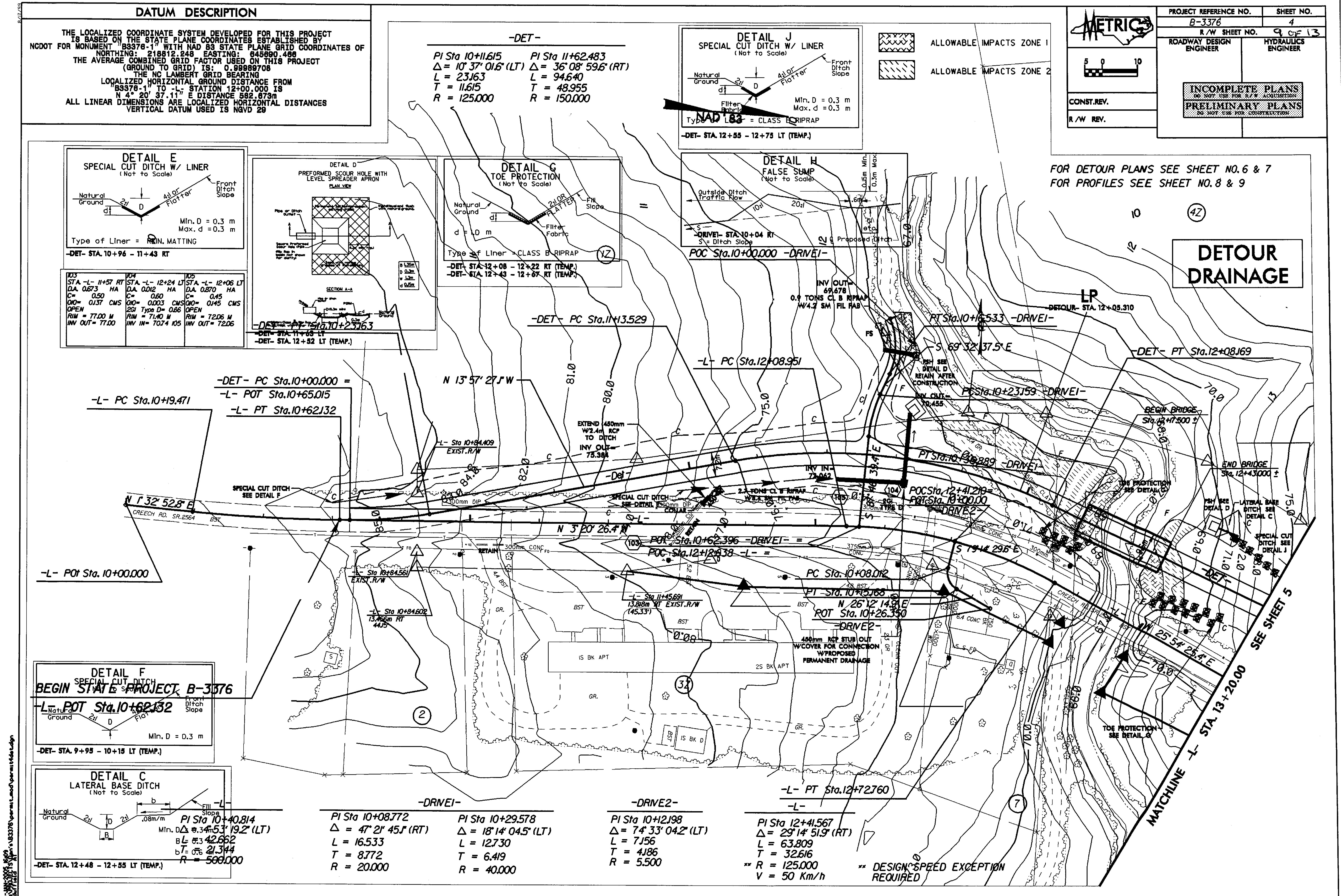
-L- PT Sta. 12+72.760

-L-

PI Sta 12+41.567
Δ = 29° 14' 51.9" (RT)
L = 63.809
T = 32.616
** R = 125.000
V = 50 Km/h

** DESIGN SPEED EXCEPTION REQUIRED

7



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: 0.99989706
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 562.673m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29
PROJECT REFERENCE NO.
B-3376
SHEET NO.
4
R/W SHEET NO.
9 OF 13
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
METRIC
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST. REV.
R/W REV.
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
FOR DETOUR PLANS SEE SHEET NO. 6 & 7
FOR PROFILES SEE SHEET NO. 8 & 9
DETOUR DRAINAGE
-DET-
PI Sta 10+11.615
Δ = 10° 37' 01.6" (LT)
L = 23.163
T = 11.615
R = 125.000
PI Sta 11+62.483
Δ = 36° 08' 59.6" (RT)
L = 94.640
T = 48.955
R = 150.000
DETAIL J
SPECIAL CUT DITCH W/ LINER
(Not to Scale)
Natural Ground
Front Ditch Slope
4:1 or Flatter
Min. D = 0.3 m
Max. d = 0.3 m
Type of Liner = CLASS B RIPRAP
-DET- STA. 12+55 - 12+75 LT (TEMP.)
DETAIL E
SPECIAL CUT DITCH W/ LINER
(Not to Scale)
Type of Liner = REIN. MATTING
-DET- STA. 10+96 - 11+43 RT
DETAIL D
PREFORMED SCOUR HOLE WITH LEVEL SPREADER APRON
DETAIL G
TOE PROTECTION
(Not to Scale)
2:1 OR FLATTER
Fill Slope
Filter Fabric
d = 0.3 m
Type of Liner = CLASS B RIPRAP
-DET- STA. 12+08 - 12+22 RT (TEMP.)
-DET- STA. 12+43 - 12+67 RT (TEMP.)
DETAIL H
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
-DRIVE1- STA. 10+04 RT
S = Ditch Slope
Proposed Ditch
POC Sta. 10+00.000 -DRIVE1-
-DET- STA. 11+63 LT
-DET- STA. 12+52 LT (TEMP.)
-DET- PT Sta. 10+23.163
-DET- PC Sta. 11+13.529
-L- PC Sta. 12+08.951
PT Sta. 10+16.533 -DRIVE1-
S 69° 32' 37.5" E
-DET- PT Sta. 12+08.169
PC Sta. 10+23.159 -DRIVE1-
LP
-DETOUR- STA. 12+05.310
-DET- PC Sta. 10+00.000 =
-L- POT Sta. 10+65.015
-L- PT Sta. 10+62.132
-L- PC Sta. 10+19.471
N 13° 57' 27.1" W
EXTEND 450mm W/2.4m RCP TO DITCH
INV OUT = 75.384
INV OUT 69.678
0.9 TONS CL B RIPRAP W/4.2 SM FIL FAB
PT Sta. 10+38.889 -DRIVE1-
POC Sta. 12+41.219 -
POT Sta. 10+00.00
-DRIVE2-
BEGIN BRIDGE Sta. 12+17.500 ±
END BRIDGE Sta. 12+43.000 ±
TOE PROTECTION SEE DETAIL G
SPECIAL CUT DITCH SEE DETAIL F
SPECIAL CUT DITCH SEE DETAIL E
N 1° 32' 52.8" E
CREECH RD. SR. 2564
N 3° 20' 26.4" W
POT Sta. 10+62.396 -DRIVE1- =
POC Sta. 12+12.938 -L- =
S 79° 14' 29.5" E
PC Sta. 10+08.012
PT Sta. 10+15.168
N 26° 12' 14.9" E
POT Sta. 10+26.350
-DRIVE2-
450mm RCP STUB OUT W/COVER FOR CONNECTION W/PROPOSED PERMANENT DRAINAGE
-L- POT Sta. 10+00.000
-L- Sta 10+84.409 EXIST. R/W
-L- Sta 10+84.561 EXIST. R/W
-L- Sta 10+84.602 13.466m RT
-L- Sta 11+45.691 13.818m RT EXIST. R/W (45.33')
IS BK APT
2S BK APT
IS BK D
N 25° 54' 25.4" E
MATCHLINE -L- STA. 13+20.00 SEE SHEET 5
DETAIL F
SPECIAL CUT DITCH
BEGIN STATE PROJECT B-3376
-L- POT Sta. 10+62.132
Min. D = 0.3 m
-DET- STA. 9+95 - 10+15 LT (TEMP.)
DETAIL C
LATERAL BASE DITCH
(Not to Scale)
-DET- STA. 12+48 - 12+55 LT (TEMP.)
PI Sta 10+40.814
Δ = 4° 53' 19.2" (LT)
L = 42.662
T = 21.344
R = 500.000
-DRIVE1-
PI Sta 10+08.772
Δ = 47° 21' 45.1" (RT)
L = 16.533
T = 8.772
R = 20.000
PI Sta 10+29.578
Δ = 18° 14' 04.5" (LT)
L = 12.730
T = 6.419
R = 40.000
-DRIVE2-
PI Sta 10+12.198
Δ = 74° 33' 04.2" (LT)
L = 7.156
T = 4.186
R = 5.500
-L-
-L- PT Sta. 12+72.760
PI Sta 12+41.567
Δ = 29° 14' 51.9" (RT)
L = 63.809
T = 32.616
** R = 125.000
V = 50 Km/h
** DESIGN SPEED EXCEPTION REQUIRED

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: 218812.245 EASTING: 845590.468
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

PROJECT REFERENCE NO.	SHEET NO.
B-3376	1 OF 13
R/W SHEET NO.	10 OF 13

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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

METRIC
5 0 10

CONST.REV.
R/W REV.

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

UTILITY 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+58 TO 12+66.38+- RT
-L- STA. 13+13.62+- TO 13+26 RT

-DET-
PI Sta 10+11.615
Δ = 10° 37' 01.6" (LT)
L = 23.163
T = 11.615
R = 125.000

PI Sta 11+62.483
Δ = 36° 08' 59.6" (RT)
L = 94.640
T = 48.955
R = 150.000

NAD 83

BETTY C. & BILLY T. WILDER
DB 1804 PG 267
(12)

MARC C. YOUNG
2001-E-2497
(42)

FRANCES W. UNDERHILL
GRANDCHILDREN TRUST
DB 5491 PG 804

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

JOHN W. WINTERS
DB 3126 PG 502
(2)

CHARLIE C. & JESSIE M. WATSON
DB 1786 PG 141
(3Z)

MARGARET B. COLEMAN
DB 3126 PG 502
(7)

JOAN E. BUOL
DB 1850 PG 163
DB 8076 PG 615
(8)

UNNAMED STREET

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

-L- PC Sta.10+19.471
-L- POT Sta.10+00.000
-DET- PC Sta.10+00.000
-L- POT Sta.10+65.015
-L- PT Sta.10+62.132
-DET- PT Sta.10+23.163
-DET- PC Sta.11+13.529
-L- PC Sta.12+08.951
-DET- PT Sta.12+08.169
POC Sta.10+00.000 -DRIVE1-
PT Sta.10+16.533 -DRIVE1-
POC Sta.10+83.159 -DRIVE1-
PT Sta.10+35.869 -DRIVE2-
POC Sta.12+41.290 -DRIVE2-
POT Sta.10+62.396 -DRIVE2-
POC Sta.12+12.638 -L-
PC Sta.10+08.02 -L-
PT Sta.10+15.68 -L-
POT Sta.10+36.350 -DRIVE2-
-L- PT Sta.12+72.760

BEGIN APPROACH SLAB
Sta.12+66.38± -L-
BEGIN BRIDGE
Sta.12+74.00± -L-
END BRIDGE
Sta.13+06.00± -L-
END APPROACH SLAB
Sta.13+13.85± -L-

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

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

-DRIVE1-
PI Sta 10+08.772
Δ = 47° 21' 45.1" (RT)
L = 16.533
T = 8.772
R = 20.000

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

-DRIVE2-
PI Sta 10+12.198
Δ = 74° 33' 04.2" (LT)
L = 7.156
T = 4.186
R = 5.500

-L-
PI Sta 12+41.567
Δ = 29° 14' 51.8" (RT)
L = 63.809
T = 32.616
** R = 125.000
V = 50 Km/h

** DESIGN SPEED EXCEPTION REQUIRED

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 582.673m
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

PROJECT REFERENCE NO.	SHEET NO.
B-3376	8 = 8
R/W SHEET NO.	11 OF 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

CONST.REV.

R/W REV.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

UTILITY DRAWING

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

-DET-

PI Sta 10+11.615
Δ = 10° 37' 01.6" (LT)
L = 23.163
T = 11.615
R = 125.000

PI Sta 11+62.483
Δ = 36° 08' 59.6" (RT)
L = 94.640
T = 48.955
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+66.38+- RT
-L- STA. 13+13.62+- TO 13+26 RT

-L-

PI Sta 10+40.814
Δ = 4° 53' 19.2" (LT)
L = 42.662
T = 21.344
R = 500.000

-DRIVE1-

PI Sta 10+08.772
Δ = 47° 21' 45.1" (RT)
L = 16.533
T = 8.772
R = 20.000

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

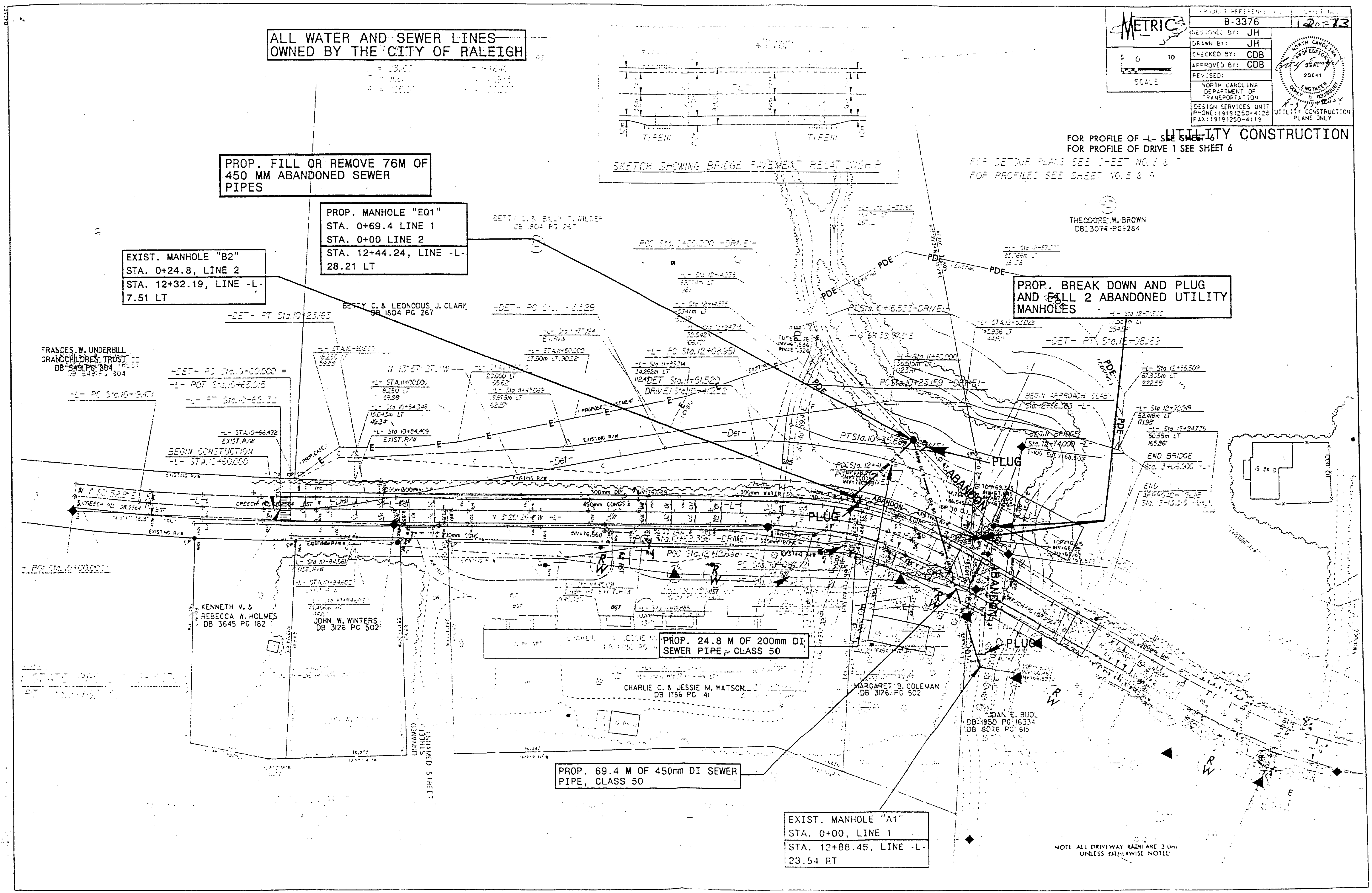
-DRIVE2-

PI Sta 10+12.198
Δ = 74° 33' 04.2" (LT)
L = 7.156
T = 4.186
R = 5.500

-L-

PI Sta 12+41.567
Δ = 29° 14' 51.0" (RT)
L = 63.809
T = 32.616
** R = 125.000
V = 50 Km/h

** DESIGN SPEED EXCEPTION REQUIRED



METRIC
B-3376
DESIGNED BY: JH
DRAWN BY: JH
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN SERVICES UNIT
UTILITY CONSTRUCTION PLANS ONLY
SCALE
UTILITY CONSTRUCTION
FOR PROFILE OF -L- SEE SHEET 6
FOR PROFILE OF DRIVE 1 SEE SHEET 6
ALL WATER AND SEWER LINES OWNED BY THE CITY OF RALEIGH
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
THEODORE W. BROWN
DB 3074 PG 284
BETTY C. & LEONODUS J. CLARK
DB 1804 PG 267
FRANCES W. UNDERHILL GRANDCHILDREN TRUST
DB 5491 PG 304
BEGIN CONSTRUCTION
PLUG
ABANDON
300mm WATER
300mm DIP
450mm CONC
KENNETH V. & REBECCA W. HOLMES
DB 3645 PG 182
JOHN W. WINTERS
DB 3126 PG 502
PROP. 24.8 M OF 200mm DI SEWER PIPE, CLASS 50
CHARLIE C. & JESSIE M. WATSON
DB 1766 PG 141
MARGARET B. COLEMAN
DB 3126 PG 502
DAN E. BUOL
DB 4950 PG 16334
DB 5076 PG 615
UNNAMED STREET
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

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (sq ft)	ZONE 2 (sq ft)	TOTAL (sq ft)	ZONE 1 (sq ft)	ZONE 2 (sq ft)	TOTAL (sq ft)	ZONE 1 (sq ft)	ZONE 2 (sq ft)
	Bridge	-L- Sta 12+66-12+85	X		695	1588	2283					
	Bridge	-L- Sta 12+99-13+10	X		710	1494	2204					
	Bridge	DET' Sta. 11+68-12+24	X		1535	4281	5816					
	Bridge	-DET- Sta. 12+39-12+54	X		706	1676	2382					
	Sewer MH	-L- Sta 12+38-12+48		X		566	566	674		674		
	Sewer Line	-L- Sta 12+77-12+93		X		531	531					
	Roadway	DRIVE Sta. 10+05	X					197	347	544		
TOTAL:	Square Feet				3646	10136	13782	871	347	1218		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE COUNTY
PROJECT: 8.2406301 (B-3376)
1/3/2005

SHEET 13 OF 13 1-27-2005

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