

**TIP PROJECT: U-3304**

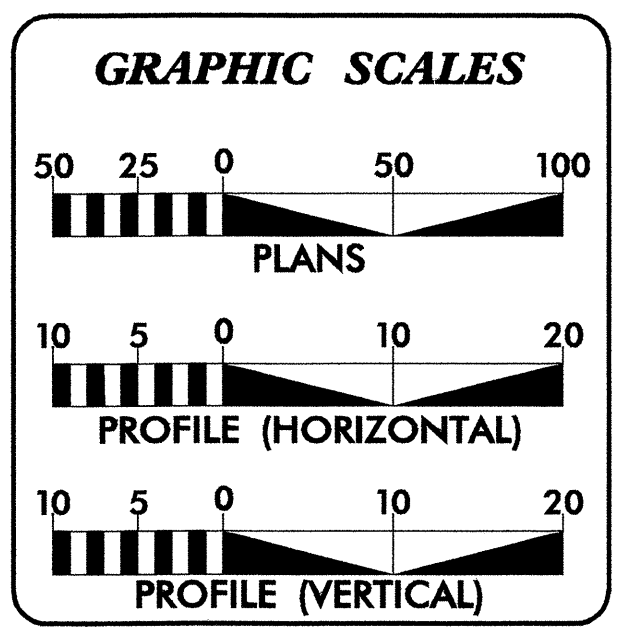
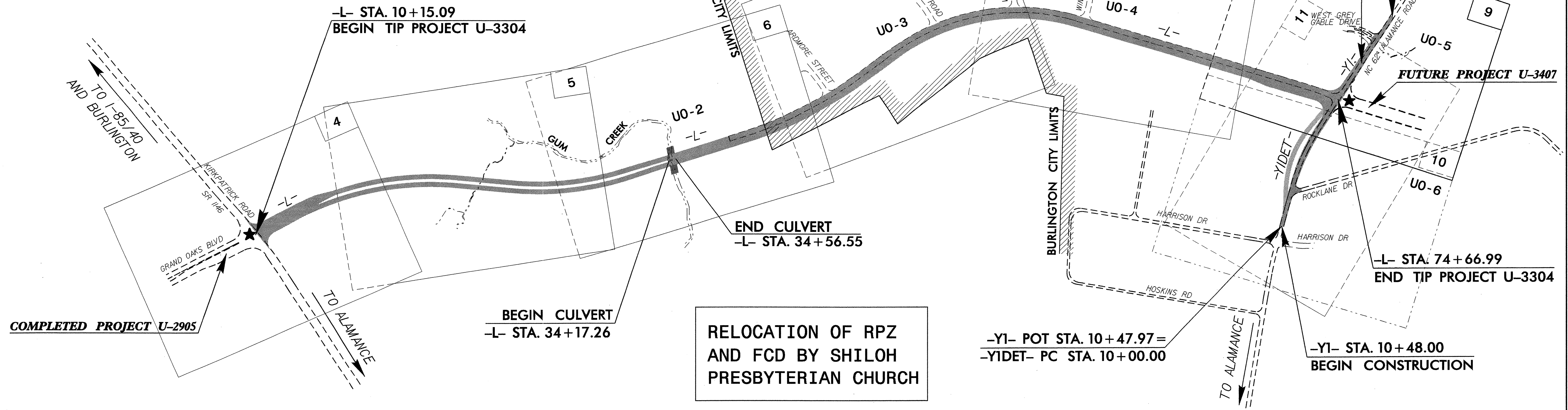
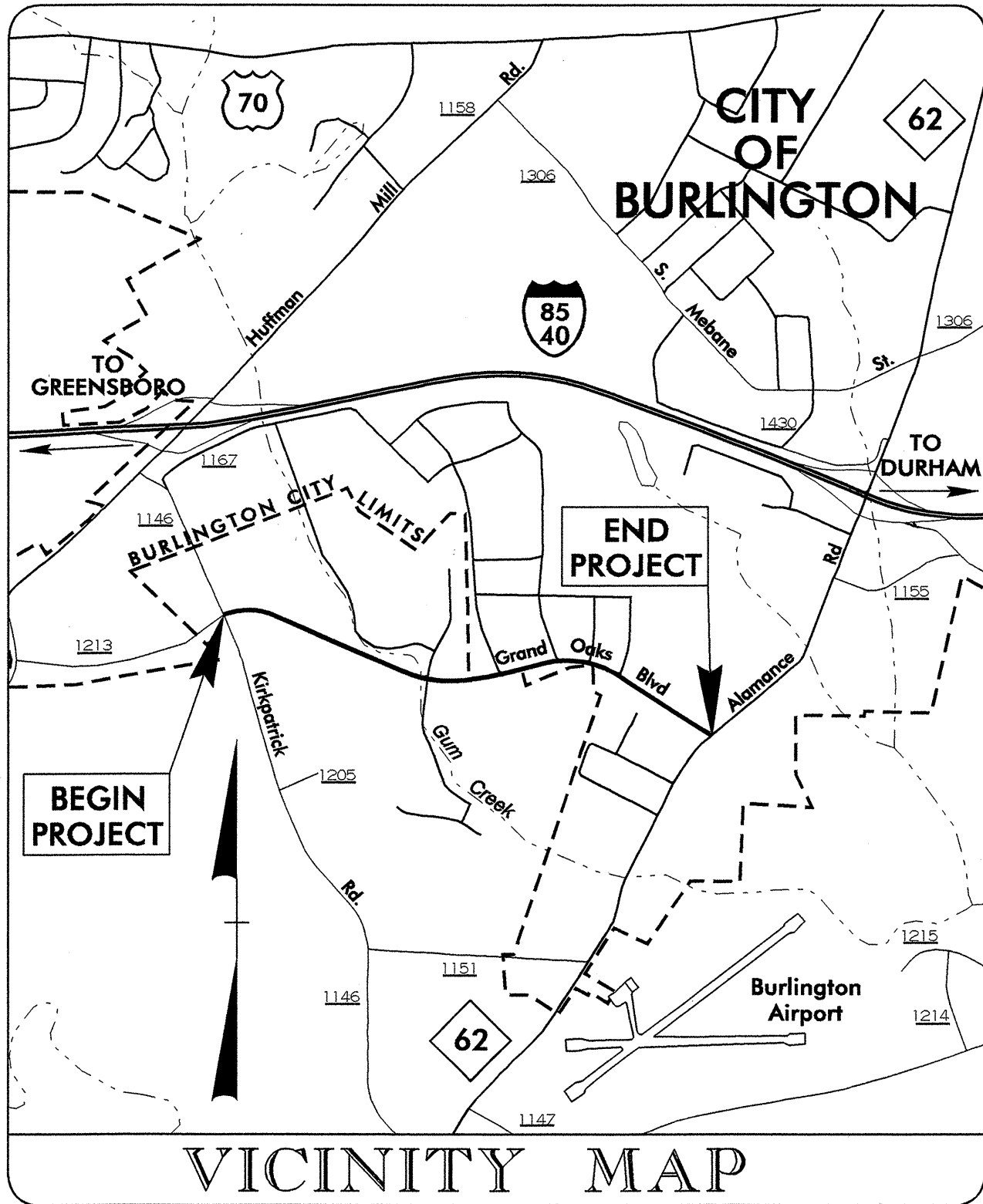
T.I.P. NO.	SHEET NO.
U-3304	UO-1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITY BY OTHERS PLANS  
ALAMANCE COUNTY**

**LOCATION: BURLINGTON - GRAND OAKS BLVD  
EXTENSION FROM SR 1146 (KIRKPATRICK RD.) TO NC 62  
(ALAMANCE ROAD)**

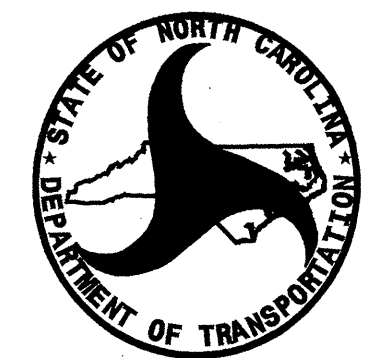
**TYPE OF WORK: RELOCATION OF POWER, CABLE, PHONE  
AND GAS LINE**



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-1A THRU UO-6	UTILITY BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- (1) AT&T
  - (2) DUKE ENERGY
  - (3) TIME WARNER CABLE
  - (4) PIEDMONT NATURAL GAS
  - (5) SHILOH PRESBYTERIAN CHURCH



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

1591 MAIL SERVICES CENTER  
RALEIGH NC 27699-1591  
PHONE (919) 259-4128  
FAX (919) 259-4119

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

UTILITIES BY OTHERS

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

DESIGN REVISION 11/16/06: REVISED S.E.-L- STA. 10+44.7 TO STA. 14+50.00 AND SLOPE STAKE LIMITS  
R/W REVISION 4/24/07: UPDATED PROPERTY LINES ON PARCEL NO.2

AVERAGE DAILY TRAFFIC		2008	2030
SR 1146			
		9,242	16,300
12,650	1,250	2,208	10,175
28,600	1,800	3,400	23,100
GRAND OAK BLVD			
		3,967	533
		8,000	900
KIRKPATRICK RD.			
		10,283	20,000

-L-  
PI Sta 17+35.58  
Δ = 33° 01' 29.4" (RT)  
D = 3' 30' 00.2"  
L = 943.55'  
T = 485.29'  
R = 1,637.00'  
V = 50 mph  
SE = .05 MAX.

-Y-  
PI Sta 17+40.51  
Δ = 7° 57' 31.5" (LT)  
D = 7' 44' 47.0"  
L = 455.73'  
T = 228.23'  
R = 3,280.83'

RIGHT OF WAY AND EASEMENTS ON THIS PARCEL WERE PURCHASED UNDER PROJ. U-2905

RIGHT OF WAY AND EASEMENTS ON THIS PARCEL WERE PURCHASED UNDER PROJ. U-2905

COMPLETED PROJECT U-2905

-L- POT STA. 10+15.09  
BEGIN PROJECT U-3304

RIGHT OF WAY AND EASEMENTS ON THIS PARCEL WERE PURCHASED UNDER PROJ. U-2905

BL-82 STA. 50+81.48  
-L- STA. 10+64.68  
81.73' RT  
-Y- PC Sta. 15+12.28

2  
JOHN B. ISLEY  
PB. 70 PG. 406  
29.70 AC (PLAT)

★

5/14/09 13-MAY-2008 08:50 r:\utilities\psh4\dwg\proj\_u-3304\_uo-1a\_psh4.dgn



UTILITIES BY OTHERS

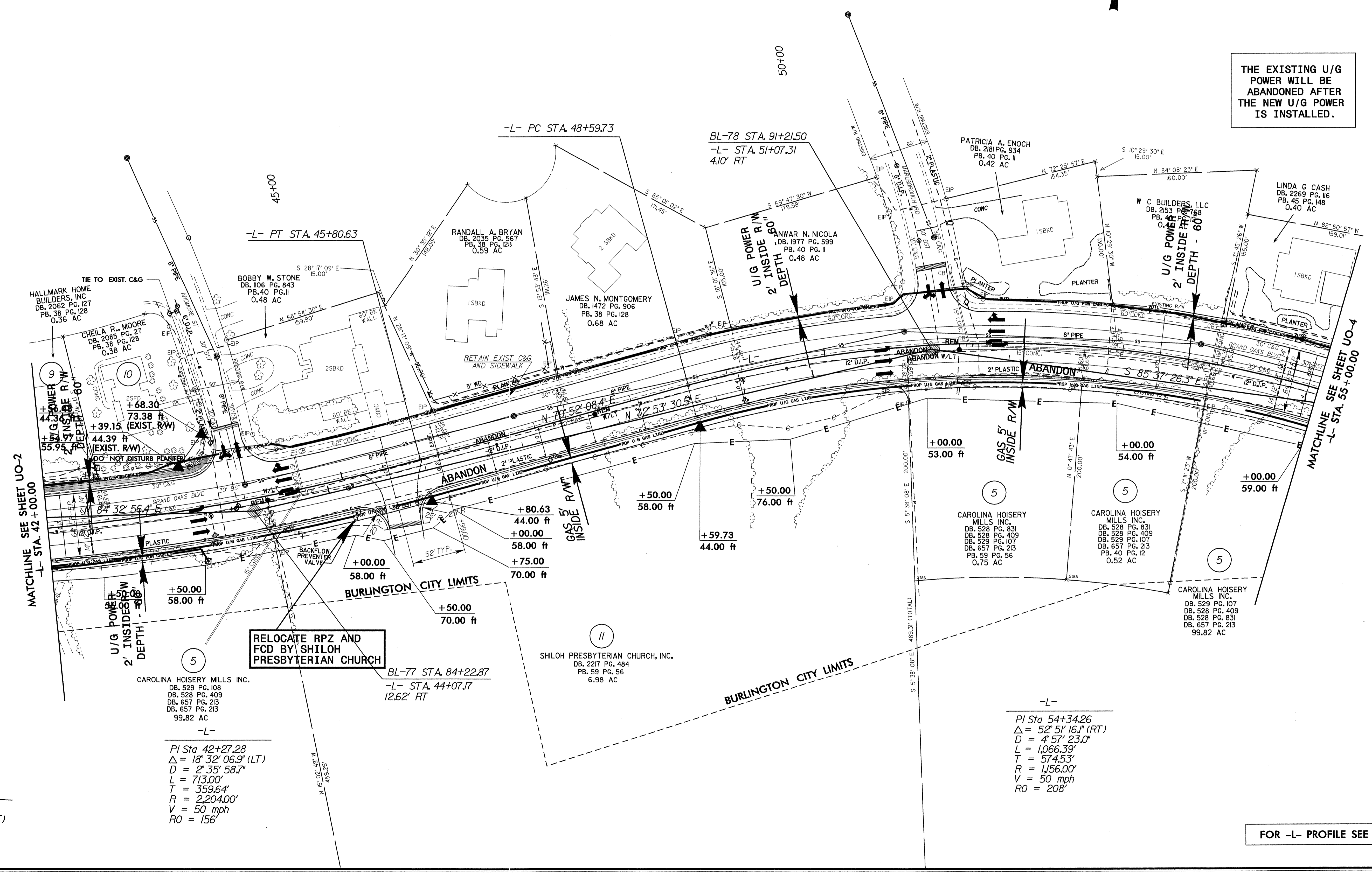
NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

THE EXISTING U/G  
POWER WILL BE  
ABANDONED AFTER  
THE NEW U/G POWER  
IS INSTALLED.

AVERAGE DAILY TRAFFIC		2008	2030
ADMORE ST.	525		
	800		
MARLBOROUGH RD.	1,158		
	1,800		
GRAND OAK BLVD	10,175	23,100	
	317	500	
	208	300	
	10,067	22,900	
	633	1,000	
	525	800	
	9,958	22,700	

R/W REVISION TRM 9/01/06: COMBINED PARCEL 12, 13,  
AND 15 INTO PARCEL No. 5.  
DESIGN REVISION 11/16/06: REVISED S.E. -L- STA. 45+99.00 TO  
60+65.00 LT. AND SLOPE STAKE LIMITS No

5/14/09 03-MAR-2008 08:48 R:\projects\3304\3304.dwg



MATCHLINE SEE SHEET UO-2  
-L- STA. 42+00.00

MATCHLINE SEE SHEET UO-4  
-L- STA. 55+00.00

**RELOCATE RPZ AND  
FCD BY SHILOH  
PRESBYTERIAN CHURCH**

CAROLINA HOISERY MILLS INC.  
DB. 529 PG. 108  
DB. 528 PG. 409  
DB. 657 PG. 213  
DB. 657 PG. 213  
99.82 AC

-L-  
PI Sta 42+27.28  
Δ = 18° 32' 06.9" (LT)  
D = 2' 35' 58.7"  
L = 713.00'  
T = 359.64'  
R = 2,204.00'  
V = 50 mph  
RO = 156'

BL-77 STA. 84+22.87  
-L- STA 44+07.17  
12.62' RT

SHILOH PRESBYTERIAN CHURCH, INC.  
DB. 2217 PG. 484  
PB. 59 PG. 56  
6.98 AC

-L-  
PI Sta 54+34.26  
Δ = 52° 51' 16.1" (RT)  
D = 4' 57' 23.0"  
L = 1,066.39'  
T = 574.53'  
R = 1,156.00'  
V = 50 mph  
RO = 208'

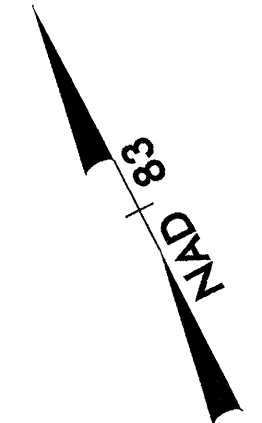
FOR -L- PROFILE SEE SHEET 13

27.28  
06.9" (LT)  
58.7"

UTILITIES BY OTHERS

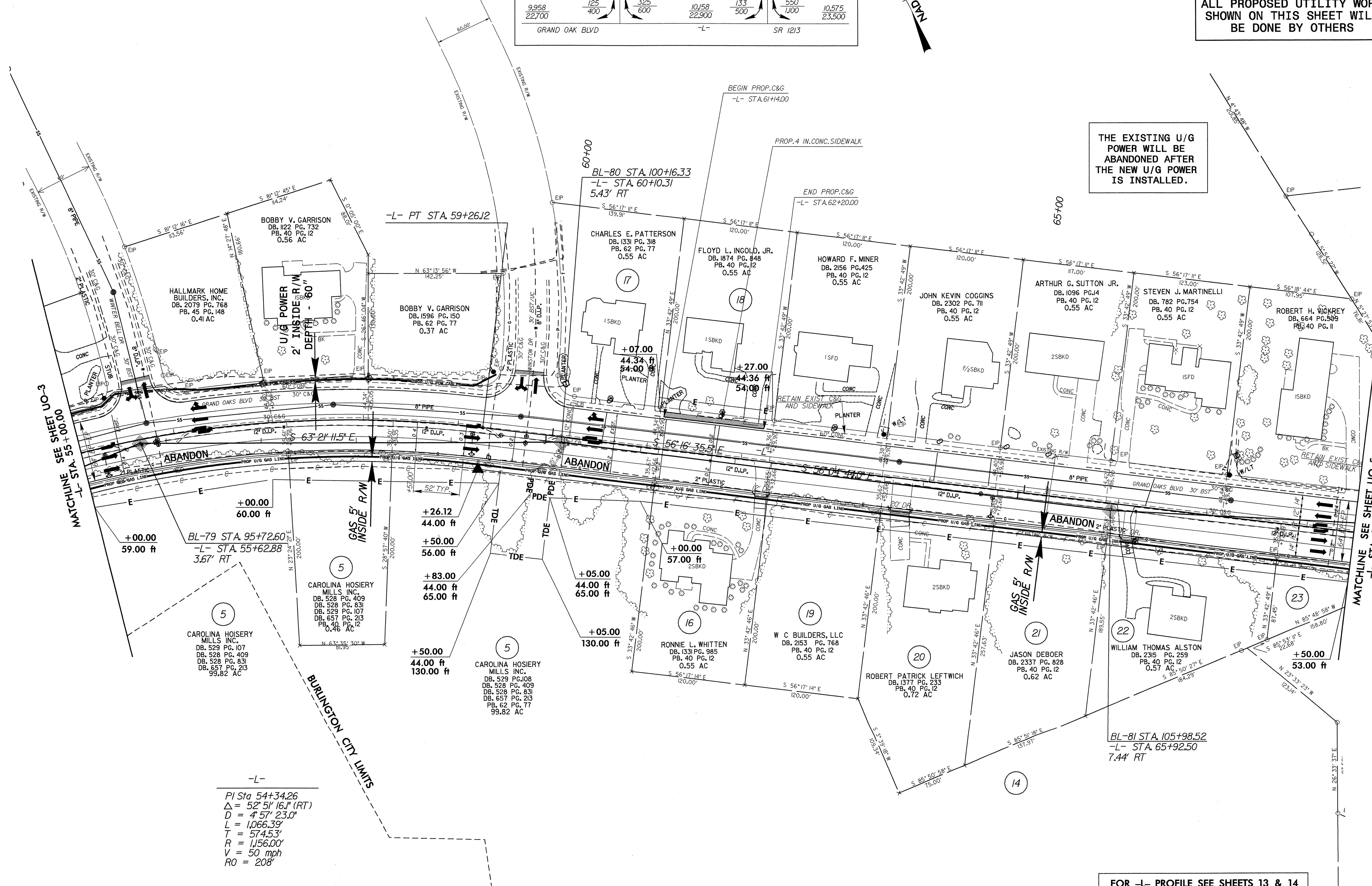
NOTE:  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS

AVERAGE DAILY TRAFFIC		2008		2030	
WINTER BELL DR.	450	125	325	10,158	133
	1,000	400	600	22,900	500
GRAND OAK BLVD	9,958	22,700		550	10,575
				1,000	23,500
				SR 1213	



DESIGN REVISION 5/8/07: ADDING 4 IN. CONC. SIDEWALK AND 2'-6" CONC. CURB AND GUTTER LEFT OF -L- STA. 61+4.00 TO STA. 62+20.00 AND SLOPE STAKE LIMITS.

THE EXISTING U/G POWER WILL BE ABANDONED AFTER THE NEW U/G POWER IS INSTALLED.



MATCHLINE SEE SHEET UO-3  
-L- STA. 55+00.00

MATCHLINE SEE SHEET UO-5  
-L- STA. 68+50.00

-L-  
PI Sta 54+34.26  
Δ = 52° 51' 16" (RT)  
D = 457.230'  
L = 1,066.39'  
T = 574.53'  
R = 1,156.00'  
V = 50 mph  
RO = 208'

FOR -L- PROFILE SEE SHEETS 13 & 14

5/14/09 03-MAR-2008 07:34 R:\utilities\3304\UO-4\UO-4.dgn

**UTILITIES BY OTHERS**

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

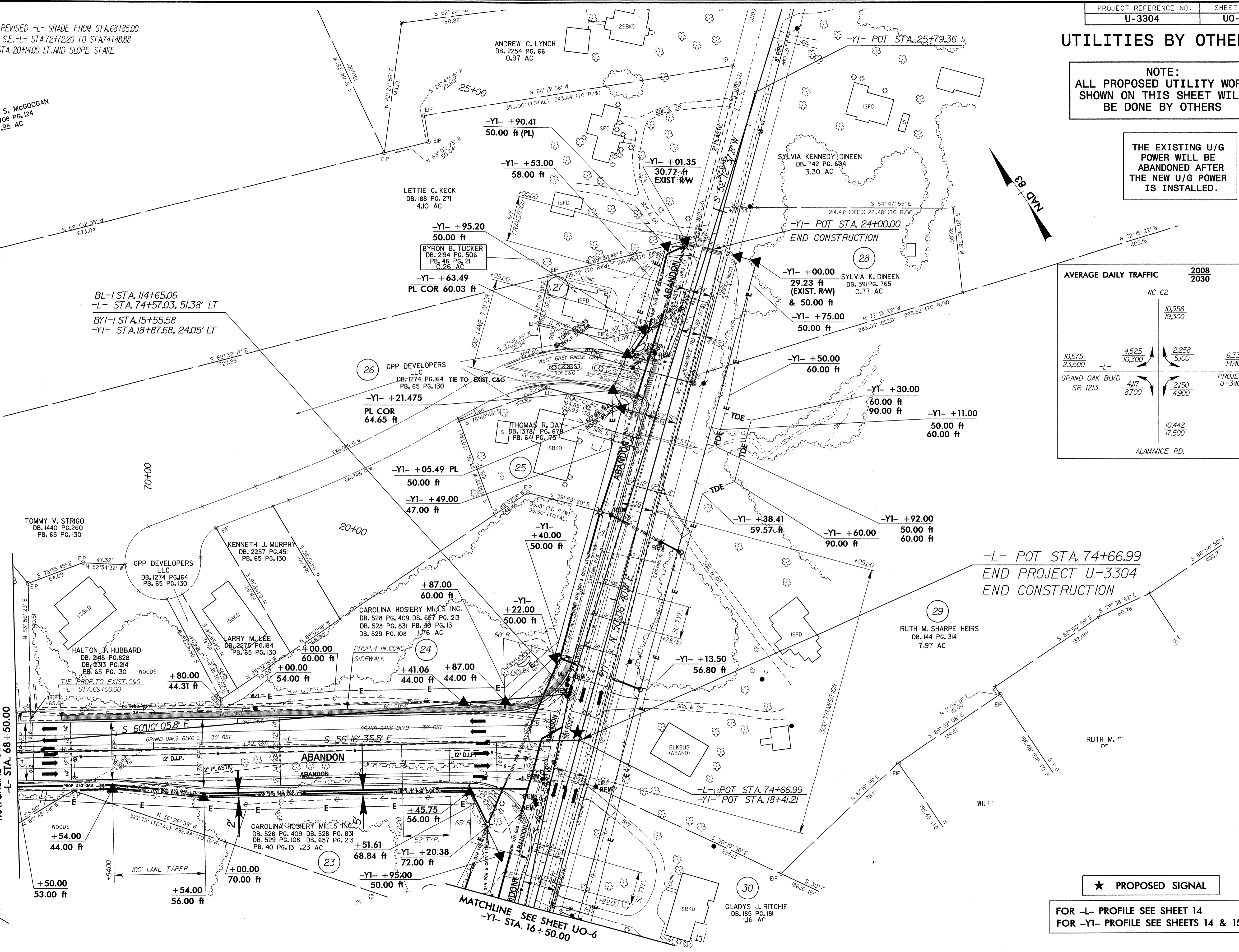
THE EXISTING U/G POWER WILL BE ABANDONED AFTER THE NEW U/G POWER IS INSTALLED.

AVERAGE DAILY TRAFFIC		2008		2030	
		NC 62		ALAMANCE RD.	
10,575	23,500	4,525	10,300	2,258	5,100
		-L-		PROJECT U-3407	
GRAND OAK BLVD SR 1213	4,117	8,700	2,150	4,900	14,400
				10,442	
				17,500	

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 5/14/09

DESIGN REVISION 5/8/07: REVISED -L- GRADE FROM STA.68+85.00 TO STA.74+48.88. REVISED S.E. -L- STA.72+72.20 TO STA.74+48.88 & -YI- STA.17+40.00 TO STA.20+4.00 LT. AND SLOPE STAKE LIMITS.

CHARLES S. MCGOOGAN  
DB. 708 PG. 124  
3.95 AC



BL-I STA. 114+65.06  
-L- STA. 74+57.03, 51.38' LT  
BYI-I STA. 15+55.58  
-YI- STA. 18+87.68, 24.05' LT

MATCHLINE SEE SHEET UO-4  
-L- STA. 68+50.00

MATCHLINE SEE SHEET UO-6  
-YI- STA. 16+50.00

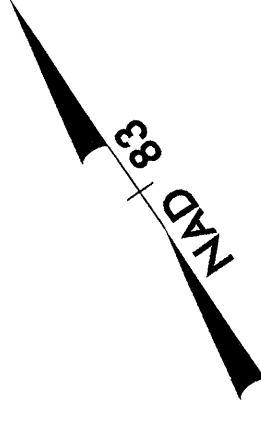
-L- POT STA. 74+66.99  
END PROJECT U-3304  
END CONSTRUCTION

★ PROPOSED SIGNAL

FOR -L- PROFILE SEE SHEET 14  
FOR -YI- PROFILE SEE SHEETS 14 & 15

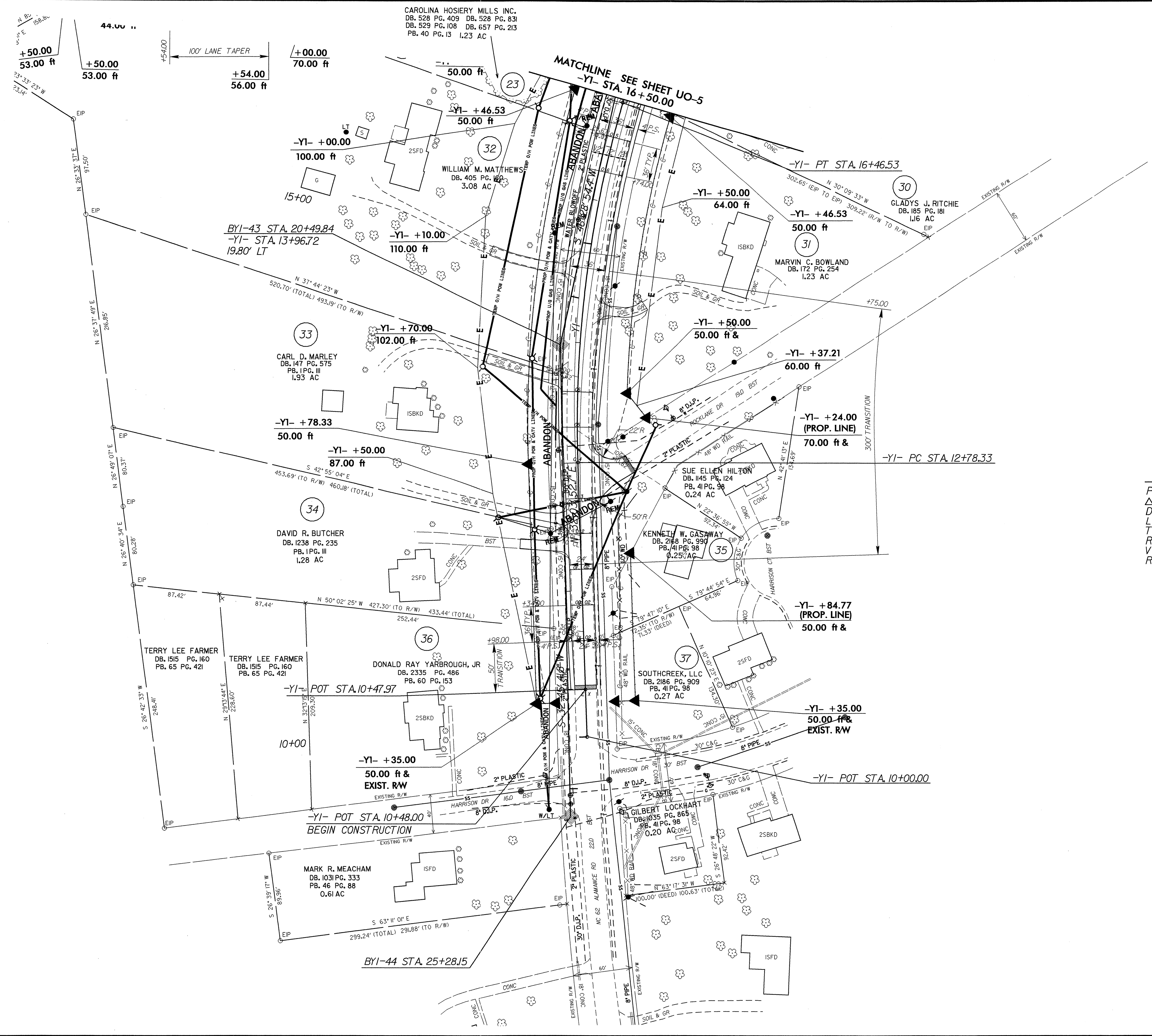
# UTILITIES BY OTHERS

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



-Y1-  
PI Sta 14+63.97  
Δ = 18° 02' 48.0" (RT)  
D = 4' 54' 04.6"  
L = 368.20'  
T = 185.64'  
R = 1,169.00'  
V = 50 mph  
RO = 216'

FOR -Y1- PROFILE SEE SHEET 14



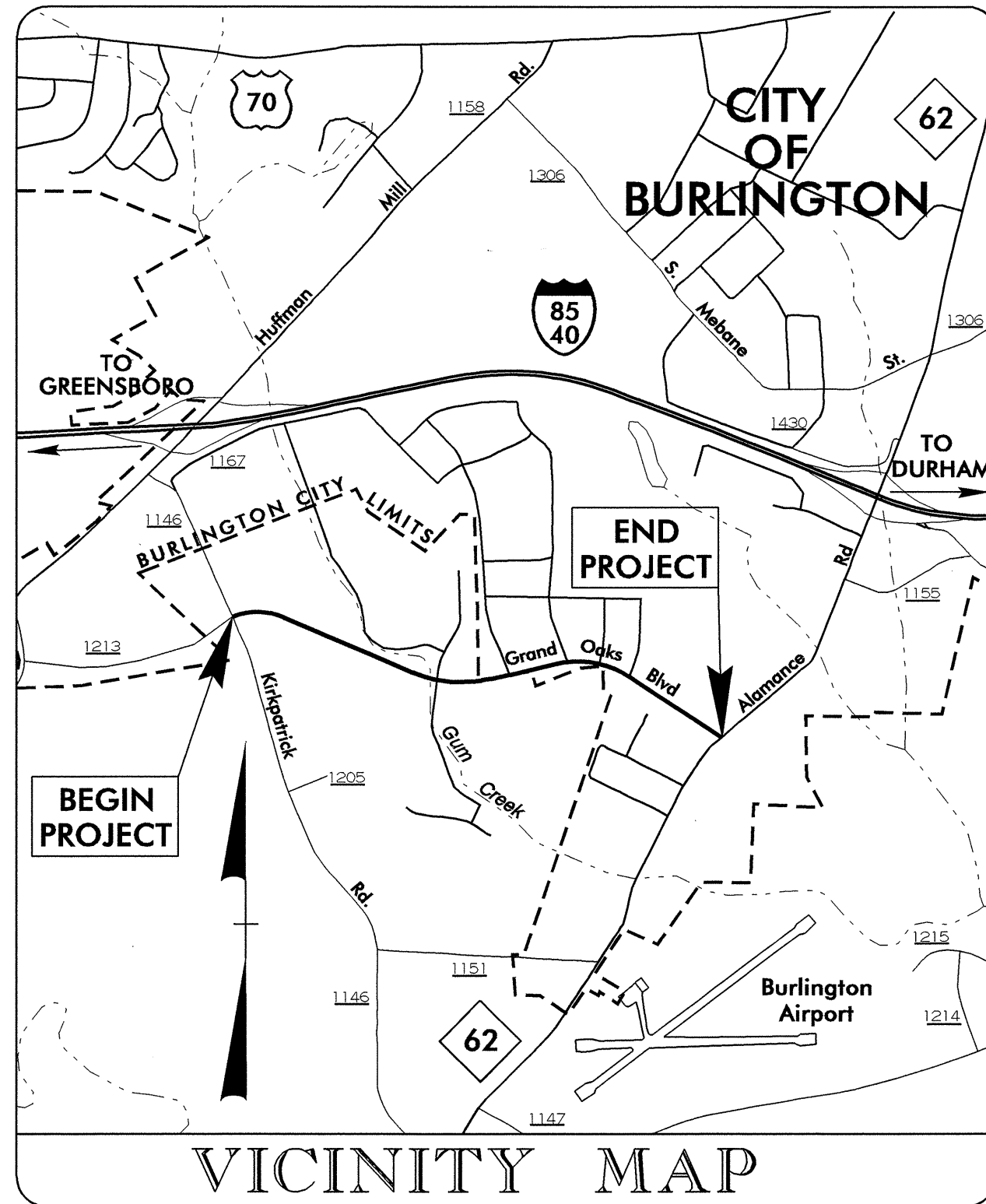
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**TIP PROJECT: U-3304**

T.I.P. NO.	SHEET NO.
U-3304	UC-1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

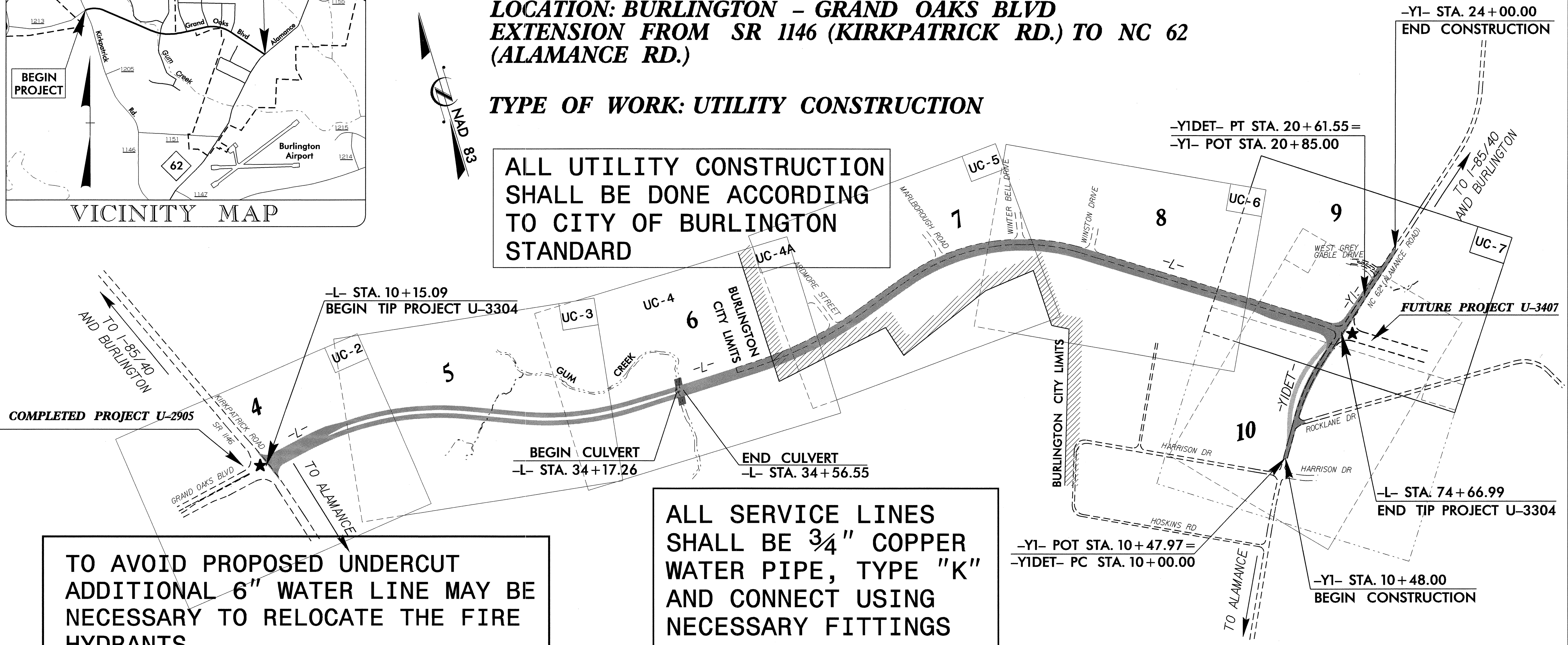
**UTILITY CONSTRUCTION PLANS  
ALAMANCE COUNTY**



**LOCATION: BURLINGTON - GRAND OAKS BLVD  
EXTENSION FROM SR 1146 (KIRKPATRICK RD.) TO NC 62  
(ALAMANCE RD.)**

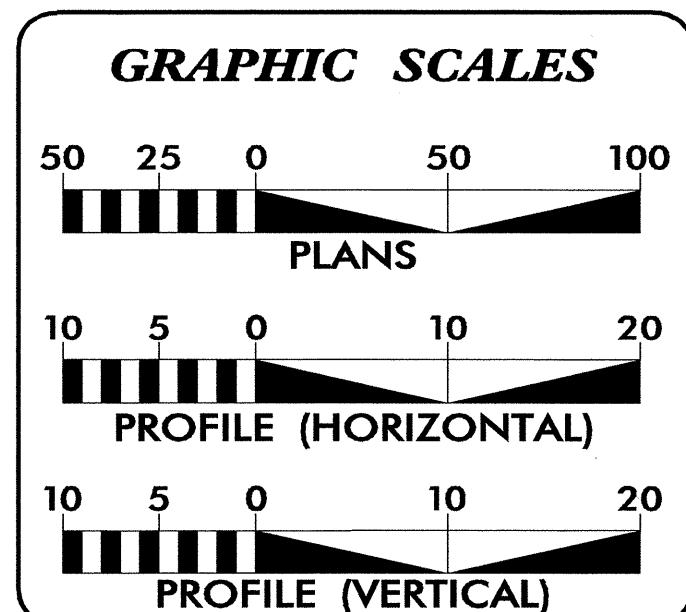
**TYPE OF WORK: UTILITY CONSTRUCTION**

ALL UTILITY CONSTRUCTION  
SHALL BE DONE ACCORDING  
TO CITY OF BURLINGTON  
STANDARD



TO AVOID PROPOSED UNDERCUT  
ADDITIONAL 6" WATER LINE MAY BE  
NECESSARY TO RELOCATE THE FIRE  
HYDRANTS

ALL SERVICE LINES  
SHALL BE 3/4" COPPER  
WATER PIPE, TYPE "K"  
AND CONNECT USING  
NECESSARY FITTINGS

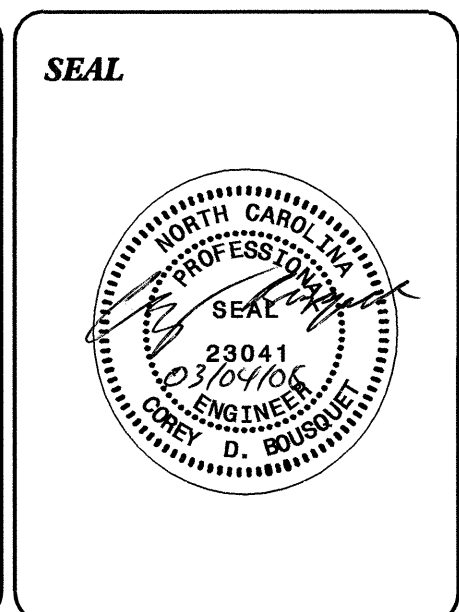


**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-12	UTILITY CONSTRUCTION PLAN SHEETS

**WATER AND SEWER OWNERS ON PROJECT**

(1) WATER: CITY OF BURLINGTON  
(2) SEWER: CITY OF BURLINGTON



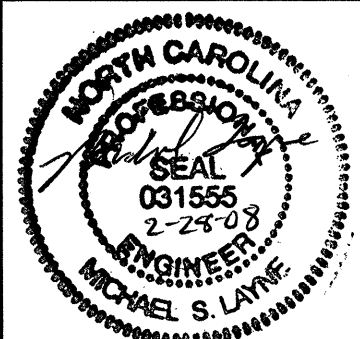
PREPARED IN THE OFFICE OF:  
**DIVISION OF HIGHWAYS  
PROJECT SERVICES  
UTILITY SECTION**

1591 MAIL SERVICES CENTER  
RALEIGH, NC 27699-1591  
PHONE (919) 259-4128  
FAX (919) 259-4119

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



REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3304	UC-2
DESIGNED BY: MSL	
DRAWN BY: MSL	
CHECKED BY: MSL	
APPROVED BY: MSL	
REVISER:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT	UTILITY CONSTRUCTION PLANS ONLY
PHONE: (919) 250-4128	
FAX: (919) 250-4119	

**NOTE:**  
 1. ALL WATER LINES SHALL BE DUCTILE IRON THICKNESS CLASS 50 OR GREATER.  
 2. WATER LINES TO BE CONSTRUCTED PER CITY OF BURLINGTON STANDARDS.

RIGHT OF WAY AND EASEMENTS ON THIS PARCEL WERE PURCHASED UNDER PROJ. U-2905

RIGHT OF WAY AND EASEMENTS ON THIS PARCEL WERE PURCHASED UNDER PROJ. U-2905

COMPLETED PROJECT U-2905

-L- POT STA. 10+00.00  
 BEGIN PROJECT U-3304  
 BEGIN CONSTRUCTION

RIGHT OF WAY AND EASEMENTS ON THIS PARCEL WERE PURCHASED UNDER PROJ. U-2905

1-24"x12" Tapping Sleeve  
 1-12" Gate Valve

AVERAGE DAILY TRAFFIC		2008	2030
SR 1146			
		9,242	16,300
12,650	1,250	2,208	10,175
28,600	1,800	3,400	23,100
GRAND OAK BLVD SR 1213			
		3,967	5,533
		8,000	900
KIRKPATRICK RD.			
		10,283	20,000

-L-  
 PI Sta 17+35.58  
 = 33° 01' 29.4" (RT)  
 D = 3° 30' 00.2"  
 L = 943.55'  
 T = 485.29'  
 R = 1,637.00'  
 V = 50 mph  
 RO = 260'

★ PROPOSED SIGNAL

PROPOSED MONO. ISLAND

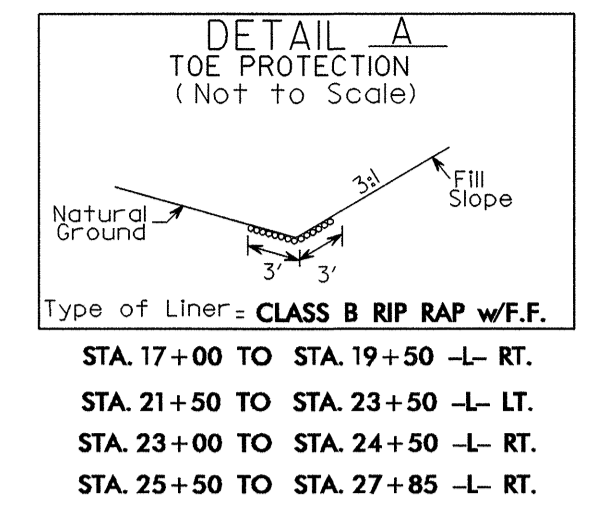
FOR -L- PROFILE SEE SHEET 12

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5/14/08  
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PROJECT REFERENCE NO. <b>U-3304</b>	SHEET NO. <b>UC-3</b>
DESIGNED BY: <b>MSL</b>	
DRAWN BY: <b>MSL</b>	
CHECKED BY: <b>MSL</b>	
APPROVED BY: <b>MSL</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**

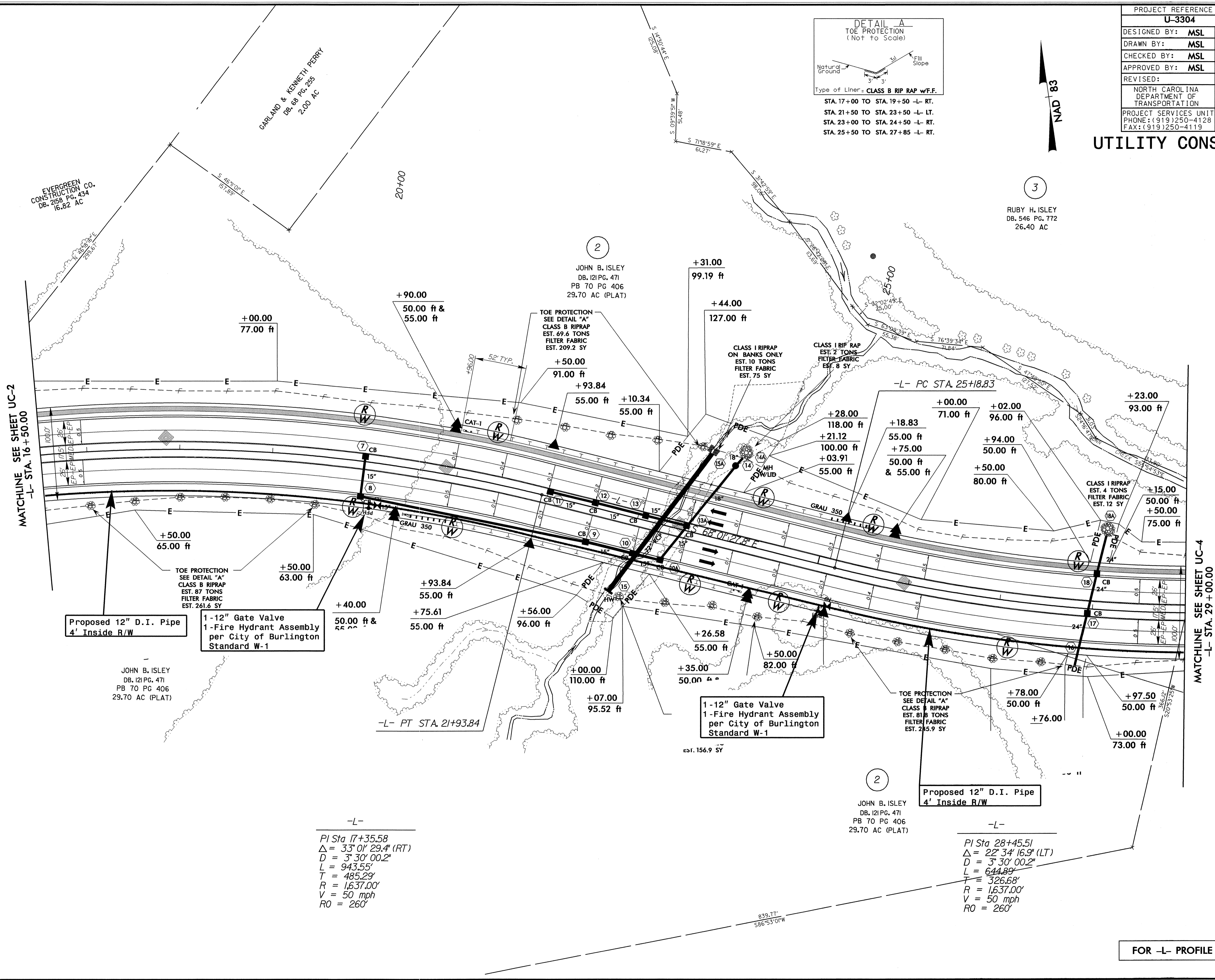


NAD 83

3  
 RUBY H. ISLEY  
 DB. 546 PG. 772  
 26.40 AC

2  
 JOHN B. ISLEY  
 DB. 121 PG. 471  
 PB 70 PG 406  
 29.70 AC (PLAT)

2  
 JOHN B. ISLEY  
 DB. 121 PG. 471  
 PB 70 PG 406  
 29.70 AC (PLAT)



MATCHLINE SEE SHEET UC-2  
 -L- STA. 16+50.00

MATCHLINE SEE SHEET UC-4  
 -L- STA. 29+00.00

Proposed 12" D.I. Pipe  
 4' Inside R/W

1-12" Gate Valve  
 1-Fire Hydrant Assembly  
 per City of Burlington  
 Standard W-1

1-12" Gate Valve  
 1-Fire Hydrant Assembly  
 per City of Burlington  
 Standard W-1

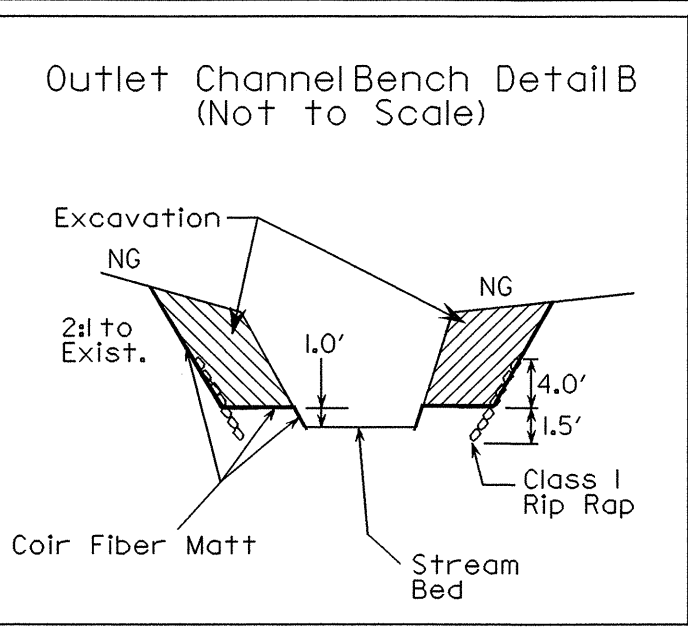
Proposed 12" D.I. Pipe  
 4' Inside R/W

-L-  
 PI Sta 17+35.58  
 $\Delta = 33^{\circ} 01' 29.4" (RT)$   
 $D = 3^{\circ} 30' 00.2"$   
 $L = 943.55'$   
 $T = 485.29'$   
 $R = 1,637.00'$   
 $V = 50 \text{ mph}$   
 $RO = 260'$

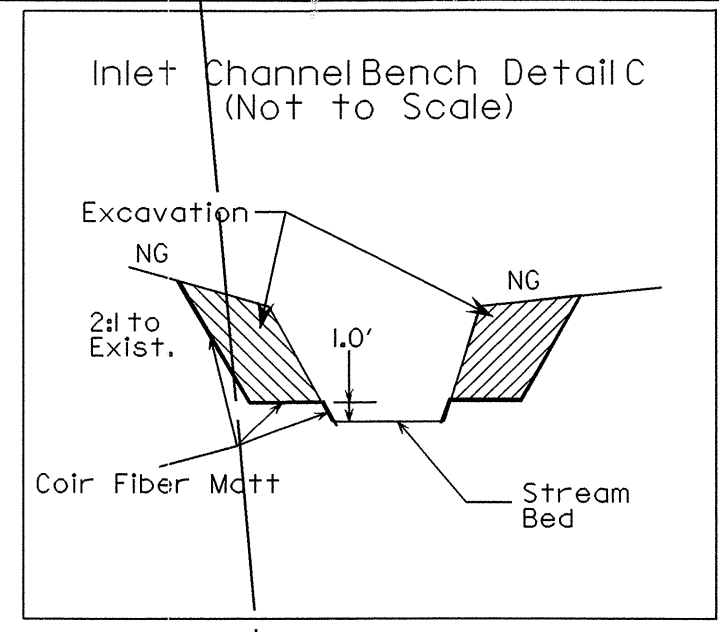
-L-  
 PI Sta 28+45.51  
 $\Delta = 22^{\circ} 34' 16.9" (LT)$   
 $D = 3^{\circ} 30' 00.2"$   
 $L = 644.89'$   
 $T = 326.68'$   
 $R = 1,637.00'$   
 $V = 50 \text{ mph}$   
 $RO = 260'$

FOR -L- PROFILE SEE SHEET 12

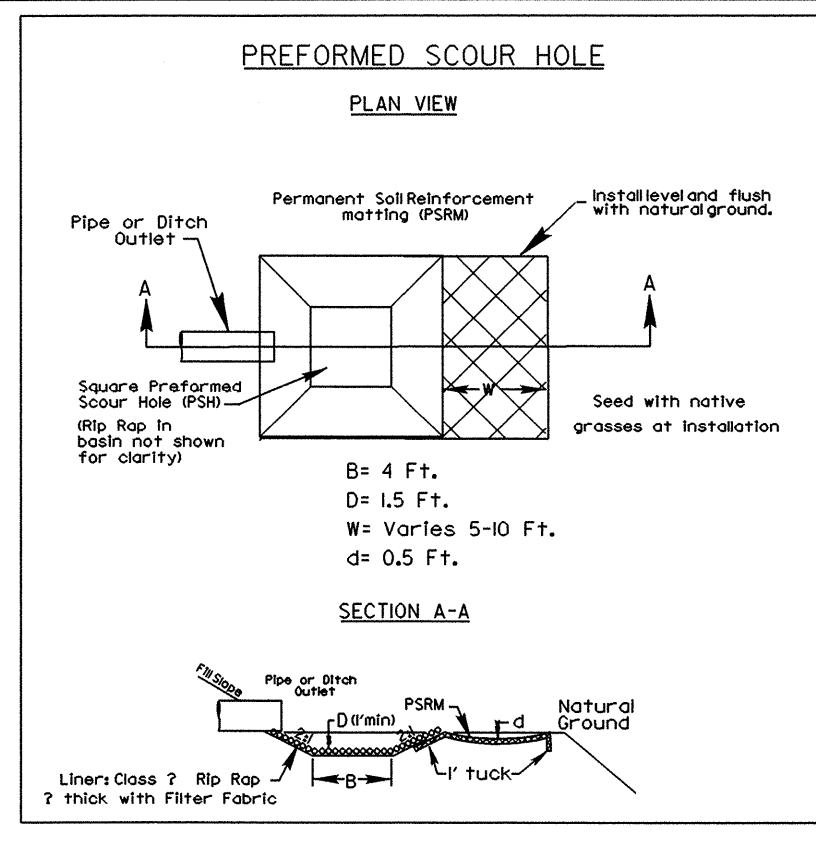
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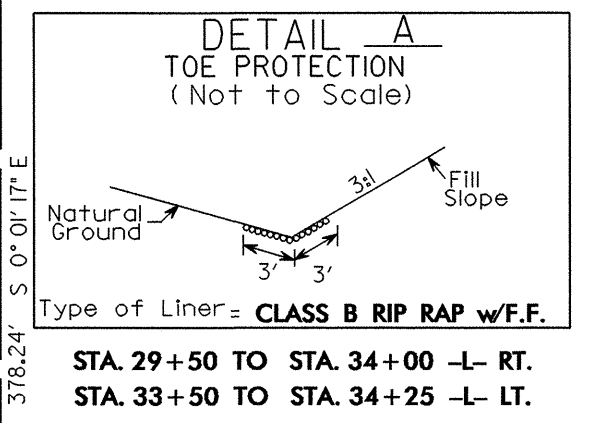
STA 34+40 -L- (RT)



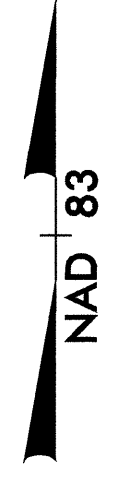
STA 34+55 -L- (LT)



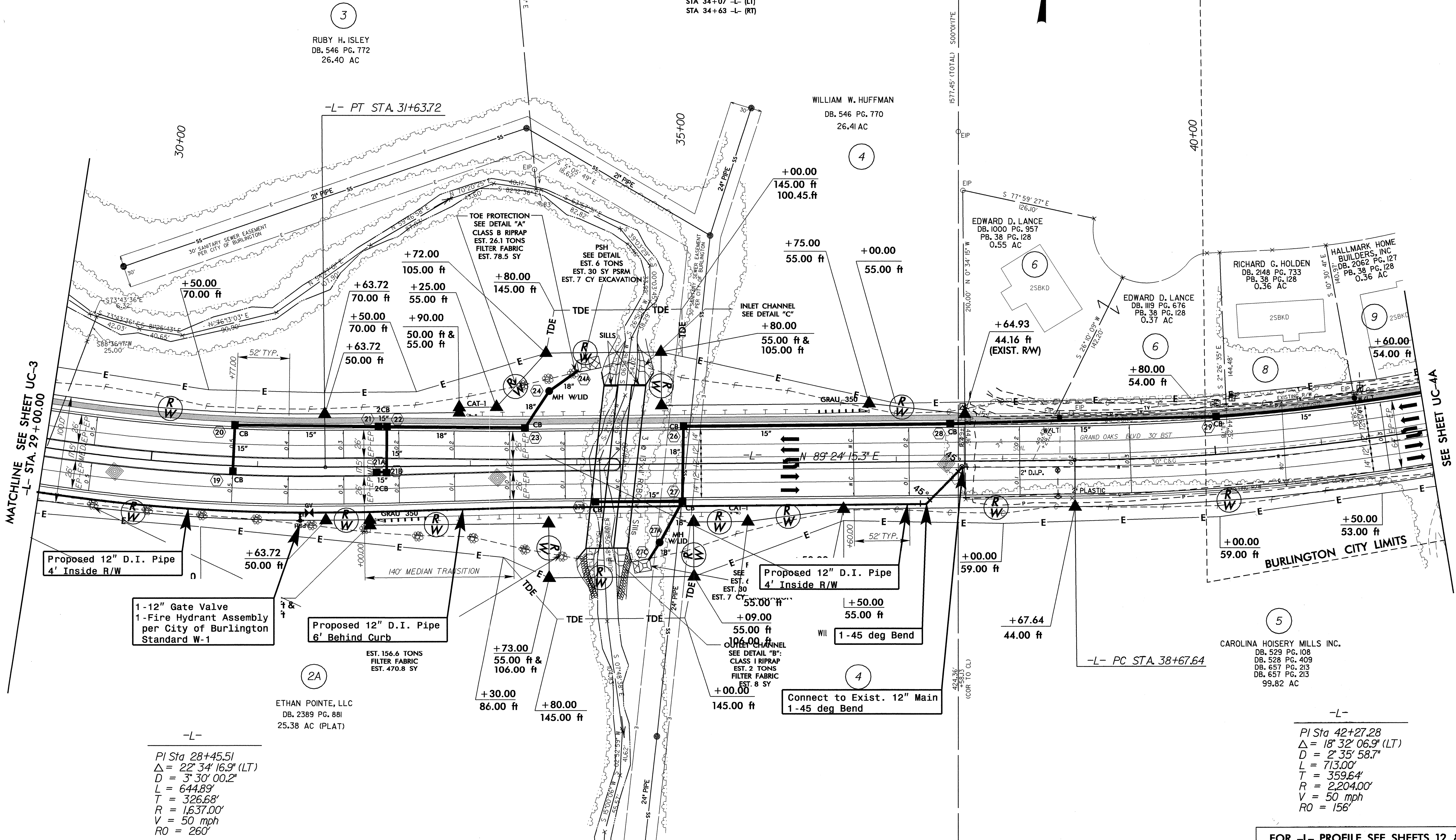
STA 34+07 -L- (LT)  
STA 34+63 -L- (RT)



STA 29+50 TO STA. 34+00 -L- RT.  
STA. 33+50 TO STA. 34+25 -L- LT.



PROJECT REFERENCE NO. <b>U-3304</b>	SHEET NO. <b>UC-4</b>
DESIGNED BY: <b>MSL</b>	
DRAWN BY: <b>MSL</b>	
CHECKED BY: <b>MSL</b>	
APPROVED BY: <b>MSL</b>	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119
<b>UTILITY CONSTRUCTION</b>	



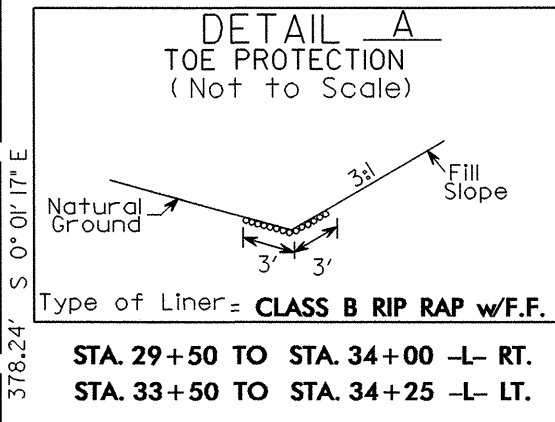
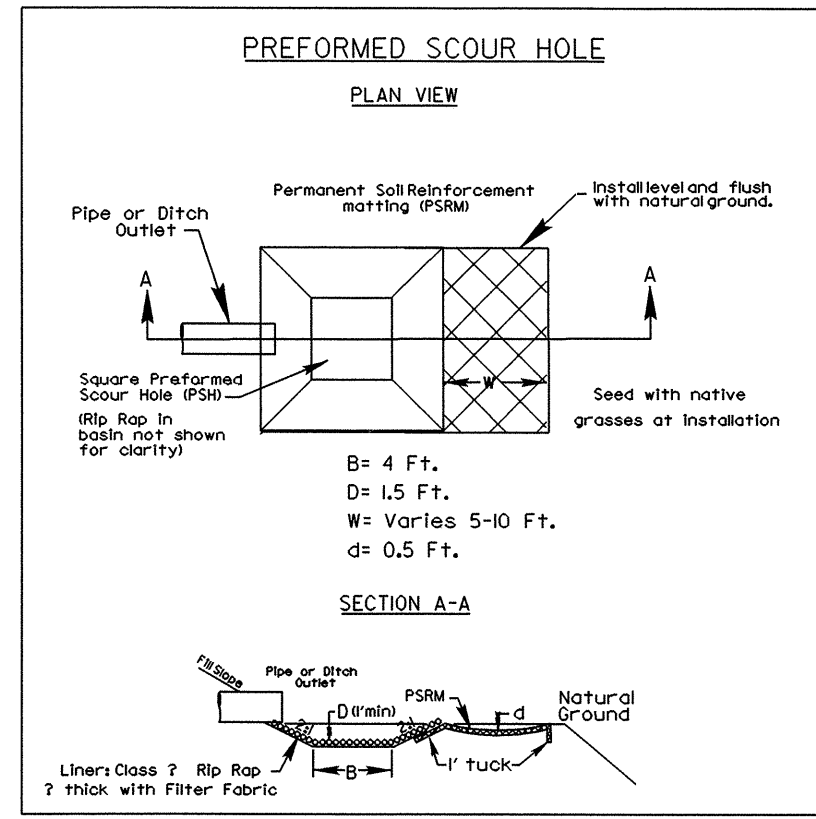
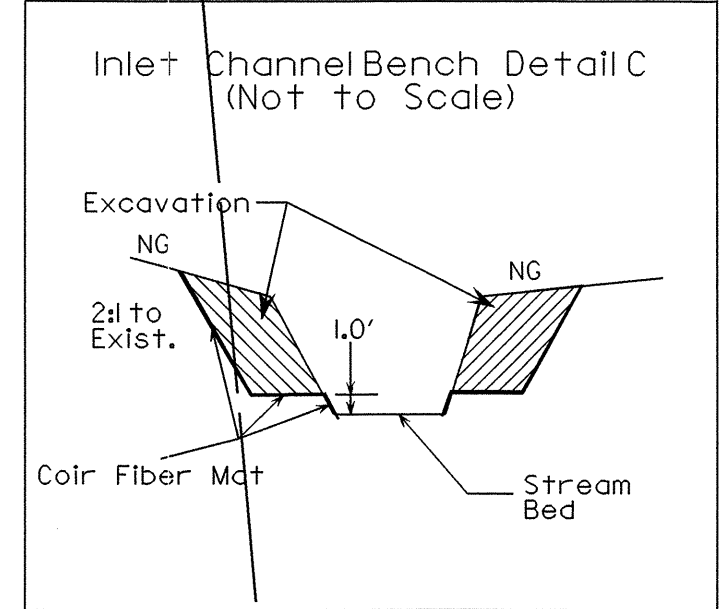
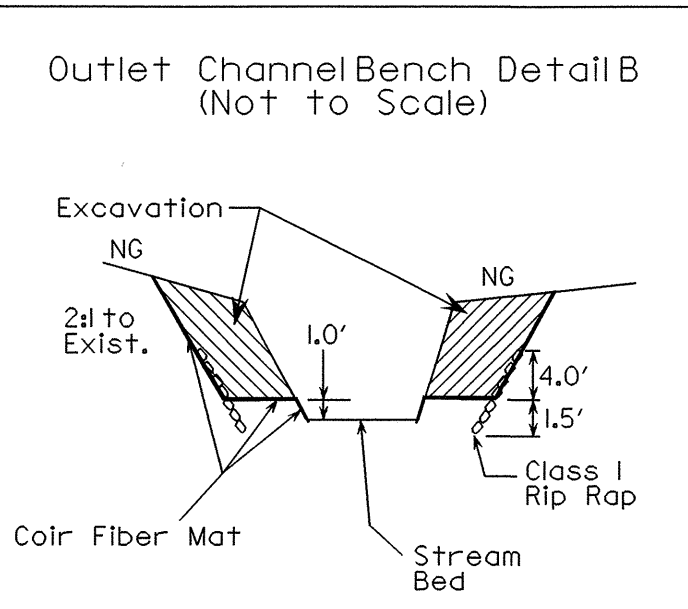
-L-  
 PI Sta 28+45.51  
 $\Delta = 22^\circ 34' 16.9''$  (LT)  
 $D = 3^\circ 30' 00.2''$   
 $L = 644.89'$   
 $T = 326.68'$   
 $R = 1,637.00'$   
 $V = 50$  mph  
 $RO = 260'$

-L-  
 PI Sta 42+27.28  
 $\Delta = 18^\circ 32' 06.9''$  (LT)  
 $D = 2^\circ 35' 58.7''$   
 $L = 713.00'$   
 $T = 359.64'$   
 $R = 2,204.00'$   
 $V = 50$  mph  
 $RO = 156'$

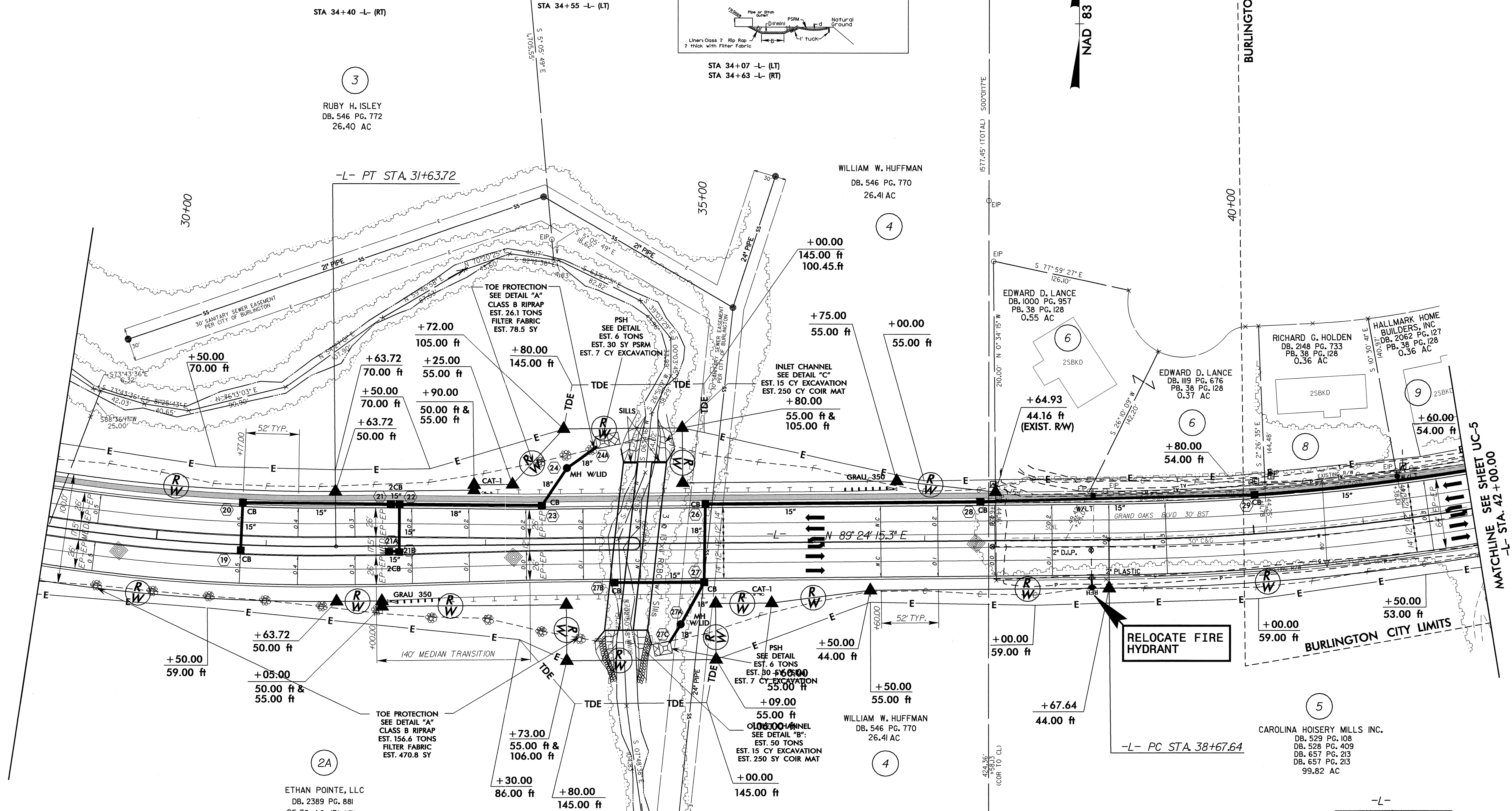
FOR -L- PROFILE SEE SHEETS 12 & 13

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 5/14/09

R/W REVISION 6/6/06: REVISED RIGHT-OF-WAY & TEMPORARY CONSTRUCTION EASEMENTS AT GUARDRAIL LOCATION, -L- STA. 32+05 TO STA. 37+64.93 LT. & RT. FOR PARCEL 2 & 4  
 R/W REVISION 11/16/06: COMBINED PARCELS 6 AND 7 TO MAKE PARCEL 6.  
 R/W REVISION 4/24/07: UPDATED PROPERTY LINES ON PARCEL NO.'S 2, 3, AND 4. SUB-DIVIDED PARCEL 2, ADDING PARCEL 2A.



PROJECT REFERENCE NO. <b>U-3304</b>	SHEET NO. <b>UC-4A</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
<b>UTILITY CONSTRUCTION</b>	



-L-  
 PI Sta 28+45.51  
 = 22° 34' 16.9" (LT)  
 D = 3' 30' 00.2"  
 L = 644.89'  
 T = 326.68'  
 R = 1,637.00'  
 V = 50 mph  
 RO = 260'

-L-  
 PI Sta 42+27.28  
 = 18° 32' 06.9" (LT)  
 D = 2' 35' 58.7"  
 L = 713.00'  
 T = 359.64'  
 R = 2,204.00'  
 V = 50 mph  
 RO = 156'

FOR -L- PROFILE SEE SHEETS 12 & 13

MATCHLINE SEE SHEET UC-5  
 -L- STA. 42+00.00

BURLINGTON CITY LIMITS

NAD 83

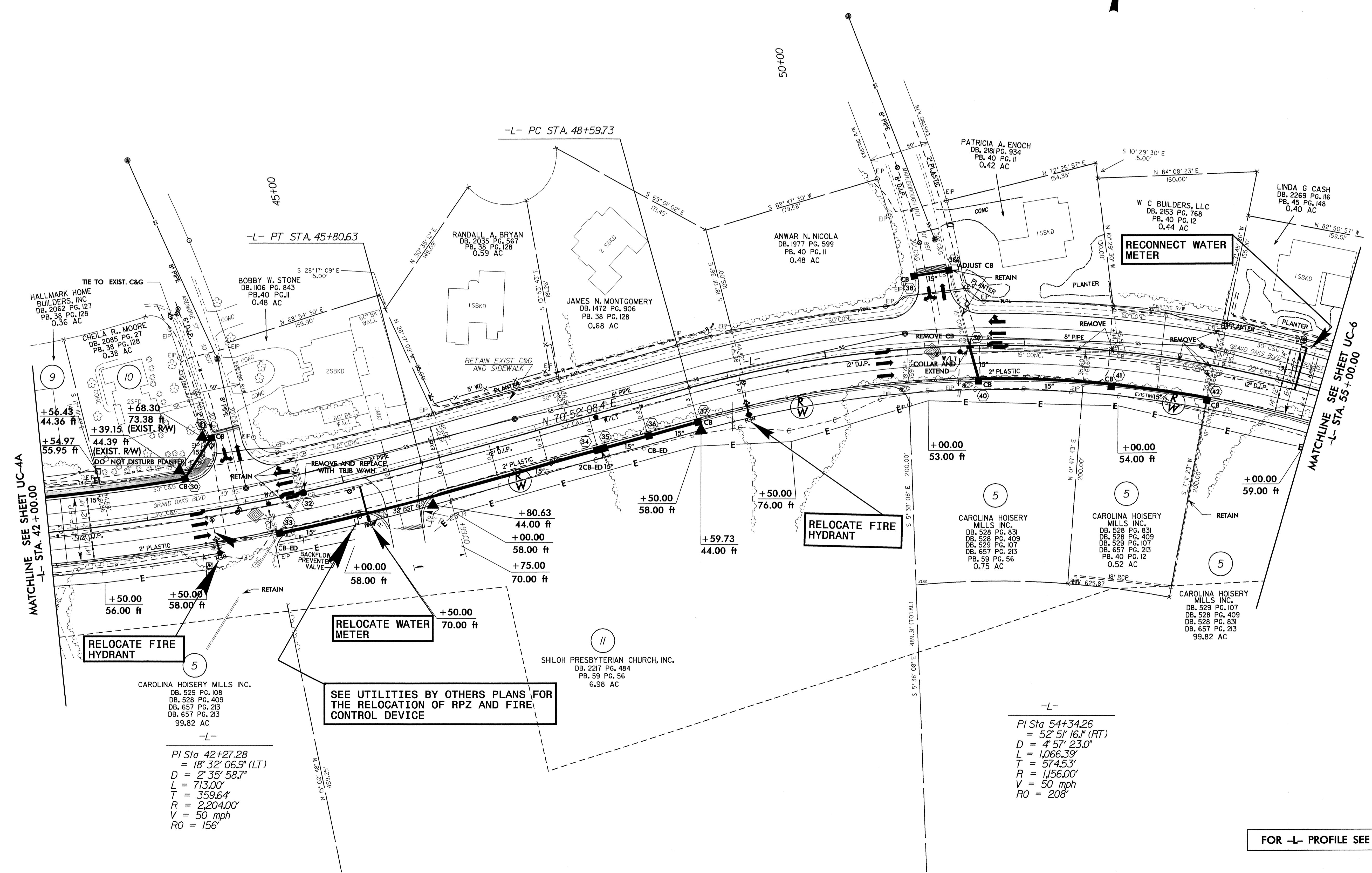
5/14/09  
04-MAR-2008 12:34  
C:\Users\jacob\Documents\Projects\U-3304\U-3304-uc5\_psh7.dgn

R/W REVISION TRM 9/01/06; COMBINED PARCEL 12,13,  
AND 15 INTO PARCEL No.5.  
DESIGN REVISION 11/16/06; REVISED S.E.-L- STA.45+99.00 TO  
60+65.00 LT. AND SLOPE STAKE LIMITS Ne

AVERAGE DAILY TRAFFIC		2008		2030	
	ADMORE ST.	525		MARLBOROUGH RD.	1,158
		800			1,800
10,775	317	208	10,067	633	525
23,100	500	300	22,900	1,000	800
	GRAND OAK BLVD		-L-		SR 1213

PROJECT REFERENCE NO. <b>U-3304</b>	SHEET NO. <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	

**UTILITY CONSTRUCTION**



MATCHLINE SEE SHEET UC-4A  
-L- STA. 42+00.00

MATCHLINE SEE SHEET UC-6  
-L- STA. 55+00.00

CAROLINA HOISERY MILLS INC.  
DB. 529 PG. 108  
DB. 528 PG. 409  
DB. 657 PG. 213  
DB. 657 PG. 213  
99.82 AC

-L-  
PI Sta 42+27.28  
= 18' 32" 06.9" (LT)  
D = 2' 35" 58.7"  
L = 713.00'  
T = 359.64'  
R = 2,204.00'  
V = 50 mph  
RO = 156'

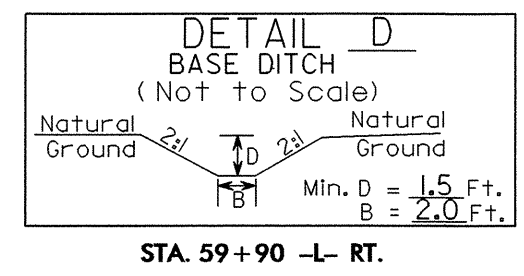
SEE UTILITIES BY OTHER PLANS FOR  
THE RELOCATION OF RPS AND FIRE  
CONTROL DEVICE

-L-  
PI Sta 54+34.26  
= 52' 51" 16.1" (RT)  
D = 4' 57" 23.0"  
L = 1,066.39'  
T = 574.53'  
R = 1,156.00'  
V = 50 mph  
RO = 208'

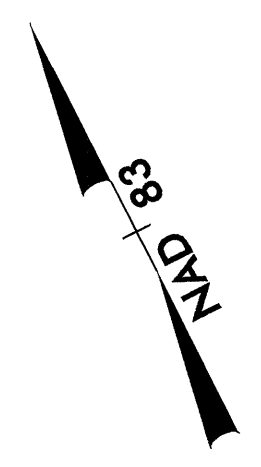
FOR -L- PROFILE SEE SHEET 13

5/14/09  
 04-MAR-2008 12:35  
 r:\utility\3304\proj\01\3304\_01\uc6\_esh8.dgn

DESIGN REVISION 5/8/07: ADDING 4 IN. CONC. SIDEWALK AND 2'-6" CONC. CURB AND GUTTER LEFT OF -L- STA.61+4.00 TO STA.62+20.00 AND SLOPE STAKE LIMITS.

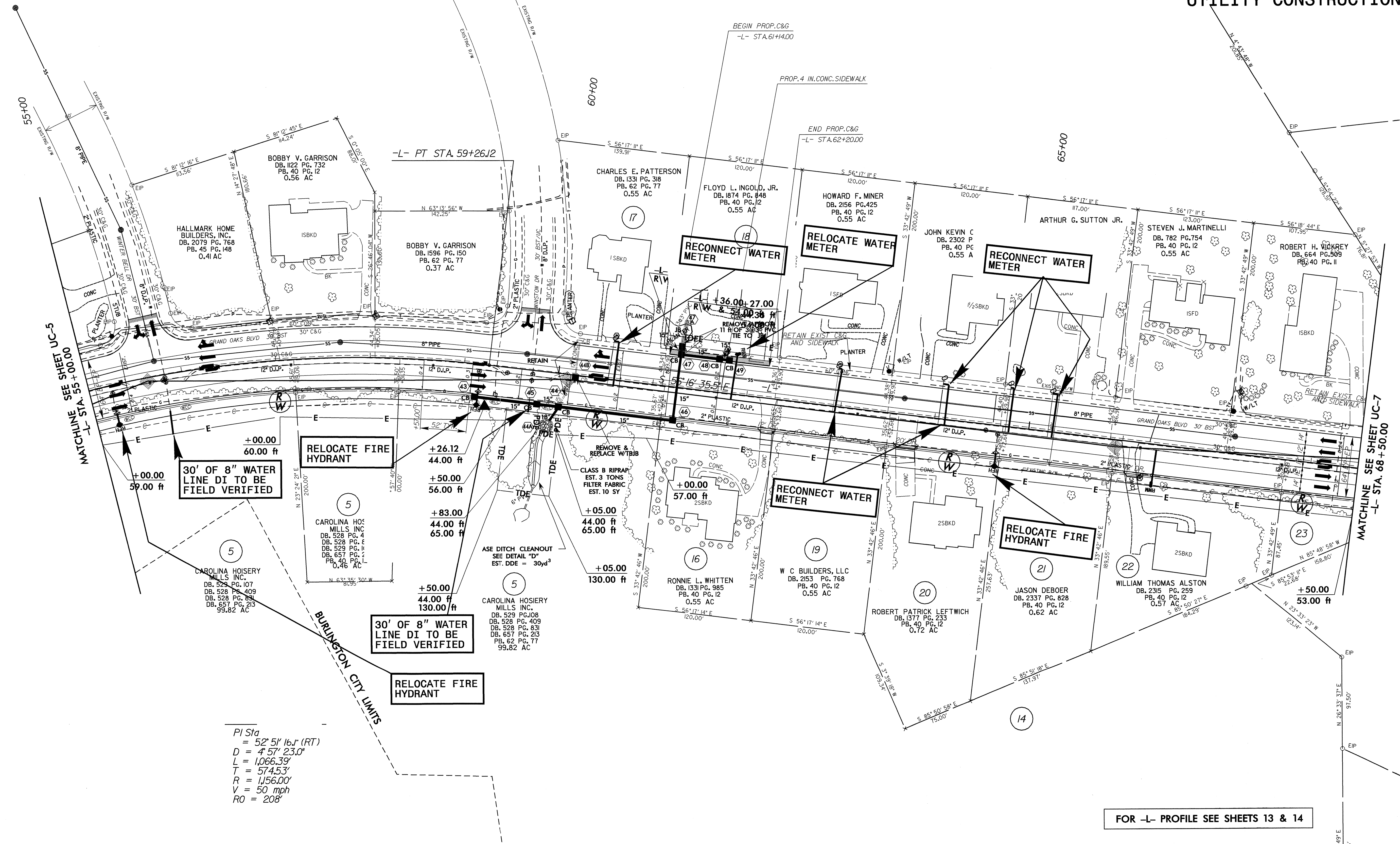


AVERAGE DAILY TRAFFIC		2008		2030	
WINTER BELL DR.	450	WINTER BELL DR.	450	WINSTON DR.	683
	1,000		1,000		1,600
	125	325	10,58	133	550
	400	600	22,900	500	1,100
GRAND OAK BLVD	9,958				
	22,700				10,575
					23,500



PROJECT REFERENCE NO. <b>U-3304</b>	SHEET NO. <b>UC-6</b>
DESIGNED BY: <b>KAK</b>	
DRAWN BY: <b>KAK</b>	
CHECKED BY: <b>CDB</b>	
APPROVED BY: <b>CDB</b>	
REVISER:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

**UTILITY CONSTRUCTION**



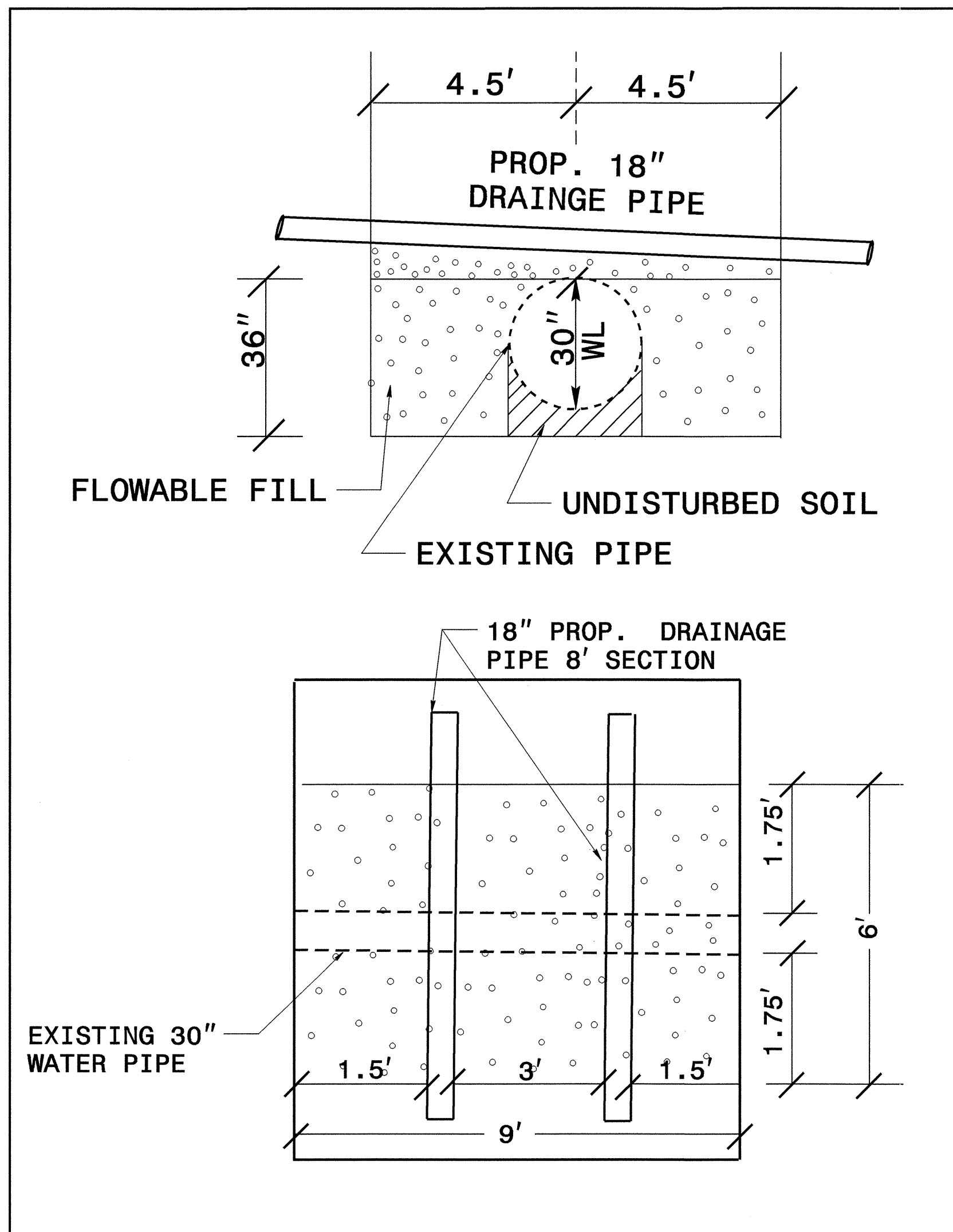
PI Sta = 52' 51' 16.1" (RT)  
 D = 4' 57' 23.0"  
 L = 1,066.39'  
 T = 574.53'  
 R = 1,156.00'  
 V = 50 mph  
 RO = 208'

FOR -L- PROFILE SEE SHEETS 13 & 14

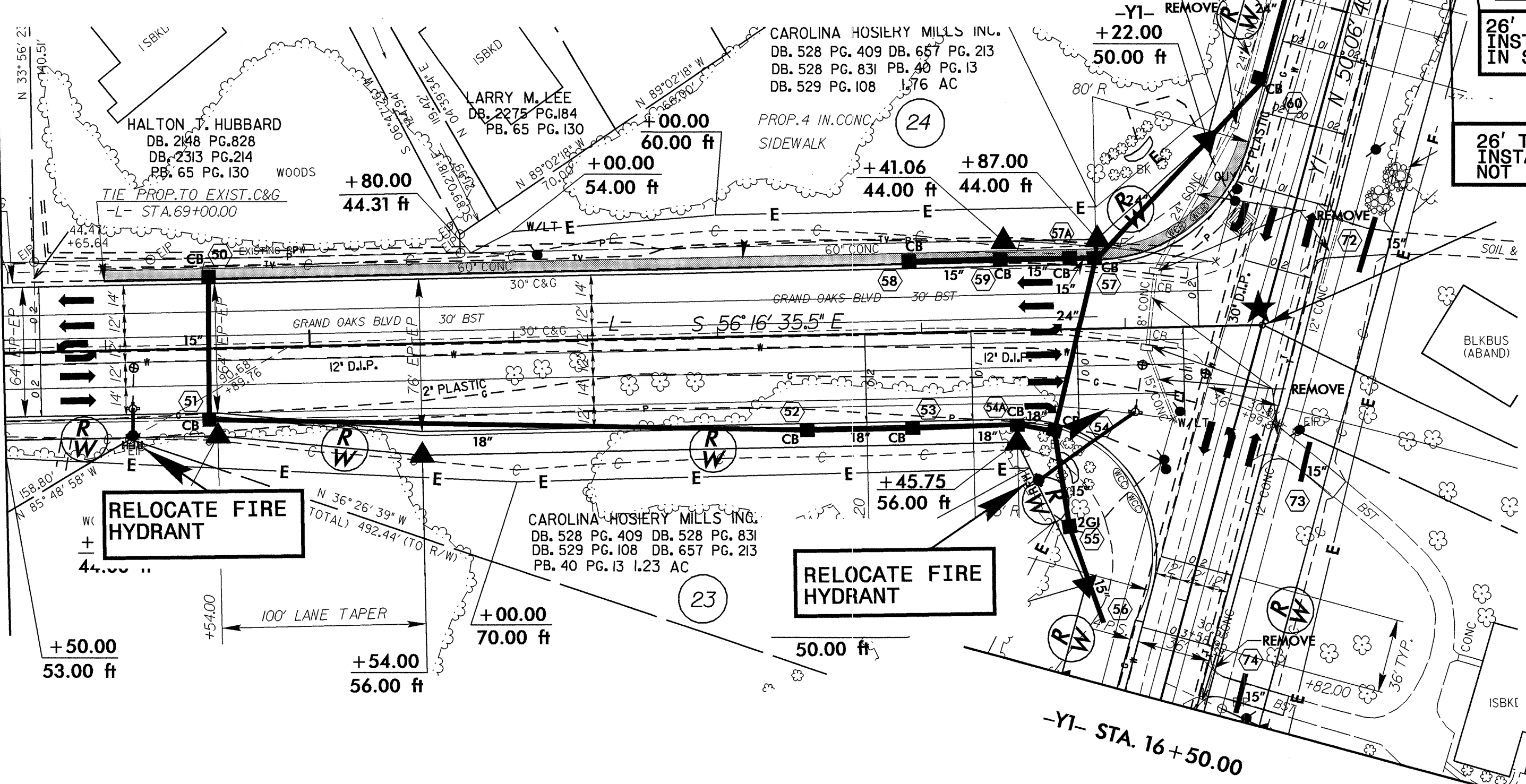
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 10-MAR-2008 12:25  
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 \$\$\$\$USERNAME\$\$\$\$

DESIGN REVISION 5/8/07: REVISED -L- GRADE FROM STA.68+85.00  
 TO STA.74+48.88, REVISED S.E. -L- STA.72+72.20 TO STA.74+48.88  
 & -Y1- STA.17+40.00 TO STA.20+14.00 LT. AND SLOPE STAKE  
 LIMITS.

# DETAIL



MATCHLINE SEE SHEET 6  
 -L- STA. 68+50.00



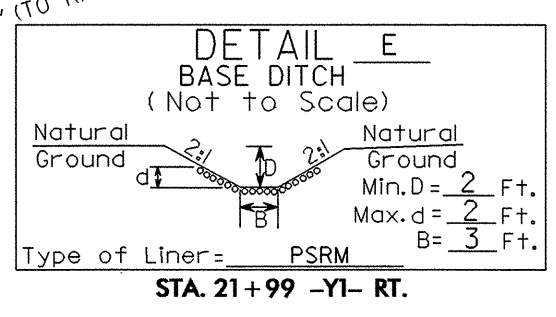
**NOTE: THE DI SEWER PIPE SHOULD HAVE PROTECTO  
 401 CERAMIC EPOXY COATING  
 PER CITY OF BURLINGTON STANDARD**

**ALL FEES AND NECESSARY CONNECTION TO  
 PROVIDE SEWER SERVICE TO  
 PARCEL 25 WILL BE INCIDENTAL TO THE  
 COST OF 4\"/>**

PROJECT REFERENCE NO. <b>U-3304</b>	SHEET NO. <b>UC-7</b>
DESIGNED BY: <b>KAK</b>	
DRAWN BY: <b>KAK</b>	
CHECKED BY: <b>CDB</b>	
APPROVED BY: <b>CDB</b>	
REVISER:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	UTILITY CONSTRUCTION PLANS ONLY

## UTILITY CONSTRUCTION

AVERAGE DAILY TRAFFIC		2008	2030
NC 62			
		10,958	19,300
10,575	4,525	2,258	6,333
23,500	10,300	5,000	14,400
-L-			
GRAND OAK BLVD SR 1213	4,117	2,150	4,900
	8,700	4,900	
		10,442	17,500
ALAMANCE RD.			

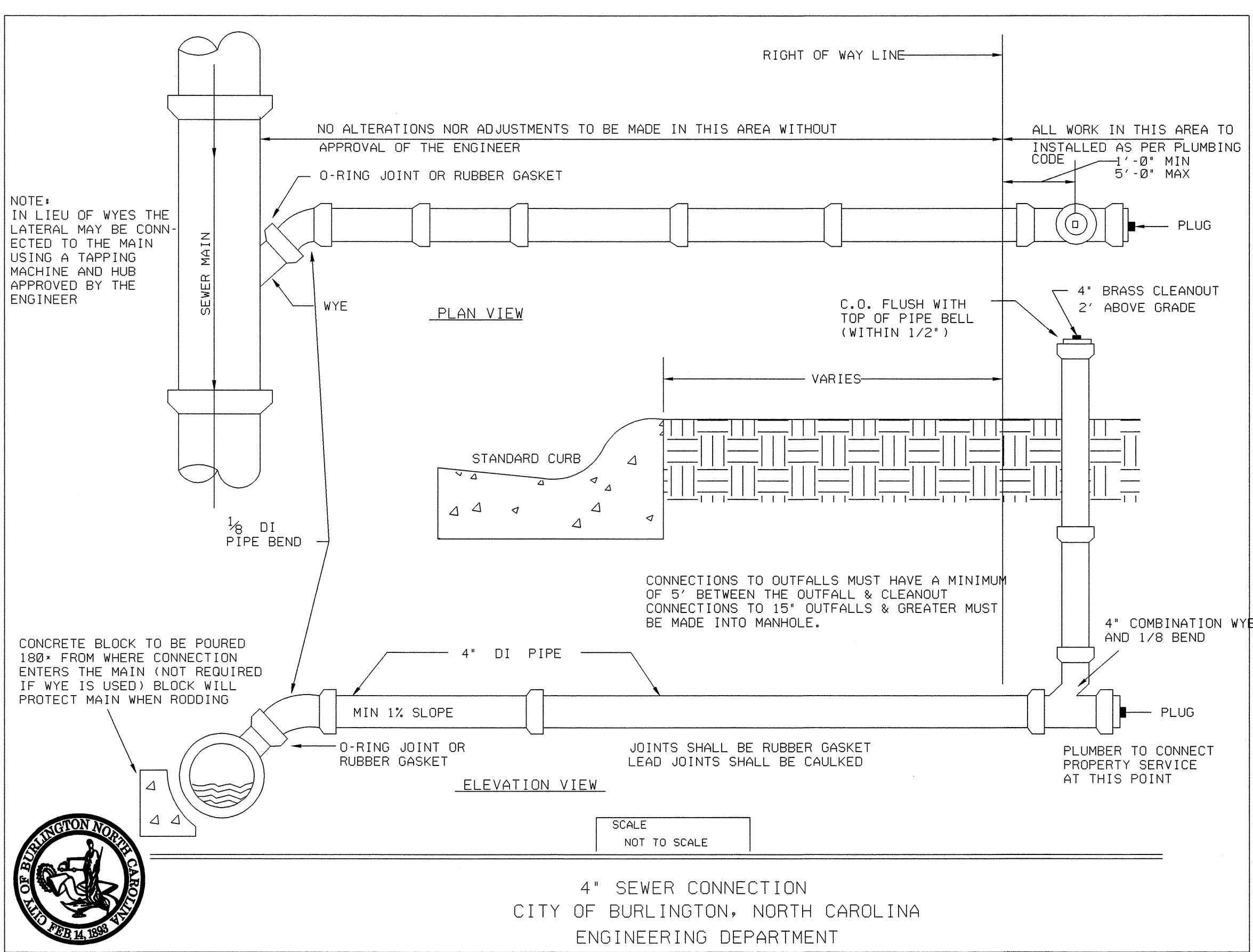
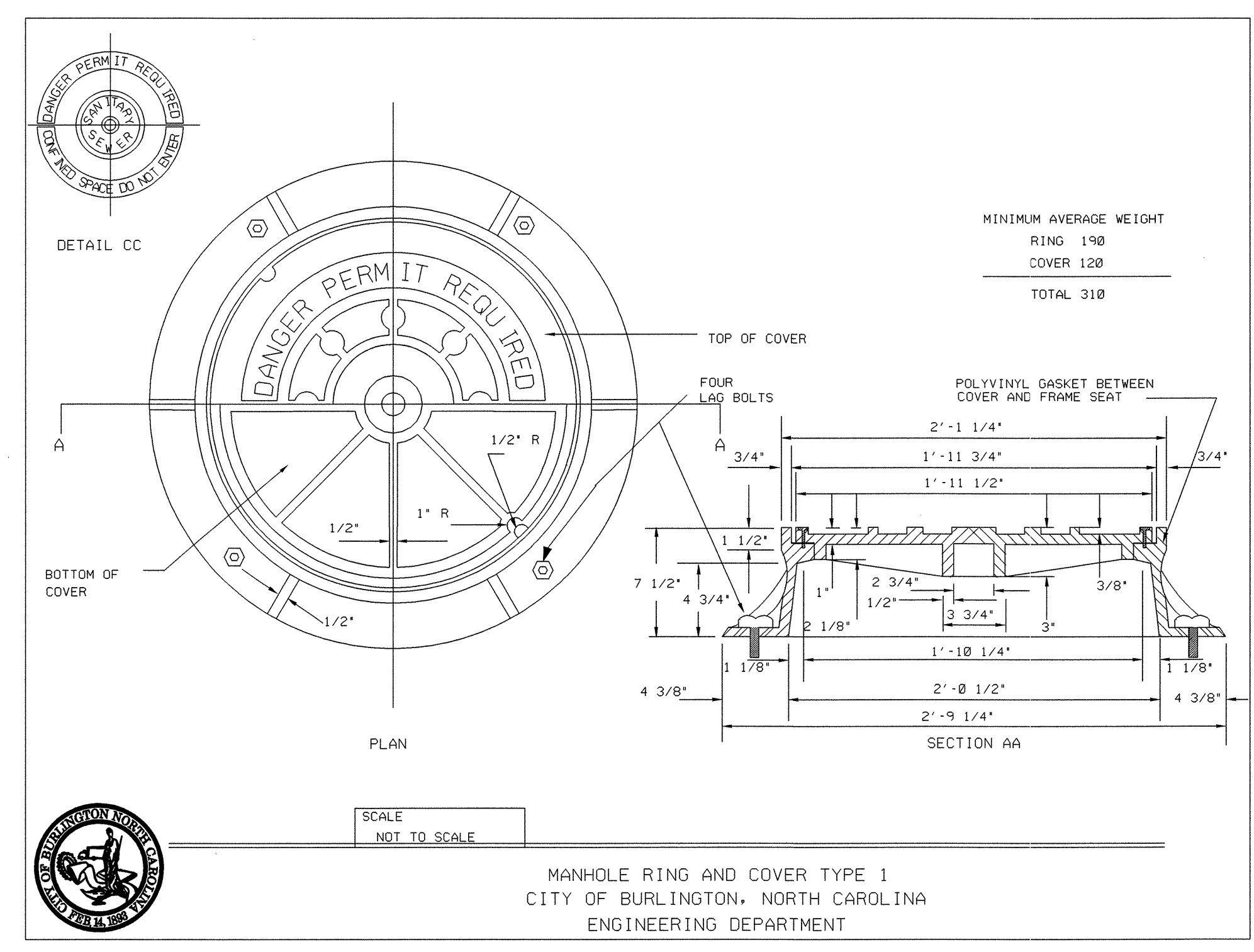


5/14/99

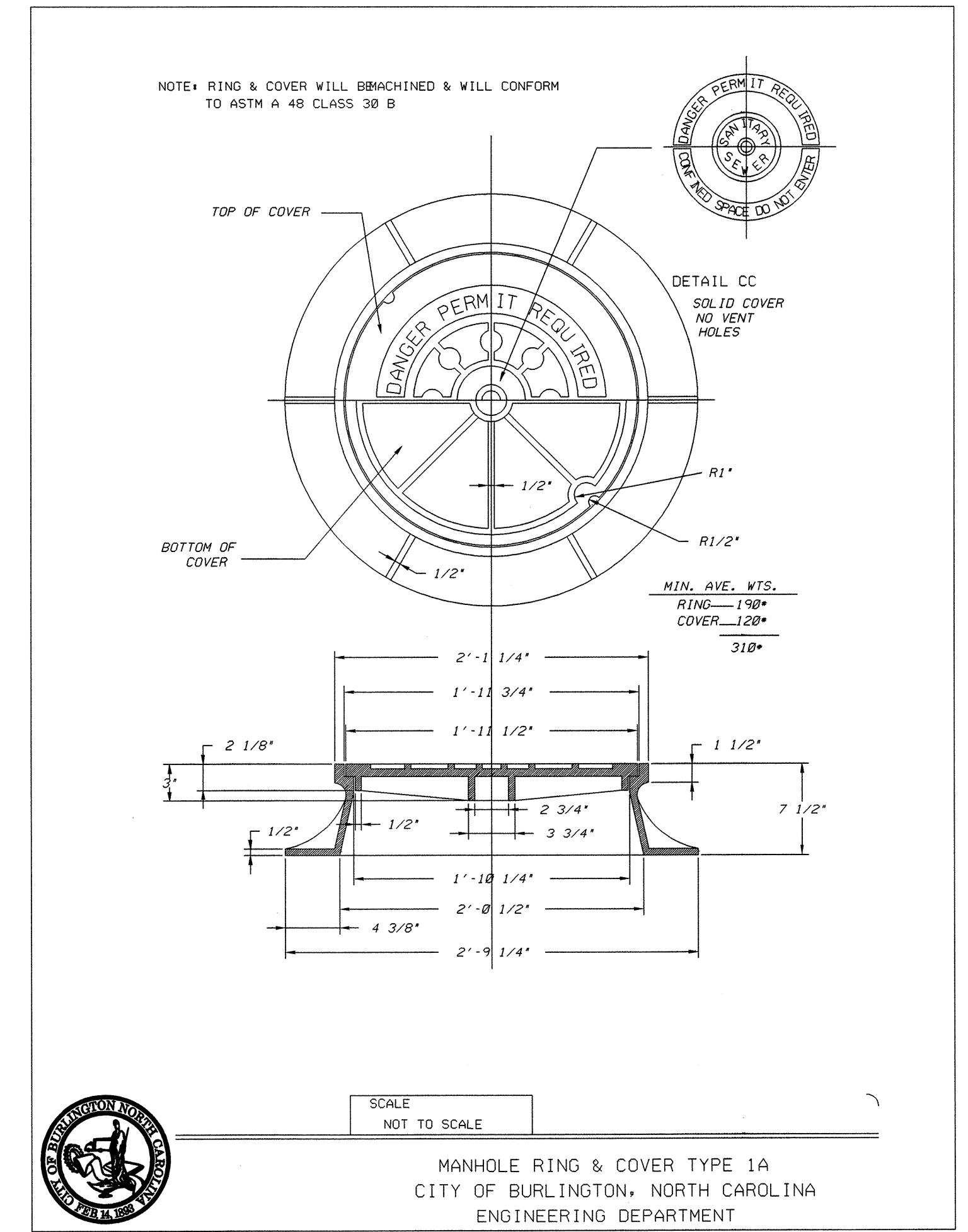
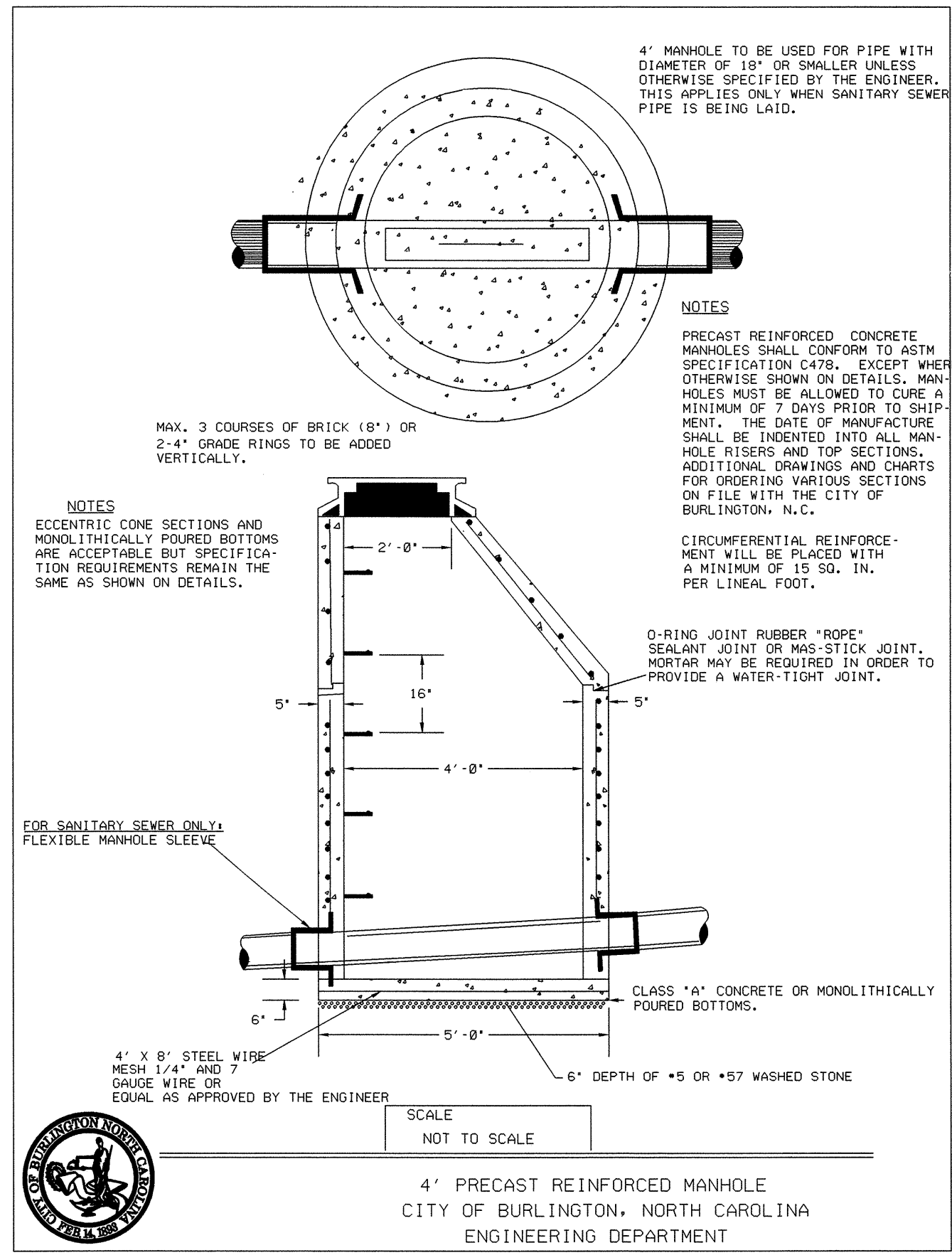
04-MAR-2008 14:49  
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 \$\$\$\$USERS\NAME\$\$\$\$

PROJECT REFERENCE NO.	SHEET NO.
<b>U-3304</b>	<b>UC-8</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**



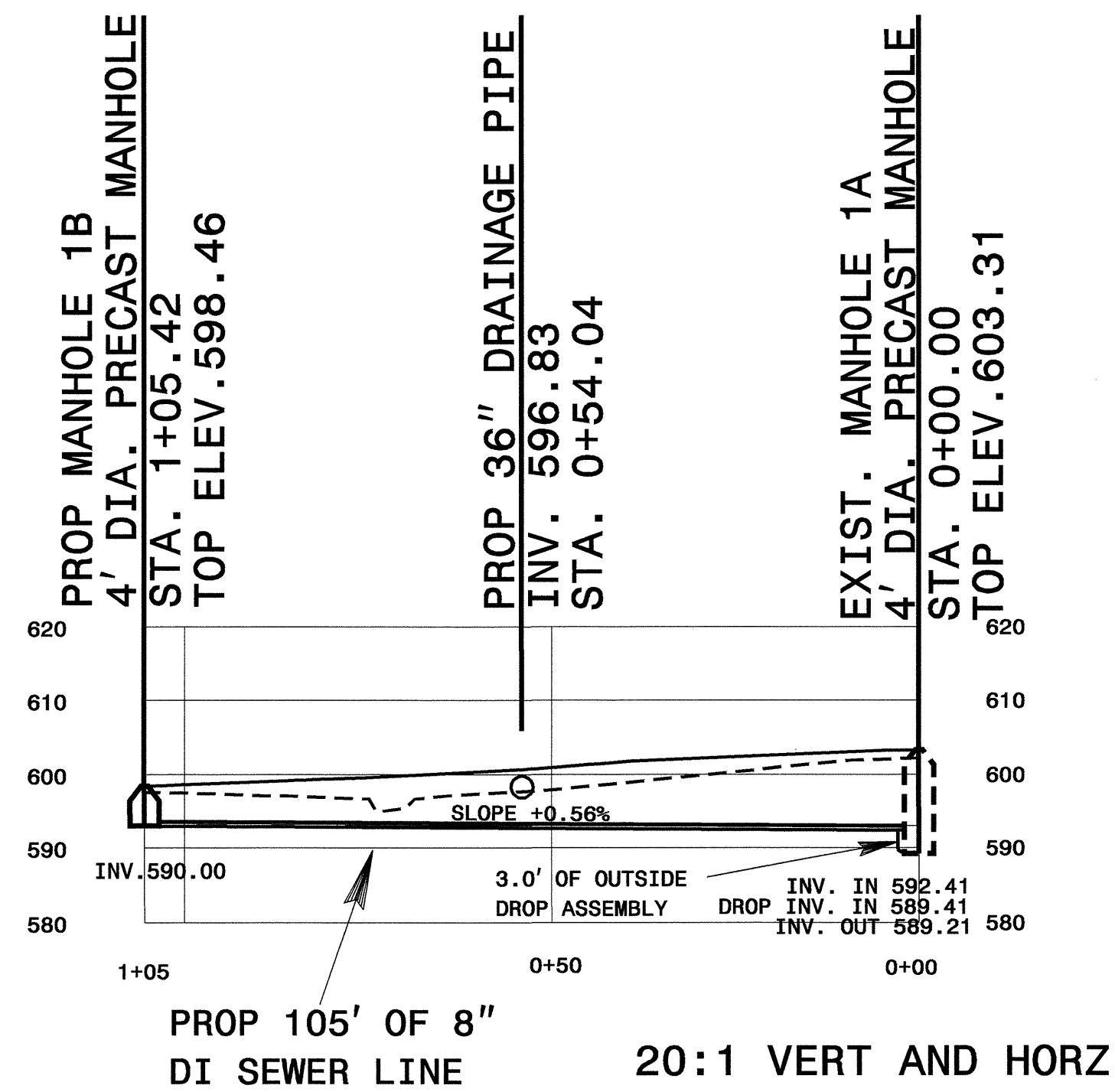
NOMINAL PIPE SIZE (mm)	MAXIMUM TRENCH WIDTH AT TOP OF PIPE		
	TRENCH WIDTH (meters)	NOMINAL PIPE SIZE (mm)	TRENCH WIDTH (meters)
100	0.72	500	1.12
150	0.76	610	1.22
200	0.81	750	1.37
250	0.86	900	1.57
300	0.91	1050	1.68
350	0.97	1200	1.83
400	1.02	1400	1.98
450	1.07		



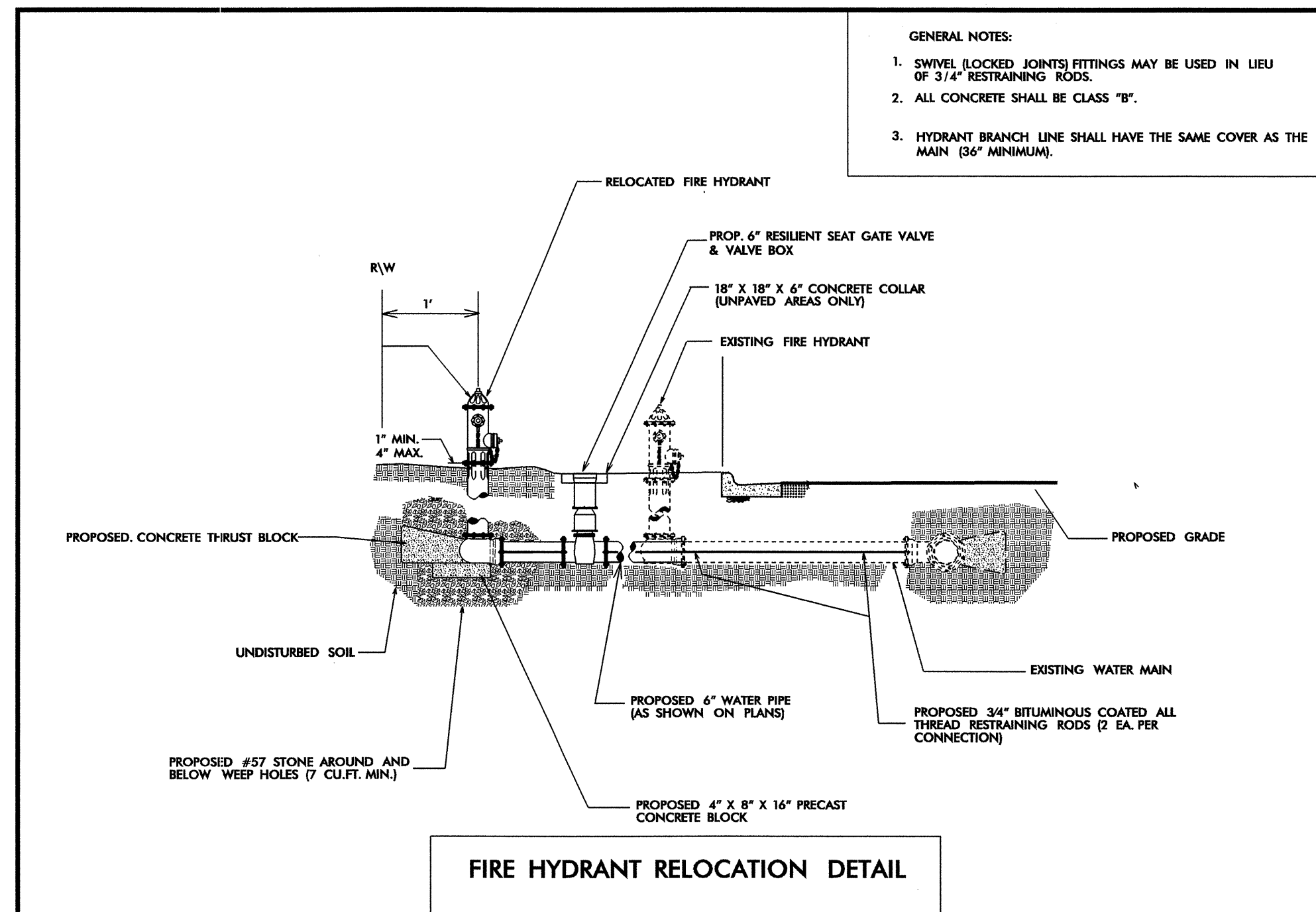


5/14/99

# 8" SEWER LINE LINE 1

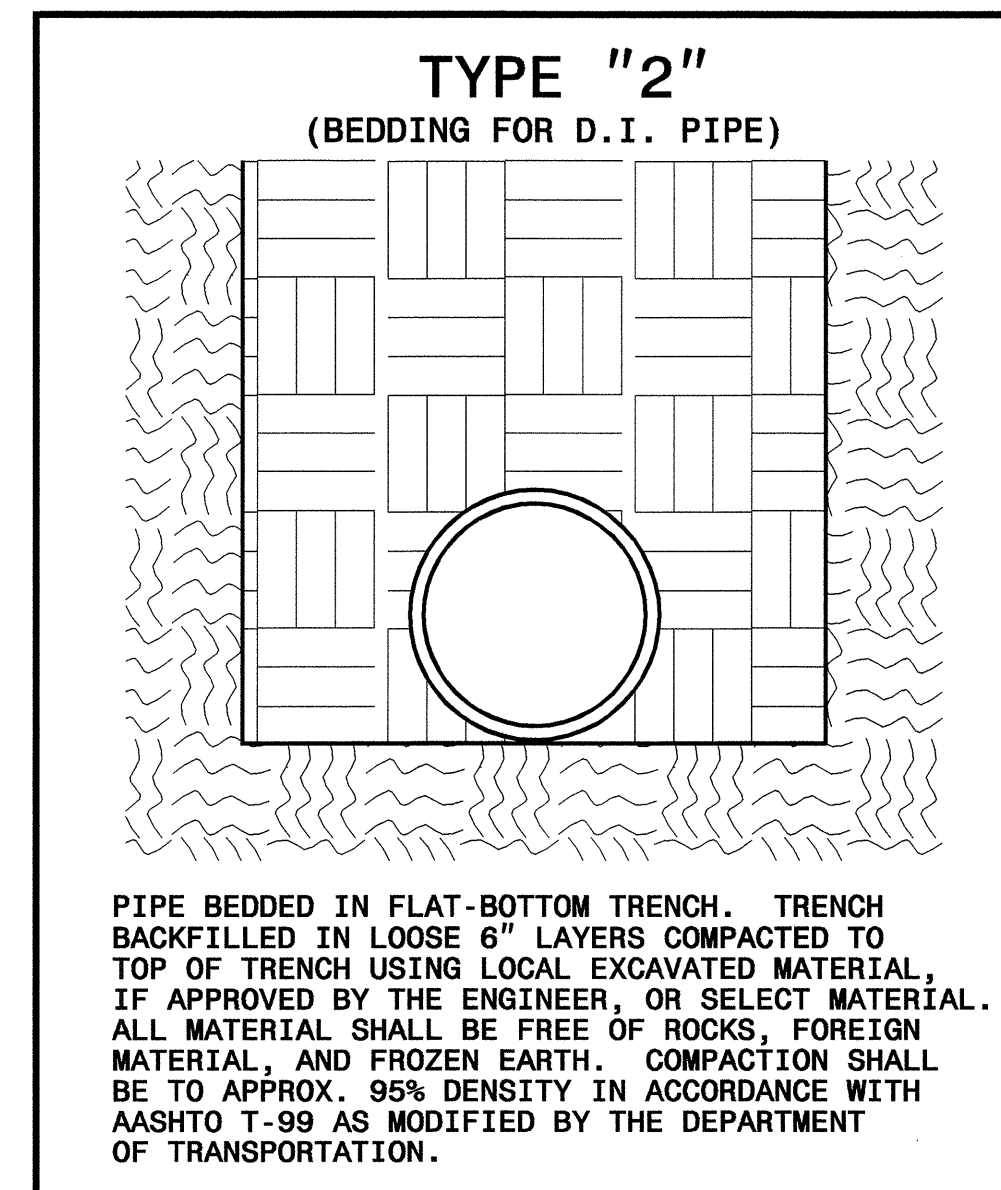


PROP 105' OF 8" DI SEWER LINE  
20:1 VERT AND HORZ



FIRE HYDRANT RELOCATION DETAIL

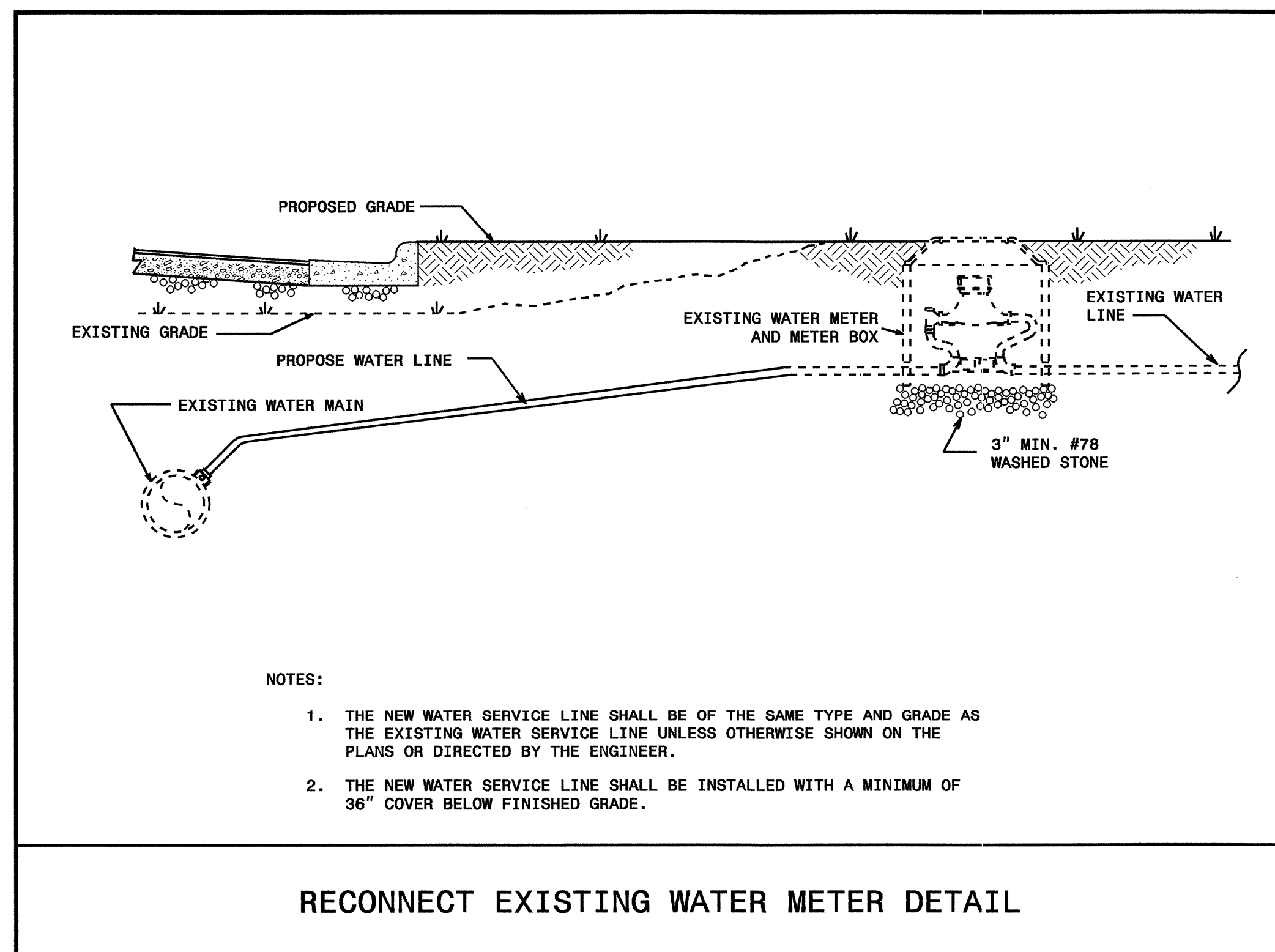
- GENERAL NOTES:
1. SWIVEL LOCKED JOINTS FITTINGS MAY BE USED IN LIEU OF 3/4" RESTRAINING RODS.
  2. ALL CONCRETE SHALL BE CLASS "B".
  3. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (36" MINIMUM).



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.

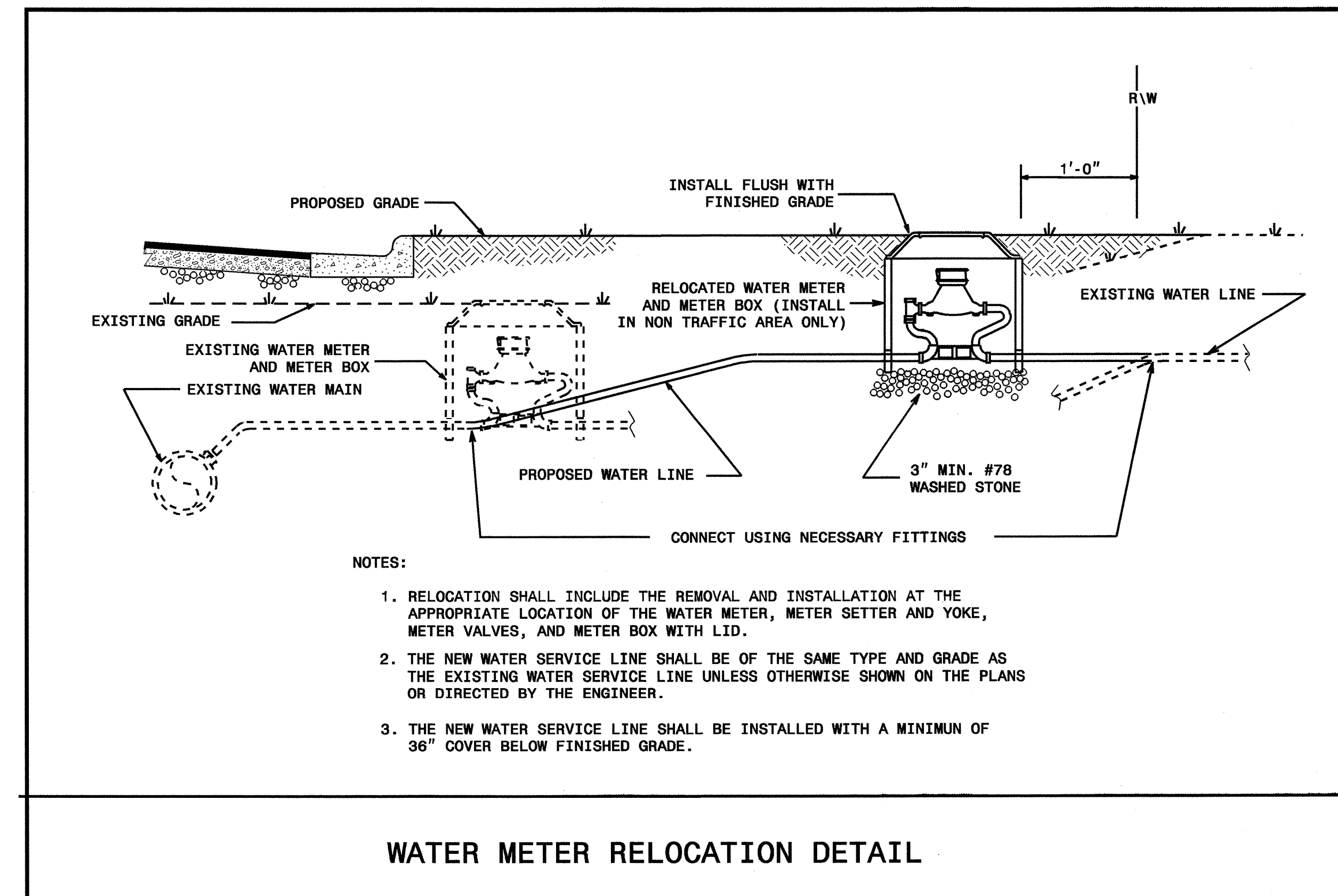
## UTILITY CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
U-3304	UC-9
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	



- NOTES:
1. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
  2. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER BELOW FINISHED GRADE.

RECONNECT EXISTING WATER METER DETAIL



- NOTES:
1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT 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 OF THE SAME TYPE AND 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.

WATER METER RELOCATION DETAIL

04-MAR-2008 15:53  
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5/28/99

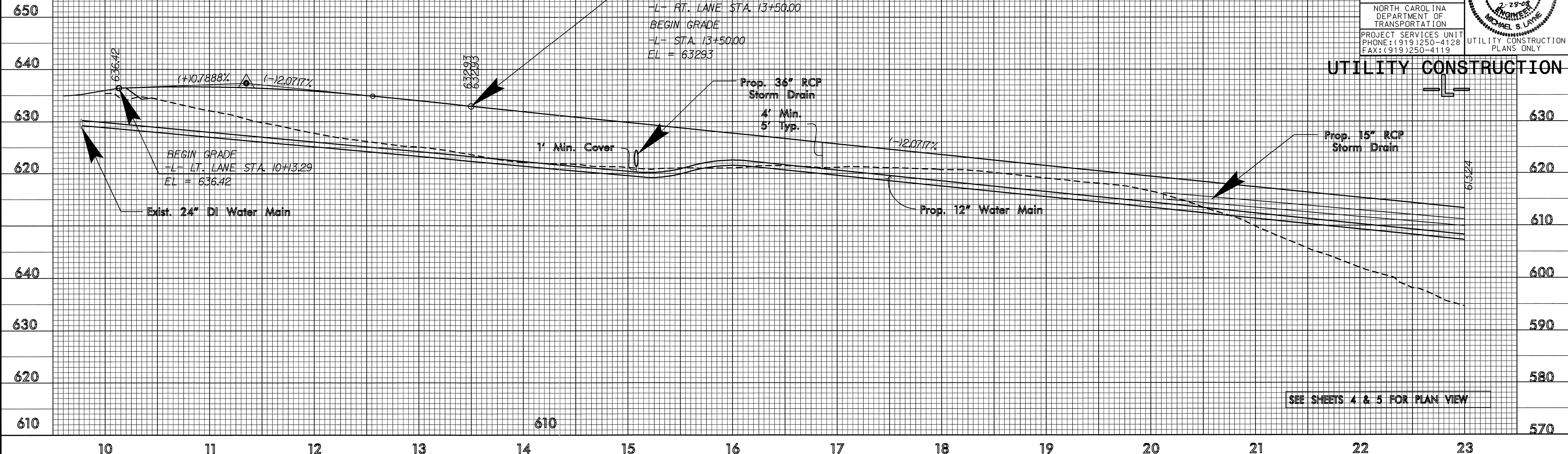
-L- (LT. LANE)  
PI = 11+35.00  
EL = 637.38'  
VC = 242'  
K = 85  
V<sub>DES</sub> = 50 mph

BM#1 EL=626.96 RAILROAD SPIKE  
IN BASE OF 18" RED CEDAR  
-L- STA. 14+94.80, 296.84 LT.

END GRADE  
-L- LT. LANE STA. 13+50.00  
-L- RT. LANE STA. 13+50.00  
BEGIN GRADE  
-L- STA. 13+50.00  
EL = 632.93

PROJECT REFERENCE NO.	SHEET NO.
U-3304	UC-11
DESIGNED BY: MSL	
DRAWN BY: MSL	
CHECKED BY: MSL	
APPROVED BY: MSL	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

### UTILITY CONSTRUCTION



BM#2 EL=577.91 RAILROAD SPIKE  
IN BASE OF 20" MAPLE  
-L- STA. 34+21.20, 271.58 RT.

PI = 34+41.00 LB  
EL = 599.31'

PI = 34+41.00 LA  
EL = 599.43'

PI = 31+70.50  
EL = 595.21'  
VC = 541'  
K = 151  
V<sub>DES</sub> = 50 mph

PI = 35+77.56  
EL = 601.50'  
VC = 273'  
K = 163  
V<sub>DES</sub> = 50 mph

STRUCTURE HYDRAULIC DATA

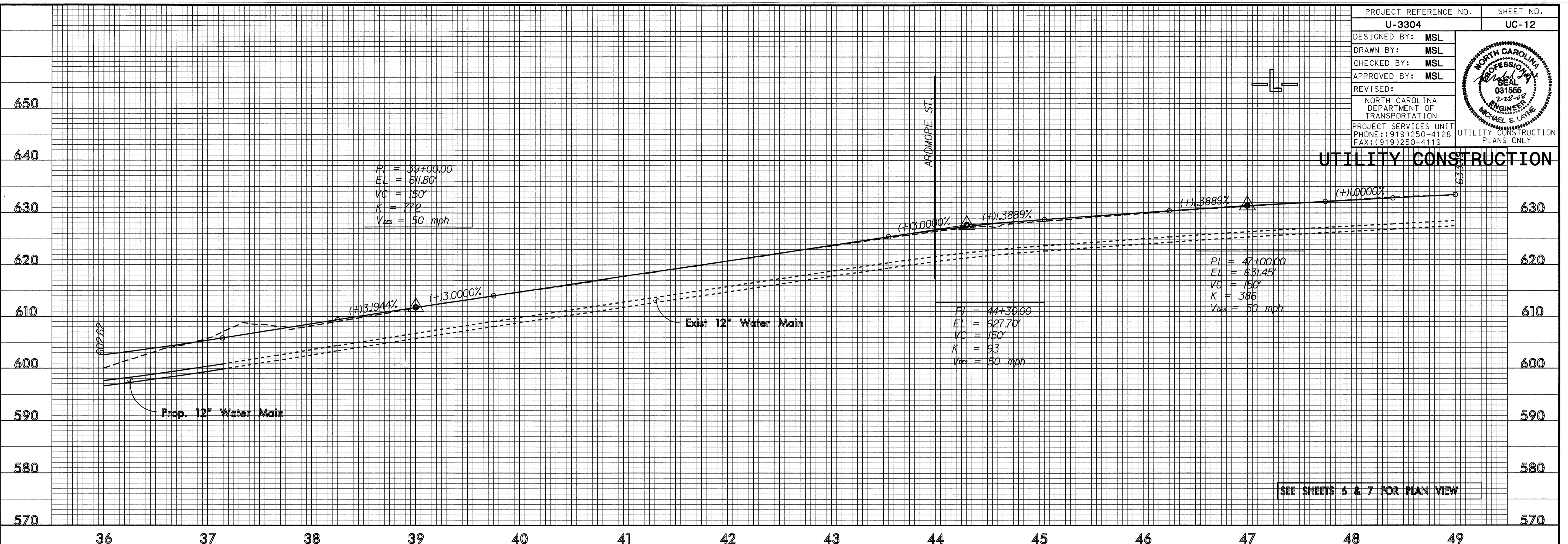
DESIGN DISCHARGE	= TBD CFS
DESIGN FREQUENCY	= YBS
DESIGN HW ELEVATION	= FT
BASE DISCHARGE	= TBD CFS
BASE FREQUENCY	= YBS
BASE HW ELEVATION	= FT
OVERTOPPING DISCHARGE	= TBD CFS
OVERTOPPING FREQUENCY	= YBS
OVERTOPPING ELEVATION	= FT

SEE SHEETS 5 & 6 FOR PLAN VIEW

28-FEB-2008 14:11  
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5/28/99

PROJECT REFERENCE NO. <b>U-3304</b>	SHEET NO. <b>UC-12</b>
DESIGNED BY: <b>MSL</b>	
DRAWN BY: <b>MSL</b>	
CHECKED BY: <b>MSL</b>	
APPROVED BY: <b>MSL</b>	
REVISI:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION UTILITY CONSTRUCTION PLANS ONLY	



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