

09/08/99

TIP PROJECT: R-2510C

12-JAN-2011 10:23  
R:\Utilities\Res\Proj\UT\Proj\2510c-ut-uc1-tsh.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

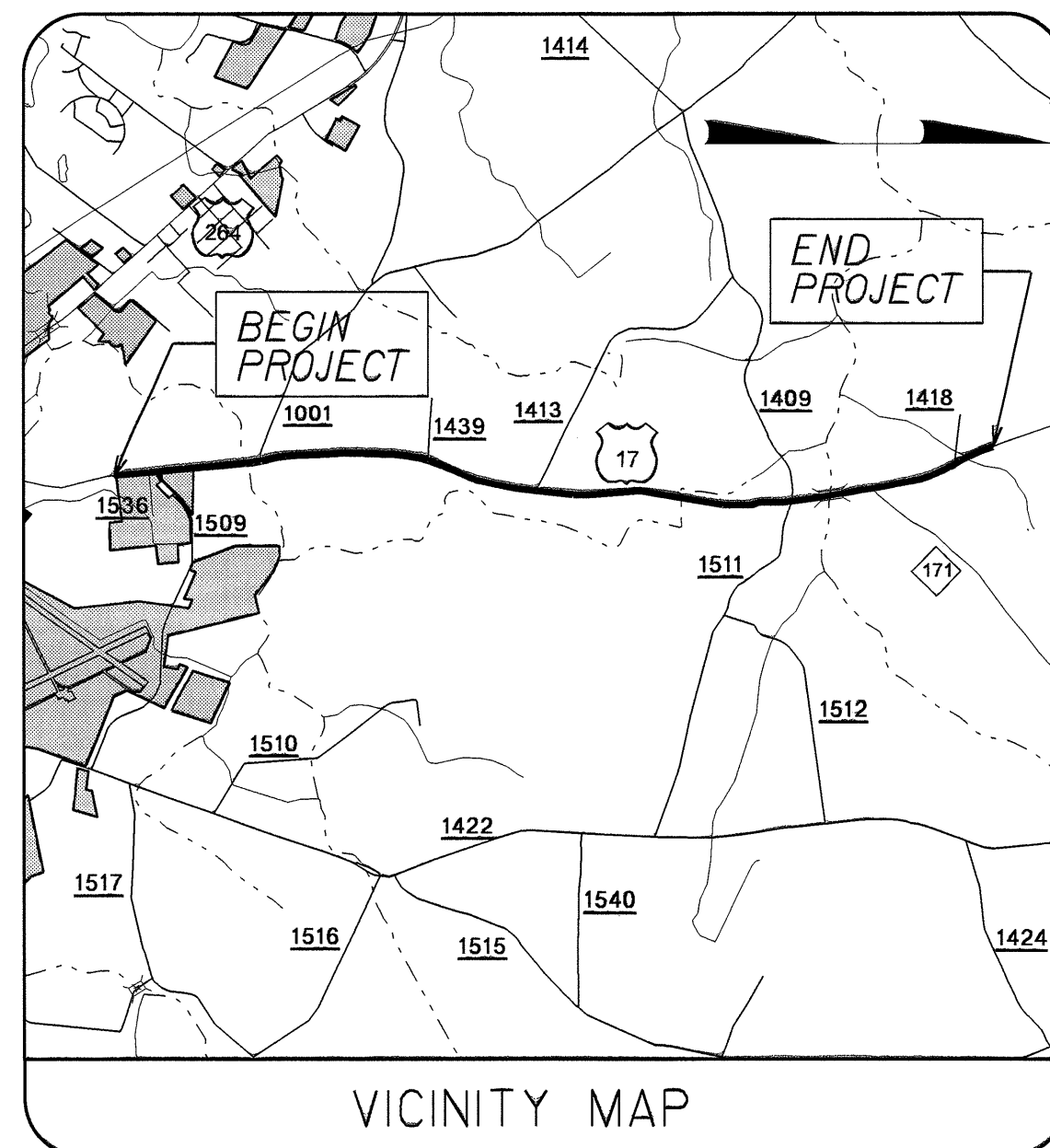
T.I.P. NO.	SHEET NO.
R-2510C	UC-1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS  
BEAUFORT COUNTY**

**LOCATION: US 17 FROM US 17 SOUTH OF SR 1001  
TO NORTH OF NC 171**

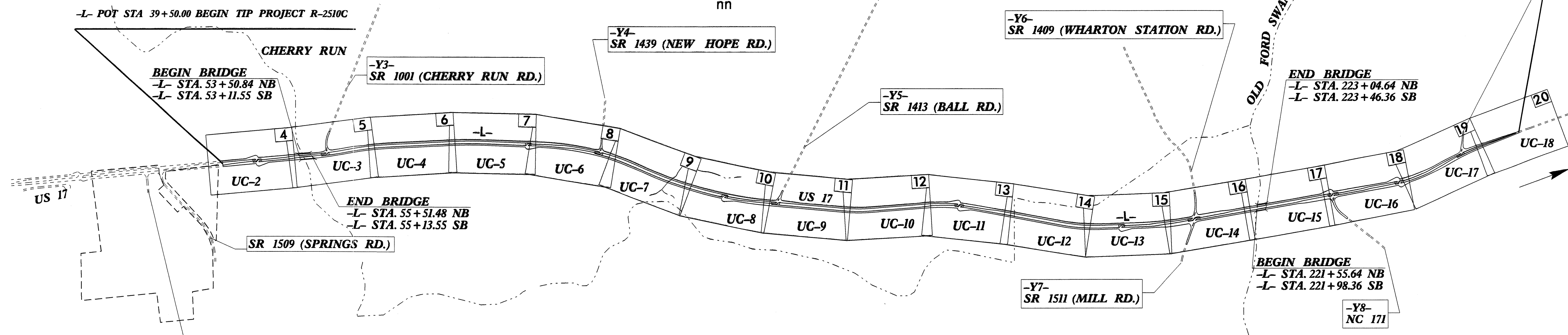
**TYPE OF WORK: RELOCATE WATER LINES**



ALL SERVICE LINES SHALL BE 1" PE  
WATER PIPE SDR 7, 200# WP (IPS)

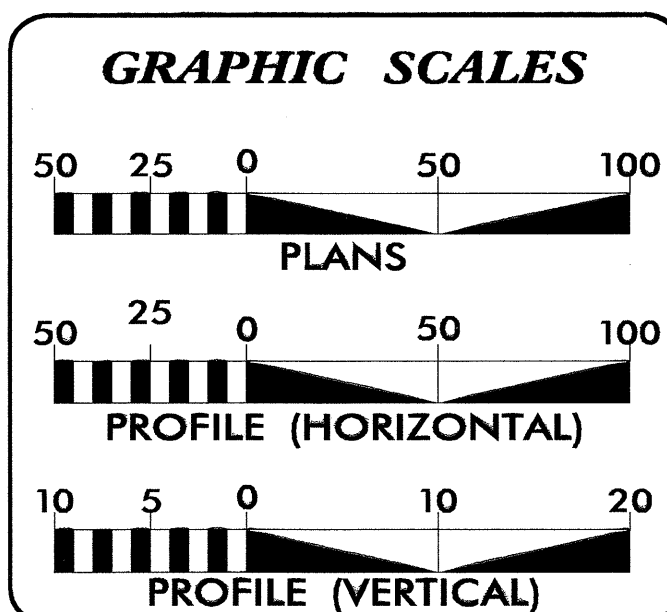
ALL PROPOSED LINES SHALL BE  
CONNECTED TO THE EXISTING  
WATER LINES USING NECESSARY  
FITTINGS

-L- POT STA 269+30.00 END TIP PROJECT R-2510C



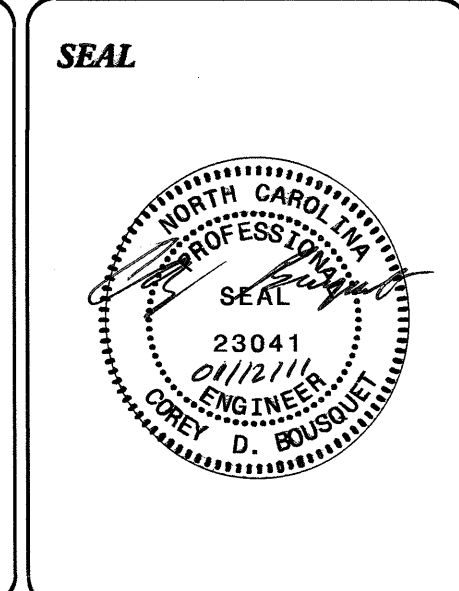
SEE SHEET UC-21 TO UC-24 FOR  
PROFILES OF THE TRENCHLESS  
INSTALLATIONS. DUCTILE IRON  
PIPE IS ONLY REQUIRED AS  
SHOWN IN THE PROFILES.

Note:  
The Contractor's attention is directed to Section 1550, 102 and 107 of the Standard Specifications concerning the trenchless installations. No damage is allowed to the wetlands or streams by the trenchless installation. The Contractor's Engineer shall design the installation method and provide on-site oversight.



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-18	UTILITY CONSTRUCTION PLAN SHEETS
UC-19 THRU UC-20	DETAILS SHEET(S)
UC-21 THRU UC-24	PROFILES

WATER AND SEWER OWNERS ON PROJECT	
(1) WATER :	CITY OF WASHINGTON
(2) WATER:	BEAUFORT COUNTY



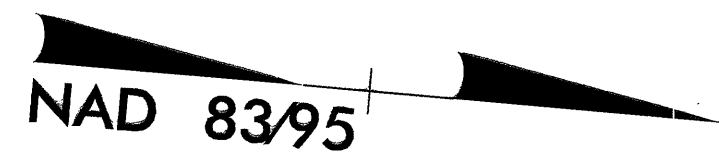
PREPARED IN THE OFFICE OF:  
**DIVISION OF HIGHWAYS  
UTILITIES ENGINEERING  
SECTION**

1591 MAIL SERVICES CENTER  
RALEIGH, NC 27699-1591  
PHONE (919) 250-4128  
FAX (919) 250-4119

**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**Corey Bousquet, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**Kifah Kamil** UTILITIES PROJECT DESIGNER

5/14/99

PROJECT REFERENCE NO. <b>R-2510C</b>	SHEET NO. <b>UC-2</b>
DESIGNED BY: <b>KAK</b>	
DRAWN BY: <b>KAK</b>	
CHECKED BY: <b>CDB</b>	
APPROVED BY: <b>CDB</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



JOSEPH D. ARNOLD  
 DB 1300 - PG 734  
 MB 1 - PG 50

ORRIN K. LANGLEY, et al  
 DB 1077 - PG 507  
 DB 893 - PG 713

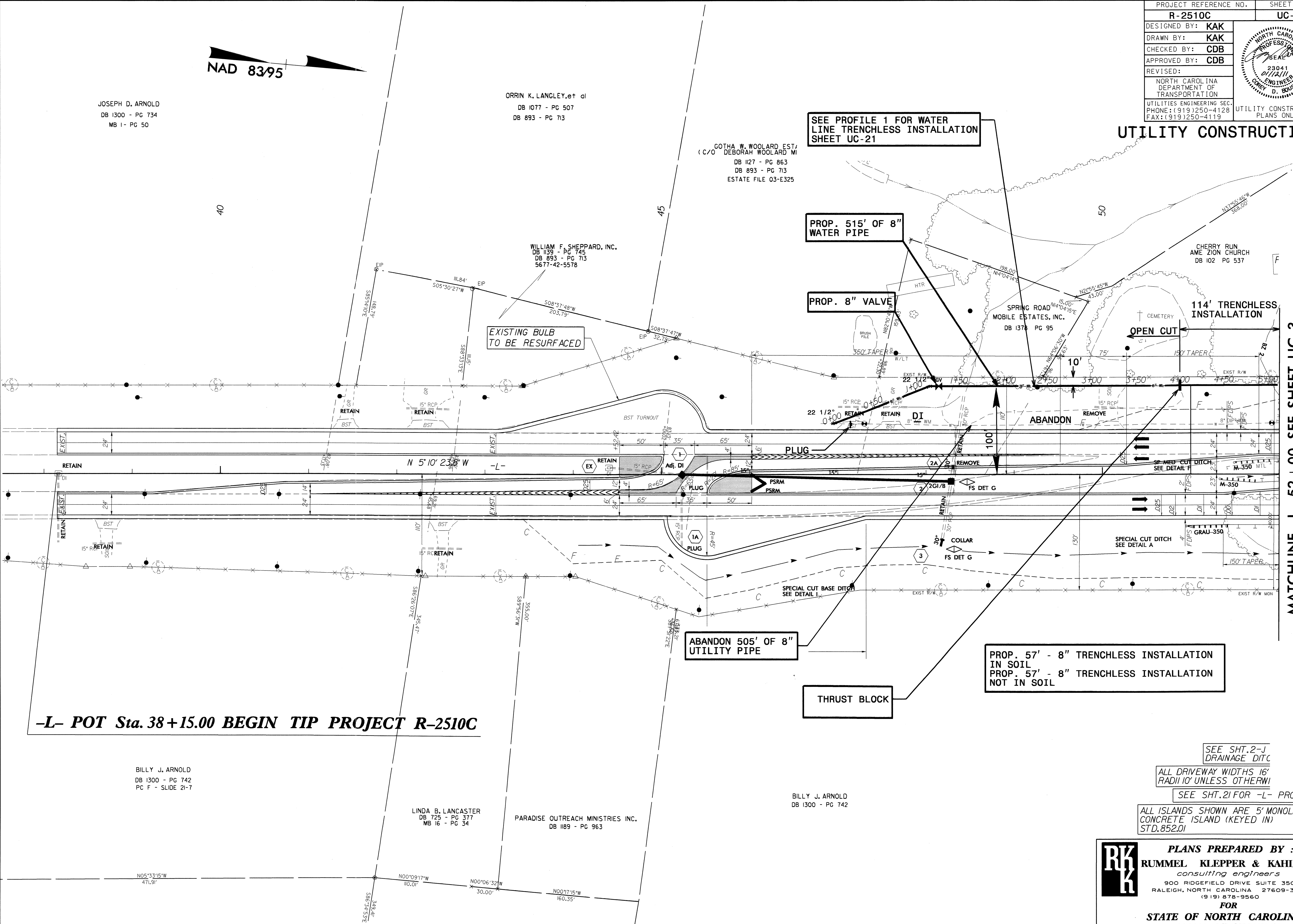
GOTHA W. WOOLLARD EST/  
 (C/O) DEBORAH WOOLLARD MI  
 DB 1127 - PG 863  
 DB 893 - PG 713  
 ESTATE FILE 03-E325

WILLIAM F. SHEPPARD, INC.  
 DB 1139 - PG 745  
 DB 893 - PG 713  
 5677-42-5578

CHERRY RUN  
 AME ZION CHURCH  
 DB 102 PG 537

SPRING ROAD  
 MOBILE ESTATES, INC.  
 DB 1378 PG 95

**UTILITY CONSTRUCTION**



SEE PROFILE 1 FOR WATER  
 LINE TRENCHLESS INSTALLATION  
 SHEET UC-21

PROP. 515' OF 8"  
 WATER PIPE

PROP. 8" VALVE

EXISTING BULB  
 TO BE RESURFACED

114' TRENCHLESS  
 INSTALLATION

PLUG

ABANDON 505' OF 8"  
 UTILITY PIPE

PROP. 57' - 8" TRENCHLESS INSTALLATION  
 IN SOIL  
 PROP. 57' - 8" TRENCHLESS INSTALLATION  
 NOT IN SOIL

THRUST BLOCK

**-L- POT Sta. 38+15.00 BEGIN TIP PROJECT R-2510C**

BILLY J. ARNOLD  
 DB 1300 - PG 742  
 PC F - SLIDE 21-7

LINDA B. LANCASTER  
 DB 725 - PG 377  
 MB 16 - PG 34

PARADISE OUTREACH MINISTRIES INC.  
 DB 1189 - PG 963

BILLY J. ARNOLD  
 DB 1300 - PG 742

SEE SHT. 2-J  
 DRAINAGE DIT

ALL DRIVEWAY WIDTHS 16'  
 RADII 10' UNLESS OTHERW

SEE SHT. 2I FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC  
 CONCRETE ISLAND (KEYED IN)  
 STD. 852.01

**RK&K**

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560

**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

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 R-2510C-ut-uc2-psh004.dgn  
 3:38:11 PM 1/12/2011  
 10/24/2011 1:12:11 PM



GOtha W. WOOLARD ESTATE  
 (C/O DEBORAH WOOLARD MITCHELL)  
 DB 1127 - PG 863  
 DB 893 - PG 713  
 ESTATE FILE 03-E325

NAD 83/95

-1 PROPERTY NAME NOT LISTED IN PRIP FILE

TI- 100 5+00.00 POT = ELEV= 19.12' NAIL SET  
 L- 52+32.99 217.25' LT

BEGIN CONSTRUCTION  
 -Y3- STA 11+75.00

THRUST BLOCK

PROP. 488' OF 8" WATER PIPE

SEE PROFILE 1 FOR WATER LINE TRENCHLESS INSTALLATION SHEET UC-21

PROP. 612' OF 8" WATER PIPE

PROP. 8" VALVE

MATCHLINE -L- 52+00 SEE UC-2

MATCHLINE -L- 66+00 SEE SHEET UC-4

ABANDON 501' OF 8" UTILITY PIPE

440' TRENCHLESS INSTALLATION

PROP. 8" VALVE

PROP. 220' - 8" TRENCHLESS INSTALLATION IN SOIL  
 PROP. 220' - 8" TRENCHLESS INSTALLATION NOT IN SOIL

TI- 102 8+73.22 PINC = ELEV= 9.32' NAIL SET  
 L- 54+41.05 81.59' RT

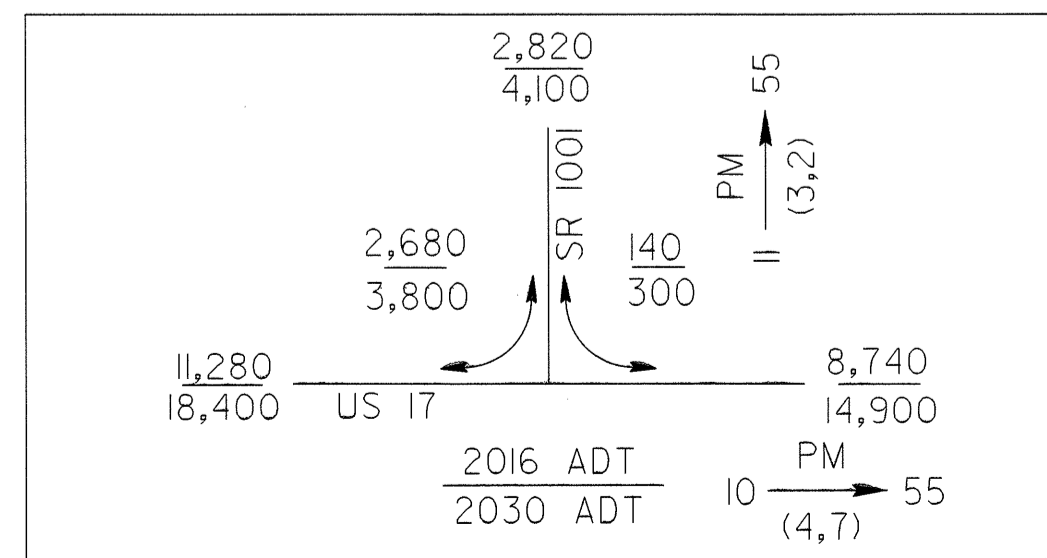
IA  
 BILLY J. ARNOLD  
 DB 1300 - PG 742

PI Sta 13+70.06  
 $\Delta = 27^{\circ} 40' 35.0''$  (LT)  
 $D = 11^{\circ} 41' 34.9''$   
 $L = 236.69'$   
 $T = 120.70'$   
 $R = 490.00'$

PI Sta 57+20.65  
 $\Delta = 4^{\circ} 48' 06.2''$  (LT)  
 $D = 0^{\circ} 29' 53.6''$   
 $L = 963.76'$   
 $T = 482.16'$   
 $R = 11,500.00'$

PIs Sta 63+17.11  
 $\Theta_s = 0^{\circ} 38' 03.4''$   
 $L_s = 120.00'$   
 $L = 963.76'$   
 $LT = 80.00'$   
 $ST = 40.00'$

PI Sta 66+24.82  
 $\Delta = 5^{\circ} 39' 21.3''$  (RT)  
 $D = 1^{\circ} 03' 25.6''$   
 $L = 535.03'$   
 $T = 267.73'$   
 $R = 5,420.00'$   
 $SE = 0.030$   
 $INC = 40.00'$



SEE SHEETS -- THRU -- FOR STRUCTURE PLANS

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT. 2I FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

SEE SHT. 2-E FOR INTERSECTION DETAIL

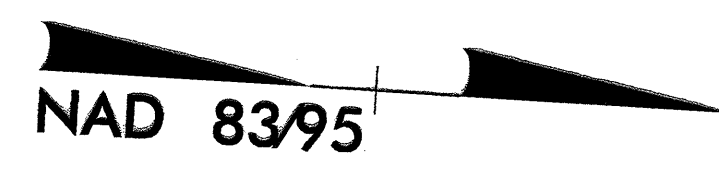
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
 consulting engineers  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

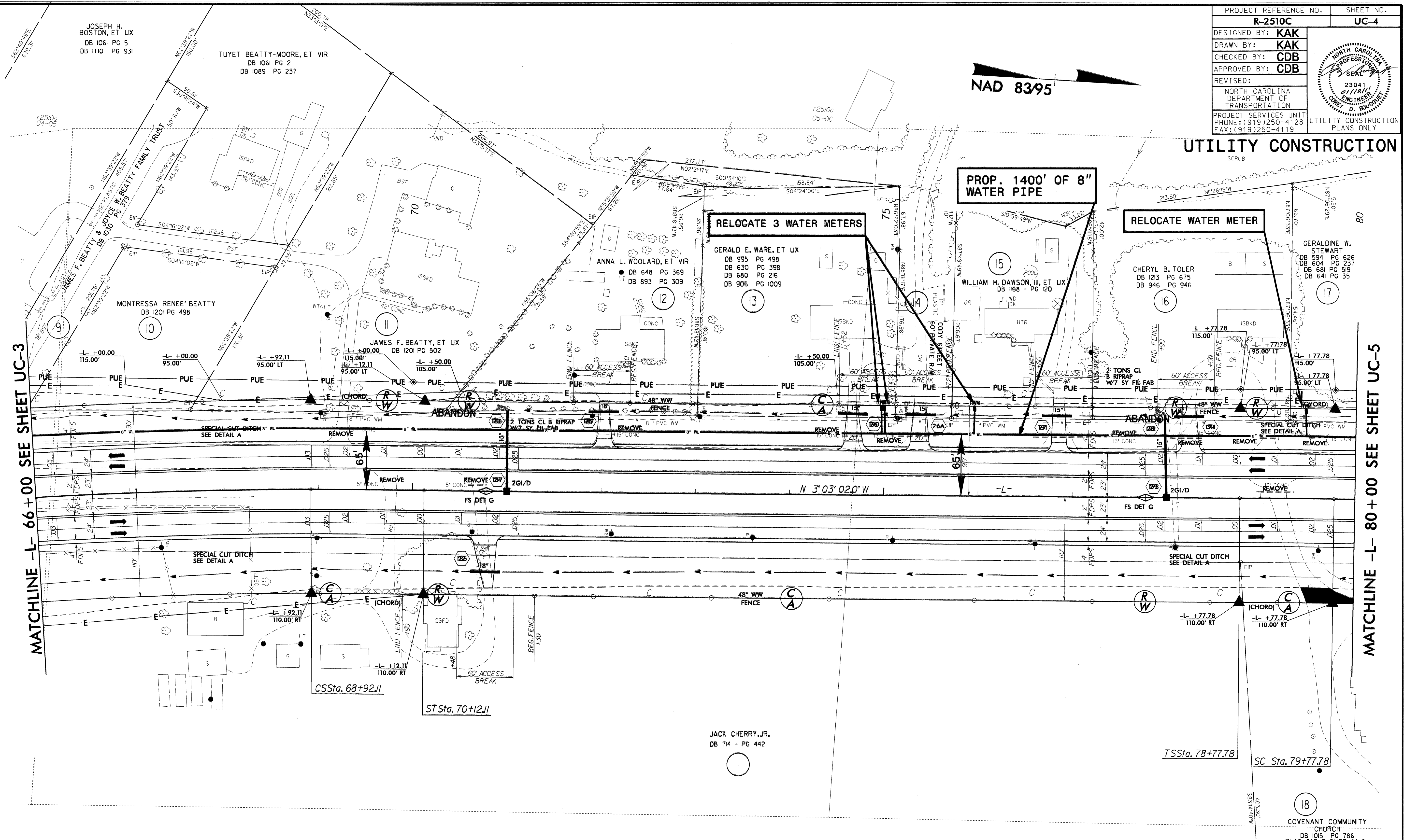
REVISIONS

12-1-10-2011 10:24  
 R:\U\Utilities\2510C-1\Drawings\2510C-1\UC-3.psh, 0005.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-4
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED BY:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



**UTILITY CONSTRUCTION**  
SCRUB



MATCHLINE -L- 66+00 SEE SHEET UC-3

MATCHLINE -L- 80+00 SEE SHEET UC-5

PI Sta 66+24.82 $\Delta = 5^{\circ} 39' 21.3''$ (RT) $D = 1^{\circ} 03' 25.6''$ $L = 535.03'$ $T = 267.73'$ $R = 5,420.00'$ $SE = 0.030$ $INC = 40.00'$	PIs Sta 69+32.11 $\Theta_s = 0^{\circ} 38' 03.4''$ $L_s = 120.00'$ $ST = 40.00'$	PIs Sta 79+44.45 $\Theta_s = 0^{\circ} 22' 33.4''$ $L_s = 100.00'$ $LT = 80.00'$ $ST = 33.33'$	PI Sta 82+63.79 $\Delta = 4^{\circ} 17' 55.1''$ (RT) $D = 0^{\circ} 45' 06.9''$ $L = 571.69'$ $T = 285.98'$ $R = 7,620.00'$ $SE = 0.025$ $INC = 40.00'$
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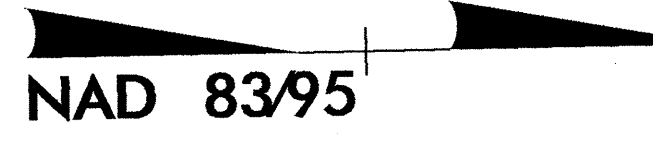


SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

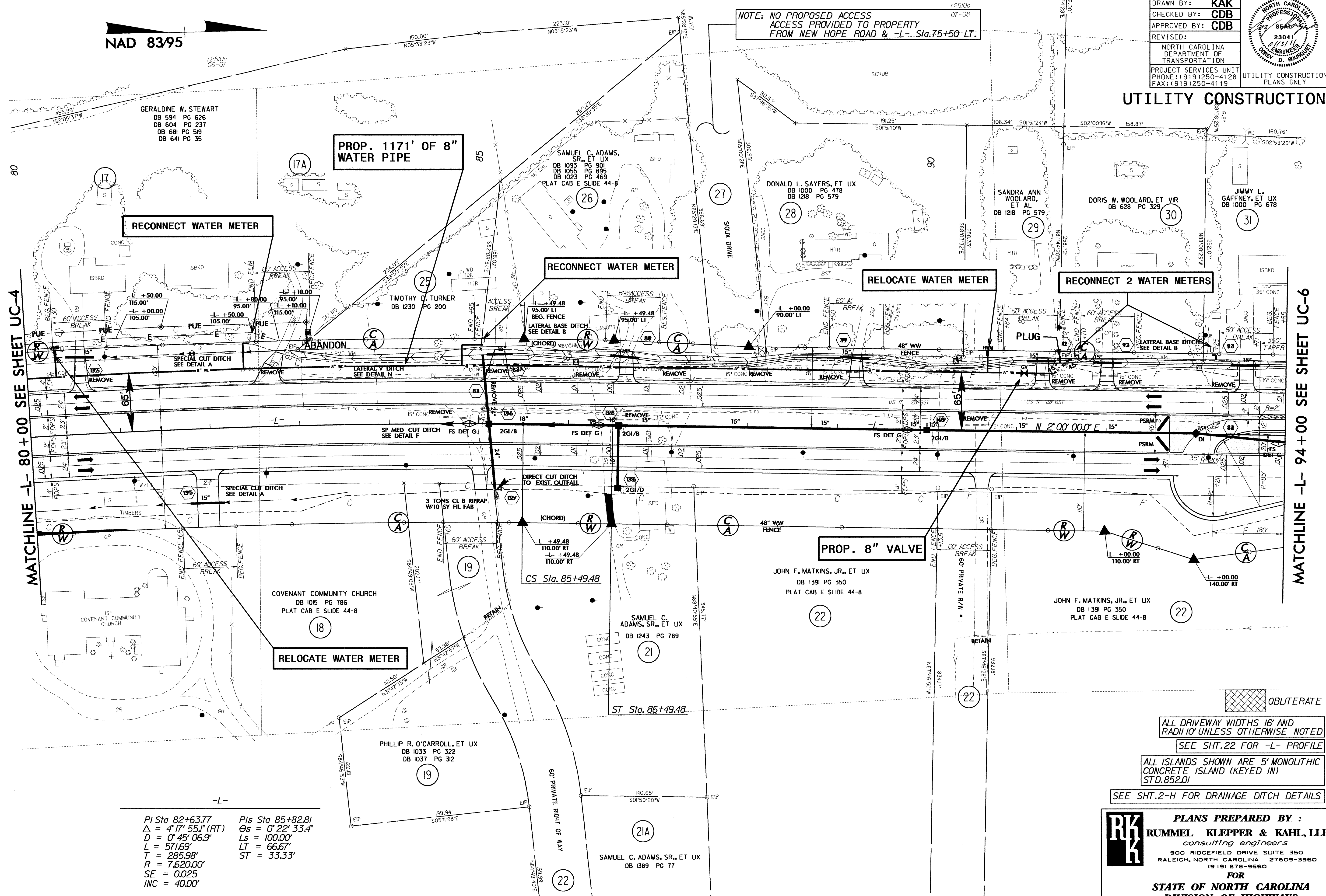
ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED  
SEE SHT. 22 FOR -L- PROFILE

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

12-JAN-2011 09:25 AR2510C\_UT\_UC4\_psh\_006.dgn  
 3:41:11



PROJECT REFERENCE NO.	SHEET NO.
<b>R-2510C</b>	<b>UC-5</b>
DESIGNED BY: <b>KAK</b>	
DRAWN BY: <b>KAK</b>	
CHECKED BY: <b>CDB</b>	
APPROVED BY: <b>CDB</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



-L-

PI Sta 82+63.77	PIs Sta 85+82.81
$\Delta = 4' 17'' 55.1'' (RT)$	$\Theta_s = 0' 22'' 33.4''$
$D = 0' 45'' 06.9''$	$L_s = 100.00'$
$L = 571.69'$	$LT = 66.67'$
$T = 285.98'$	$ST = 33.33'$
$R = 7,620.00'$	
$SE = 0.025$	
$INC = 40.00'$	

OBLITERATE

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT.22 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD.852.01

SEE SHT.2-H FOR DRAINAGE DITCH DETAILS

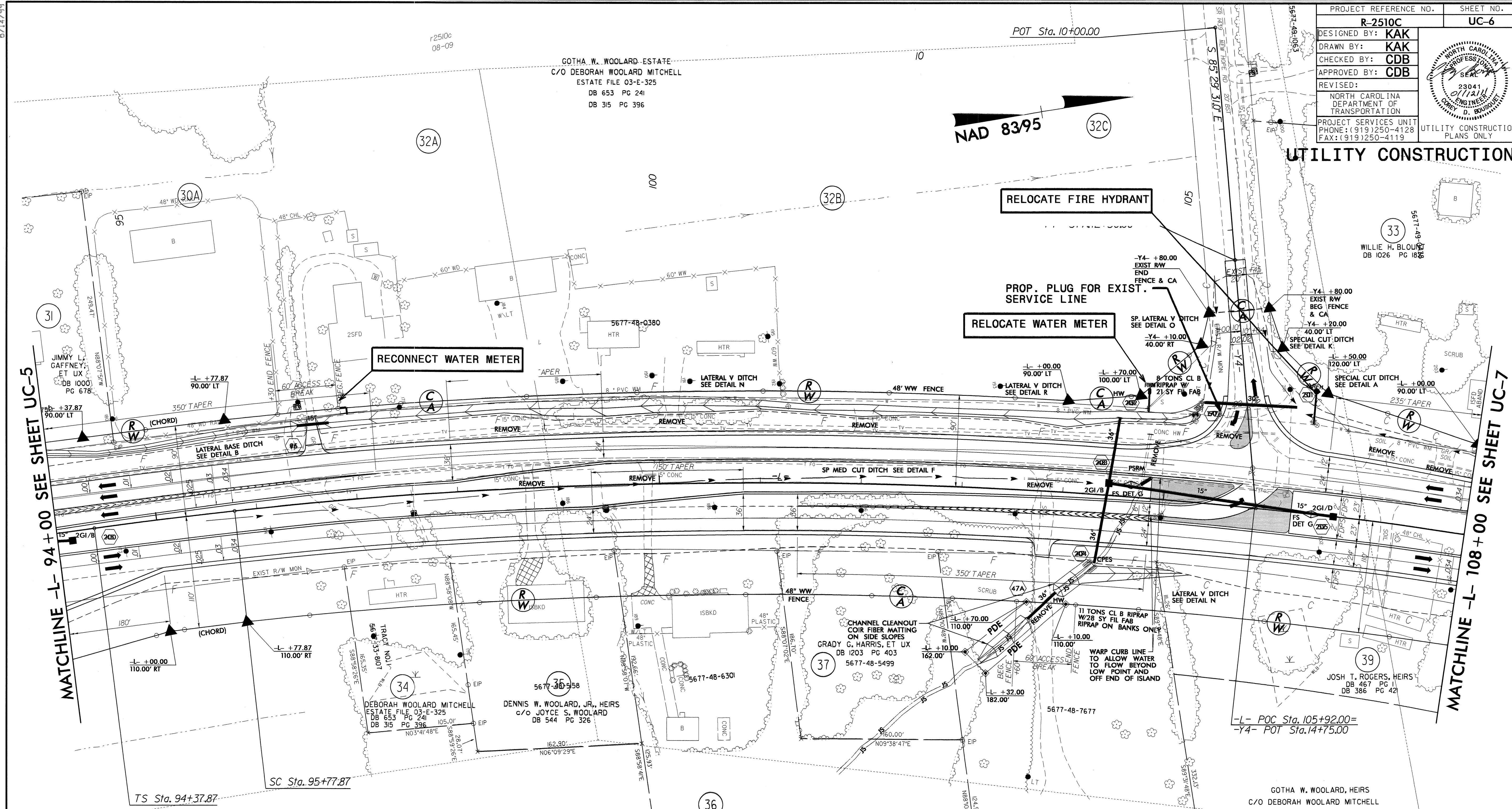
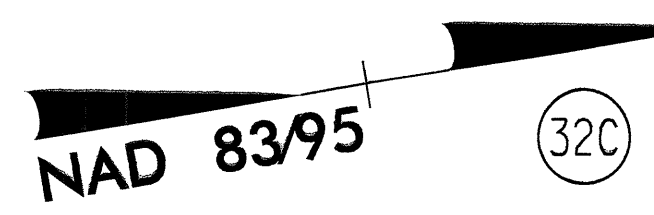
**PLANS PREPARED BY :**

**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560

**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

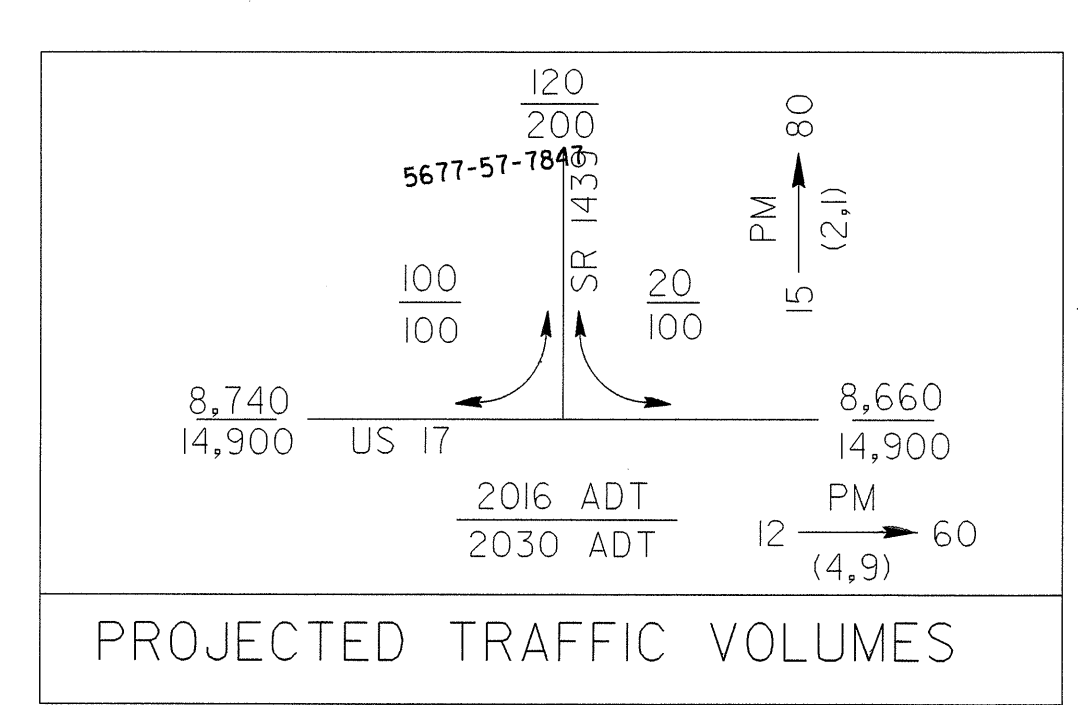
PROJECT REFERENCE NO.	R-2510C	SHEET NO.	UC-6
DESIGNED BY:	KAK		
DRAWN BY:	KAK		
CHECKED BY:	CDB		
APPROVED BY:	CDB		
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
			UTILITY CONSTRUCTION PLANS ONLY

GOTHA W. WOOLARD-ESTATE  
 C/O DEBORAH WOOLARD MITCHELL  
 ESTATE FILE 03-E-325  
 DB 653 PG 241  
 DB 315 PG 396



MATCHLINE -L- 94+00 SEE SHEET UC-5

MATCHLINE -L- 108+00 SEE SHEET UC-7



-L-

PIs Sta 95+31.21	PI Sta 104+09.45
$\Theta_s = 0^\circ 51' 12.0''$	$\Delta = 20^\circ 04' 01.5''$ (RT)
$L_s = 140.00'$	$D = 1' 13' 08.6''$
$LT = 93.33'$	$L = 1,646.11'$
$ST = 46.67'$	$T = 831.57'$
	$R = 4,700.00'$
	$SE = 0.034$
	$INC = 41.18'$

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED  
 SEE SHT. 23 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN)  
 STD. 852.01

SEE SHT. 2-E FOR INTERSECTION DETAIL

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**  
  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

12-VAN-201113-01 N:\P2510C-UT\_UC6.psh\_008.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-7
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

REUBEN H. FERRELL  
DB 813 PG 258  
ESTATE FILE 86-E-406

46

MARY BLOUNT MOORE  
DB 849 PG 369

43

NAD 8395

HOLY TRINITY CHURCH OF CHRIST  
C/O MELVIN SCOTT, ET UX  
DB 1067 PG 423

42

WILLIE H. BLOUNT  
DB 1026 PG 182

33

JEFFERY E. HOLLAND,  
ET UX  
DB 1137 PG 560

41

JOSH T. ROGERS, HEIRS  
DB 467 PG 1  
DB 386 PG 421

39

SEE PROFILE 2 FOR WATER LINE  
TRENCHLESS INSTALLATION  
SEE SHEET UC-22

PROP. 124'- 8" TRENCHLESS INSTALLATION IN SOIL  
PROP. 124'- 8" TRENCHLESS INSTALLATION NOT IN SOIL

PROP. 66' OF 4" WATER LINE  
2-4" VALVE

OPEN CUT 248' TRENCHLESS INSTALLATION OPEN CUT

PROP. 8" VALVE

PROP. 402' OF 8" WATER PIPE

THRUST BLOCK

RELOCATE FIRE HYDRANT

THRUST BLOCK

PROP. 8" VALVE

GOTHA W. WOOLARD, HEIRS  
C/O DEBORAH WOOLARD MITCHELL  
DB 955 PG 208

40

MARY L. BROWN HOPKINS  
DB 746 PG 529  
DB 869 PG 280

45

ALL DRIVEWAY WIDTHS 16' AND  
RADI 10' UNLESS OTHERWISE NOTED

SEE SHT. 23 FOR -L- PROFILE

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

PI Sta 104+09.45	Pls Sta 112+70.65	Pls Sta 114+30.65	PI Sta 125+45.57
$\Delta = 20^{\circ} 04' 01.5" (RT)$	$\Theta_s = 0^{\circ} 51' 12.0"$	$\Theta_s = 0^{\circ} 24' 48.2"$	$\Delta = 17^{\circ} 44' 29.2" (LT)$
$D = 1^{\circ} 13' 08.6"$	$L_s = 140.00'$	$L_s = 100.00'$	$D = 0^{\circ} 49' 36.4"$
$L = 1,646.11'$	$LT = 93.33'$	$LT = 66.67'$	$L = 2,145.85'$
$T = 831.57'$	$ST = 46.67'$	$ST = 33.33'$	$T = 1,081.58'$
$R = 4,700.00'$			$R = 6,930.00'$
$SE = 0.034$			$SE = 0.025$
$INC = 41J8'$			$INC = 40.00'$

MATCHLINE -L- 108+00 SEE SHEET UC-6

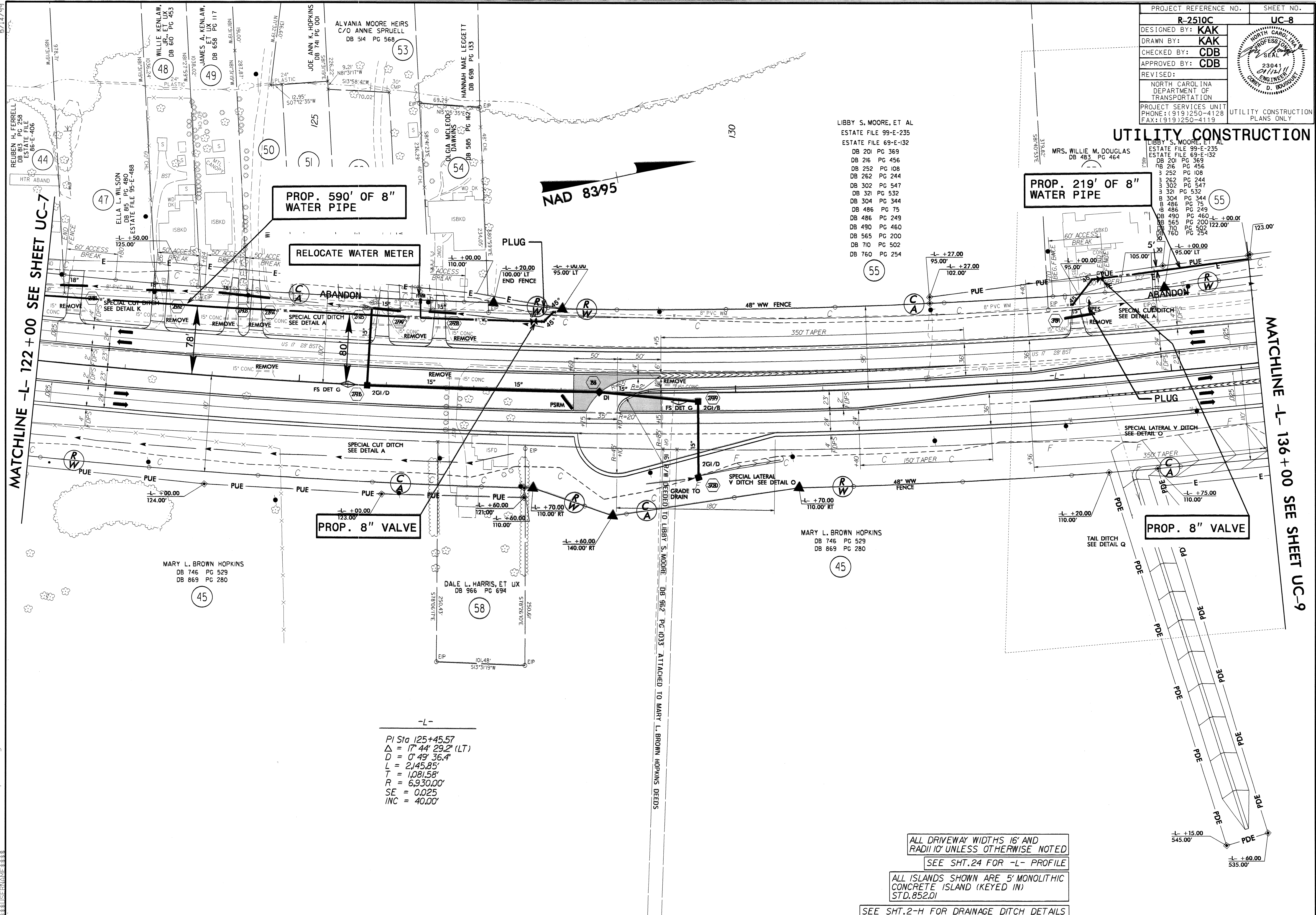
MATCHLINE -L- 122+00 SEE SHEET UC-8

8/17/99

12- (AN-20112420  
3:\Utilities\Projects\2510c-ut-uc7\_psh\_009.dgn  
3:Utilities\Projects\2510c-ut-uc7\_psh\_009.dgn

PROJECT REFERENCE NO.	R-2510C	SHEET NO.	UC-8
DESIGNED BY:	KAK		
DRAWN BY:	KAK		
CHECKED BY:	CDB		
APPROVED BY:	CDB		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119			

**UTILITY CONSTRUCTION**



REVISIONS

MATCHLINE -L- 122+00 SEE SHEET UC-7

MATCHLINE -L- 136+00 SEE SHEET UC-9

NAD 83/95

PROP. 590' OF 8" WATER PIPE

RELOCATE WATER METER

PROP. 219' OF 8" WATER PIPE

PROP. 8" VALVE

PROP. 8" VALVE

-L-  
 PI Sta 125+45.57  
 $\Delta = 17' 44' 29.2" (LT)$   
 $D = 0' 49' 36.4"$   
 $L = 2,145.85'$   
 $T = 1,081.58'$   
 $R = 6,930.00'$   
 $SE = 0.025$   
 $INC = 40.00'$

LIBBY S. MOORE, ET AL  
 ESTATE FILE 99-E-235  
 ESTATE FILE 69-E-132  
 DB 201 PG 369  
 DB 216 PG 456  
 DB 252 PG 108  
 DB 262 PG 244  
 DB 302 PG 547  
 DB 302 PG 532  
 DB 304 PG 344  
 DB 304 PG 344  
 DB 486 PG 75  
 DB 486 PG 249  
 DB 490 PG 460  
 DB 490 PG 460  
 DB 565 PG 200  
 DB 710 PG 502  
 DB 760 PG 254

LIBBY S. MOORE, ET AL  
 ESTATE FILE 99-E-235  
 ESTATE FILE 69-E-132  
 DB 201 PG 369  
 DB 216 PG 456  
 DB 252 PG 108  
 DB 262 PG 244  
 DB 302 PG 547  
 DB 302 PG 532  
 DB 304 PG 344  
 DB 304 PG 344  
 DB 486 PG 75  
 DB 486 PG 249  
 DB 490 PG 460  
 DB 490 PG 460  
 DB 565 PG 200  
 DB 710 PG 502  
 DB 760 PG 254

MARY L. BROWN HOPKINS  
 DB 746 PG 529  
 DB 869 PG 280

MARY L. BROWN HOPKINS  
 DB 746 PG 529  
 DB 869 PG 280

DALE L. HARRIS, ET UX  
 DB 966 PG 694

ALVANIA MOORE HEIRS  
 C/O ANNIE SPRUELL  
 DB 514 PG 568

JOE ANN K. HOPKINS  
 DB 741 PG 001

HANNAH MAE LEGGETT  
 DB 698 PG 133

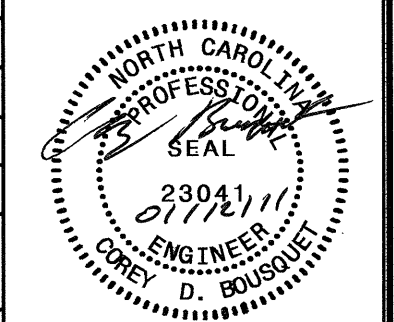
WILLIE KENLAW,  
 ET UX  
 DB 610 PG 453

JAMES A. KENLAW,  
 ET UX  
 DB 658 PG 117

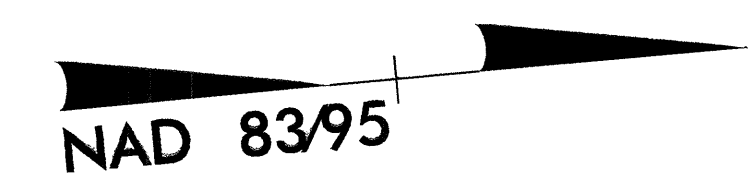
ALL DRIVEWAY WIDTHS 16' AND  
 RADII 10' UNLESS OTHERWISE NOTED  
 SEE SHT. 24 FOR -L- PROFILE  
 ALL ISLANDS SHOWN ARE 5' MONOLITHIC  
 CONCRETE ISLAND (KEYED IN)  
 STD. 852.01  
 SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

12-MAY-2011 10:26  
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 R2510C-UT-UC8-psht\_010.dgn





**UTILITY CONSTRUCTION**



55  
 LIBBY S. MOORE, ET AL  
 ESTATE FILE 99-E-235  
 ESTATE FILE 69-E-132  
 DB 201 PG 369  
 DB 216 PG 456  
 DB 252 PG 108  
 DB 262 PG 244  
 DB 302 PG 547  
 DB 321 PG 532  
 DB 304 PG 344  
 DB 486 PG 75  
 DB 486 PG 249  
 DB 490 PG 460  
 DB 565 PG 200  
 DB 710 PG 502  
 DB 760 PG 254

LIBBY S. MOORE  
 ESTATE FILE 99-E-235  
 ESTATE FILE 69-E-132  
 DB 262 PG 244  
 DB 216 PG 456

JOHN B. STOKES &  
 DELPHIE C. STOKES  
 DB 677 PG 181

PROP. 24'- 8" TRENCHLESS INSTALLATION IN SOIL  
 PROP. 24'- 8" TRENCHLESS INSTALLATION NOT IN SOIL

PROP. 86' OF 4" WATER PIPE  
 1-4" VALVE

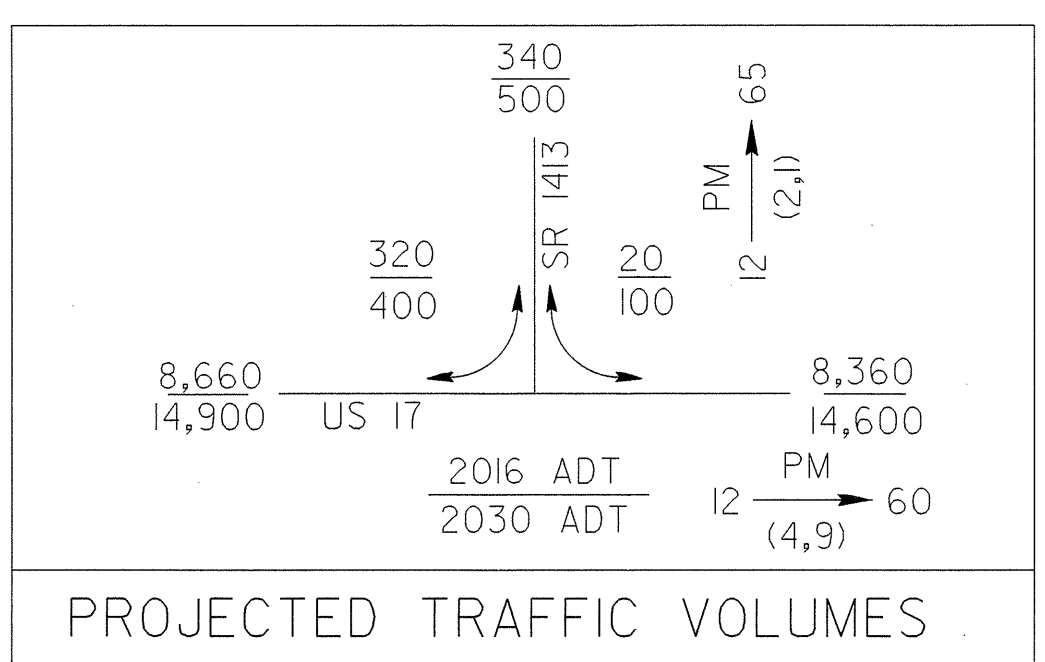
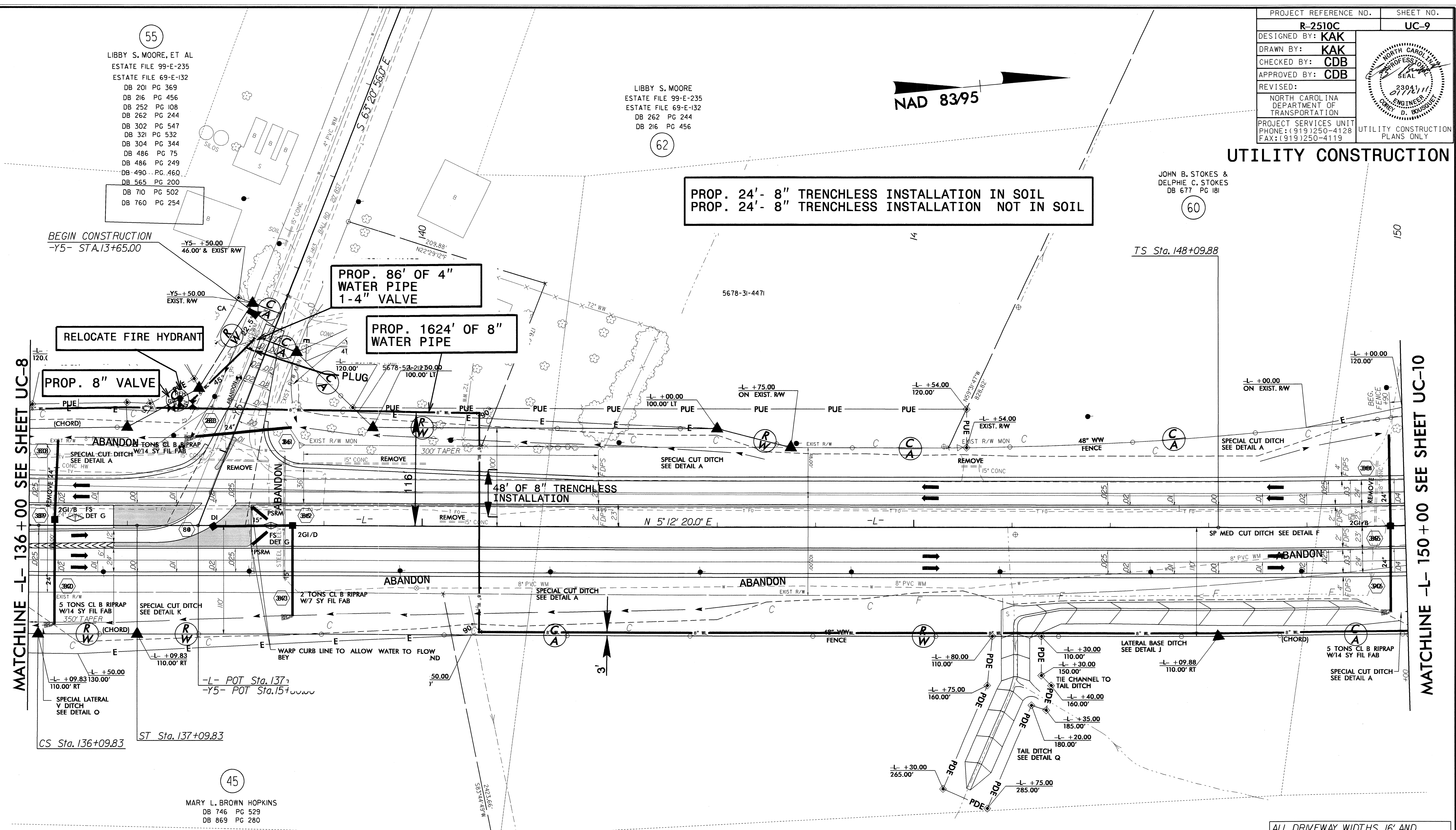
PROP. 1624' OF 8" WATER PIPE

RELOCATE FIRE HYDRANT

PROP. 8" VALVE

MATCHLINE -L- 136+00 SEE SHEET UC-8

MATCHLINE -L- 150+00 SEE SHEET UC-10



-L-

PI Sta 125+45.57	PIs Sta 136+43.17	PIs Sta 149+59.89
$\Delta = 17^{\circ} 44' 29.2''$ (LT)	$\Theta_s = 0^{\circ} 24' 48.2''$	$\Theta_s = 2^{\circ} 10' 39.5''$
$D = 0^{\circ} 49' 36.4''$	$L_s = 100.00'$	$L_s = 225.00'$
$L = 2145.85'$	$LT = 66.67'$	$LT = 150.01'$
$T = 1,081.58'$	$ST = 33.33'$	$ST = 75.01'$
$R = 6,930.00'$		
$SE = 0.025$		
$INC = 40.00'$		

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT. 24 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

SEE SHT. 2-F FOR INTERSECTION DETAIL

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

JOHN B. STOKES &  
 DELPHIE C. STOKES  
 DB 677 PG 181

60

SECOND TRACT


5678-44-944

8/17/99

REVISIONS

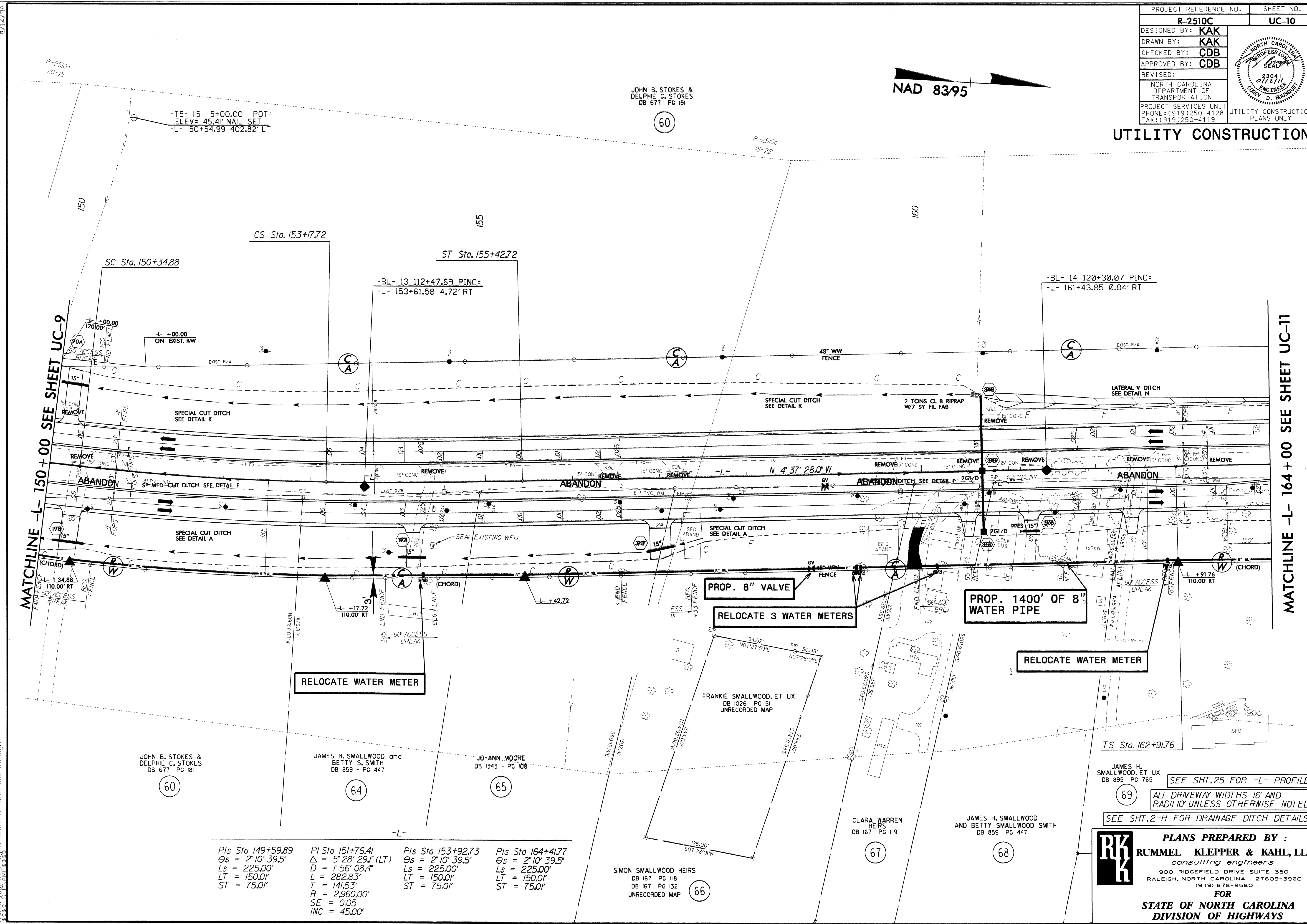
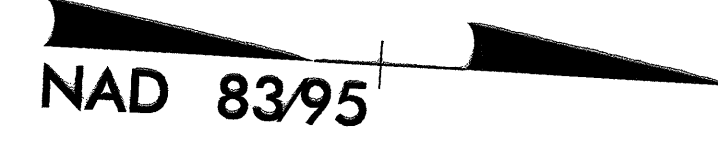
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-10
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

# UTILITY CONSTRUCTION

JOHN B. STOKES & DELPHIE C. STOKES  
DB 677 - PG 181



MATCHLINE -L- 150+00 SEE SHEET UC-9

MATCHLINE -L- 164+00 SEE SHEET UC-11

Pls Sta 149+59.89 Os = 2' 10' 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'	Pl Sta 151+76.41 Δ = 5' 28' 29.1" (LT) D = 1' 56' 08.4" L = 282.83' T = 141.53' R = 2,960.00' SE = 0.05 INC = 45.00'	Pls Sta 153+92.73 Os = 2' 10' 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'	Pls Sta 164+41.77 Os = 2' 10' 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'
---	---	---	---

SEE SHT. 25 FOR -L- PROFILE

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

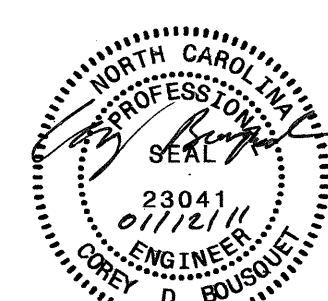
**PLANS PREPARED BY :**

**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560

**FOR**

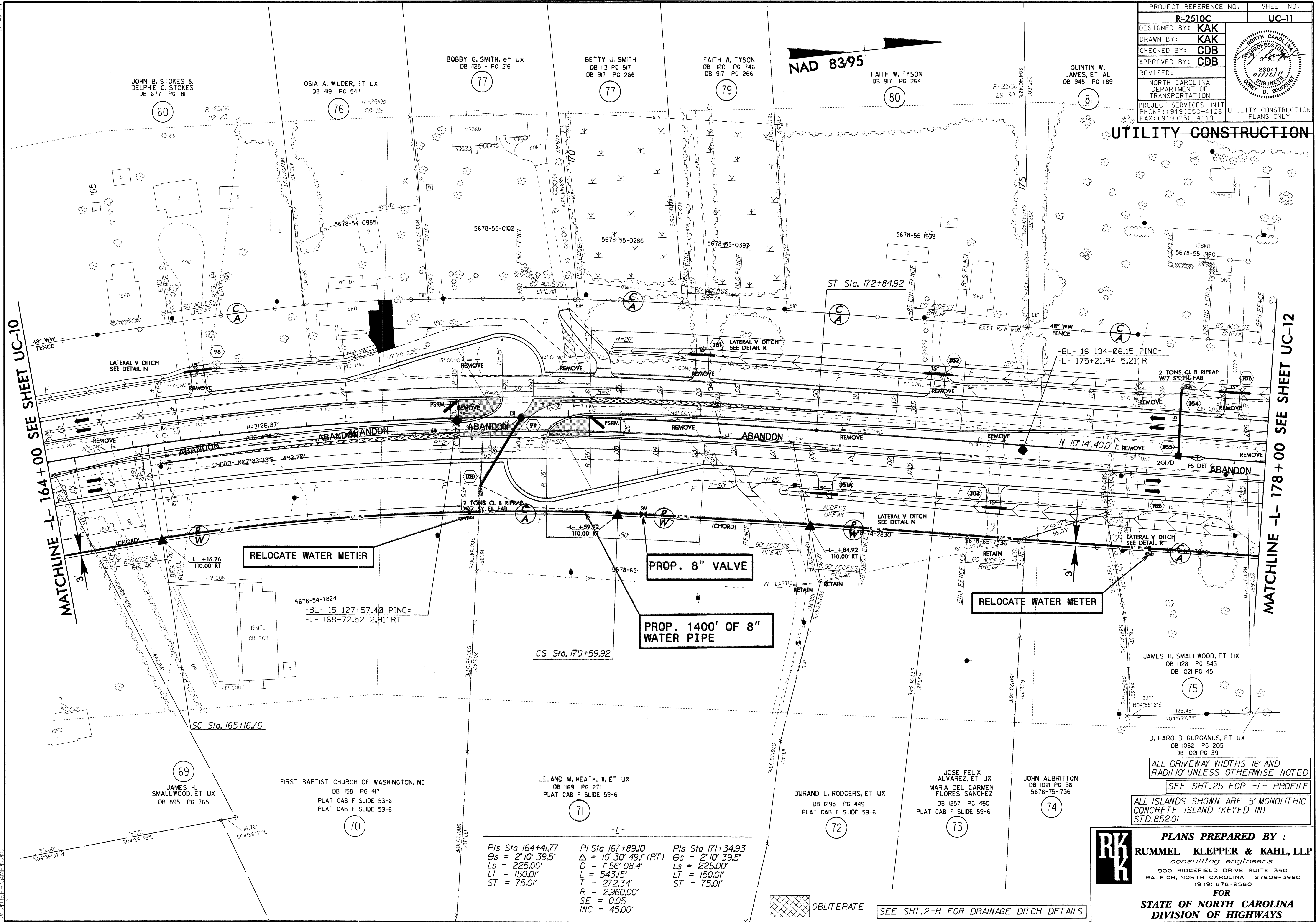
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

12-JAN-2011 12:48 N:\2510C-UT\_UC10\_psh\_012.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-11
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

NAD 83/95

UTILITY CONSTRUCTION



MATCHLINE -L- 164+00 SEE SHEET UC-10

MATCHLINE -L- 178+00 SEE SHEET UC-12

REVISIONS

Pls Sta 164+41.77 $\theta_s = 2^\circ 10' 39.5''$ $L_s = 225.00'$ $LT = 150.01'$ $ST = 75.01'$	Pl Sta 167+89.10 $\Delta = 10^\circ 30' 49.1'' (RT)$ $D = 1^\circ 56' 08.4''$ $L = 543.15'$ $T = 272.34'$ $R = 2,960.00'$ $SE = 0.05$ $INC = 45.00'$	Pls Sta 171+34.93 $\theta_s = 2^\circ 10' 39.5''$ $L_s = 225.00'$ $LT = 150.01'$ $ST = 75.01'$
--	---	--

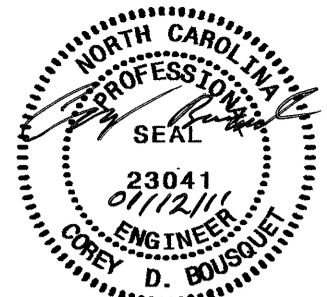
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

ALL DRIVEWAY WIDTHS 16' AND RADIUS 10' UNLESS OTHERWISE NOTED  
 SEE SHT. 25 FOR -L- PROFILE  
 ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

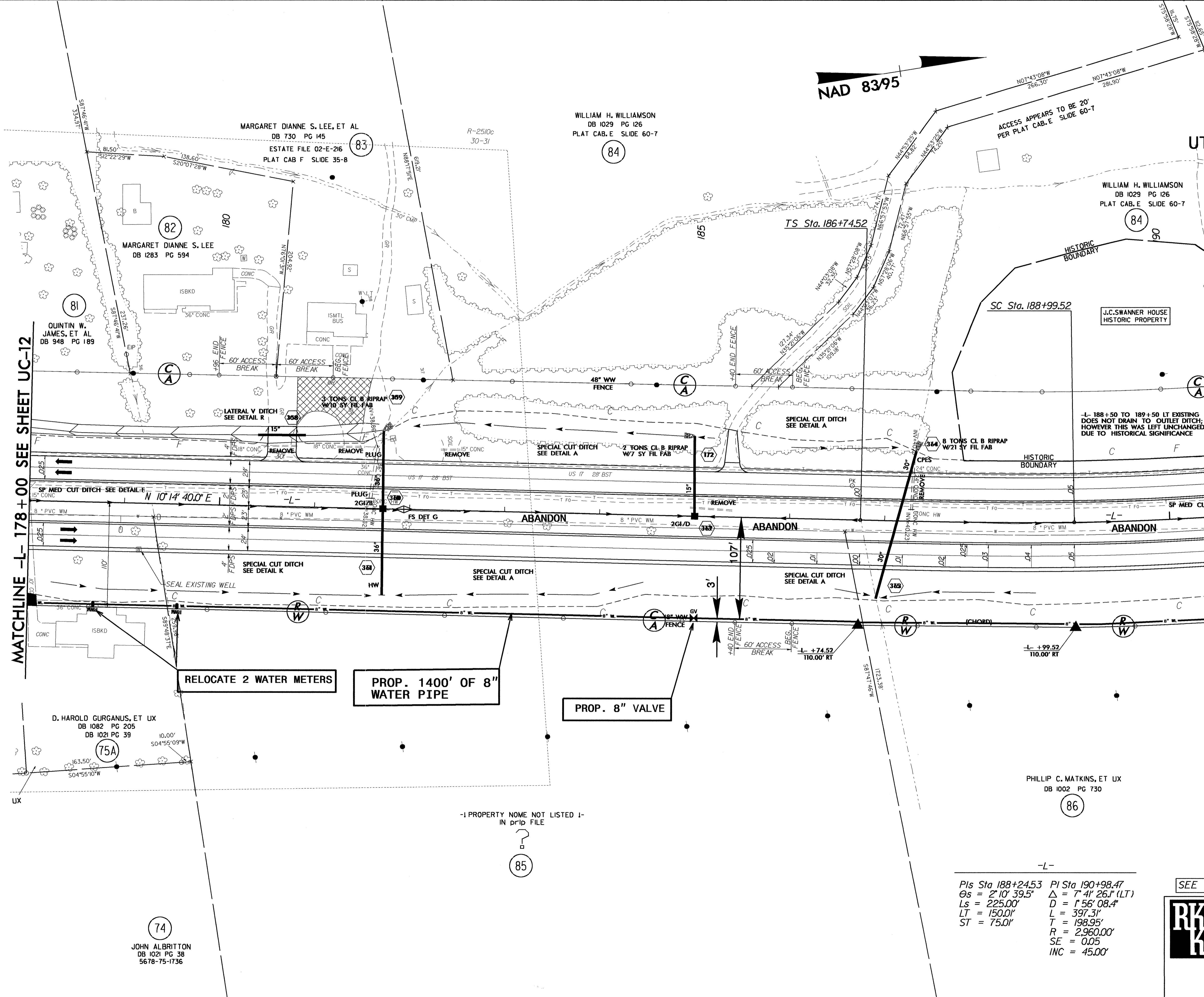
**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

B:\17\99  
 12-16-2011 10:48 AM R2510C-UT\_UC11\_psh\_013.dgn

8/17/99  
12-JAN-2011 11:18 AM P2510C\_UT\_UC12.dgn  
R:\U\11\11\12-JAN-2011 11:18 AM P2510C\_UT\_UC12.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-12
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

# UTILITY CONSTRUCTION



REVISIONS

MATCHLINE -L- 178+00 SEE SHEET UC-12

MATCHLINE -L- 192+00 SEE SHEET UC-13

D. HAROLD GURGANUS, ET UX  
DB 1082 PG 205  
DB 1021 PG 39

74  
JOHN ALBRITTON  
DB 1021 PG 38  
5678-75-1736

RELOCATE 2 WATER METERS

PROP. 1400' OF 8" WATER PIPE

PROP. 8" VALVE

-I PROPERTY NAME NOT LISTED I- IN PLAT FILE

85


PHILLIP C. MATKINS, ET UX  
DB 1002 PG 730

-L-  
 PIs Sta 188+24.53 PI Sta 190+98.47  
 Os = 2°10'39.5" Δ = 7°41'26.4" (LT)  
 Ls = 225.00' D = 156'08.4"  
 LT = 150.01' L = 397.31'  
 ST = 75.01' T = 198.95'  
 R = 2,960.00'  
 SE = 0.05  
 INC = 45.00'

SEE SHT.26 FOR -L- PROFILE

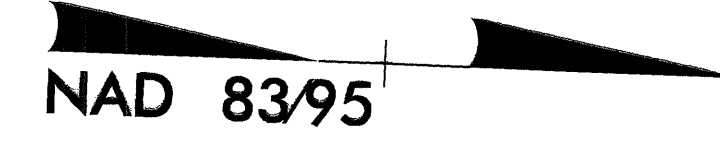
ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT.2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**  
 **RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

8/13/99

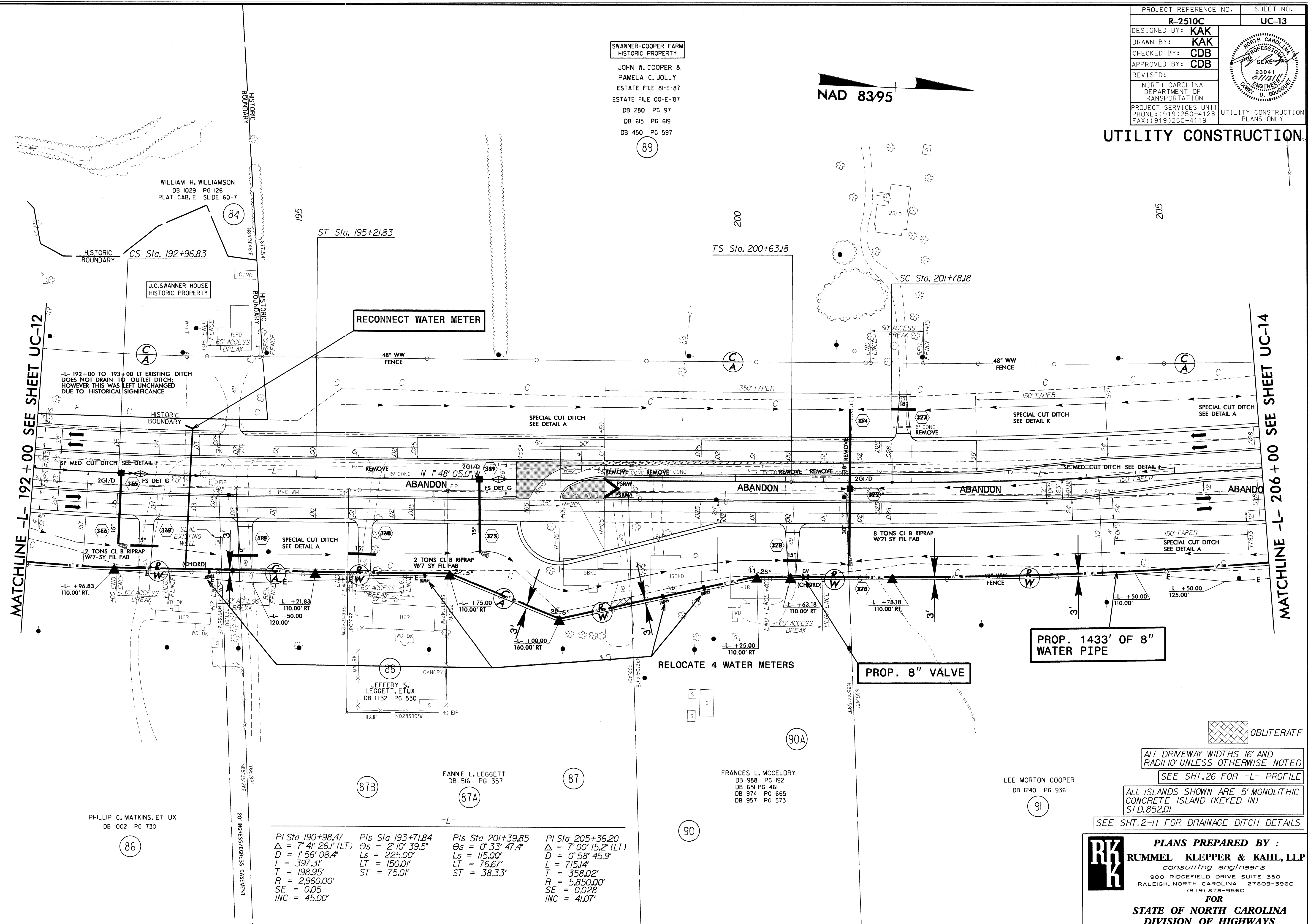
PROJECT REFERENCE NO.	R-2510C	SHEET NO.	UC-13
DESIGNED BY:	KAK		
DRAWN BY:	KAK		
CHECKED BY:	CDB		
APPROVED BY:	CDB		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119			



### UTILITY CONSTRUCTION

SWANNER-COOPER FARM  
HISTORIC PROPERTY

JOHN W. COOPER &  
PAMELA C. JOLLY  
ESTATE FILE 81-E-87  
ESTATE FILE 00-E-187  
DB 280 PG 97  
DB 615 PG 619  
DB 450 PG 597



MATCHLINE -L- 192+00 SEE SHEET UC-12

MATCHLINE -L- 206+00 SEE SHEET UC-14

PI Sta 190+98.47	PIs Sta 193+71.84	PIs Sta 201+39.85	PI Sta 205+36.20
$\Delta = 7' 41'' 26.1'' (LT)$	$\Delta = 2' 10'' 39.5''$	$\Delta = 0' 33'' 47.4''$	$\Delta = 7' 00'' 15.2'' (LT)$
$D = 1' 56'' 08.4''$	$Ls = 225.00'$	$Ls = 115.00'$	$D = 0' 58'' 45.9''$
$L = 397.31'$	$LT = 150.01'$	$LT = 76.67'$	$L = 715.14'$
$T = 198.95'$	$ST = 75.01'$	$ST = 38.33'$	$T = 358.02'$
$R = 2,960.00'$			$R = 5,850.00'$
$SE = 0.05$			$SE = 0.028$
$INC = 45.00'$			$INC = 41.07'$

PROP. 1433' OF 8" WATER PIPE

PROP. 8" VALVE

RELOCATE 4 WATER METERS

RECONNECT WATER METER

OBLITERATE

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT. 26 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

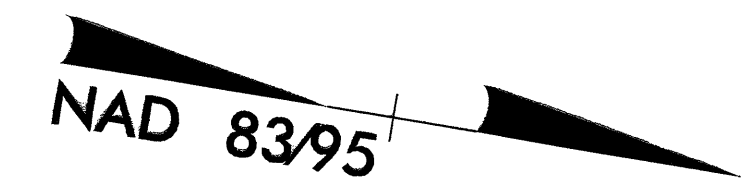
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**

**RUMMEL KLEPPER & KAHL, LLP**  
consulting engineers  
900 RIDGEMOUNT DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560

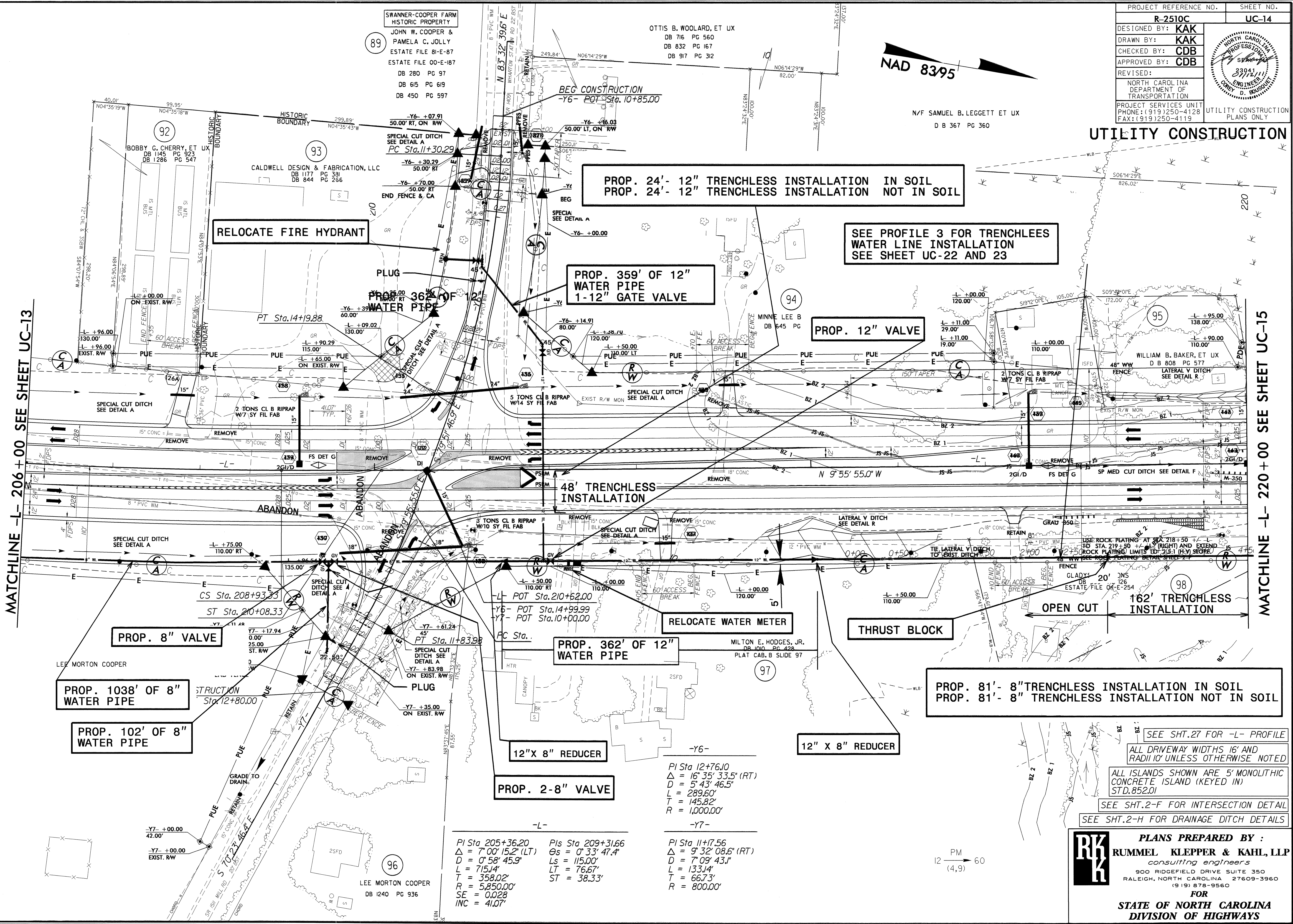
FOR STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

12-JAN-2011 12:47:47 NRP2510C-UT-UC13-psht-015.dgn



N/F SAMUEL B. LEGGETT ET UX  
 D B 367 PG 360

**UTILITY CONSTRUCTION**



**PROP. 24'- 12" TRENCHLESS INSTALLATION IN SOIL**  
**PROP. 24'- 12" TRENCHLESS INSTALLATION NOT IN SOIL**

**SEE PROFILE 3 FOR TRENCHLESS WATER LINE INSTALLATION**  
**SEE SHEET UC-22 AND 23**

**PROP. 359' OF 12" WATER PIPE**  
**1-12" GATE VALVE**

**PROP. 12" VALVE**

**48' TRENCHLESS INSTALLATION**

**162' TRENCHLESS INSTALLATION**

**PROP. 8" VALVE**

**PROP. 1038' OF 8" WATER PIPE**

**PROP. 102' OF 8" WATER PIPE**

**PROP. 362' OF 12" WATER PIPE**

**RELOCATE WATER METER**

**THRUST BLOCK**

**PROP. 81'- 8" TRENCHLESS INSTALLATION IN SOIL**  
**PROP. 81'- 8" TRENCHLESS INSTALLATION NOT IN SOIL**

**12" X 8" REDUCER**

**12" X 8" REDUCER**

**PROP. 2-8" VALVE**

**-L-**

PI Sta. 205+36.20	PIs Sta. 209+31.66	PI Sta. 11+7.56
$\Delta = 7^{\circ}00'15.2"$ (LT)	$\Theta s = 0^{\circ}33'47.4"$	$\Delta = 9^{\circ}32'08.6"$ (RT)
$D = 0^{\circ}58'45.9"$	$Ls = 115.00'$	$D = 7^{\circ}09'43.1"$
$L = 715.14'$	$LT = 76.67'$	$L = 133.14'$
$T = 358.02'$	$ST = 38.33'$	$T = 66.73'$
$R = 5,850.00'$		$R = 800.00'$
$SE = 0.028$		
$INC = 41.07'$		

**-Y6-**

PI Sta. 12+76.10
$\Delta = 16^{\circ}35'33.5"$ (RT)
$D = 5^{\circ}43'46.5"$
$L = 289.60'$
$T = 145.82'$
$R = 1,000.00'$

**-Y7-**

PI Sta. 11+7.56
$\Delta = 9^{\circ}32'08.6"$ (RT)
$D = 7^{\circ}09'43.1"$
$L = 133.14'$
$T = 66.73'$
$R = 800.00'$

SEE SHT. 27 FOR -L- PROFILE

ALL DRIVEWAY WIDTHS 16' AND RADIUS 10' UNLESS OTHERWISE NOTED

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

SEE SHT. 2-F FOR INTERSECTION DETAIL

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**

**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*

900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560

**FOR**

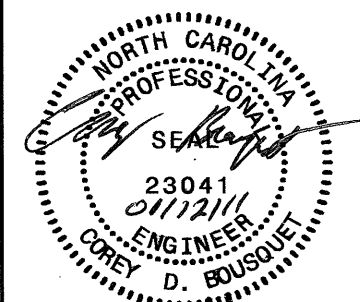
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

MATCHLINE -L- 206+00 SEE SHEET UC-13

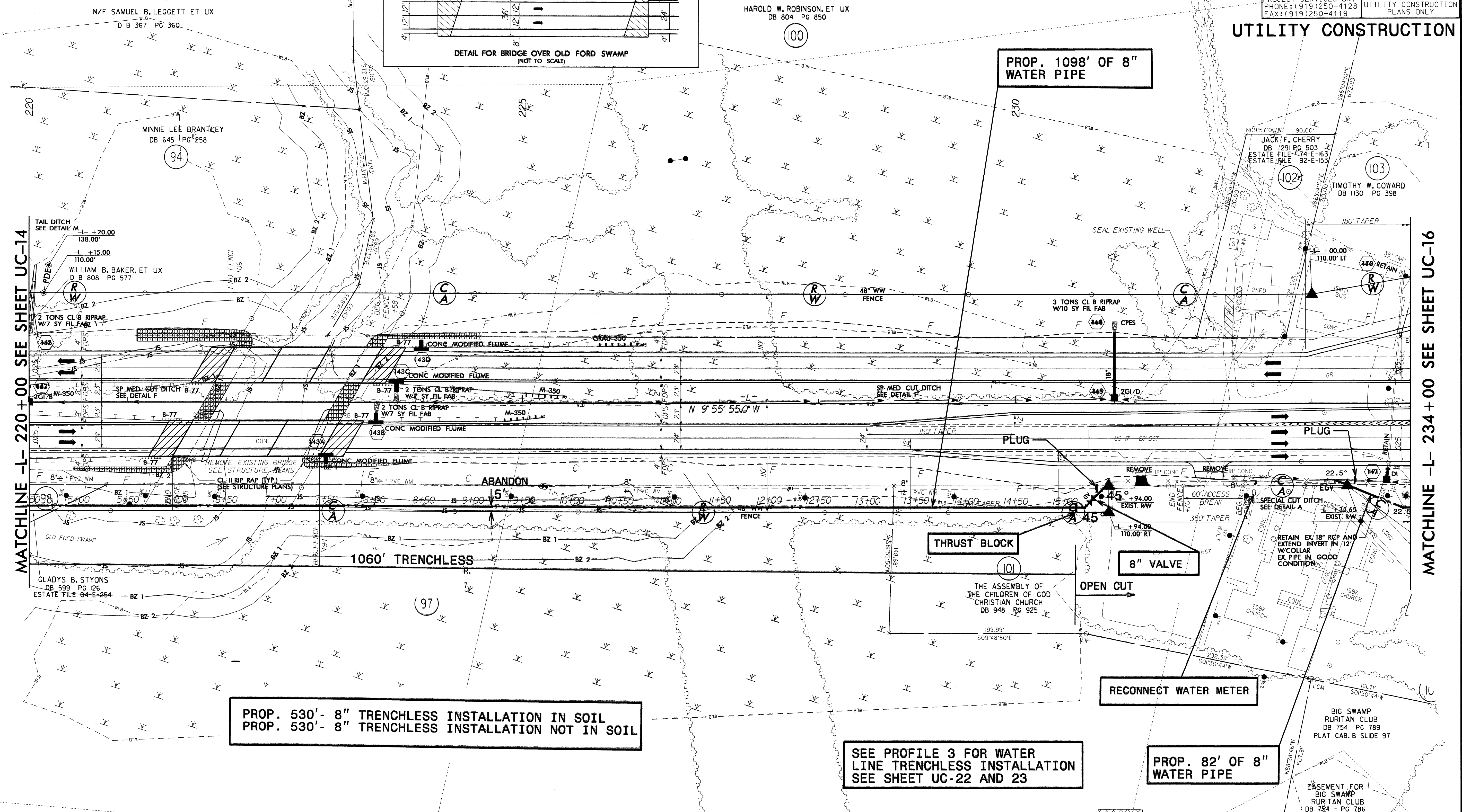
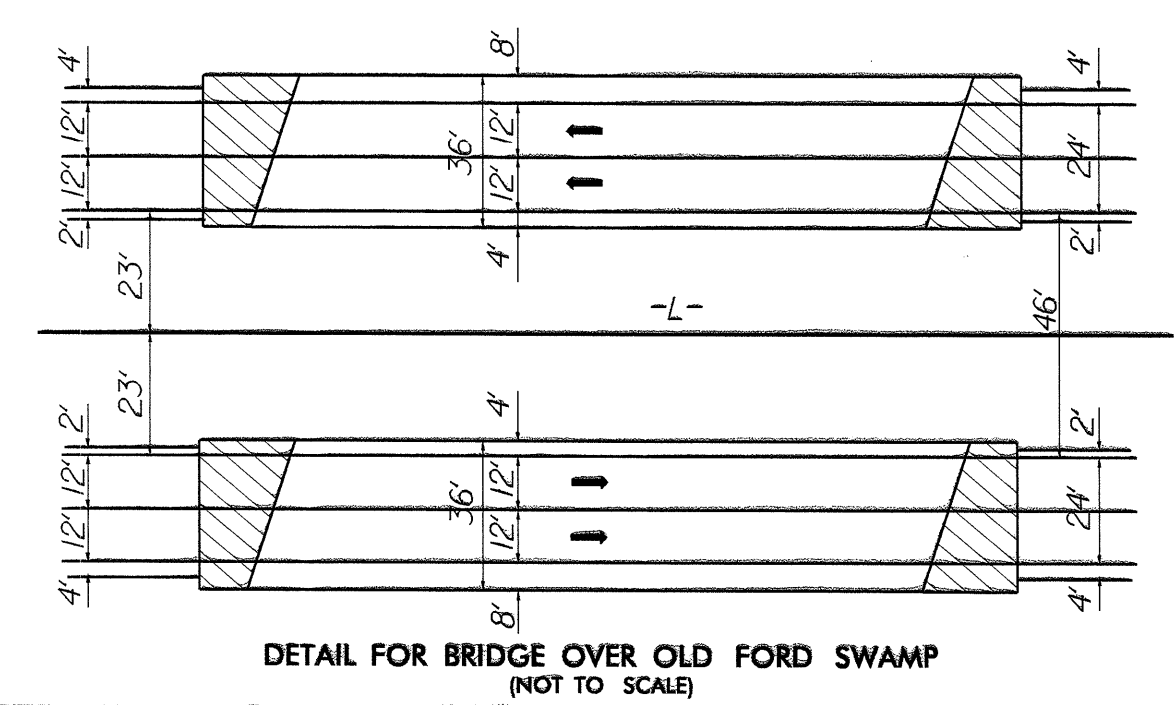
MATCHLINE -L- 220+00 SEE SHEET UC-15

REVISIONS

12-JAN-2011 12:57 N:\R2510C-UT\_UC14-ps-h.016.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-15
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

BEGIN APPROACH SLAB -L- STA. 221+73.36 (SBL)  
 BEGIN APPROACH SLAB -L- STA. 221+32.94 (NBL)  
 BEGIN BRIDGE -L- STA. 221+97.21 (SBL)  
 BEGIN BRIDGE -L- STA. 221+56.79 (NBL)  
 END BRIDGE -L- STA. 223+46.21 (SBL)  
 END BRIDGE -L- STA. 223+05.79 (NBL)  
 END APPROACH SLAB -L- STA. 223+70.06 (SBL)  
 END APPROACH SLAB -L- STA. 223+29.64 (NBL)



MATCHLINE -L- 220+00 SEE SHEET UC-14

MATCHLINE -L- 234+00 SEE SHEET UC-16

PROP. 530'- 8" TRENCHLESS INSTALLATION IN SOIL  
 PROP. 530'- 8" TRENCHLESS INSTALLATION NOT IN SOIL

SEE PROFILE 3 FOR WATER  
 LINE TRENCHLESS INSTALLATION  
 SEE SHEET UC-22 AND 23

PROP. 82' OF 8" WATER PIPE

SEE SHEETS -- THRU -- FOR STRUCTURE PLANS

SEE SHT. 27 FOR -L- PROFILE

ALL DRIVEWAY WIDTHS 16' AND RADIUS UNLESS OTHERWISE NOTED

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

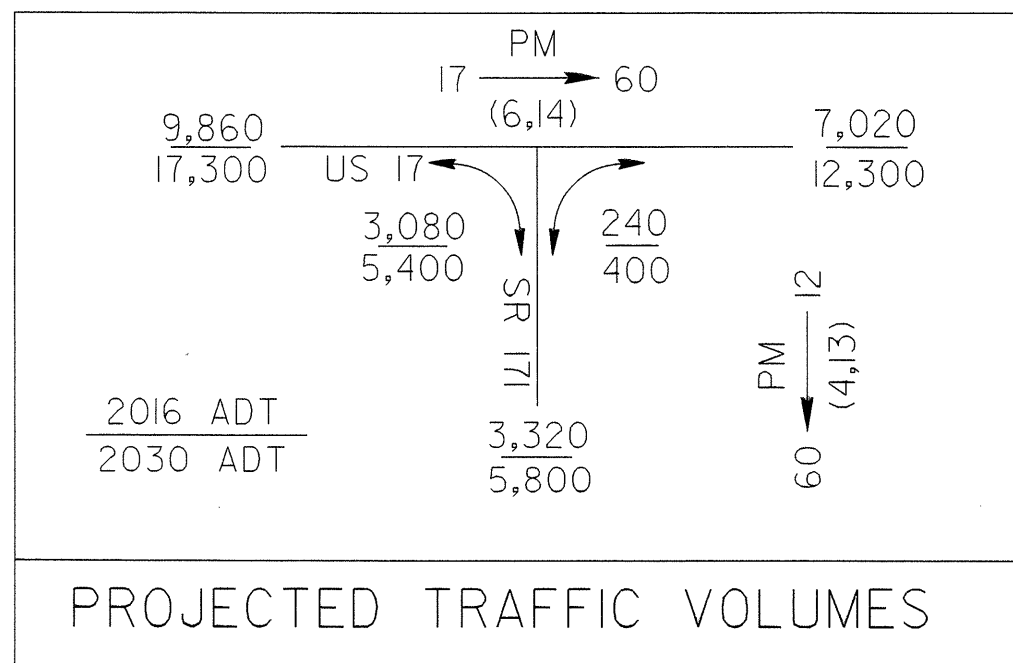


**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

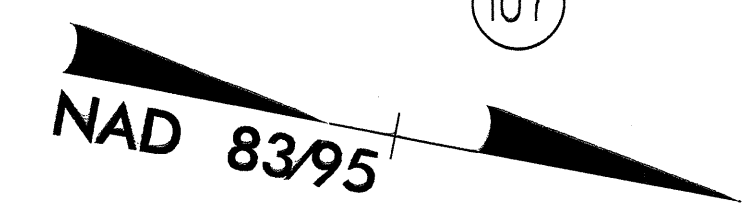
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 12-17-09

8/17/99

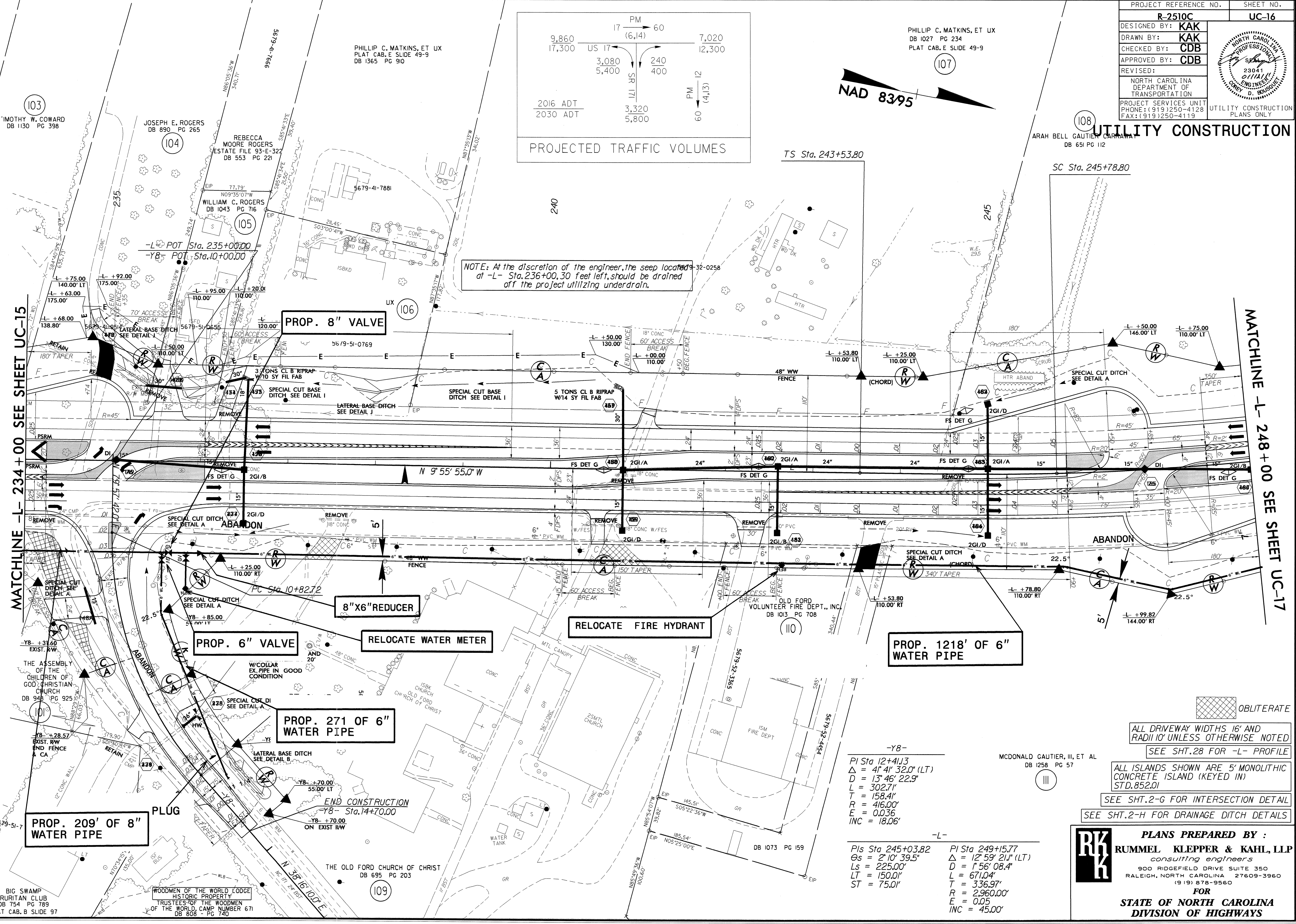
PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-16
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



PHILLIP C. MATKINS, ET UX  
 DB 1027 PG 234  
 PLAT CAB. E SLIDE 49-9



NOTE: At the discretion of the engineer, the seep located at -L- Sta. 236+00.30 feet left, should be drained off the project utilizing underdrain.



MATCHLINE -L- 234+00 SEE SHEET UC-15

MATCHLINE -L- 248+00 SEE SHEET UC-17

ALL DRIVEWAY WIDTHS 16' AND RADIUS UNLESS OTHERWISE NOTED  
 SEE SHT. 28 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN)  
 STD. 852.01

SEE SHT. 2-G FOR INTERSECTION DETAIL  
 SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**  
  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

-Y8-  
 PI Sta 12+41.13  
 $\Delta = 41^{\circ} 41' 32.0''$   
 $D = 13^{\circ} 46' 22.9''$   
 $L = 302.71'$   
 $T = 158.41'$   
 $R = 416.00'$   
 $E = 0.036$   
 $INC = 18.06'$

-L-  
 Pls Sta 245+03.82  
 $\Theta_s = 2^{\circ} 10' 39.5''$   
 $L_s = 225.00'$   
 $LT = 150.01'$   
 $ST = 75.01'$   
 Pls Sta 249+15.77  
 $\Delta = 12^{\circ} 59' 21.1''$  (LT)  
 $D = 1^{\circ} 56' 08.4''$   
 $L = 671.04'$   
 $T = 336.97'$   
 $R = 2,960.00'$   
 $E = 0.05$   
 $INC = 45.00'$

BIG SWAMP  
 RURITAN CLUB  
 DB 754 PG 789  
 PLAT CAB. B SLIDE 97

WOODMEN OF THE WORLD LODGE  
 HISTORIC PROPERTY  
 TRUSTEES OF THE WOODMEN  
 OF THE WORLD CAMP NUMBER 671  
 DB 808 PG 740

THE OLD FORD CHURCH OF CHRIST  
 DB 695 PG 203

RELOCATE FIRE HYDRANT  
 VOLUNTEER FIRE DEPT., INC.  
 DB 103 PG 708

8" X 6" REDUCER

PROP. 6" VALVE

PROP. 271' OF 6" WATER PIPE

PROP. 1218' OF 6" WATER PIPE

PROP. 209' OF 8" WATER PIPE

END CONSTRUCTION  
 -Y8- Sta. 14+70.00  
 ON EXIST. RW

103  
 TIMOTHY W. COWARD  
 DB 1130 PG 398

104  
 JOSEPH E. ROGERS  
 DB 890 PG 265

REBECCA MOORE ROGERS  
 ESTATE FILE 93-E-322  
 DB 553 PG 221

105  
 WILLIAM C. ROGERS  
 DB 1043 PG 716

106  
 PHILLIP C. MATKINS, ET UX  
 PLAT CAB. E SLIDE 49-9  
 DB 1365 PG 910

108  
 ARAH BELL GAUTIER, III, ET AL  
 DB 651 PG 112

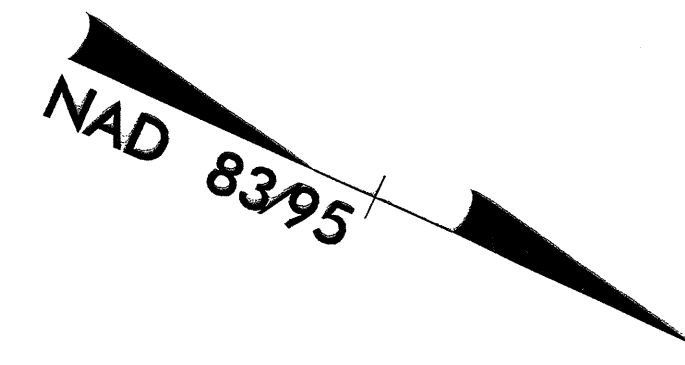
TS Sta. 243+53.80

SC Sta. 245+78.80

109  
 BIG SWAMP  
 RURITAN CLUB  
 DB 754 PG 789  
 PLAT CAB. B SLIDE 97



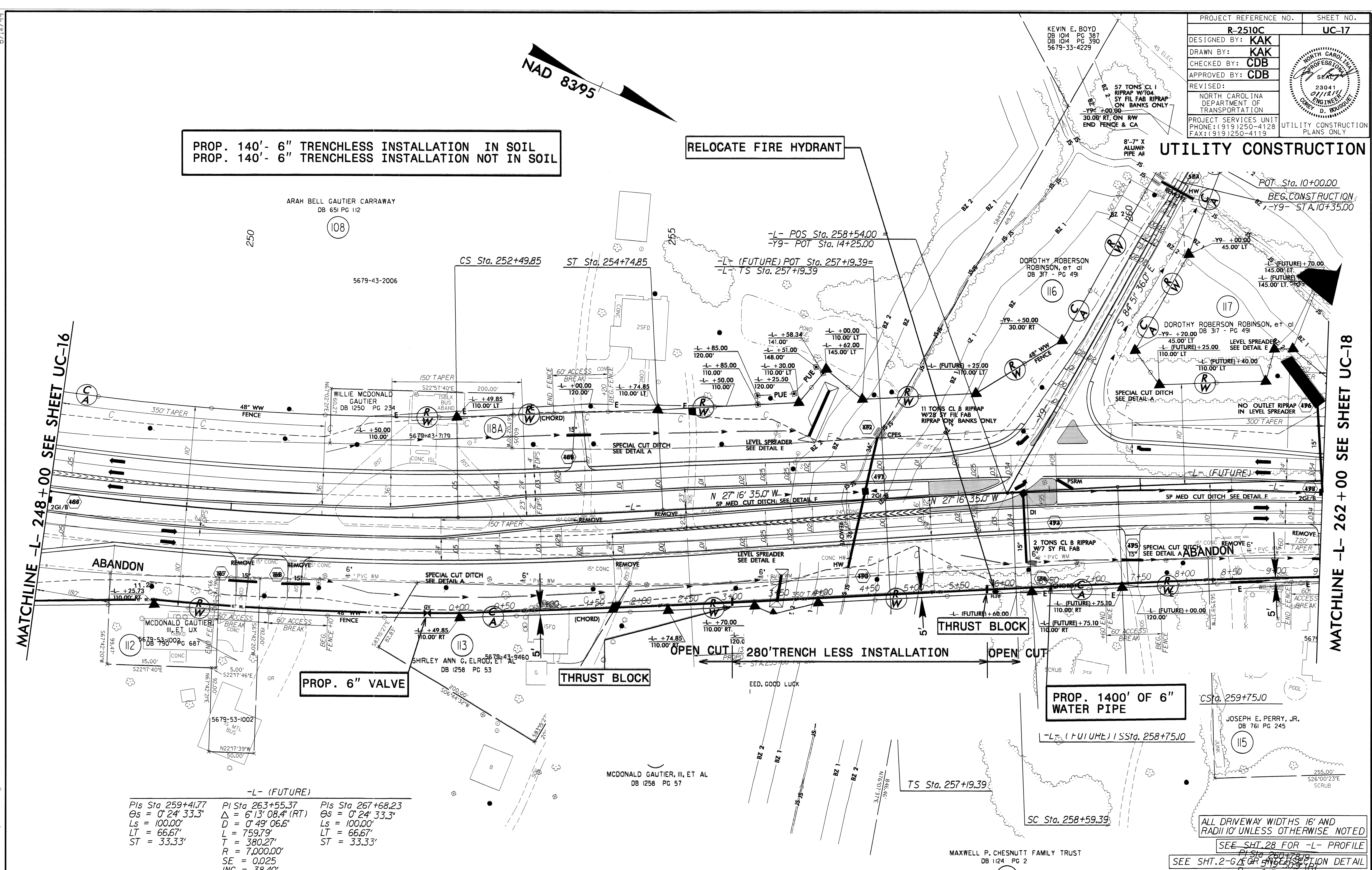
PROJECT REFERENCE NO.	R-2510C	SHEET NO.	UC-17
DESIGNED BY:	KAK		
DRAWN BY:	KAK		
CHECKED BY:	CDB		
APPROVED BY:	CDB		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119			
			UTILITY CONSTRUCTION PLANS ONLY



PROP. 140'- 6" TRENCHLESS INSTALLATION IN SOIL  
 PROP. 140'- 6" TRENCHLESS INSTALLATION NOT IN SOIL

RELOCATE FIRE HYDRANT

UTILITY CONSTRUCTION



MATCHLINE -L- 248+00 SEE SHEET UC-16

MATCHLINE -L- 262+00 SEE SHEET UC-18

-L- (FUTURE)

Pls Sta 259+41.77	Pls Sta 263+55.37	Pls Sta 267+68.23
$\Delta = 0' 24' 33.3"$	$\Delta = 6' 13' 08.4"$ (RT)	$\Delta = 0' 24' 33.3"$
Ls = 100.00'	D = 0' 49' 06.6"	Ls = 100.00'
LT = 66.67'	L = 759.79'	LT = 66.67'
ST = 33.33'	T = 380.27'	ST = 33.33'
	R = 7,000.00'	
	SE = 0.025	
	INC = 38.40'	

Pls Sta 249+15.77	Pls Sta 253+24.86	Pls Sta 258+12.73	Pls Sta 260+78.19
$\Delta = 12' 59' 21.1"$ (LT)	$\Delta = 2' 10' 39.5"$	$\Delta = 0' 51' 12.0"$	$\Delta = 5' 19' 50.9"$ (RT)
D = 1' 56' 08.4"	Ls = 225.00'	Ls = 140.00'	D = 1' 13' 08.6"
L = 671.04'	LT = 150.01'	LT = 93.33'	L = 437.29'
R = 336.97'	ST = 75.01'	ST = 46.67'	T = 218.80'
T = 2,960.00'			R = 4,700.00'
SE = 0.05			SE = 0.034
INC = 45.00'			INC = 40.18'

SEE PROFILE 4 FOR TRENCHLESS WATER LINE INSTALLATION  
 SEE SHEET UC-24

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

ALL DRIVEWAY WIDTHS 16' AND RADIUS 10' UNLESS OTHERWISE NOTED

SEE SHT. 28 FOR -L- PROFILE  
 SEE SHT. 2-G FOR INSULATION DETAIL

**PLANS PREPARED BY:**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

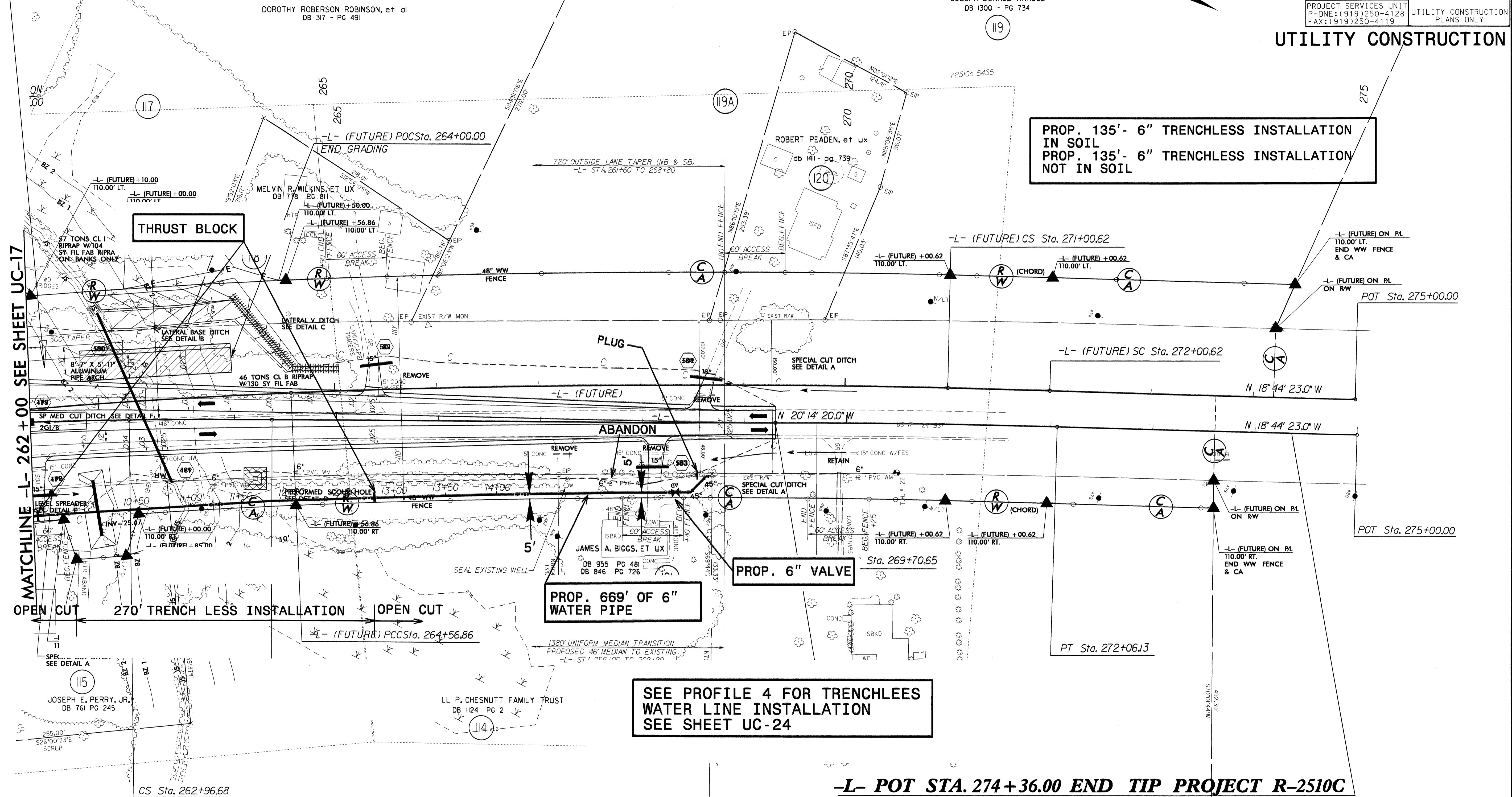
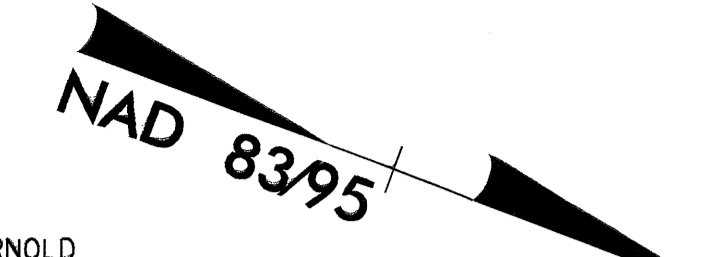
REVISIONS

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8/17/99  
 12-VAN-2011516-NP2510C-UT-UC18-psh\_020.dgn  
 12-VAN-2011516-NP2510C-UT-UC18-psh\_020.dgn

**Note: For permitting purposes, construct subgrade, fill slope and required drainage for future project.**  
 (-L- Sta 262+50 to 264+00 LT.)

PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-18
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	



**PROP. 135'- 6" TRENCHLESS INSTALLATION IN SOIL**  
**PROP. 135'- 6" TRENCHLESS INSTALLATION NOT IN SOIL**

**SEE PROFILE 4 FOR TRENCHLESS WATER LINE INSTALLATION**  
**SEE SHEET UC-24**

**-L- POT STA. 274+36.00 END TIP PROJECT R-2510C**

-L-		-L- (FUTURE)	
PI Sta 263+43.35	PI Sta 270+88.40	PI Sta 259+41.77	PI Sta 262+16.07
Δ = 1° 29' 57.0" (RT)	Δ = 1° 29' 57.0" (RT)	Δ = 3° 56' 35.7" (RT)	Δ = 3° 52' 57.4" (RT)
Os = 0° 51' 12.0"	Os = 0° 51' 12.0"	Os = 0° 24' 33.3"	Os = 0° 36' 11.2"
Ls = 140.00'	Ls = 100.00'	Ls = 100.00'	Ls = 100.00'
D = 0° 38' 11.8"	D = 0° 49' 06.6"	D = 0° 49' 06.6"	D = 0° 36' 11.2"
LT = 93.33'	L = 235.49'	L = 66.67'	L = 643.76'
ST = 46.67'	T = 117.75'	T = 240.97'	T = 322.00'
	R = 9,000.00'	R = 7,000.00'	R = 9,500.00'

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED  
 SEE SHT. 29 FOR -L- & -L- (FUTURE) PROFILES

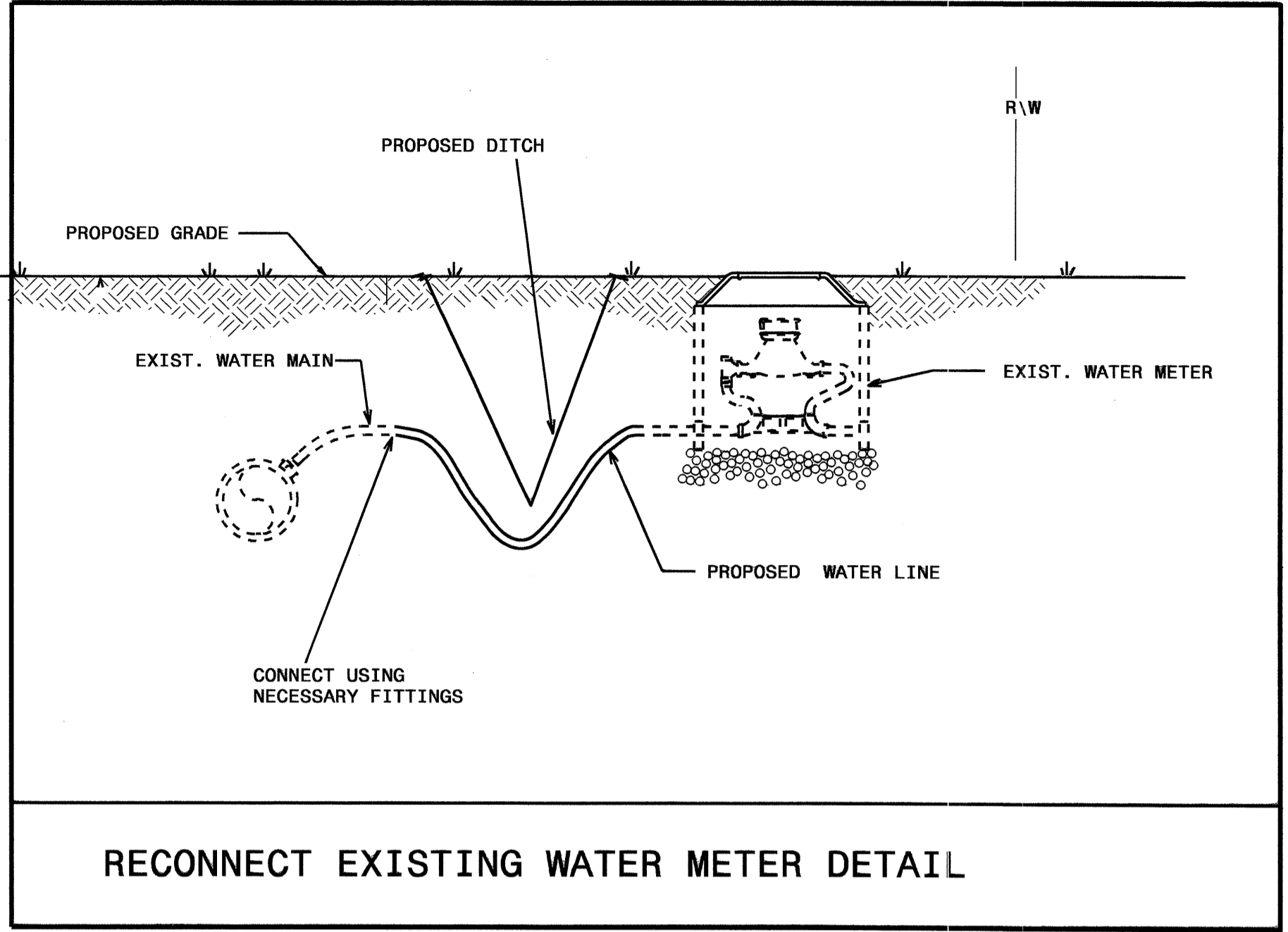
**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

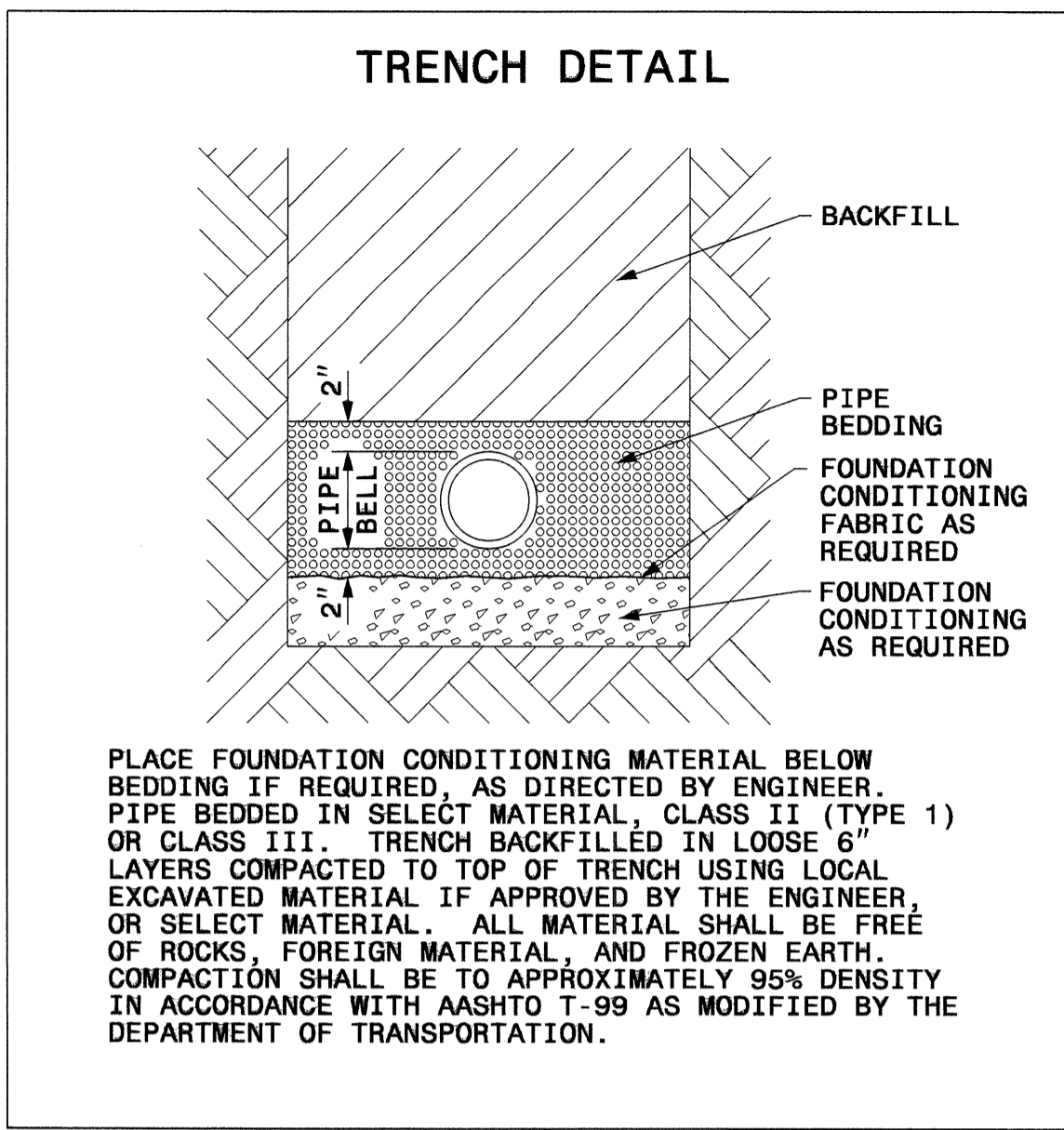
ALAMEDA L. EDWARDS  
 DB 869 PG 286

122

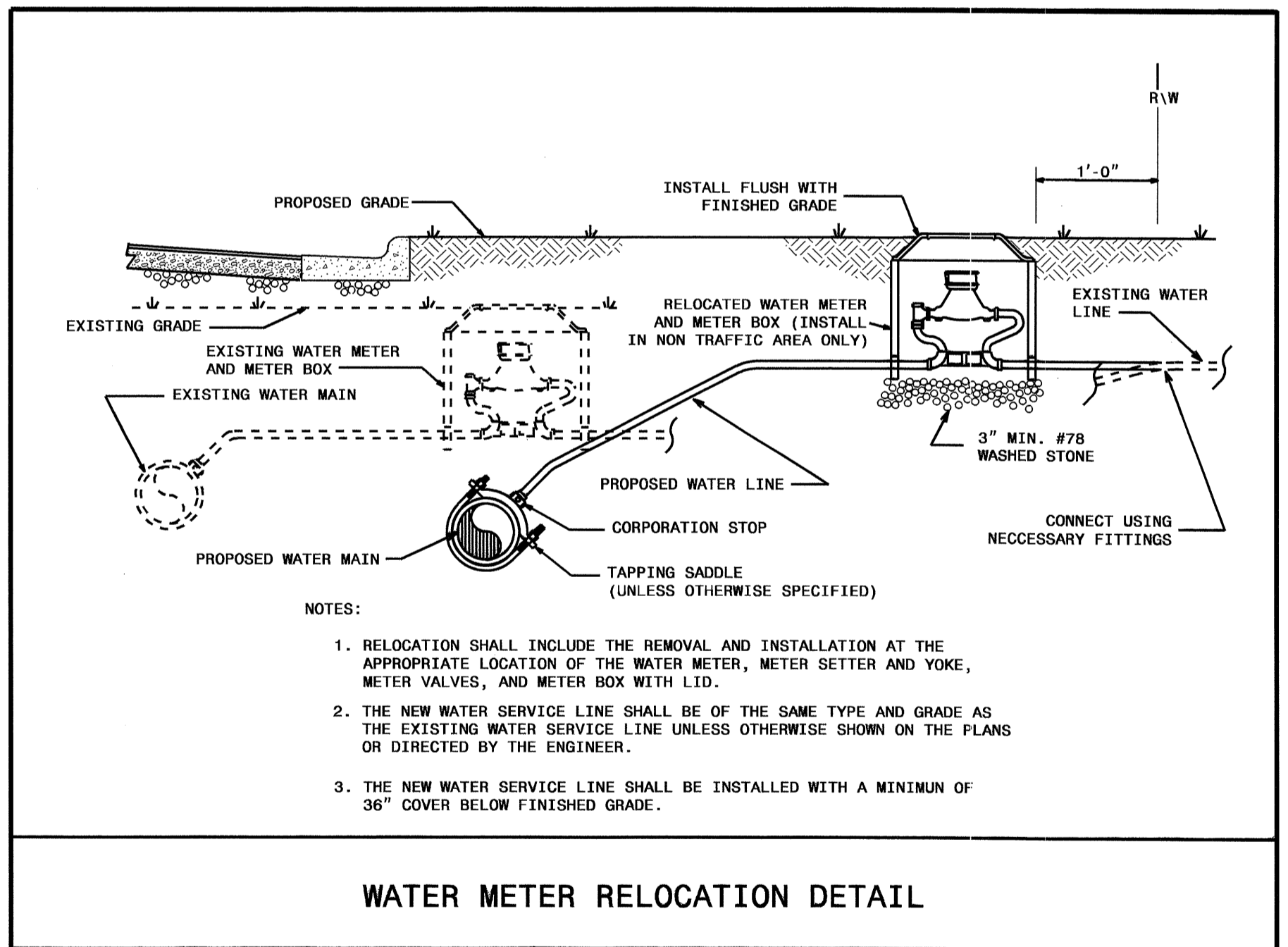
UTILITY CONSTRUCTION



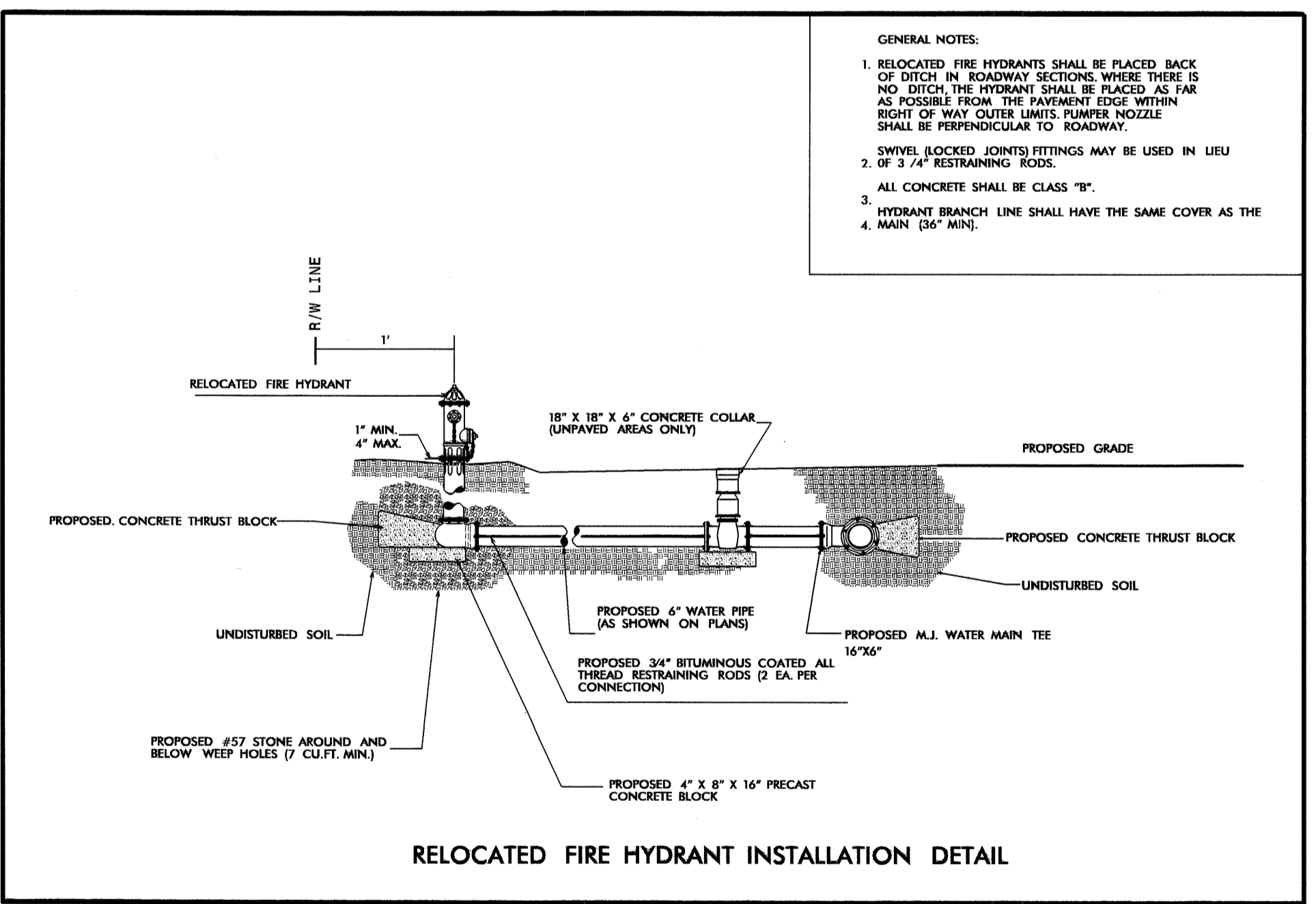
RECONNECT EXISTING WATER METER DETAIL



NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		



WATER METER RELOCATION DETAIL

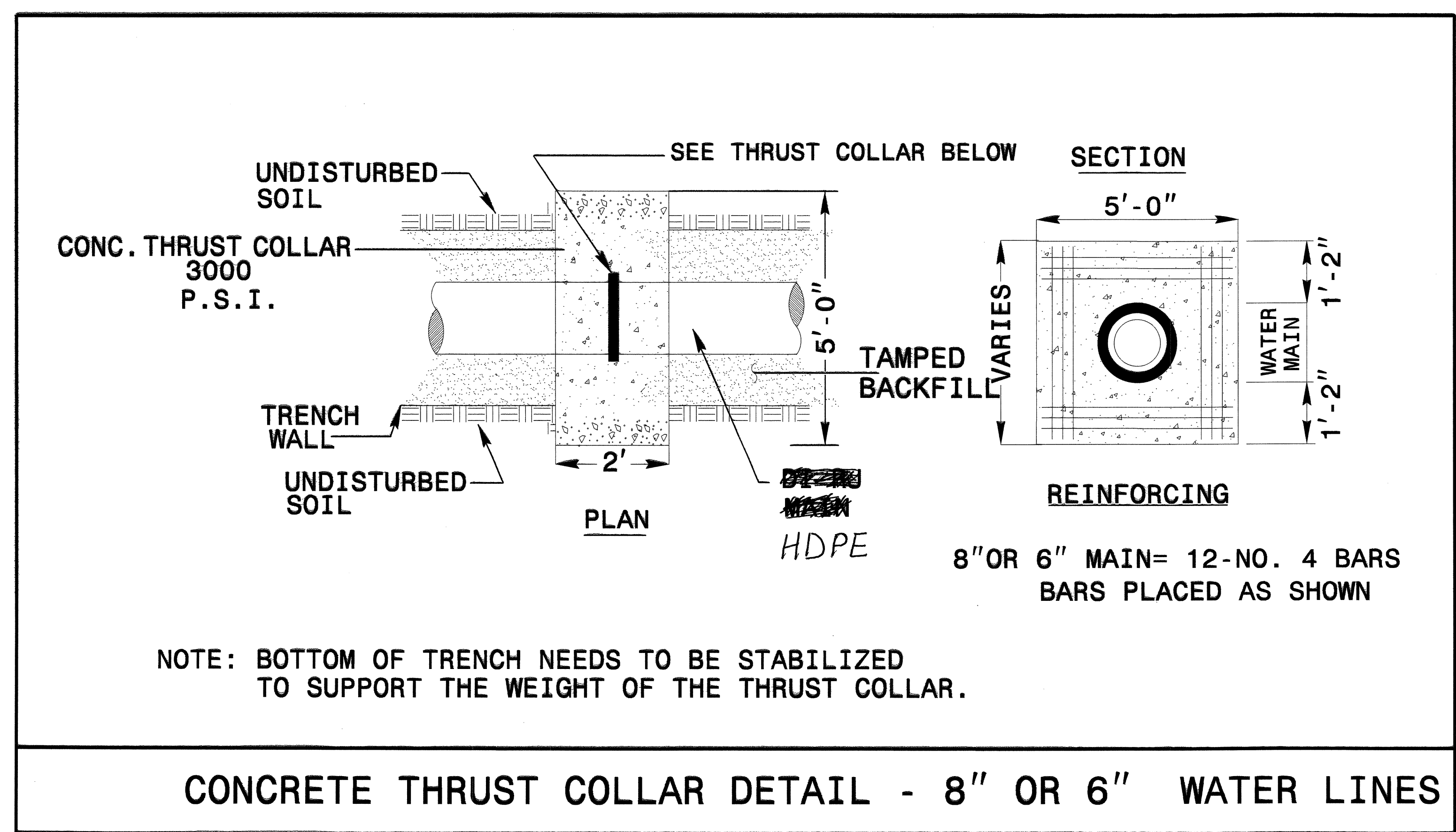
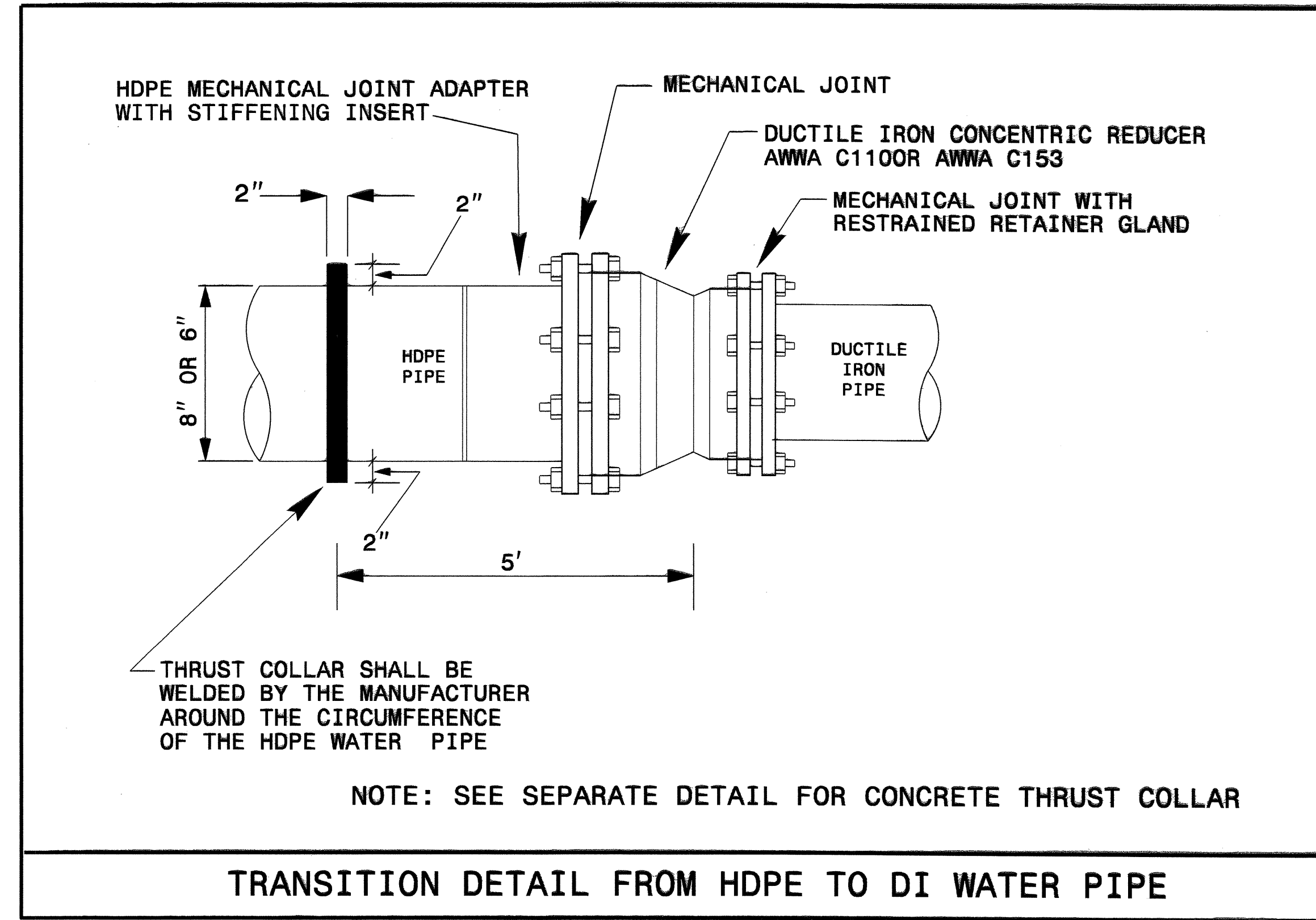
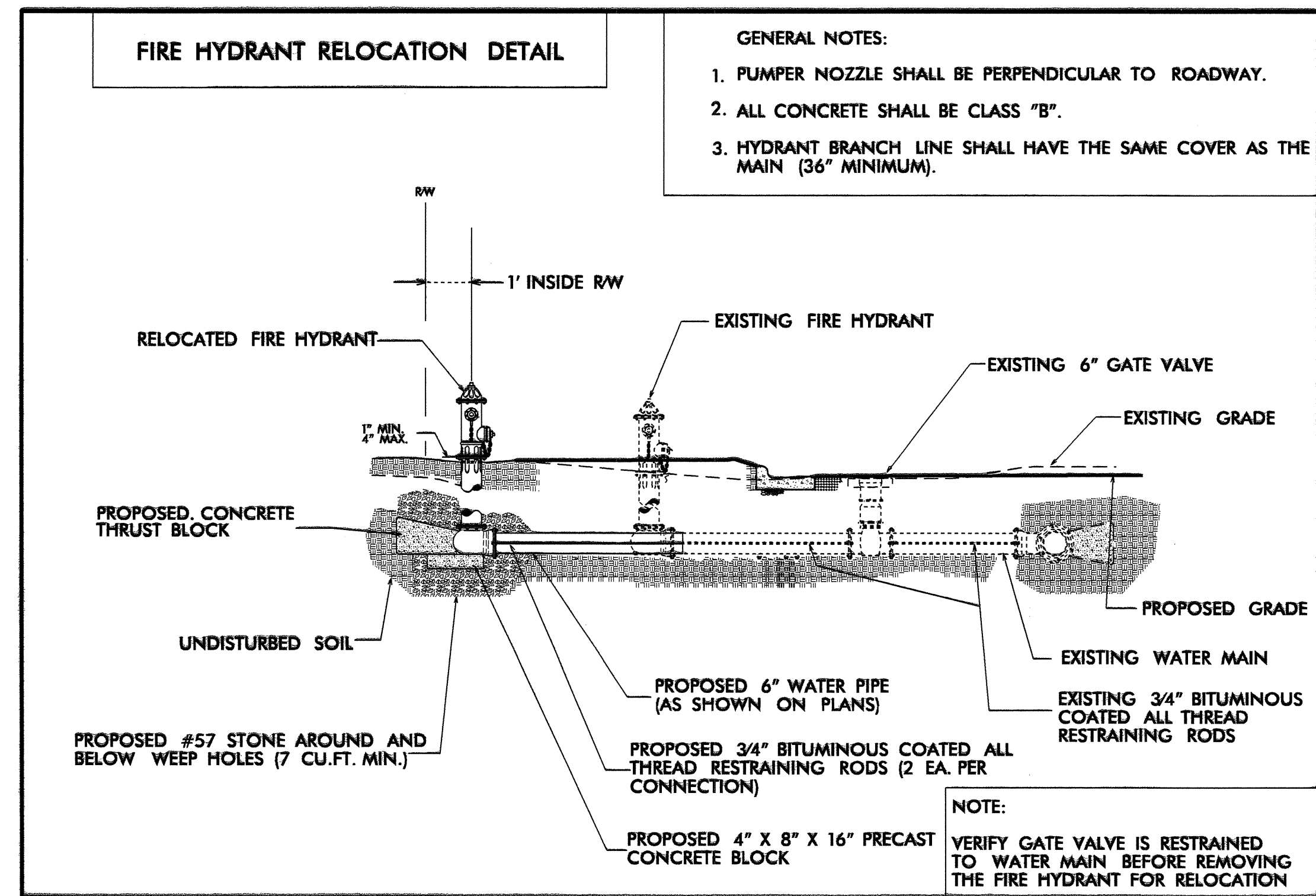


RELOCATED FIRE HYDRANT INSTALLATION DETAIL

5/14/99

PROJECT REFERENCE NO. <b>R-2510C</b>	SHEET NO. <b>UC-20</b>
DESIGNED BY: <b>KAK</b>	
DRAWN BY: <b>KAK</b>	
CHECKED BY: <b>CDB</b>	
APPROVED BY: <b>CDB</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**

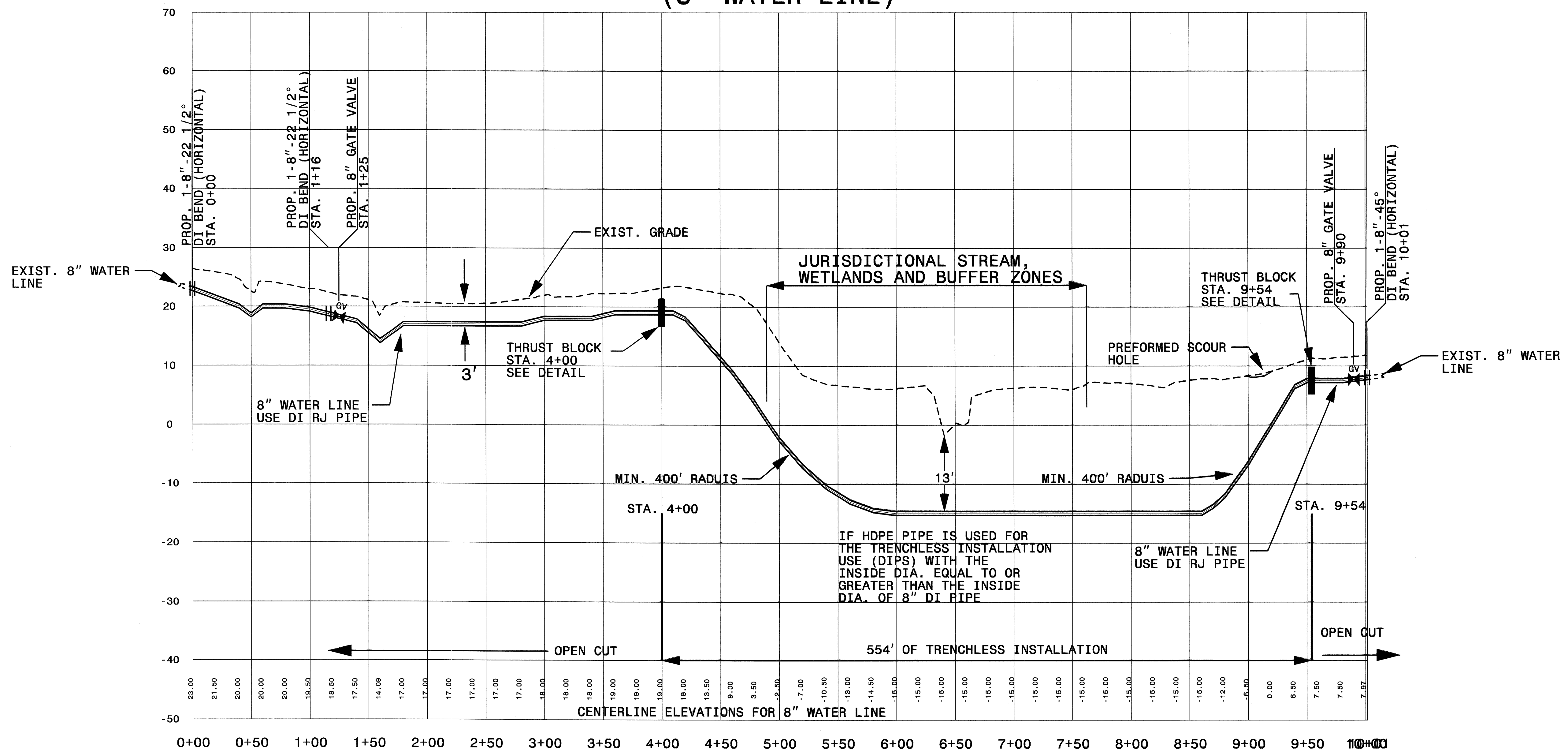


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PROJECT REFERENCE NO.	SHEET NO.
R-2510C	UC-21
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

PROFILE 1  
(8" WATER LINE)



TRENCHLESS INSTALLATION

NOTE:

THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107 AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING THE TRENCHLESS INSTALLATION. NO DAMAGE IS ALLOWED TO THE BUFFER ZONES, WETLANDS OR STREAM BY THE TRENCHLESS INSTALLATION. THE CONTRACTOR'S ENGINEER SHALL DESIGN THE INSTALLATION METHOD AND PROVIDE ON-SITE OVERSIGHT.

TRENCHLESS INSTALLATION BY DIRECTIONAL BORE

NOTE:

THE HORIZONTAL AND VERTICAL BORE PATHS SHOWN ARE BASED ON INFORMATION AVAILABLE AT THIS TIME AND ARE FOR PERMITTING REASONS ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN/ENGINEER THE PROPOSED ALIGNMENTS.

5/14/99

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09/28/99

**TIP PROJECT: R-2510C**

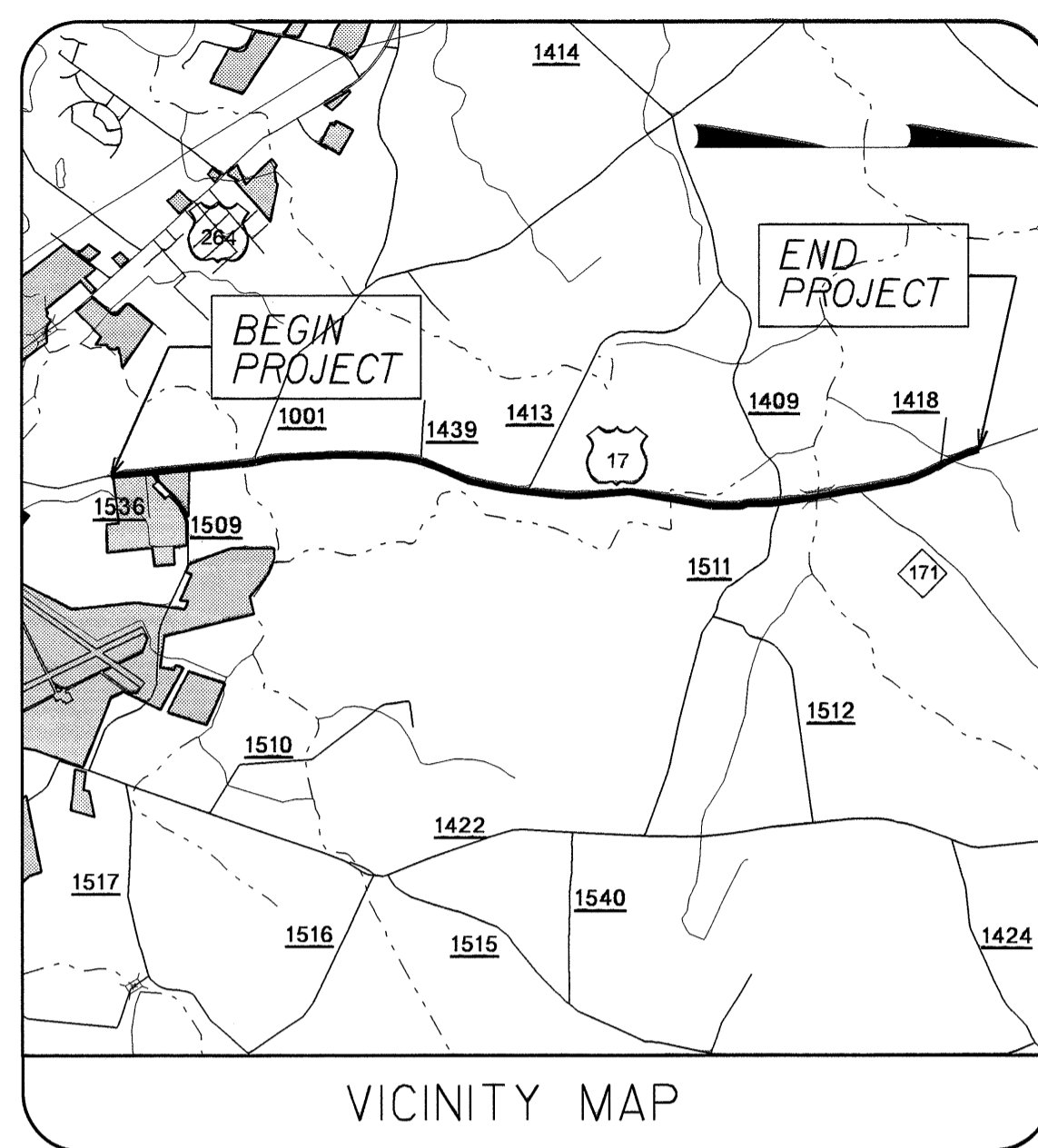
T.I.P. NO.	SHEET NO.
R-2510C	UO-1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

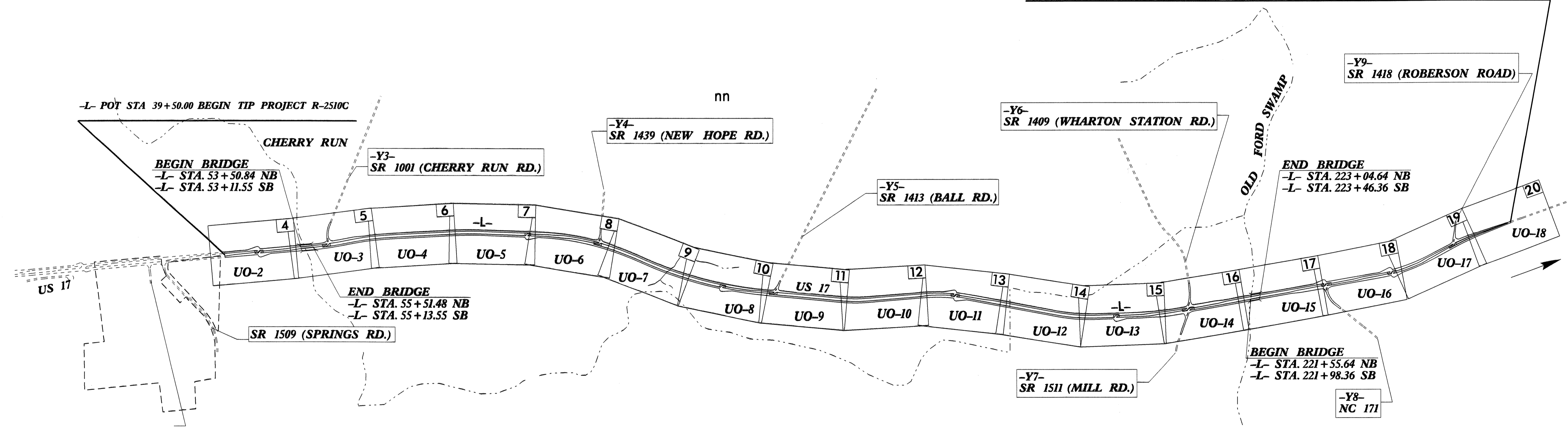
**UTILITIES BY OTHERS PLANS  
BEAUFORT COUNTY**

LOCATION: US 17 FROM US 17 SOUTH OF SR 1001 (CHERRY RUN ROAD)  
TO NORTH OF NC 171.

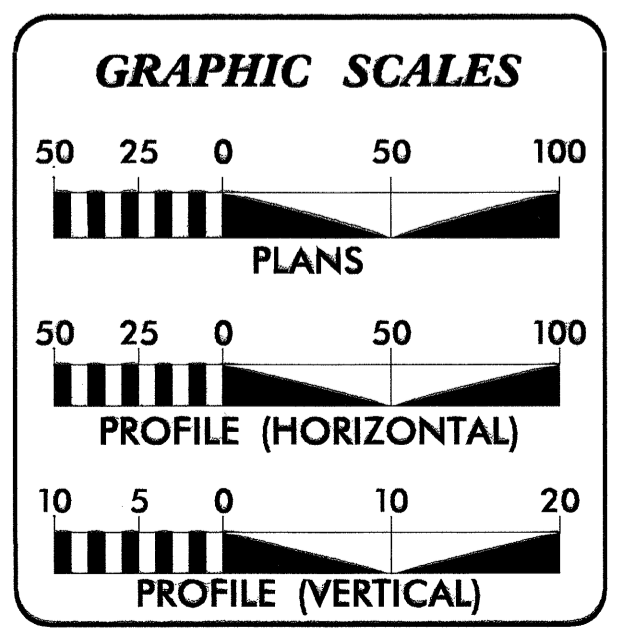
TYPE OF WORK: RELOCATE UTILITIES LINES



-L- POT STA 269+30.00 END TIP PROJECT R-2510C



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\$\$\$\$\$SERVNAME\$\$\$\$\$



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-02 THRU UO-18	UTILITY BY OTHERS PLAN SHEETS

**UTILITY OWNERS ON PROJECT**

- EMBARQ
- CITY OF WASHINGTON-POWER
- SUDDEN LINK CATV

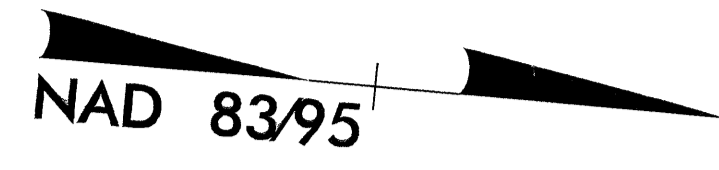
PREPARED IN THE OFFICE OF:  
**DIVISION OF HIGHWAYS  
UTILITIES ENGINEERING  
SECTION**

1591 MAIL SERVICES CENTER  
RALEIGH NC 27699-1591  
PHONE (919) 250-4128  
FAX (919) 250-4119

**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**Corey Bousquet, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**Kifah Kamil** UTILITIES PROJECT DESIGNER

# UTILITIES BY OTHERS

**NOTE:**  
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



JOSEPH D. ARNOLD  
DB 1300 - PG 734  
MB 1 - PG 50

ORRIN K. LANGLEY, et al  
DB 1077 - PG 507  
DB 893 - PG 713

GOTHA W. WOOLARD ESTATE  
(C/O DEBORAH WOOLARD MITCHELL)  
DB 1127 - PG 863  
DB 893 - PG 713  
ESTATE FILE 03-E325

WILLIAM F. SHEPPARD, INC.  
DB 1139 - PG 745  
DB 893 - PG 713  
5677-42-5578

PROP. POWER AND CATV LINES

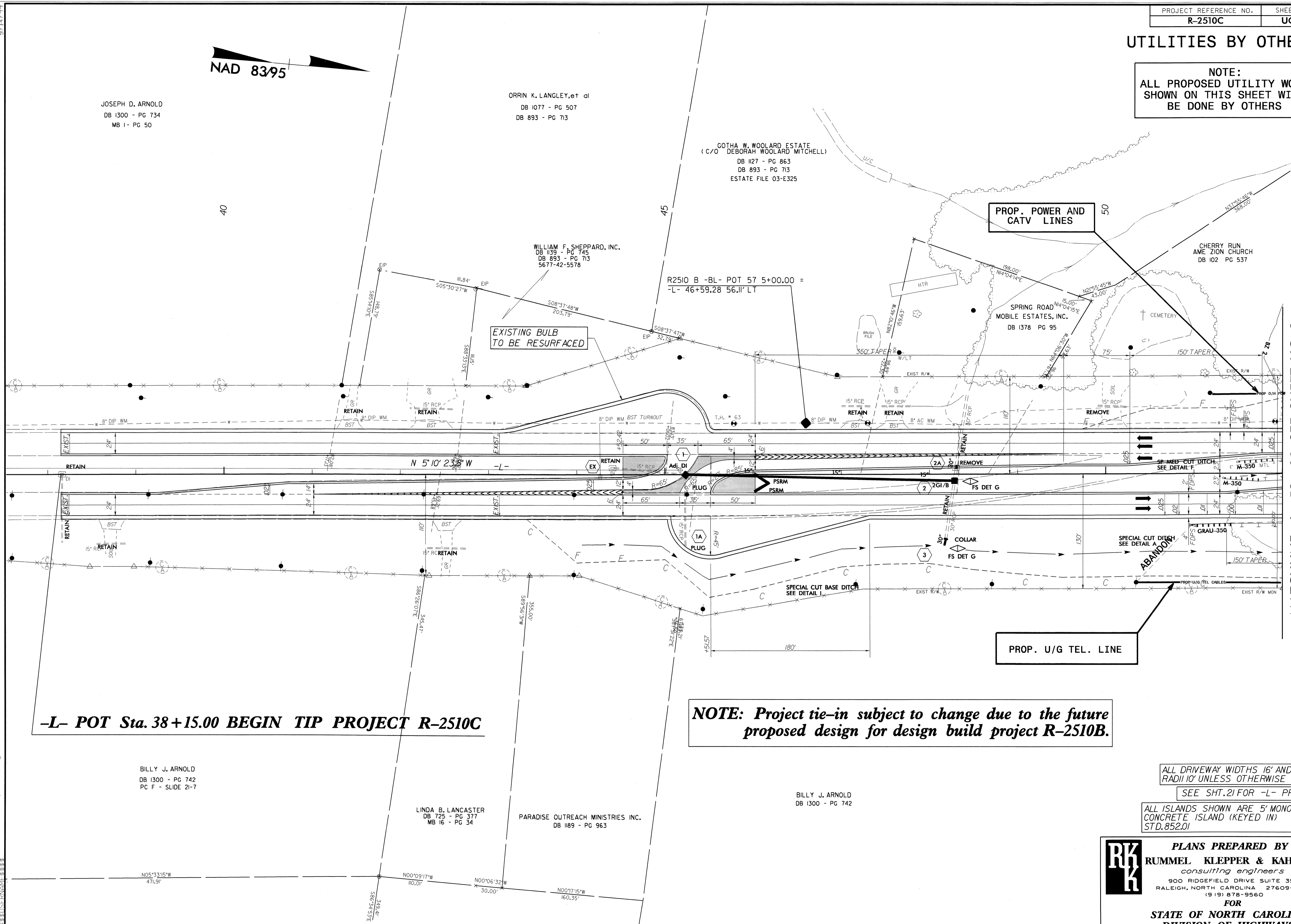
CHERRY RUN  
AME ZION CHURCH  
DB 102 PG 537

SPRING ROAD  
MOBILE ESTATES, INC.  
DB 1378 PG 95

EXISTING BULB TO BE RESURFACED

R2510 B -BL- POT 57 5+00.00 =  
-L- 46+59.28 56.11' LT

MATCHLINE -L- 52+00 SEE SHEET UO-3



**-L- POT Sta. 38+15.00 BEGIN TIP PROJECT R-2510C**

**NOTE: Project tie-in subject to change due to the future proposed design for design build project R-2510B.**

BILLY J. ARNOLD  
DB 1300 - PG 742  
PC F - SLIDE 21-7


LINDA B. LANCASTER  
DB 725 - PG 377  
MB 16 - PG 34

PARADISE OUTREACH MINISTRIES INC.  
DB 1189 - PG 963

BILLY J. ARNOLD  
DB 1300 - PG 742

ALL DRIVEWAY WIDTHS 16' AND RADIUS 10' UNLESS OTHERWISE NOTED  
SEE SHT. 21 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

**PLANS PREPARED BY :**  

**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

8/17/99  
 12-VAN-20114818  
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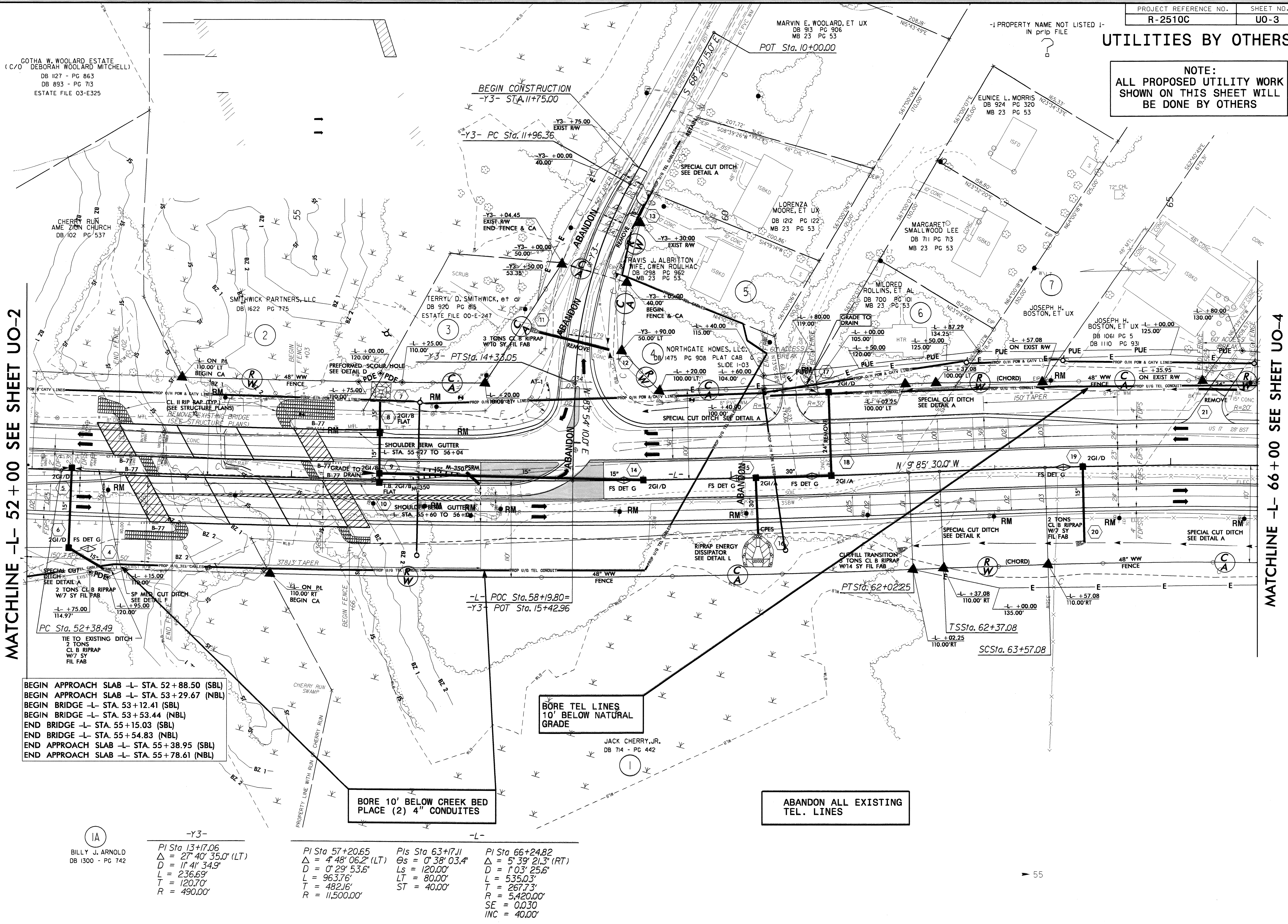
UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

GOtha W. WOOLARD ESTATE  
(C/O DEBORAH WOOLARD MITCHELL)  
DB 1127 - PG 863  
DB 893 - PG 713  
ESTATE FILE 03-E325

MATCHLINE -L- 52+00 SEE SHEET UO-2

MATCHLINE -L- 66+00 SEE SHEET UO-4



- BEGIN APPROACH SLAB -L- STA. 52+88.50 (SBL)
- BEGIN APPROACH SLAB -L- STA. 53+29.67 (NBL)
- BEGIN BRIDGE -L- STA. 53+12.41 (SBL)
- BEGIN BRIDGE -L- STA. 53+53.44 (NBL)
- END BRIDGE -L- STA. 55+15.03 (SBL)
- END BRIDGE -L- STA. 55+54.83 (NBL)
- END APPROACH SLAB -L- STA. 55+38.95 (SBL)
- END APPROACH SLAB -L- STA. 55+78.61 (NBL)

BORE TEL LINES  
10' BELOW NATURAL  
GRADE

BORE 10' BELOW CREEK BED  
PLACE (2) 4\"/>

ABANDON ALL EXISTING  
TEL. LINES

IA  
BILLY J. ARNOLD  
DB 1300 - PG 742

-Y3-  
PI Sta 13+17.06  
Δ = 27° 40' 35.0\"/>

PI Sta 57+20.65  
Δ = 4° 48' 06.2\"/>

PIs Sta 63+17.11  
Os = 0° 38' 03.4\"/>

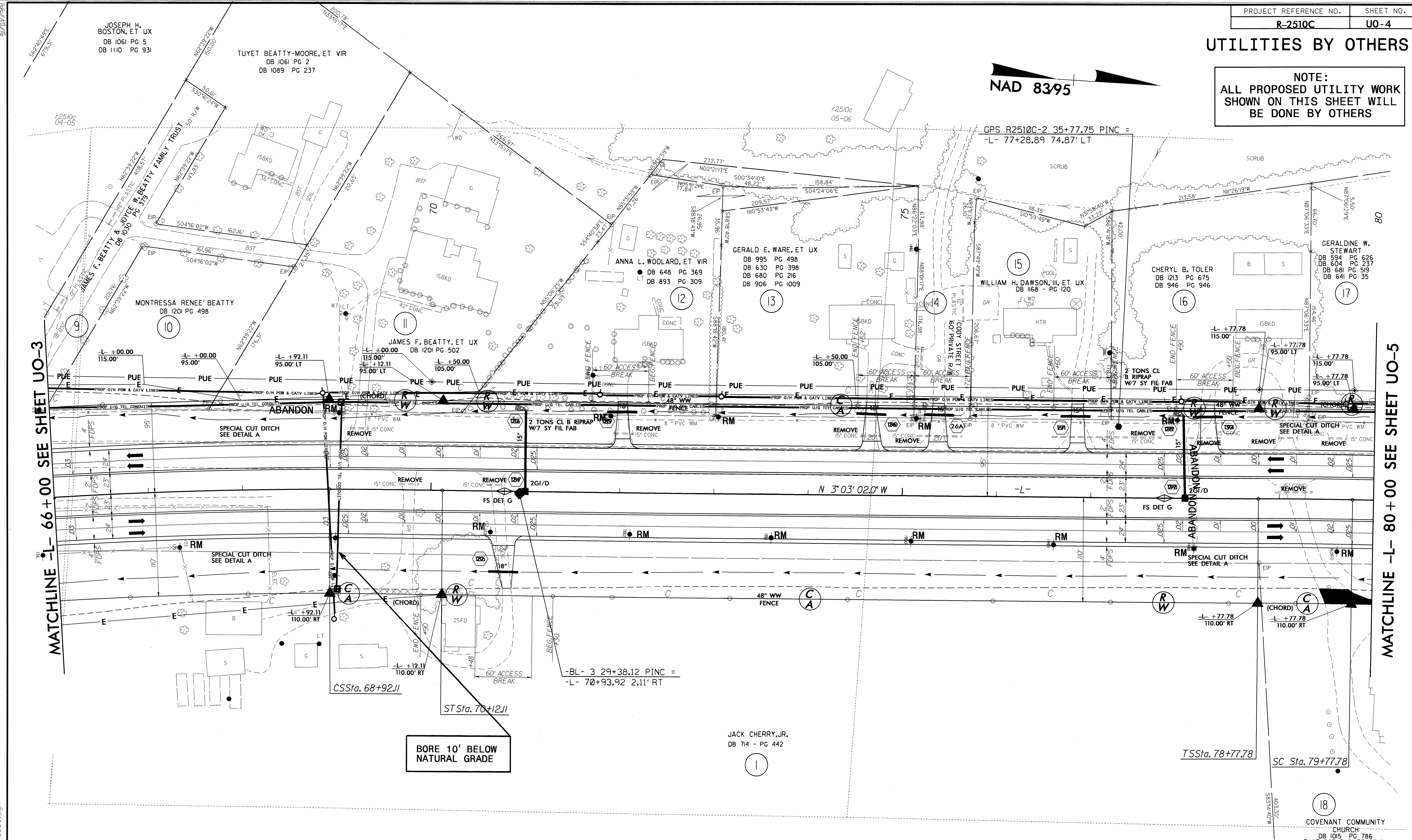
PI Sta 66+24.82  
Δ = 5° 39' 21.3\"/>

12-MAY-2011 5:58 PM  
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UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

NAD 83/95



MATCHLINE -L- 66+00 SEE SHEET UO-3

MATCHLINE -L- 80+00 SEE SHEET UO-5

BORE 10' BELOW  
NATURAL GRADE

JACK CHERRY, JR.  
DB 714 - PG 442

TSSSta. 78+77.78

SC Sta. 79+77.78

PI Sta 66+24.82 Δ = 5° 39' 21.3" (RT) D = 1° 03' 25.6" L = 535.03' T = 267.73' R = 5,420.00' SE = 0.030 INC = 40.00'	PIs Sta 69+32.11 Δs = 0° 38' 03.4" Ls = 120.00' LT = 80.00' ST = 40.00'	PIs Sta 79+44.45 Δs = 0° 22' 33.4" Ls = 100.00' LT = 66.67' ST = 33.33'	PI Sta 82+63.79 Δ = 4° 17' 55.1" (RT) D = 0° 45' 06.9" L = 571.69' T = 285.98' R = 7,620.00' SE = 0.025 INC = 40.00'
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OBLITERATE

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

ALL DRIVEWAY WIDTHS 16' AND  
RADII 10' UNLESS OTHERWISE NOTED  
SEE SHT. 22 FOR -L- PROFILE

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
consulting engineers  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560  
FOR  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

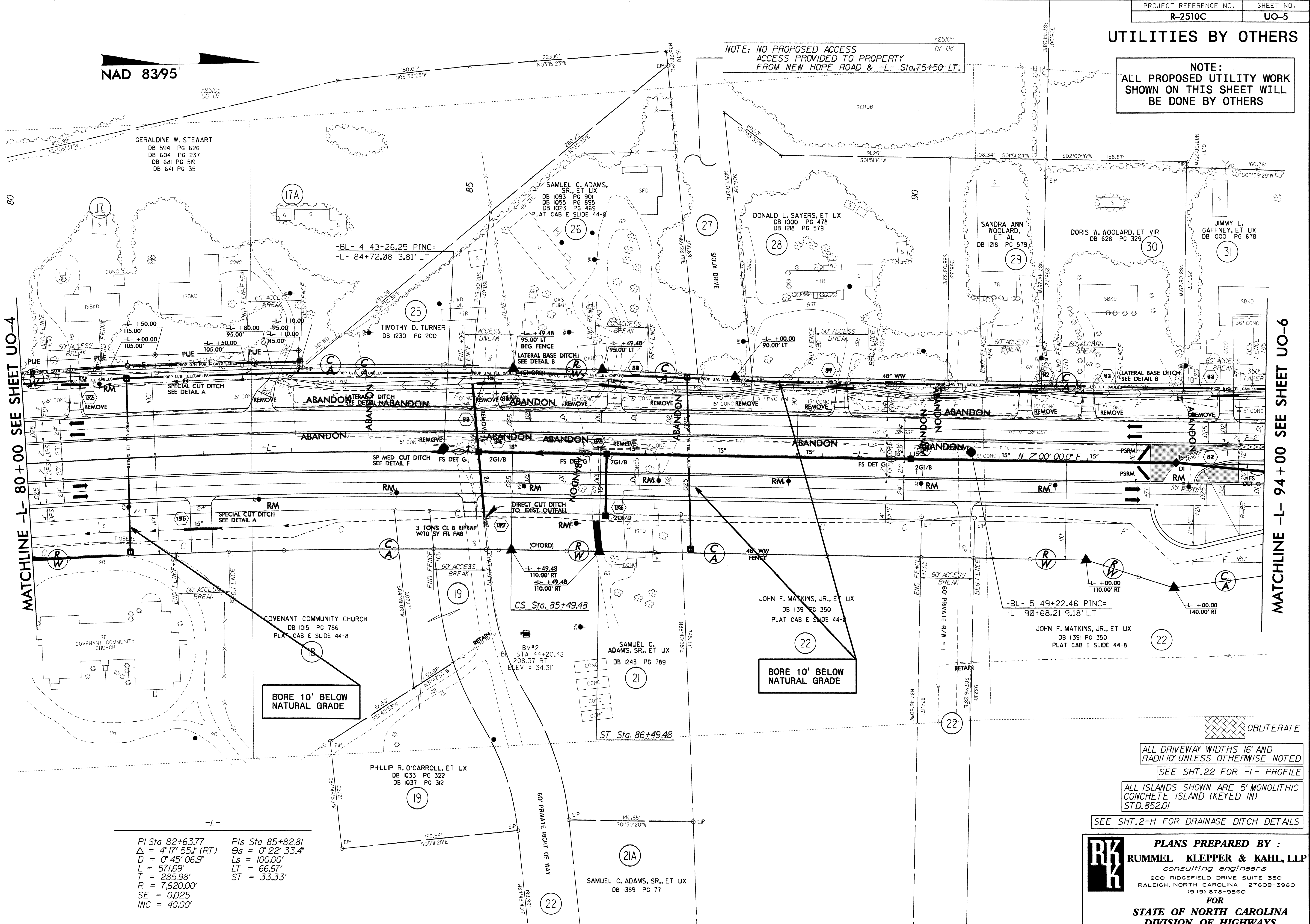
12-MAN-2011425  
R:\U04\1\33361\PROJECT\UO-4\2510c-ut-uc4\_psh\_006.dgn

UTILITIES BY OTHERS

NOTE: ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

NOTE: NO PROPOSED ACCESS ACCESS PROVIDED TO PROPERTY FROM NEW HOPE ROAD & -L- Sta.75+50 LT.

NAD 83/95



MATCHLINE -L- 80+00 SEE SHEET UO-4

MATCHLINE -L- 94+00 SEE SHEET UO-6

BORE 10' BELOW NATURAL GRADE

BORE 10' BELOW NATURAL GRADE

$PI\ Sta\ 82+63.77$   
 $\Delta = 4' 17'' 55.1'' (RT)$   
 $D = 0' 45'' 06.9''$   
 $L = 571.69'$   
 $T = 285.98'$   
 $R = 7,620.00'$   
 $SE = 0.025$   
 $INC = 40.00'$

$Pls\ Sta\ 85+82.81$   
 $\Theta_s = 0' 22'' 33.4''$   
 $L_s = 100.00'$   
 $LT = 66.67'$   
 $ST = 33.33'$

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT.22 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD.852.01

SEE SHT.2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**

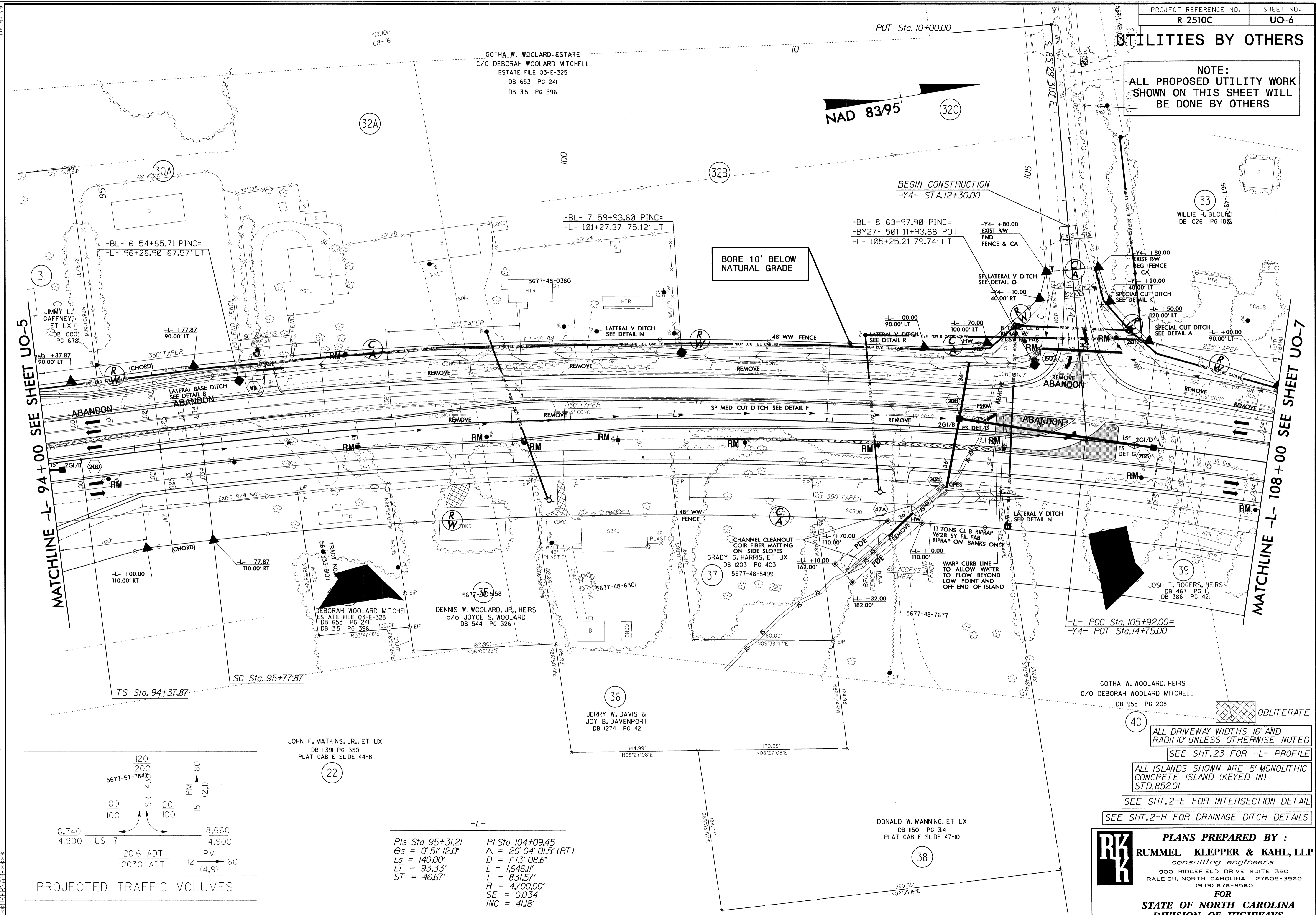
**RK K** RUMMEL KLEPPER & KAHL, LLP  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560

FOR  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

12-11-2011 10:32 AM N:\2510c-ut.us5.psh.007.dgn  
 8/17/99

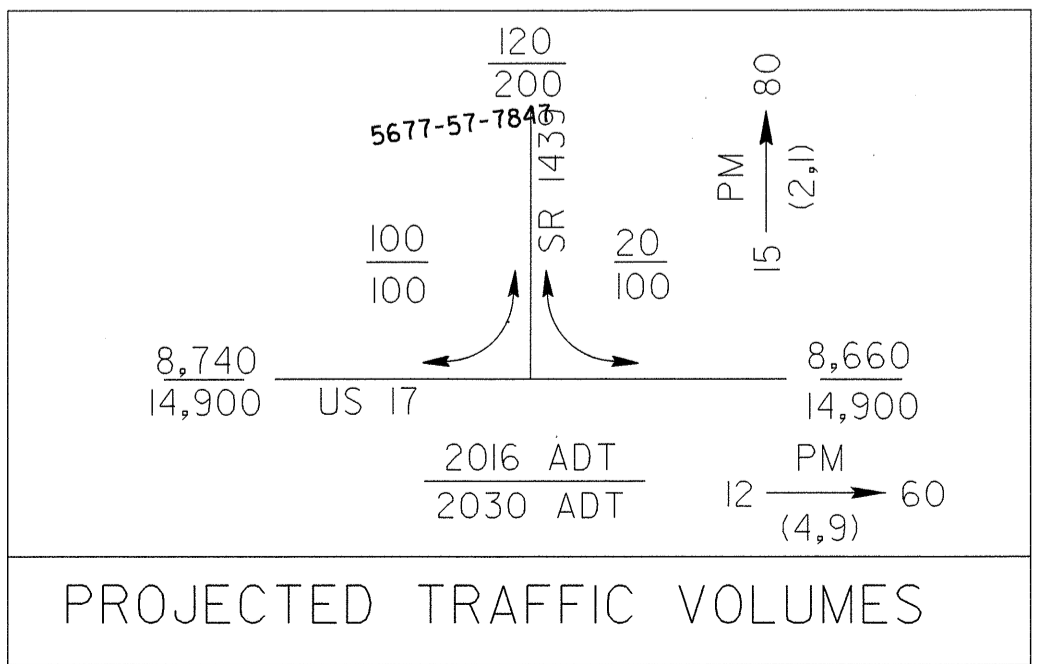
**UTILITIES BY OTHERS**

**NOTE:**  
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



MATCHLINE -L- 94+00 SEE SHEET UO-5

MATCHLINE -L- 108+00 SEE SHEET UO-7



**-L-**

PIs Sta 95+31.21	PI Sta 104+09.45
$\Theta_s = 0^\circ 51' 12.0''$	$\Delta = 20^\circ 04' 01.5''$ (RT)
$L_s = 140.00'$	$D = 1^\circ 13' 08.6''$
$LT = 93.33'$	$L = 1,646.11'$
$ST = 46.67'$	$T = 831.57'$
	$R = 4,700.00'$
	$SE = 0.034$
	$INC = 41J8'$

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED  
SEE SHT. 23 FOR -L- PROFILE  
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01  
SEE SHT. 2-E FOR INTERSECTION DETAIL  
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
consulting engineers  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560  
FOR  
**STATE OF NORTH CAROLINA**  
DIVISION OF HIGHWAYS

10-JAN-2011 14:51 N:\R2510C\_UT\_UO6\_psh\_008.dgn



UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

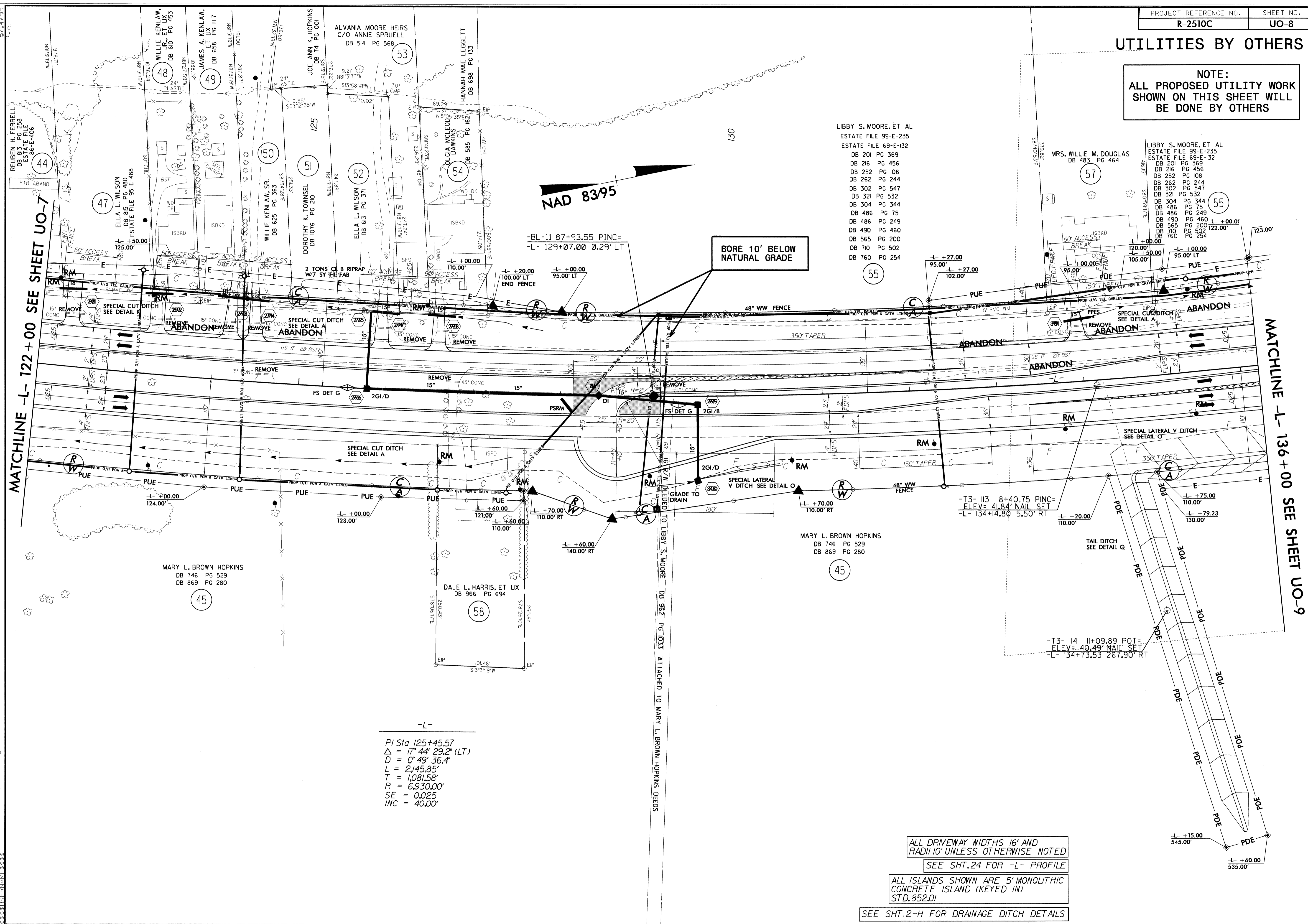
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ESTATE FILE 99-E-235  
ESTATE FILE 69-E-132
- DB 201 PG 369
  - DB 216 PG 456
  - DB 252 PG 108
  - DB 262 PG 244
  - DB 302 PG 547
  - DB 321 PG 532
  - DB 304 PG 344
  - DB 486 PG 75
  - DB 486 PG 249
  - DB 490 PG 460
  - DB 565 PG 200
  - DB 710 PG 502
  - DB 760 PG 254

- MRS. WILLIE M. DOUGLAS  
DB 483 PG 464
- LIBBY S. MOORE, ET AL  
ESTATE FILE 99-E-235  
ESTATE FILE 69-E-132
- DB 201 PG 369
  - DB 216 PG 456
  - DB 252 PG 108
  - DB 262 PG 244
  - DB 302 PG 547
  - DB 321 PG 532
  - DB 304 PG 344
  - DB 486 PG 75
  - DB 486 PG 249
  - DB 490 PG 460
  - DB 565 PG 200
  - DB 710 PG 502
  - DB 760 PG 254

- MARY L. BROWN HOPKINS  
DB 746 PG 529  
DB 869 PG 280

-L-  
PI Sta 125+45.57  
Δ = 17° 44' 29.2" (LT)  
D = 0' 49' 36.4"  
L = 2,145.85'  
T = 1,081.58'  
R = 6,930.00'  
SE = 0.025  
INC = 40.00'

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED  
SEE SHT. 24 FOR -L- PROFILE  
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01  
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS



NAD 83/95

BORE 10' BELOW NATURAL GRADE

-BL-11 87+93.55 PINC=  
-L- 129+07.00 0.29' LT

-T3- 113 8+40.75 PINC=  
ELEV= 41.84' NAIL SET  
-L- 134+14.80 5.50' RT

-T3- 114 11+09.89 POT=  
ELEV= 40.49' NAIL SET  
-L- 134+73.53 267.90' RT

MATCHLINE -L- 122+00 SEE SHEET UO-7

MATCHLINE -L- 136+00 SEE SHEET UO-9

REVISIONS

12-14-2011 452 NR2510C\_UT\_UO8\_psh\_010.dgn



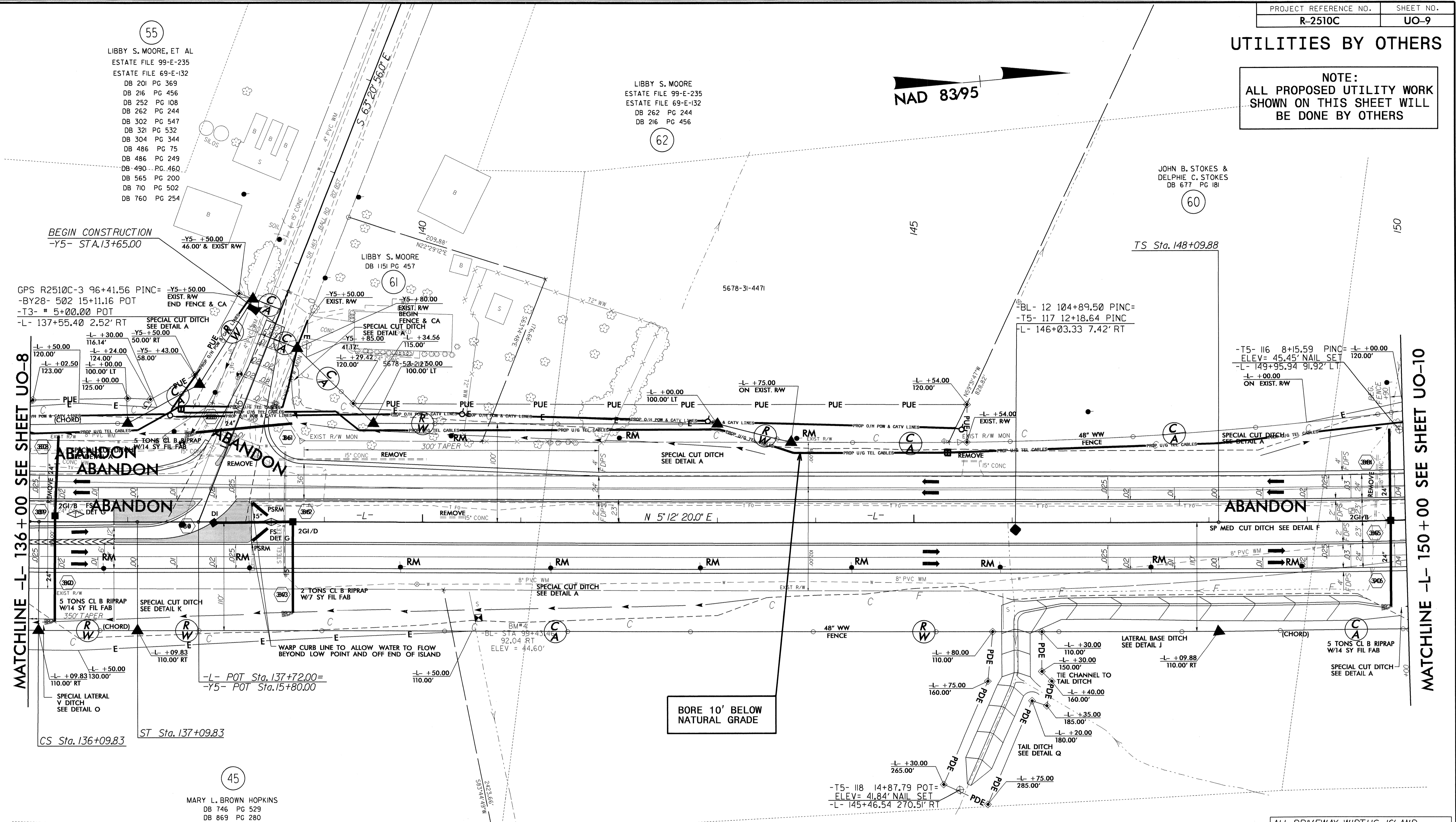
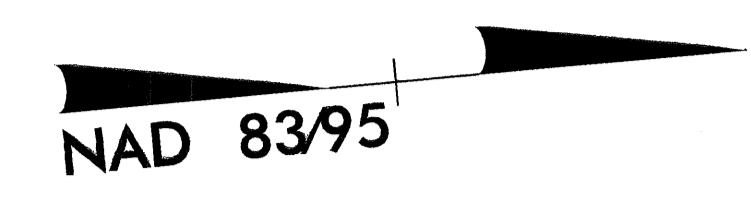
UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

LIBBY S. MOORE, ET AL  
ESTATE FILE 99-E-235  
ESTATE FILE 69-E-132  
DB 201 PG 369  
DB 216 PG 456  
DB 252 PG 108  
DB 262 PG 244  
DB 302 PG 547  
DB 321 PG 532  
DB 304 PG 344  
DB 486 PG 75  
DB 486 PG 249  
DB 490 PG 460  
DB 565 PG 200  
DB 710 PG 502  
DB 760 PG 254

LIBBY S. MOORE  
ESTATE FILE 99-E-235  
ESTATE FILE 69-E-132  
DB 262 PG 244  
DB 216 PG 456

JOHN B. STOKES & DELPHIE C. STOKES  
DB 677 PG 181

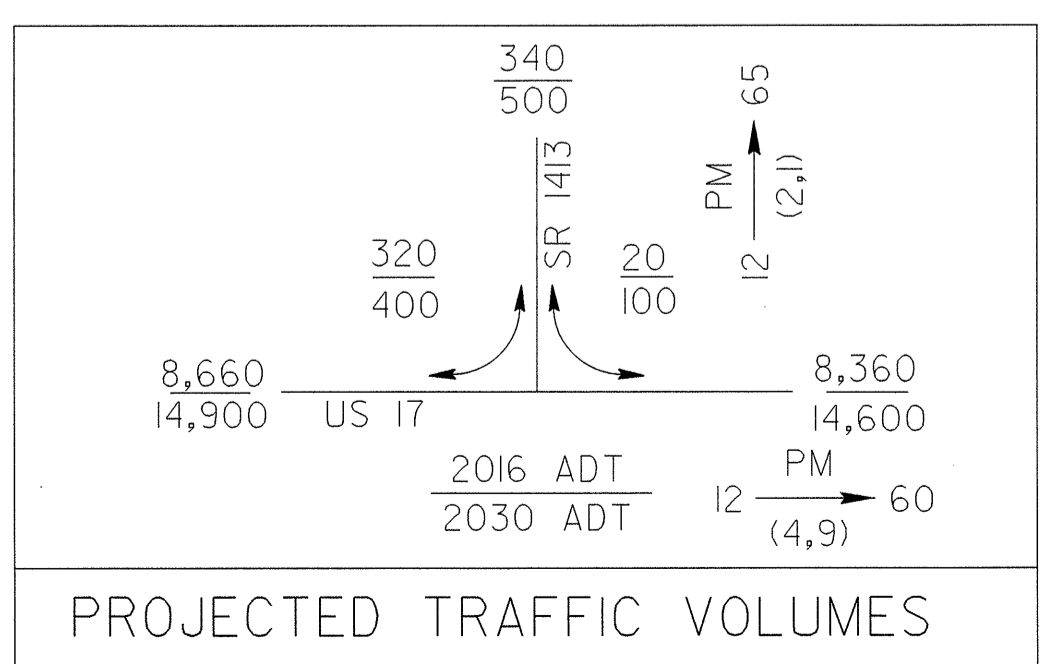


MATCHLINE -L- 136+00 SEE SHEET UO-8

MATCHLINE -L- 150+00 SEE SHEET UO-10

REVISIONS

BORE 10' BELOW NATURAL GRADE



-L-

PI Sta 125+45.57 $\Delta = 17^{\circ} 44' 29.2" (LT)$ $D = 0^{\circ} 49' 36.4"$ $L = 2,145.85'$ $T = 1,081.58'$ $R = 6,930.00'$ $SE = 0.025$ $INC = 40.00'$	PIs Sta 136+43.17 $\Theta_s = 0^{\circ} 24' 48.2"$ $L_s = 100.00'$ $LT = 66.67'$ $ST = 33.33'$	PIs Sta 149+59.89 $\Theta_s = 2^{\circ} 10' 39.5"$ $L_s = 225.00'$ $LT = 150.01'$ $ST = 75.01'$
--	--	---

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED  
SEE SHT. 24 FOR -L- PROFILE  
ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01  
SEE SHT. 2-F FOR INTERSECTION DETAIL  
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

PLANS PREPARED BY:

**RK&K**  
RUMMEL KLEPPER & KAHL, LLP  
consulting engineers  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560

FOR  
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

SECOND TRACT

5678-44-9144

10-MAR-2011 15:57 R:\2510C\UT\_L009\_psh\_011.dgn

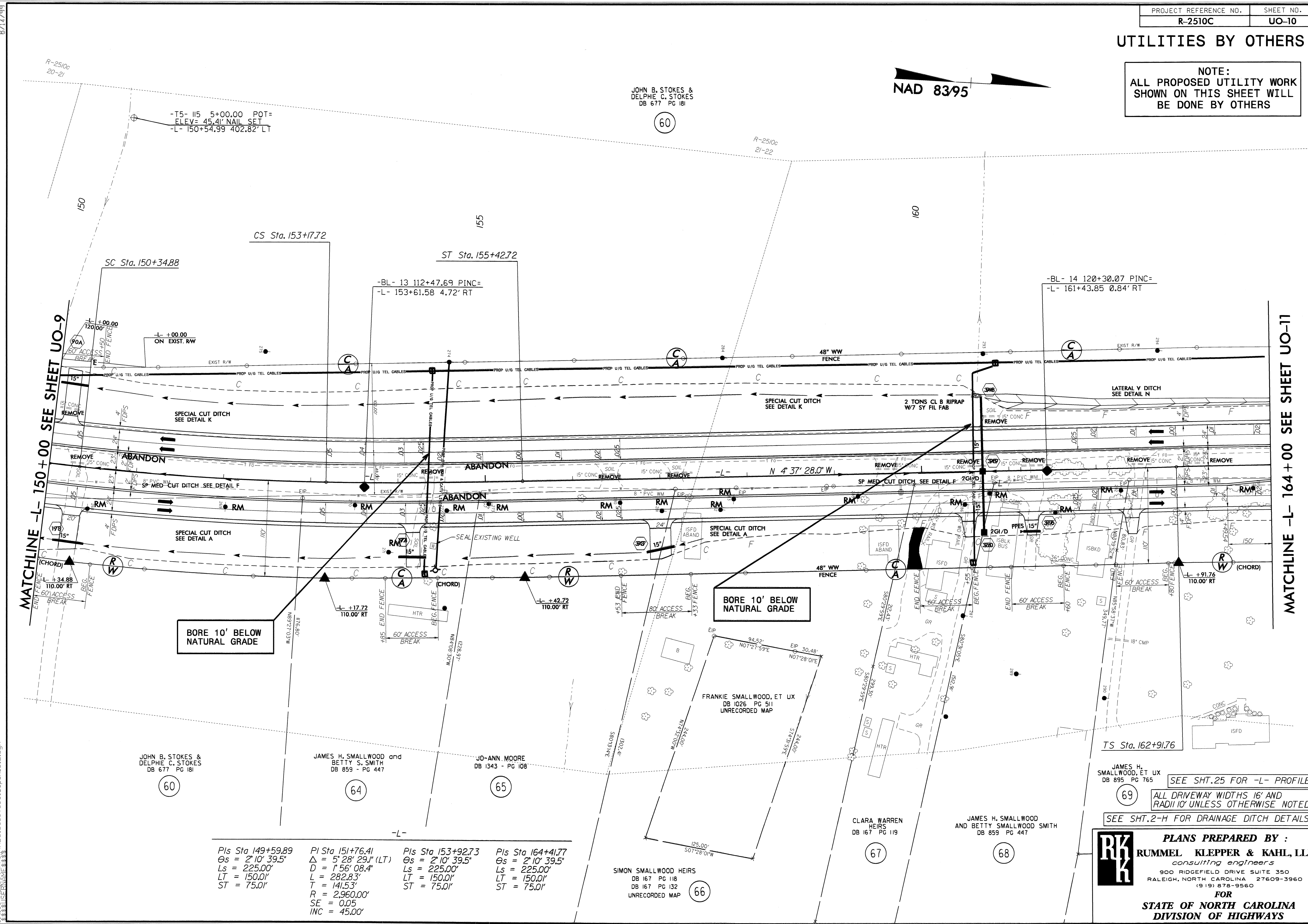
UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

NAD 8395

JOHN B. STOKES &  
DELPHIE C. STOKES  
DB 677 PG 181

60



MATCHLINE -L- 150+00 SEE SHEET UO-9

MATCHLINE -L- 164+00 SEE SHEET UO-11

BORE 10' BELOW  
NATURAL GRADE

BORE 10' BELOW  
NATURAL GRADE

Pls Sta 149+59.89 Os = 2' 10" 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'	Pl Sta 151+76.41 Δ = 5' 28" 29.1" (LT) D = 1' 56" 08.4" L = 282.83' T = 141.53' R = 2,960.00' SE = 0.05 INC = 45.00'	Pls Sta 153+92.73 Os = 2' 10" 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'	Pls Sta 164+41.77 Os = 2' 10" 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'
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SEE SHT. 25 FOR -L- PROFILE  
ALL DRIVEWAY WIDTHS 16' AND  
RADII 10' UNLESS OTHERWISE NOTED  
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

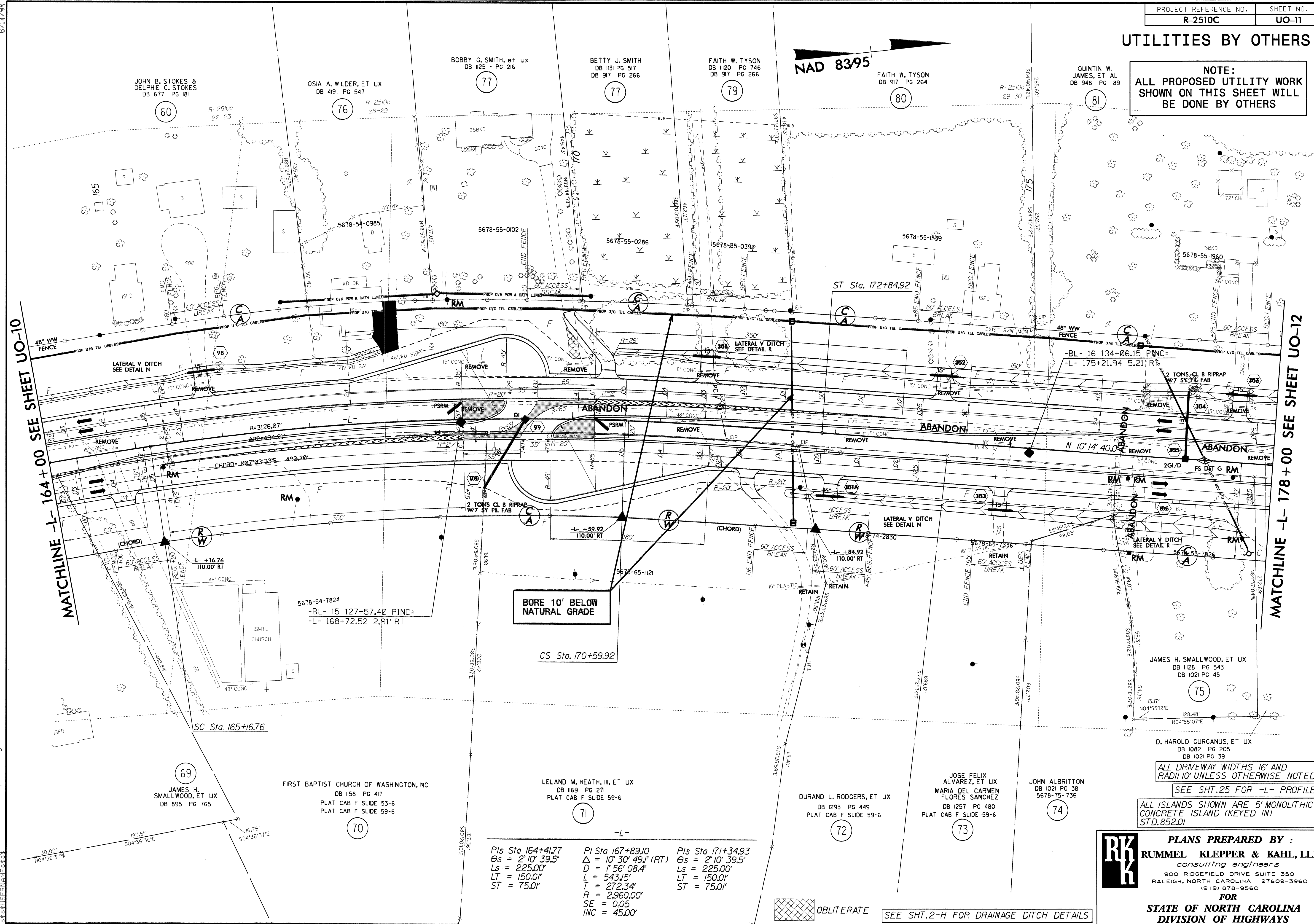
**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560  
FOR  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

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UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

NAD 8395



MATCHLINE -L- 164+00 SEE SHEET UO-10

MATCHLINE -L- 178+00 SEE SHEET UO-12

REVISIONS

BORE 10' BELOW  
NATURAL GRADE

ALL DRIVEWAY WIDTHS 16' AND  
RADII 10' UNLESS OTHERWISE NOTED  
SEE SHT. 25 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC  
CONCRETE ISLAND (KEYED IN)  
STD. 852.01

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

<p>Pls Sta. 164+41.77  <math>\theta_s = 2^\circ 10' 39.5''</math>  <math>L_s = 225.00'</math>  <math>LT = 150.01'</math>  <math>ST = 75.01'</math></p>	<p>Pls Sta. 167+89.10  <math>\Delta = 10^\circ 30' 49.1'' (RT)</math>  <math>D = 1^\circ 56' 08.4''</math>  <math>L = 543.15'</math>  <math>T = 272.34'</math>  <math>R = 2,960.00'</math>  <math>SE = 0.05</math>  <math>INC = 45.00'</math></p>	<p>Pls Sta. 171+34.93  <math>\theta_s = 2^\circ 10' 39.5''</math>  <math>L_s = 225.00'</math>  <math>LT = 150.01'</math>  <math>ST = 75.01'</math></p>
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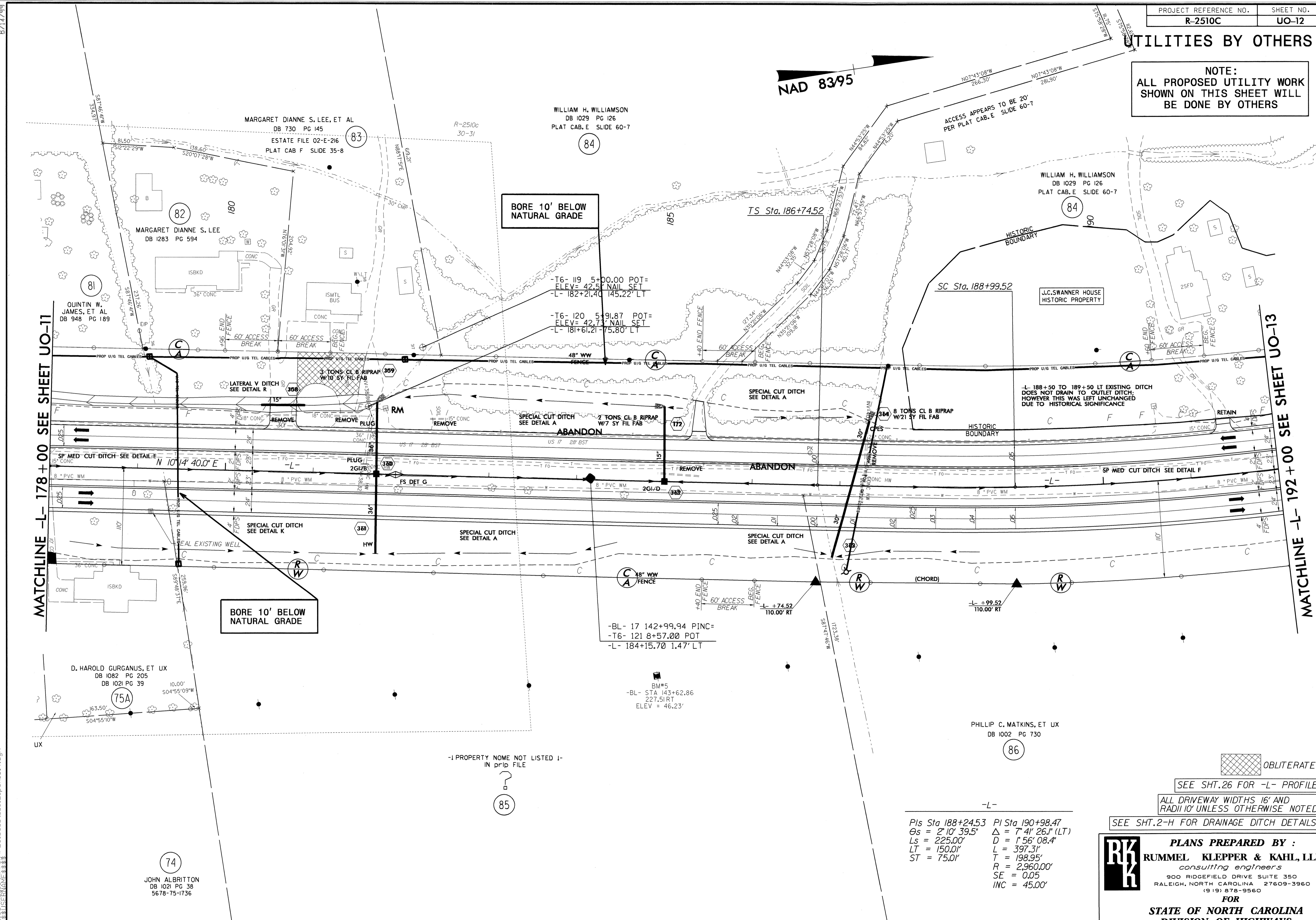
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SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

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UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



MATCHLINE -L- 178 + 00 SEE SHEET UO-11

MATCHLINE -L- 192 + 00 SEE SHEET UO-13

BORE 10' BELOW NATURAL GRADE

BORE 10' BELOW NATURAL GRADE

-I PROPERTY NAME NOT LISTED I- IN P1P1 FILE

OBLITERATE

SEE SHT. 26 FOR -L- PROFILE

ALL DRIVEWAY WIDTHS 16' AND RADII 10' UNLESS OTHERWISE NOTED

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

Pls Sta 188+24.53 PI Sta 190+98.47  
 $\theta_s = 2^\circ 10' 39.5''$   $\Delta = 7^\circ 41' 26.1''$  (LT)  
 $L_s = 225.00'$   $D = 156' 08.4''$   
 $LT = 150.01'$   $L = 397.31'$   
 $ST = 75.01'$   $T = 198.95'$   
 $R = 2,960.00'$   
 $SE = 0.05$   
 $INC = 45.00'$

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

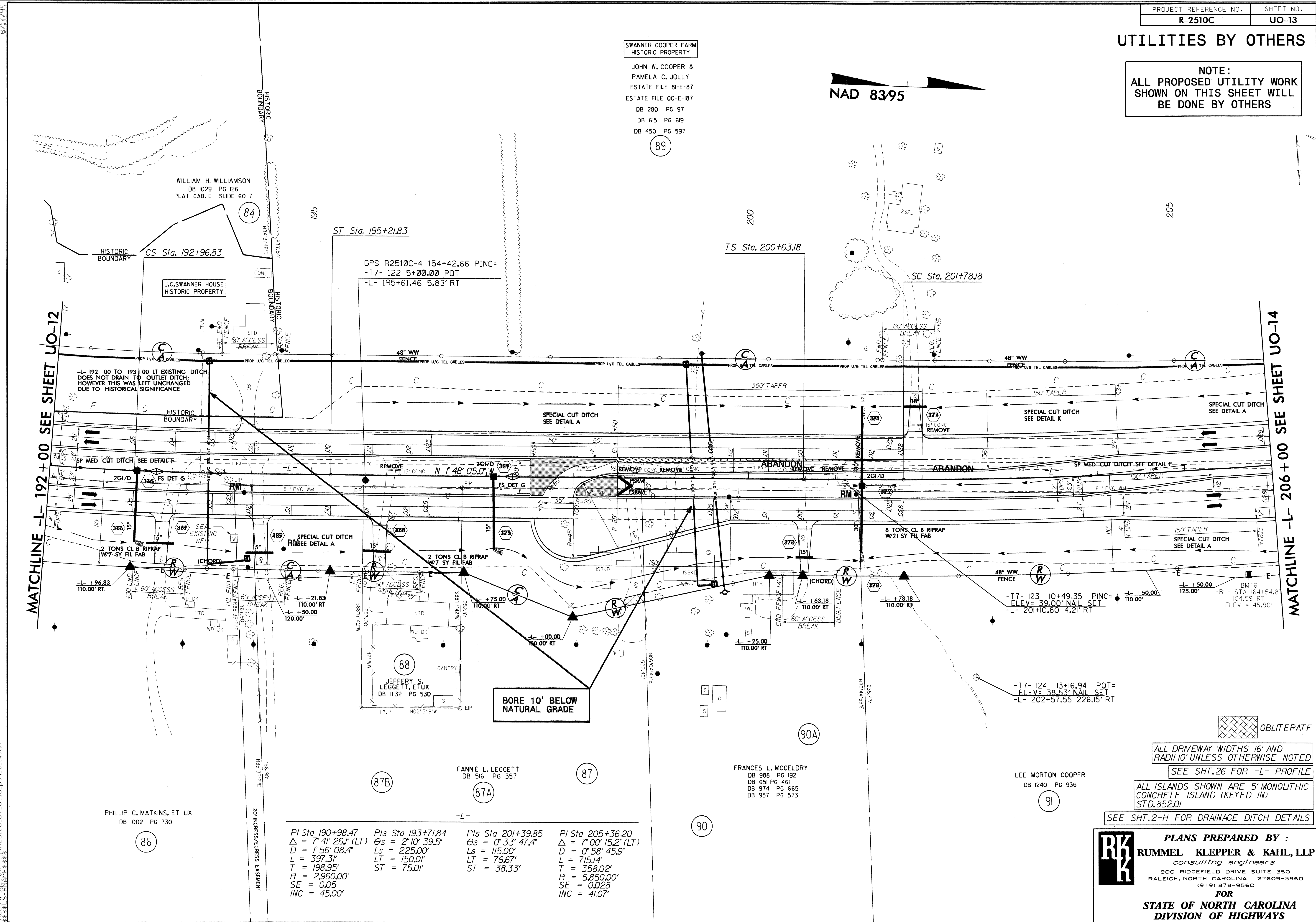
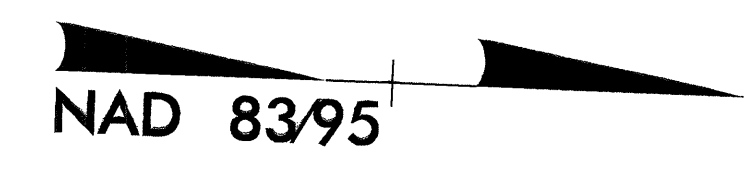
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 11:58:51 AM

UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

SWANNER-COOPER FARM  
HISTORIC PROPERTY

JOHN W. COOPER &  
PAMELA C. JOLLY  
ESTATE FILE 8I-E-87  
ESTATE FILE 00-E-187  
DB 280 PG 97  
DB 615 PG 619  
DB 450 PG 597



MATCHLINE -L- 192+00 SEE SHEET UO-12

MATCHLINE -L- 206+00 SEE SHEET UO-14

<p>PI Sta 190+98.47 Δ = 7' 4" 26.1" (LT) D = 1' 56" 08.4" L = 397.31' T = 198.95' R = 2,960.00' SE = 0.05 INC = 45.00'</p>	<p>PIs Sta 193+71.84 Θs = 2' 10' 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'</p>	<p>PIs Sta 201+39.85 Θs = 0' 33' 47.4" Ls = 115.00' LT = 76.67' ST = 38.33'</p>	<p>PI Sta 205+36.20 Δ = 7' 00' 15.2" (LT) D = 0' 58' 45.9" L = 715.14' T = 358.02' R = 5,850.00' SE = 0.028 INC = 41.07'</p>
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OBLITERATE

ALL DRIVEWAY WIDTHS 16' AND  
RADII 10' UNLESS OTHERWISE NOTED

SEE SHT. 26 FOR -L- PROFILE

ALL ISLANDS SHOWN ARE 5' MONOLITHIC  
CONCRETE ISLAND (KEYED IN)  
STD. 852.01

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

**PLANS PREPARED BY :**

**RUMMEL KLEPPER & KAHL, LLP**  
consulting engineers  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560

FOR  
**STATE OF NORTH CAROLINA**  
DIVISION OF HIGHWAYS

6/17/99

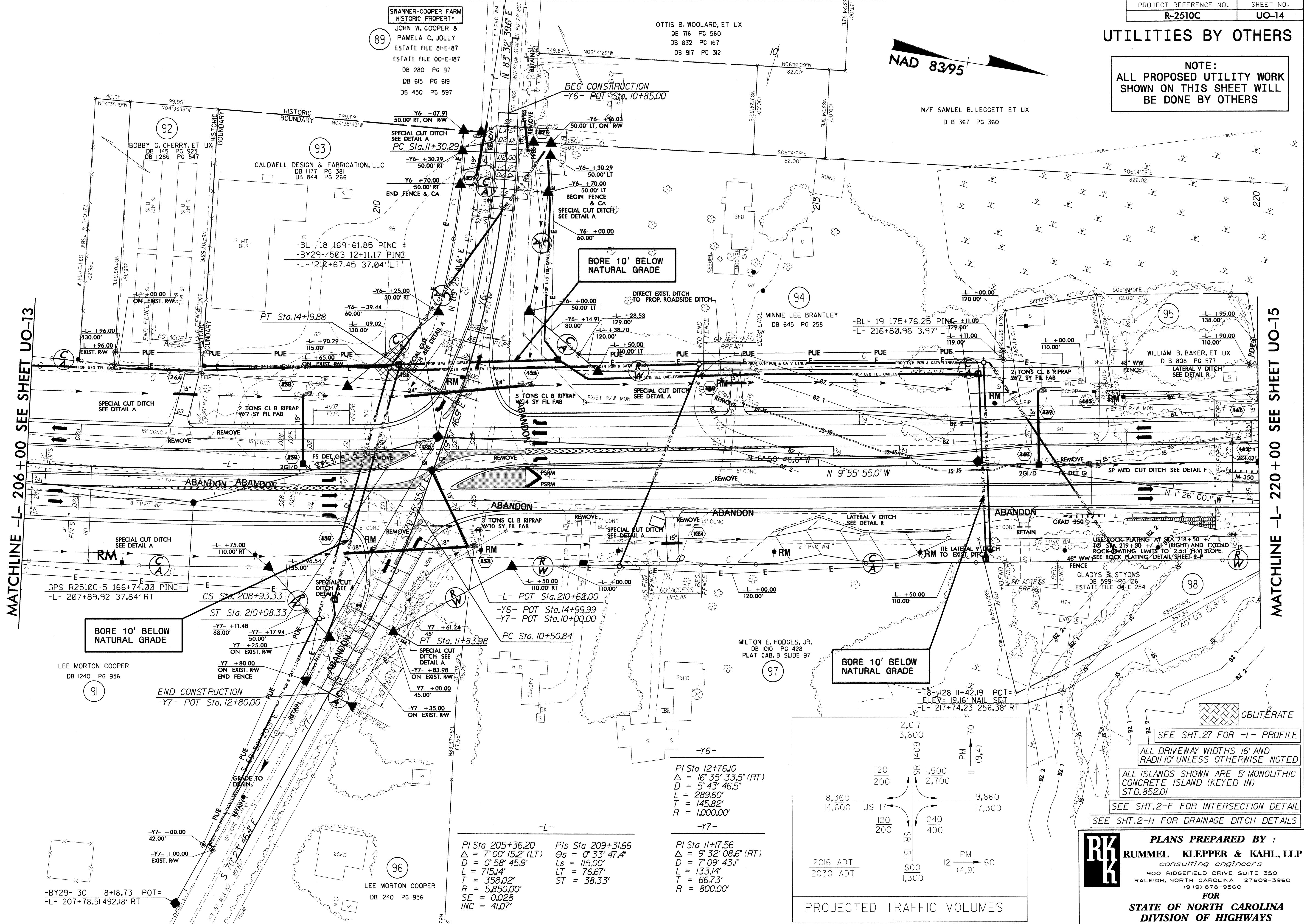
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UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

NAD 83/95



MATCHLINE -L- 206+00 SEE SHEET UO-13

MATCHLINE -L- 220+00 SEE SHEET UO-15

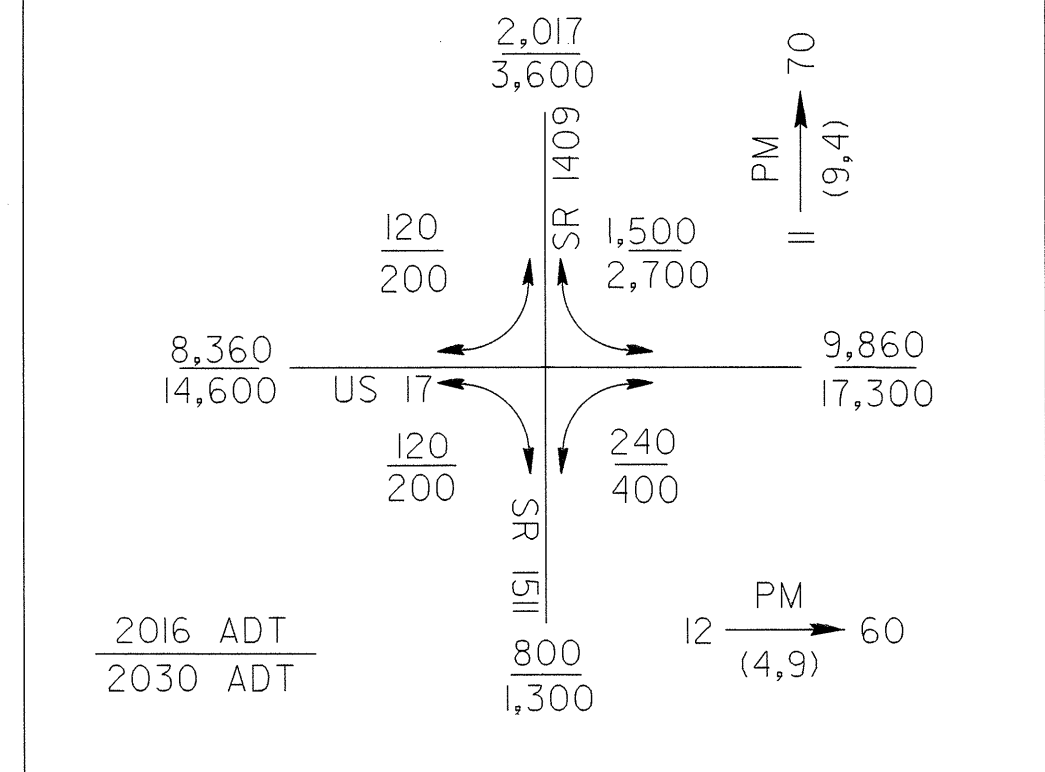
REVISIONS

BORE 10' BELOW  
NATURAL GRADE

BORE 10' BELOW  
NATURAL GRADE

-Y6-  
PI Sta 12+76.10  
Δ = 16° 35' 33.5" (RT)  
D = 5' 43' 46.5"  
L = 289.60'  
T = 145.82'  
R = 1,000.00'

-L-  
PI Sta 205+36.20    PIs Sta 209+31.66  
Δ = 7° 00' 15.2" (LT)    Δ = 9° 32' 08.6" (RT)  
D = 0° 58' 45.9"    Ls = 115.00'  
L = 715.14'    LT = 76.67'  
T = 358.02'    ST = 38.33'  
R = 5,850.00'  
SE = 0.028  
INC = 41.07'



PROJECTED TRAFFIC VOLUMES

SEE SHT. 27 FOR -L- PROFILE

ALL DRIVEWAY WIDTHS 16' AND RADIUS 10' UNLESS OTHERWISE NOTED

ALL ISLANDS SHOWN ARE 5' MONOLITHIC CONCRETE ISLAND (KEYED IN) STD. 852.01

SEE SHT. 2-F FOR INTERSECTION DETAIL  
SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS



PLANS PREPARED BY:  
**RUMMEL KLEPPER & KAHL, LLP**  
consulting engineers  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560  
FOR  
**STATE OF NORTH CAROLINA**  
DIVISION OF HIGHWAYS

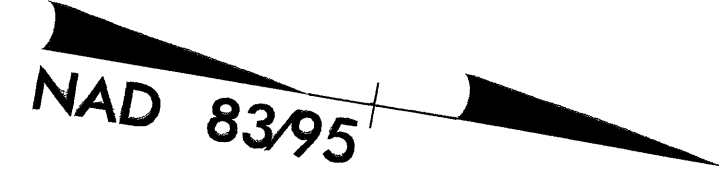
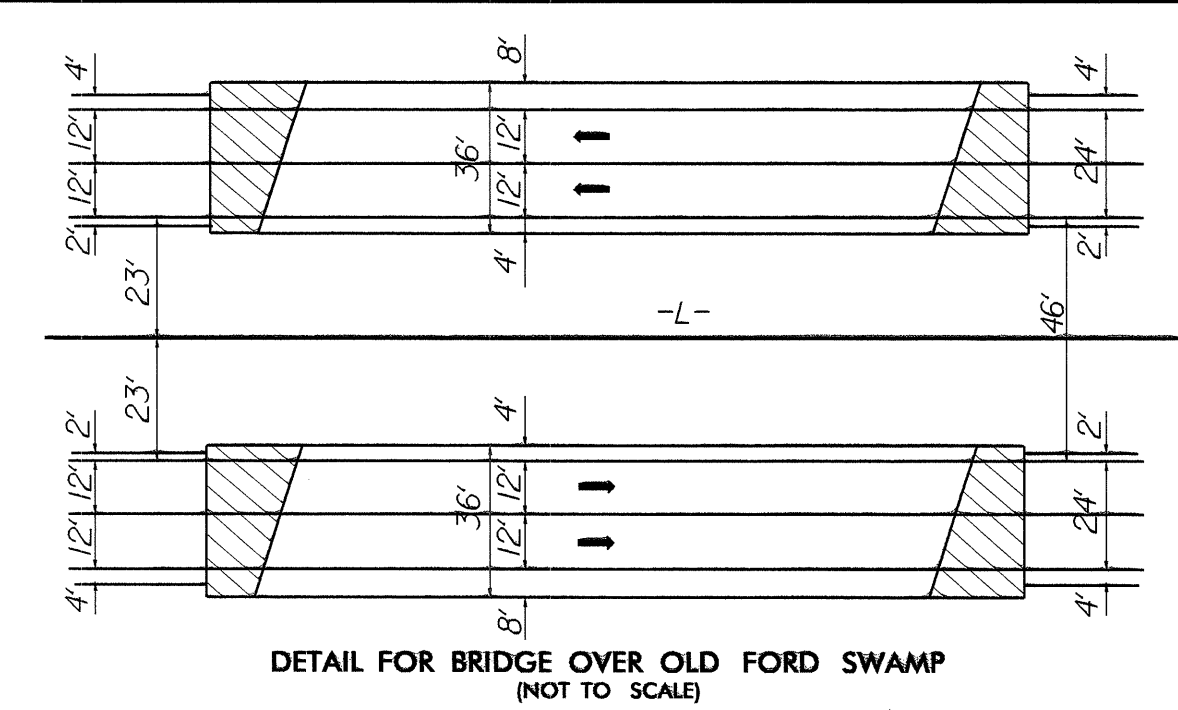
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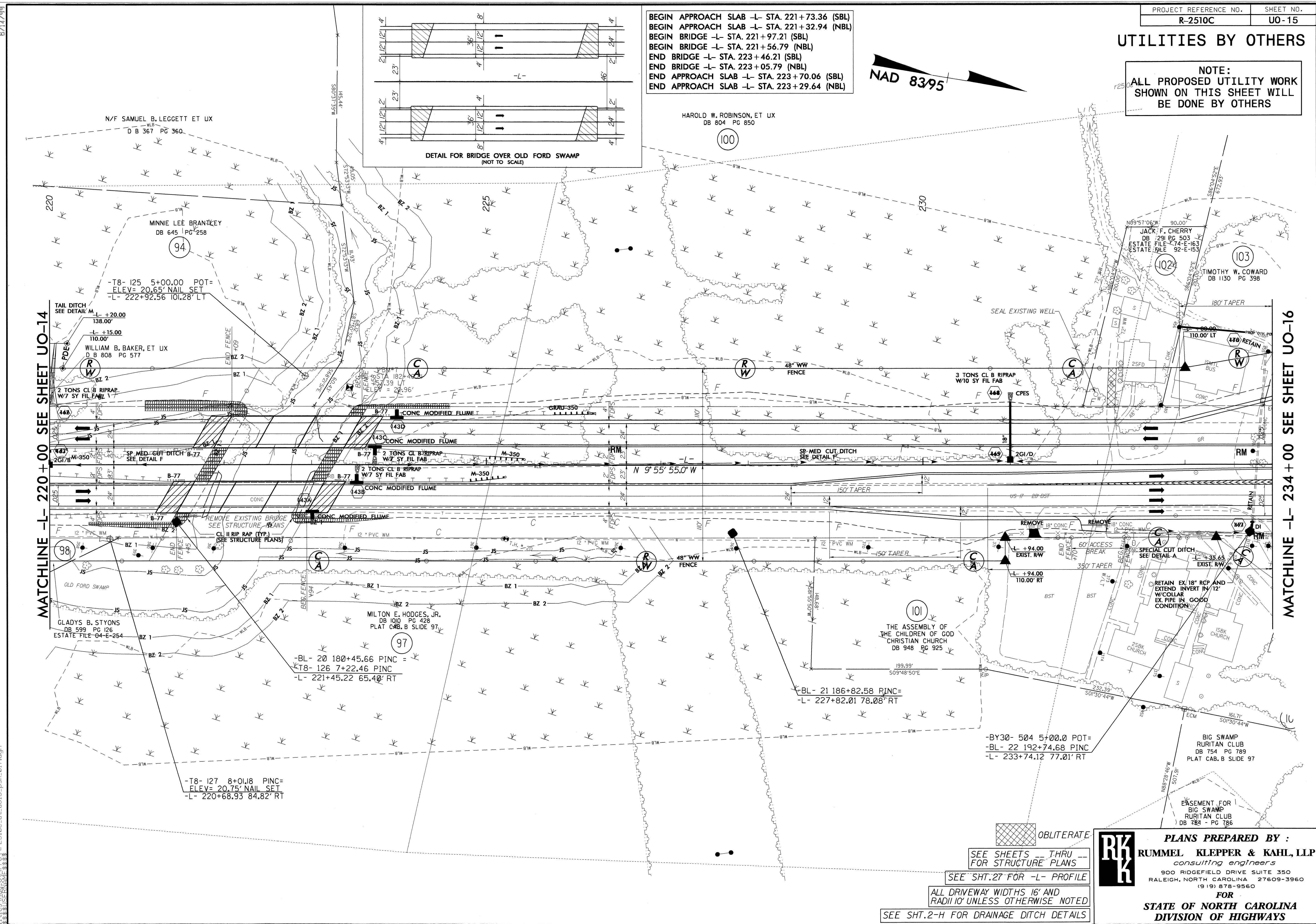
### UTILITIES BY OTHERS

NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

BEGIN APPROACH SLAB -L- STA. 221+73.36 (SBL)  
 BEGIN APPROACH SLAB -L- STA. 221+32.94 (NBL)  
 BEGIN BRIDGE -L- STA. 221+97.21 (SBL)  
 BEGIN BRIDGE -L- STA. 221+56.79 (NBL)  
 END BRIDGE -L- STA. 223+46.21 (SBL)  
 END BRIDGE -L- STA. 223+05.79 (NBL)  
 END APPROACH SLAB -L- STA. 223+70.06 (SBL)  
 END APPROACH SLAB -L- STA. 223+29.64 (NBL)



HAROLD W. ROBINSON, ET UX  
 DB 804 PG 850



MATCHLINE -L- 220+00 SEE SHEET UO-14

MATCHLINE -L- 234+00 SEE SHEET UO-16

OBLITERATE

SEE SHEETS -- THRU --  
FOR STRUCTURE PLANS

SEE SHT. 27 FOR -L- PROFILE

ALL DRIVEWAY WIDTHS 16' AND  
RADIUS UNLESS OTHERWISE NOTED

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS



**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
 FOR  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

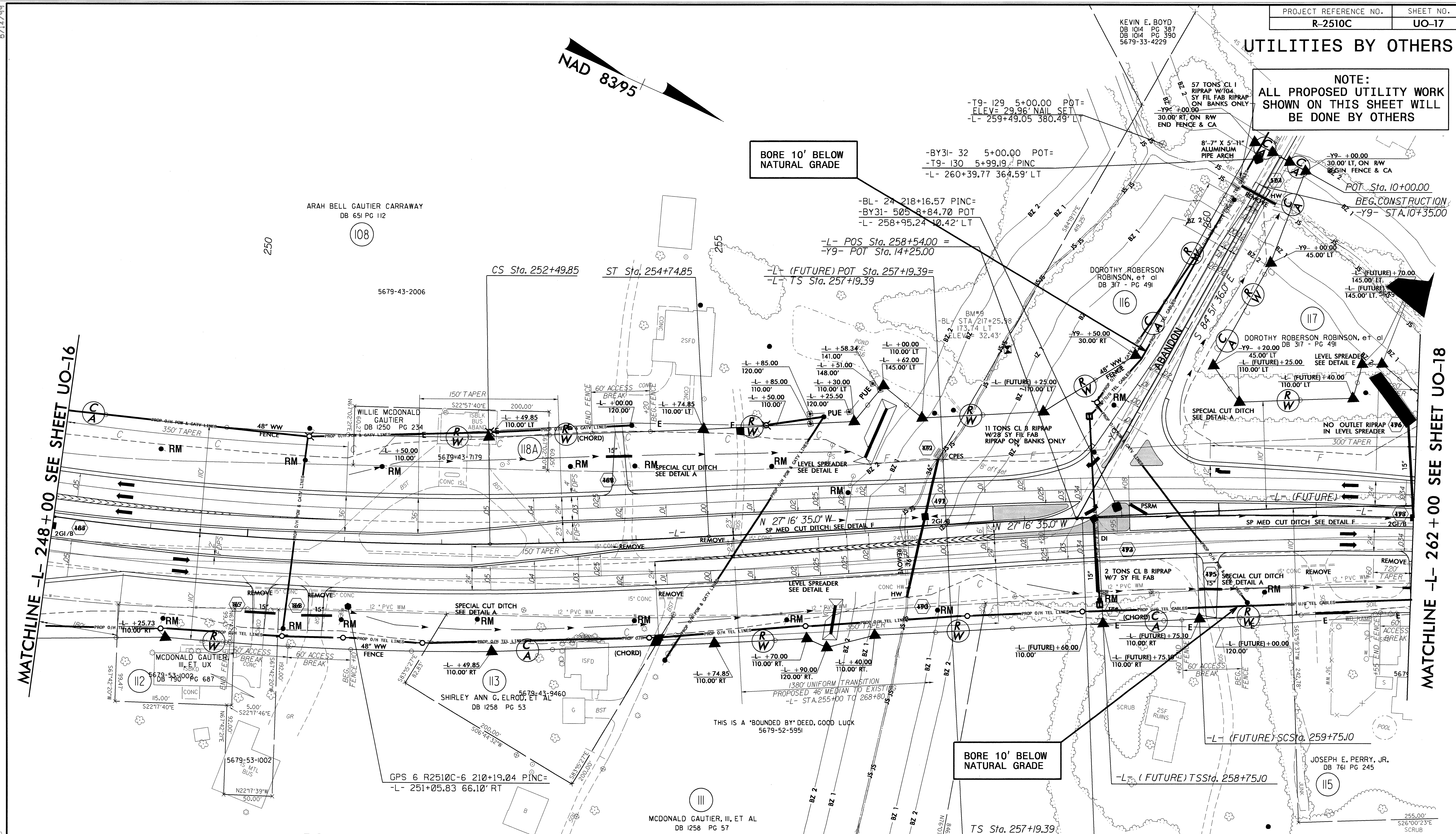
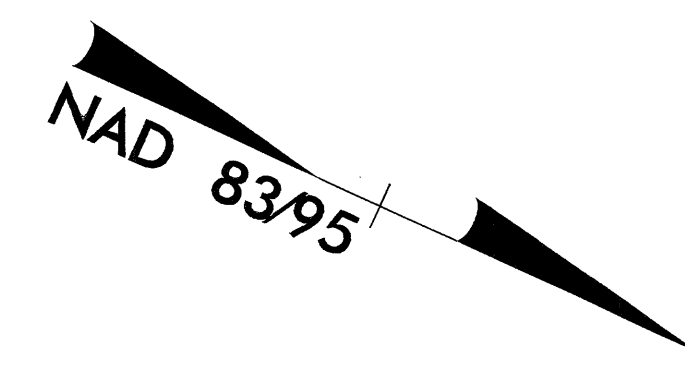
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UTILITIES BY OTHERS

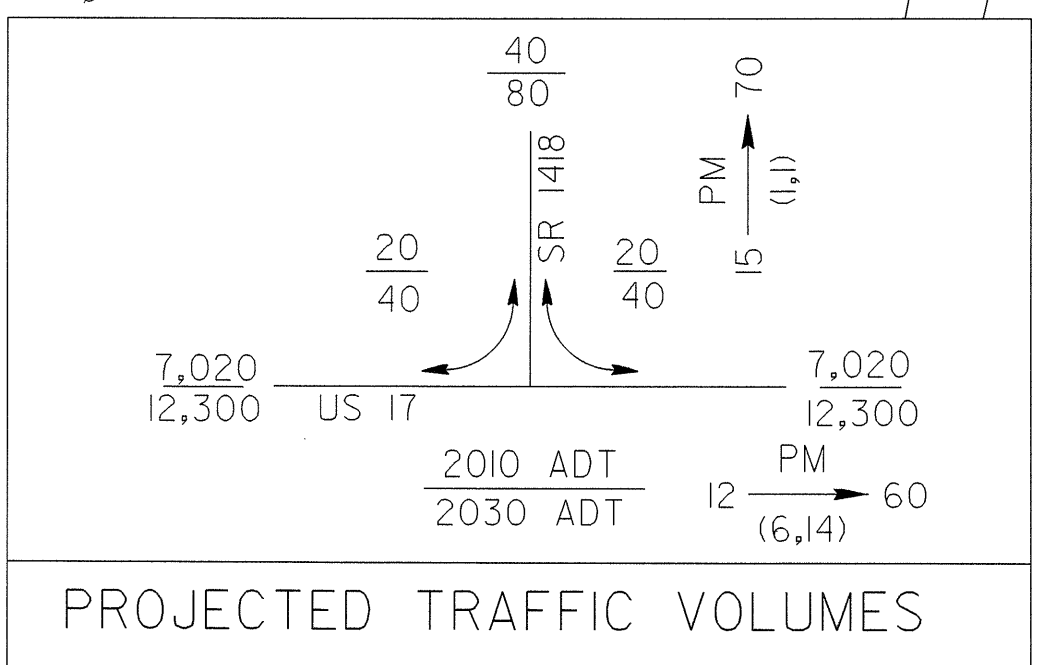
NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



MATCHLINE -L- 248+00 SEE SHEET UO-16

MATCHLINE -L- 262+00 SEE SHEET UO-18

-L- (FUTURE)			
PI Sta 249+15.77 Δ = 12° 59' 21" (LT) D = 1' 56' 08.4" L = 671.04' T = 336.97' R = 2,960.00' SE = 0.05 INC = 45.00'	PI Sta 253+24.86 Δ = 2° 10' 39.5" Ls = 225.00' LT = 150.01' ST = 75.01'	PI Sta 258+12.73 Δ = 0° 51' 12.0" Ls = 140.00' LT = 93.33' T = 437.29' R = 4,700.00' SE = 0.034 INC = 40.18'	PI Sta 260+78.19 Δ = 5° 19' 50.9" (RT) D = 1' 13' 08.6" L = 437.29' T = 218.80' R = 4,700.00' SE = 0.034 INC = 40.18'



BORE 10' BELOW  
NATURAL GRADE

TS Sta. 257+19.39

MAXWELL P. CHESNUTT FAMILY TRUST  
DB 1124 PG 2

ALL ISLANDS SHOWN ARE 5' MONOLITHIC  
CONCRETE ISLAND (KEYED IN)  
STD. 852.01

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

ALL DRIVEWAY WIDTHS 16' AND  
RADIUS 10' UNLESS OTHERWISE NOTED

SEE SHT. 28 FOR -L- PROFILE  
PI Sta 261+71.71  
SEE SHT. 2-G FOR SECTION DETAIL

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
consulting engineers  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
(919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

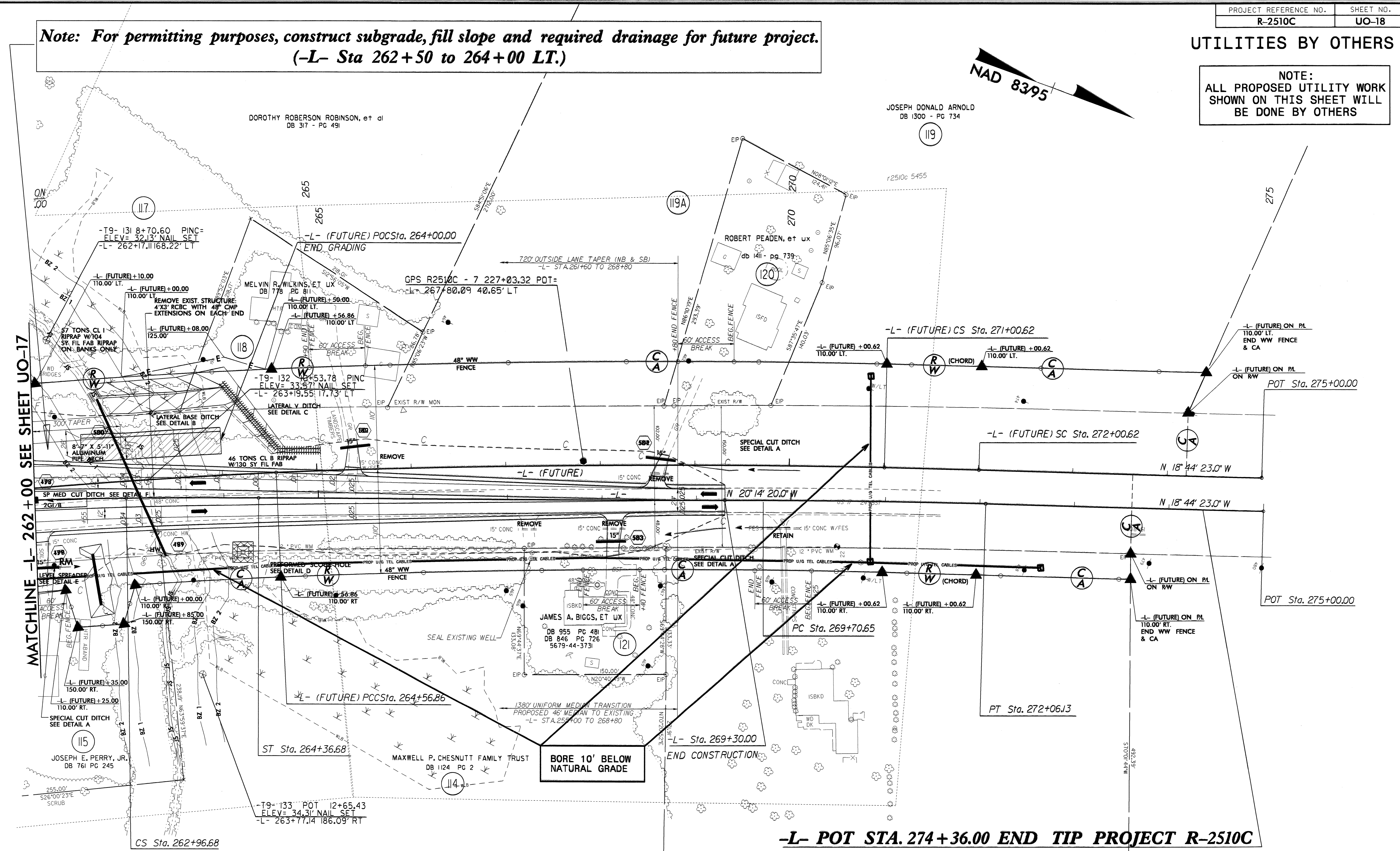
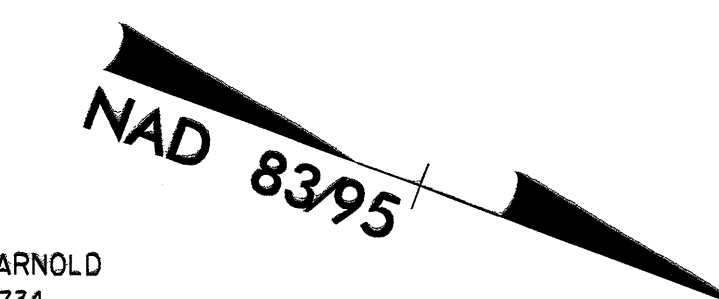
REVISIONS

6/13/99 12-JAN-2011 6:37 AM R2510C-UT-U017 -pst-019.dgn

**Note: For permitting purposes, construct subgrade, fill slope and required drainage for future project.**  
 (-L- Sta 262+50 to 264+00 LT.)

**UTILITIES BY OTHERS**

**NOTE:**  
 ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



MATCHLINE L- 262+00 SEE SHEET UO-17

**-L- POT STA. 274+36.00 END TIP PROJECT R-2510C**

-L-		-L- (FUTURE)	
PI Sta 263+43.35	PI Sta 270+88.40	PI Sta 262+16.07	PI Sta 267+78.86
Δ = 0° 51' 12.0"	Δ = 1° 29' 57.0" (RT)	Δ = 3° 56' 35.7" (RT)	Δ = 3° 52' 57.4" (RT)
Δs = 13' 08.6"	D = 0° 38' 11.8"	D = 0° 49' 06.6"	D = 0° 36' 11.2"
Δs = 37.29'	L = 235.49'	L = 481.76'	L = 643.76'
Δs = 18.80'	T = 117.75'	T = 240.97'	T = 322.00'
Δs = 47.000'	R = 9,000.00'	R = 7,000.00'	R = 9,500.00'
Δs = 0.034'			
Δs = 40.18'			

ALL DRIVEWAY WIDTHS 16' AND RADIUS 10' UNLESS OTHERWISE NOTED  
 SEE SHT. 29 FOR -L- & -L- (FUTURE) PROFILES

**PLANS PREPARED BY :**  
**RUMMEL KLEPPER & KAHL, LLP**  
*consulting engineers*  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 (919) 878-9560  
**FOR**  
**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**

SEE SHT. 2-H FOR DRAINAGE DITCH DETAILS

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