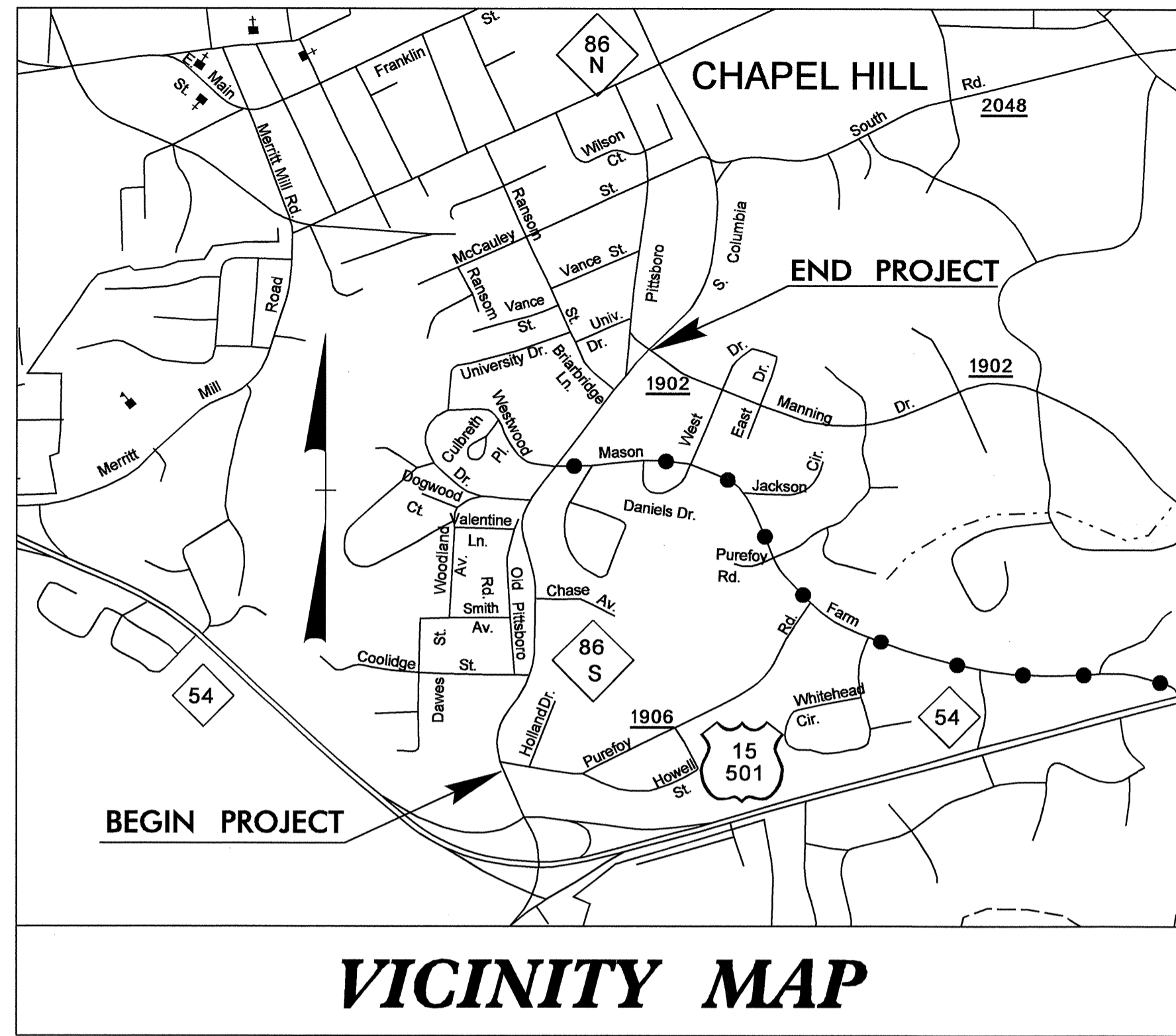


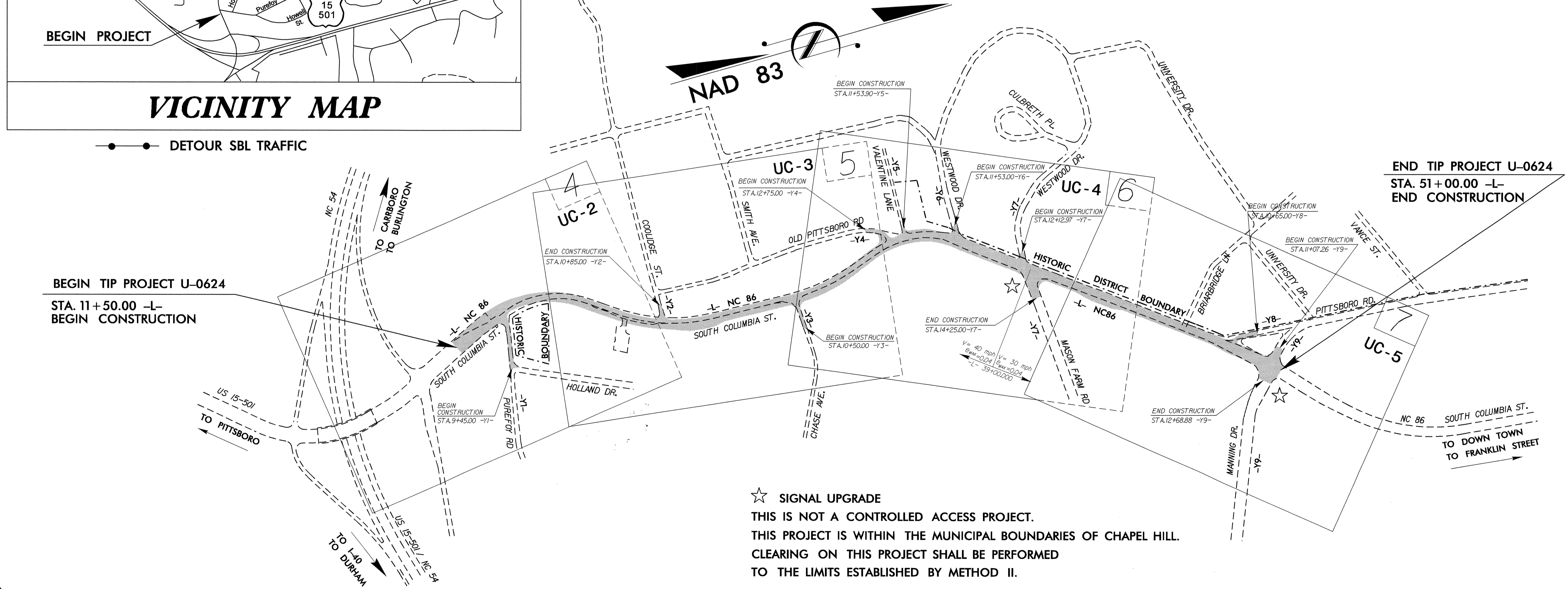
**TIP PROJECT: U-0624**



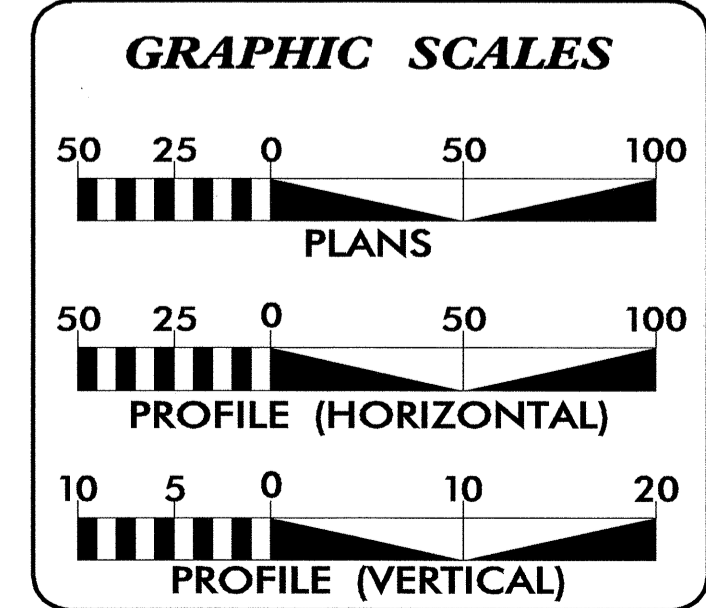
# UTILITY CONSTRUCTION PLANS ORANGE COUNTY

**LOCATION: NC 86 (SOUTH COLUMBIA STREET)  
FROM SR 1906 (PUREFOY ROAD) TO SR 1902  
(MANNING DRIVE) IN CHAPEL HILL**

**TYPE OF WORK: UTILITY RELOCATION**



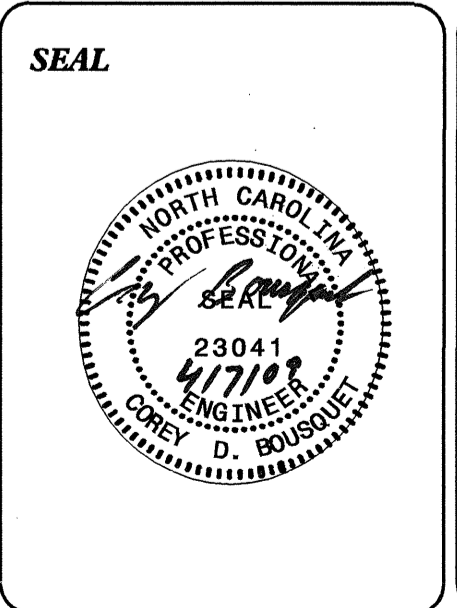
☆ SIGNAL UPGRADE  
THIS IS NOT A CONTROLLED ACCESS PROJECT.  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF CHAPEL HILL.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.



SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-5	UTILITY CONSTRUCTION PLAN SHEETS
UC-6	UTILITY CONSTRUCTION DETAIL PLAN SHEET

**WATER AND SEWER OWNERS ON PROJECT**

(1) WATER OWASA  
(2) SANITARY SEWER OWASA



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

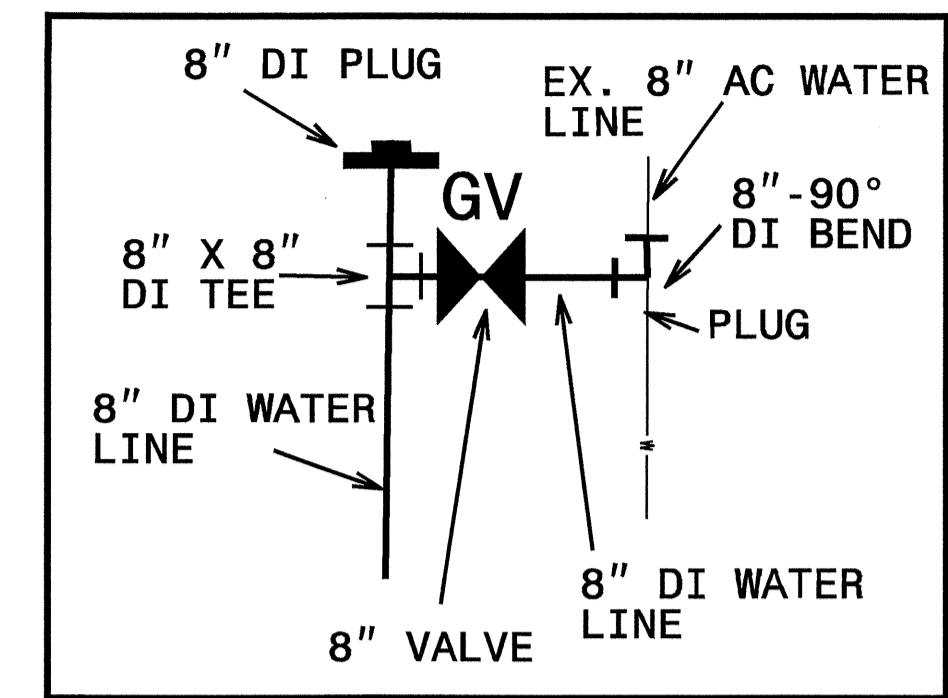
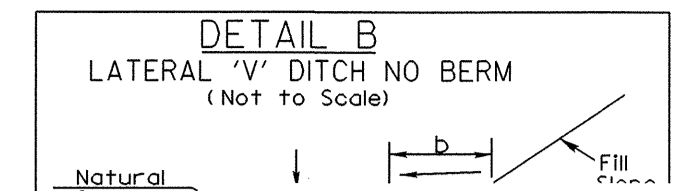
**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**Corey Bousquet, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**Stephanie Athey** UTILITIES PROJECT DESIGNER

07-APR-2009 15:51  
F:\Utilities\rdy\ut\proj\U-0624\_rdy\_ut\_uc\_tsh.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$



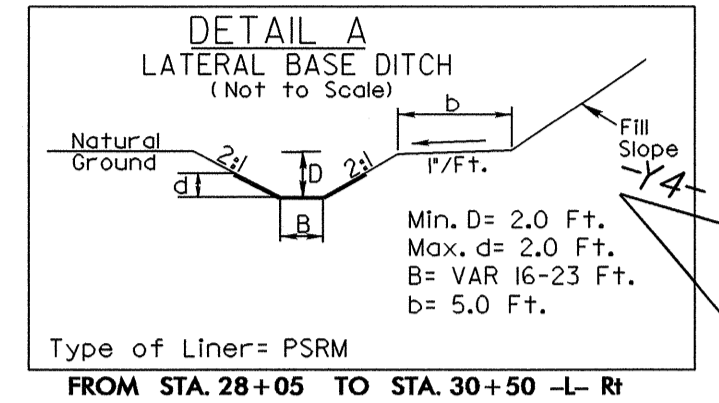
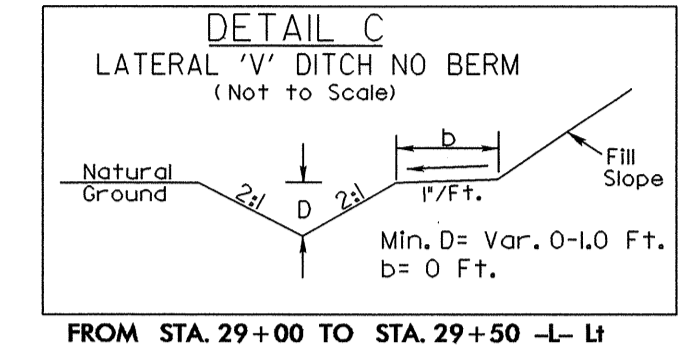
NAD 83/95

LEGEND: TRENCHLESS INSTALL



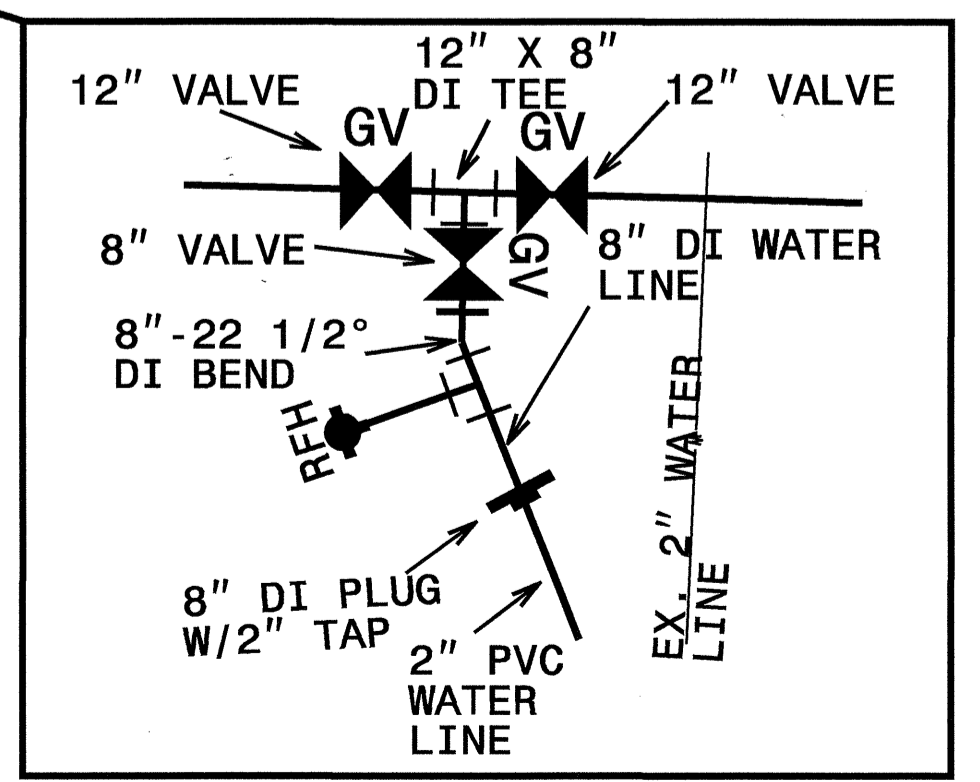
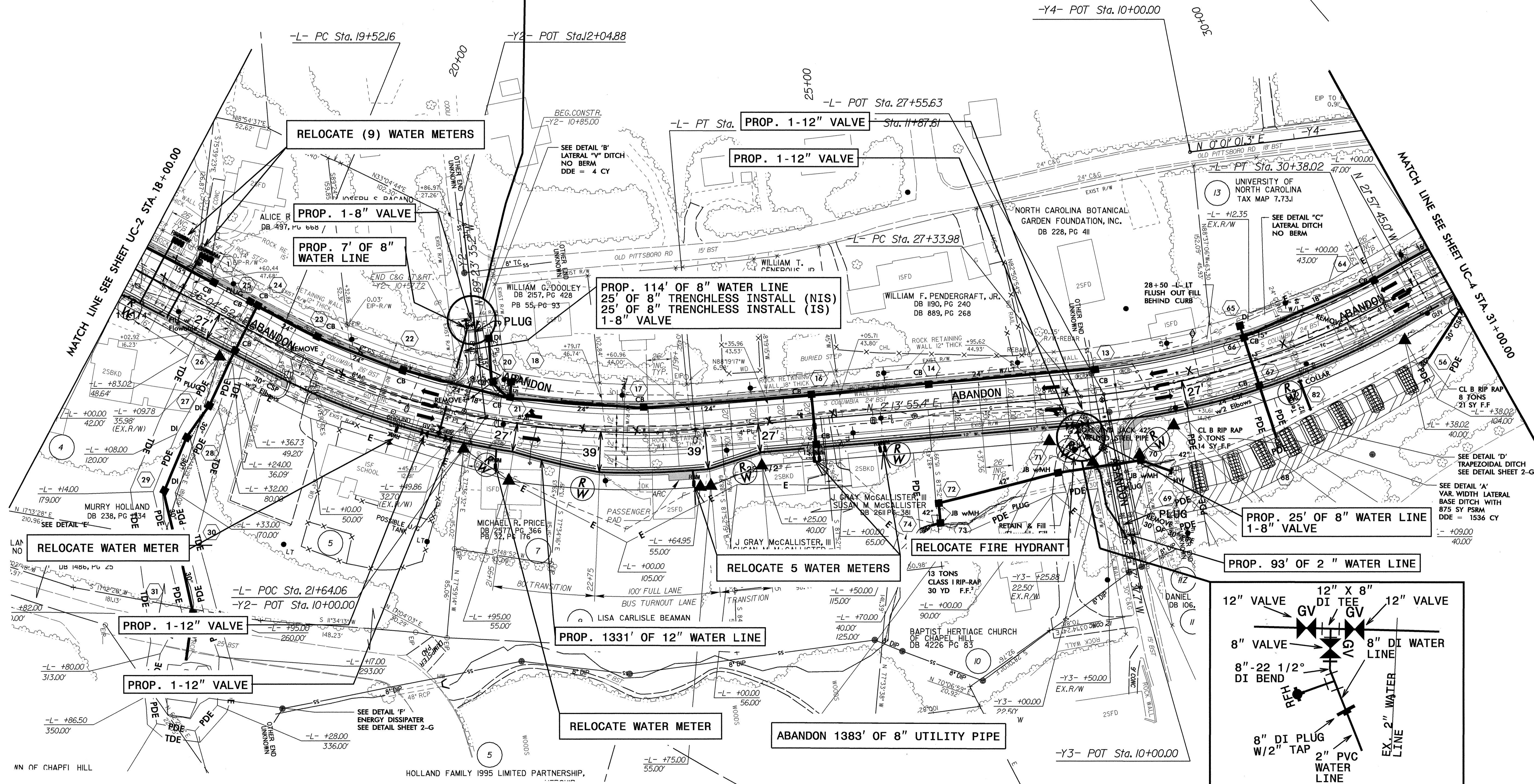
SE = .04  
V = 40 mph

SE = .04  
V = 40 mph



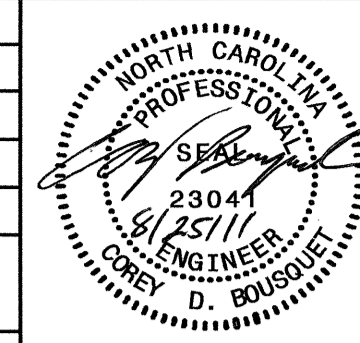
UTILITY CONSTRUCTION

5/14/09  
07-APP-2009 15:48  
r:\u0624-r.dwg  
uc3.dgn

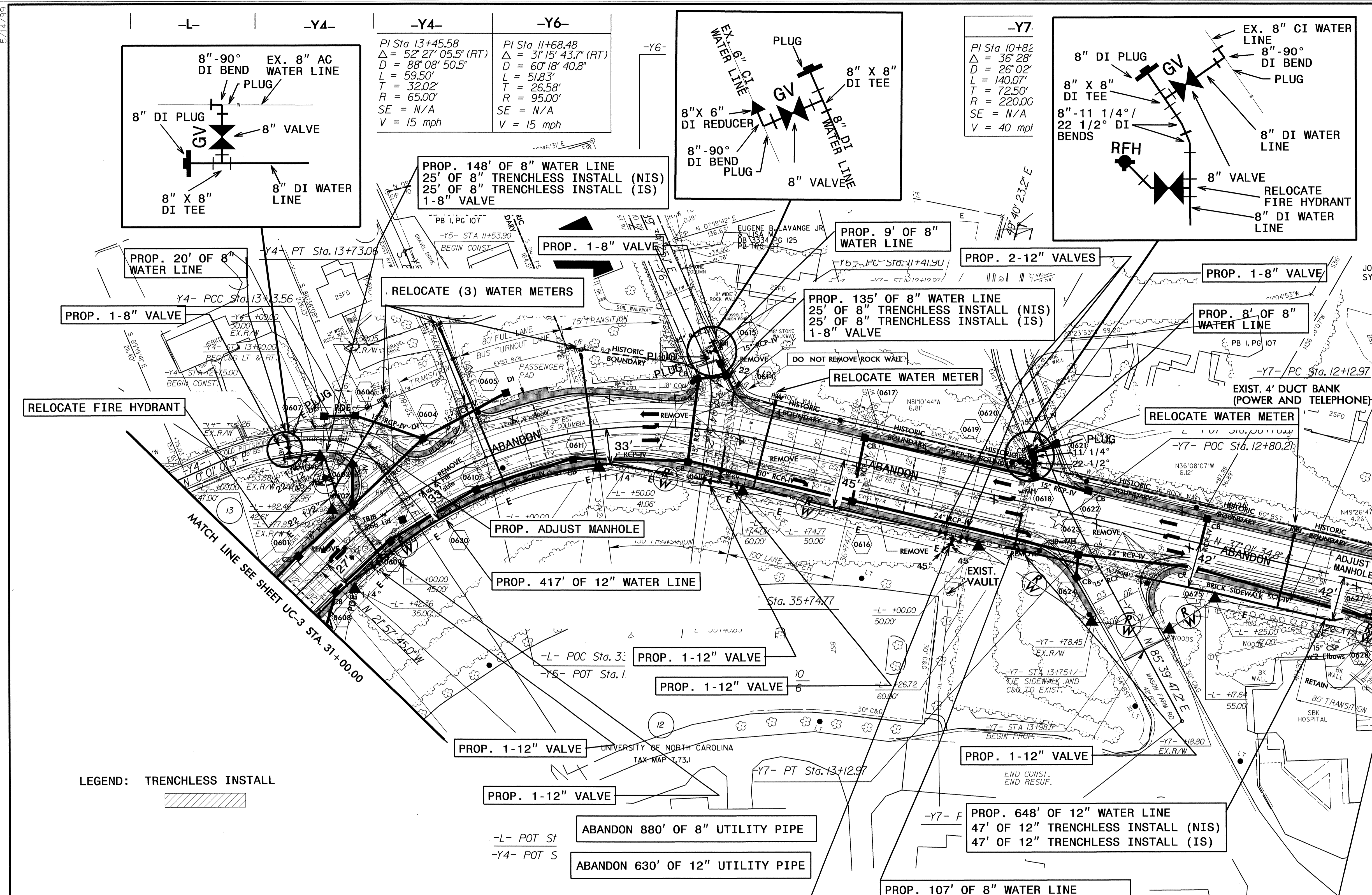


MN OF CHAPPI HILL  
HOLLAND FAMILY 1995 LIMITED PARTNERSHIP,

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-0624	UC-4
DESIGNED BY: SBA	
DRAWN BY: SBA	
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



PROP. 20' OF 8" WATER LINE

PROP. 1-8" VALVE

RELOCATE FIRE HYDRANT

MATCH LINE SEE SHEET UC-3 STA. 31+00.00

PROP. 148' OF 8" WATER LINE  
25' OF 8" TRENCHLESS INSTALL (NIS)  
25' OF 8" TRENCHLESS INSTALL (IS)  
1-8" VALVE

RELOCATE (3) WATER METERS

PROP. 1-8" VALVE

PROP. 135' OF 8" WATER LINE  
25' OF 8" TRENCHLESS INSTALL (NIS)  
25' OF 8" TRENCHLESS INSTALL (IS)  
1-8" VALVE

RELOCATE WATER METER

RELOCATE WATER METER

PROP. ADJUST MANHOLE

PROP. 417' OF 12" WATER LINE

PROP. 1-12" VALVE

PROP. 1-12" VALVE

PROP. 1-12" VALVE

PROP. 1-12" VALVE

ABANDON 880' OF 8" UTILITY PIPE

ABANDON 630' OF 12" UTILITY PIPE

PROP. 648' OF 12" WATER LINE  
47' OF 12" TRENCHLESS INSTALL (NIS)  
47' OF 12" TRENCHLESS INSTALL (IS)

PROP. 107' OF 8" WATER LINE  
25' OF 8" TRENCHLESS INSTALL (NIS)  
25' OF 8" TRENCHLESS INSTALL (IS)  
1-8" VALVE  
RELOCATE FIRE HYDRANT

PROP. 18' OF 12" WATER LINE  
1-12" VALVE

LEGEND: TRENCHLESS INSTALL

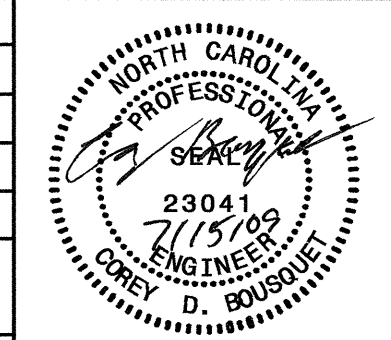
2005 AADT	OLD PITTSBORO RD.	VALENTINE LN.	WESTWOOD DR.	WESTWOOD DR.	WESTWOOD DR.	WESTWOOD DR.	WESTWOOD DR.	WESTWOOD DR.	WESTWOOD DR.
	600	-100	600	400	400	400	400	400	400
2030 AADT	700	NA	700	500	500	500	500	500	500
	200	-100	400	200	100	100	100	100	100
	300	NA	400	300	100	100	100	100	100
S. COLUMBIA ST.									
NC 86	19,000	19,200	19,200	19,000	6000	3000	16,000	NC 86	
	30,900	31,000	31,000	30,900	9300	4700	26,300		
					9200				
					14300				
					MASON FARM RD.				

☆ SIGNAL UPGRADE

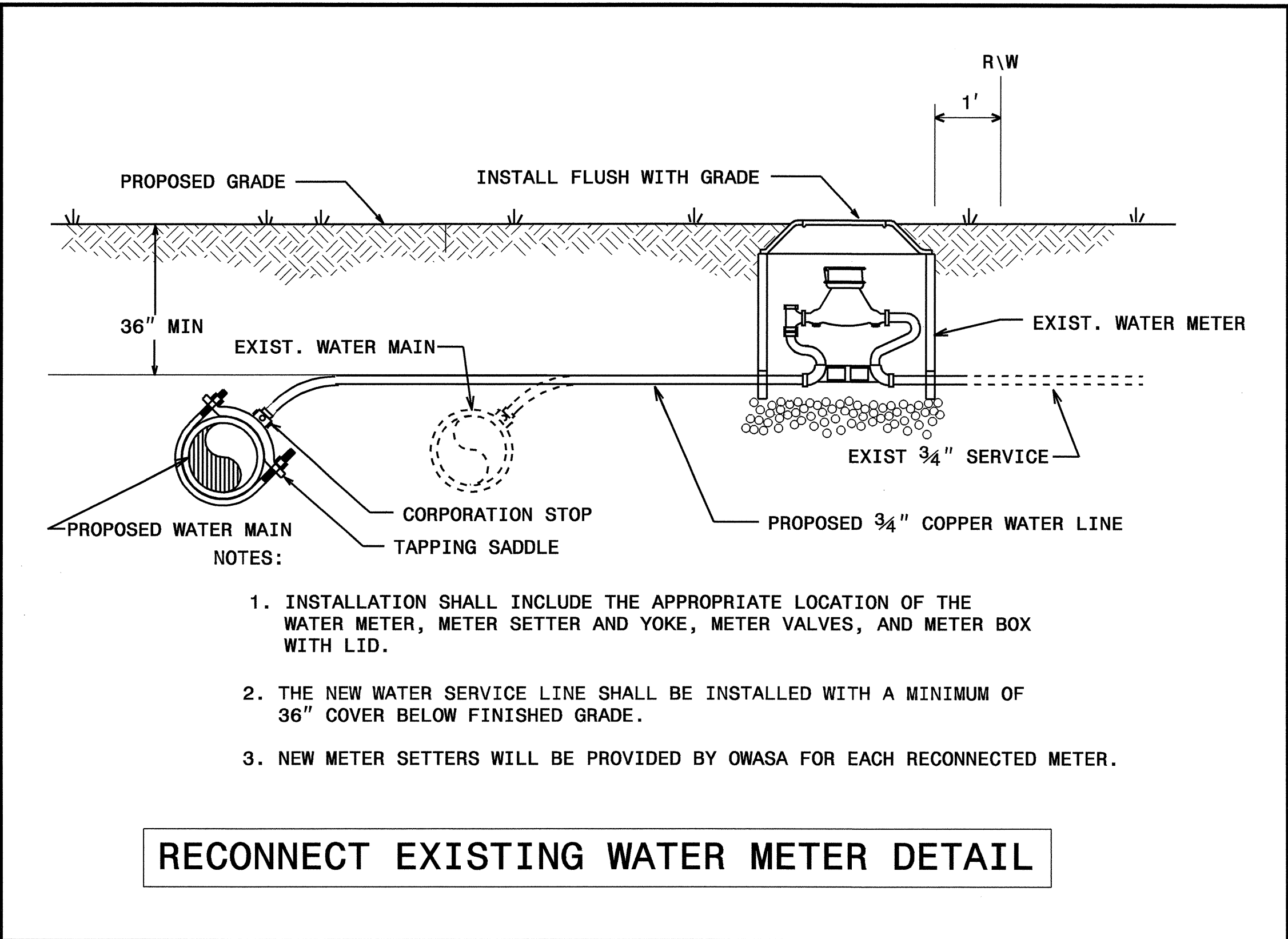
FOR -L- PROFILE, SEE SHEET 8  
FOR -Y4- PROFILE, SEE SHEET 10  
FOR -Y5- PROFILE, SEE SHEET 10  
FOR -Y6- PROFILE, SEE SHEET 10  
FOR -Y7- PROFILE, SEE SHEET 11

R:\Utilities\Projects\U0624\_rdy\_psh06\_uc4.dgn 25-AUG-2011 10:21



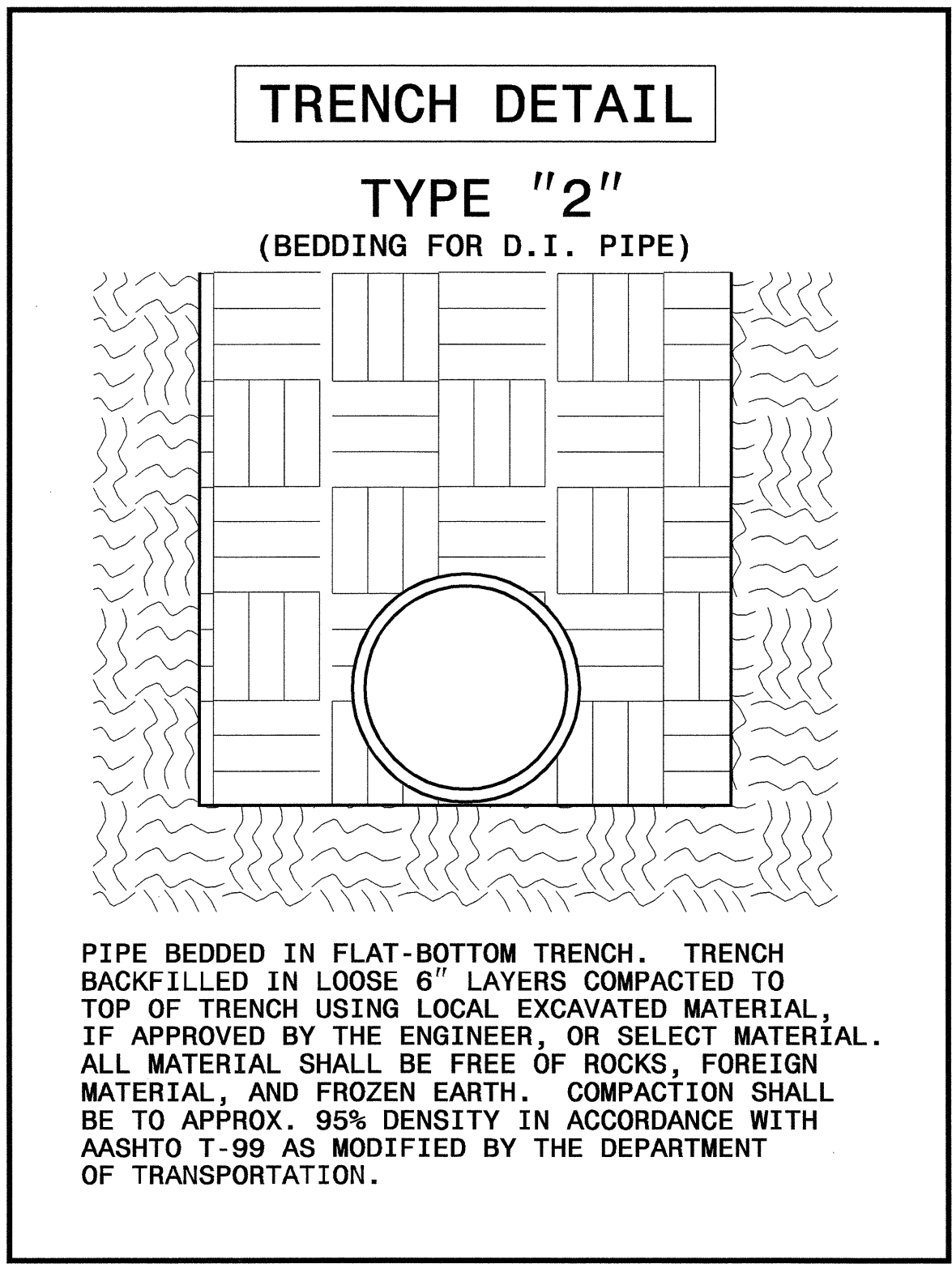


**UTILITY CONSTRUCTION**



- NOTES:
1. INSTALLATION SHALL INCLUDE THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, AND METER BOX WITH LID.
  2. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER BELOW FINISHED GRADE.
  3. NEW METER SETTERS WILL BE PROVIDED BY OWASA FOR EACH RECONNECTED METER.

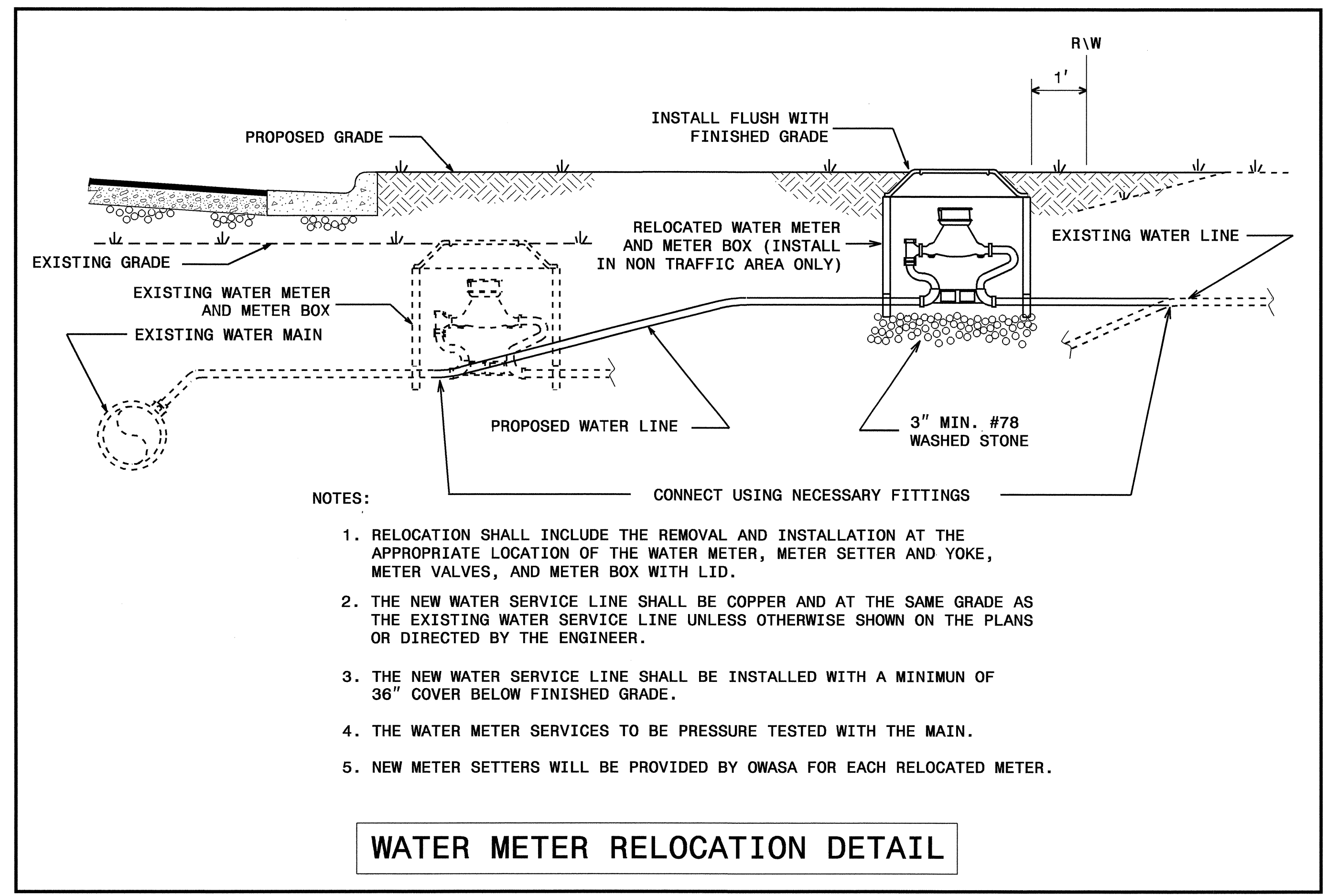
**RECONNECT EXISTING WATER METER DETAIL**



PIPE BEDDED IN FLAT-BOTTOM TRENCH. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

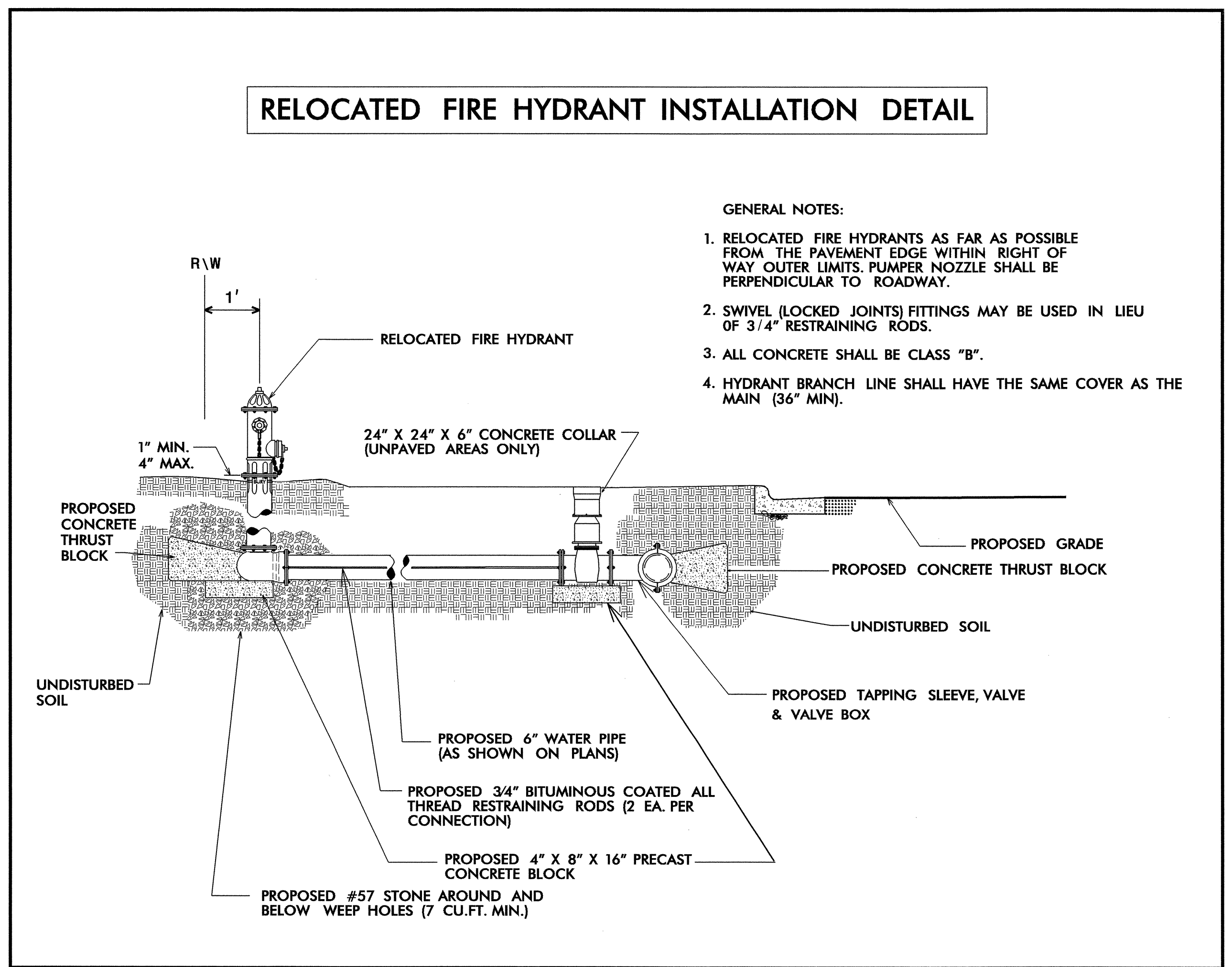
**MAXIMUM TRENCH WIDTHS AT TOP OF PIPE**

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		



- NOTES:
1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVE, AND METER BOX WITH LID.
  2. THE NEW WATER SERVICE LINE SHALL BE COPPER AND AT THE SAME GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
  3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER BELOW FINISHED GRADE.
  4. THE WATER METER SERVICES TO BE PRESSURE TESTED WITH THE MAIN.
  5. NEW METER SETTERS WILL BE PROVIDED BY OWASA FOR EACH RELOCATED METER.

**WATER METER RELOCATION DETAIL**



- GENERAL NOTES:
1. RELOCATED FIRE HYDRANTS AS FAR AS POSSIBLE FROM THE PAVEMENT EDGE WITHIN RIGHT OF WAY OUTER LIMITS. PUMPER NOZZLE SHALL BE PERPENDICULAR TO ROADWAY.
  2. SWIVEL (LOCKED JOINTS) FITTINGS MAY BE USED IN LIEU OF 3/4" RESTRAINING RODS.
  3. ALL CONCRETE SHALL BE CLASS "B".
  4. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (36" MIN.).

**TIP PROJECT: U-0624**

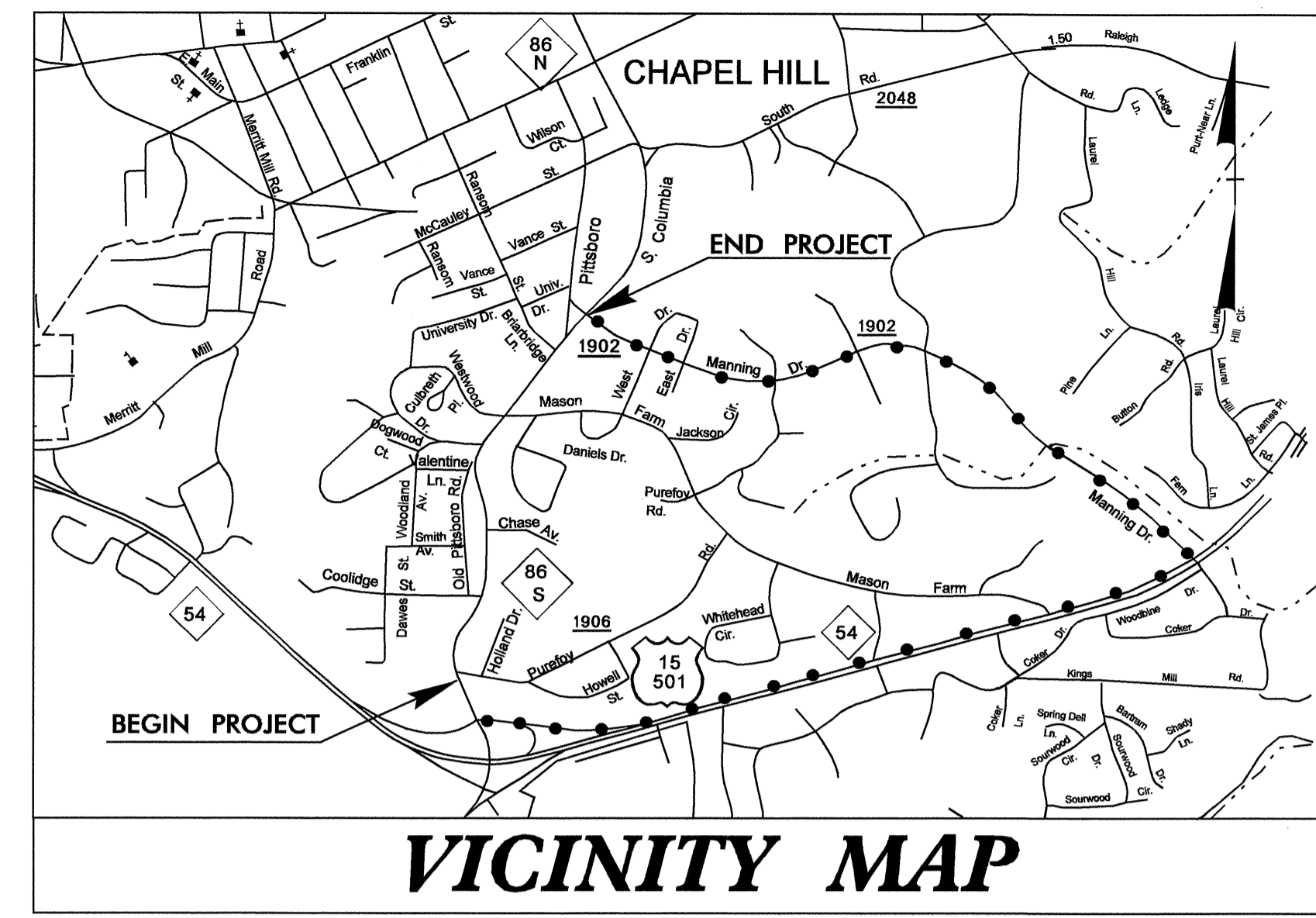
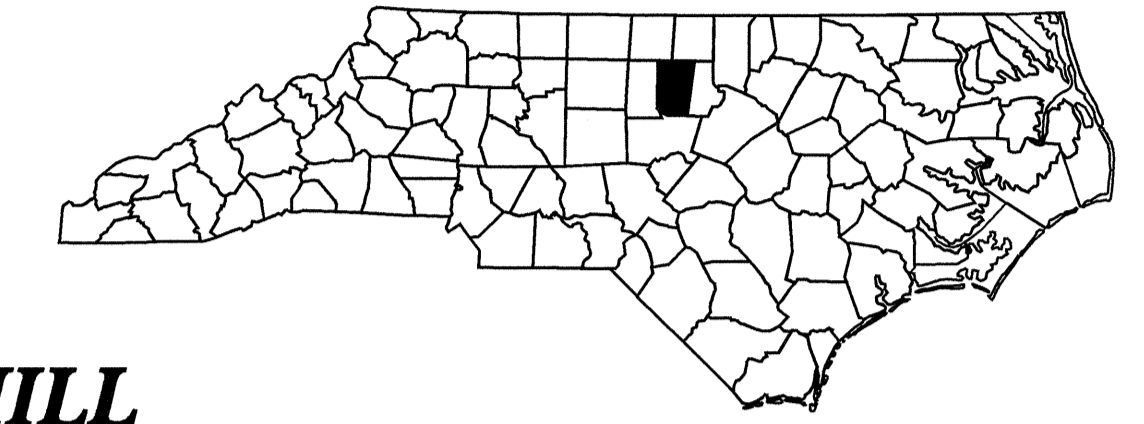
T.I.P. NO.	SHEET NO.
U-0624	UO-1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS  
ORANGE COUNTY**

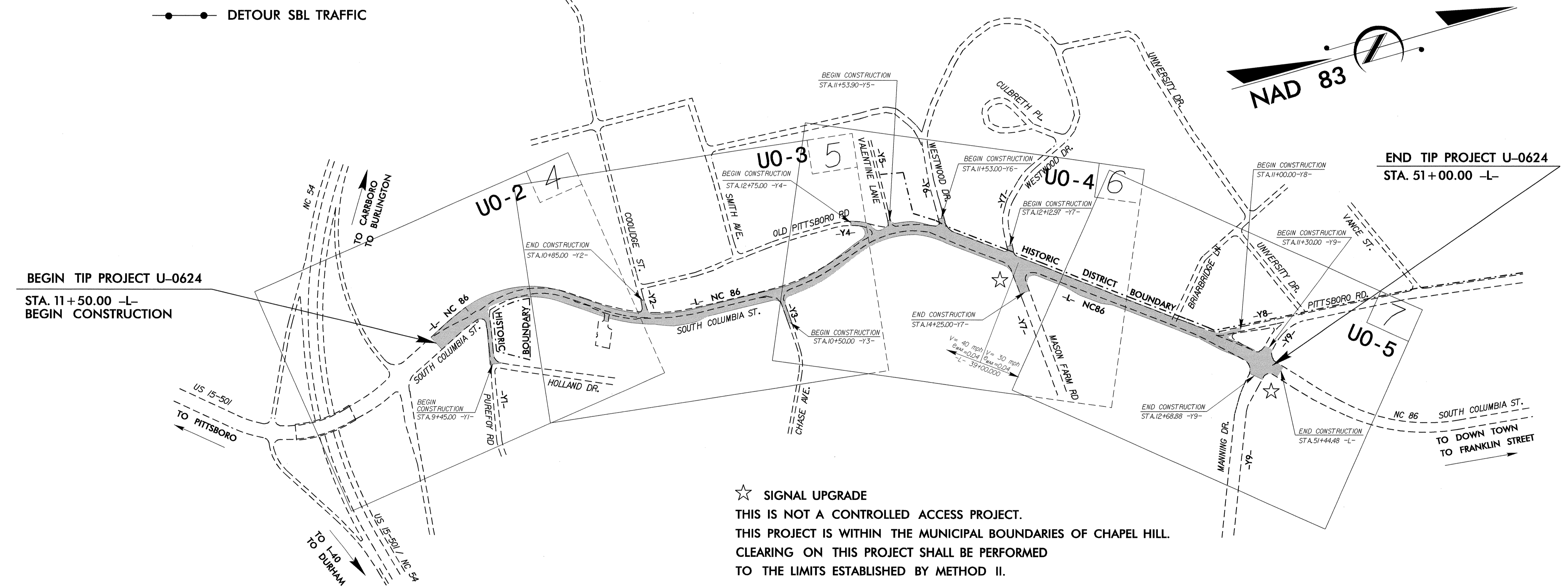
**LOCATION: NC 86 (SOUTH COLUMBIA STREET)  
FROM SR 1906 (PUREFOY ROAD) TO  
SR 1902 (MANNING DRIVE) IN CHAPEL HILL**

**TYPE OF WORK: UTILITIES RELOCATION**

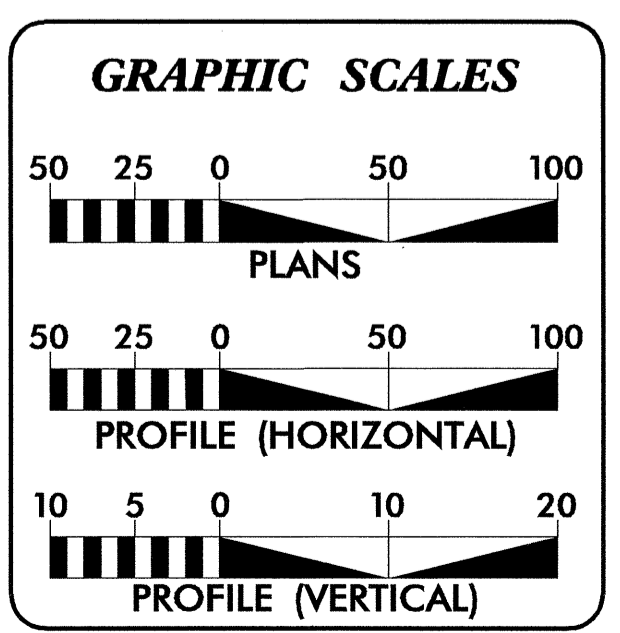


**VICINITY MAP**

● — ● DETOUR SBL TRAFFIC



☆ SIGNAL UPGRADE  
THIS IS NOT A CONTROLLED ACCESS PROJECT.  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF CHAPEL HILL.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED  
TO THE LIMITS ESTABLISHED BY METHOD II.



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-5	UTILITY BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- DUKE (Power)
  - AT&T (Telephone)
  - TWC (Cable TV)
  - PSNC (Gas)

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

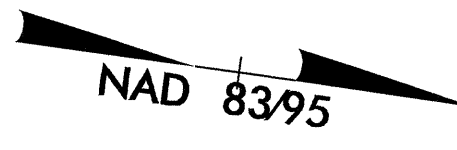
**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**Corey Bousquet, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**Nabil Hamdan** UTILITIES PROJECT DESIGNER

07-APR-2009 09:54  
S:\UTILITIES\proj\U-0624\_Ut\_rdytsh\_UO1.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

### UTILITIES BY OTHERS

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

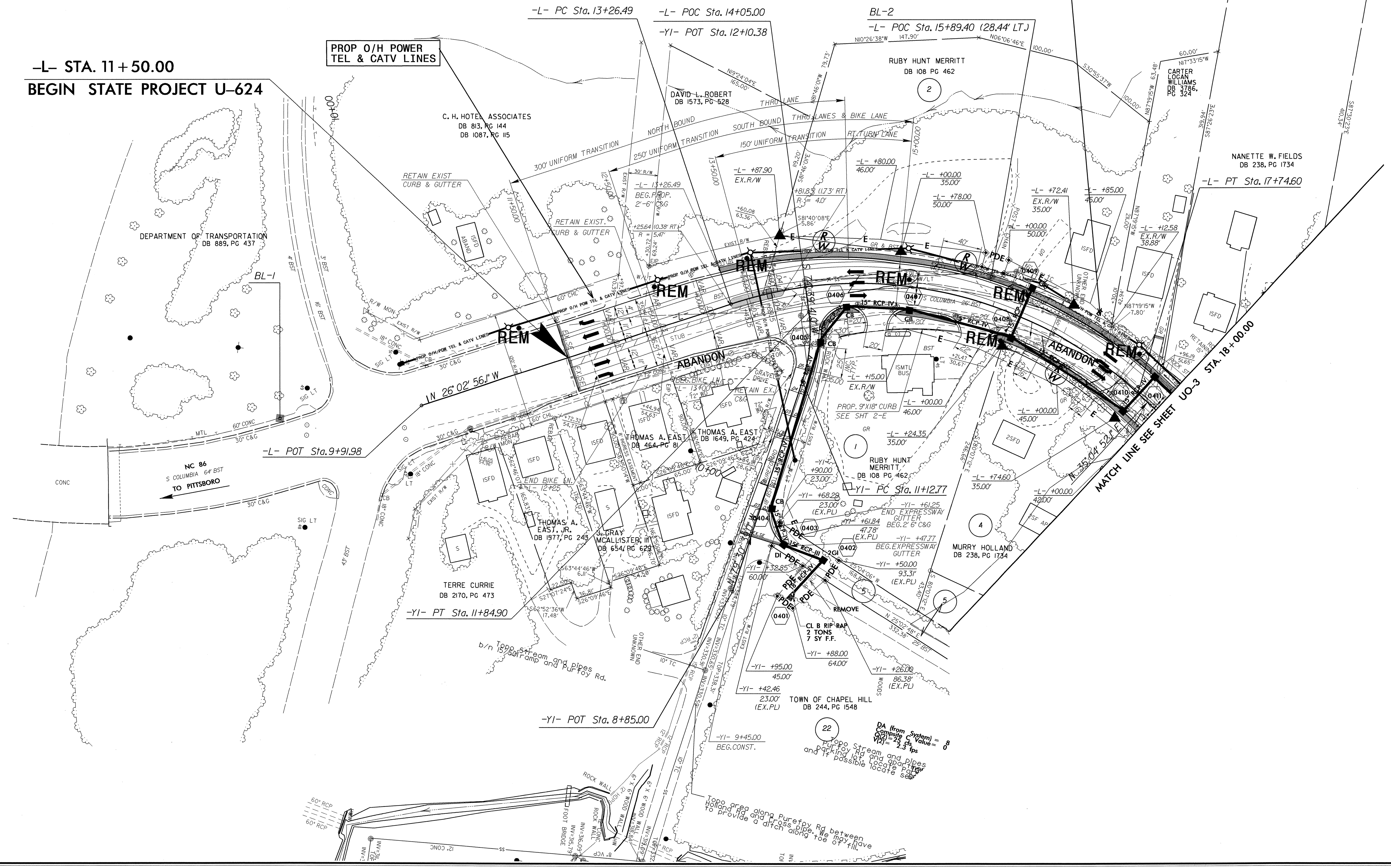
-L-	-YI-
PI Sta 15+74.53	PI Sta 11+49.46
$\Delta = 61^{\circ}07'48.2''$ (RT)	$\Delta = 25^{\circ}49'40.0''$ (LT)
$D = 13^{\circ}38'30.7''$	$D = 35^{\circ}48'35.5''$
$L = 448.11'$	$L = 72.12'$
$T = 248.04'$	$T = 36.69'$
$R = 420.00'$	$R = 160.00'$
$SE = .04$	$SE = N/A$
$V = 35$ mph	$V = 30$ mph



**-L- STA. 11+50.00  
BEGIN STATE PROJECT U-624**

**PROP O/H POWER  
TEL & CATV LINES**

**PROP O/H POWER  
TEL & CATV LINES**



**MATCH LINE SEE SHEET UO-3 STA. 18+00.00**

DA (from system) = 8  
Composite C Value = 8  
V(2) = 2.3 fps  
Top area along Purefoy Rd between parking lot and open pipe and it possible locate sewer

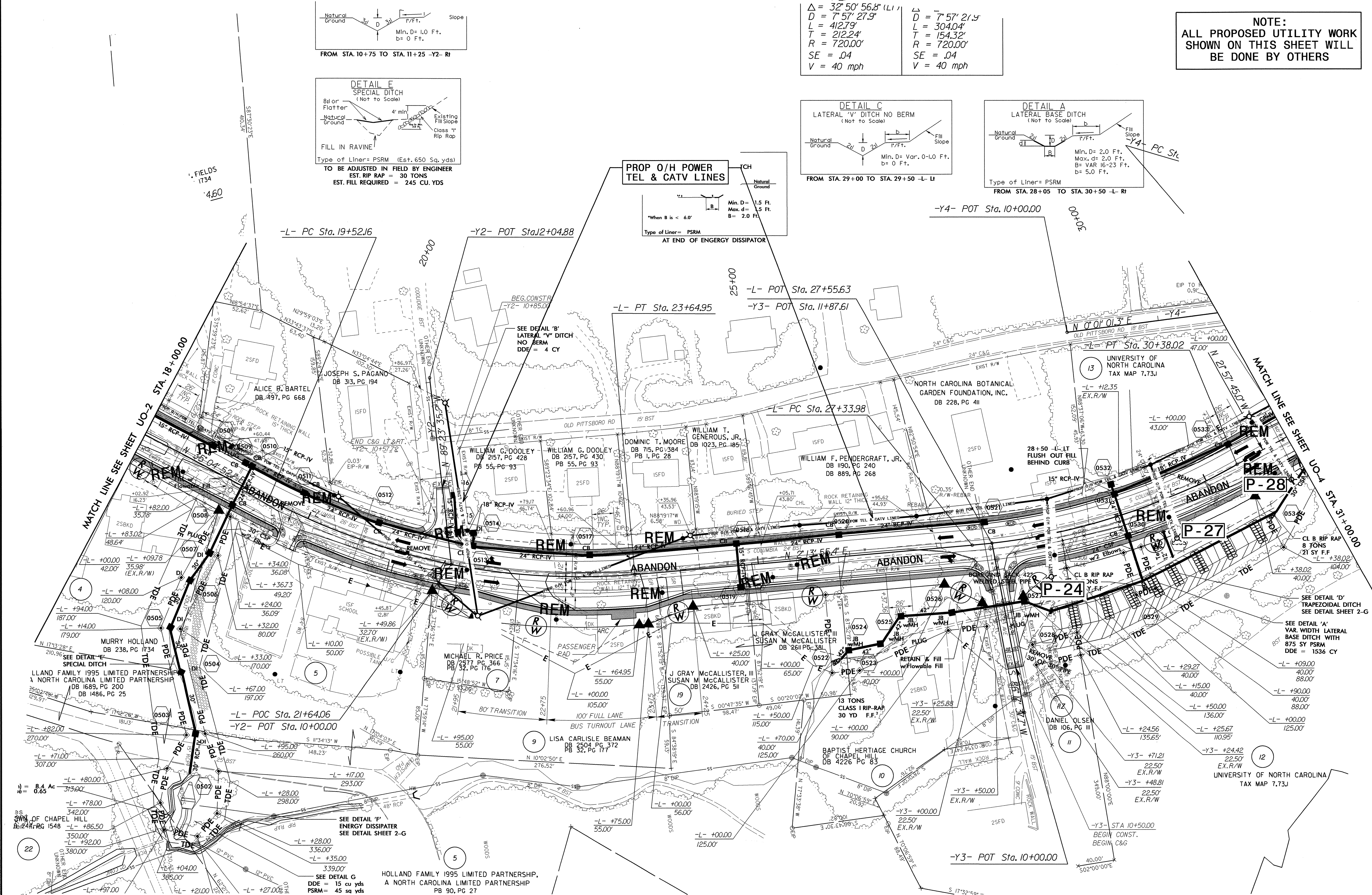
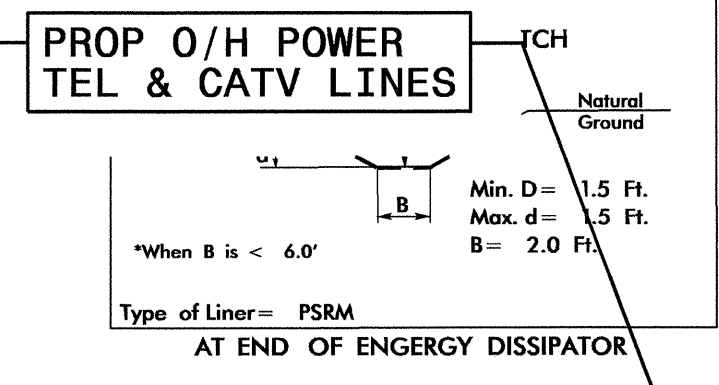
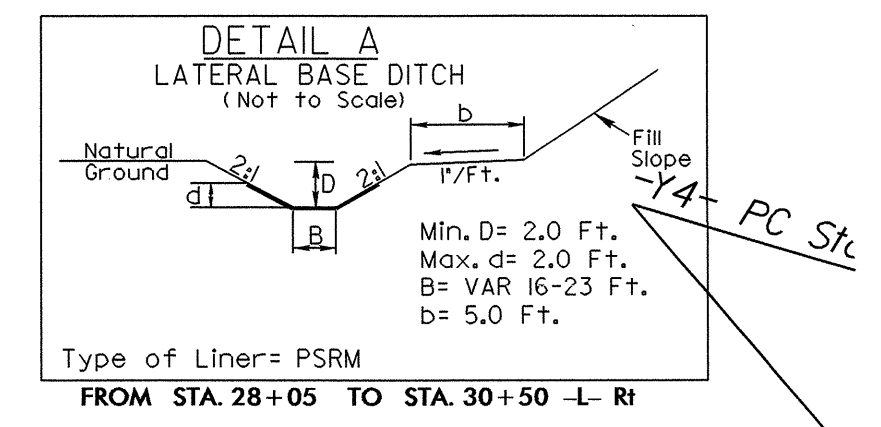
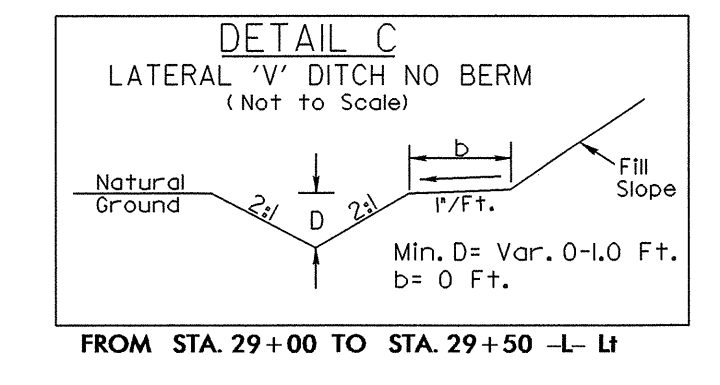
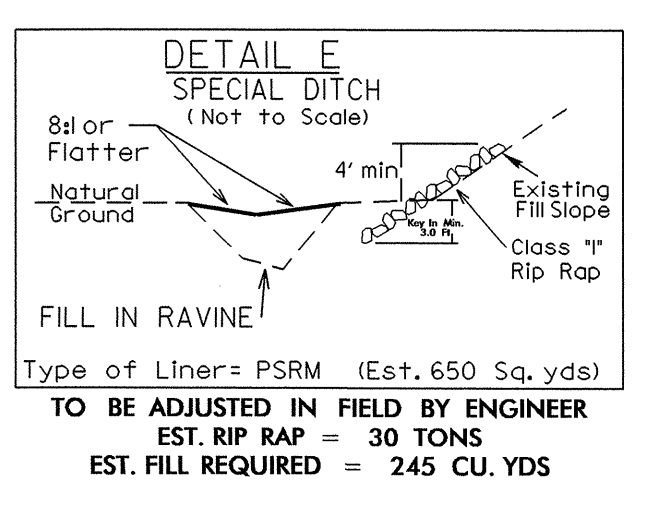
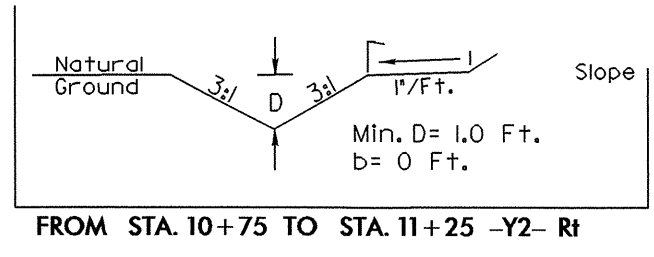
5/14/95  
01-JUN-2011 14:52  
\\utl\it\p\0624\_Ut\_rdy\_psh04\_U02.dgn



UTILITIES BY OTHERS

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

$\Delta = 32^{\circ} 50' 56.8" (L)$	$\Delta = 7^{\circ} 57' 21.9"$
$D = 7^{\circ} 57' 27.9"$	$D = 304.04'$
$L = 412.79'$	$L = 154.32'$
$T = 212.24'$	$T = 720.00'$
$R = 720.00'$	$R = 720.00'$
$SE = .04$	$SE = .04$
$V = 40 \text{ mph}$	$V = 40 \text{ mph}$



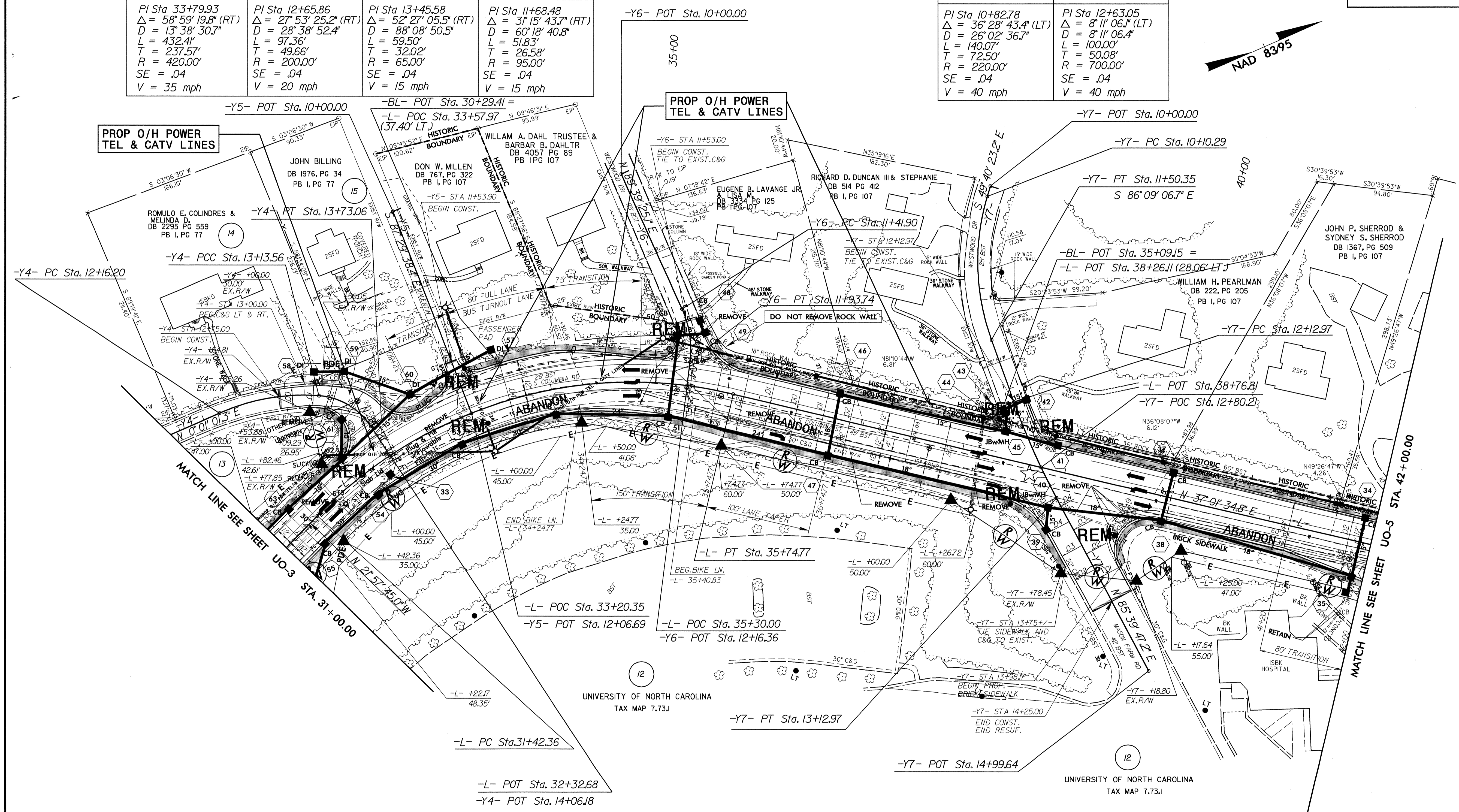
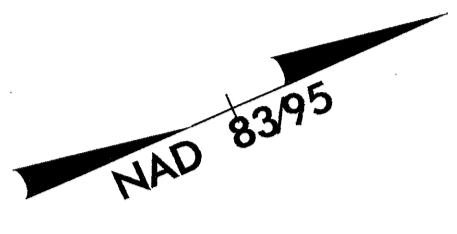
5/14/99  
21-JUN-2011 14:38  
U:\Utilities\Chapel Hill\UO-0624\UO-3.dgn  
UO-3.dwg

UTILITIES BY OTHERS

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

-L-	-Y4-	-Y4-	-Y6-
PI Sta 33+79.93	PI Sta 12+65.86	PI Sta 13+45.58	PI Sta 11+68.48
$\Delta = 58^{\circ}59'19.8"$ (RT)	$\Delta = 27^{\circ}53'25.2"$ (RT)	$\Delta = 52^{\circ}27'05.5"$ (RT)	$\Delta = 31^{\circ}15'43.7"$ (RT)
D = 13'38'30.7"	D = 28'38'52.4"	D = 88'08'50.5"	D = 60'18'40.8"
L = 432.41'	L = 97.36'	L = 59.50'	L = 51.83'
T = 237.57'	T = 49.66'	T = 32.02'	T = 26.58'
R = 420.00'	R = 200.00'	R = 65.00'	R = 95.00'
SE = .04	SE = .04	SE = .04	SE = .04
V = 35 mph	V = 20 mph	V = 15 mph	V = 15 mph

-Y7-	-Y7-
PI Sta 10+82.78	PI Sta 12+63.05
$\Delta = 36^{\circ}28'43.4"$ (LT)	$\Delta = 8^{\circ}11'06.1"$ (LT)
D = 26'02'36.7"	D = 8'11'06.4"
L = 140.07'	L = 100.00'
T = 72.50'	T = 50.08'
R = 220.00'	R = 700.00'
SE = .04	SE = .04
V = 40 mph	V = 40 mph



PROP O/H POWER  
TEL & CATV LINES

PROP O/H POWER  
TEL & CATV LINES

5/14/99

07 APR 2009 15:53  
U:\0624\_Ut\_rdy\_psh06\_U04.dgn  
UTILITY ENGINEER

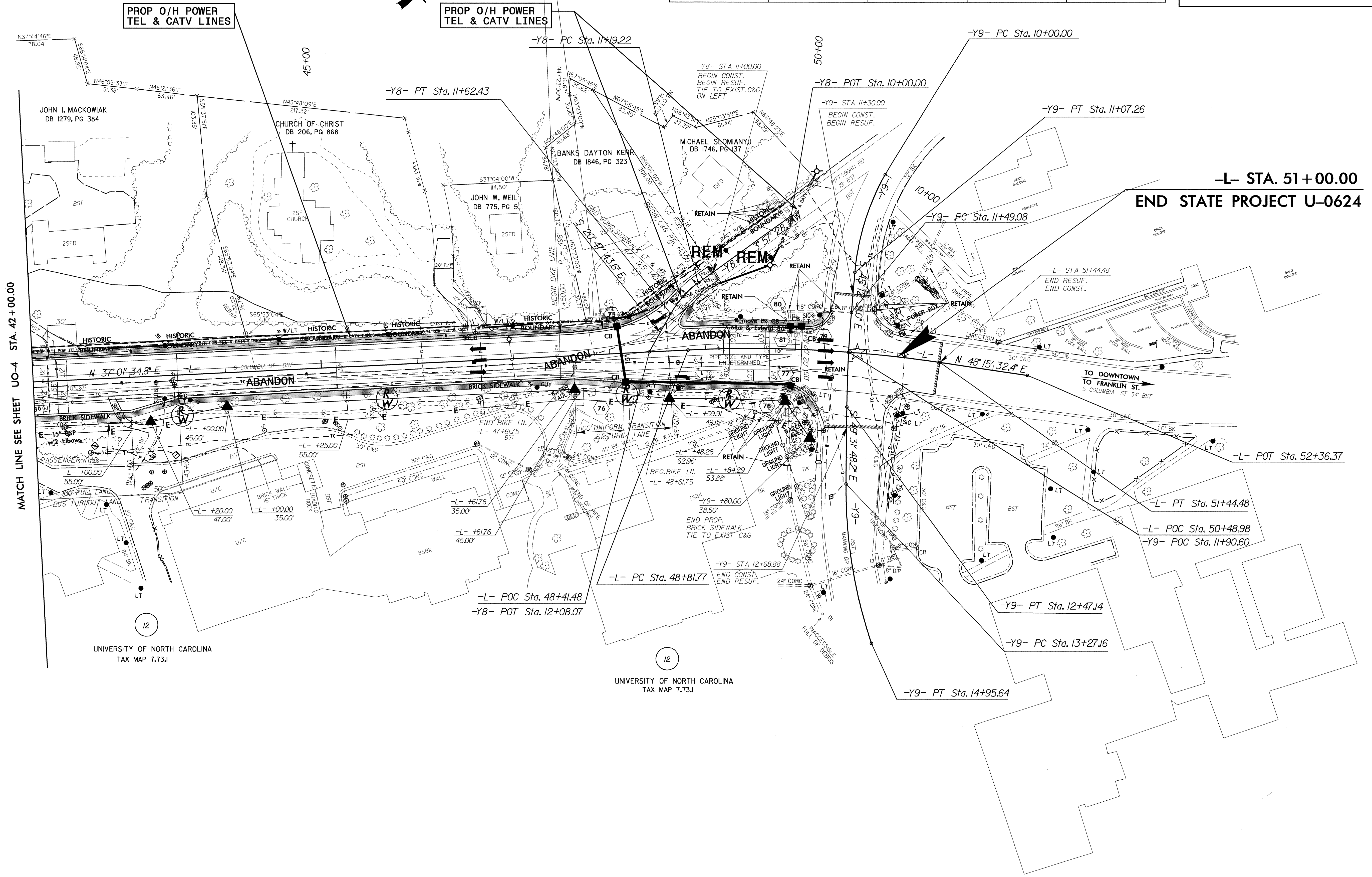
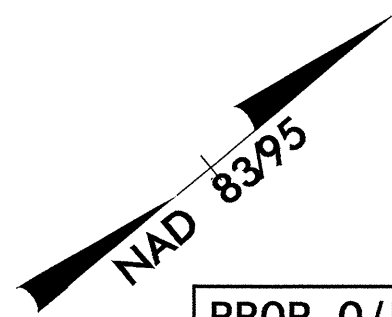
MATCH LINE SEE SHEET UO-5  
STA. 42+00.00

MATCH LINE SEE SHEET UO-3  
STA. 31+00.00

### UTILITIES BY OTHERS

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

-L-	-Y8-	-Y9-	-Y9-	-Y9-
PI Sta 50+13.55 Δ = 11' 13" 57.6" (RT) D = 4' 16" 32.9" L = 262.70' T = 131.77' R = 1,340.00' SE = NC V = 40 mph	PI Sta 11+41.77 Δ = 24' 45" 11.9" (LT) D = 57' 17" 44.8" L = 43.20' T = 21.94' R = 100.00' SE = NC V = 40 mph	PI Sta 10+54.47 Δ = 24' 34" 59.6" (LT) D = 22' 55" 05.9" L = 107.26' T = 54.47' R = 250.00'	PI Sta 11+98.13 Δ = 4' 19" 17.2" (LT) D = 4' 24" 26.5" L = 98.05' T = 49.05' R = 1,300.00'	PI Sta 14+12.21 Δ = 19' 18" 21.8" (LT) D = 11' 27" 33.0" L = 168.48' T = 85.04' R = 500.00'



MATCH LINE SEE SHEET UO-4 STA. 42+00.00

**-L- STA. 51+00.00  
END STATE PROJECT U-0624**

UNIVERSITY OF NORTH CAROLINA  
TAX MAP 7.73.J

UNIVERSITY OF NORTH CAROLINA  
TAX MAP 7.73.J

5/14/99  
07-APR-2009 09:40  
\\nash\files\lcf\proj\UO-0624\_UH\_rdy\_psh07\_UO5.dgn