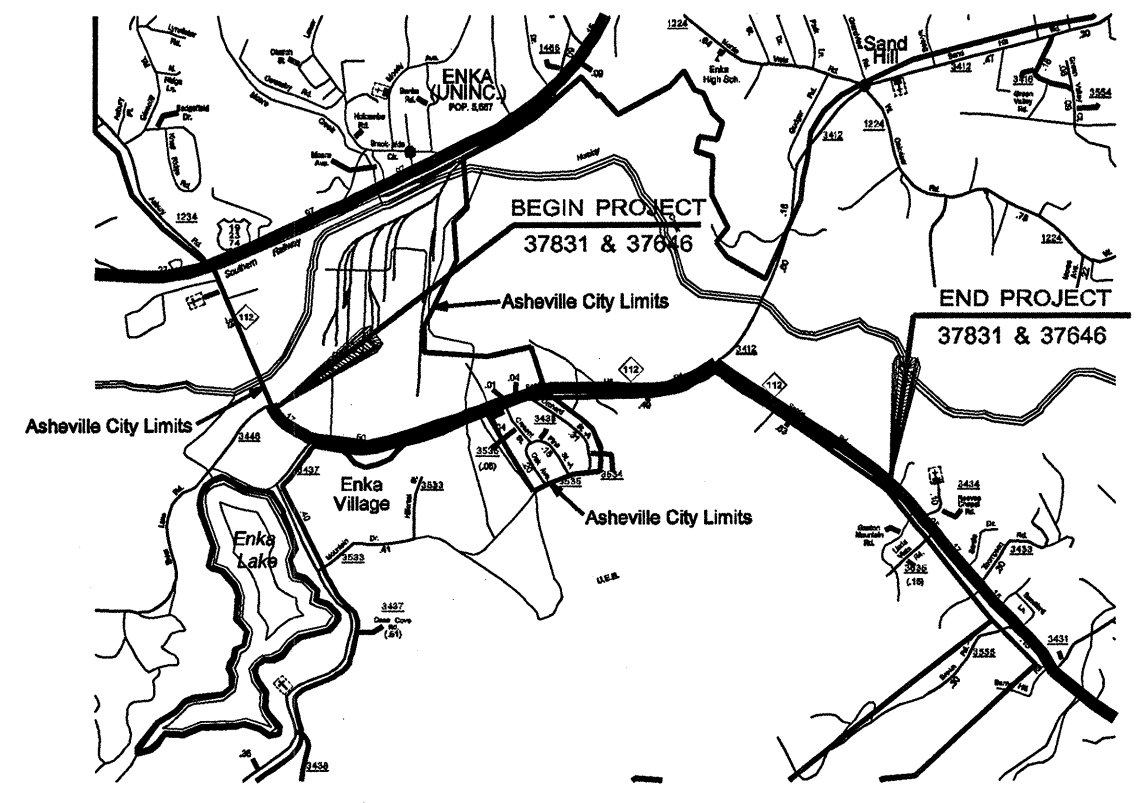


**WBS 37831
AND 37646**

PROJECT: MAI3028R AND MAI3026R

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	37831	UC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

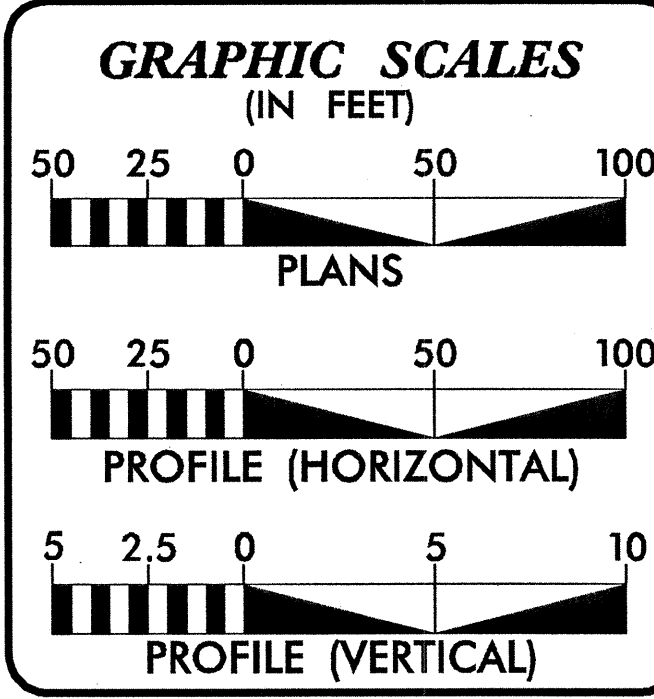
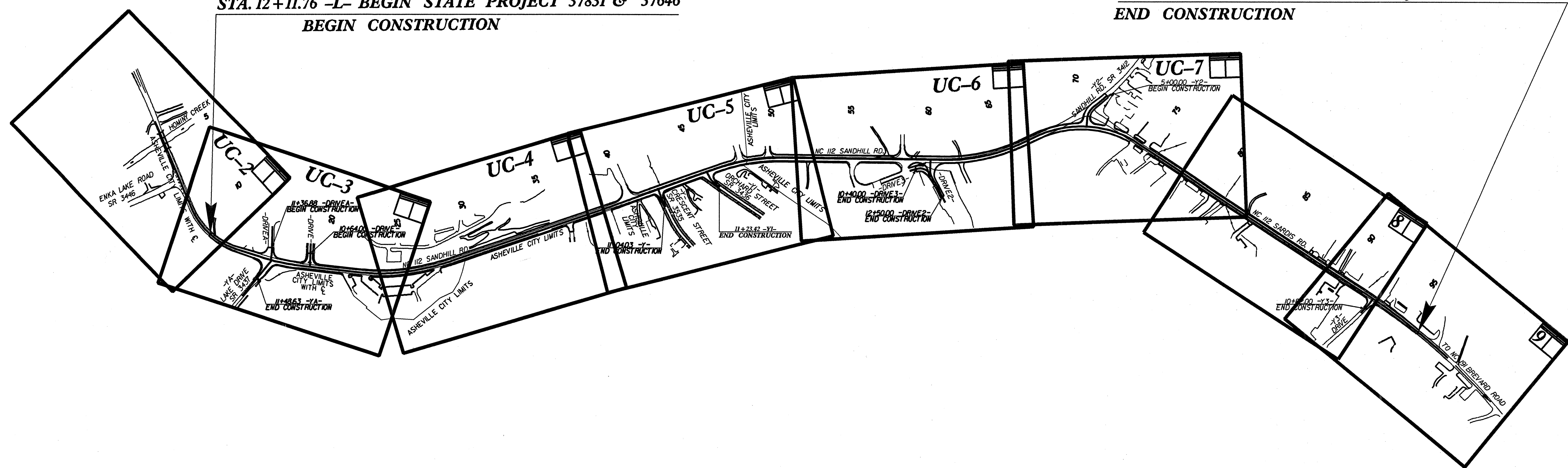
**UTILITY CONSTRUCTION PLANS
BUNCOMBE COUNTY**

LOCATION: NC 112 SAND HILL ROAD AND SARDIS ROAD FROM WEST OF SR 3437 LAKE DRIVE TO 2500' EAST OF INTERSECTION OF SAND HILL RD. SR 3412 WITH SARDIS RD NC 112

TYPE OF WORK: GRADING, DRAINAGE, WIDENING, CURB AND GUTTER, PAVING AND THERMOPLASTIC PAVEMENT MARKINGS

STA. 12+11.76 -L- BEGIN STATE PROJECT 37831 & 37646
BEGIN CONSTRUCTION

STA. 95+83.50 -L- END STATE PROJECT 37831 & 37646
END CONSTRUCTION

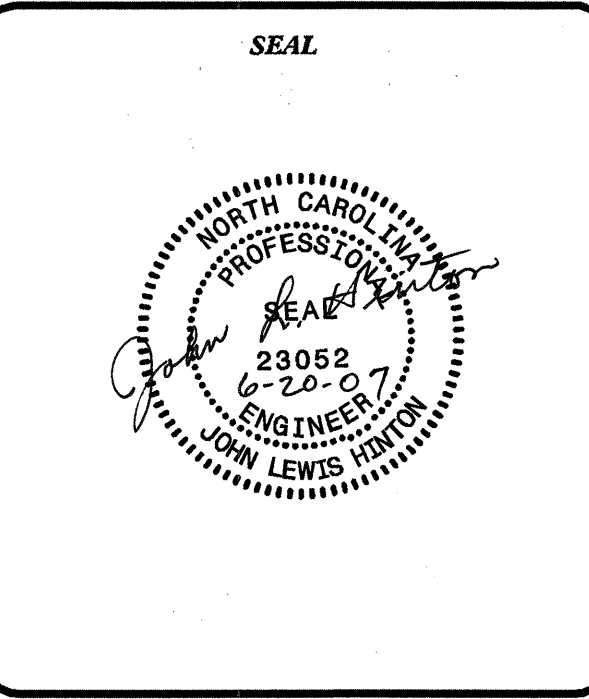


INDEX OF SHEETS

SHEET No.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 TO UC-7	UTILITY CONSTRUCTION PLAN SHEETS
UC-8 TO UC-11	UTILITY CONSTRUCTION PROFILE SHEETS
UC-12 TO UC-13	UTILITY CONSTRUCTION DETAIL SHEETS

UTILITY OWNERS ON PROJECT

(1) CITY OF ASHEVILLE (WATER)
(2) METROPOLITAN SEWERAGE DISTRICT (SEWER)



PREPARED BY

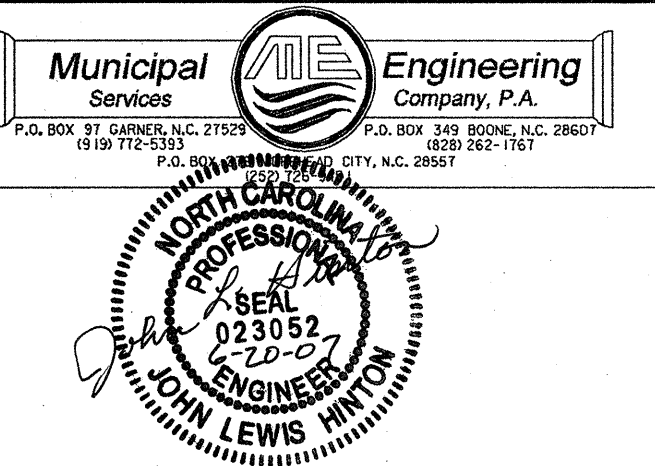
Municipal Services Engineering Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 276 MOREHEAD CITY, N.C. 28557 (252) 726-9481

UTILITY DESIGN ENGINEER JOHN L. HINTON P.E.

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

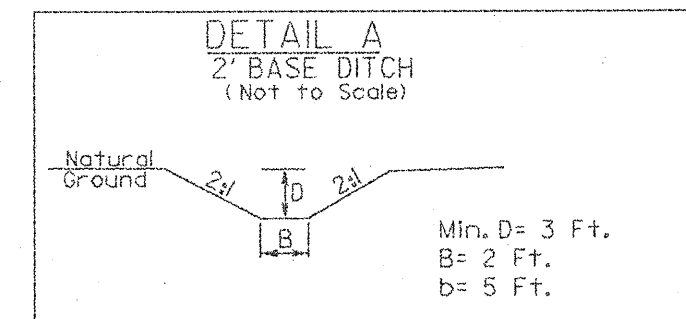
8/17/99



UTILITY CONSTRUCTION
1. REVISED 6/19/07 JLH
CITY OF ASHEVILLE COMMENTS

PI Sta 12+18.14 Δ = 49° 06' 28.0" (LT) D = 12' 00' 00.0" L = 409.23' T = 218.14' R = 477.4648' SE = 0.06 RUNOFF = 165.00'	PI Sta 17+02.14 Δ = 11° 15' 29.2" (LT) D = 4' 15' 00.0" L = 264.90' T = 132.88' R = 1,348.1360' SE = 0.048 RUNOFF = 165.00'	PI Sta 23+79.56 Δ = 15° 54' 25.6" (LT) D = 4' 30' 00.0" L = 353.49' T = 177.89' R = 1,273.2395' SE = 0.049 RUNOFF = 165.00'
--	--	--

-DRIVEA-
PI Sta 11+88.39
Δ = 13° 25' 37.1" (RT)
D = 4' 31' 07.3"
L = 32.34'
T = 16.24'
R = 138.00'
SE = AS SHOWN ON PLANS
RUNOFF = AS SHOWN ON PLANS

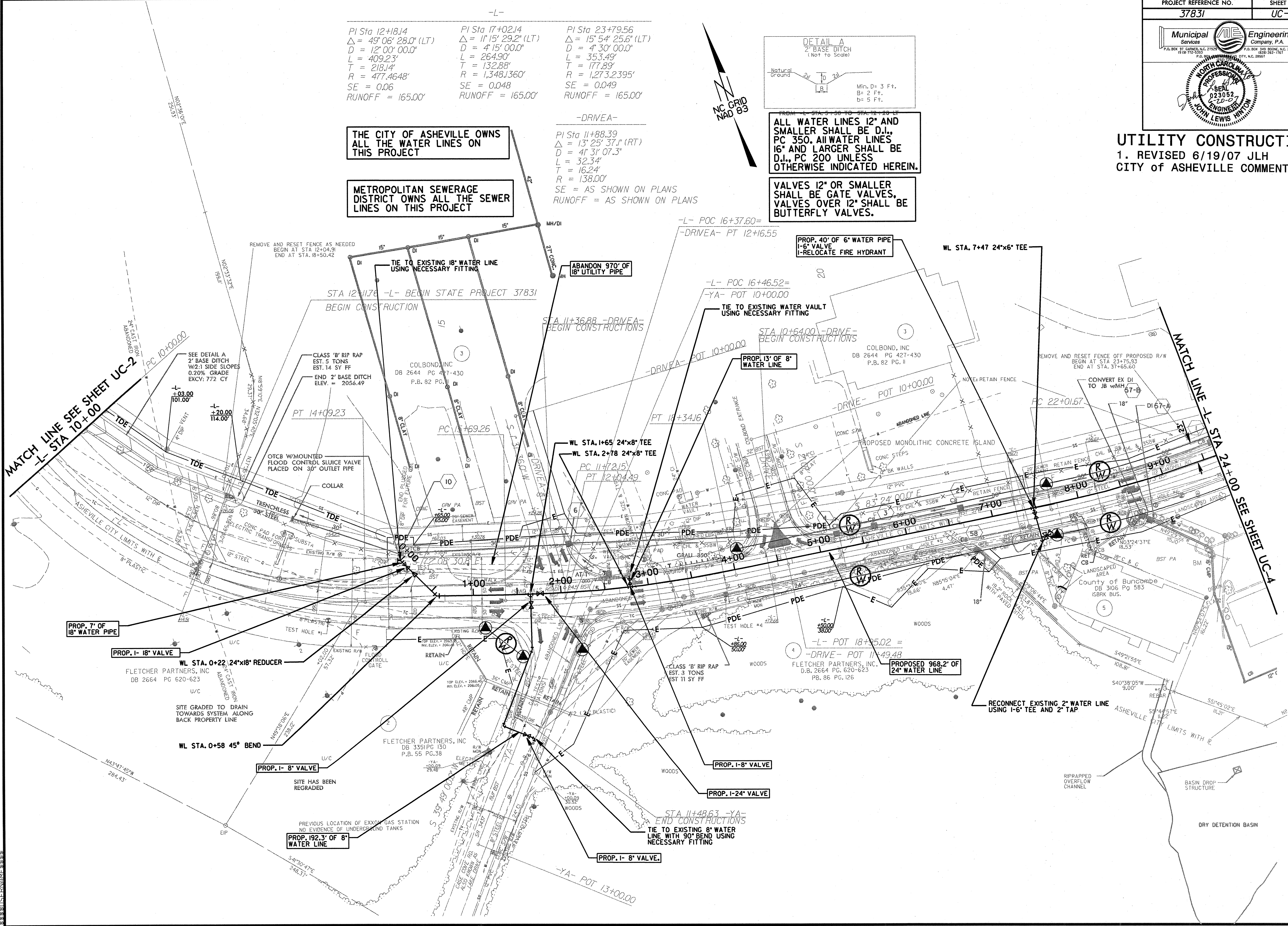


ALL WATER LINES 12" AND SMALLER SHALL BE D.I., PC 350. ALL WATER LINES 16" AND LARGER SHALL BE D.I., PC 200 UNLESS OTHERWISE INDICATED HEREIN.

VALVES 12" OR SMALLER SHALL BE GATE VALVES. VALVES OVER 12" SHALL BE BUTTERFLY VALVES.

THE CITY OF ASHEVILLE OWNS ALL THE WATER LINES ON THIS PROJECT

METROPOLITAN SEWERAGE DISTRICT OWNS ALL THE SEWER LINES ON THIS PROJECT



MATCH LINE SEE SHEET UC-2
-L- STA 10+00

MATCH LINE -L- STA 24+00 SEE SHEET UC-4

STATIONING CONTINUED ON PREVIOUS SHEET

-L-

PI Sta 26+92.19
 $\Delta = 9' 34" 11.2" (LT)$
 $D = 3' 30" 00.0"$
 $L = 273.42'$
 $T = 137.03'$
 $R = 1,637.0223'$
 $SE = 0.043$
 $RUNOFF = 165.00'$

PROJECT REFERENCE NO. 37831	SHEET NO. UC-4
---------------------------------------	--------------------------

Municipal Services

P.O. BOX 97 CARMER, N.C. 27525
 919.512.9398
 602.775.9494

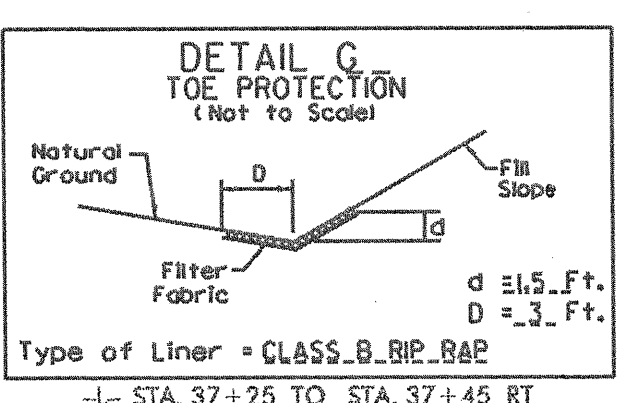
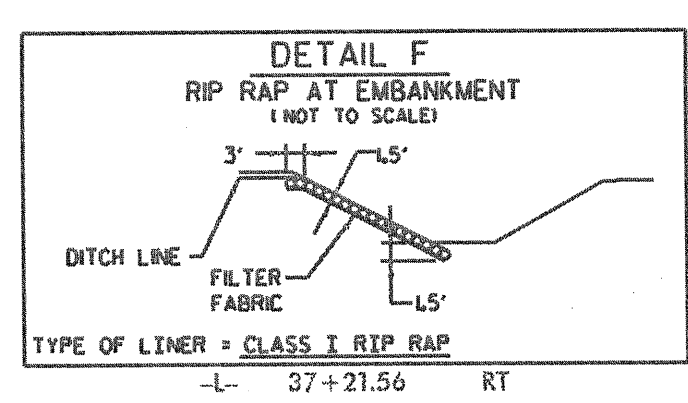
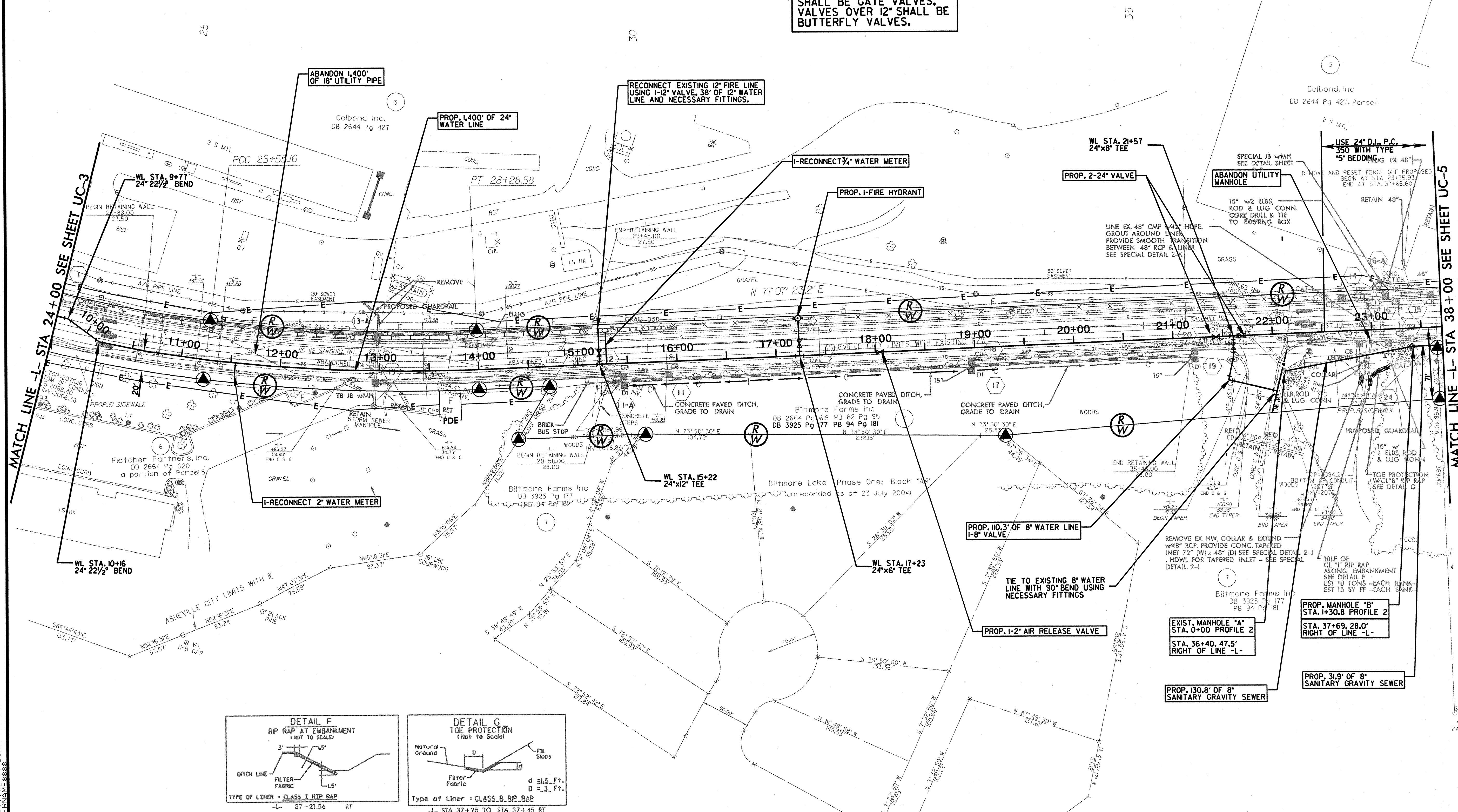
Engineering Company, P.A.

P.O. BOX 349 BOONE, N.C. 28607
 828.262.1167

ALL WATER LINES 12" AND SMALLER SHALL BE D.I., PC 350. ALL WATER LINES 16" AND LARGER SHALL BE D.I., PC 200 UNLESS OTHERWISE INDICATED HEREIN.

VALVES 12" OR SMALLER SHALL BE GATE VALVES. VALVES OVER 12" SHALL BE BUTTERFLY VALVES.

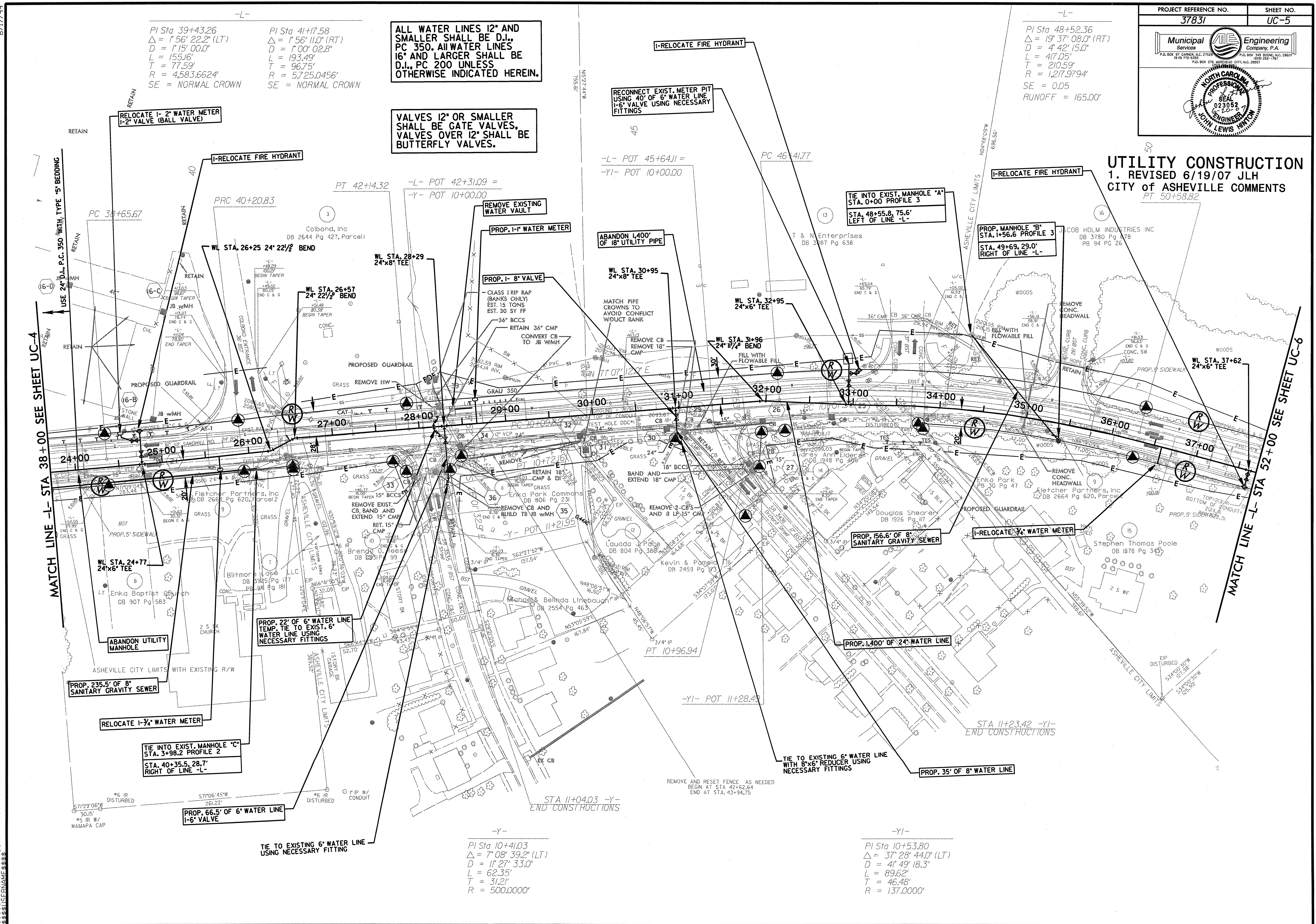
UTILITY CONSTRUCTION
 1. REVISED 6/19/07 JLH
 CITY OF ASHEVILLE COMMENTS



*****SHEET LINE*****

MATCH LINE -L- STA 38+00 SEE SHEET UC-5

UTILITY CONSTRUCTION
1. REVISED 6/19/07 JLH
CITY OF ASHEVILLE COMMENTS
 PT 50+58.82



PI Sta 39+43.26
 $\Delta = 1'56''22.2''$ (LT)
 $D = 1'15''00.0''$
 $L = 155.16'$
 $T = 77.59'$
 $R = 4,583.6624'$
 SE = NORMAL CROWN

PI Sta 41+17.58
 $\Delta = 1'56''11.0''$ (RT)
 $D = 1'00''02.8''$
 $L = 193.49'$
 $T = 96.75'$
 $R = 5,725.0456'$
 SE = NORMAL CROWN

ALL WATER LINES 12" AND SMALLER SHALL BE D.I., PC 350. ALL WATER LINES 16" AND LARGER SHALL BE D.I., PC 200 UNLESS OTHERWISE INDICATED HEREIN.

VALVES 12" OR SMALLER SHALL BE GATE VALVES. VALVES OVER 12" SHALL BE BUTTERFLY VALVES.

PI Sta 48+52.36
 $\Delta = 1'37''08.0''$ (RT)
 $D = 4'42''15.0''$
 $L = 417.05'$
 $T = 210.59'$
 $R = 1,217.9794'$
 SE = 0.05
 RUNOFF = 165.00'

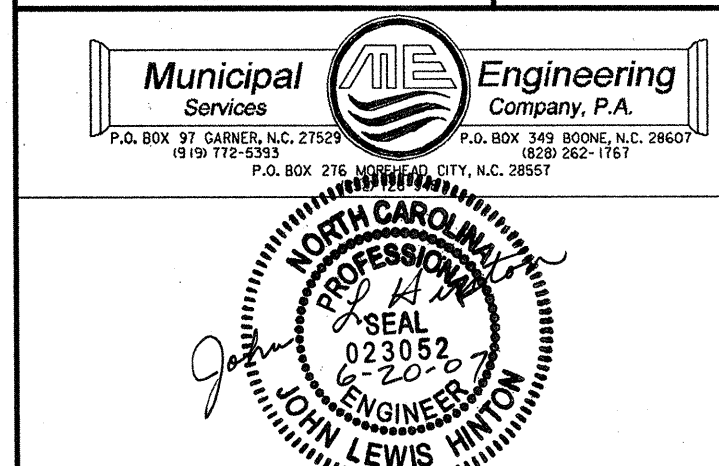
-Y-
 PI Sta 10+41.03
 $\Delta = 7'08''39.2''$ (LT)
 $D = 11'27''33.0''$
 $L = 62.35'$
 $T = 31.21'$
 $R = 500.0000'$

-Y1-
 PI Sta 10+53.80
 $\Delta = 37'28''44.0''$ (LT)
 $D = 41'49''18.3''$
 $L = 89.62'$
 $T = 46.48'$
 $R = 137.0000'$

MATCH LINE -L- STA 38+00 SEE SHEET UC-4

MATCH LINE -L- STA 52+00 SEE SHEET UC-6

8/17/99



UTILITY CONSTRUCTION 1. REVISED 6/19/07 JLH CITY OF ASHEVILLE COMMENTS

-L-
PI Sta 63+63.61
 $\Delta = 25^{\circ} 20' 30.0''$ (LT)
D = 5' 00' 00.0"
L = 506.83'
T = 257.63'
R = 1145.9156'
SE = 0.051
RUNOFF = 165.00'

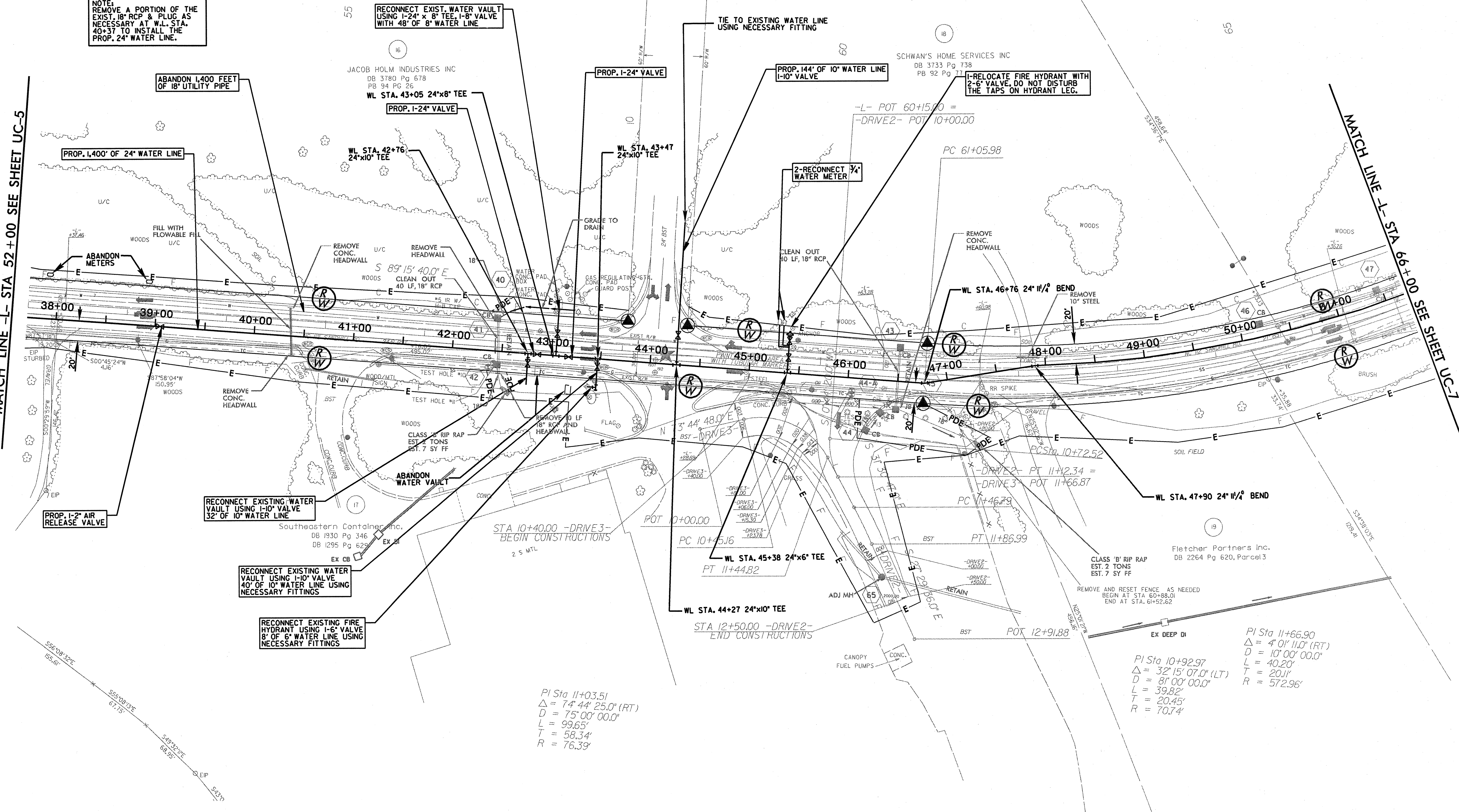
ALL WATER LINES 12" AND SMALLER SHALL BE D.I., PC 350. ALL WATER LINES 16" AND LARGER SHALL BE D.I., PC 200 UNLESS OTHERWISE INDICATED HEREIN.

VALVES 12" OR SMALLER SHALL BE GATE VALVES, VALVES OVER 12" SHALL BE BUTTERFLY VALVES.

NOTE: REMOVE A PORTION OF THE EXIST. 18" RCP & PLUG AS NECESSARY AT WL STA. 40+37 TO INSTALL THE PROP. 24" WATER LINE.

MATCH LINE -L- STA 52+00 SEE SHEET UC-5

MATCH LINE -L- STA 66+00 SEE SHEET UC-7



ABANDON 1,400 FEET OF 18" UTILITY PIPE

RECONNECT EXIST. WATER VAULT USING 1-24" x 8" TEE, 1-8" VALVE WITH 48" OF 8" WATER LINE

PROP. 144" OF 10" WATER LINE 1-10" VALVE

1-RELOCATE FIRE HYDRANT WITH 2-6" VALVE, DO NOT DISTURB THE TAPS ON HYDRANT LEG.

PROP. 1,400' OF 24" WATER LINE

WL STA. 43+05 24"x8" TEE
PROP. 1-24" VALVE

WL STA. 43+47 24"x10" TEE
PROP. 1-24" VALVE

-L- POT 60+15.00 =
-DRIVE2- POT 10+00.00

2-RECONNECT 3/4" WATER METER

ABANDON METERS

WL STA. 42+76 24"x10" TEE
PROP. 1-24" VALVE

WL STA. 43+76 24"x10" TEE
PROP. 1-24" VALVE

WL STA. 46+76 24" 11/4" BEND
REMOVE 10" STEEL

38+00

39+00

40+00

41+00

42+00

43+00

44+00

45+00

46+00

47+00

48+00

49+00

50+00

PROP. 1-2" AIR RELEASE VALVE

RECONNECT EXISTING WATER VAULT USING 1-10" VALVE 32" OF 10" WATER LINE

RECONNECT EXISTING WATER VAULT USING 1-10" VALVE 40" OF 10" WATER LINE USING NECESSARY FITTINGS

RECONNECT EXISTING FIRE HYDRANT USING 1-6" VALVE 8" OF 6" WATER LINE USING NECESSARY FITTINGS

STA 10+40.00 -DRIVE3- BEGIN CONSTRUCTIONS

WL STA. 44+27 24"x10" TEE
STA 12+50.00 -DRIVE2- END CONSTRUCTIONS

WL STA. 47+90 24" 11/4" BEND

PI Sta 11+03.51
 $\Delta = 74^{\circ} 44' 25.0''$ (RT)
D = 75' 00' 00.0"
L = 99.65'
T = 58.34'
R = 76.39'

PI Sta 10+92.97
 $\Delta = 32^{\circ} 15' 07.0''$ (LT)
D = 81' 00' 00.0"
L = 39.82'
T = 20.45'
R = 70.74'

PI Sta 11+66.90
 $\Delta = 4^{\circ} 01' 11.0''$ (RT)
D = 10' 00' 00.0"
L = 40.20'
T = 20.11'
R = 572.96'

UTILITY CONSTRUCTION

8/17/09

PROJECT REFERENCE NO. 37831 SHEET NO. UC-7

Municipal Engineering Services
 Services Company, P.A.
 P.O. BOX 97 GARNER, N.C. 27529
 P.O. BOX 348 BOONE, N.C. 28607
 P.O. BOX 172533 RALEIGH, N.C. 27617

Professional Engineer
 JOHN LEWIS HINTON
 033052
 6-20-07

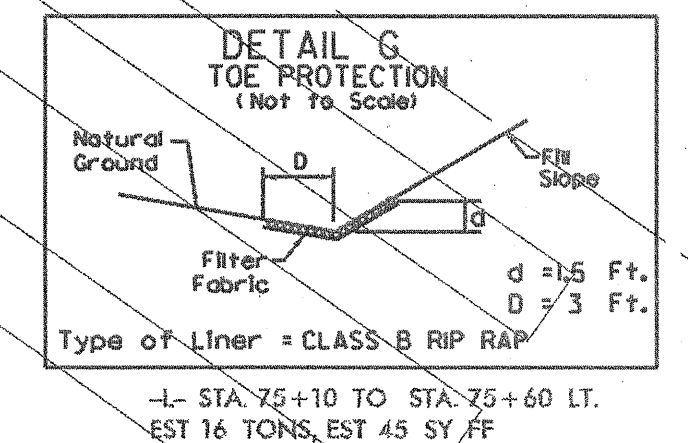
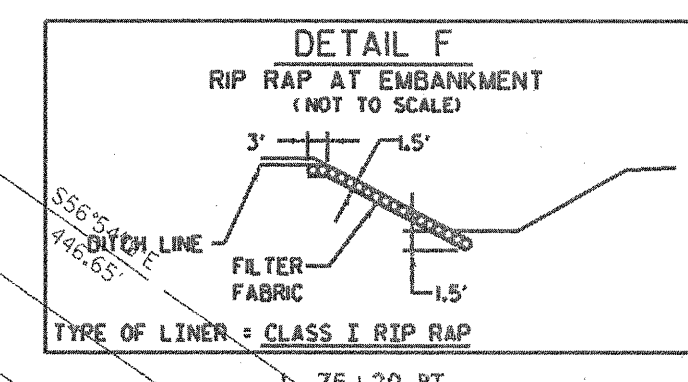
UTILITY CONSTRUCTION
1. REVISED 6/19/07 JLH
CITY OF ASHEVILLE COMMENTS

PI Sta 63+63.61
 $\Delta = 25^{\circ}20'30.0''$ (LT)
 $D = 5^{\circ}00'00.0''$
 $L = 506.83'$
 $T = 257.63'$
 $R = 145.9156'$
 $SE = 0.051$
 $RUNOFF = 165.00'$

PI Sta 71+04.85
 $\Delta = 57^{\circ}47'17.4''$ (RT)
 $D = 8^{\circ}30'00.0''$
 $L = 679.86'$
 $T = 372.01'$
 $R = 674.0680'$
 $SE = 0.06$
 $RUNOFF = 165.00'$

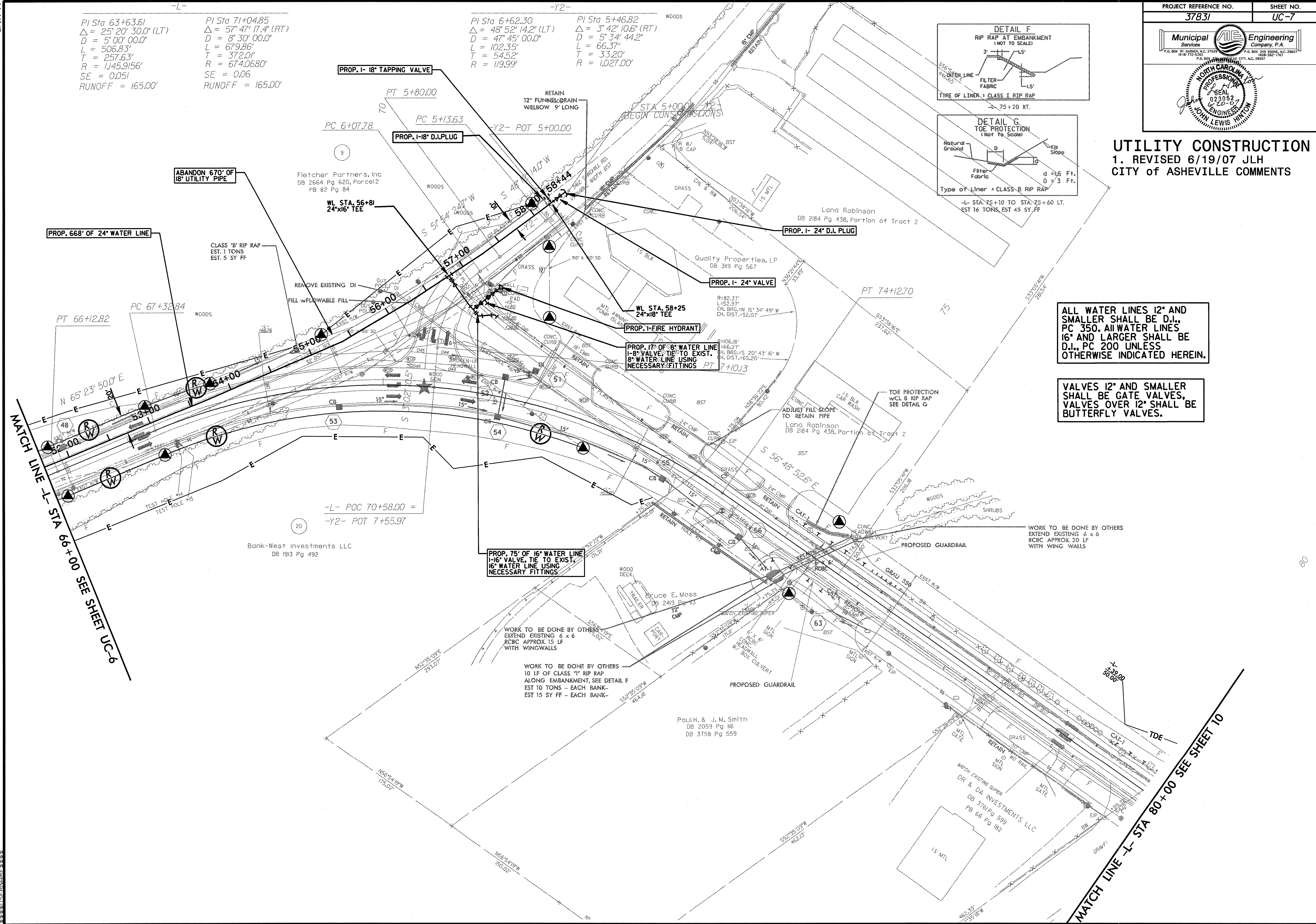
PI Sta 6+62.30
 $\Delta = 48^{\circ}52'14.2''$ (LT)
 $D = 47^{\circ}45'00.0''$
 $L = 102.35'$
 $T = 54.52'$
 $R = 119.99'$

PI Sta 5+46.82
 $\Delta = 3^{\circ}42'10.6''$ (RT)
 $D = 5^{\circ}34'44.2''$
 $L = 66.37'$
 $T = 33.20'$
 $R = 1,027.00'$



ALL WATER LINES 12" AND SMALLER SHALL BE D.I., PC 350. ALL WATER LINES 16" AND LARGER SHALL BE D.I., PC 200 UNLESS OTHERWISE INDICATED HEREIN.

VALVES 12" AND SMALLER SHALL BE GATE VALVES, VALVES OVER 12" SHALL BE BUTTERFLY VALVES.



MATCH LINE -L- STA 66+00 SEE SHEET UC-6

MATCH LINE -L- STA 80+00 SEE SHEET TO

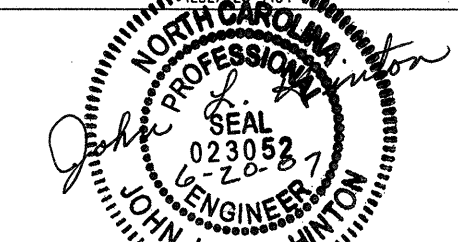
WORK TO BE DONE BY OTHERS
 EXTEND EXISTING 6 x 6 RCBC APPROX. 15 LF WITH WINGWALLS

WORK TO BE DONE BY OTHERS
 10 LF OF CLASS "I" RIP RAP ALONG EMBANKMENT, SEE DETAIL F EST 10 TONS - EACH BANK - EST 15 SY FF - EACH BANK -

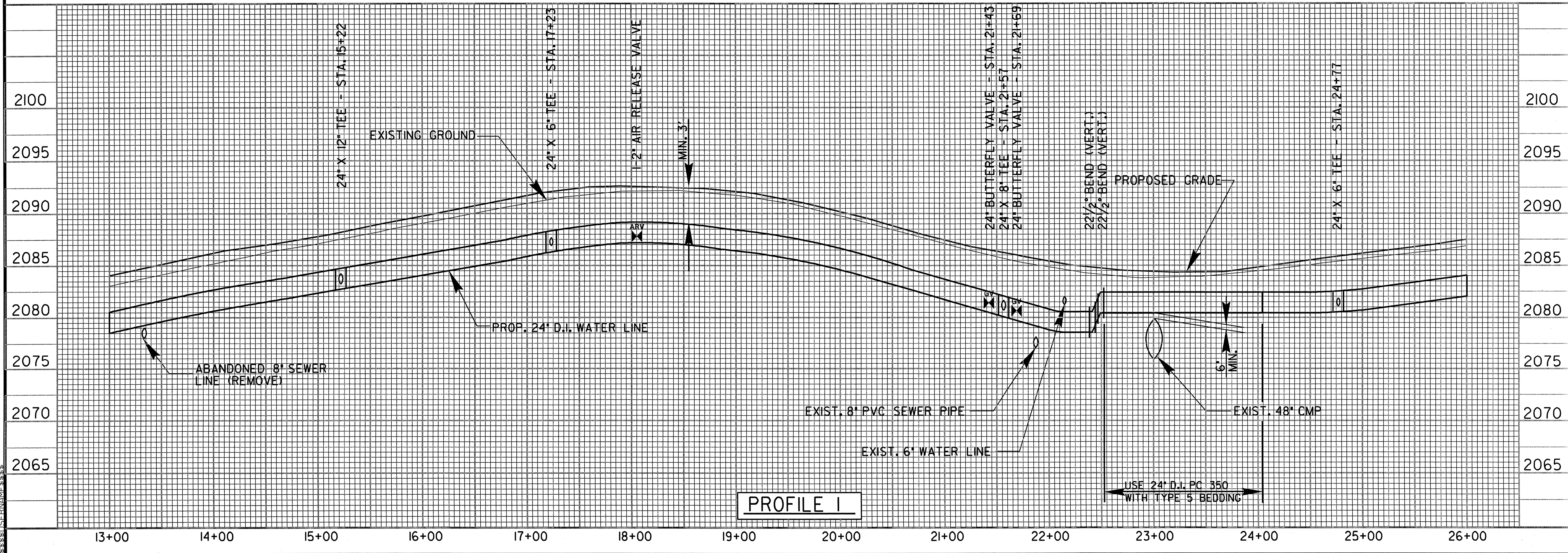
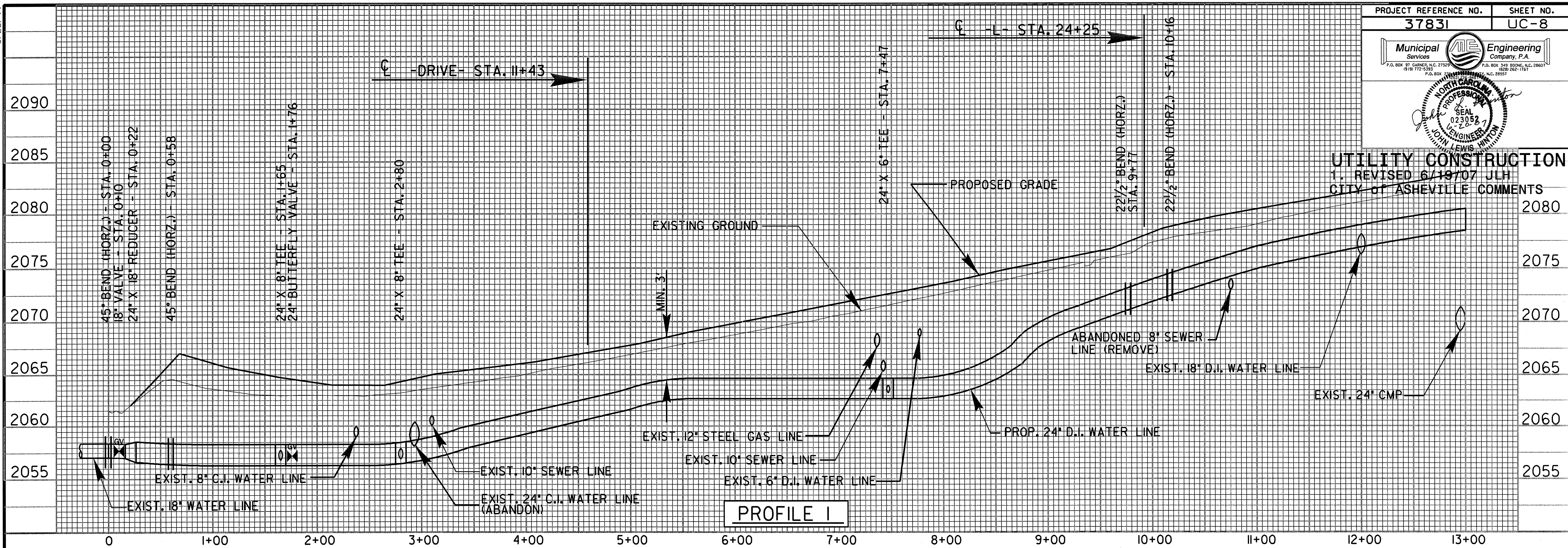
WORK TO BE DONE BY OTHERS
 EXTEND EXISTING 6 x 6 RCBC APPROX. 20 LF WITH WING WALLS

SYSTEM: \$\$\$\$
 DGN: \$\$\$\$
 USER: \$\$\$\$

5/28/99

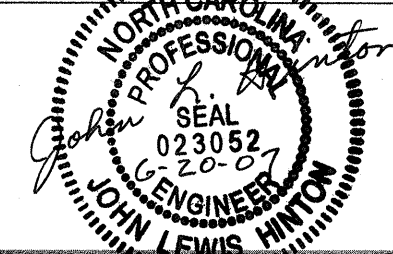


UTILITY CONSTRUCTION
 1. REVISED 6/19/07 JLH
 CITY OF ASHEVILLE COMMENTS

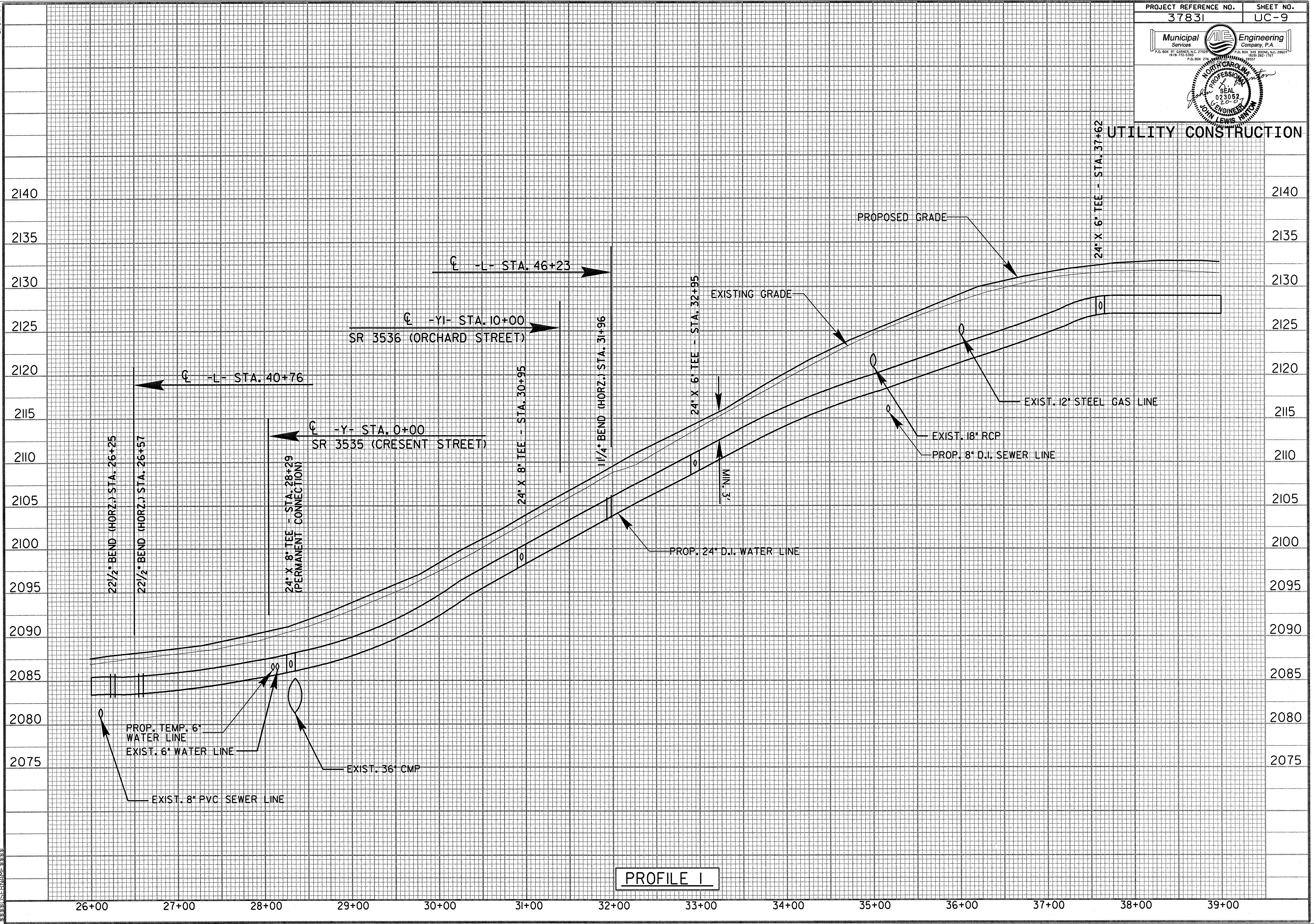


STINE CONSTRUCTION COMPANY
 1000 S. HAYWOOD ST.
 ASHEVILLE, NC 28801
 (704) 252-1161

5/14/99



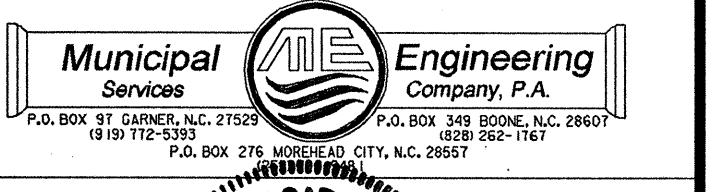
UTILITY CONSTRUCTION



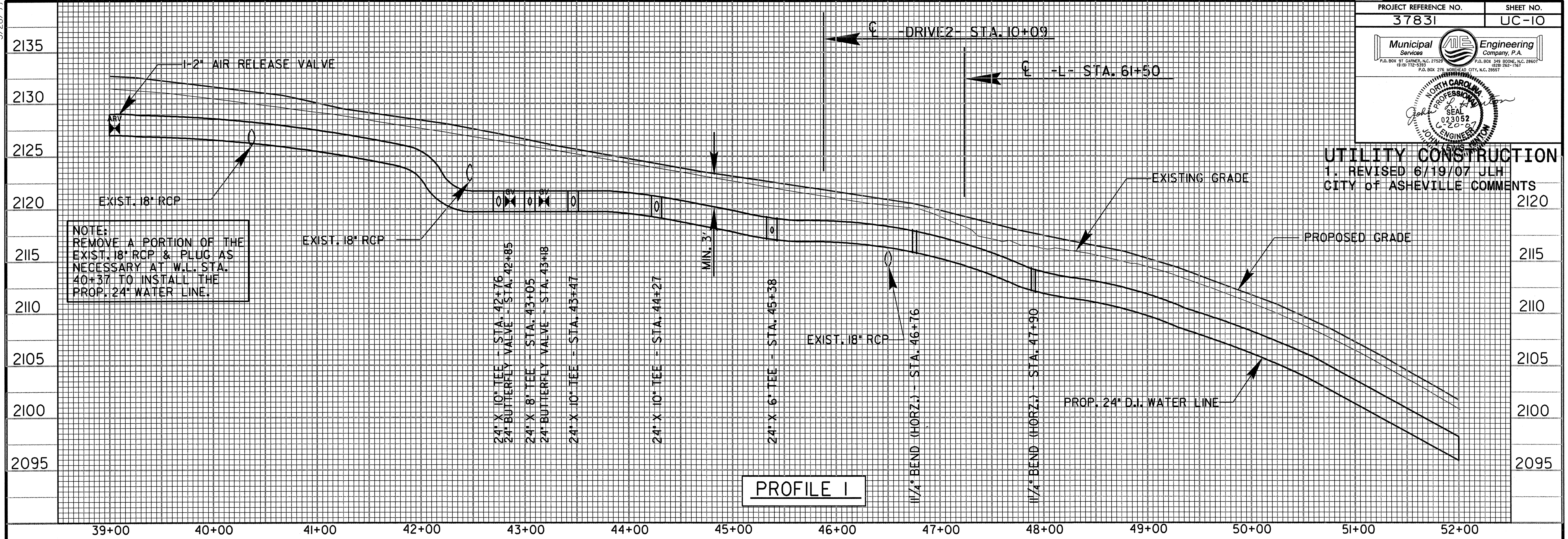
PROFILE I

VERTICAL CURVE DATA
STATIONING
ELEVATION

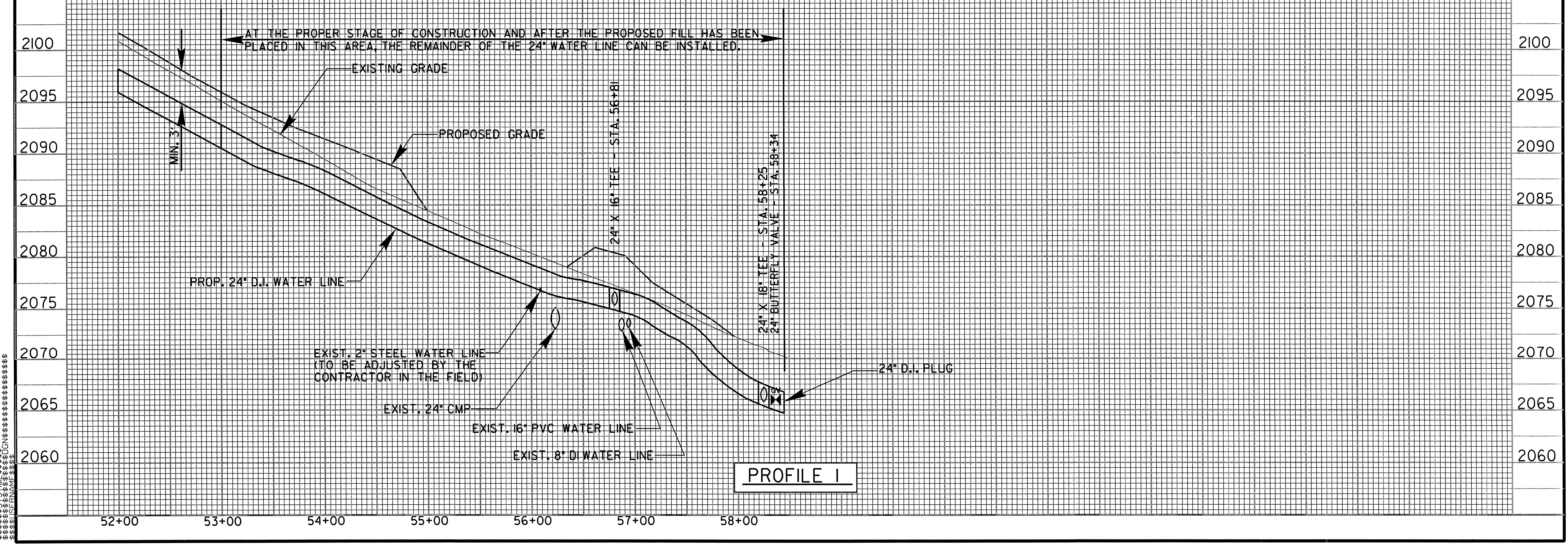
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UTILITY CONSTRUCTION
 1. REVISED 6/19/07 JLH
 CITY OF ASHEVILLE COMMENTS



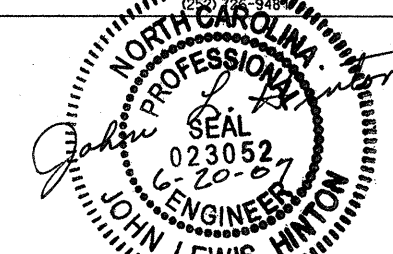
PROFILE 1



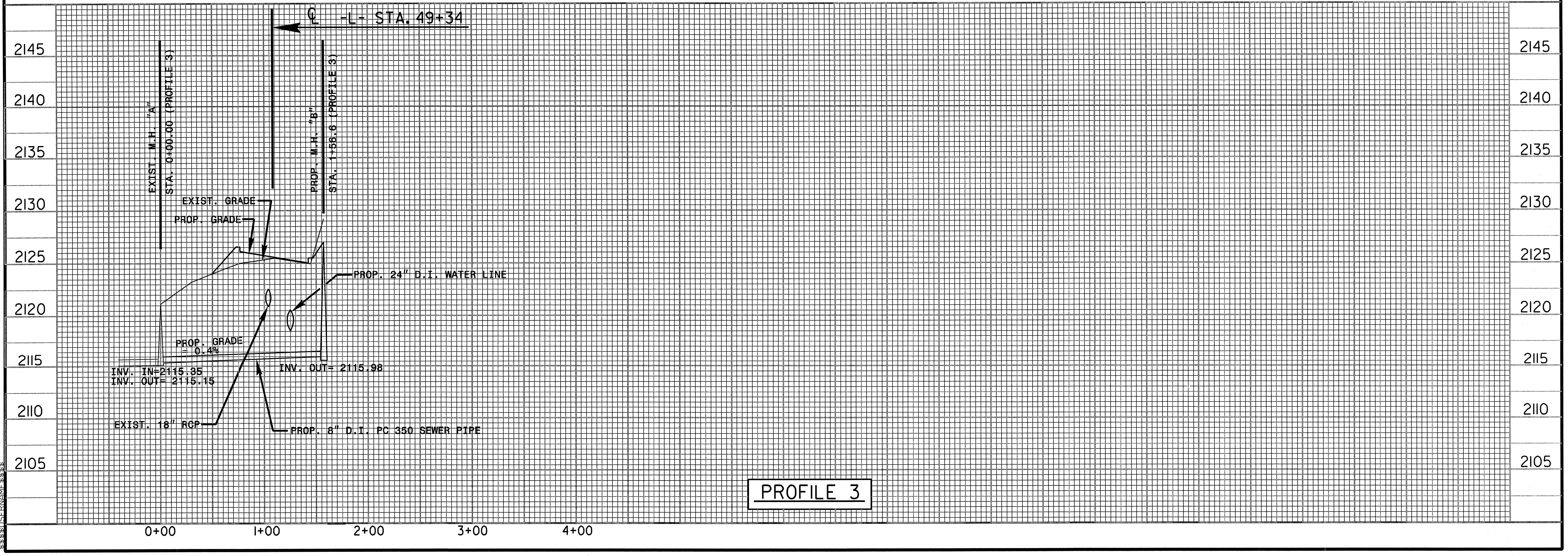
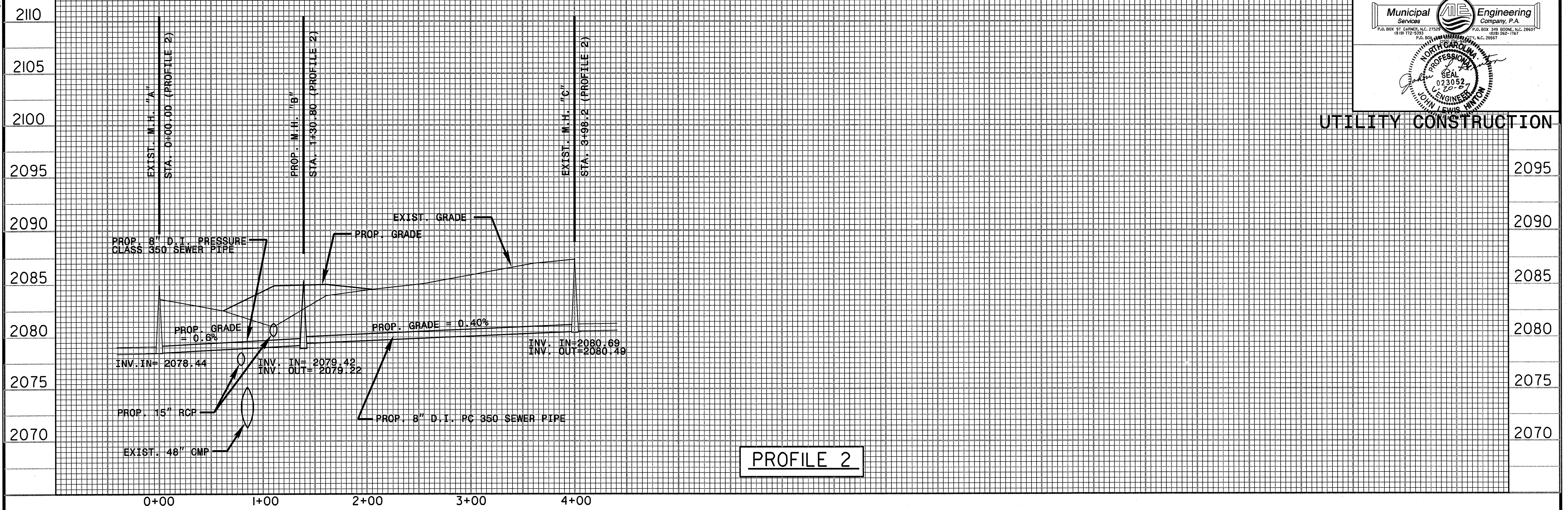
PROFILE 1

CONSTRUCTION

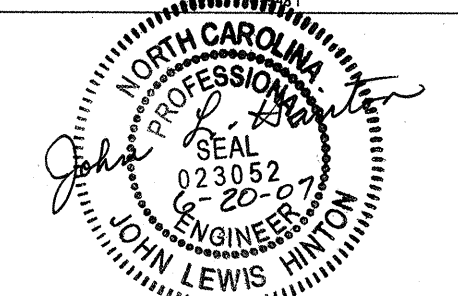
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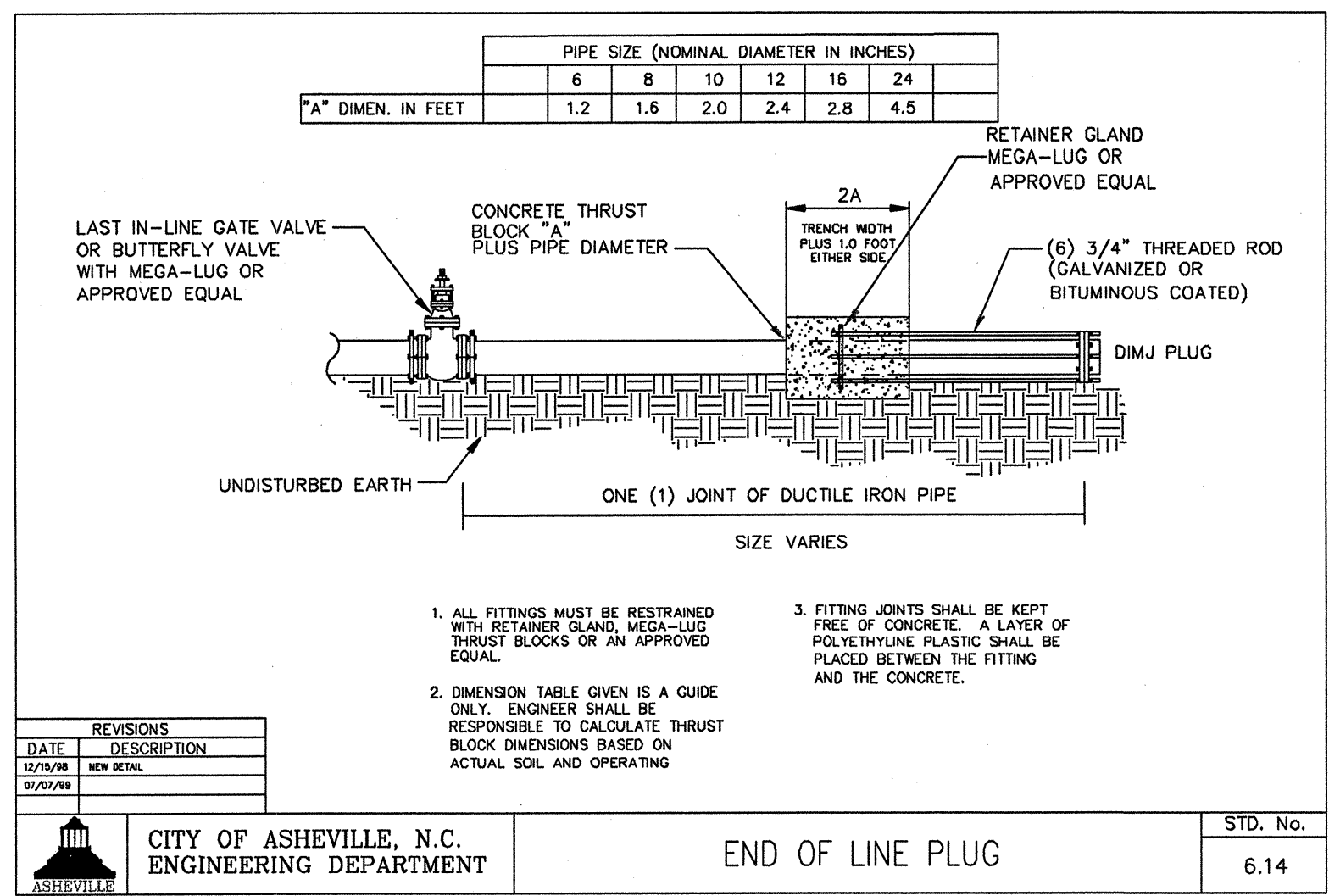
UTILITY CONSTRUCTION



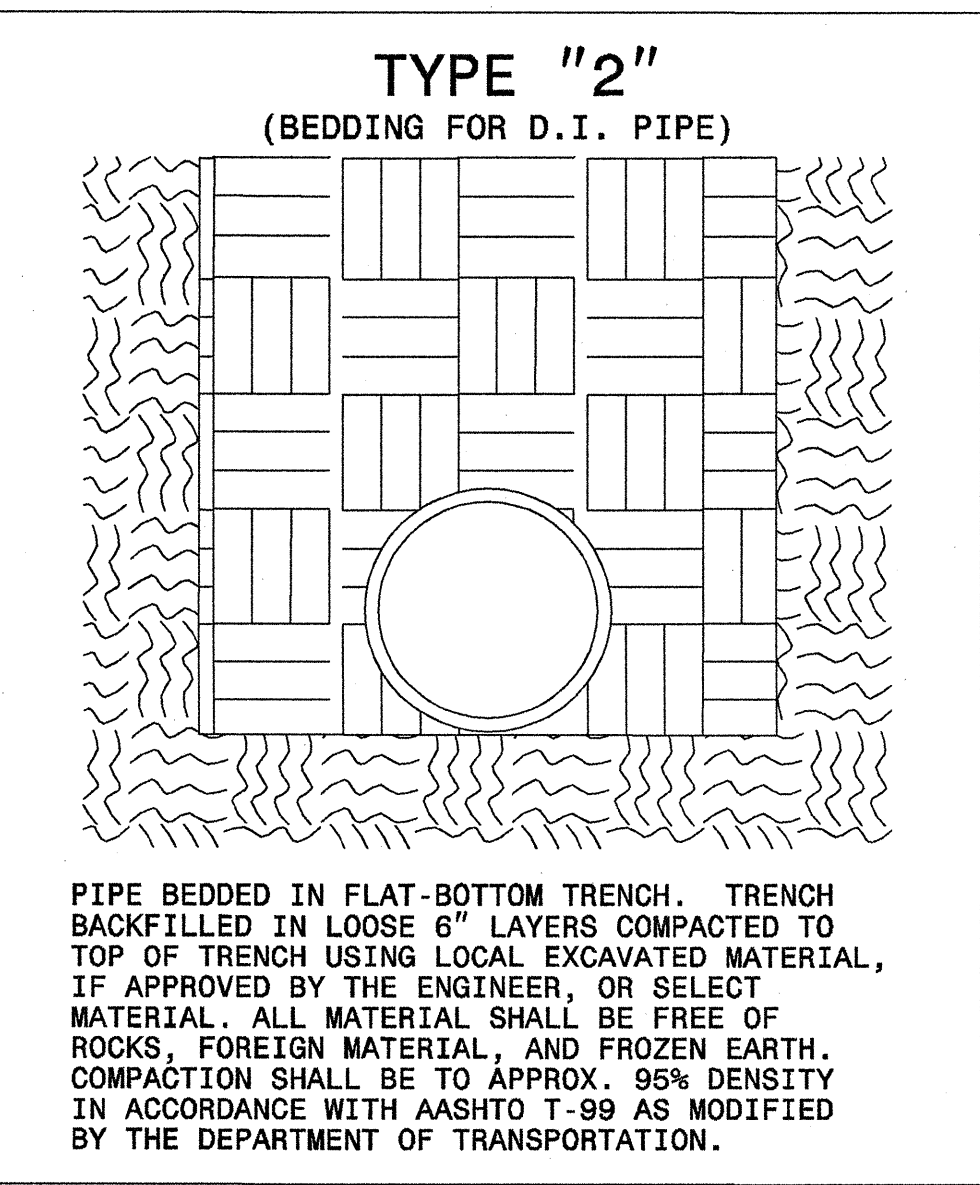
UTILITY CONSTRUCTION



UTILITY CONSTRUCTION
 1. REVISED 6/19/07 JLH
 CITY OF ASHEVILLE COMMENTS

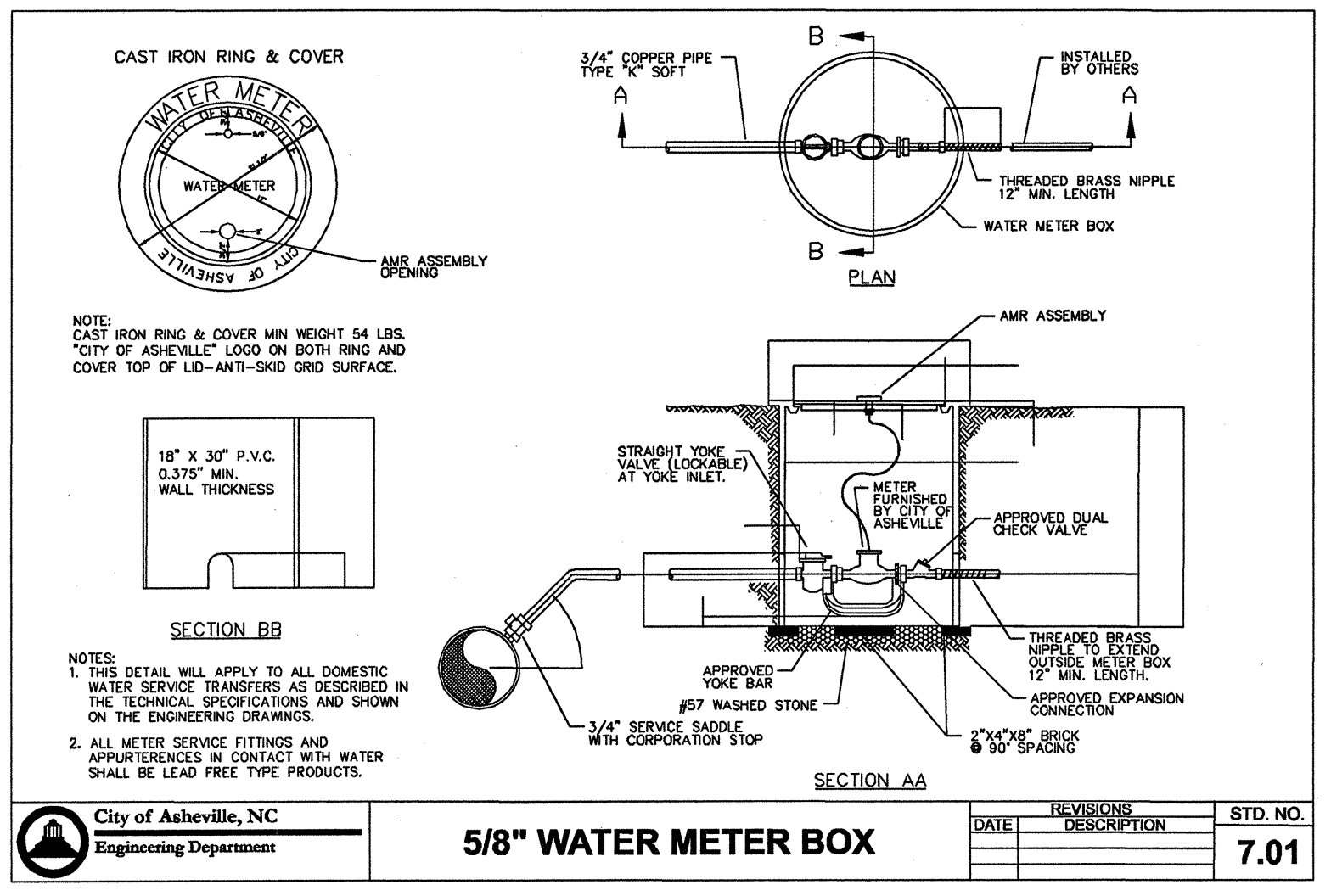


DATE	REVISIONS DESCRIPTION	STD. NO.
05/09/99	NEW SPEC.	6.14



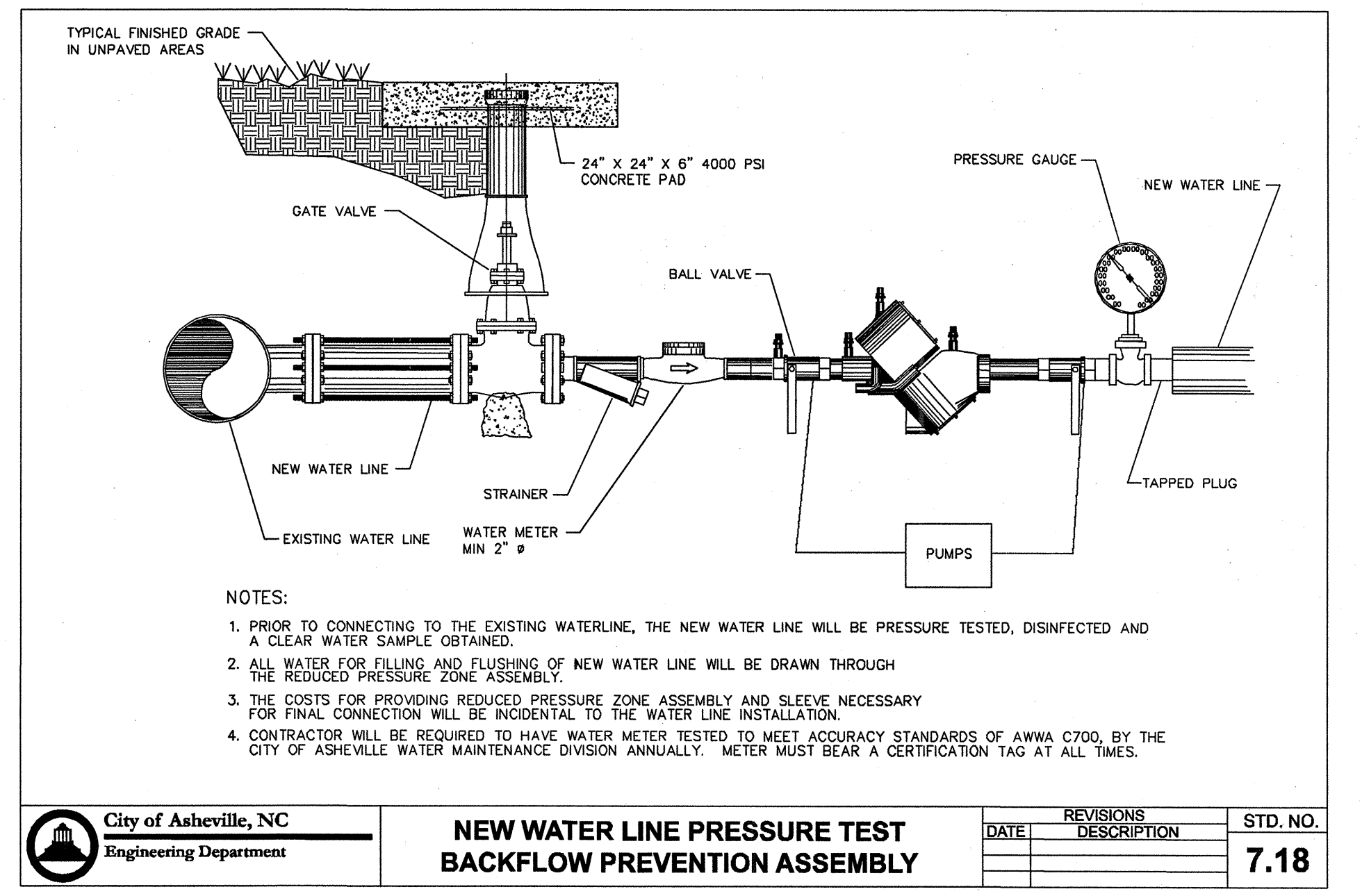
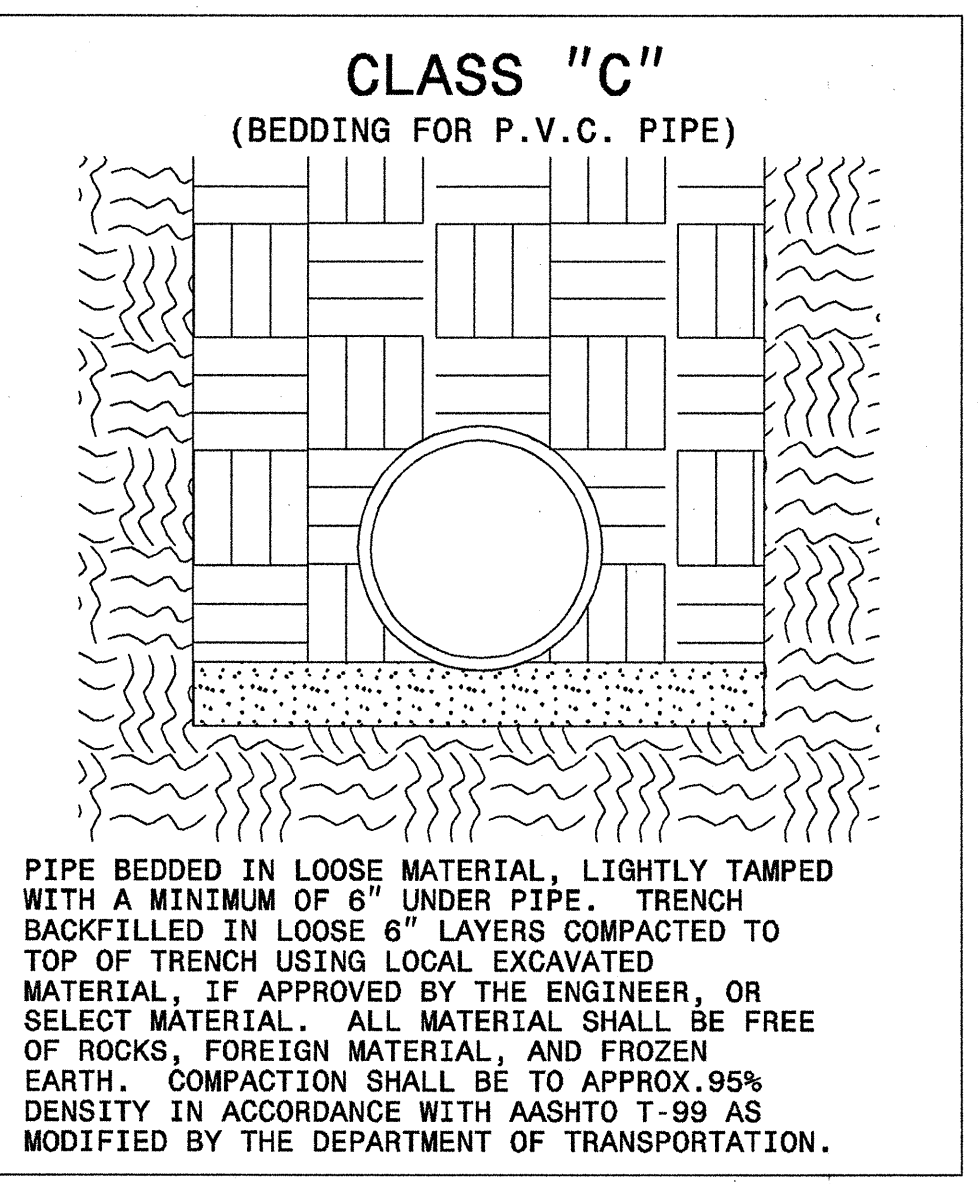
MAXIMUM TRENCH WIDTH AT TOP OF PIPE

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		



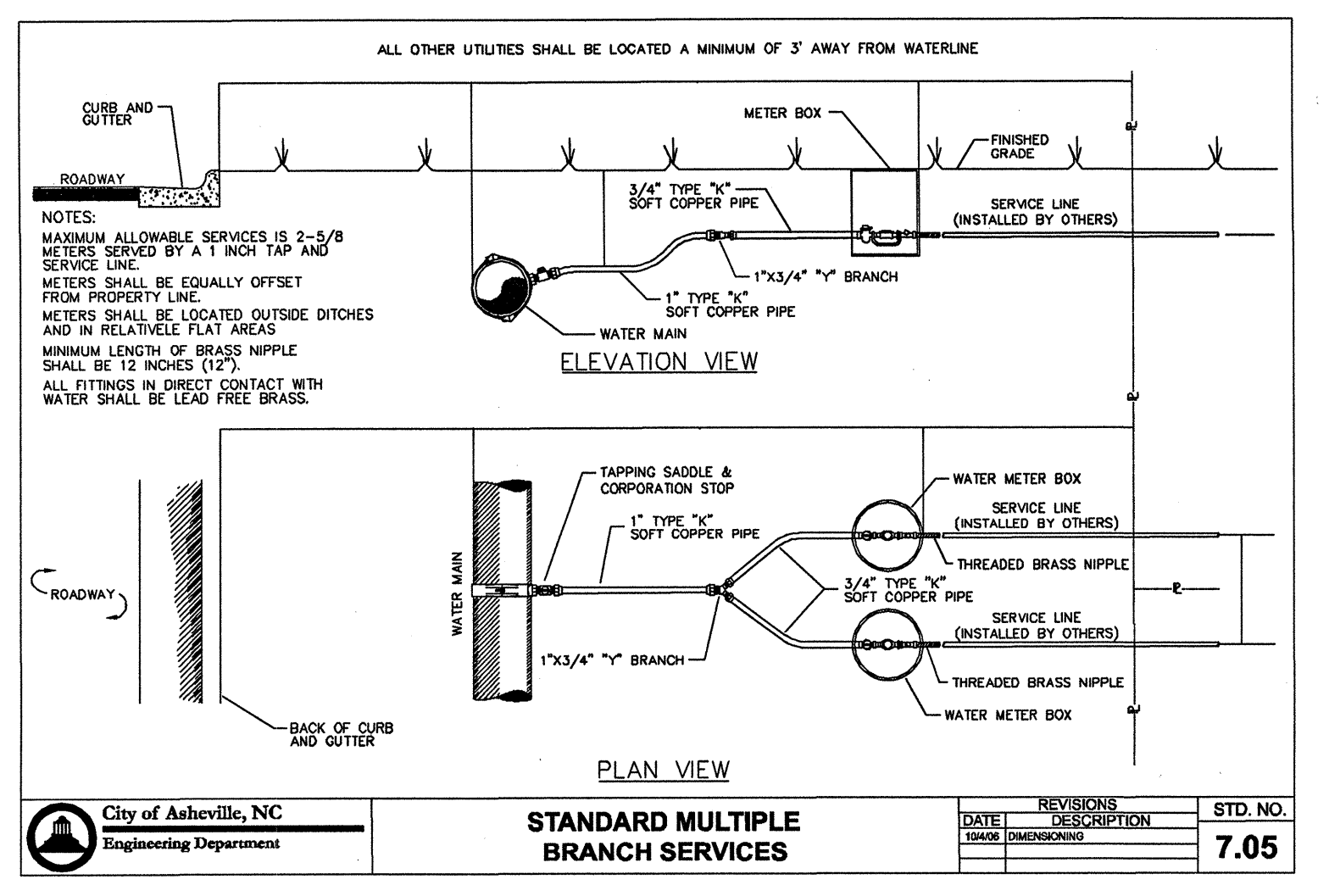
City of Asheville, NC Engineering Department

DATE	REVISIONS DESCRIPTION	STD. NO.
		7.01



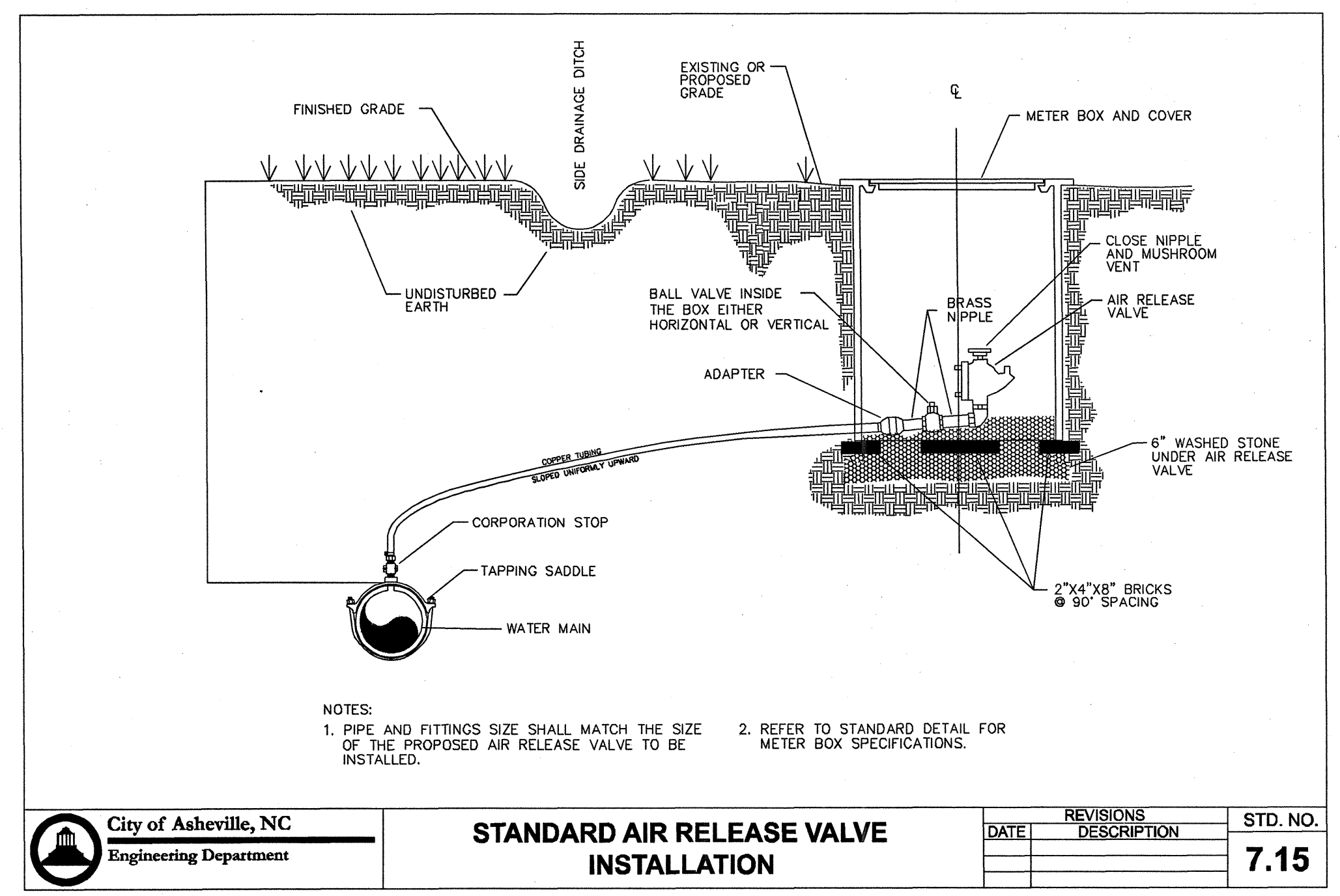
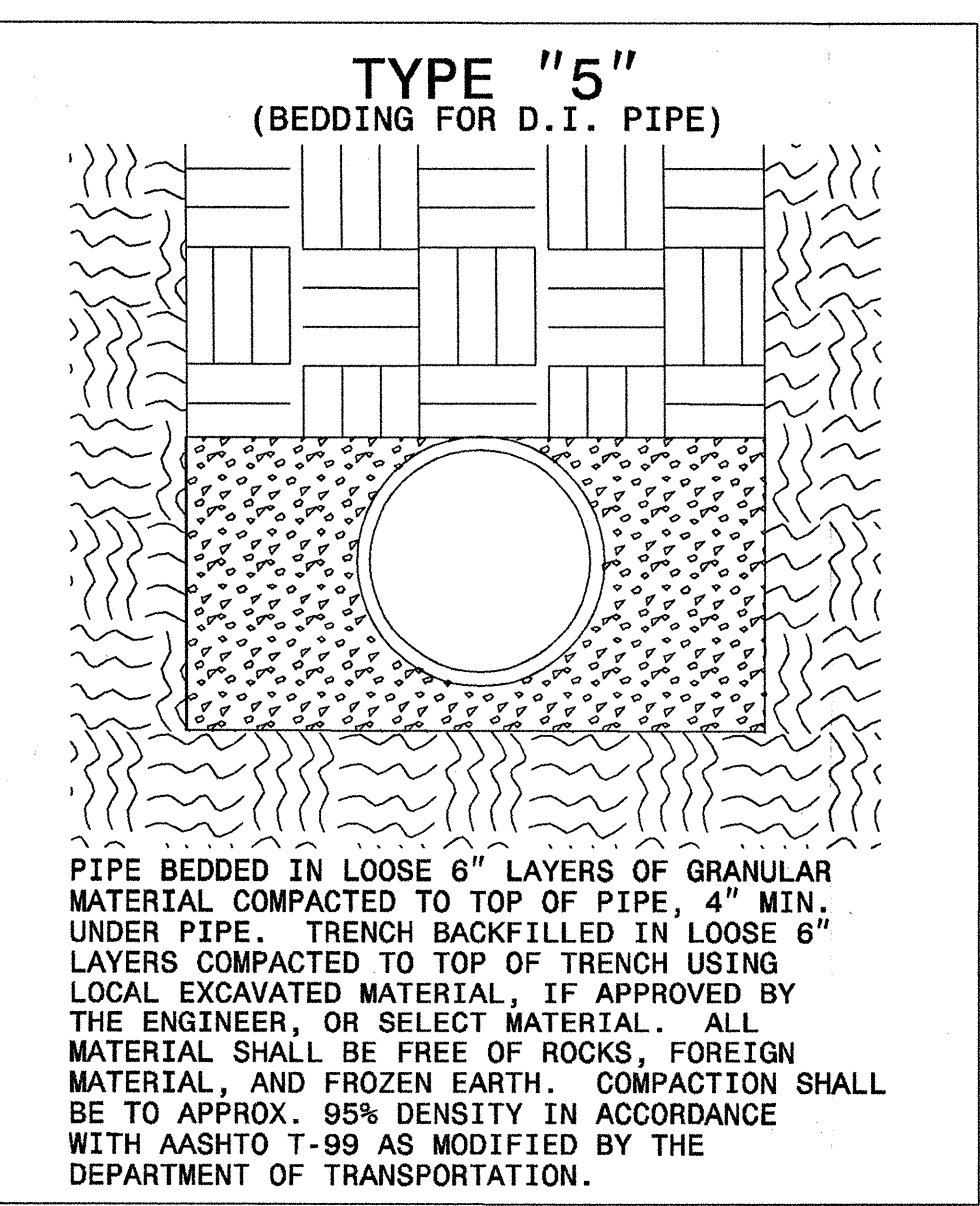
City of Asheville, NC Engineering Department

DATE	REVISIONS DESCRIPTION	STD. NO.
		7.18



City of Asheville, NC Engineering Department

DATE	REVISIONS DESCRIPTION	STD. NO.
		7.05



City of Asheville, NC Engineering Department

DATE	REVISIONS DESCRIPTION	STD. NO.
		7.15

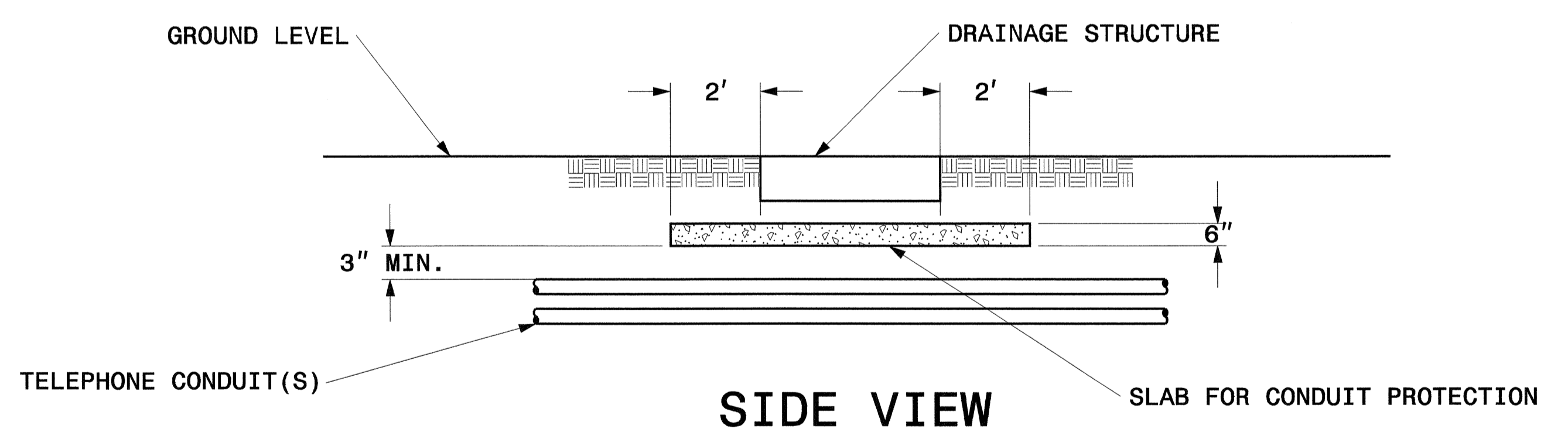
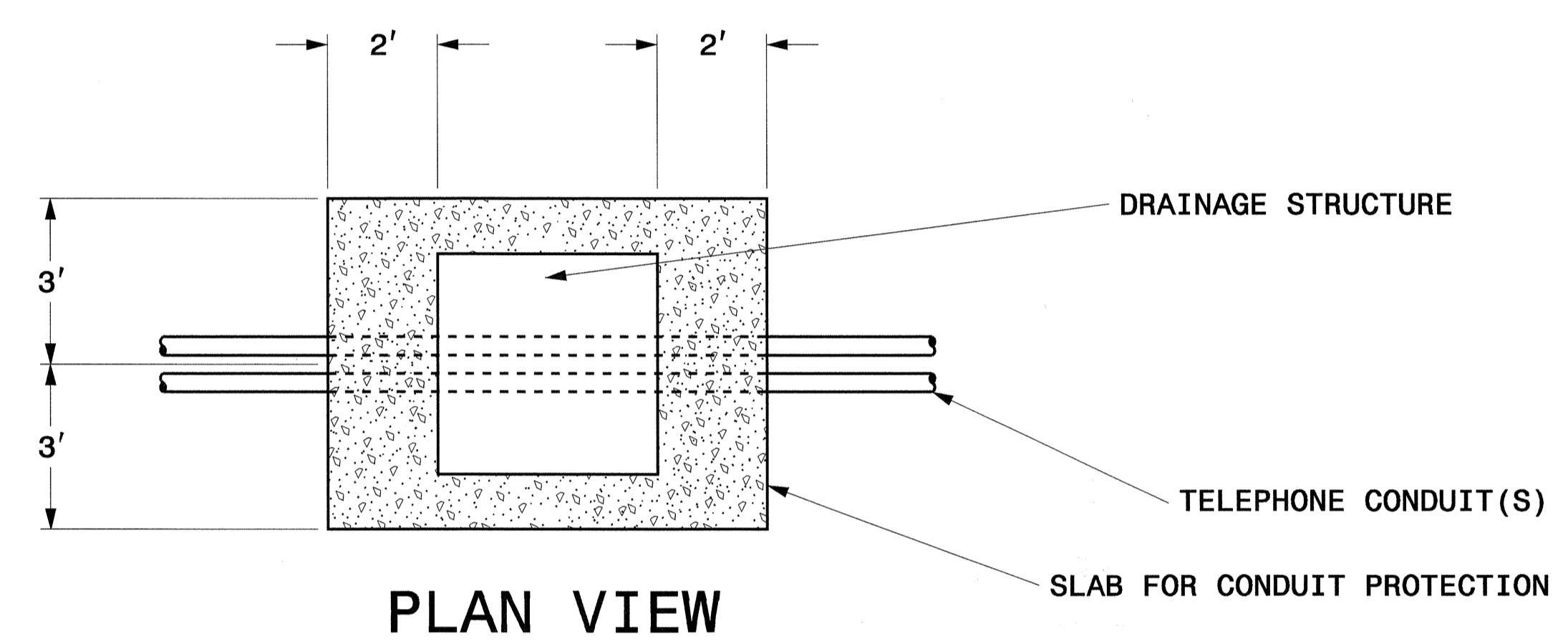
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
37831	UC-12A
DESIGNED BY: CAB	
DRAWN BY: BH	
CHECKED BY: CAB	
APPROVED BY: CAB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

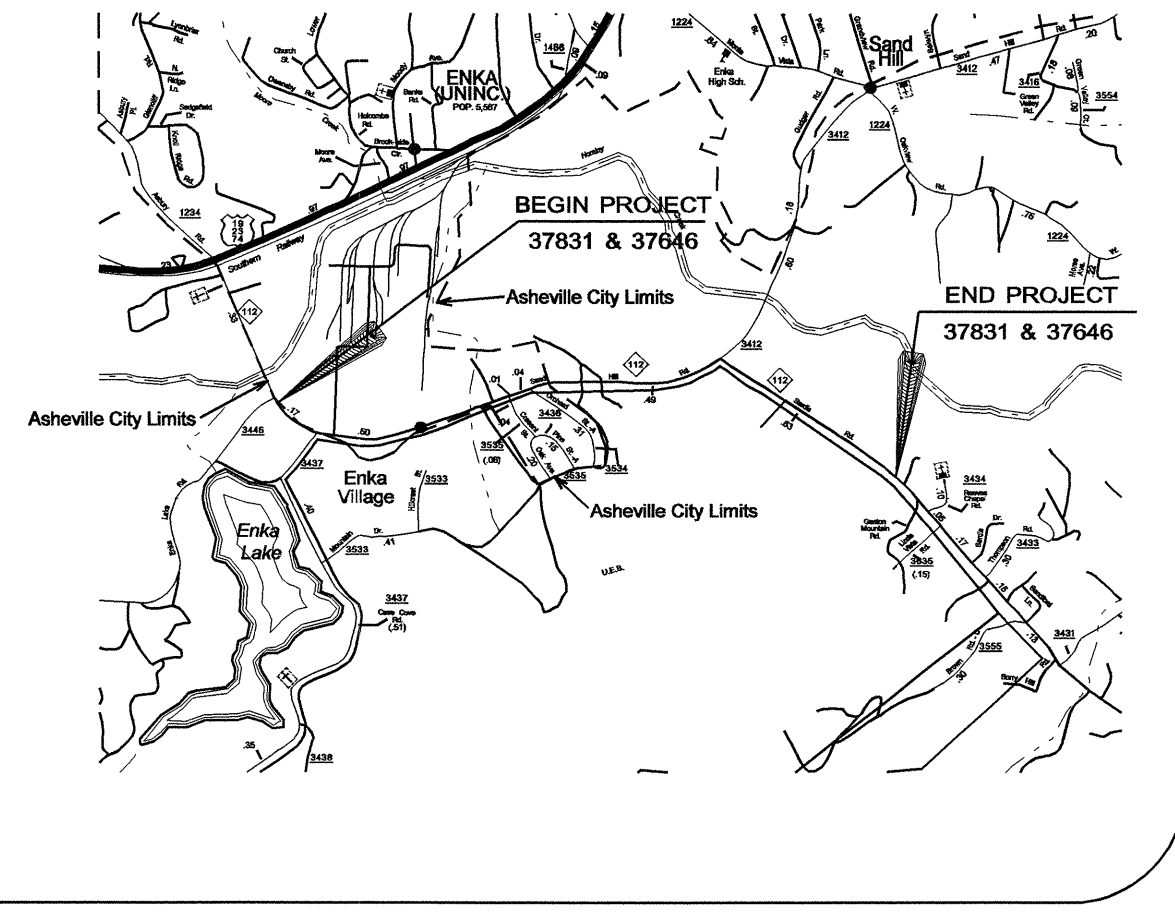
CONDUIT PROTECTION AT DRAINAGE STRUCTURES DETAIL



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09/28/09
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PROJECT: 37831



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
37831	UO-1

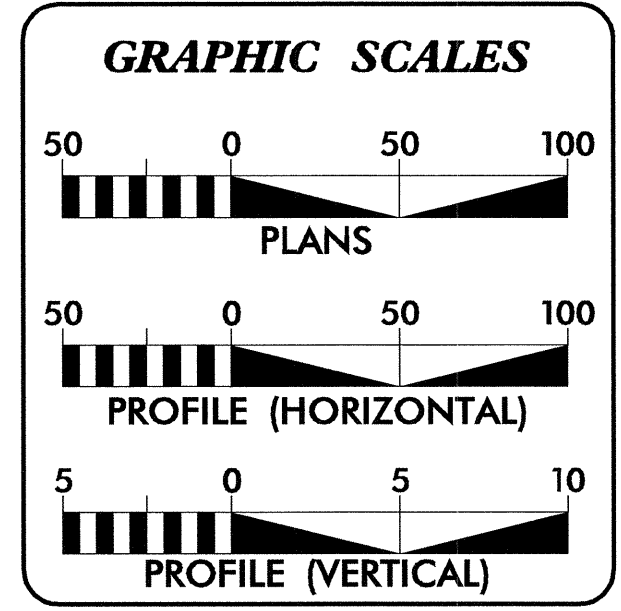
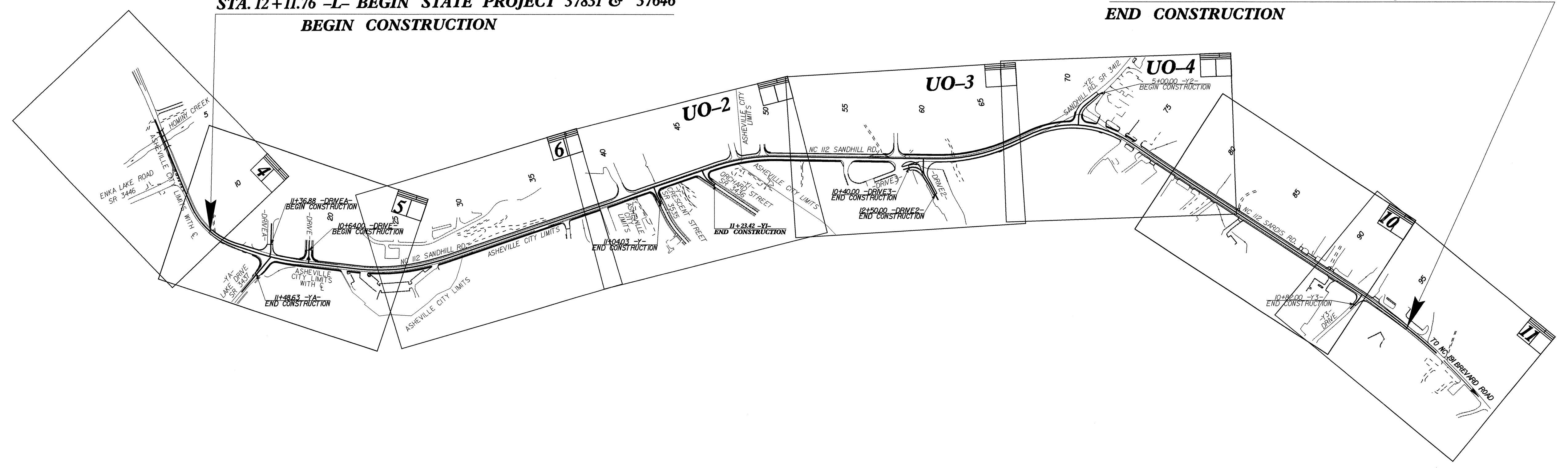
UTILITY BY OTHERS PLANS BUNCOMBE COUNTY

LOCATION: NC 112 SAND HILL ROAD AND SARDIS ROAD FROM WEST OF SR 3437 LAKE DRIVE TO 2500' EAST OF INTERSECTION OF SAND HILL RD. SR 3412 WITH SARDIS RD NC 112

TYPE OF WORK: UTILITIES CONFLICTS

**STA. 12+11.76 -L- BEGIN STATE PROJECT 37831 & 37646
BEGIN CONSTRUCTION**

**STA. 95+83.50 -L- END STATE PROJECT 37831 & 37646
END CONSTRUCTION**



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-4	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

- (1) PROGRESS ENERGY
- (2) AT&T
- (3) PUBLIC SERVICE OF NORTH CAROLINA
- (4) CHARTER COMMUNICATIONS

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

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

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill, P.E. UTILITIES PROJECT DESIGNER

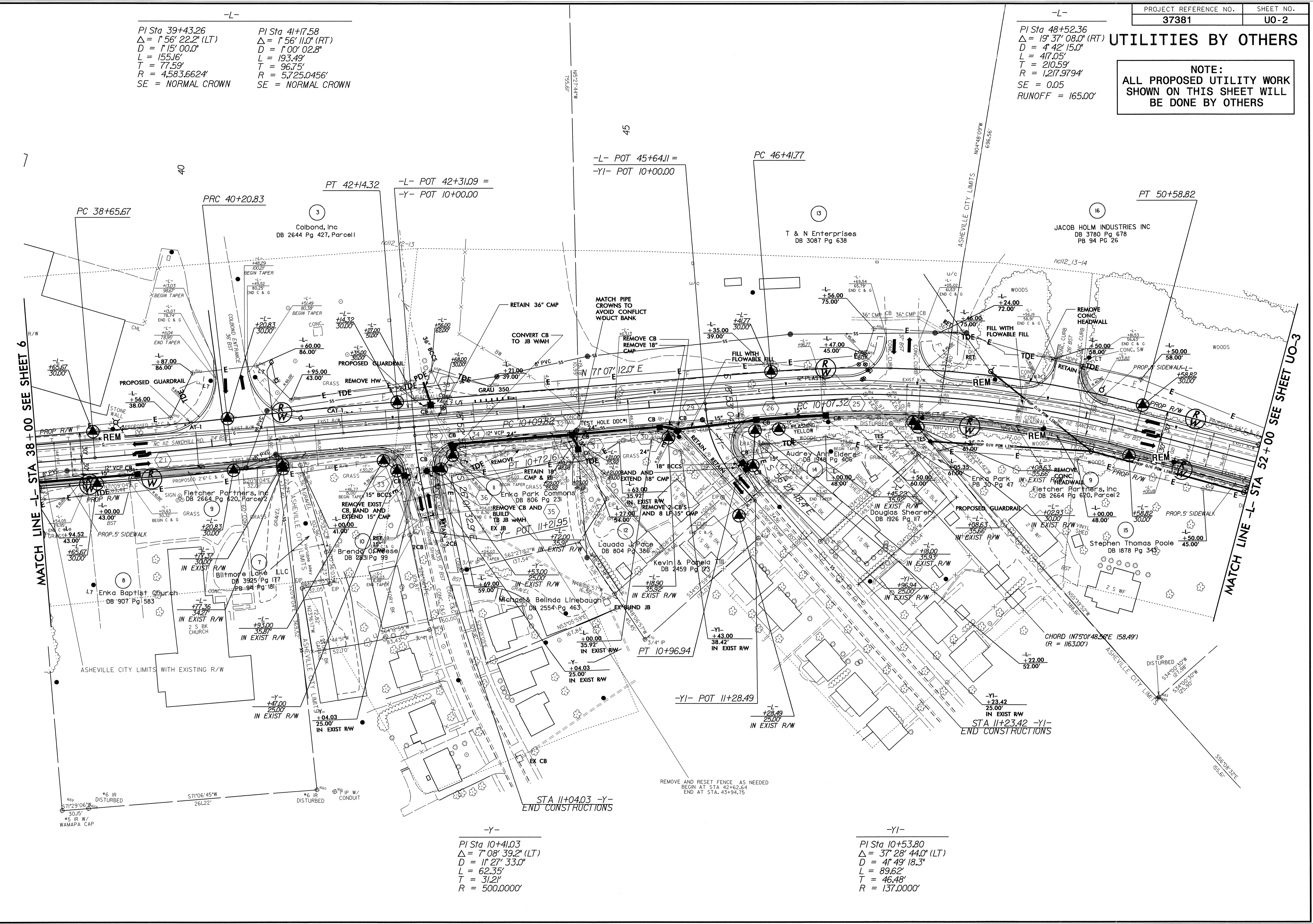
UTILITIES BY OTHERS

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

PI Sta 39+43.26
Δ = 1° 56' 22.2" (LT)
D = 115' 00.0"
L = 155.16'
T = 77.59'
R = 4,583.6624'
SE = NORMAL CROWN

PI Sta 41+7.58
Δ = 1° 56' 11.0" (RT)
D = 1° 00' 02.8"
L = 193.49'
T = 96.75'
R = 5,725.0456'
SE = NORMAL CROWN

PI Sta 48+52.36
Δ = 19° 37' 08.0" (RT)
D = 4° 42' 15.0"
L = 417.05'
T = 210.59'
R = 1,217.9794'
SE = 0.05
RUNOFF = 165.00'



MATCH LINE -L- STA 38+00 SEE SHEET 6

MATCH LINE -L- STA 52+00 SEE SHEET UO-3

-Y-
PI Sta 10+41.03
Δ = 7° 08' 39.2" (LT)
D = 11' 27' 33.0"
L = 62.35'
T = 31.21'
R = 500.0000'

-YI-
PI Sta 10+53.80
Δ = 37° 28' 44.0" (LT)
D = 41' 49' 18.3"
L = 89.62'
T = 46.48'
R = 137.0000'

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5/14/99

13 SEP 2007 09:48 J:\PROJECTS\2007\37831\ut_8_uo3_psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
37831	U0-3

UTILITIES BY OTHERS

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

-L-
PI Sta 63+63.61
Δ = 25° 20' 30.0" (LT)
D = 5° 00' 00.0"
L = 506.83'
T = 257.63'
R = 1,145.9156'
SE = 0.051
RUNOFF = 165.00'

Bell South
PO Box 1221
Charlotte, NC 28201
(704) 424-1435
Contact: Krista Tillman

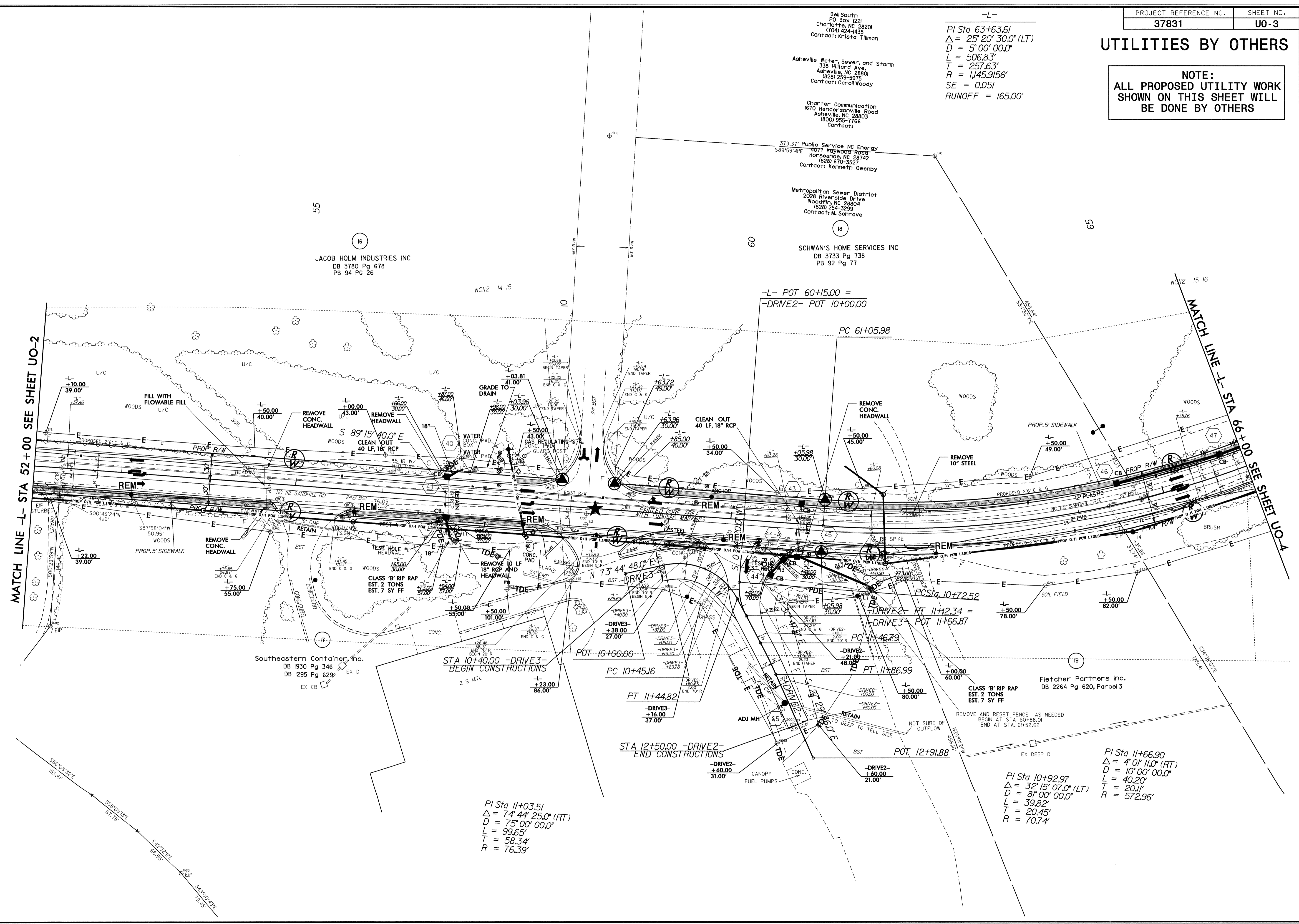
Asheville Water, Sewer, and Storm
338 Hilliard Ave.
Asheville, NC 28801
(828) 253-5975
Contact: Carol Woody

Charter Communication
1670 Henderonville Road
Asheville, NC 28803
(800) 955-7766
Contact:

373.37 Public Service NC Energy
4077 Haywood Road
Horseshoe, NC 28742
(828) 670-3527
Contact: Kenneth Owenby

Metropolitan Sewer District
2028 Riverside Drive
Woodfin, NC 28804
(828) 254-3299
Contact: M. Schraive

SCHWAN'S HOME SERVICES INC
DB 3733 Pg 738
PB 92 Pg 77



MATCH LINE -L- STA 52+00 SEE SHEET UO-2

MATCH LINE -L- STA 66+00 SEE SHEET UO-A

16
JACOB HOLM INDUSTRIES INC
DB 3780 Pg 678
PB 94 Pg 26

Southeastern Container, Inc.
DB 1930 Pg 346
DB 1295 Pg 629

Fletcher Partners Inc.
DB 2264 Pg 620, Parcel 3

PI Sta 11+03.51
Δ = 74° 44' 25.0" (RT)
D = 75° 00' 00.0"
L = 99.65'
T = 58.34'
R = 76.39'

PI Sta 11+66.90
Δ = 4° 01' 11.0" (RT)
D = 10° 00' 00.0"
L = 40.20'
T = 39.82'
R = 572.96'

PI Sta 10+92.97
Δ = 32° 15' 07.0" (LT)
D = 81° 00' 00.0"
L = 20.11'
T = 20.45'
R = 70.74'

-L- POT 60+15.00 =
-DRIVE2- POT 10+00.00

PC 61+05.98

PC Sta 10+72.52
DRIVE2- PT 11+12.34 =
DRIVE3- POT 11+66.87

PC 10+45.16
PT 11+44.82
-DRIVE3- +16.00
37.00'

STA 12+50.00 -DRIVE2-
END CONSTRUCTIONS
-DRIVE2- +60.00
31.00'

PT 11+86.99
-DRIVE2- +21.95
80.00'

POT 12+91.88
-DRIVE2- +60.00
21.00'

STA 10+40.00 -DRIVE3-
BEGIN CONSTRUCTIONS
-L- +23.00
86.00'

UTILITIES BY OTHERS

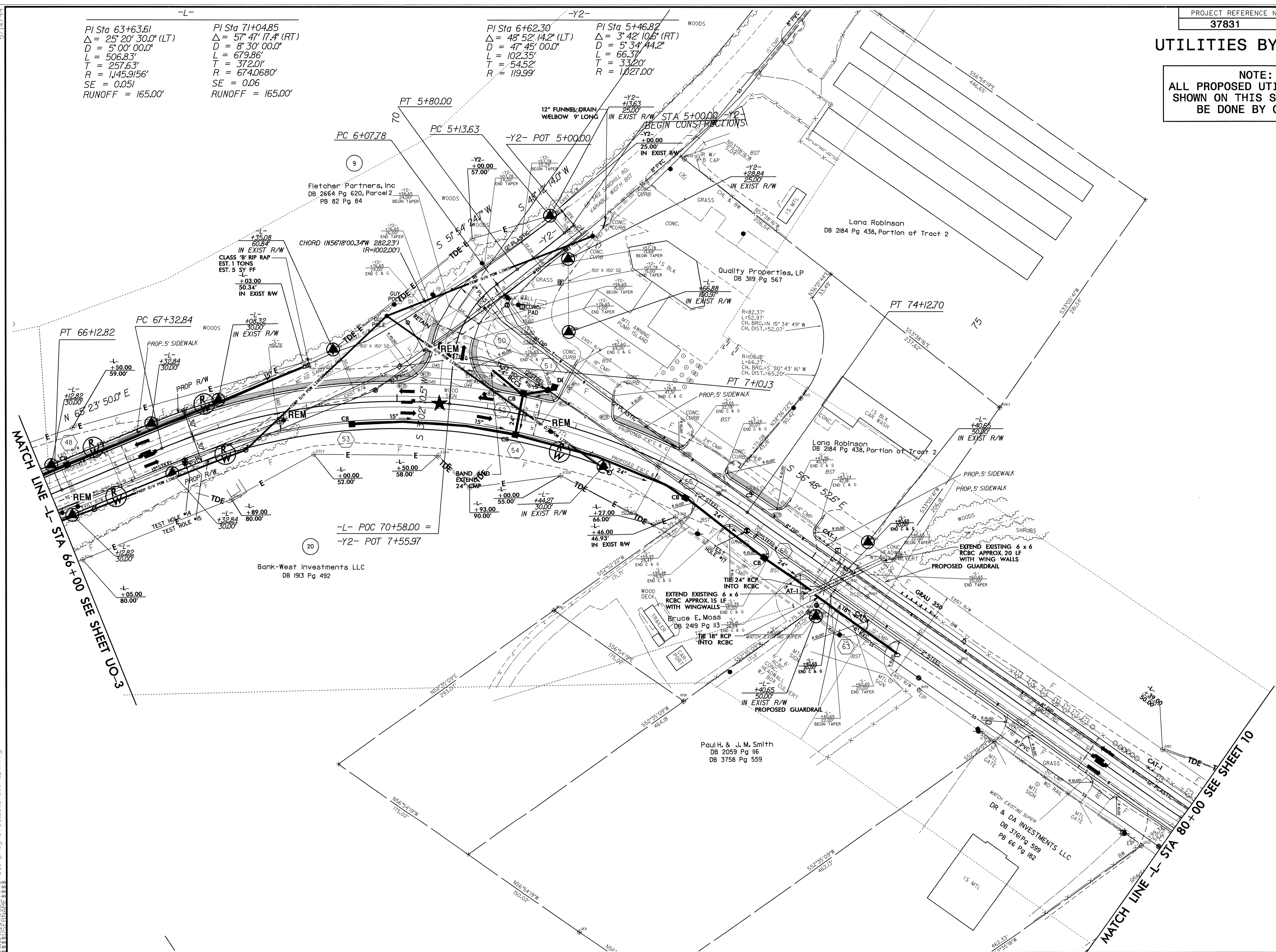
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

PI Sta 63+63.61
 $\Delta = 25^\circ 20' 30.0''$ (LT)
 $D = 5' 00' 00.0''$
 $L = 506.83'$
 $T = 257.63'$
 $R = 1,145.9156'$
 $SE = 0.051$
 $RUNOFF = 165.00'$

PI Sta 71+04.85
 $\Delta = 57^\circ 47' 17.4''$ (RT)
 $D = 8' 30' 00.0''$
 $L = 679.86'$
 $T = 372.01'$
 $R = 674.0680'$
 $SE = 0.06$
 $RUNOFF = 165.00'$

PI Sta 6+62.30
 $\Delta = 48^\circ 52' 14.2''$ (LT)
 $D = 47' 45' 00.0''$
 $L = 102.35'$
 $T = 54.52'$
 $R = 119.99'$

PI Sta 5+46.82
 $\Delta = 3^\circ 42' 10.6''$ (RT)
 $D = 5' 34' 44.2''$
 $L = 66.37'$
 $T = 33.20'$
 $R = 1027.00'$



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