

03-MAY-2010 08:09 R:\Utilities\rdy_ut\Proj\U3423_Ut_Title_UC1.psh.dgn \$\$\$USERNAME\$\$\$

TIP PROJECT: U-3423

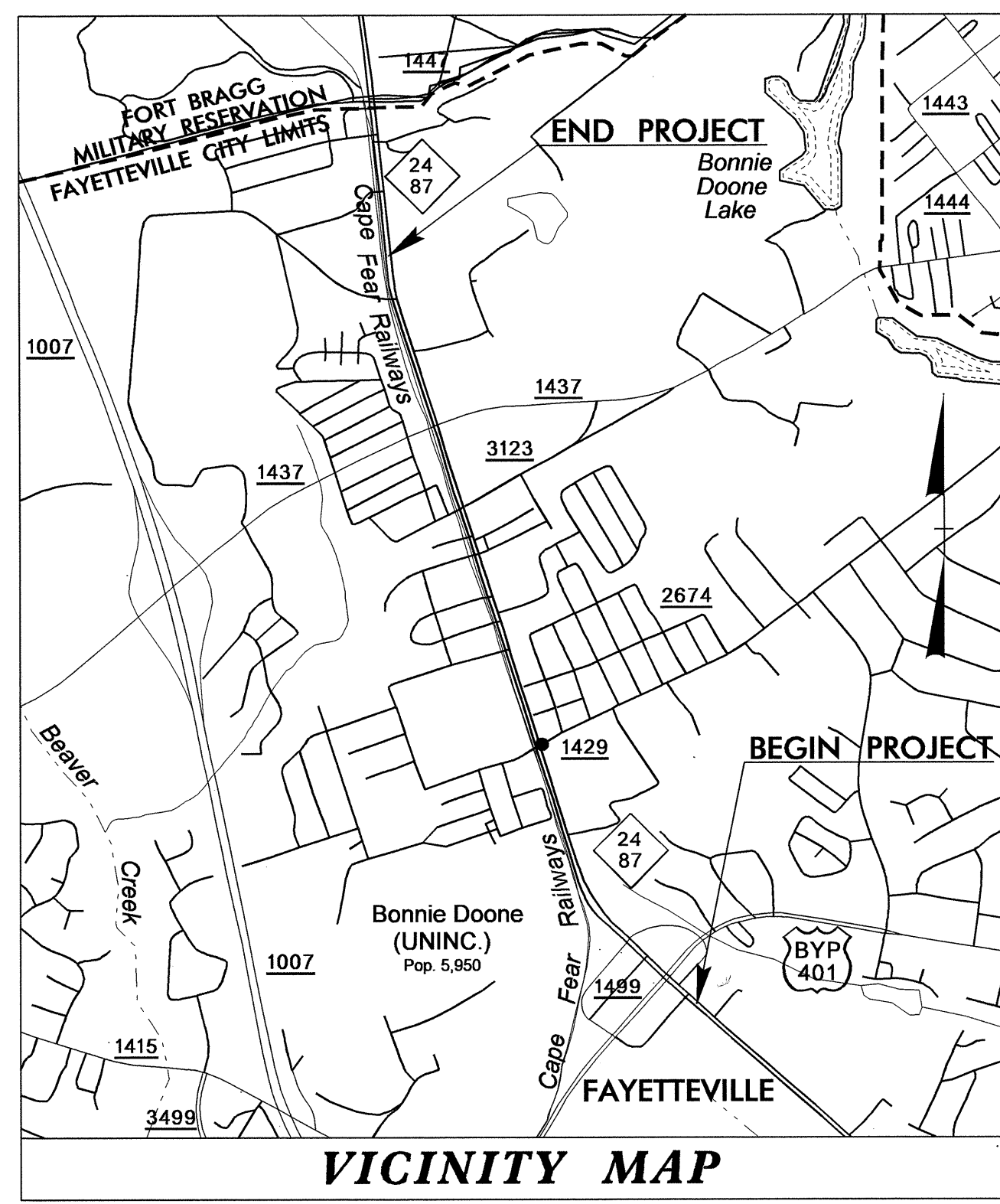
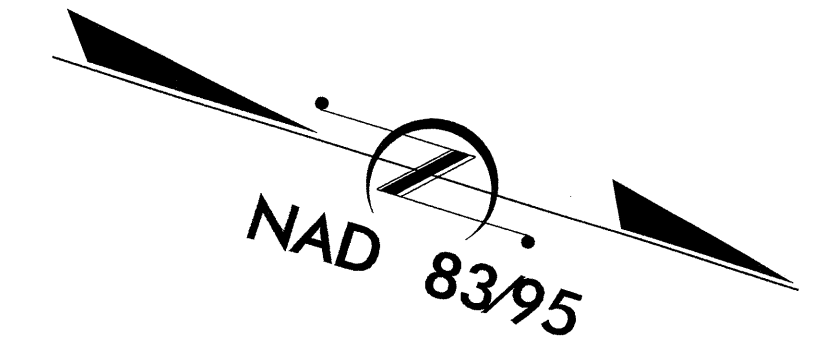
T.I.P. NO.	SHEET NO.
U-3423	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITY CONSTRUCTION PLANS
CUMBERLAND COUNTY**

**LOCATION: FAYETTEVILLE NC 24 & 87 (BRAGG BOULEVARD)
FROM THE US 401 BYPASS TO NORTH OF
SR 1437 (SANTE FE DRIVE /SHAW ROAD)**

TYPE OF WORK: WATER AND SANITARY SEWER UTILITY WORK

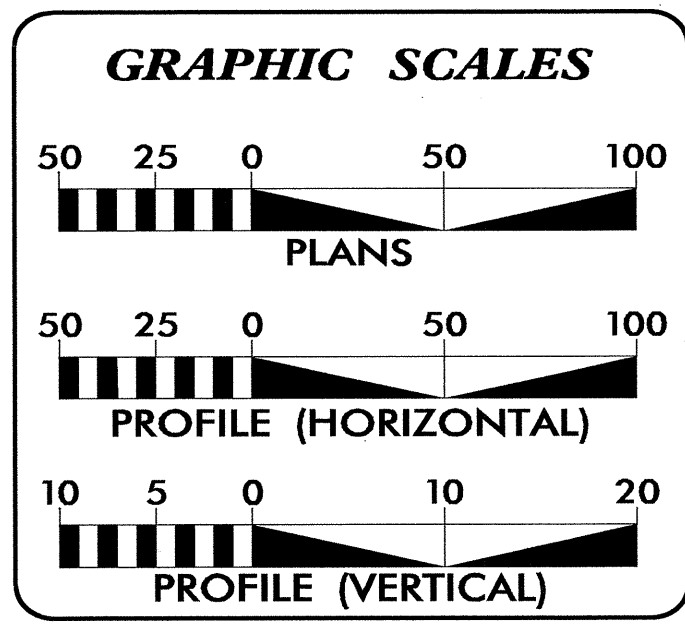
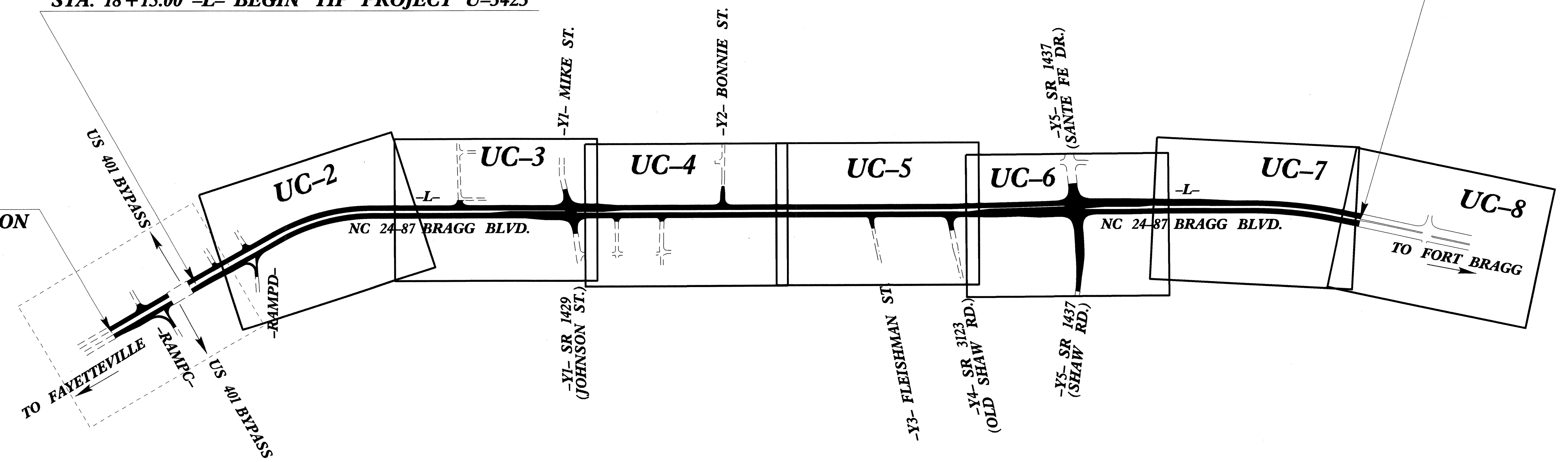


VICINITY MAP

STA. 105+57.51 -L- END TIP PROJECT U-3423

STA. 18+15.00 -L- BEGIN TIP PROJECT U-3423

STA. 11+00.00 -L- BEGIN CONSTRUCTION

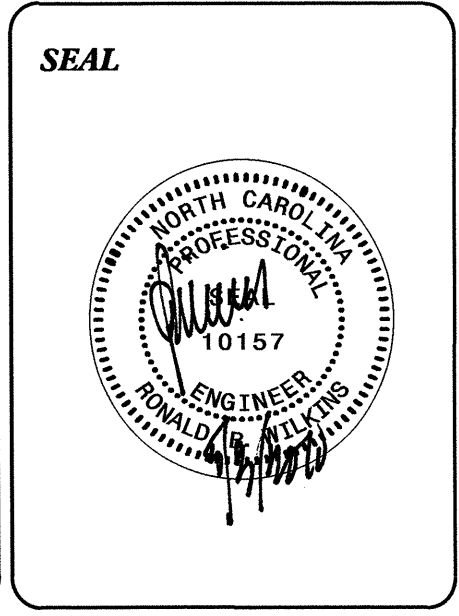


INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-8	UTILITY CONSTRUCTION PLAN
UC-9 THRU UC-10	DETAIL SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) WATER - PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE

(2) SANITARY SEWER - PUBLIC WORKS COMMISSION OF THE CITY OF FAYETTEVILLE



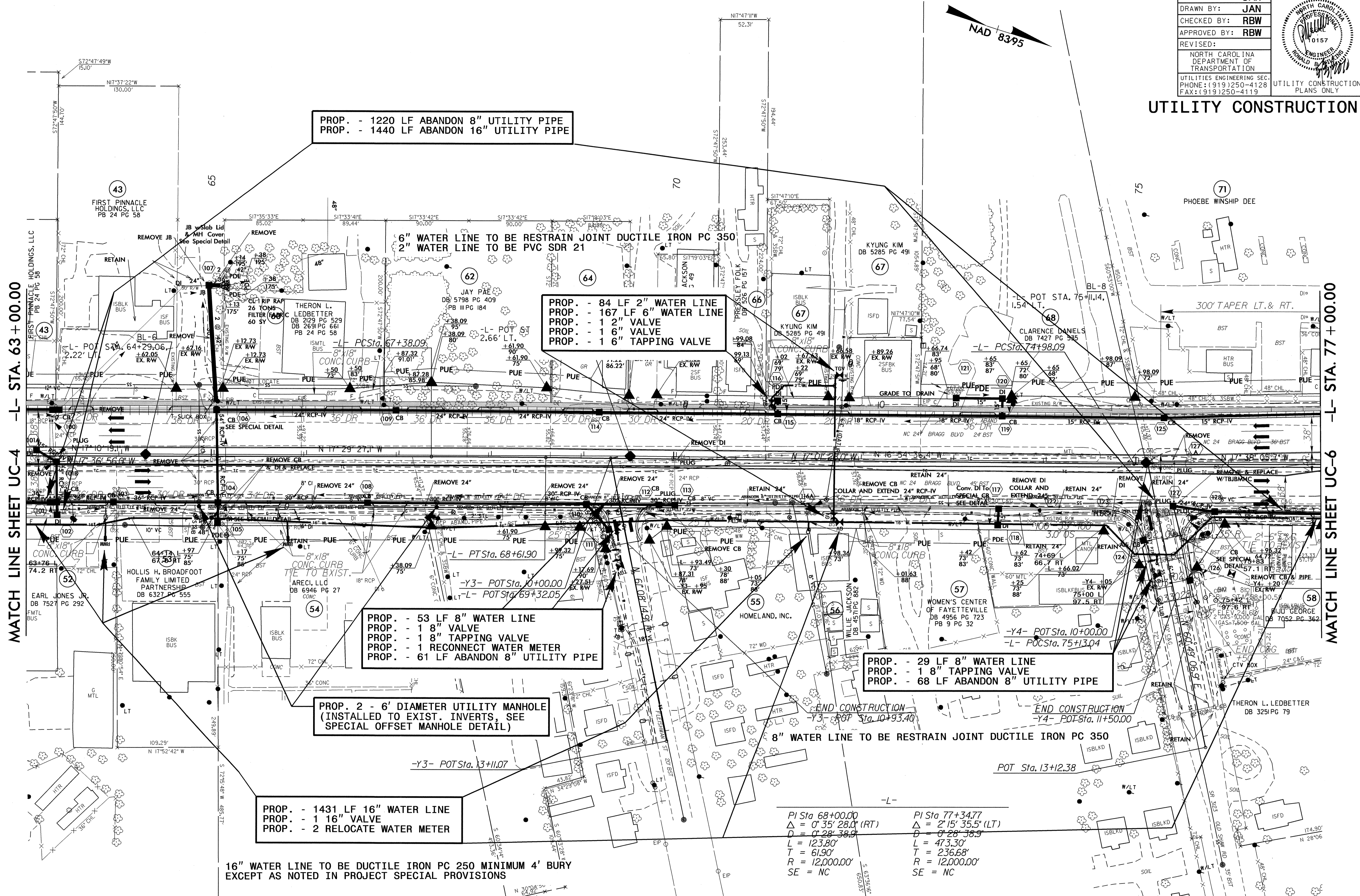
PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES ENGINEERING
SECTION**

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

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
R. B. Wilkins, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
John A. Nigro, P.E. UTILITIES PROJECT DESIGNER

NOTE: ALL PROP. SEWER LINES SHALL BE DUCTILE IRON PIPE

PROJECT REFERENCE NO.	U-3423	SHEET NO.	UC-5
DESIGNED BY:	JAN		
DRAWN BY:	JAN		
CHECKED BY:	RBW		
APPROVED BY:	RBW		
REVISID:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION			



PROP. - 1220 LF ABANDON 8" UTILITY PIPE
 PROP. - 1440 LF ABANDON 16" UTILITY PIPE

PROP. - 84 LF 2" WATER LINE
 PROP. - 167 LF 6" WATER LINE
 PROP. - 1 2" VALVE
 PROP. - 1 6" VALVE
 PROP. - 1 6" TAPPING VALVE

PROP. - 53 LF 8" WATER LINE
 PROP. - 1 8" VALVE
 PROP. - 1 8" TAPPING VALVE
 PROP. - 1 RECONNECT WATER METER
 PROP. - 61 LF ABANDON 8" UTILITY PIPE

PROP. - 29 LF 8" WATER LINE
 PROP. - 1 8" TAPPING VALVE
 PROP. - 68 LF ABANDON 8" UTILITY PIPE

PROP. - 1431 LF 16" WATER LINE
 PROP. - 1 16" VALVE
 PROP. - 2 RELOCATE WATER METER

PROP. 2 - 6' DIAMETER UTILITY MANHOLE
 (INSTALLED TO EXIST. INVERTS, SEE
 SPECIAL OFFSET MANHOLE DETAIL)

16" WATER LINE TO BE DUCTILE IRON PC 250 MINIMUM 4' BURY
 EXCEPT AS NOTED IN PROJECT SPECIAL PROVISIONS

PI Sta 68+00.00	PI Sta 77+34.77
$\Delta = 0^{\circ} 35' 28.0" (RT)$	$\Delta = 2^{\circ} 15' 35.5" (LT)$
$D = 0^{\circ} 28' 38.9"$	$D = 0^{\circ} 28' 36.9"$
$L = 123.80'$	$L = 473.30'$
$T = 61.90'$	$T = 236.68'$
$R = 12,000.00'$	$R = 12,000.00'$
SE = NC	SE = NC

MATCH LINE SHEET UC-4 -L- STA. 63+00.00

MATCH LINE SHEET UC-6 -L- STA. 77+00.00

5/14/99
 03-MAY-2010 10:38
 J:\U-3423\U-3423.U-8_UC5_psh.dgn



NOTE: ALL PROP. SEWER LINES SHALL BE DUCTILE IRON PIPE

DUCTILE IRON PC 350 WATER LINE MINIMUM 4' BURY

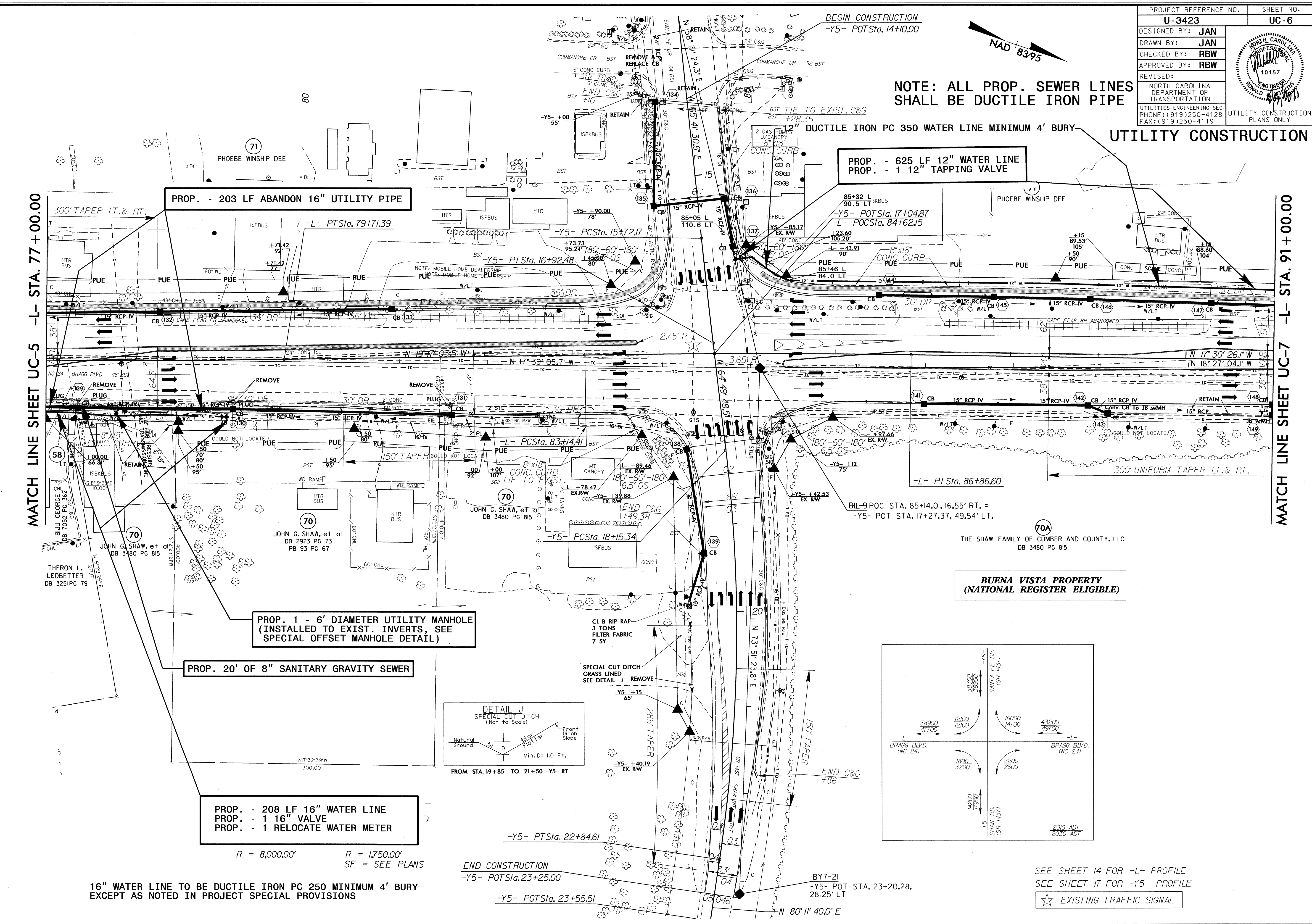
UTILITY CONSTRUCTION

PROP. - 625 LF 12" WATER LINE
 PROP. - 1 12" TAPPING VALVE

PROP. - 203 LF ABANDON 16" UTILITY PIPE

MATCH LINE SHEET UC-5 -L- STA. 77 + 00.00

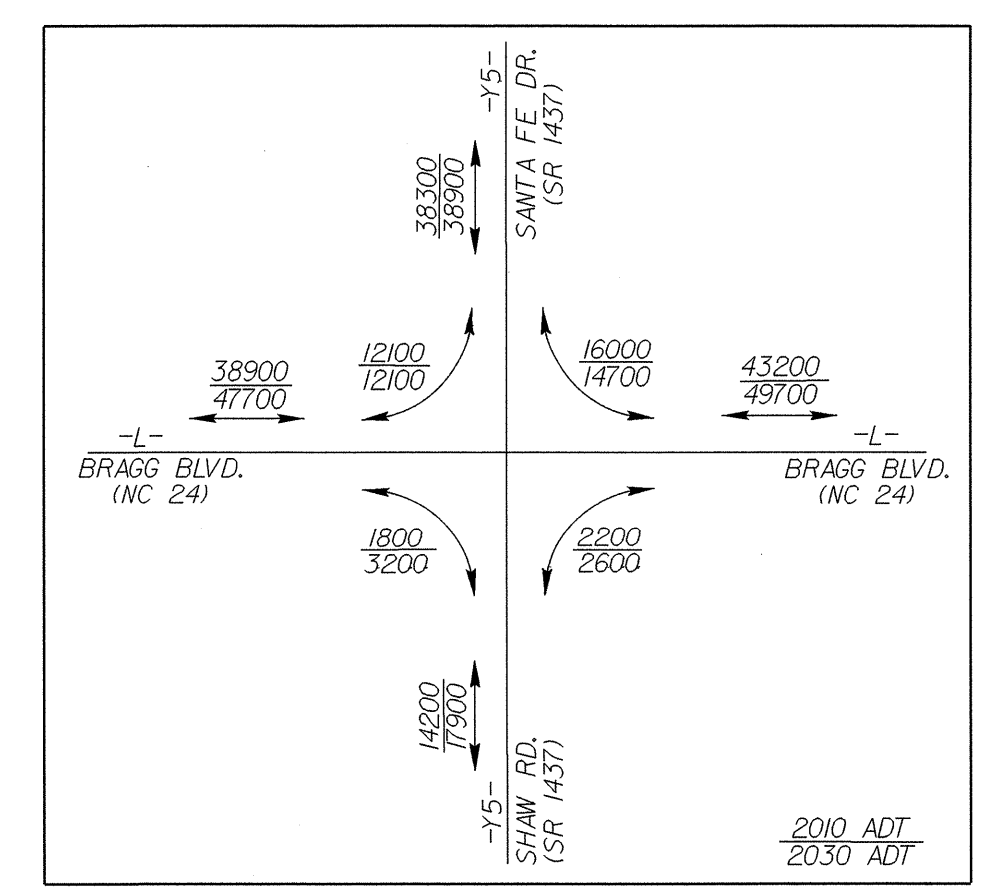
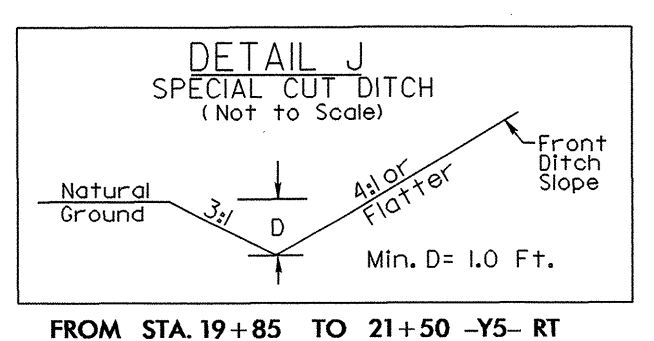
MATCH LINE SHEET UC-7 -L- STA. 91 + 00.00



PROP. 1 - 6' DIAMETER UTILITY MANHOLE (INSTALLED TO EXIST. INVERTS, SEE SPECIAL OFFSET MANHOLE DETAIL)

PROP. 20' OF 8" SANITARY GRAVITY SEWER

PROP. - 208 LF 16" WATER LINE
 PROP. - 1 16" VALVE
 PROP. - 1 RELOCATE WATER METER



16" WATER LINE TO BE DUCTILE IRON PC 250 MINIMUM 4' BURY EXCEPT AS NOTED IN PROJECT SPECIAL PROVISIONS

R = 8,000.00' R = 1,750.00'
 SE = SEE PLANS

SEE SHEET 14 FOR -L- PROFILE
 SEE SHEET 17 FOR -Y5- PROFILE

☆ EXISTING TRAFFIC SIGNAL

5/14/99
 03-MAY-2010 09:19
 R:\U-3423\U-3423-UC-6-psht.dgn

PROJECT REFERENCE NO.	U-3423	SHEET NO.	UC-8
DESIGNED BY:	JAN		
DRAWN BY:	JAN		
CHECKED BY:	RBW		
APPROVED BY:	RBW		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
UTILITIES ENGINEERING SEC. PHONE: (919)250-4128 FAX: (919)250-4119			

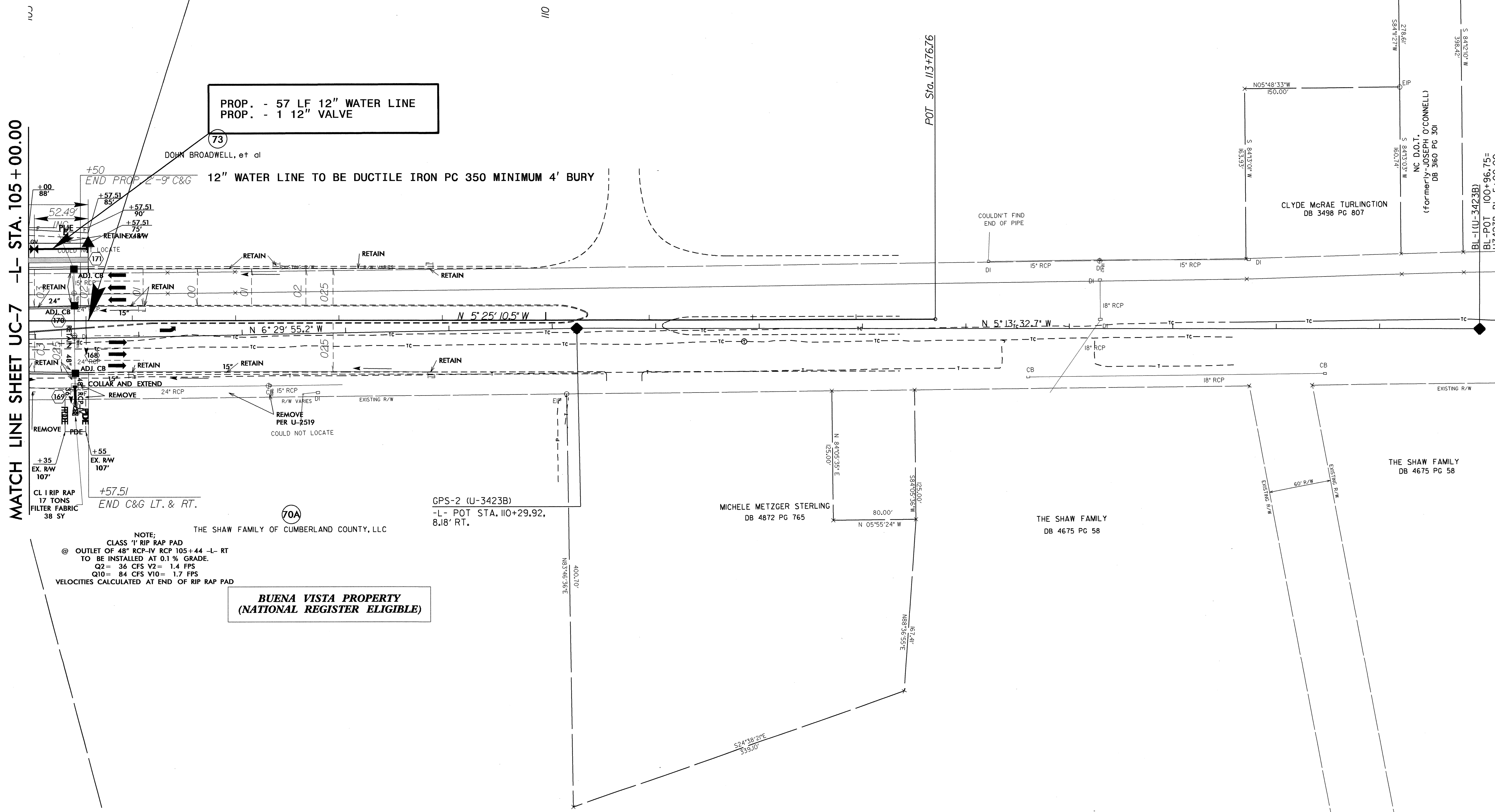


UTILITY CONSTRUCTION

STA. 105+57.51 -L- END TIP PROJECT U-3423

MATCH LINE SHEET UC-7 -L- STA. 105+00.00

PROP. - 57 LF 12" WATER LINE
PROP. - 1 12" VALVE



NOTE:
CLASS 1" RIP RAP PAD
OUTLET OF 48" RCP-IV RCP 105+44 -L- RT
TO BE INSTALLED AT 0.1% GRADE.
Q2 = 36 CFS V2 = 1.4 FPS
Q10 = 84 CFS V10 = 1.7 FPS
VELOCITIES CALCULATED AT END OF RIP RAP PAD

**BUENA VISTA PROPERTY
(NATIONAL REGISTER ELIGIBLE)**

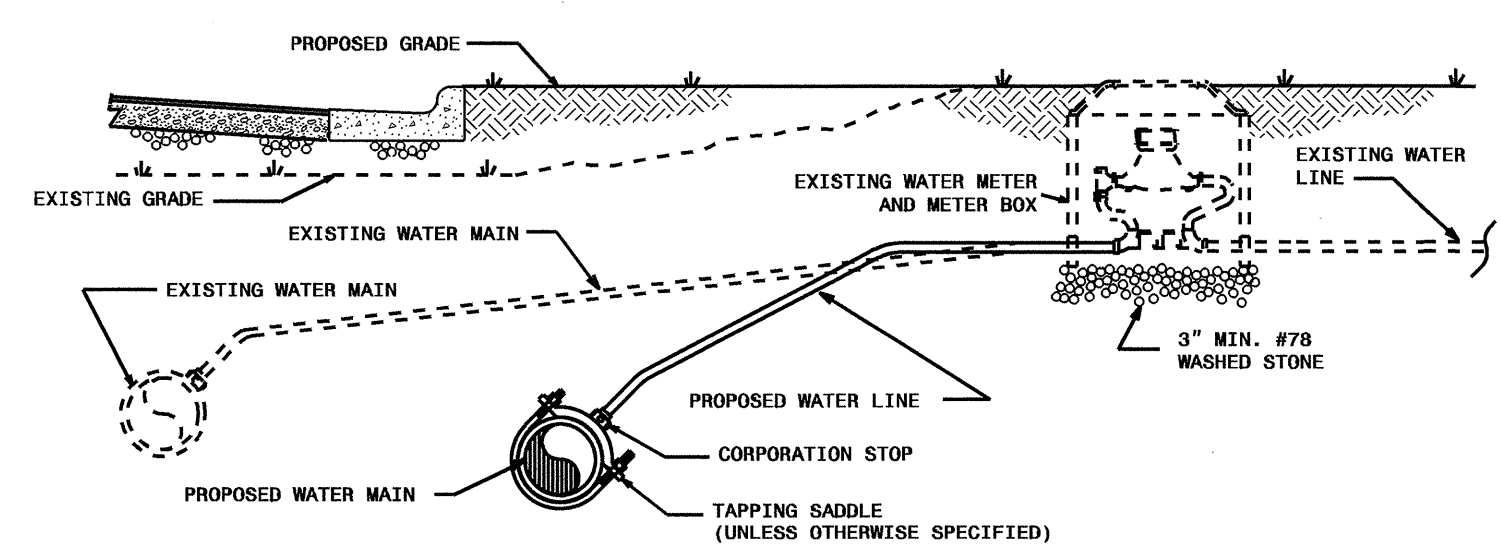
SEE SHEET 15 FOR -L- PROFILE

5/14/99
03-MAY-2010 12:18
R:\U\11318\Fig\U-3423.U-11.UC8.psh.dgn



UTILITY CONSTRUCTION

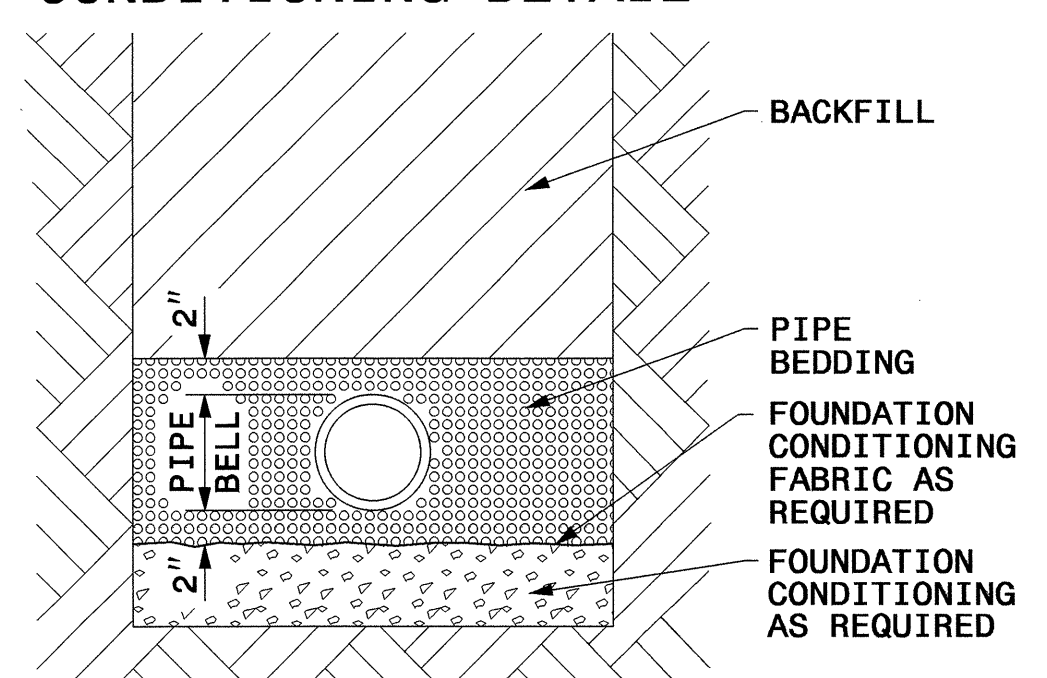
NOTE: TAPPING SADDLE, CORPORATION STOP, 1" COPPER WATER PIPE, TYPE K INCIDENTAL TO WATER METER



- 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

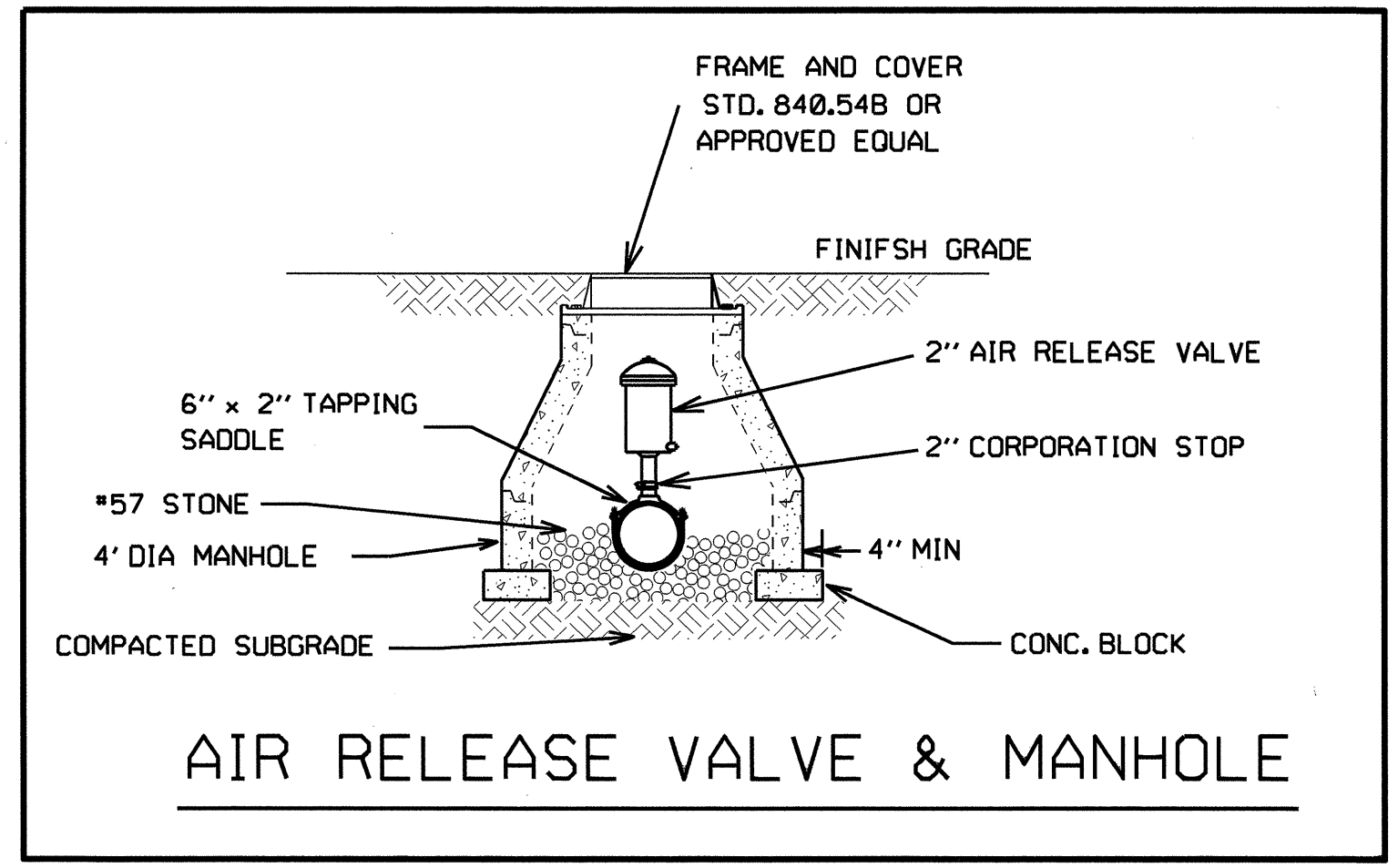
BEDDING/FOUNDATION CONDITIONING DETAIL



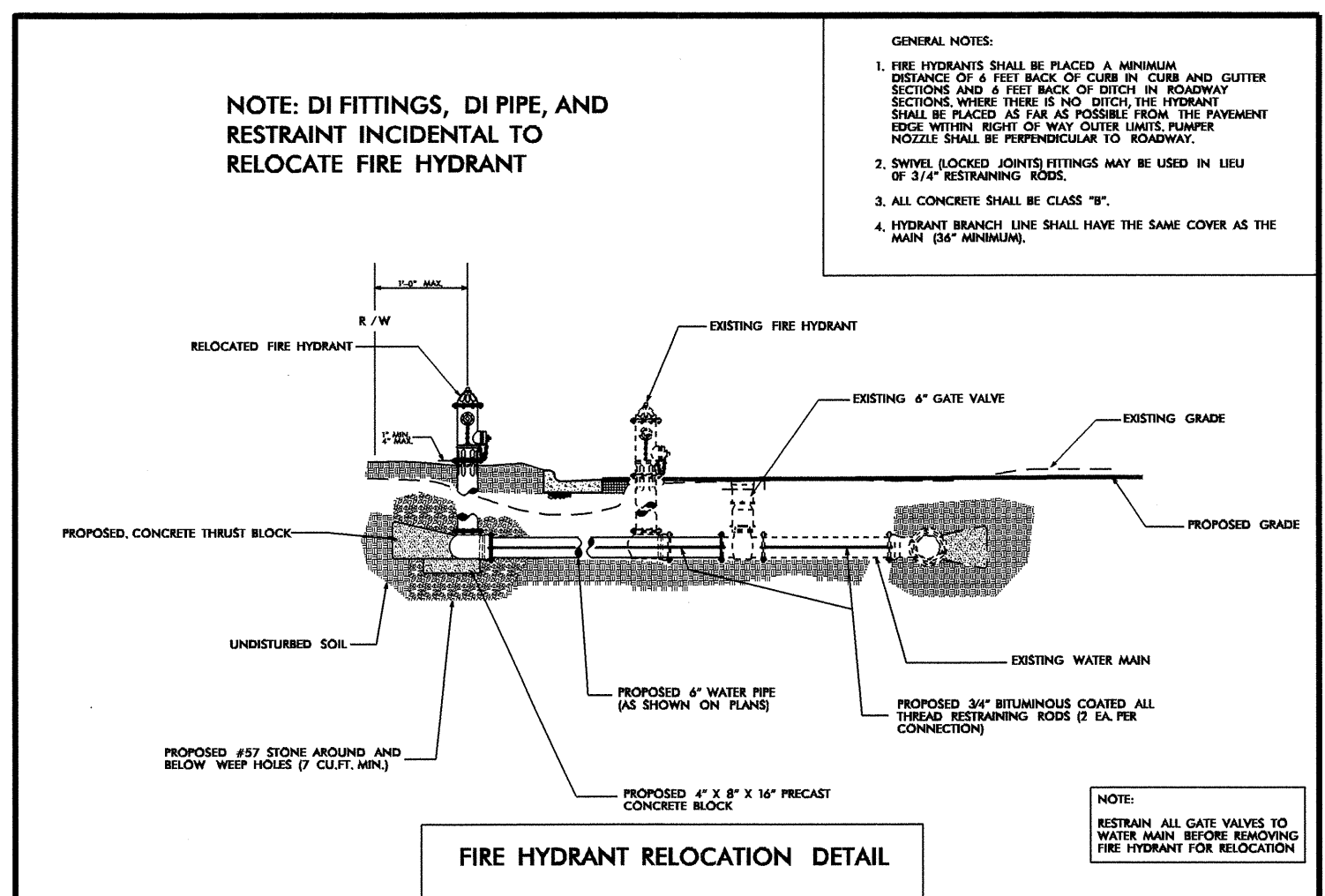
PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS VI. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL TRENCH BACKFILL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

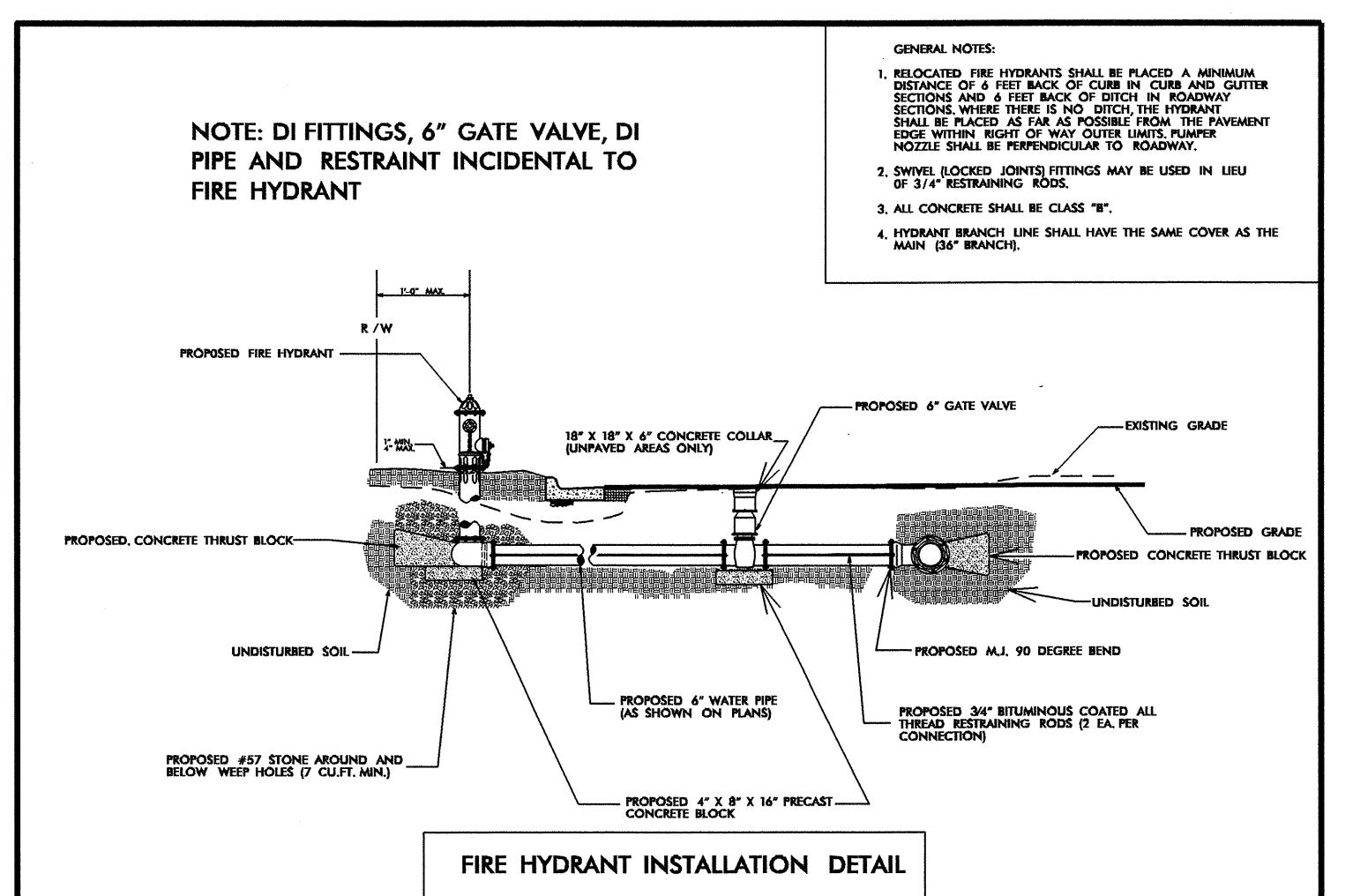
NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		



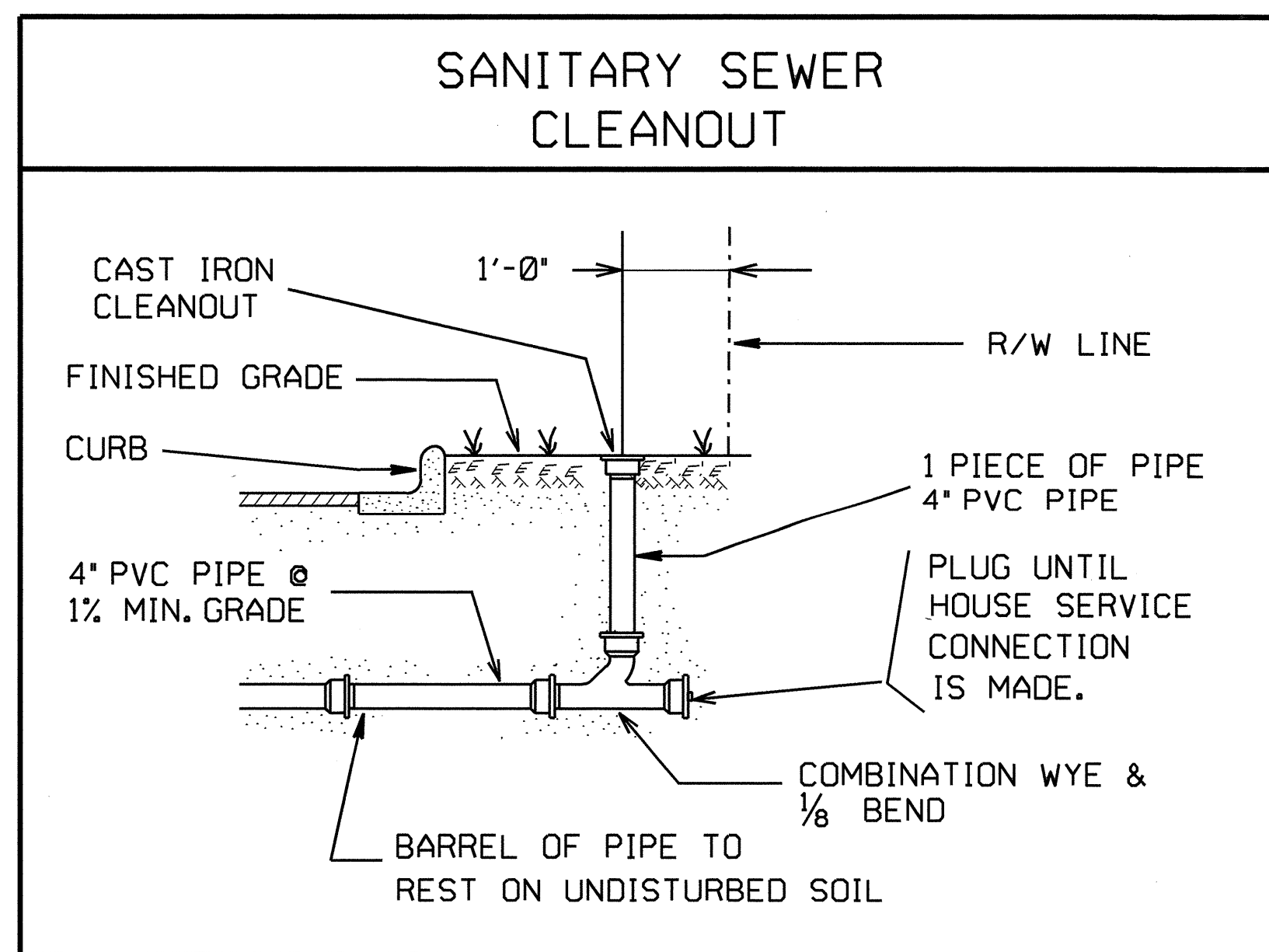
AIR RELEASE VALVE & MANHOLE



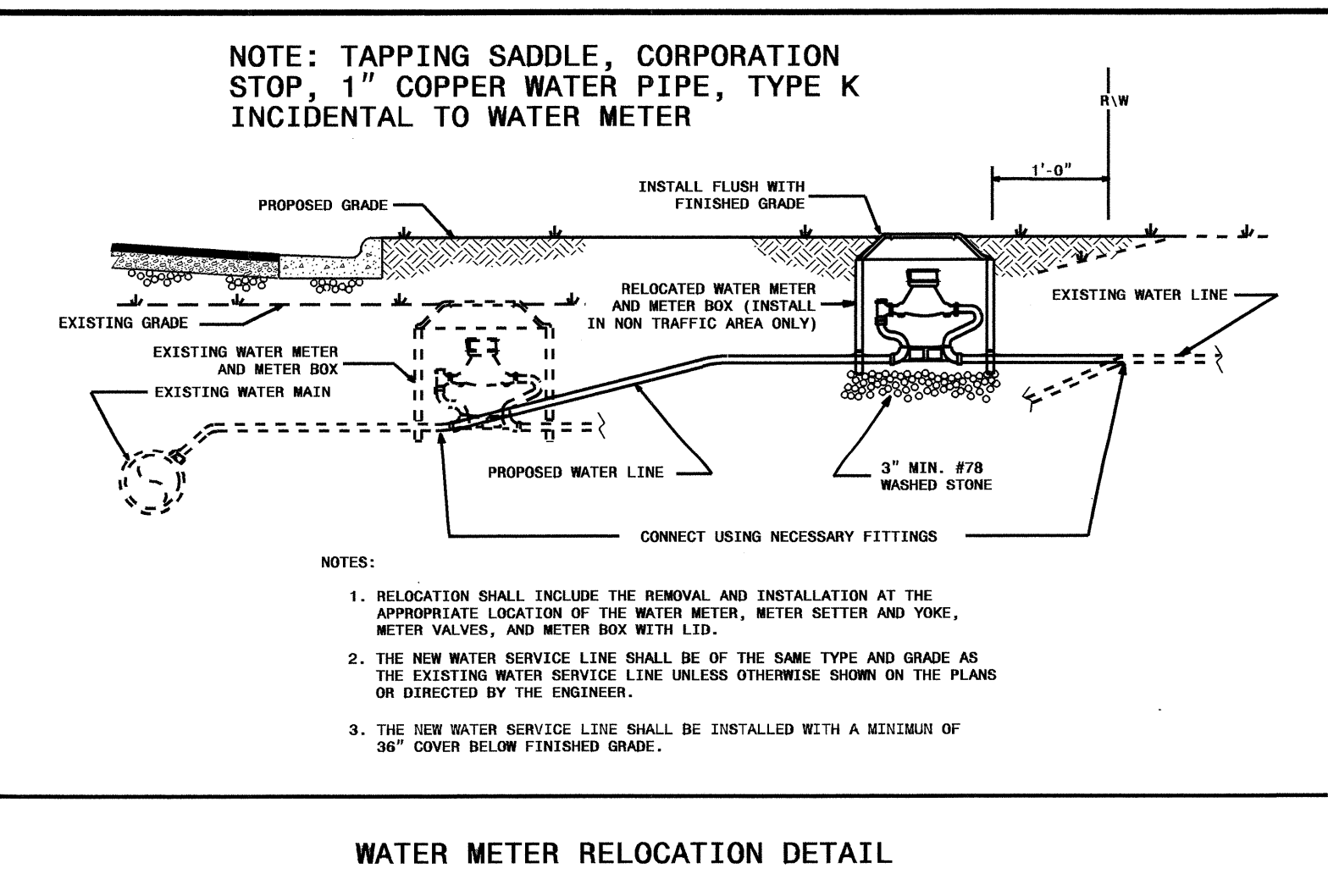
FIRE HYDRANT RELOCATION DETAIL



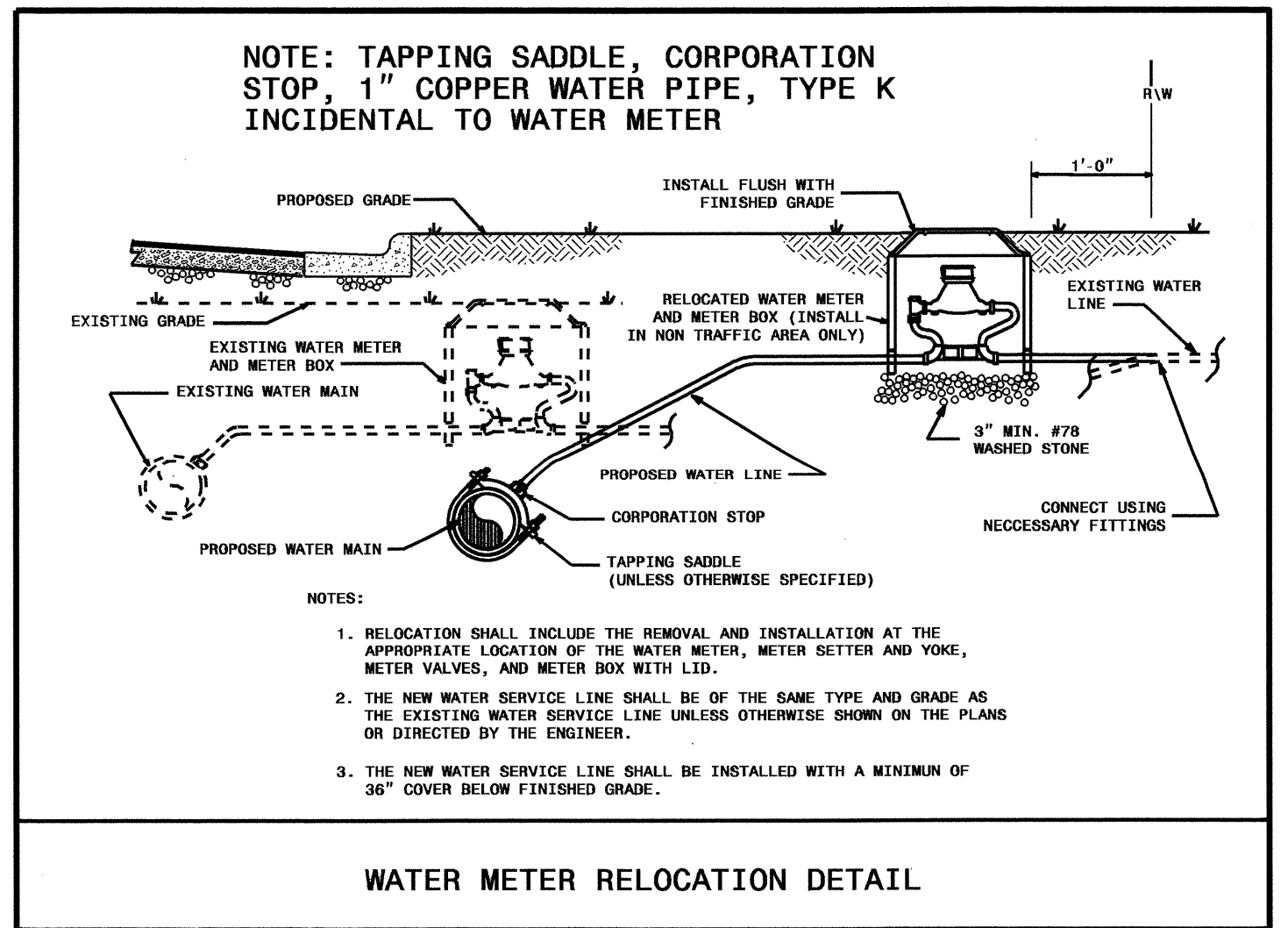
FIRE HYDRANT INSTALLATION DETAIL



SANITARY SEWER CLEANOUT



WATER METER RELOCATION DETAIL



WATER METER RELOCATION DETAIL

5/14/99

29-APR-2000 14:40 Pro:J03423-Ut-udt.dgn

09/28/99

CONTRACT: TIP PROJECT: U-3423

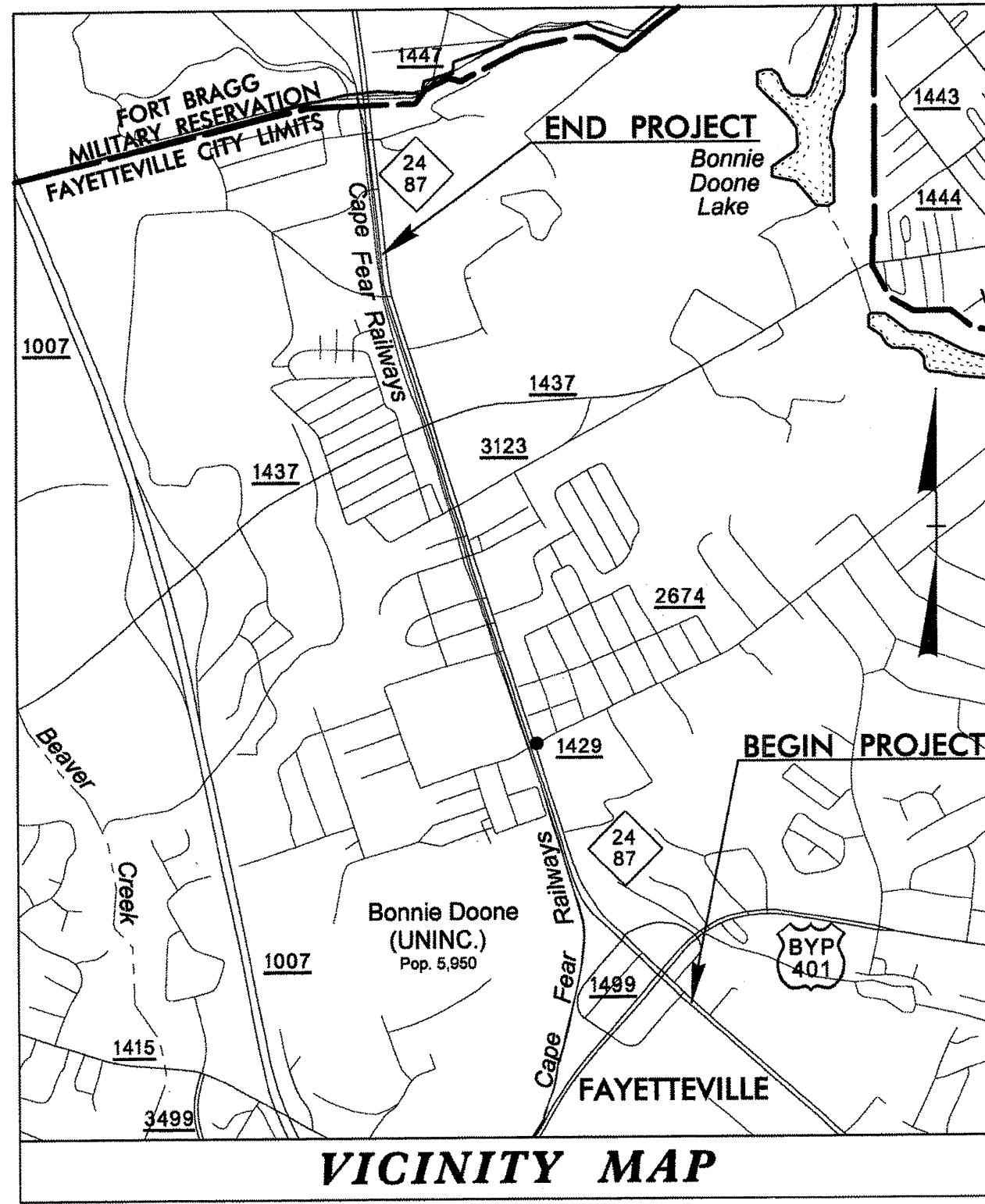
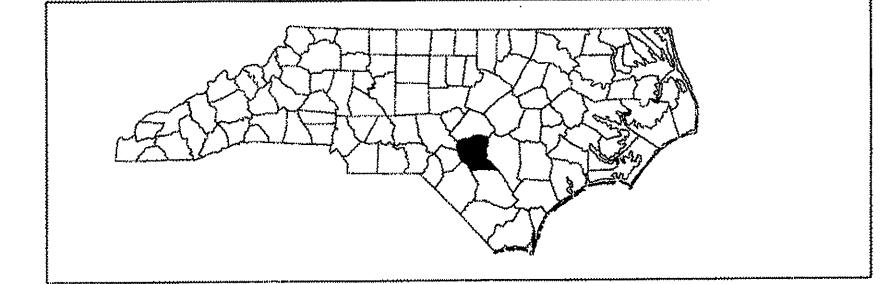
CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

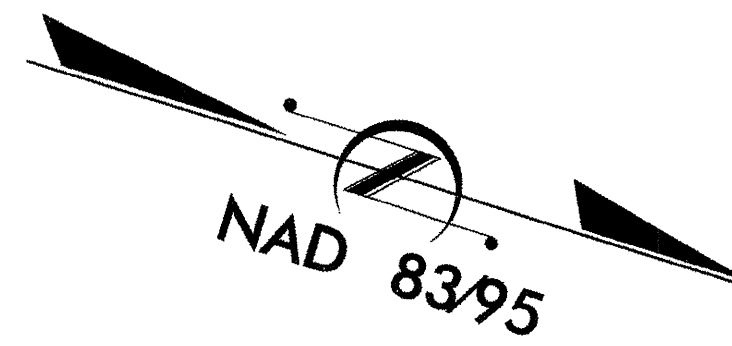
**UTILITIES BY OTHERS PLANS
CUMBERLAND COUNTY**

**LOCATION: NC 24 - 87 (BRAGG BOULEVARD)
FROM THE US 401 BYPASS TO NORTH OF
SR 1437 (SANTE FE DRIVE /SHAW ROAD)
TYPE OF WORK: UTILITIES BY OTHERS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3423	UO-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34942.1.1	NHF-24(12)	PE	
34942.2.2	NHF-24(12)	RW & UTIL.	

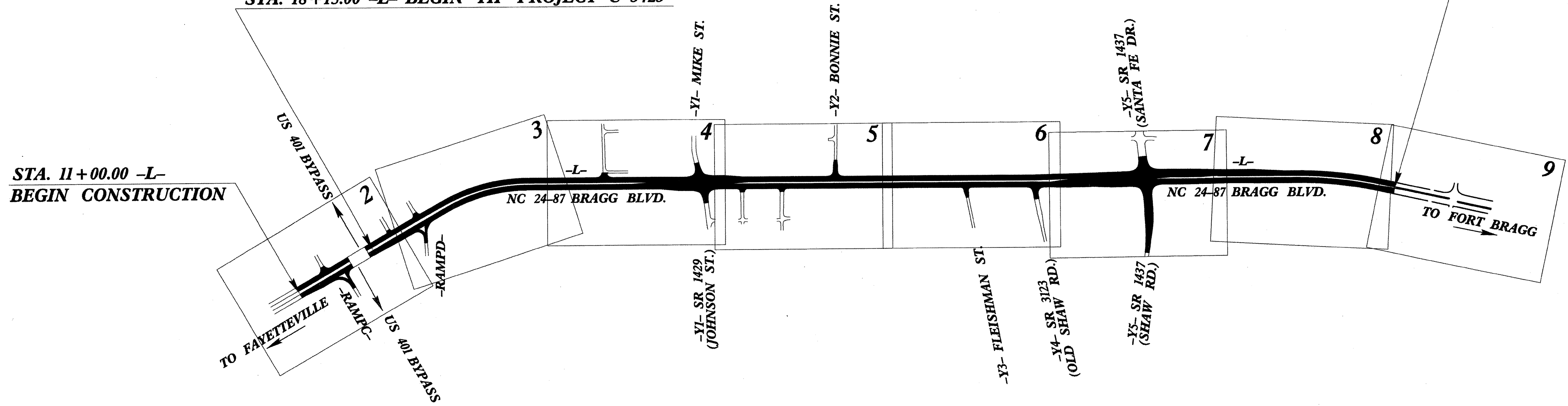


VICINITY MAP

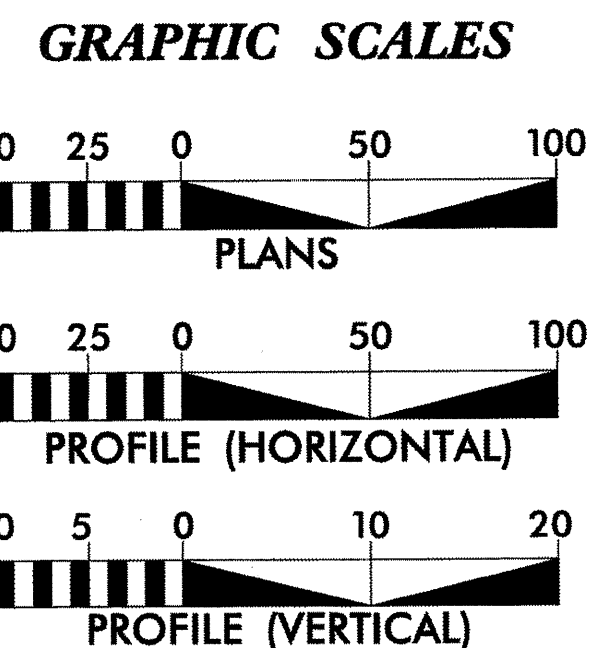


STA. 105+57.51 -L- END TIP PROJECT U-3423

STA. 18+15.00 -L- BEGIN TIP PROJECT U-3423



STA. 11+00.00 -L-
BEGIN CONSTRUCTION



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 thru UO-9	UTILITIES BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- (1) CENTURYLINK (TELECOMMUNICATIONS)
 - (2) LEVEL 3 (TELECOMMUNICATIONS)
 - (3) PIEDMONT NATURAL GAS (NATURAL GAS)
 - (4) PROGRESS ENERGY (POWER DISTRIBUTION)
 - (5) PUBLIC WORKS COMMISSION (POWER DISTRIBUTION AND COMMUNICATIONS)
 - (6) TIME - WARNER CABLE (CABLE TELEVISION)

PREPARED BY:
AECOM
AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

FOR:
DIVISION OF HIGHWAYS
PROJECT SERVICES
UTILITIES ENGINEERING
1591 MAIL SERVICE CENTER
RALEIGH NC 27609-1591
PHONE (919) 258-4128
FAX (919) 258-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
R.B. Wilkins, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Aecom of N.C., Inc. UTILITIES PROJECT DESIGNER

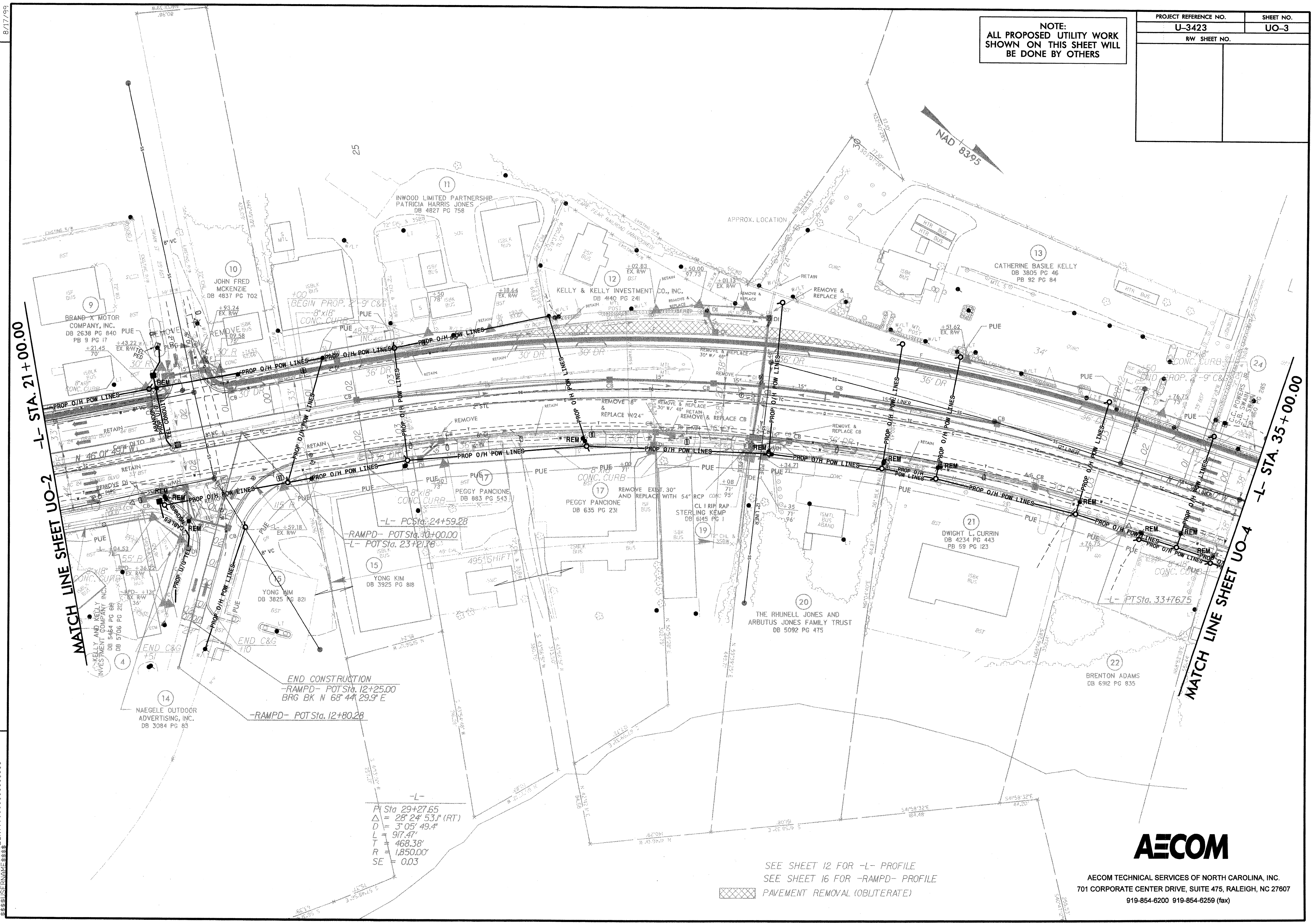
\$\$\$SYTIME\$\$\$\$
\$\$\$DCN\$\$\$\$
\$\$\$USERNAME\$\$\$\$

8/17/95

REVISIONS

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

PROJECT REFERENCE NO.	SHEET NO.
U-3423	UO-3
RW SHEET NO.	



MATCH LINE SHEET UO-2 -L- STA. 21+00.00

MATCH LINE SHEET UO-4 -L- STA. 35+00.00

-L-
 P/ Sta 29+27.65
 $\Delta = 28' 24" 53.1" (RT)$
 $D = 3' 05" 49.4"$
 $L = 917.47'$
 $T = 468.38'$
 $R = 1,850.00'$
 $SE = 0.03$

SEE SHEET 12 FOR -L- PROFILE
 SEE SHEET 16 FOR -RAMPD- PROFILE
 PAVEMENT REMOVAL (OBLITERATE)

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
 701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
 919-854-6200 919-854-6259 (fax)

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3423	UO-4
RW SHEET NO.	

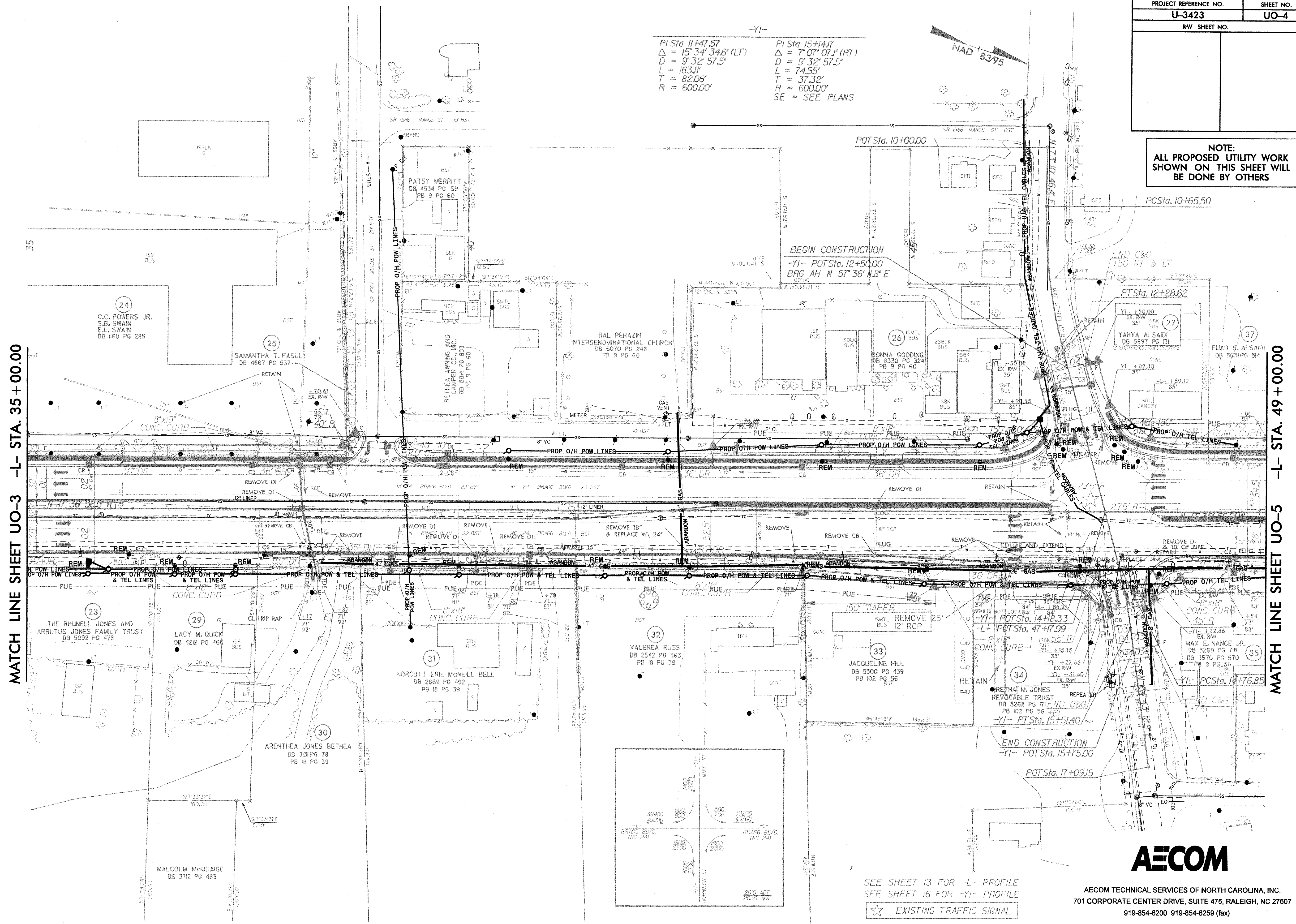
NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

-YI-
 PI Sta 11+47.57 PI Sta 15+14.17
 $\Delta = 15' 34" 34.6'$ (LT) $\Delta = 7' 07" 07.1'$ (RT)
 $D = 9' 32" 57.5'$ $D = 9' 32" 57.5'$
 $L = 163.11'$ $L = 74.55'$
 $T = 82.06'$ $T = 37.32'$
 $R = 600.00'$ $R = 600.00'$
 SE = SEE PLANS

NAD 8395

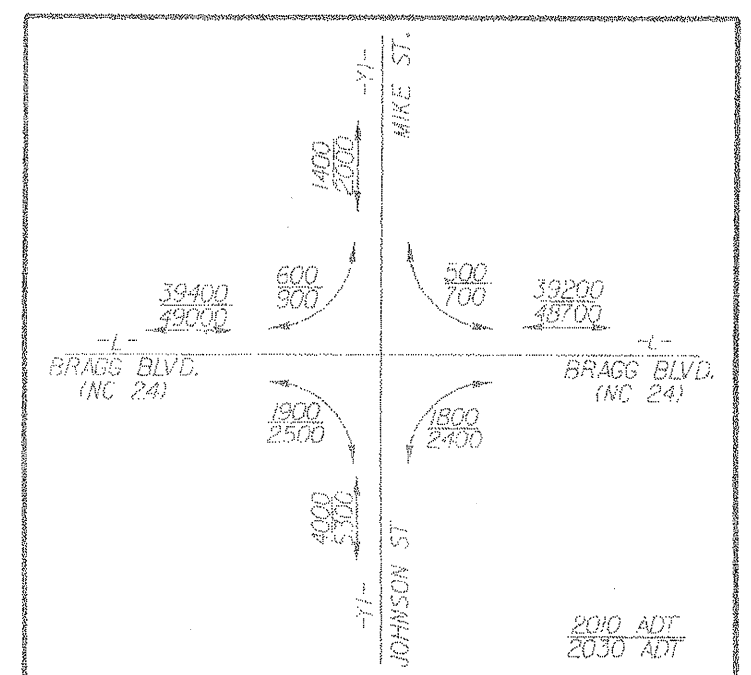
MATCH LINE SHEET UO-3 -L- STA. 35+00.00

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



REVISIONS

01
 02
 03
 04
 05
 06
 07
 08
 09
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100



SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 16 FOR -YI- PROFILE
★ EXISTING TRAFFIC SIGNAL

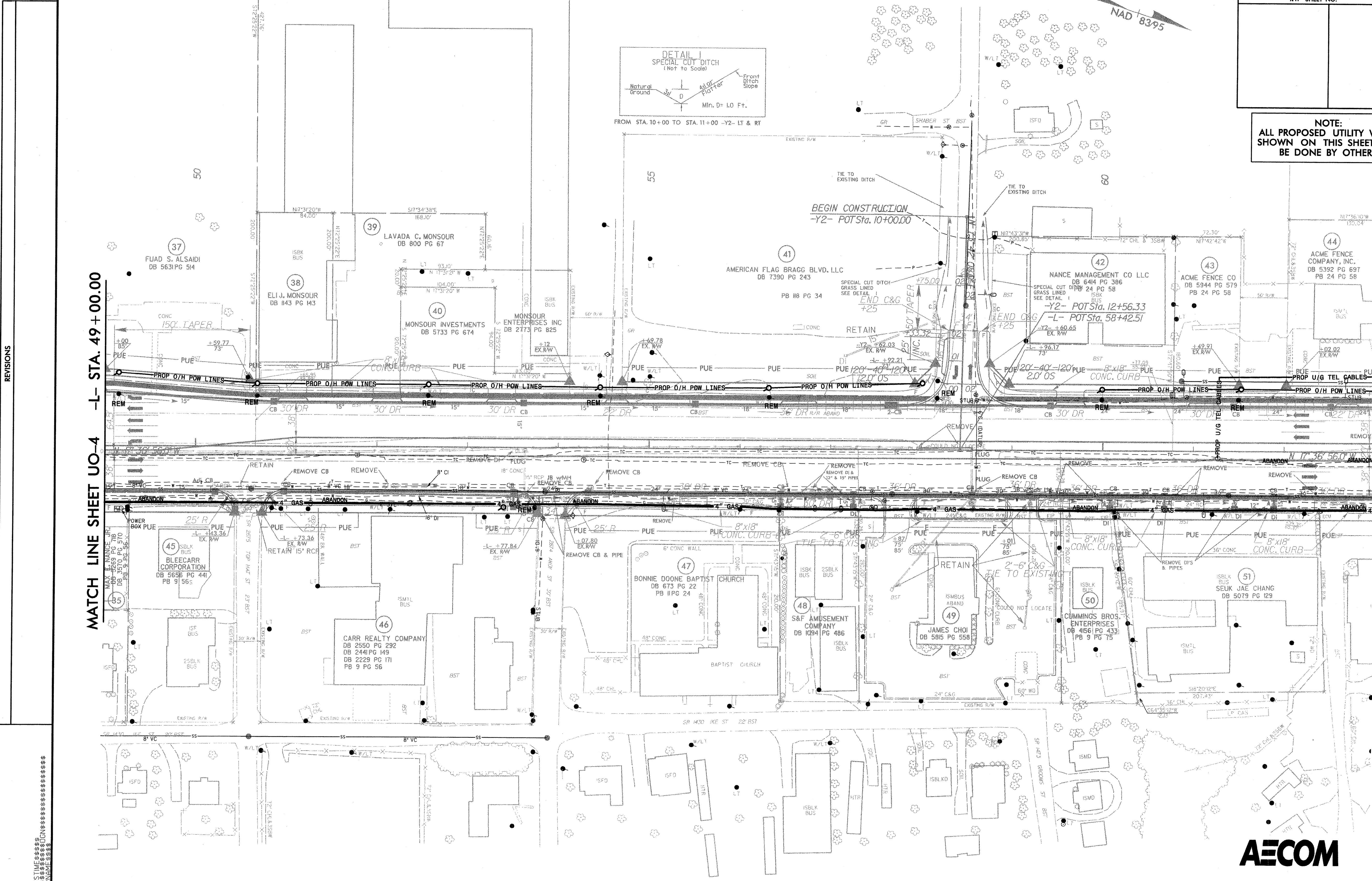


AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3423	UO-5
RW SHEET NO.	

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



REVISIONS

MATCH LINE SHEET UO-4 -L- STA. 49+00.00

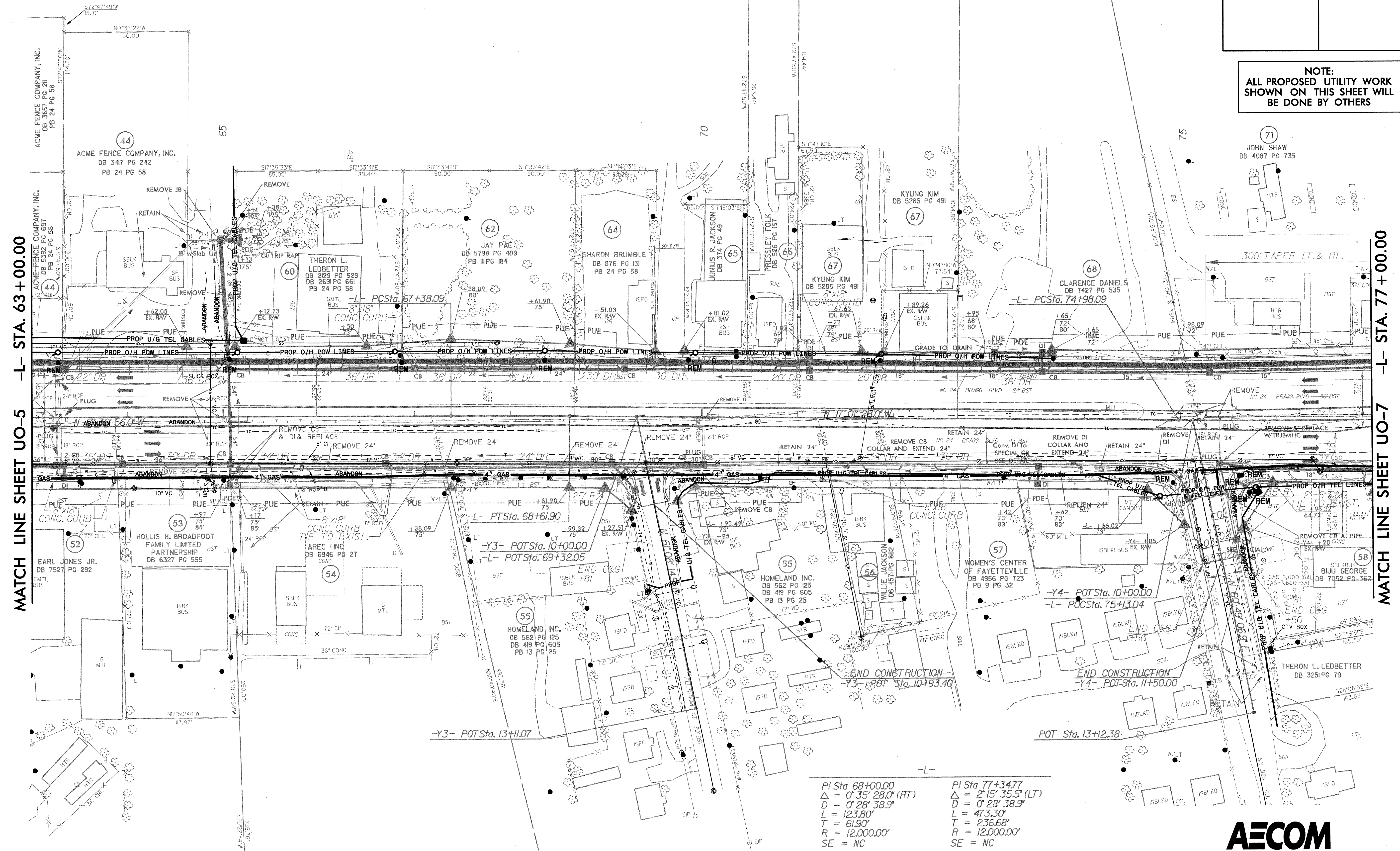
MATCH LINE SHEET UO-6 -L- STA. 63+00.00



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

SYSTEMS
DRAWN
USER NAME

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



MATCH LINE SHEET UO-7 -L- STA. 77+00.00

-L-
 PI Sta 68+00.00
 $\Delta = 0' 35' 28.0''$ (RT)
 $D = 0' 28' 38.9''$
 $L = 123.80'$
 $T = 61.90'$
 $R = 12,000.00'$
 $SE = NC$

-L-
 PI Sta 77+34.77
 $\Delta = 2' 15' 35.5''$ (LT)
 $D = 0' 28' 38.9''$
 $L = 473.30'$
 $T = 236.68'$
 $R = 12,000.00'$
 $SE = NC$

SEE SHEET 14 FOR -L- PROFILE
 SEE SHEET 17 FOR -Y3- & -Y4- PROFILE



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
 701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
 919-854-6200 919-854-6259 (fax)

REVISIONS

8/17/99

SYSTEMS
 DON
 USERNAM

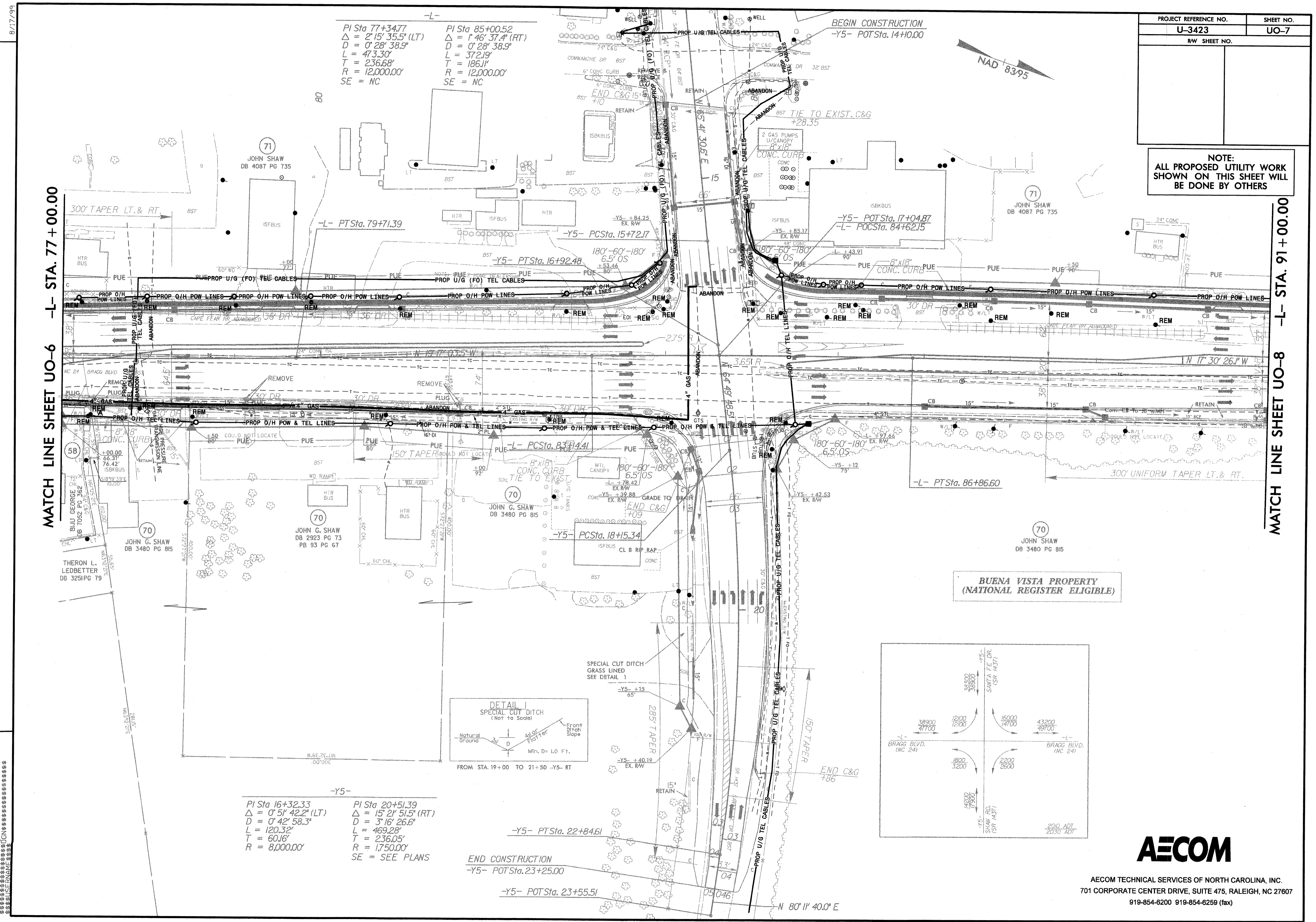
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3423	UO-7
RW SHEET NO.	

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

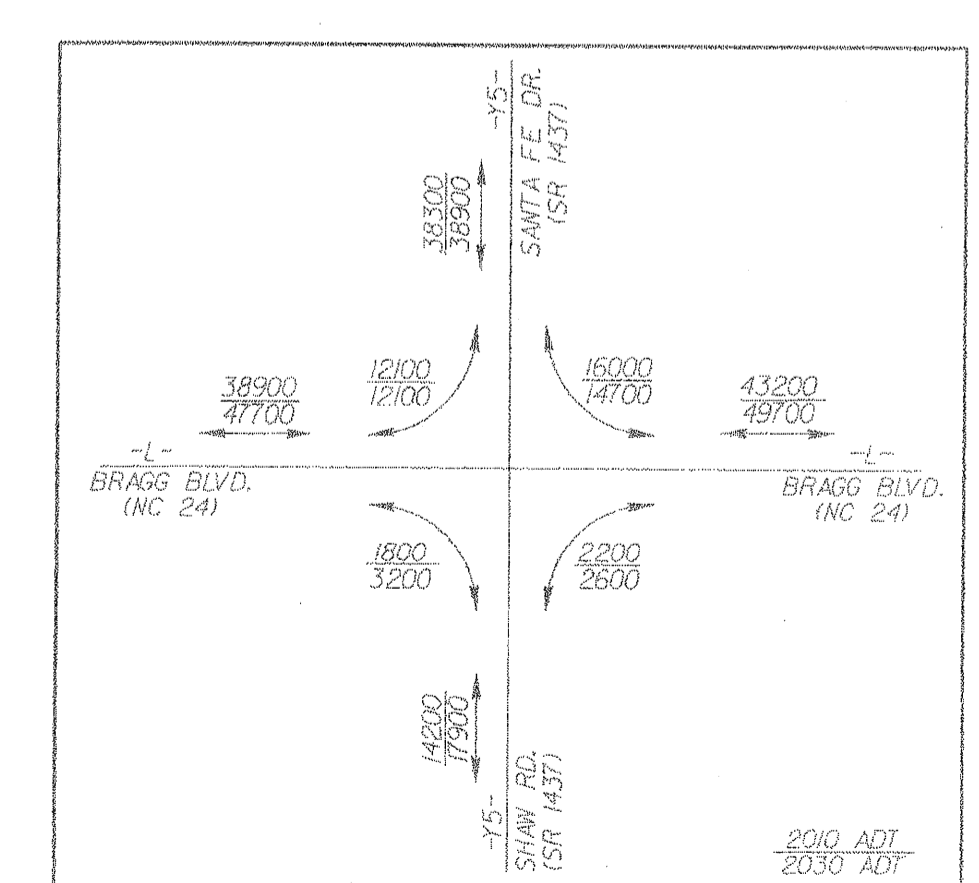
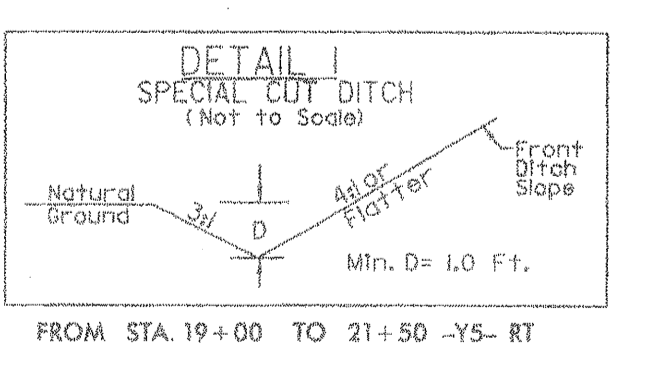
MATCH LINE SHEET UO-6 -L- STA. 77+00.00

MATCH LINE SHEET UO-8 -L- STA. 91+00.00



-L-
 PI Sta 77+34.77 PI Sta 85+00.52
 $\Delta = 2' 15" 35.5" (LT)$ $\Delta = 1' 46" 37.4" (RT)$
 $D = 0' 28" 38.9"$ $D = 0' 28" 38.9"$
 $L = 473.30'$ $L = 372.19'$
 $T = 236.68'$ $T = 186.11'$
 $R = 12,000.00'$ $R = 12,000.00'$
 SE = NC SE = NC

-Y5-
 PI Sta 16+32.33 PI Sta 20+51.39
 $\Delta = 0' 51" 42.2" (LT)$ $\Delta = 15' 21" 51.5" (RT)$
 $D = 0' 42" 58.3"$ $D = 3' 16" 26.6"$
 $L = 120.32'$ $L = 469.28'$
 $T = 60.16'$ $T = 236.05'$
 $R = 8,000.00'$ $R = 17,500.00'$
 SE = SEE PLANS



AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
 701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
 919-854-6200 919-854-6259 (fax)

REVISIONS

SYSTEMS
 JUDN
 USEN
 SNA

PROJECT REFERENCE NO.	SHEET NO.
U-3423	UO-8
RAW SHEET NO.	

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

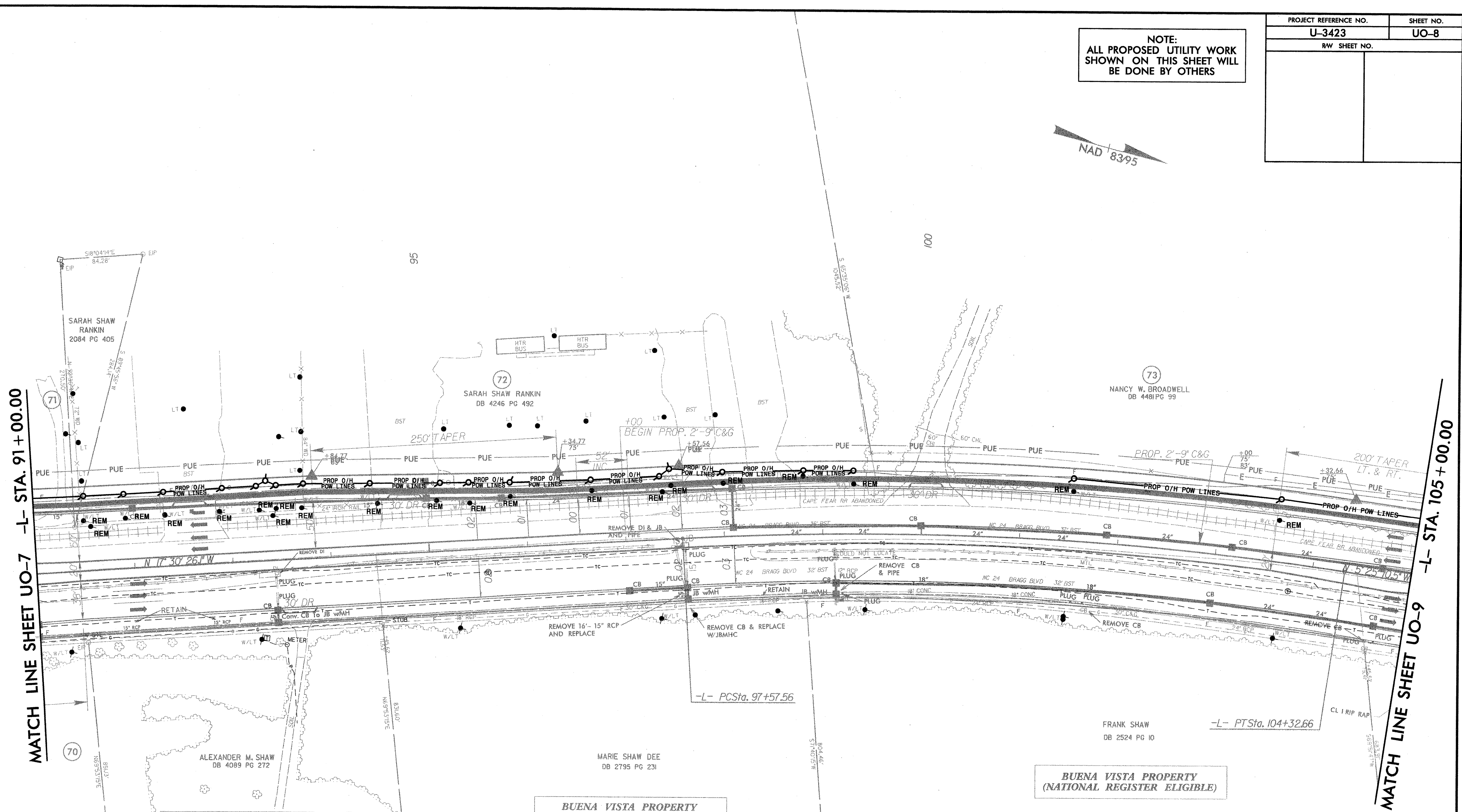


MATCH LINE SHEET UO-7 -L- STA. 91+00.00

MATCH LINE SHEET UO-9 -L- STA. 105+00.00

8/17/99

REVISIONS



-L-
PI Sta 100+96.37
Δ = 12° 05' 15.5" (RT)
D = 1' 47" 25.8"
L = 675.10'
T = 338.81'
R = 3,200.00'
SE = SEE PLANS

BUENA VISTA PROPERTY
(NATIONAL REGISTER ELIGIBLE)

BUENA VISTA PROPERTY
(NATIONAL REGISTER ELIGIBLE)

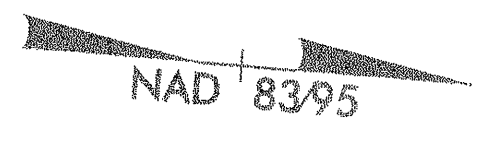
BUENA VISTA PROPERTY
(NATIONAL REGISTER ELIGIBLE)

AECOM

AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)

PROJECT REFERENCE NO.	SHEET NO.
U-3423	UO-9
RW SHEET NO.	

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



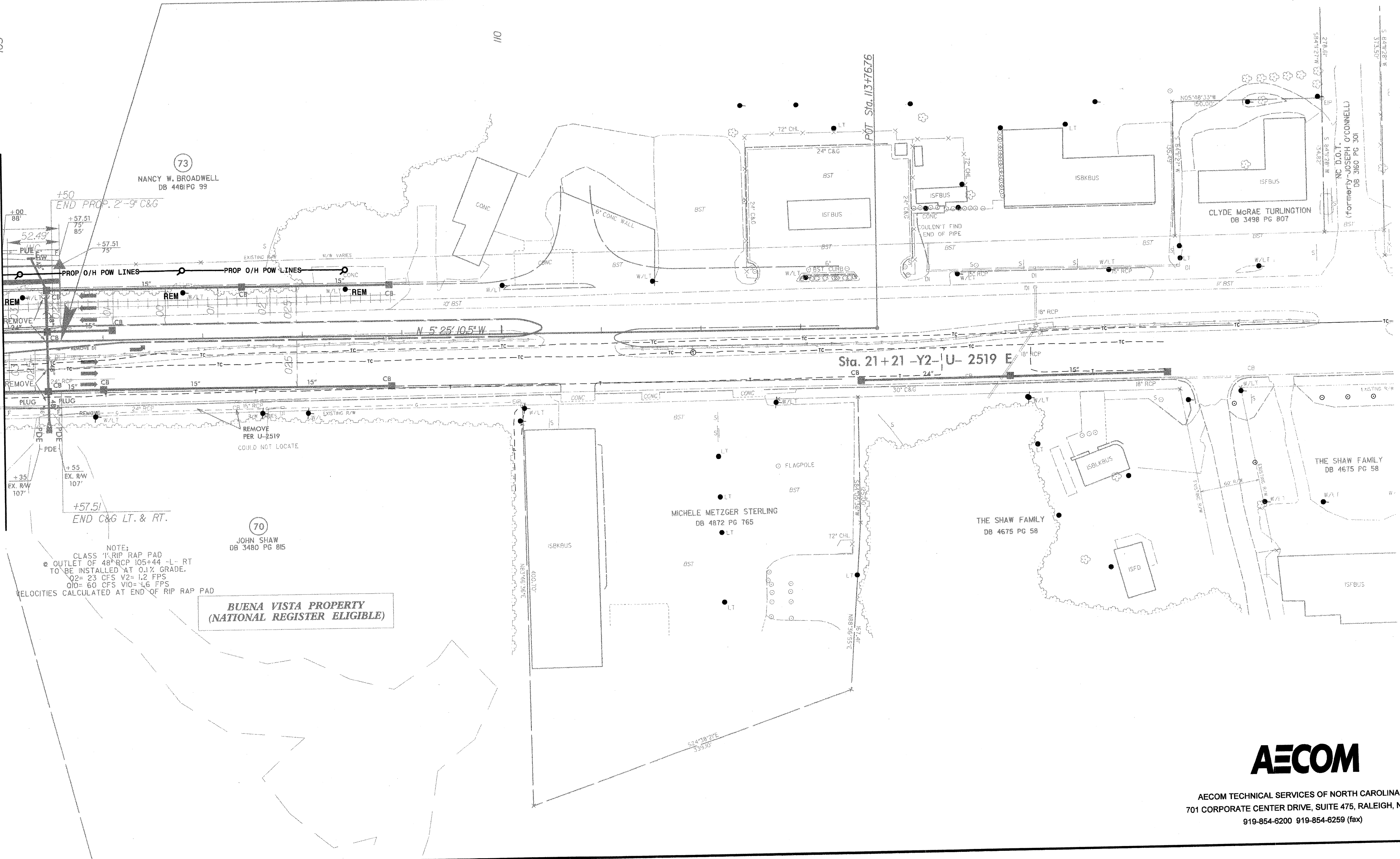
8/17/99

STA. 105+57.51 -L- END TIP PROJECT U-3423

MATCH LINE SHEET UO-8 -L- STA. 105+00.00

105

110



NOTE:
CLASS 1 RIP RAP PAD
OUTLET OF 48" RCP 105+44 -L- RT
TO BE INSTALLED AT 0.1% GRADE.
Q2= 23 CFS V2= 1.2 FPS
Q10= 60 CFS V10= 1.6 FPS
VELOCITIES CALCULATED AT END OF RIP RAP PAD

**BUENA VISTA PROPERTY
(NATIONAL REGISTER ELIGIBLE)**

REVISIONS

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100



AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.
701 CORPORATE CENTER DRIVE, SUITE 475, RALEIGH, NC 27607
919-854-6200 919-854-6259 (fax)