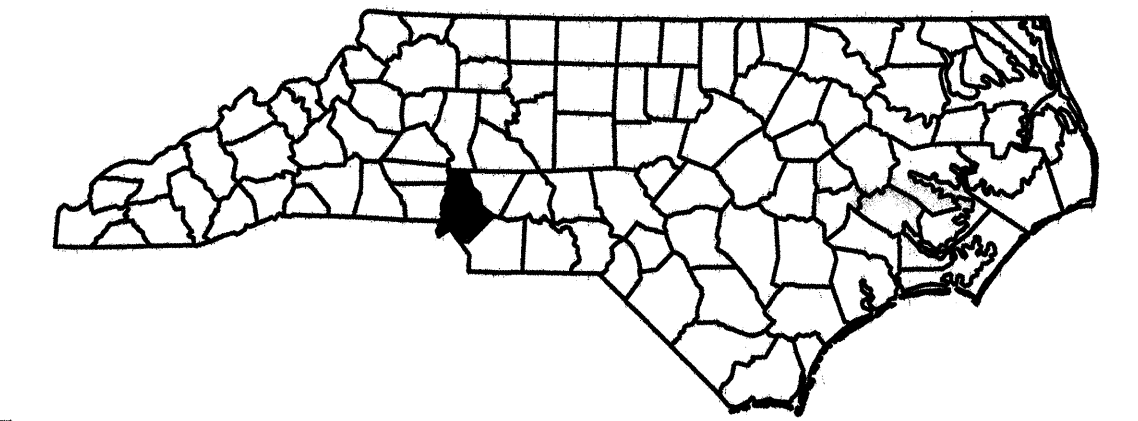


TIP PROJECT: U-3447

CONTRACT: C201829

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3447	UC-1	UC-8

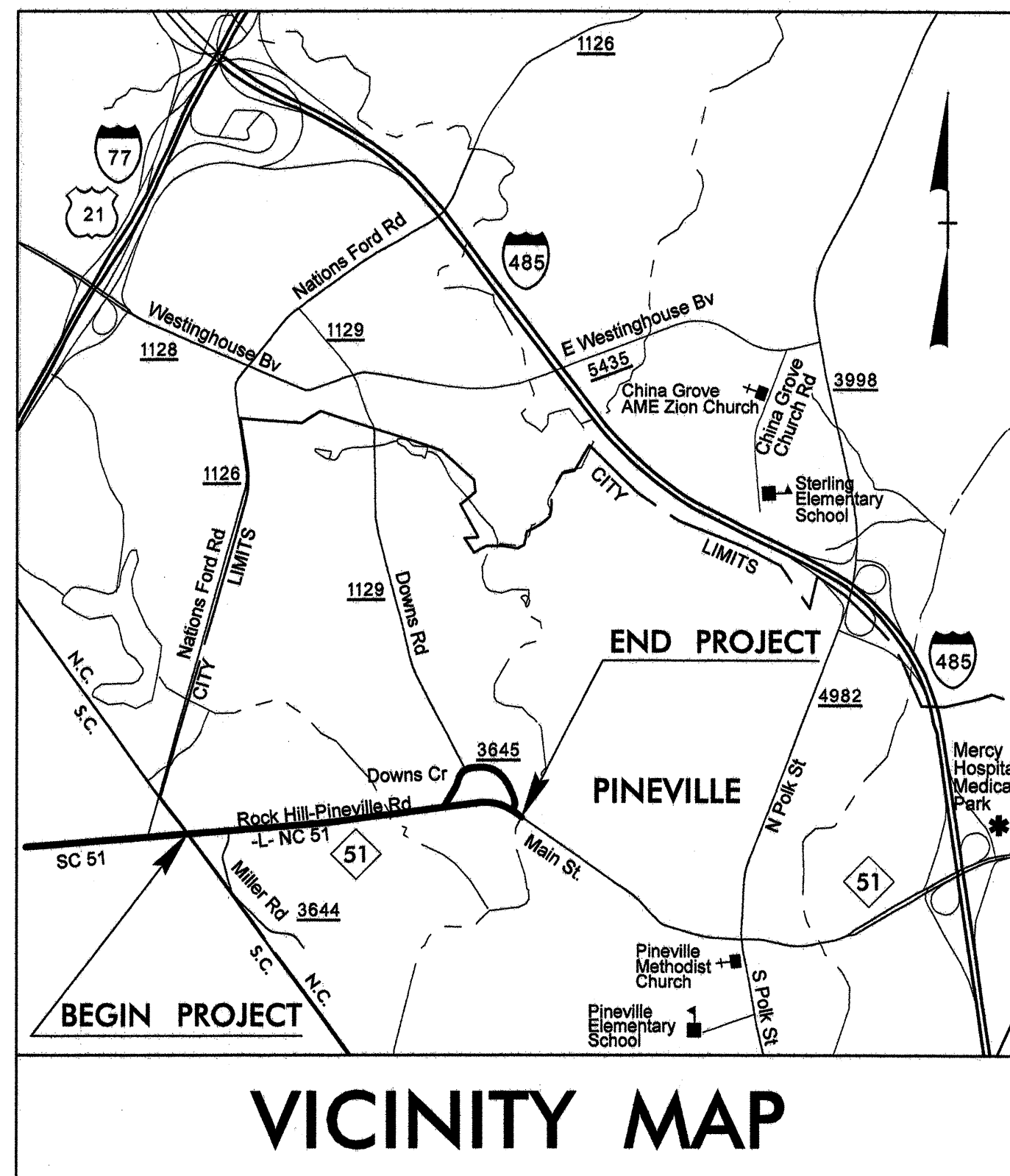


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

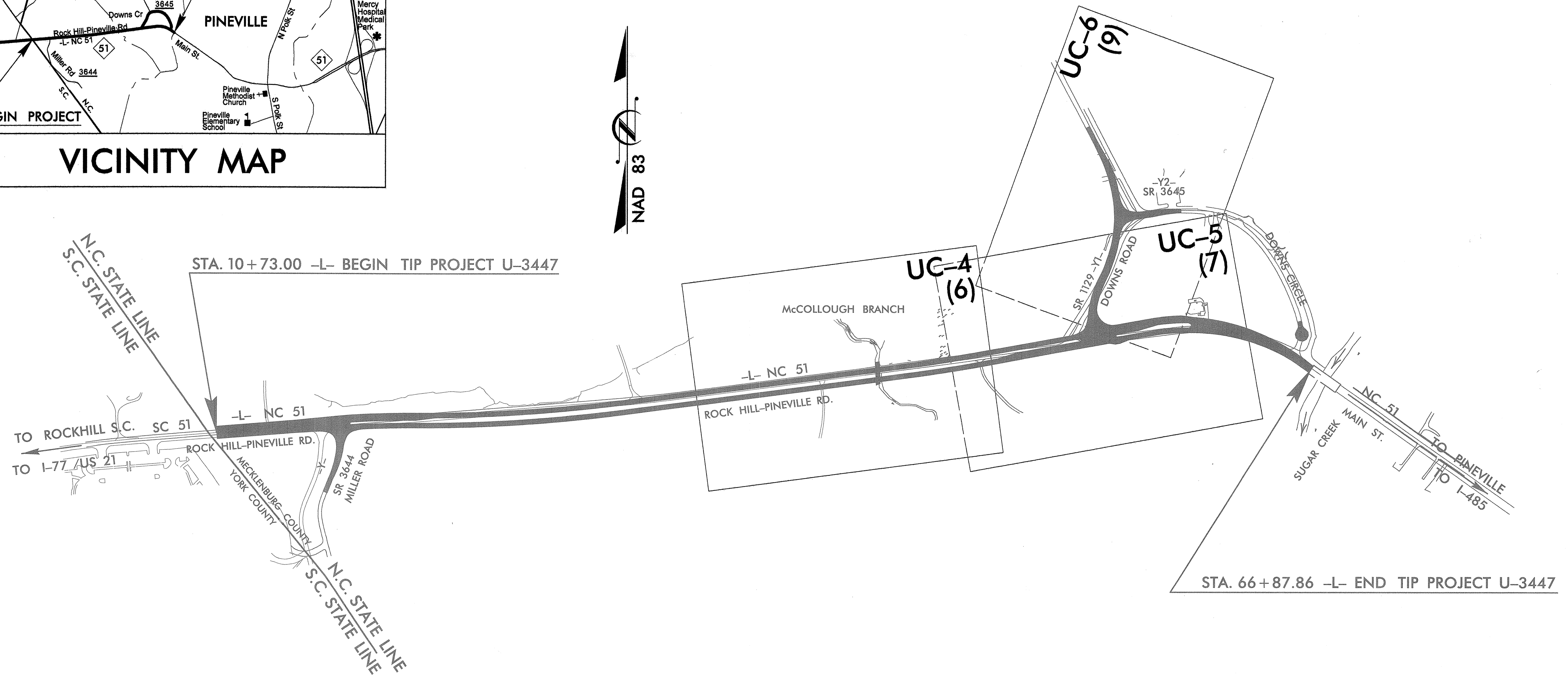
**UTILITY CONSTRUCTION PLANS  
MECKLENBURG COUNTY**

**LOCATION: NC 51, ROCK HILL - PINEVILLE RD. FROM THE  
SC STATE LINE TO SR 3645 (DOWNS CIRCLE)**

**TYPE OF WORK: UTILITIES**



**VICINITY MAP**



STA. 10+73.00 -L- BEGIN TIP PROJECT U-3447

STA. 66+87.86 -L- END TIP PROJECT U-3447

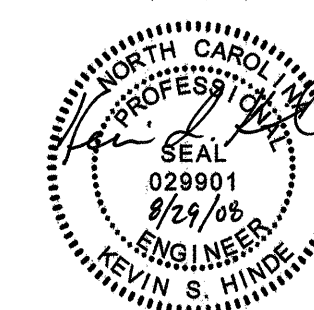
**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	SYMBOLGY SHEET
UC-3	PERMIT SHEET
UC-4 THRU UC-6	UTILITY CONSTRUCTION PLAN SHEETS
UC-7	PROFILE SHEET
UC-8	DETAIL SHEET

**WATER AND SEWER OWNERS ON PROJECT**

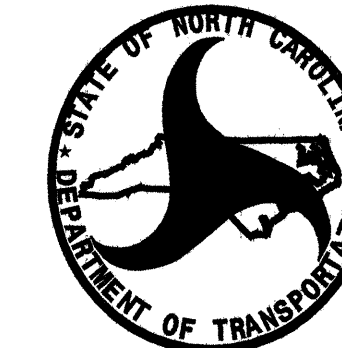
- (1) WATER - CMU
- (2) SANITARY SEWER - CMU

SEAL:



**Hinde Engineering, Inc.**

7520 EAST INDEPENDENCE BLVD., SUITE 230  
CHARLOTTE, NC 28227  
704-814-4407 (office)  
704-814-9042 (fax)



PREPARED IN THE OFFICE OF:  
**DIVISION OF HIGHWAYS  
PROJECT SERVICES  
UTILITY SECTION**

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

**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER

**Steve Mckee, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER

**Kevin S. Hinde, P.E.** UTILITIES PROJECT DESIGNER

PROJECT REFERENCE NO. U-3447	SHEET NO. UC-2
DESIGNED BY: CLS	
DRAWN BY: JNA	
CHECKED BY: KSH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## UTILITIES PLAN SHEET SYMBOLS

UTILITY CONSTRUCTION

### Water

Proposed Back Flow Preventor .....		Proposed RPZ Back Flow Preventor .....	
Relocate Back Flow Preventor .....		Relocate RPZ Back Flow Preventor .....	
Existing Water Valve .....		Water Cross .....	
Proposed Valve .....		Water Plug .....	
Proposed Tapping Valve .....		Water Reducer .....	
Existing Water Meter .....		Water Tee .....	
Proposed Water Meter .....		Water Pump Station .....	
Proposed Water Meter / Vault .....		Water Thrust Block .....	
Relocate Water Meter .....		Blow Off Valve .....	
Remove Water Meter .....	REM WM	Air Release Valve .....	
Existing Hydrant .....		Water Line Stop .....	
Prop Hydrant .....		Water Line Stop w Bypass .....	
Relocate Hydrant .....			
Remove Hydrant .....	REM FH		

### Sewer

Existing Manhole .....		Sewer Cross .....	
Proposed UT Manhole .....		Sewer Plug .....	
Remove UT Manhole .....	REM UT MH	Sewer Reducer .....	
Abandon Utility Manhole .....	ABAND MH	Sewer Tee .....	
Sewer Line Stop .....		Sewer Pump Station .....	
Sewer Line Stop w Bypass .....		Sewer Thrust Block .....	

NORTH CAROLINA DEPT. OF TRANSPORTATION ENGINEERING DIVISION RALEIGH, NORTH CAROLINA				
NC 51, ROCK HILL - PINEVILLE RD. FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)				
Designed By:	Checked By:	Date:	Sheet:	Of:
CLS	KSH	8-25-08	UC-2	UC-8
<b>Hinde Engineering, Inc.</b> <small>7520 EAST INDEPENDENCE BLVD., SUITE 230          CHARLOTTE, NC 28227          704-814-4407 (office)          704-814-9042 (fax)</small>				

PROJECT REFERENCE NO. U-3447	SHEET NO. UC-3
DESIGNED BY: CLS	
DRAWN BY: JNA	
CHECKED BY: KSH	
APPROVED BY:	
REVISED BY:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

# UTILITY CONSTRUCTION

APPLICATION FOR NON-DISCHARGE PERMIT  
 GRAVITY SEWER MAIN EXTENSION  
 CHARLOTTE-MECKLENBURG UTILITIES

PROJECT NAME NC 51, ROCK HILL - PINEVILLE RD. FROM THE SC STATE LINE  
TO SR 3645 (DOWNS CIRCLE)

CMUD PROJECT NO.: \_\_\_\_\_

PROJECT TYPE:  NEW CONSTRUCTION  RELOCATION  MODIFICATION OF PERMIT NO. \_\_\_\_\_  
 OTHER \_\_\_\_\_

VOLUME OF WASTEWATER GENERATED BY THIS PROJECT: \_\_\_\_\_ GALLONS PER DAY BASED  
 ON 190 GAL/DAY/SINGLE FAMILY HOUSEHOLD \_\_\_\_\_ HOUSEHOLDS OR  
 135 GAL/DAY/MULTI-FAMILY UNIT X \_\_\_\_\_ UNITS OR IS BASED ON:

WASTEWATER TREATMENT PLANT RECEIVING WASTEWATER:  
 McALPINE CR. (NC0024970)  IRWIN CR. (NC0024945)  McDOWELL CR. (NC0036277)  
 SUGAR CR. (NC0024937)  MALLARD CR. (NC0030210)

NATURE OF WASTEWATER 100% % DOMESTIC 0 % % INDUSTRIAL  
0 % % COMMERCIAL 0 % % OTHER \_\_\_\_\_

ORIGIN OF WASTEWATER  SUBDIVISION \_\_\_\_\_ COMMERCIAL \_\_\_\_\_  
 SCHOOL \_\_\_\_\_ INDUSTRIAL \_\_\_\_\_  
 APARTMENTS/CONDO'S \_\_\_\_\_ OTHER \_\_\_\_\_

LIST ANY PARAMETER AND ITS CONCENTRATION THAT WILL BE GREATER THAN NORMAL DOMESTIC LEVELS:  
N/A

IF WASTEWATER IS NON-DOMESTIC, DESCRIBE LEVEL OF PRETREATMENT:  
N/A

IF A PRETREATMENT PERMIT IS REQUIRED, HAS ONE BEEN ISSUED? YES \_\_\_\_\_ NO \_\_\_\_\_ N/A   
 HAS ENGINEER DETERMINED THAT DOWNSTREAM SEWERS ARE CAPABLE TO HANDLE THIS FLOW? YES  NO \_\_\_\_\_  
 PERMIT NO. FOR SEWERS IMMEDIATELY DOWNSTREAM \_\_\_\_\_  
 PIPE DIAMETER OF SEWERS IMMEDIATELY DOWNSTREAM 10"

HAS ENGINEER DETERMINED THAT NC DEM AND CMU MINIMUM DESIGN STANDARDS ARE MET BY THIS PROJECT?  YES \_\_\_\_\_ NO \_\_\_\_\_

COMPLETE NAME AND ADDRESS OF ENGINEERING DESIGN FIRM:  
HINDE ENGINEERING, INC.  
7520 EAST INDEPENDENCE BLVD., SUITE 230  
CHARLOTTE, N.C. 28227

TELEPHONE 704-814-4407

PROFESSIONAL ENGINEER'S CERTIFICATION:  
 I, KEVIN S. HINDE, P.E., ATTEST THAT THIS APPLICATION FOR THE RELOCATION AND NEW CONSTRUCTION OF SEWER LINES  
 WITHIN THE AFOREMENTIONED PROJECT HAS BEEN REVIEWED BY ME AND IS ACCURATE AND COMPLETE TO THE  
 BEST OF MY KNOWLEDGE. I FURTHER ATTEST THAT TO THE BEST OF MY KNOWLEDGE THE PROPOSED DESIGN HAS BEEN  
 PREPARED IN ACCORDANCE WITH THE APPLICABLE REGULATIONS. ALTHOUGH CERTAIN PORTIONS OF THIS SUBMITTAL  
 PACKAGE MAY HAVE BEEN DEVELOPED BY OTHER PROFESSIONALS, INCLUSION OF THESE MATERIALS UNDER MY  
 SIGNATURE AND SEAL SIGNIFIES THAT I HAVE REVIEWED THIS MATERIAL AND HAVE JUDGED IT TO BE CONSISTENT WITH  
 THE PROPOSED DESIGN.

NORTH CAROLINA PROFESSIONAL ENGINEER'S SEAL, SIGNATURE, AND DATE:

CMU PERMIT NO. \_\_\_\_\_ ISSUED \_\_\_\_\_  
 PLANT FLOW ALLOCATION RECORDED BY: \_\_\_\_\_  
 PERMIT APPROVED BY: BARRY SHEARIN, P.E., CHIEF ENGINEER



## APPLICATION FOR PERMIT FOR WATER MAIN EXTENSION

PROJECT NAME: NC 51, ROCK HILL - PINEVILLE RD. FROM THE SC STATE LINE  
TO SR 3645 (DOWNS CIRCLE)

CMU PROJECT NO.: \_\_\_\_\_

PROJECT DESCRIPTION: 353 LF 12" DI WATER PIPE - WATER MAIN AND FITTINGS

DESIGNED BY: FIRM: HINDE ENGINEERING, INC.

ENGINEER: KEVIN S. HINDE, P.E. DESIGNED BY: CLINT L. STEVENS

ADDRESS: 7520 EAST INDEPENDENCE BLVD., SUITE 230  
CHARLOTTE, NORTH CAROLINA 28227

PHONE: 704-814-4407

THIS APPLICATION IS MADE UNDER AND IN FULL ACCORD WITH THE PROVISIONS OF CHAPTER 130A-317 OF THE  
 NORTH CAROLINA GENERAL STATUTES, AND SUCH OTHER STATUTES AS RELATED TO PUBLIC WATER SYSTEMS.  
 CMU HAS BEEN GRANTED AUTHORITY TO ISSUE PERMITS FOR EXTENSION OF WATER MAINS PURSUANT TO ISA  
 NCAC 18C.1801. THE APPLICANT AGREES THAT NO SIGNIFICANT CHANGE OR DEVIATION FROM THE PLANS AND  
 SPECIFICATIONS APPROVED BY CMU WILL BE MADE WITHOUT THE WRITTEN CONSENT AND APPROVAL OF  
 CMU OR ITS AUTHORIZED REPRESENTATIVE. A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE  
 OF NORTH CAROLINA SHALL SUBMIT A STATEMENT REFLECTING THAT ADEQUATE OBSERVATIONS DURING AND  
 UPON COMPLETION OF CONSTRUCTION INDICATES THAT CONSTRUCTION WAS COMPLETED IN ACCORDANCE WITH  
 APPROVED PLANS AND SPECIFICATIONS.

PERMIT NO. \_\_\_\_\_ DATE \_\_\_\_\_  
 APPROVED: BARRY SHEARIN, P.E., CHIEF ENGINEER

CHARLOTTE-MECKLENBURG UTILITIES  
 5100 BROOKSHIRE BLVD.  
 CHARLOTTE, NORTH CAROLINA 28216

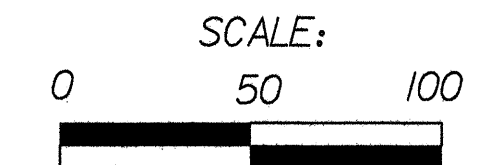
NORTH CAROLINA DEPT. OF TRANSPORTATION ENGINEERING DIVISION RALEIGH, NORTH CAROLINA				
<u>NC 51, ROCK HILL - PINEVILLE RD. FROM</u> <u>THE SC STATE LINE TO</u> <u>SR 3645 (DOWNS CIRCLE)</u>				
Designed By:	Checked By:	Date:	Sheet:	Of:
<u>CLS</u>	<u>KSH</u>	<u>8-25-08</u>	<u>UC-3</u>	<u>UC-8</u>
<b>Hinde Engineering, Inc.</b> 7520 EAST INDEPENDENCE BLVD., SUITE 230 CHARLOTTE, NC 28227 704-814-4407 (office) 704-814-9042 (fax)				



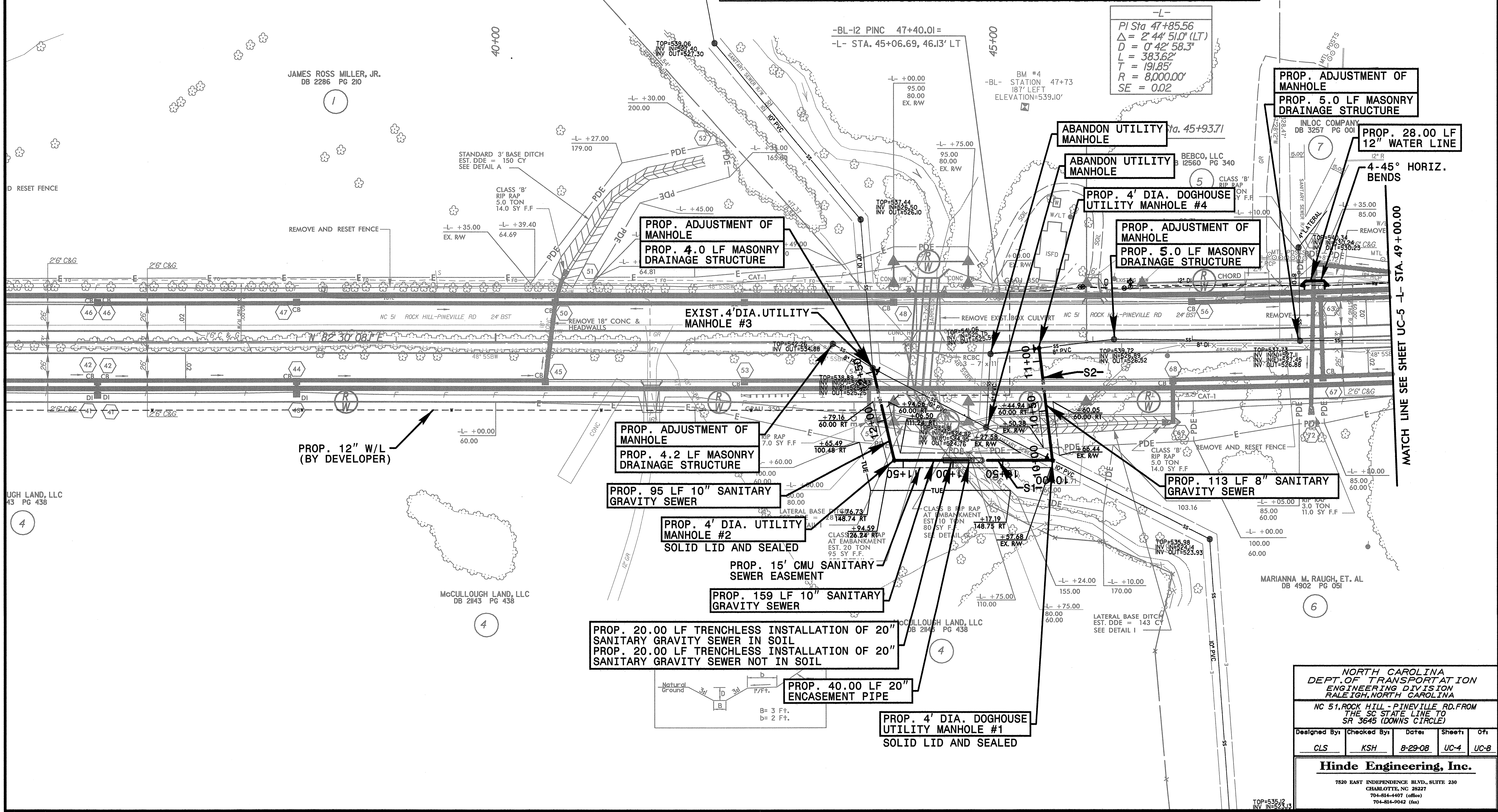
UTILITY PLAN SHEET UC-4 CORRESPONDS WITH ROADWAY PLAN SHEET 6

PROJECT REFERENCE NO.	SHEET NO.
U-3447	UC-4
DESIGNED BY: CLS	
DRAWN BY: JNA	
CHECKED BY: KSH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**



- GENERAL NOTES:**
1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JULY 2006, THE STANDARDS DETAILS AS SHOWN ON PLANS, AND THE PROJECT SPECIAL PROVISIONS FOR UTILITY CONSTRUCTION.
  2. ALL WATER AND SEWER LINES ON THIS PROJECT ARE OWNED BY CHARLOTTE-MECKLENBURG UTILITIES.
  3. ALL 12-INCH AND SMALLER DIAMETER PIPE SHALL BE DUCTILE IRON PRESSURE CLASS 350, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  4. ALL 16-INCH AND LARGER DIAMETER PIPE SHALL BE DUCTILE IRON PRESSURE CLASS 250, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  5. VALVES ON WATER MAINS SMALLER THAN 16-INCH IN DIAMETER SHALL BE DIRECT BURY GATE VALVES, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  6. VALVES ON WATER MAINS 16-INCHES IN DIAMETER AND LARGER SHALL BE BUTTERFLY VALVES, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  7. DUCTILE IRON RESTRAINED JOINT PIPE SHALL BE USED IN LIEU OF THRUST BLOCKING ON PROPOSED WATER LINE RELOCATIONS.
  8. WALL BLOCKING SHALL BE USED ON EXISTING WATER LINES AT THE PROPOSED RELOCATION TIE IN POINTS.
  9. CONTRACTOR SHALL CONNECT ALL WATER LINES AND SERVICE CONNECTIONS USING NECESSARY FITTINGS.



PI Sta 47+85.56  
 $\Delta = 2' 44" 51.0" (LT)$   
 $D = 0' 42" 58.3"$   
 $L = 383.62'$   
 $T = 191.85'$   
 $R = 8,000.00'$   
 $SE = 0.02$

PROP. ADJUSTMENT OF MANHOLE  
 PROP. 5.0 LF MASONRY DRAINAGE STRUCTURE

PROP. 28.00 LF 12" WATER LINE

ABANDON UTILITY MANHOLE

ABANDON UTILITY MANHOLE

PROP. 4" DIA. DOGHOUSE UTILITY MANHOLE #4

PROP. ADJUSTMENT OF MANHOLE  
 PROP. 5.0 LF MASONRY DRAINAGE STRUCTURE

PROP. ADJUSTMENT OF MANHOLE  
 PROP. 4.0 LF MASONRY DRAINAGE STRUCTURE

EXIST. 4" DIA. UTILITY MANHOLE #3

PROP. ADJUSTMENT OF MANHOLE  
 PROP. 4.2 LF MASONRY DRAINAGE STRUCTURE

PROP. 95 LF 10" SANITARY GRAVITY SEWER

PROP. 4" DIA. UTILITY MANHOLE #2  
 SOLID LID AND SEALED

PROP. 15' CMU SANITARY SEWER EASEMENT

PROP. 159 LF 10" SANITARY GRAVITY SEWER

PROP. 20.00 LF TRENCHLESS INSTALLATION OF 20" SANITARY GRAVITY SEWER IN SOIL  
 PROP. 20.00 LF TRENCHLESS INSTALLATION OF 20" SANITARY GRAVITY SEWER NOT IN SOIL

PROP. 40.00 LF 20" ENCASUREMENT PIPE

PROP. 4" DIA. DOGHOUSE UTILITY MANHOLE #1  
 SOLID LID AND SEALED

PROP. 113 LF 8" SANITARY GRAVITY SEWER

MATCH LINE SEE SHEET UC-5 - STA. 49+00.00

NORTH CAROLINA DEPT. OF TRANSPORTATION ENGINEERING DIVISION RALEIGH, NORTH CAROLINA

NC 51, ROCK HILL - PINEVILLE RD. FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)

Designed By:	Checked By:	Date:	Sheet:	Of:
CLS	KSH	8-29-08	UC-4	UC-8

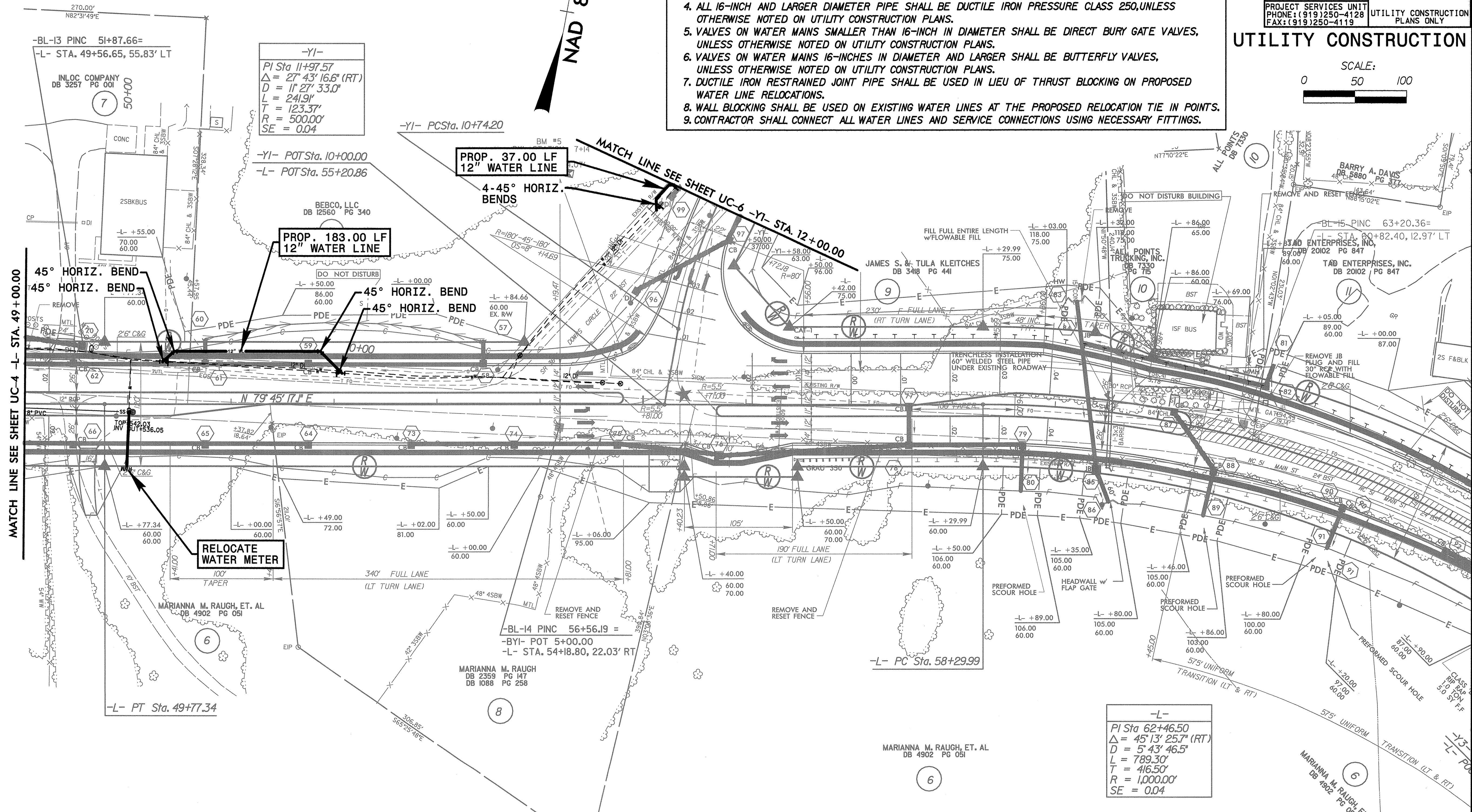
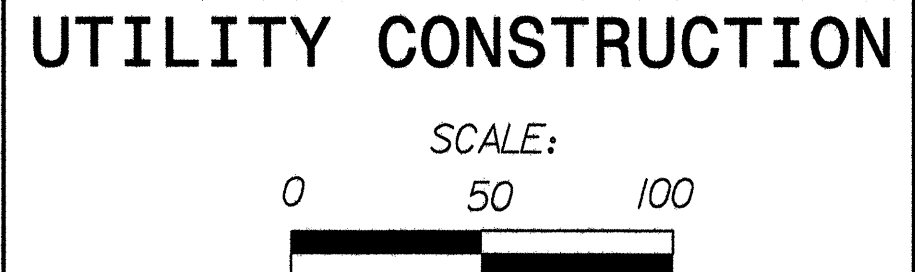
**Hinde Engineering, Inc.**  
 7520 EAST INDEPENDENCE BLVD., SUITE 230  
 CHARLOTTE, NC 28227  
 704-814-4407 (cell)  
 704-814-9042 (fax)



UTILITY PLAN SHEET UC-5 CORRESPONDS WITH ROADWAY PLAN SHEET 7

PROJECT REFERENCE NO.	SHEET NO.
U-3447	UC-5
DESIGNED BY: CLS	
DRAWN BY: JNA	
CHECKED BY: KSH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

- GENERAL NOTES:**
1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JULY 2006, THE STANDARDS DETAILS AS SHOWN ON PLANS, AND THE PROJECT SPECIAL PROVISIONS FOR UTILITY CONSTRUCTION.
  2. ALL WATER AND SEWER LINES ON THIS PROJECT ARE OWNED BY CHARLOTTE-MECKLENBURG UTILITIES.
  3. ALL 12-INCH AND SMALLER DIAMETER PIPE SHALL BE DUCTILE IRON PRESSURE CLASS 350, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  4. ALL 16-INCH AND LARGER DIAMETER PIPE SHALL BE DUCTILE IRON PRESSURE CLASS 250, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  5. VALVES ON WATER MAINS SMALLER THAN 16-INCH IN DIAMETER SHALL BE DIRECT BURY GATE VALVES, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  6. VALVES ON WATER MAINS 16-INCHES IN DIAMETER AND LARGER SHALL BE BUTTERFLY VALVES, UNLESS OTHERWISE NOTED ON UTILITY CONSTRUCTION PLANS.
  7. DUCTILE IRON RESTRAINED JOINT PIPE SHALL BE USED IN LIEU OF THRUST BLOCKING ON PROPOSED WATER LINE RELOCATIONS.
  8. WALL BLOCKING SHALL BE USED ON EXISTING WATER LINES AT THE PROPOSED RELOCATION TIE IN POINTS.
  9. CONTRACTOR SHALL CONNECT ALL WATER LINES AND SERVICE CONNECTIONS USING NECESSARY FITTINGS.



-Y1-  
 PI Sta 11+97.57  
 $\Delta = 27' 43" 16.6" (RT)$   
 $D = 11' 27" 33.0"$   
 $L = 241.9'$   
 $T = 123.37'$   
 $R = 500.00'$   
 $SE = 0.04$

PROP. 37.00 LF  
 12" WATER LINE

PROP. 183.00 LF  
 12" WATER LINE

RELOCATE  
 WATER METER

-L-  
 PI Sta 62+46.50  
 $\Delta = 45' 13" 25.7" (RT)$   
 $D = 5' 43" 46.5"$   
 $L = 789.30'$   
 $T = 416.50'$   
 $R = 1,000.00'$   
 $SE = 0.04$

NORTH CAROLINA DEPT. OF TRANSPORTATION  
 ENGINEERING DIVISION  
 RALEIGH, NORTH CAROLINA

NC 51, ROCK HILL - PINEVILLE RD. FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)

Designed By:	Checked By:	Date:	Sheet:	Of:
CLS	KSH	8-25-08	UC-5	UC-8

**Hinde Engineering, Inc.**  
 7520 EAST INDEPENDENCE BLVD., SUITE 230  
 CHARLOTTE, NC 28227  
 704-844-4407 (office)  
 704-844-9042 (fax)



UTILITY PLAN SHEET UC-6 CORRESPONDS WITH ROADWAY PLAN SHEET 9

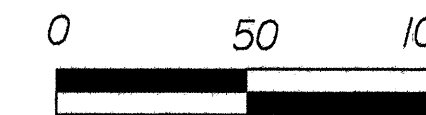
**GENERAL NOTES:**

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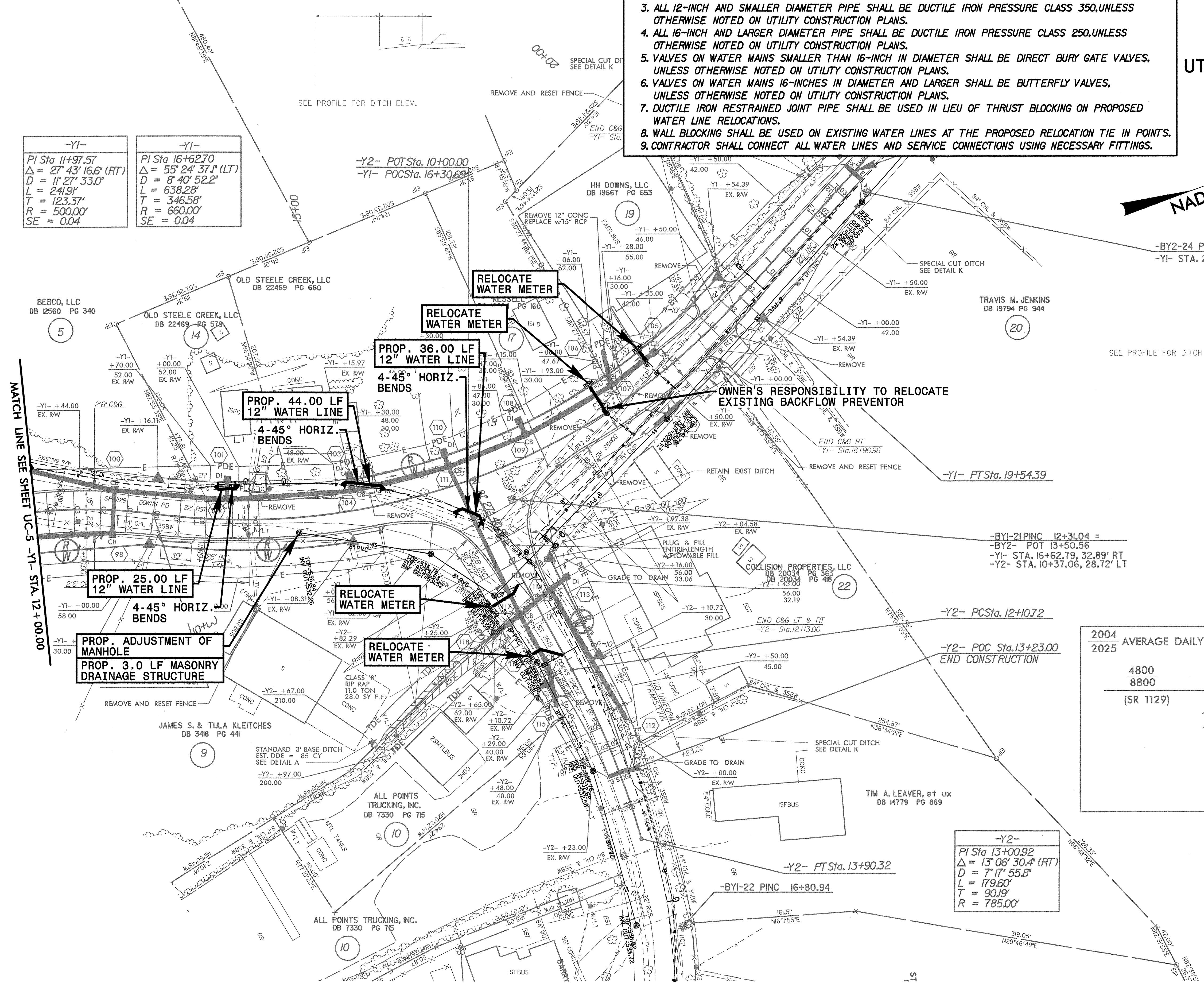
PROJECT REFERENCE NO.	SHEET NO.
U-3447	UC-6
DESIGNED BY: CLS	
DRAWN BY: JNA	
CHECKED BY: KSH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**

SCALE: 0 50 100



NAD 83



-Y1-	-Y1-
PI Sta 11+97.57	PI Sta 16+62.70
$\Delta = 27^\circ 43' 16.6''$ (RT)	$\Delta = 55^\circ 24' 37.1''$ (LT)
D = 11' 27" 33.0"	D = 8' 40" 52.2"
L = 241.91'	L = 638.28'
T = 123.37'	T = 346.58'
R = 500.00'	R = 660.00'
SE = 0.04	SE = 0.04

-Y1-	-Y1-
PI Sta 11+97.57	PI Sta 16+62.70
$\Delta = 27^\circ 43' 16.6''$ (RT)	$\Delta = 55^\circ 24' 37.1''$ (LT)
D = 11' 27" 33.0"	D = 8' 40" 52.2"
L = 241.91'	L = 638.28'
T = 123.37'	T = 346.58'
R = 500.00'	R = 660.00'
SE = 0.04	SE = 0.04

2004 AVERAGE DAILY TRAFFIC		2025 AVERAGE DAILY TRAFFIC	
4800	8800	4800	8800
(SR 1129)		-Y1- DOWNS RD	
<100	<100	<100	<100
100		100	
-Y2- DOWNS CIRCLE		(SR 3645)	

-Y2-
PI Sta 13+00.92
$\Delta = 13^\circ 08' 30.4''$ (RT)
D = 7' 17" 55.8"
L = 179.60'
T = 90.19'
R = 785.00'

**NORTH CAROLINA DEPT. OF TRANSPORTATION**  
 ENGINEERING DIVISION  
 RALEIGH, NORTH CAROLINA  
 NC 51, ROCK HILL - PINEVILLE RD. FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)

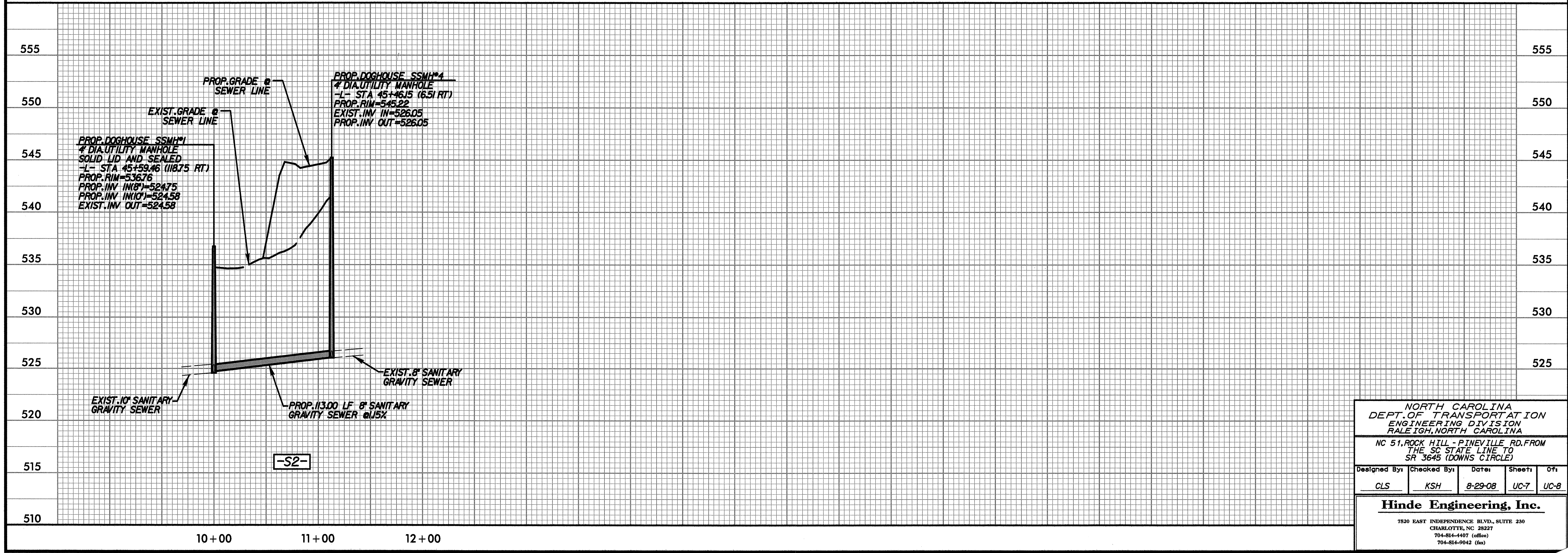
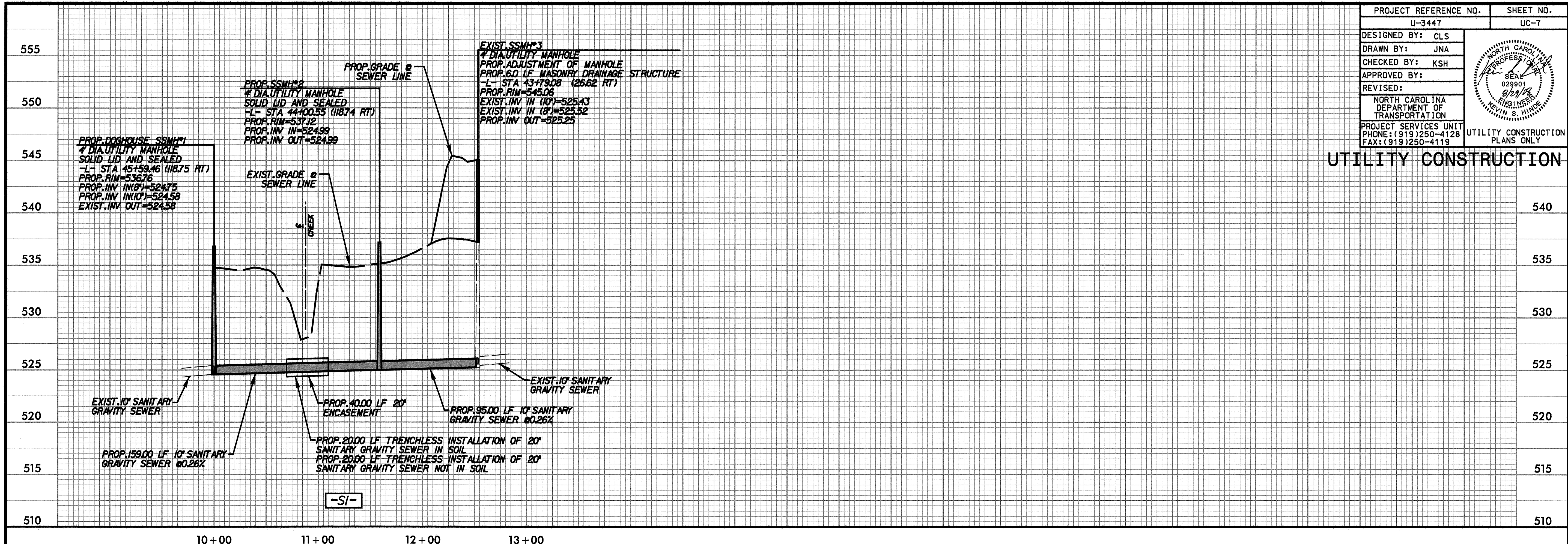
Designed By:	Checked By:	Date:	Sheet:	Of:
CLS	KSH	8-25-08	UC-6	UC-8

**Hinde Engineering, Inc.**  
 7530 EAST INDEPENDENCE BLVD., SUITE 230  
 CHARLOTTE, NC 28227  
 704-584-4407 (office)  
 704-584-9042 (fax)



PROJECT REFERENCE NO. U-3447	SHEET NO. UC-7
DESIGNED BY: CLS	
DRAWN BY: JNA	
CHECKED BY: KSH	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**



NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 ENGINEERING DIVISION  
 RALEIGH, NORTH CAROLINA  
 NC 51, ROCK HILL - PINEVILLE RD. FROM  
 THE SC STATE LINE TO  
 SR 3645 (DOWNS CIRCLE)

Designed By:	Checked By:	Date:	Sheet:	Of:
CLS	KSH	8-29-08	UC-7	UC-8

**Hinde Engineering, Inc.**  
 7520 EAST INDEPENDENCE BLVD., SUITE 230  
 CHARLOTTE, NC 28227  
 704-814-4407 (office)  
 704-814-9042 (fax)







09/08/99

TIP PROJECT: U-3447

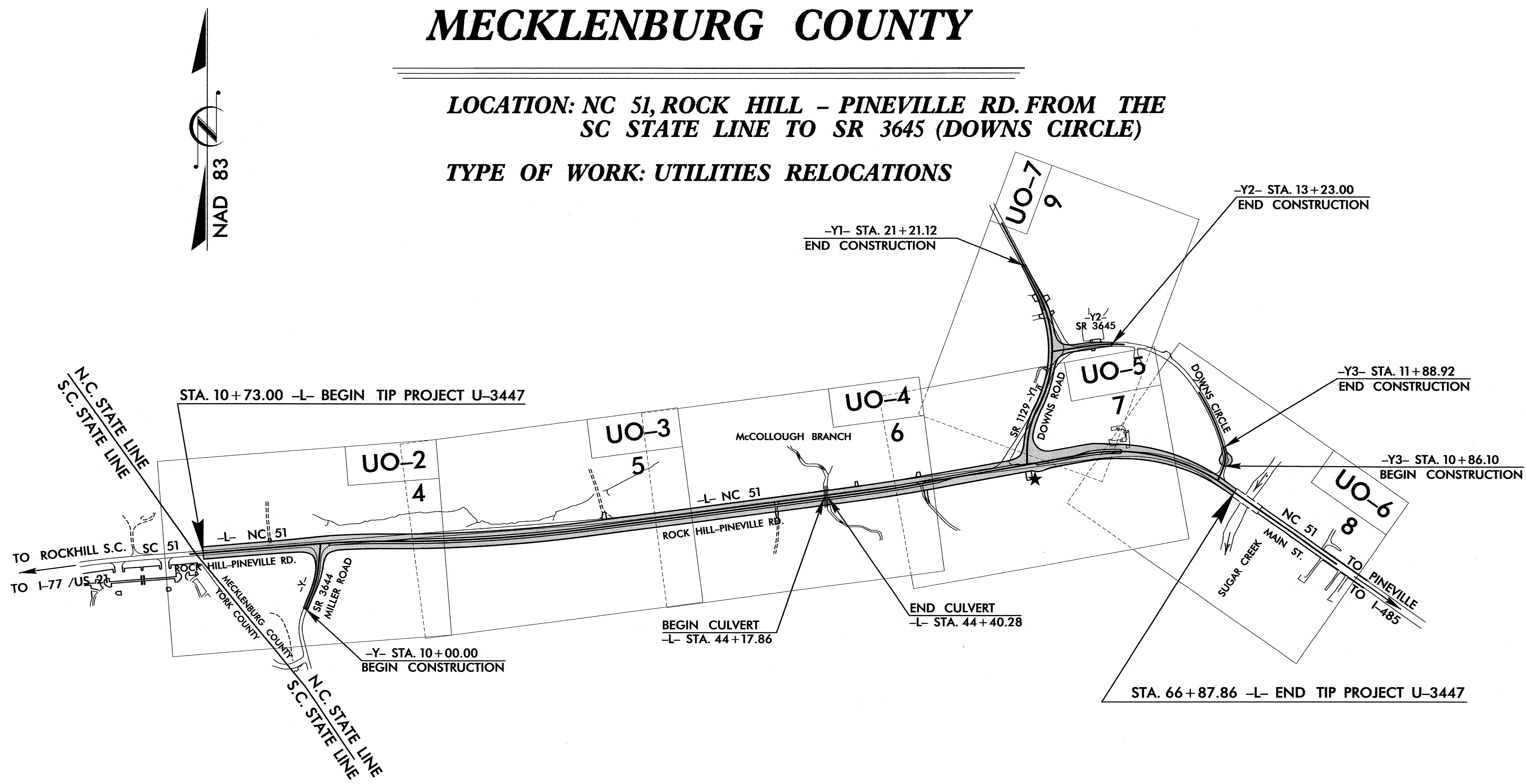
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
U-3447	UO-1

**UTILITIES BY OTHERS PLANS  
MECKLENBURG COUNTY**

LOCATION: NC 51, ROCK HILL - PINEVILLE RD. FROM THE  
SC STATE LINE TO SR 3645 (DOWNS CIRCLE)

TYPE OF WORK: UTILITIES RELOCATIONS



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-7	UTILITY BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- (1) Duke Energy
  - (2) AT&T
  - (3) Pineville Telephone Company
  - (4) Pineville Electric Company
  - (5) Piedmont Natural Gas
  - (6) Windstream Communications, Inc.
  - (7) Time Warner

PREPARED IN THE OFFICE OF:

**WK DICKSON**  
community infrastructure consultants

720 Corporate Center Drive  
Raleigh, North Carolina 27607  
Phone: (919) 782-0495  
Fax: (919) 782-9672  
www.wkdickson.com

OFFICE LOCATIONS:

NORTH CAROLINA  
SOUTH CAROLINA  
GEORGIA  
FLORIDA

PREPARED FOR:

**DIVISION OF HIGHWAYS  
DESIGN SERVICES  
UTILITY SECTION**

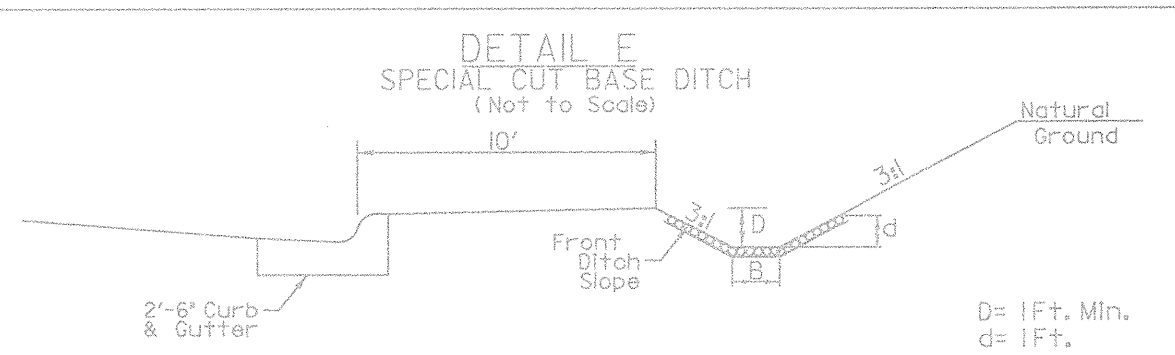
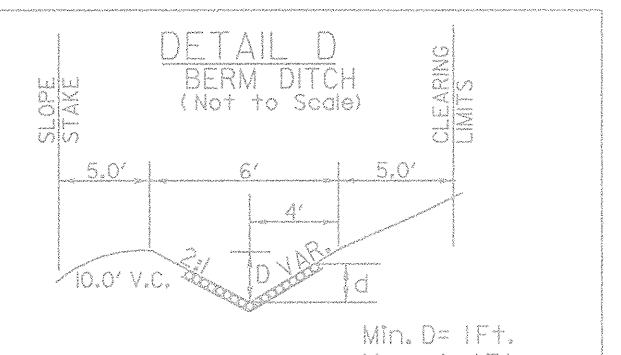
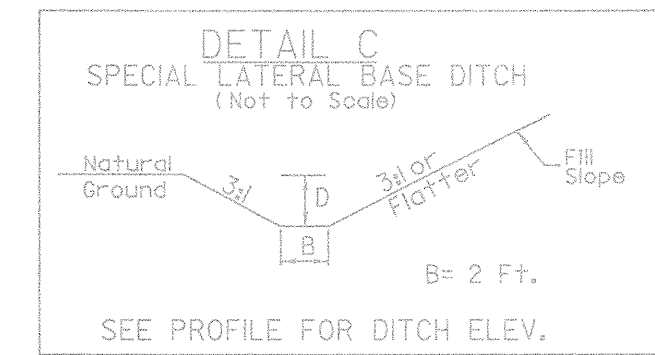
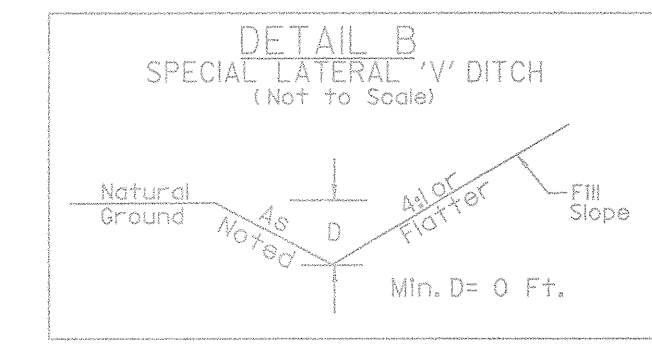
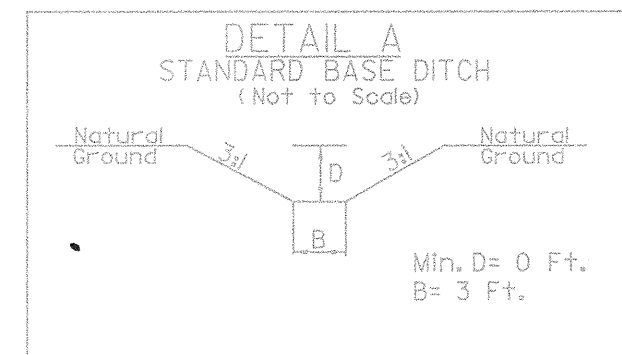
1591 MAIL SERVICES CENTER  
RALEIGH, NC 27699-1591  
PHONE (919) 250-4128  
FAX (919) 250-4119

**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**Steve McKee, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**Alonza Yancey** UTILITIES PROJECT DESIGNER

11/4/2008  
RAV3447\_ubo\_fsh.dgn  
K&A Associates, P.C.



UTILITIES BY OTHERS



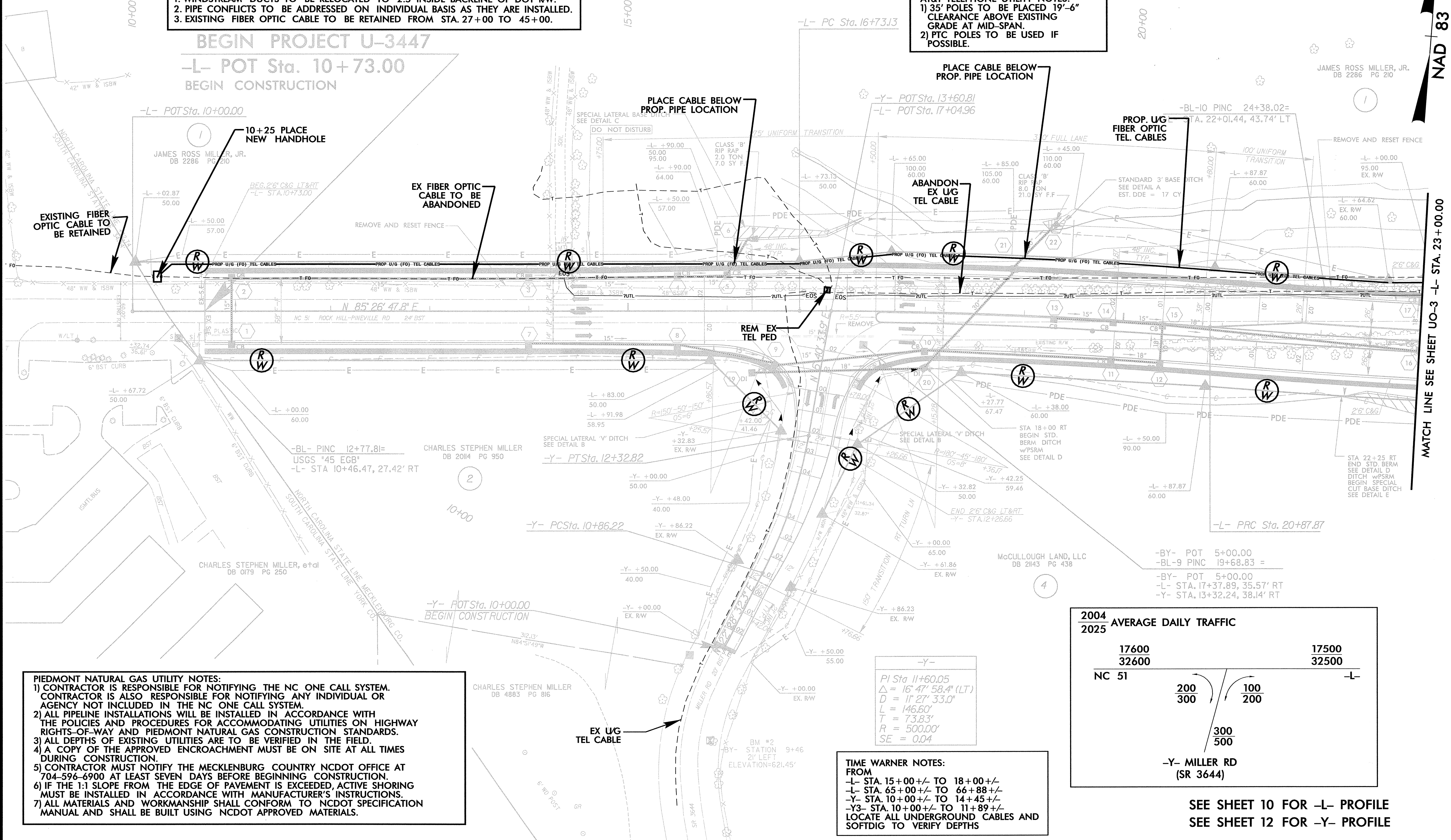
-L-  
 PI Sta 18+80.62  
 $\Delta = 4' 45'' 09.5'' (RT)$   
 $D = 1' 08'' 45.3''$   
 $L = 414.75'$   
 $T = 207.49'$   
 $R = 5,000.00'$   
 $SE = 0.02$

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

WINDSTREAM FIBER OPTIC CABLE NOTES:  
 1. WINDSTREAM DUCTS TO BE RELOCATED TO 2.5' INSIDE BACKLINE OF DOT RW.  
 2. PIPE CONFLICTS TO BE ADDRESSED ON INDIVIDUAL BASIS AS THEY ARE INSTALLED.  
 3. EXISTING FIBER OPTIC CABLE TO BE RETAINED FROM STA. 27+00 TO 45+00.

AT&T TELEPHONE UTILITY NOTES:  
 1) 35' POLES TO BE PLACED 19'-6" CLEARANCE ABOVE EXISTING GRADE AT MID-SPAN.  
 2) PTC POLES TO BE USED IF POSSIBLE.

BEGIN PROJECT U-3447  
 -L- POT Sta. 10+73.00  
 BEGIN CONSTRUCTION



PIEDMONT NATURAL GAS UTILITY NOTES:  
 1) CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE NC ONE CALL SYSTEM. CONTRACTOR IS ALSO RESPONSIBLE FOR NOTIFYING ANY INDIVIDUAL OR AGENCY NOT INCLUDED IN THE NC ONE CALL SYSTEM.  
 2) ALL PIPELINE INSTALLATIONS WILL BE INSTALLED IN ACCORDANCE WITH THE POLICIES AND PROCEDURES FOR ACCOMMODATING UTILITIES ON HIGHWAY RIGHTS-OF-WAY AND PIEDMONT NATURAL GAS CONSTRUCTION STANDARDS.  
 3) ALL DEPTHS OF EXISTING UTILITIES ARE TO BE VERIFIED IN THE FIELD.  
 4) A COPY OF THE APPROVED ENCROACHMENT MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION.  
 5) CONTRACTOR MUST NOTIFY THE MECKLENBURG COUNTRY NCDOT OFFICE AT 704-596-6900 AT LEAST SEVEN DAYS BEFORE BEGINNING CONSTRUCTION.  
 6) IF THE 1:1 SLOPE FROM THE EDGE OF PAVEMENT IS EXCEEDED, ACTIVE SHORING MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.  
 7) ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO NCDOT SPECIFICATION MANUAL AND SHALL BE BUILT USING NCDOT APPROVED MATERIALS.

TIME WARNER NOTES:  
 FROM  
 -L- STA. 15+00+/- TO 18+00+/-  
 -L- STA. 65+00+/- TO 66+88+/-  
 -Y- STA. 10+00+/- TO 14+45+/-  
 -Y3- STA. 10+00+/- TO 11+89+/-  
 LOCATE ALL UNDERGROUND CABLES AND SOFTDIG TO VERIFY DEPTHS

2004 AVERAGE DAILY TRAFFIC

2004	2025		
17600	17500		
32600	32500		
NC 51		200	100
		300	200
		300	500
			-L-
		-Y- MILLER RD (SR 3644)	

SEE SHEET 10 FOR -L- PROFILE  
 SEE SHEET 12 FOR -Y- PROFILE

8/17/08

11/17/2008  
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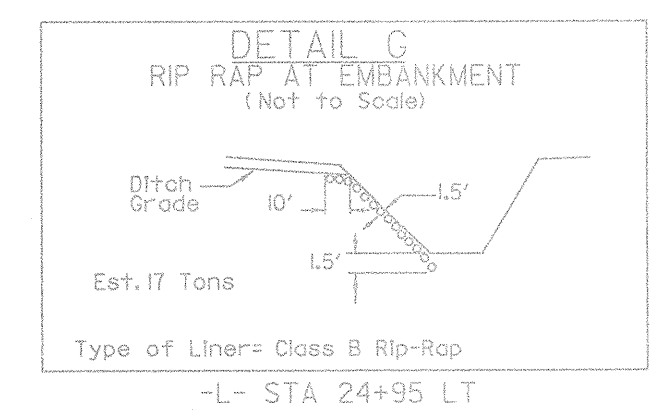
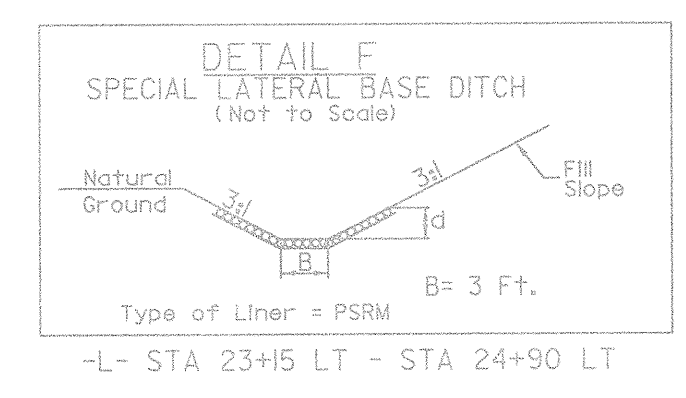
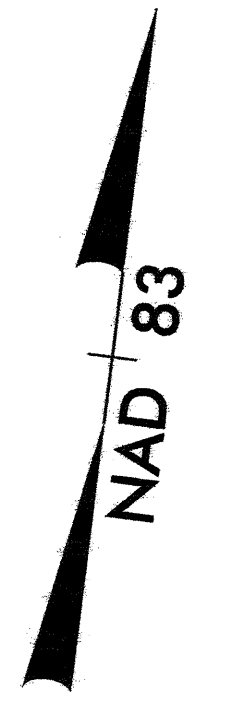
NAD 83

MATCH LINE SEE SHEET UO-3 -L- STA. 23+00.00

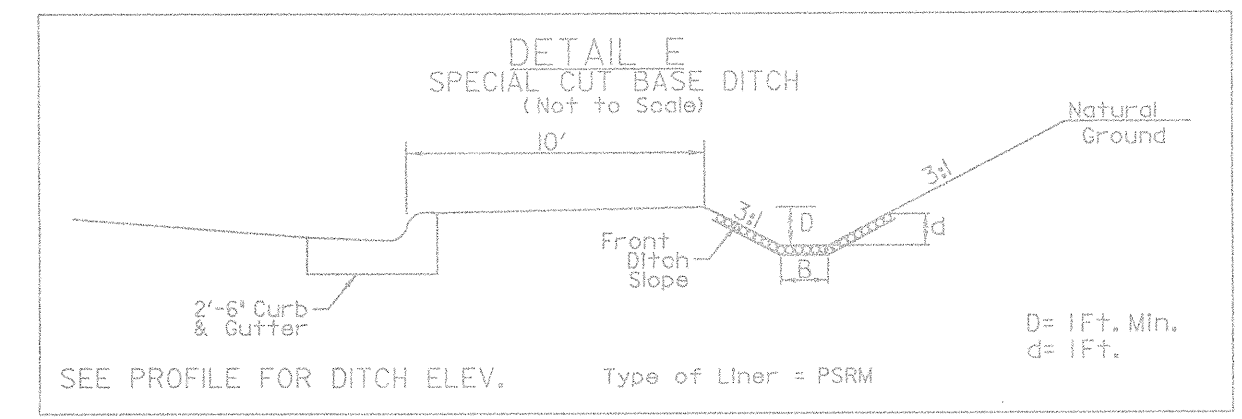
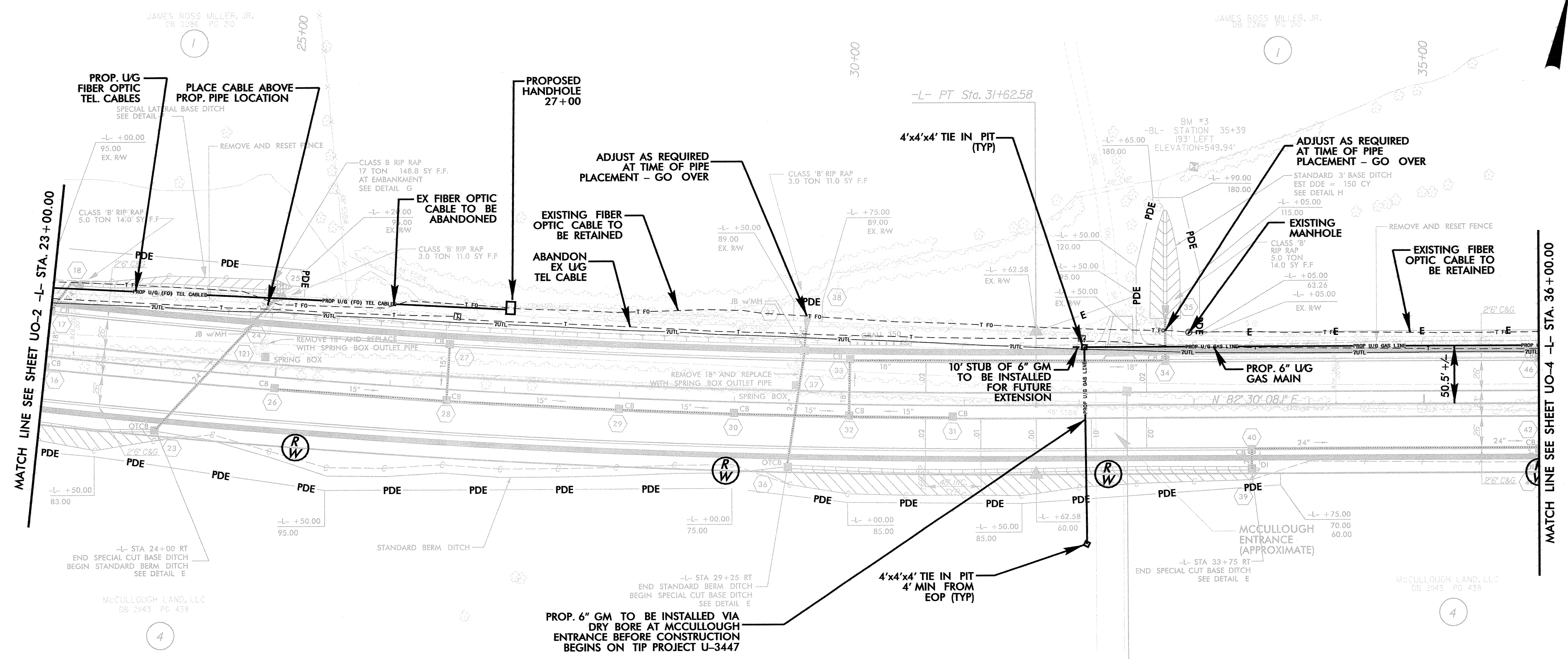
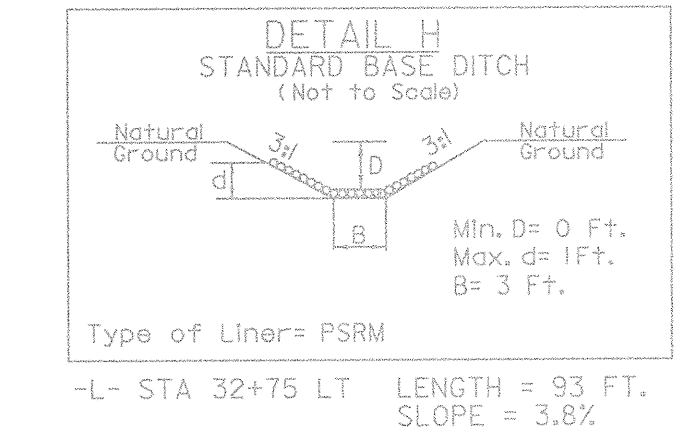


**UTILITIES BY OTHERS**

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



-L-  
PI Sta 26+26.04  
 $\Delta = 7' 41.49.3" (LT)$   
 $D = 0' 42' 58.3"$   
 $L = 1,074.7'$   
 $T = 538.16'$   
 $R = 8,000.00'$   
 $SE = 0.02$



STATION LIMITS	FRONT SLOPE	BASE WIDTH	BACKSLOPE
-L- STA 22+25 RT - STA 24+00 RT	3:1	2 FT.	3:1
-L- STA 29+25 RT - STA 33+75 RT	4:1	3 FT.	4:1

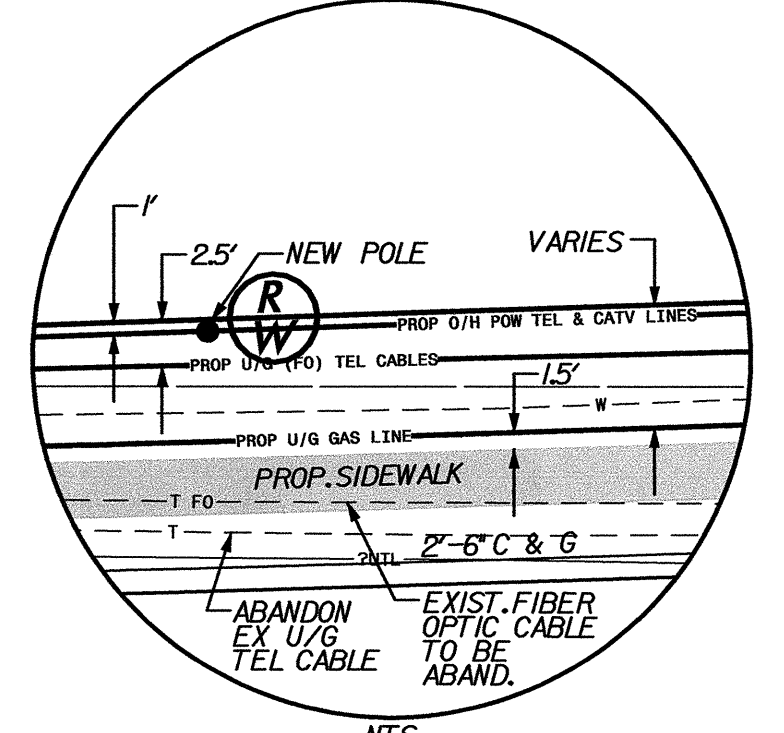
SEE SHEET 10 FOR -L- PROFILE

11/5/2009 10:34:49 rdu:uo\_3.dgn

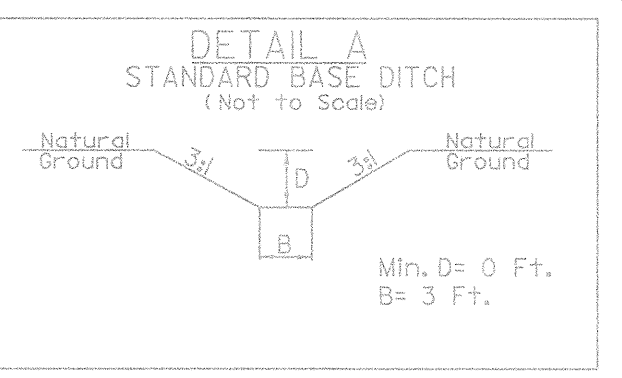
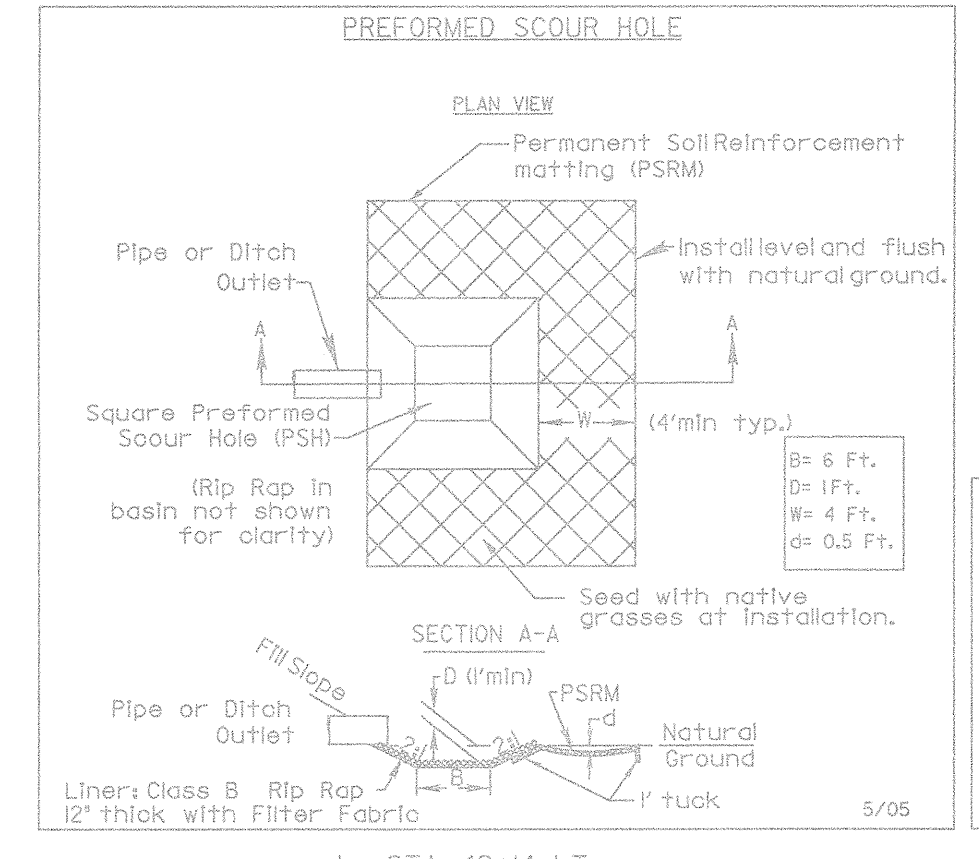


**UTILITIES BY OTHERS**

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



TYPICAL SHOWING DIMENSIONS TO PROPOSED UTILITIES FROM PROPOSED RIGHT OF WAY



NOTE:  
2'-3" OF UNDERCUT FROM  
STA. 37+50 +/- TO STA. 42+00 +/-

JAMES ROSS MILLER, JR.  
DB 2286 PG 210

TIE PROP. O/H POWER,  
TEL & CATV LINES TO  
EXIST. POWER POLE  
(PINEVILLE,  
TIME WARNER)

ADJUST EX CABLE  
ACCORDING TO PROP.  
36" DRAINAGE PIPE ELEV.

EXISTING FIBER  
OPTIC CABLE TO  
BE RETAINED

HDD BORE EXIT  
AT 4'X4'X4' TIE  
IN PIT (TYP)

EXISTING FIBER  
OPTIC CABLE TO  
BE RETAINED

ABANDON  
EX U/G  
TEL CABLE

REMOVE AND RESET FENCE  
REM EX  
TEL PED

PROPOSED  
HANDHOLE  
45+00

PROP. U/G  
FIBER OPTIC  
TEL CABLES

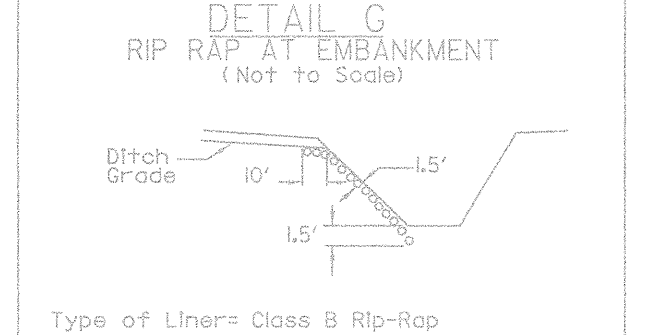
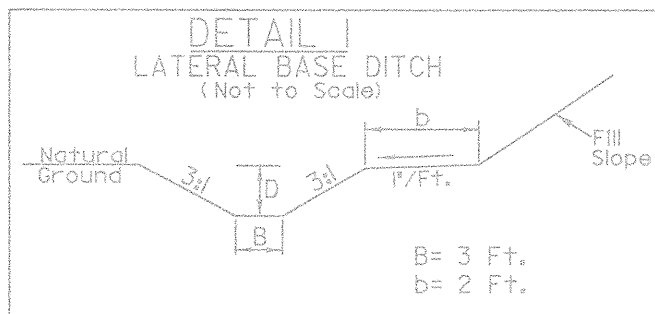
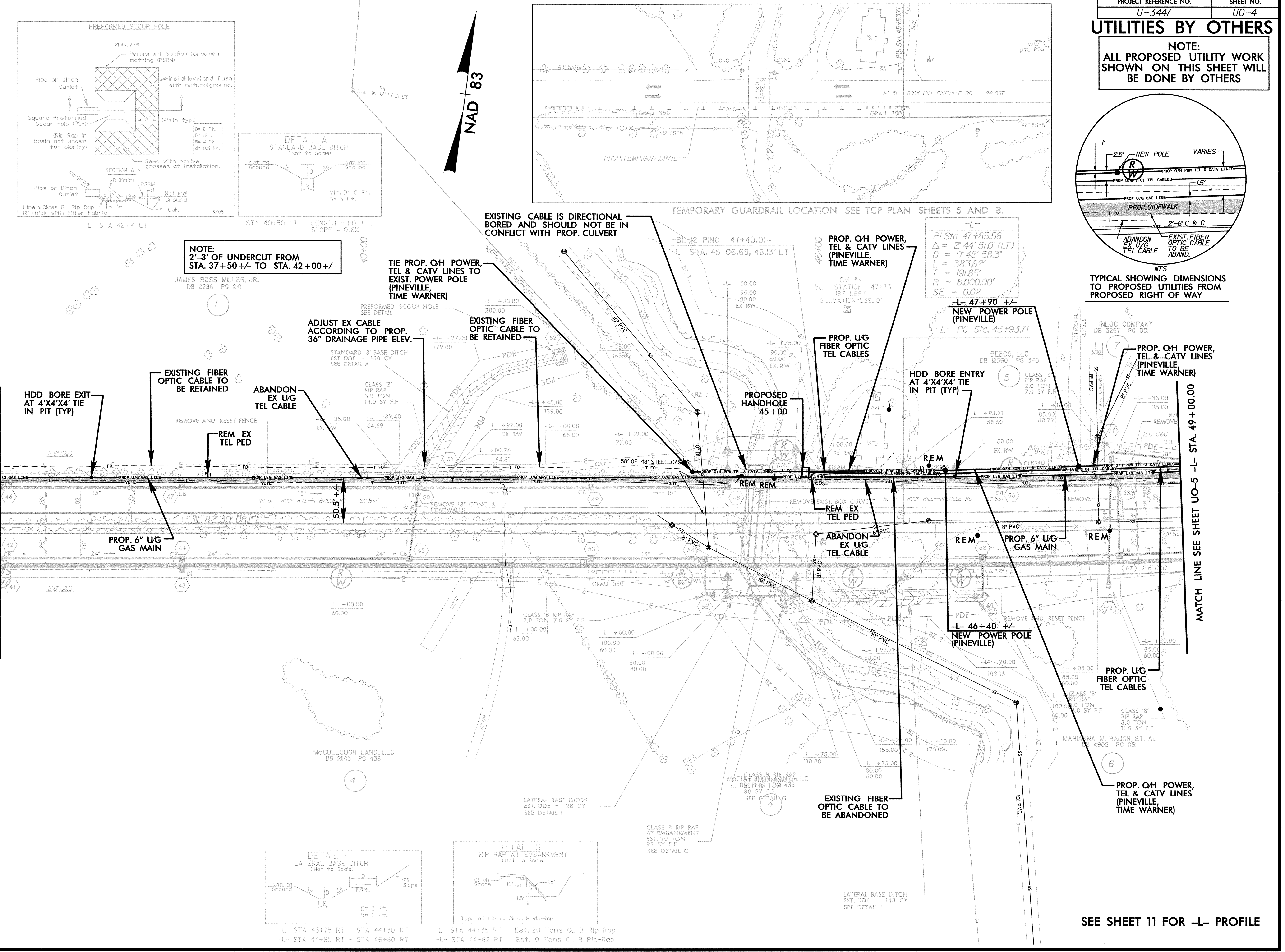
HDD BORE ENTRY  
AT 4'X4'X4' TIE  
IN PIT (TYP)

NEW POWER POLE  
(PINEVILLE)

PROP. O/H POWER,  
TEL & CATV LINES  
(PINEVILLE,  
TIME WARNER)

MATCH LINE SEE SHEET UO-5 -L- STA. 49+00.00

MATCH LINE SEE SHEET UO-3 -L- STA. 36+00.00



-L- STA 43+75 RT - STA 44+30 RT  
-L- STA 44+65 RT - STA 46+80 RT

-L- STA 44+35 RT Est. 20 Tons CL B Rip-Rap  
-L- STA 44+62 RT Est. 10 Tons CL B Rip-Rap

PI Sta 47+85.56  
Δ = 2' 44" 51.0' (LT)  
D = 0' 42" 58.3"  
L = 383.62'  
T = 191.85'  
R = 8,000.00'  
SE = 0.02

BM #4  
STATION: 47+73  
187' LEFT  
ELEVATION=539.10'

EXISTING FIBER  
OPTIC CABLE TO  
BE ABANDONED

NEW POWER POLE  
(PINEVILLE)

PROP. O/H POWER,  
TEL & CATV LINES  
(PINEVILLE,  
TIME WARNER)

SEE SHEET 11 FOR -L- PROFILE

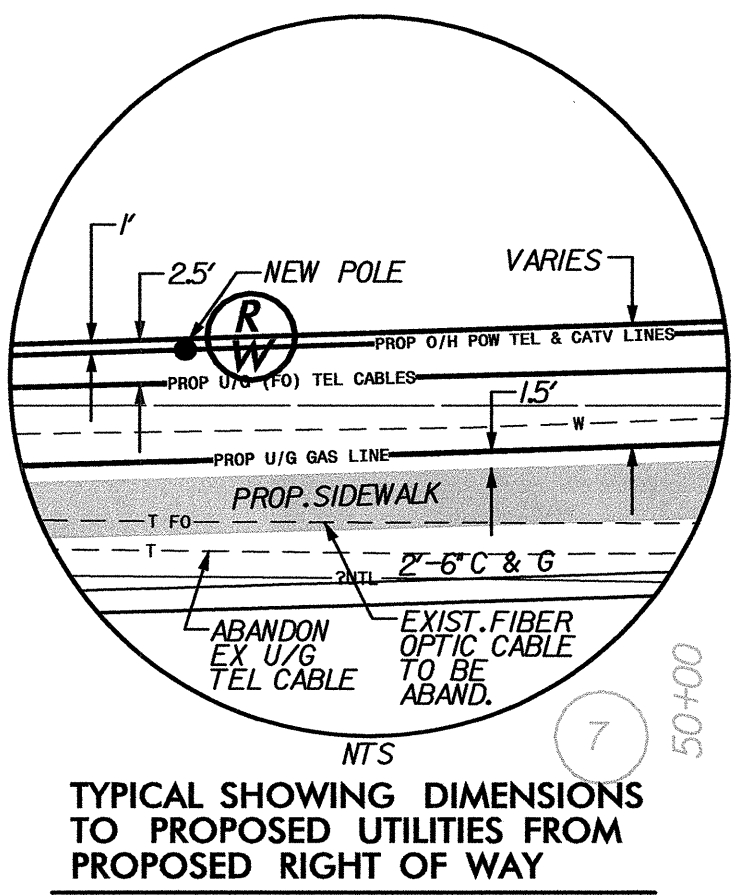
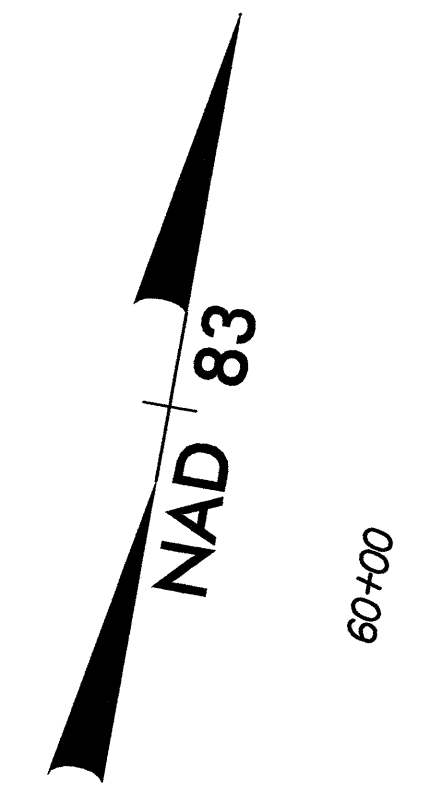
REVISIONS  
ROW REVISION: TRM 8/14/07 - REVISED PROPERTY OWNER NAME ON PARCEL NO. 6.

11/17/2008  
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R.C. & Associates, P.C.

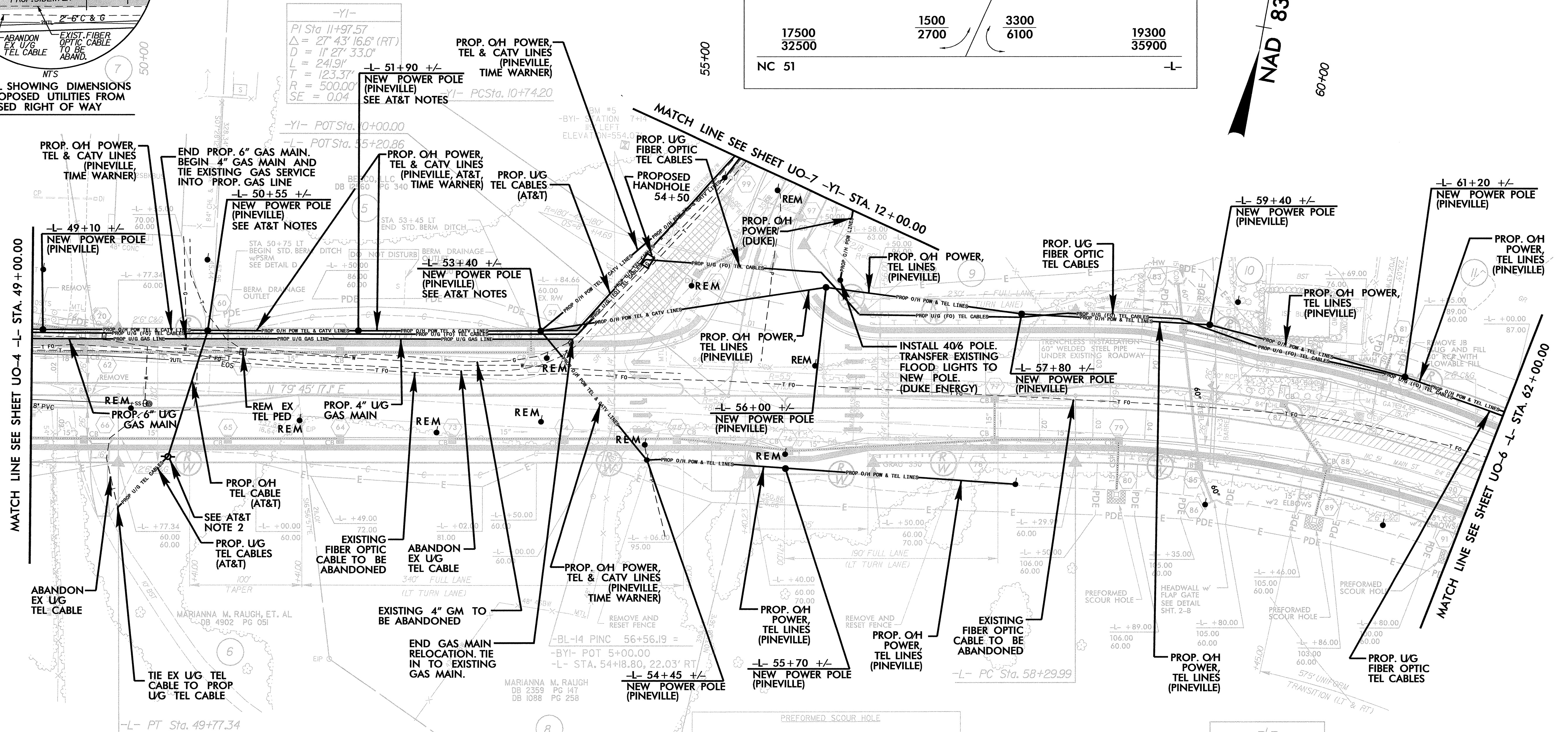


NOTE:  
 ALL PROPOSED UTILITY WORK  
 SHOWN ON THIS SHEET WILL  
 BE DONE BY OTHERS

2004 AVERAGE DAILY TRAFFIC		-YI- DOWNS CIRCLE (SR 3645)		
17500	1500	4800	3300	19300
32500	2700	8800	6100	35900
NC 51				-L-

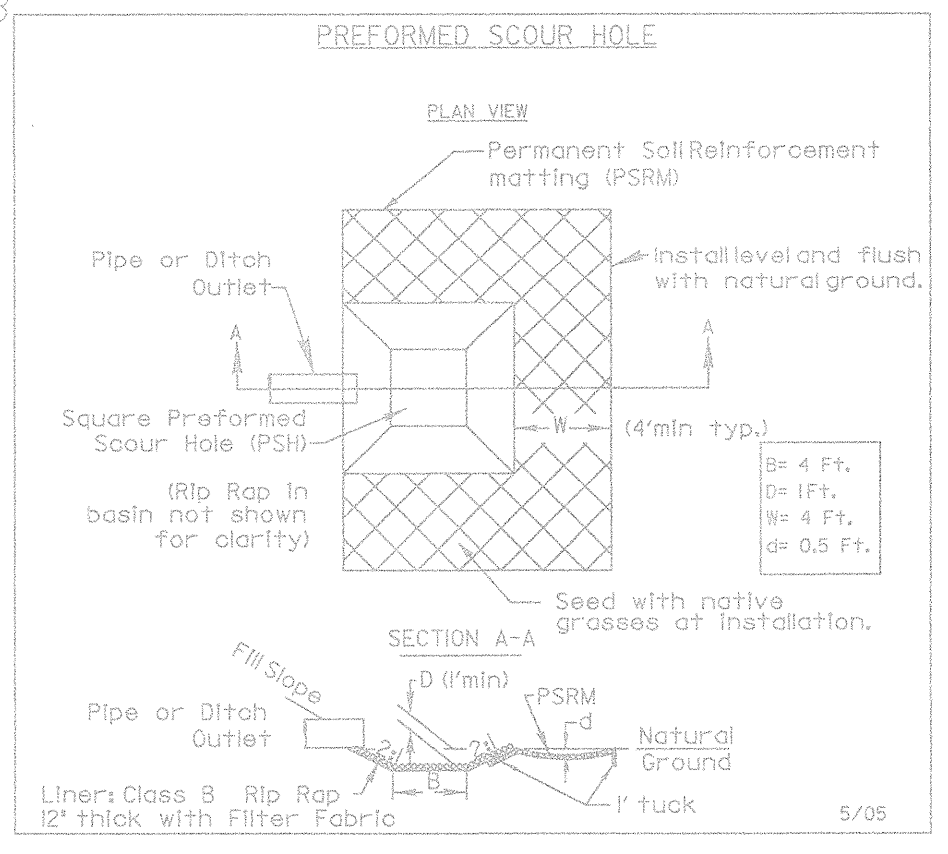
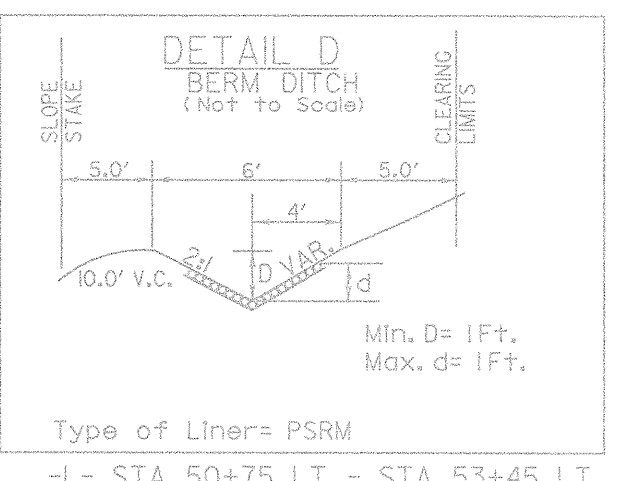


TYPICAL SHOWING DIMENSIONS TO PROPOSED UTILITIES FROM PROPOSED RIGHT OF WAY



-YI-  
 PI Sta 11+97.57  
 $\Delta = 27^\circ 43' 16.6''$  (RT)  
 $D = 14^\circ 27' 33.0''$   
 $L = 241.9'$   
 $T = 123.37'$   
 $R = 500.00'$   
 $SE = 0.04$

-L-  
 PI Sta 62+46.50  
 $\Delta = 45^\circ 13' 25.7''$  (RT)  
 $D = 5^\circ 43' 46.5''$   
 $L = 789.30'$   
 $R = 1,000.00'$   
 $SE = 0.04$



REVISIONS  
 ROW REVISION: TRM 8/14/07 - REVISED PROPERTY OWNER NAME ON PARCEL NO.6.

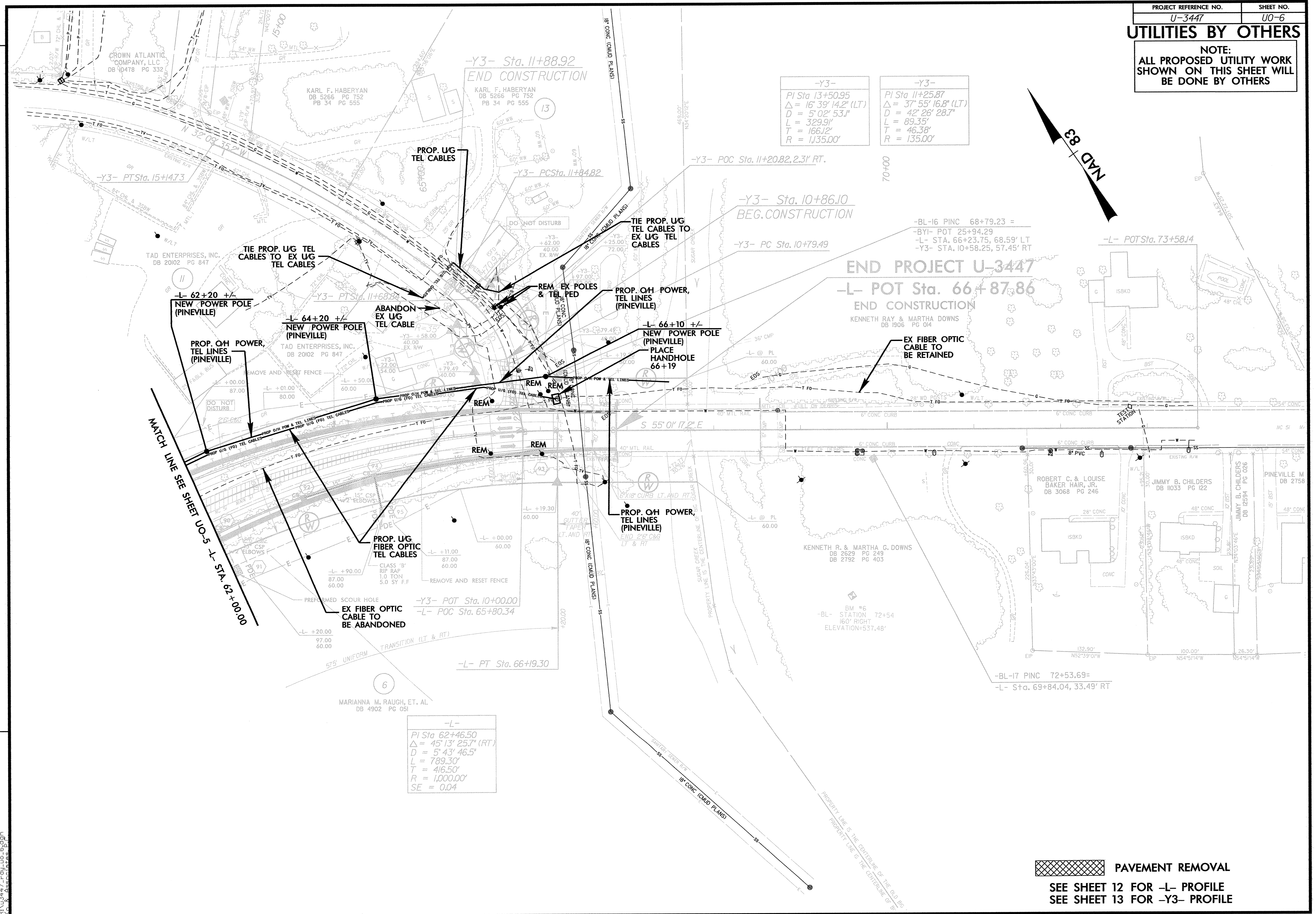
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11/17/2008  
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 C:\Users\...



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

REVISIONS  
 ROW REVISION TRM 8/14/07 - REVISED PROPERTY OWNER NAME ON PARCEL NO. 6.



-Y3-	-Y3-
PI Sta 13+50.95	PI Sta 11+25.87
$\Delta = 16^\circ 39' 14.2''$ (LT)	$\Delta = 37^\circ 55' 16.8''$ (LT)
D = 5'02' 53.1"	D = 42' 26' 28.7"
L = 329.91'	L = 89.35'
T = 166.12'	T = 46.38'
R = 1,135.00'	R = 135.00'

-L-
PI Sta 62+46.50
$\Delta = 45^\circ 13' 25.7''$ (RT)
D = 5' 43' 46.5"
L = 789.30'
T = 416.50'
R = 1,000.00'
SE = 0.04

PAVEMENT REMOVAL

SEE SHEET 12 FOR -L- PROFILE  
 SEE SHEET 13 FOR -Y3- PROFILE

11/5/2009  
 R:\3447\rd\uo\_6.dgn  
 R. & Associates, P.C.



