

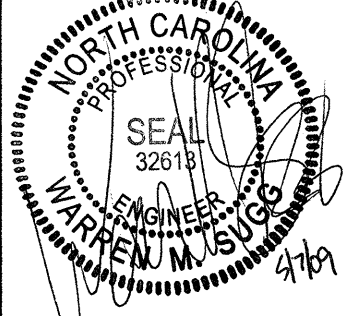
70+00

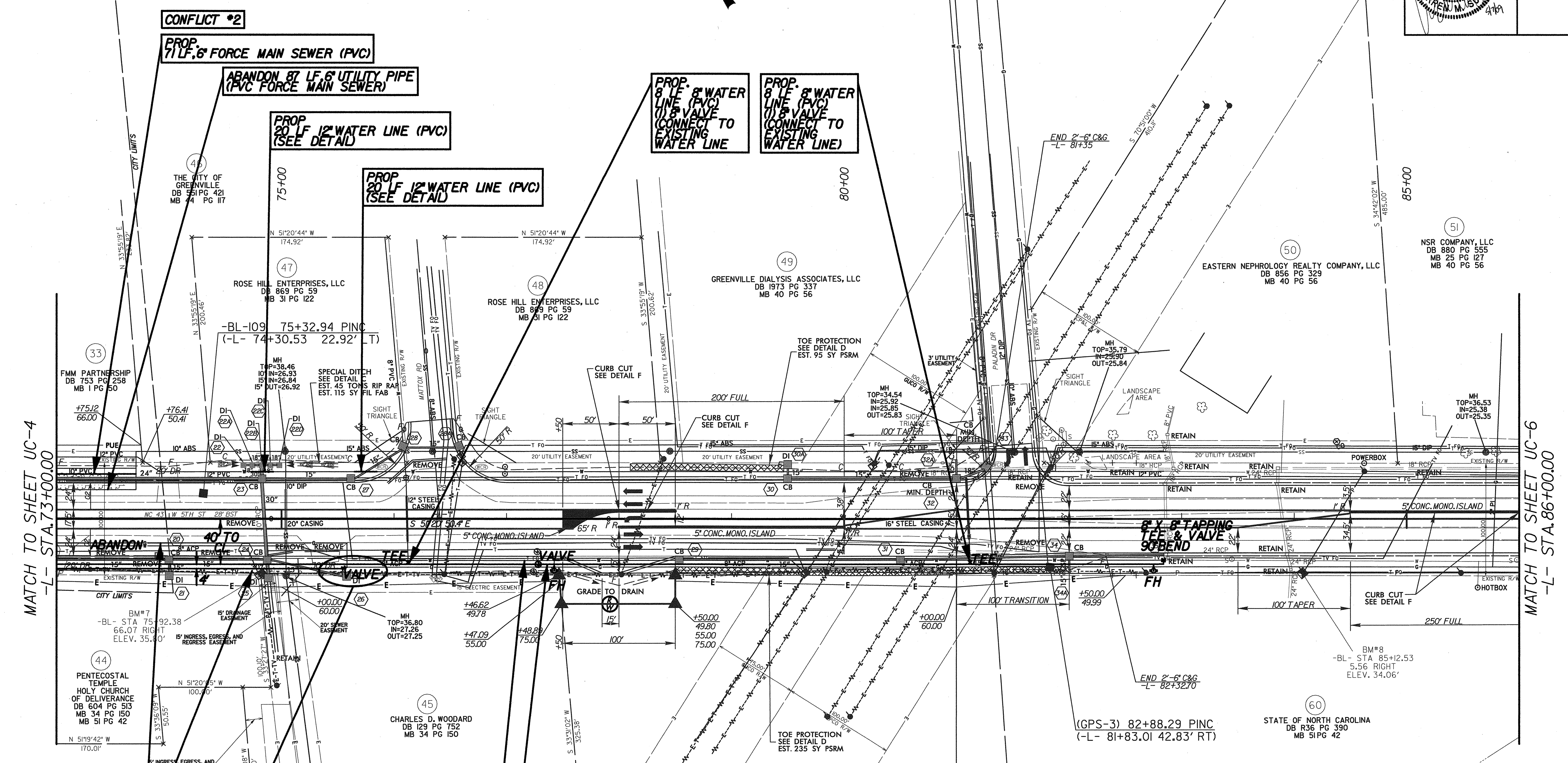
MATCH TO SHEET UC-5
-L- STA.73+00.00

MULKEY ENGINEERS AERIAL LEGEND	
---E---	ELECTRIC
---E-T---	ELECTRIC W/ TELEPHONE
---E-T-TV---	ELECTRIC W/ TELEPHONE & TV
---E-TV---	ELECTRIC W/ TV
---T---	TELEPHONE
---TV---	TV CABLE

5/28/09

MULKEY
ENGINEERS & CONSULTANTS
P.O. Box 33147
Raleigh, N.C. 27636
(919) 851-1918
(919) 851-1919 (FAX)
WWW.MULKEYINC.COM

PROJECT REFERENCE NO. U-5018B	SHEET NO. UC-5
UTILITY DESIGN ENGINEER	
	



MATCH TO SHEET UC-4
-L- STA. 73+00.00

MATCH TO SHEET UC-6
-L- STA. 86+00.00

CONFLICT #2

PROP. 71 LF 6" FORCE MAIN SEWER (PVC)

ABANDON 87 LF 6" UTILITY PIPE (PVC FORCE MAIN SEWER)

PROP. 20 LF 12" WATER LINE (PVC) (SEE DETAIL)

PROP. 20 LF 12" WATER LINE (PVC) (SEE DETAIL)

PROP. 8 LF 8" WATER LINE (PVC) (1) 8" VALVE (CONNECT TO EXISTING WATER LINE)

PROP. 8 LF 8" WATER LINE (PVC) (1) 8" VALVE (CONNECT TO EXISTING WATER LINE)

CONFLICT #3

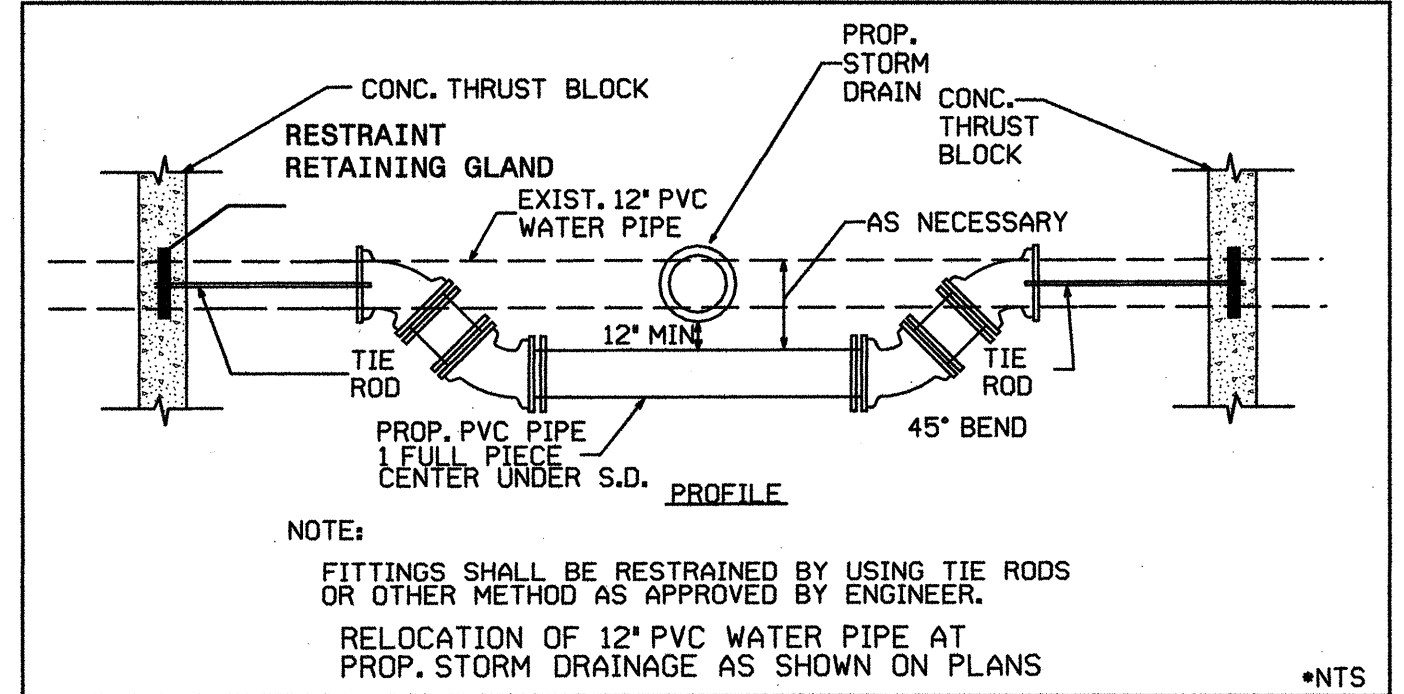
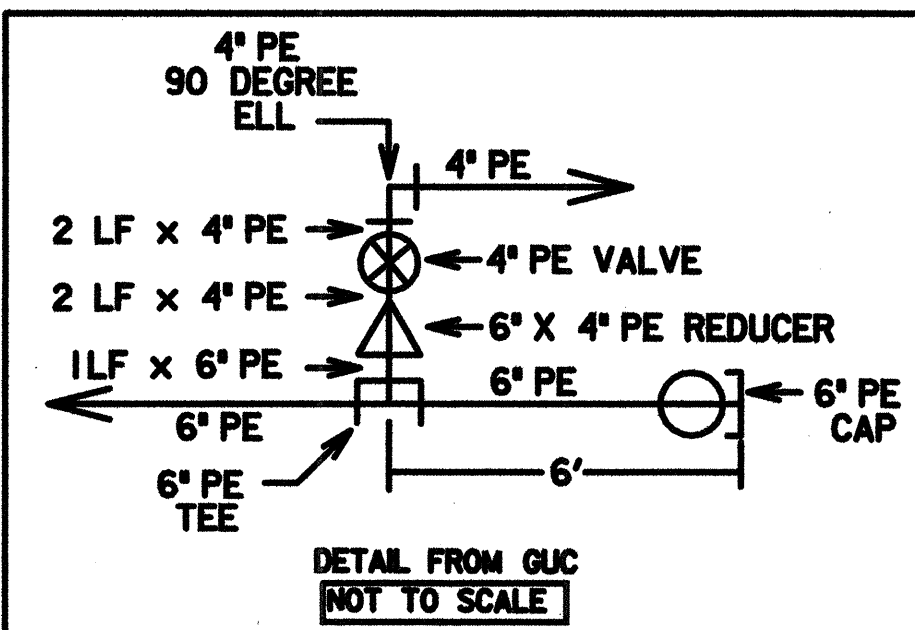
ABANDON 279 LF 4" UTILITY PIPE (PE GAS PIPE)

PROP. 258 LF 6" MDPE GAS LINE (1) 6" GAS VALVE

CONFLICT #4

ABANDON 985 LF 8" UTILITY PIPE (ACP WATER PIPE)

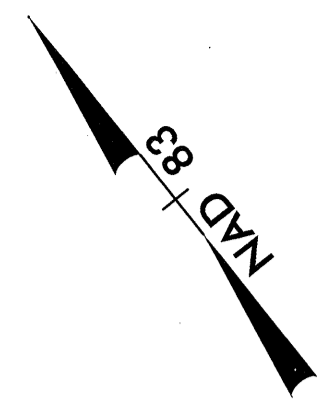
PROP. 984 LF 8" WATER LINE (PVC) (1) RELOCATE FIRE HYDRANT (1) FIRE HYDRANT (1) 8" VALVE (1) 8" TAPPING VALVE (3) RELOCATE EXISTING WATER METER



5/7/2009 8:55:19 AM SECTION BA\Utility Relo Plots\U5018B_U1.LUC5.dgn

5/28/09

-L-
PI Sta 94+97.36
 $\Delta = 8' 58' 55.9''$ (LT)
 $D = 2' 12' 13.3''$
 $L = 407.60'$
 $T = 204.22'$
 $R = 2,600.00'$
SE = EXIST



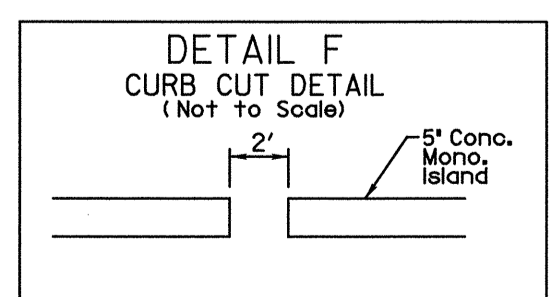
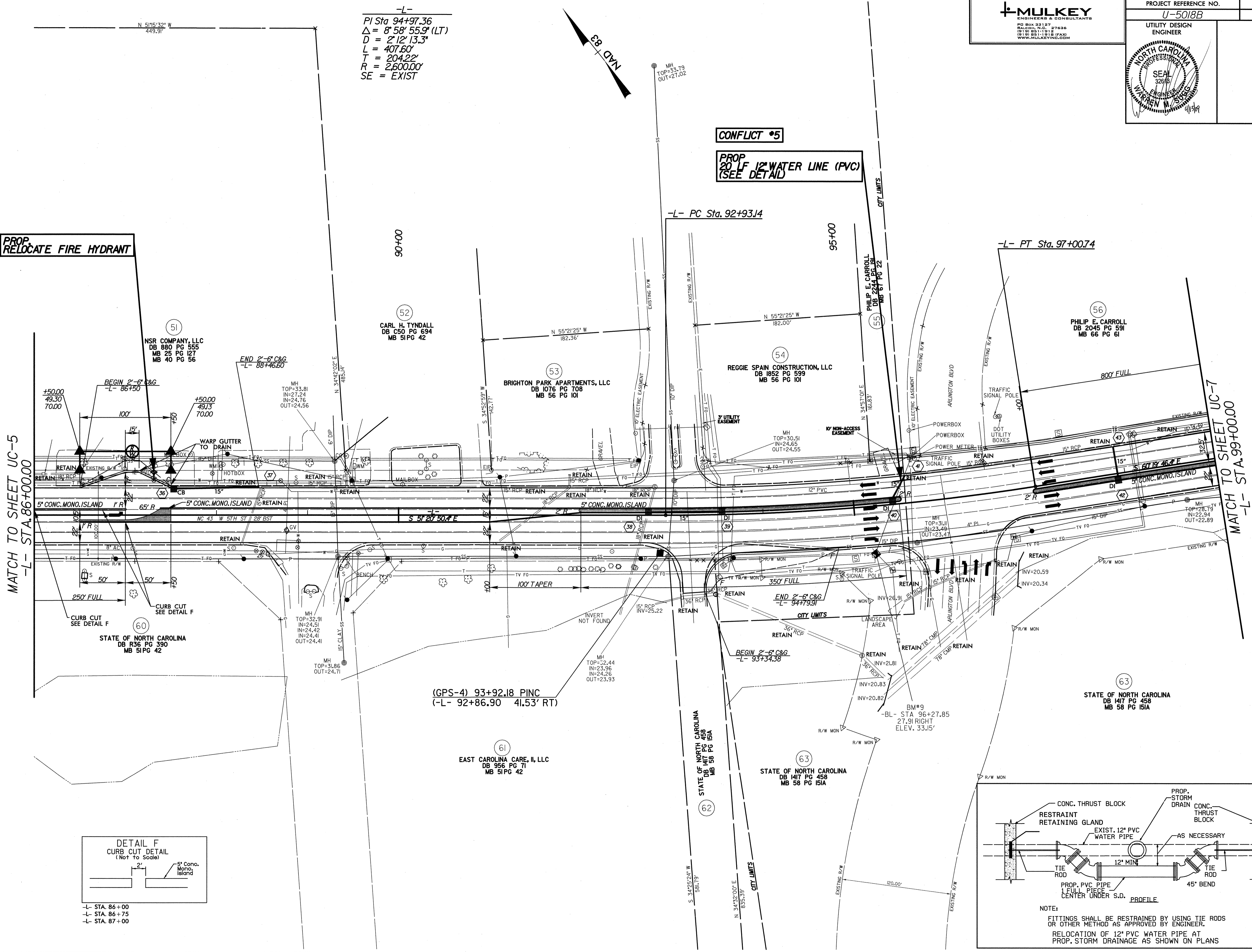
PROP. RELOCATE FIRE HYDRANT

CONFLICT #5

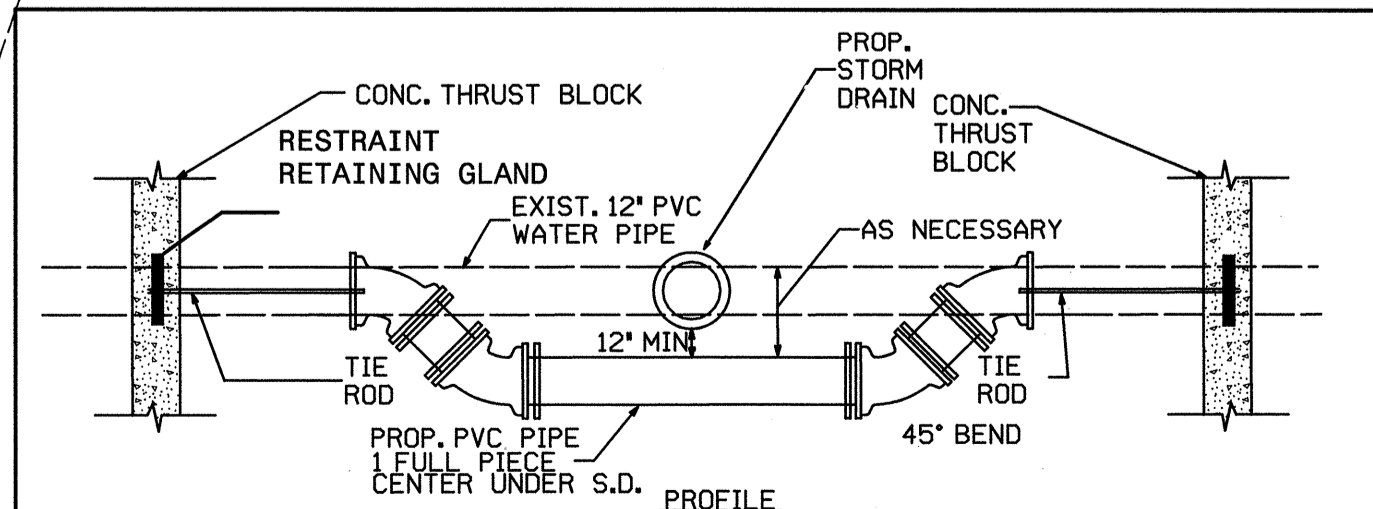
**PROP. 20" LF 12" WATER LINE (PVC)
(SEE DETAIL)**

MATCH TO SHEET UC-5
-L- STA. 86+00.00

MATCH TO SHEET UC-7
-L- STA. 99+00.00



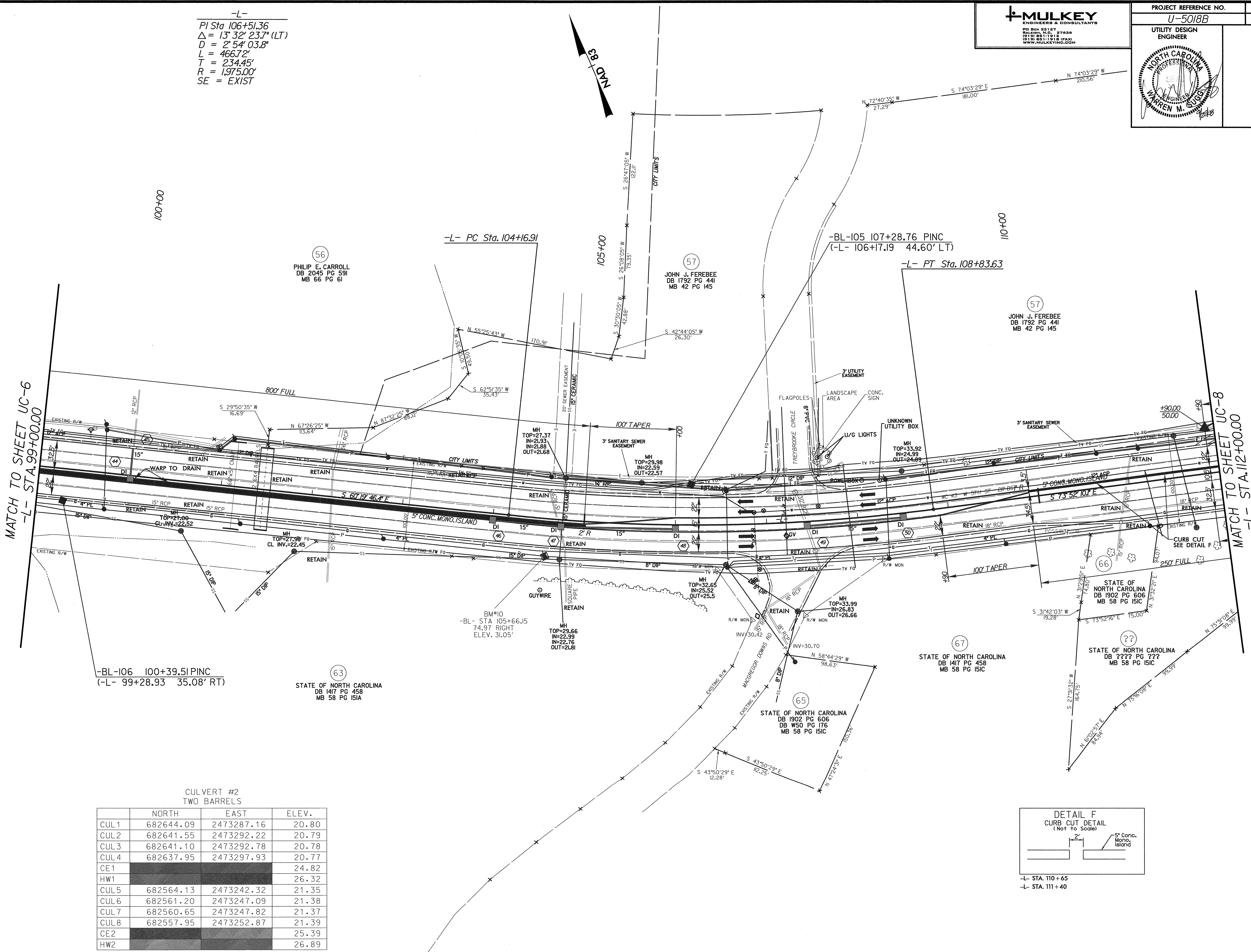
-L- STA. 86+00
-L- STA. 86+75
-L- STA. 87+00



NOTE:
FITTINGS SHALL BE RESTRAINED BY USING TIE RODS OR OTHER METHOD AS APPROVED BY ENGINEER.
RELOCATION OF 12\"/>

4/13/2009 R:\Utilities\Relo Plots\U5018B\util_UC6.dgn

-L-
 PI Sta 106+51.36
 $\Delta = 13^{\circ} 32' 23.7" (LT)$
 $D = 2^{\circ} 54' 03.8"$
 $L = 466.72'$
 $T = 234.45'$
 $R = 1,975.00'$
 SE = EXIST



MATCH TO SHEET UC-6
 -L- STA. 99+00.00

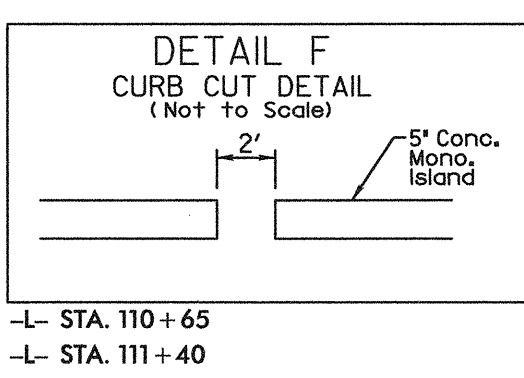
MATCH TO SHEET UC-8
 -L- STA. 112+00.00

-BL-106 100+39.51 PINC
 (-L- 99+28.93 35.08' RT)

(63) STATE OF NORTH CAROLINA
 DB 1417 PG 458
 MB 58 PG 151A

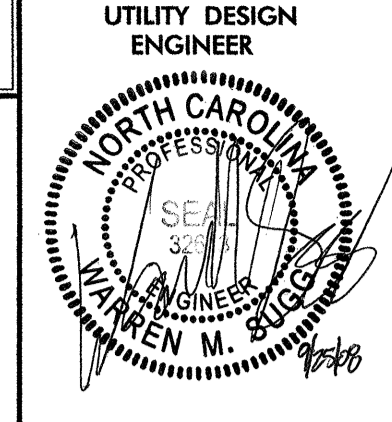
CULVERT #2
 TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	682644.09	2473287.16	20.80
CUL2	682641.55	2473292.22	20.79
CUL3	682641.10	2473292.78	20.78
CUL4	682637.95	2473297.93	20.77
CE1			24.82
HW1			26.32
CUL5	682564.13	2473242.32	21.35
CUL6	682561.20	2473247.09	21.38
CUL7	682560.65	2473247.82	21.37
CUL8	682557.95	2473252.87	21.39
CE2			25.39
HW2			26.89

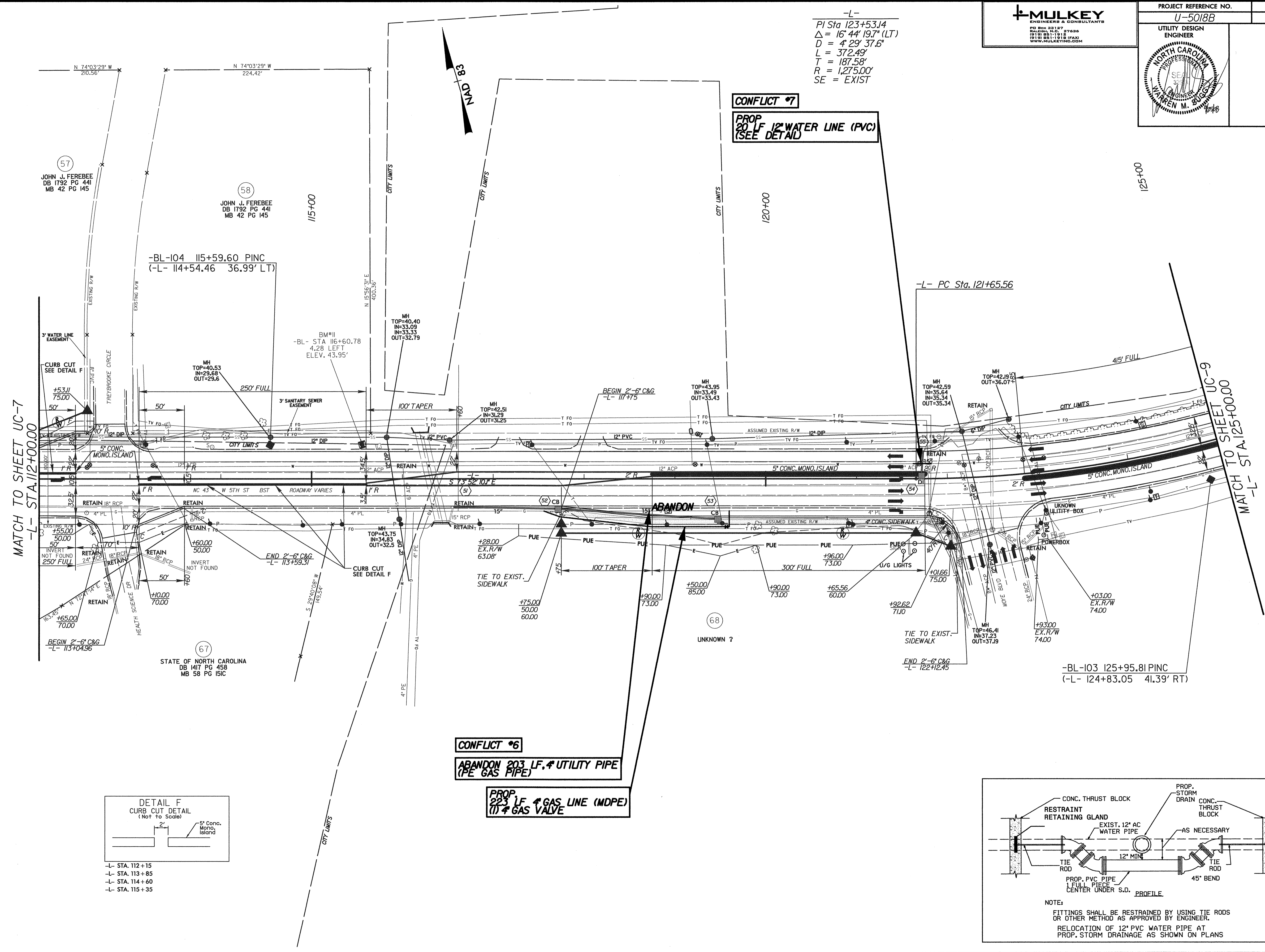


-L- STA. 110+65
 -L- STA. 111+40

5/28/09



-L-
PI Sta 123+53.14
 $\Delta = 16' 44" 19.7" (LT)$
 $D = 4' 29' 37.6"$
 $L = 372.49'$
 $T = 187.58'$
 $R = 1,275.00'$
SE = EXIST



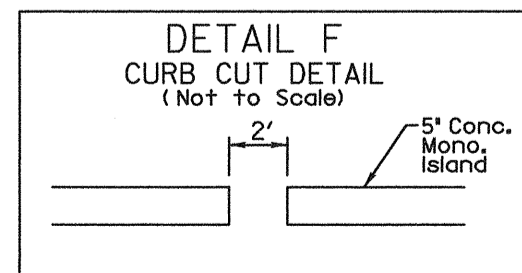
CONFLICT #7
PROP
20 LF 12" WATER LINE (PVC)
(SEE DETAIL)

CONFLICT #6
ABANDON 203 LF. 4" UTILITY PIPE
(PE GAS PIPE)

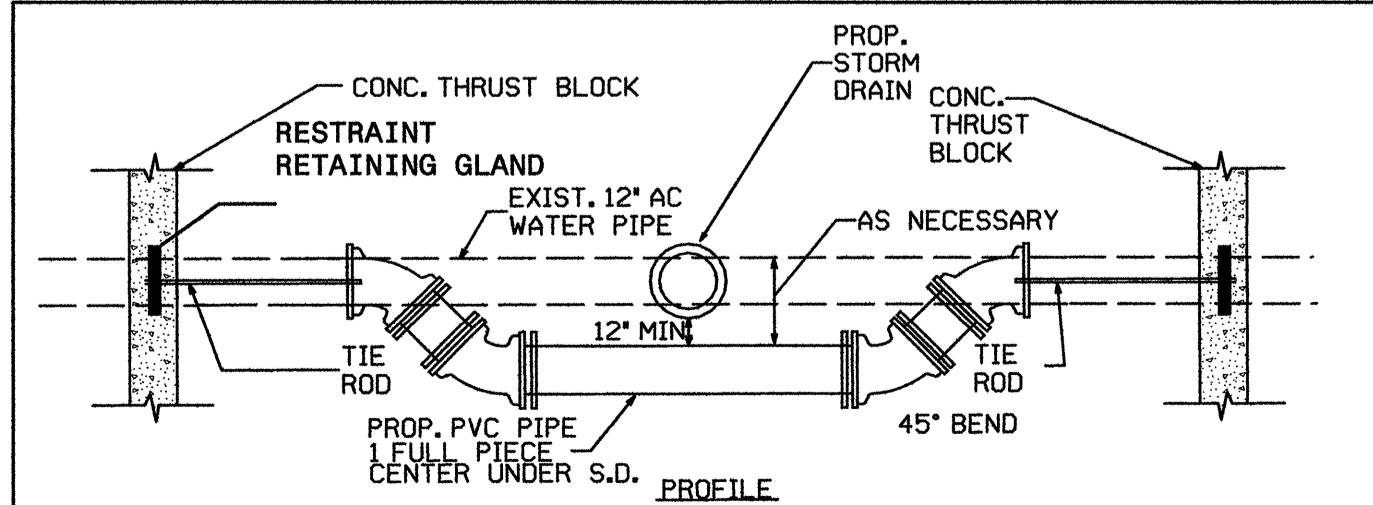
PROP
223 LF 4" GAS LINE (MDPE)
(17) 4" GAS VALVE

MATCH TO SHEET UC-7
-L- STA. 112+00.00

MATCH TO SHEET UC-9
-L- STA. 125+00.00



-L- STA. 112 + 15
-L- STA. 113 + 85
-L- STA. 114 + 60
-L- STA. 115 + 35



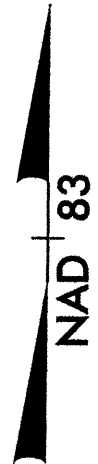
NOTE:
FITTINGS SHALL BE RESTRAINED BY USING TIE RODS OR OTHER METHOD AS APPROVED BY ENGINEER.
RELOCATION OF 12" PVC WATER PIPE AT PROP. STORM DRAINAGE AS SHOWN ON PLANS

•NTS

8/25/2008 R:\Utilities\Relo Plots\U5018B\url1 UC8.dgn
12:30:23 PM

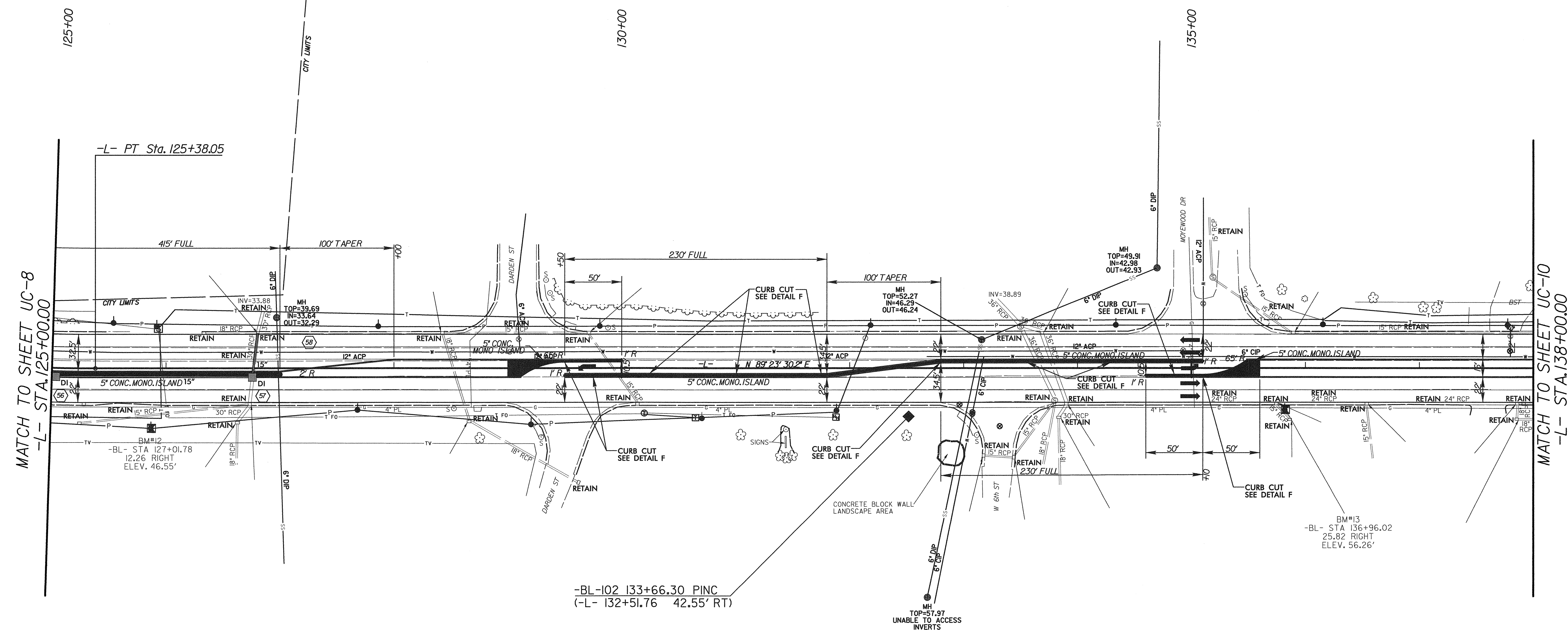
5/28/99

-L-
PI Sta. 123+53.14
 $\Delta = 16' 44" 19.7" (LT)$
 $D = 4' 29" 37.6"$
 $L = 372.49'$
 $T = 187.58'$
 $R = 1,275.00'$
SE = EXIST



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Raleigh, NC 27636
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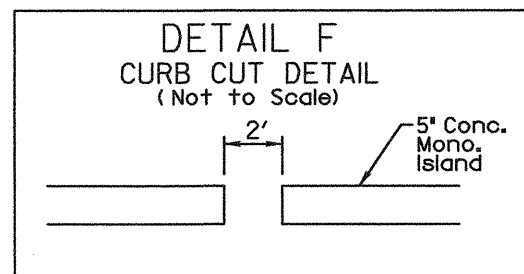
PROJECT REFERENCE NO. U-5018B	SHEET NO. UC-9
UTILITY DESIGN ENGINEER	



MATCH TO SHEET UC-8
-L- STA. 125+00.00

MATCH TO SHEET UC-10
-L- STA. 138+00.00

-BL-102 133+66.30 PINC
(-L- 132+51.76 42.55' RT)




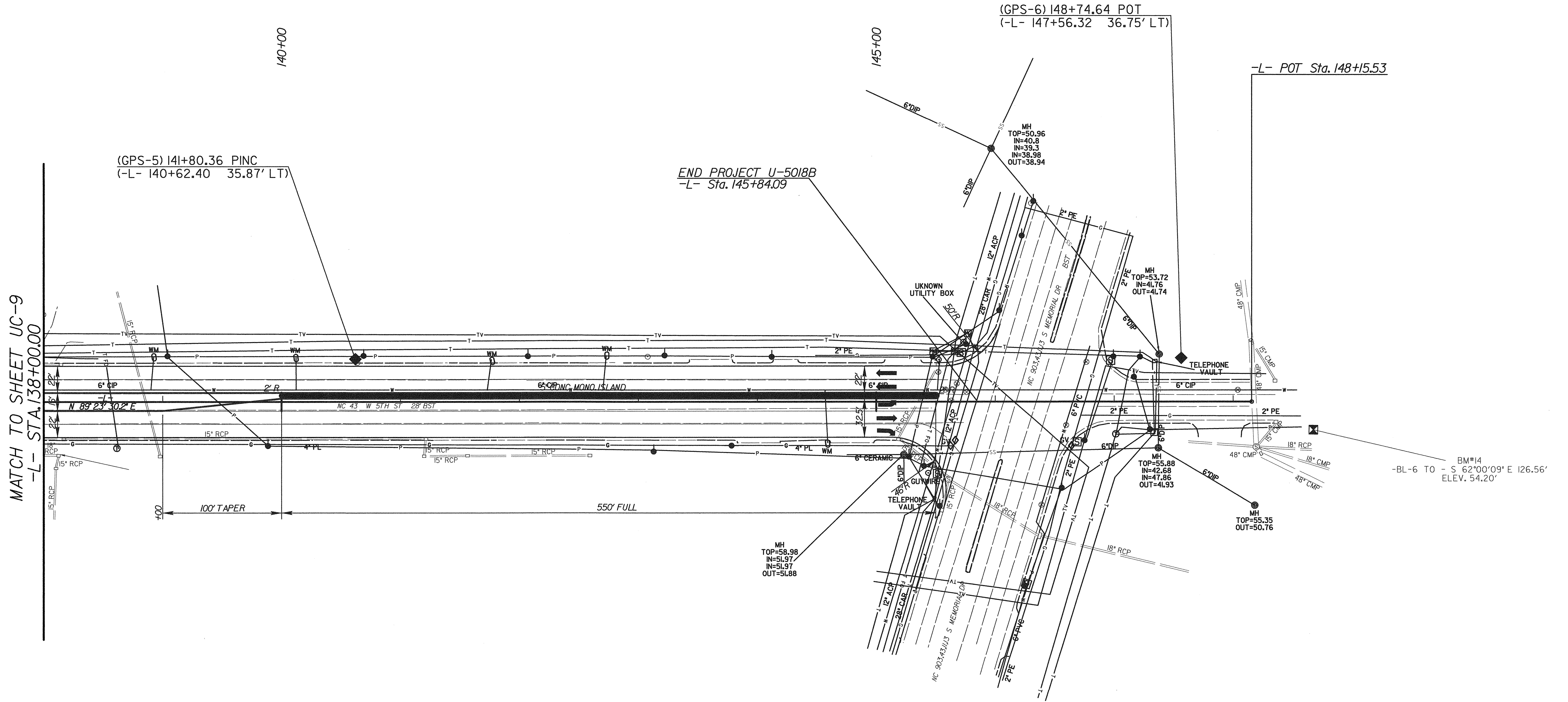
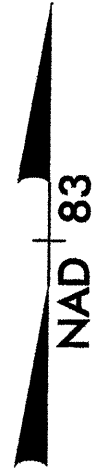
- L- STA. 129+50
- L- STA. 129+75
- L- STA. 130+25
- L- STA. 131+00
- L- STA. 131+75
- L- STA. 132+80
- L- STA. 133+55
- L- STA. 134+30
- L- STA. 134+85
- L- STA. 135+10

8/25/2008
R:\Utilities\SECTION B\Utility Relo Plots\U5018B\util UC9.dgn
12:30:41 PM

5/28/09

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RALEIGH, N.C. 27636
(919) 881-1912
(919) 881-1818 (FAX)
WWW.MULKEYINC.COM

PROJECT REFERENCE NO. <i>U-5018B</i>	SHEET NO. <i>UC-10</i>
UTILITY DESIGN ENGINEER	
	



MATCH TO SHEET UC-9
-L- STA. 138+00.00

(GPS-5) 141+80.36 PINC
(-L- 140+62.40 35.87' LT)

END PROJECT U-5018B
-L- Sta. 145+84.09

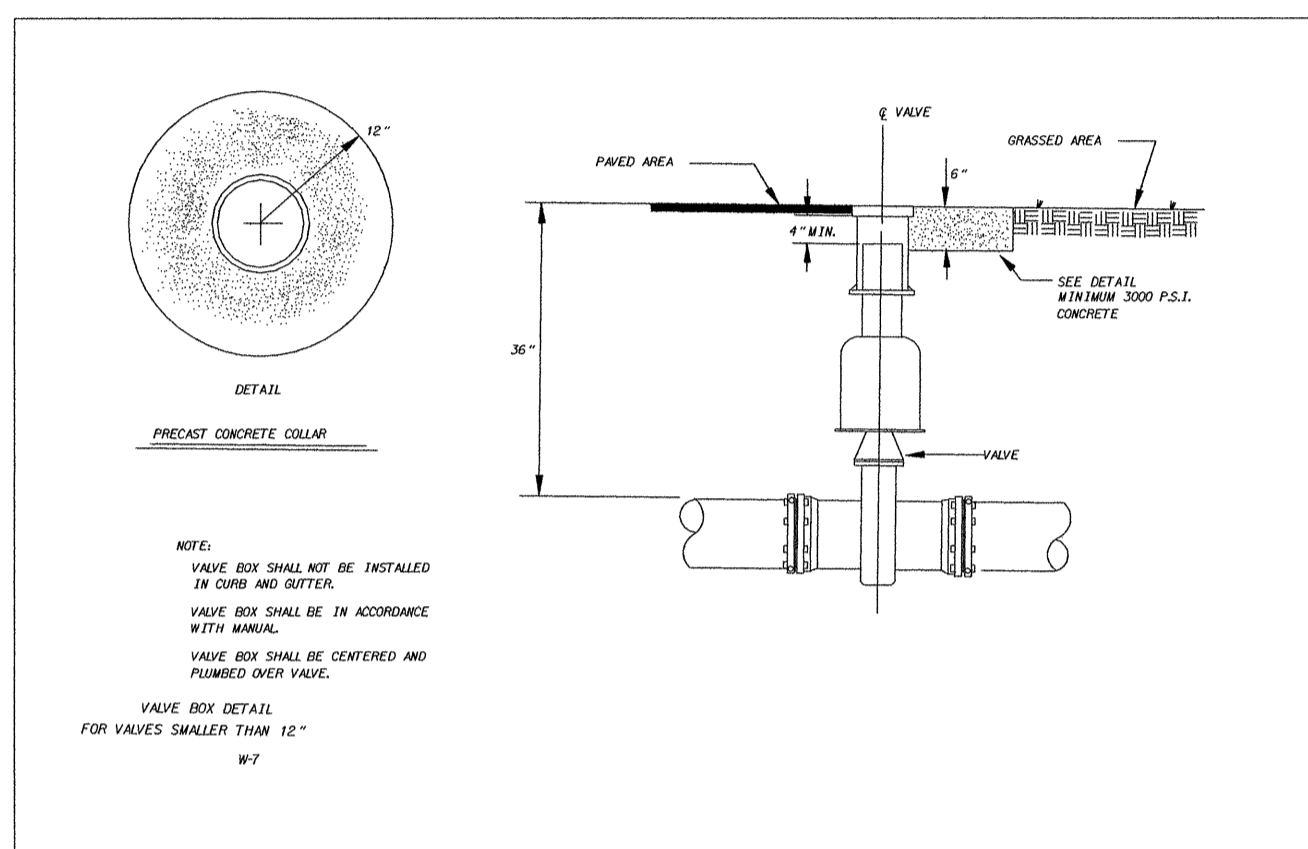
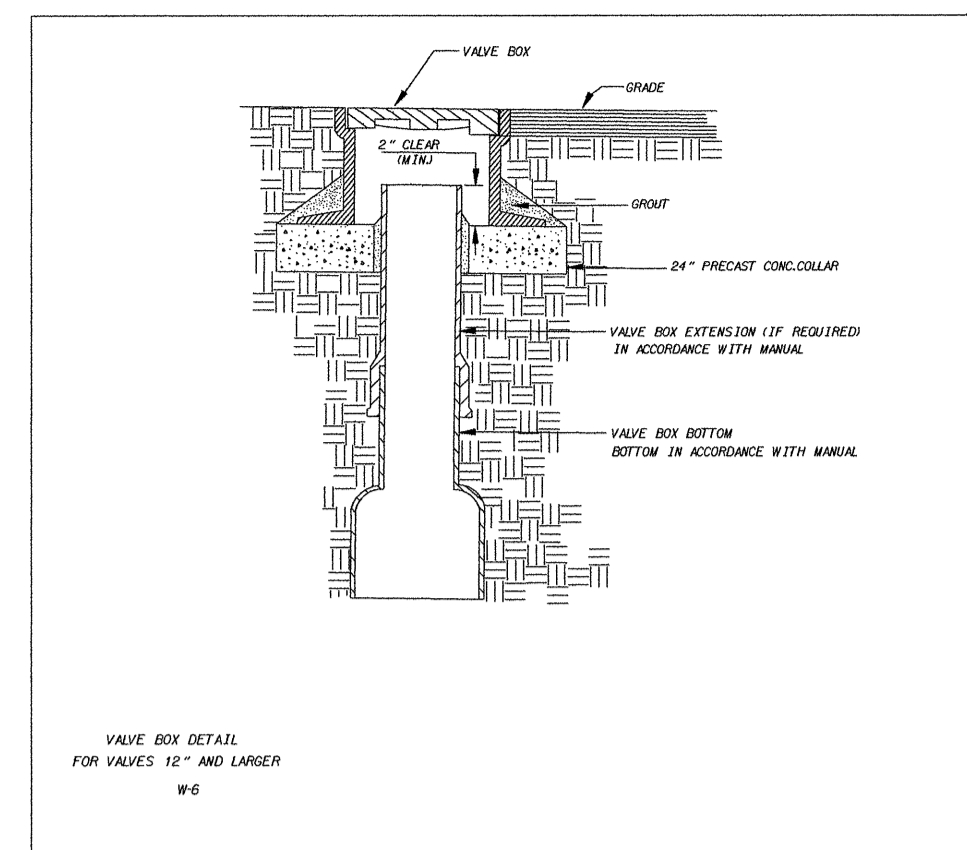
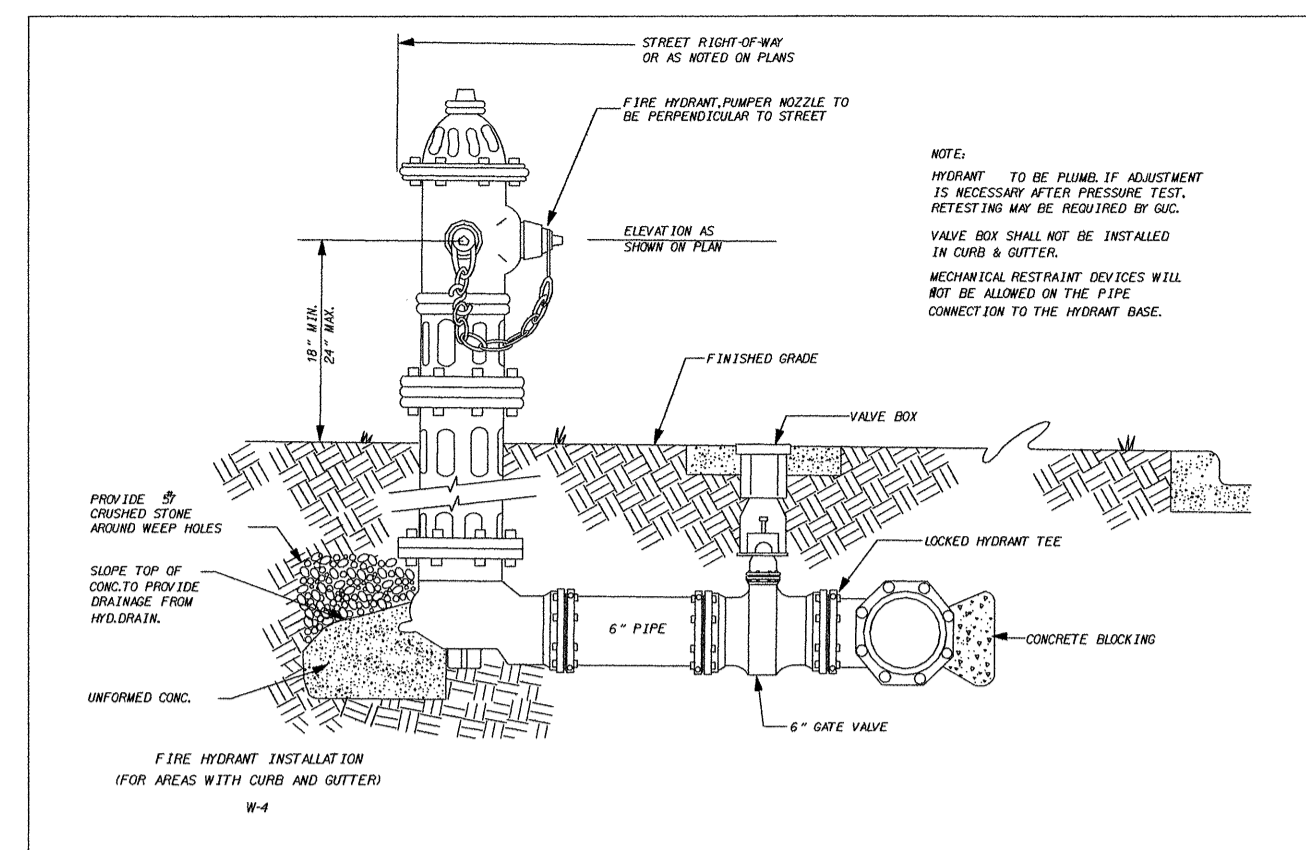
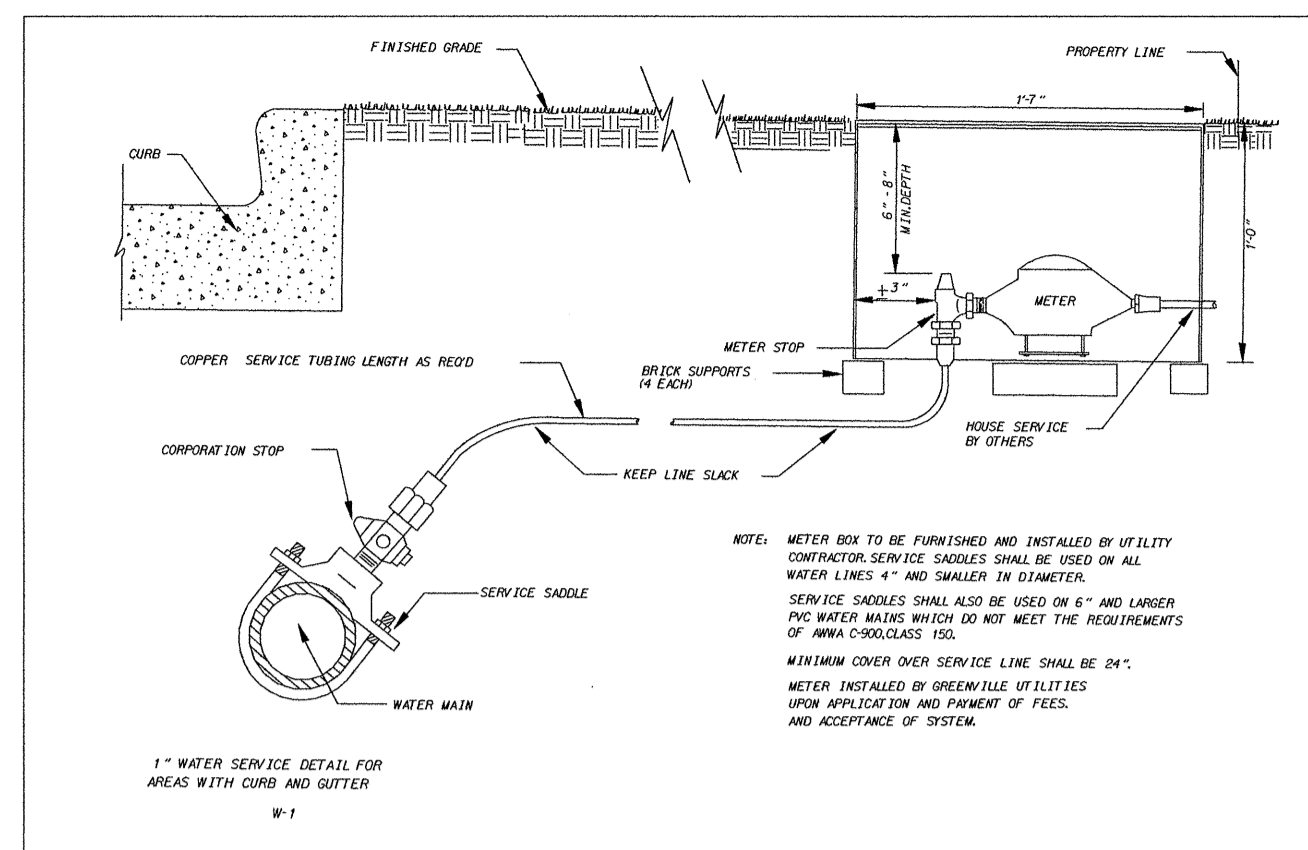
(GPS-6) 148+74.64 POT
(-L- 147+56.32 36.75' LT)

-L- POT Sta. 148+15.53

BM#14
-BL-6 TO -S 62°00'09" E 126.56'
ELEV. 54.20'

8/25/2008
R:\Utilities\SECTION B\Utility_Relo Plots\U5018B.utl\UC10.dgn
12:30:57 PM

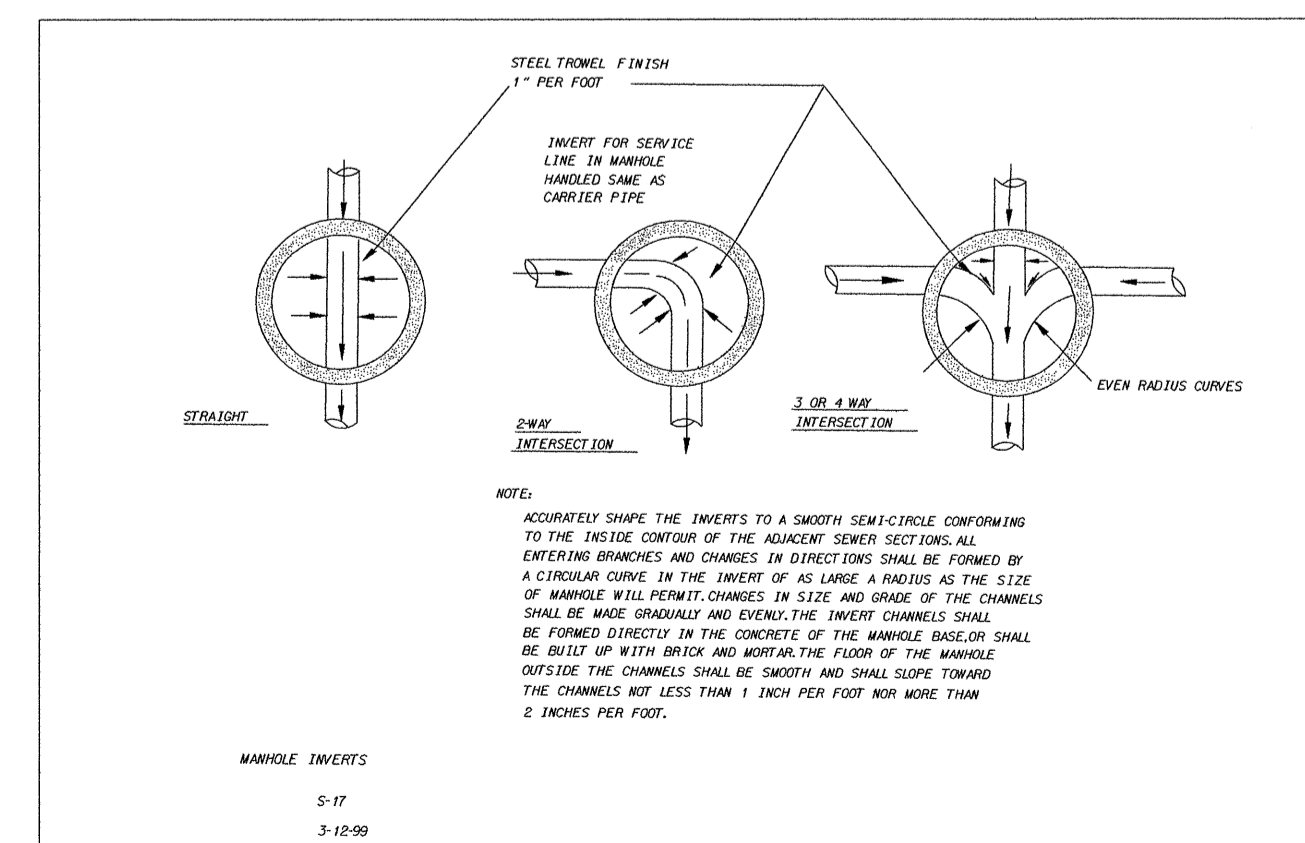
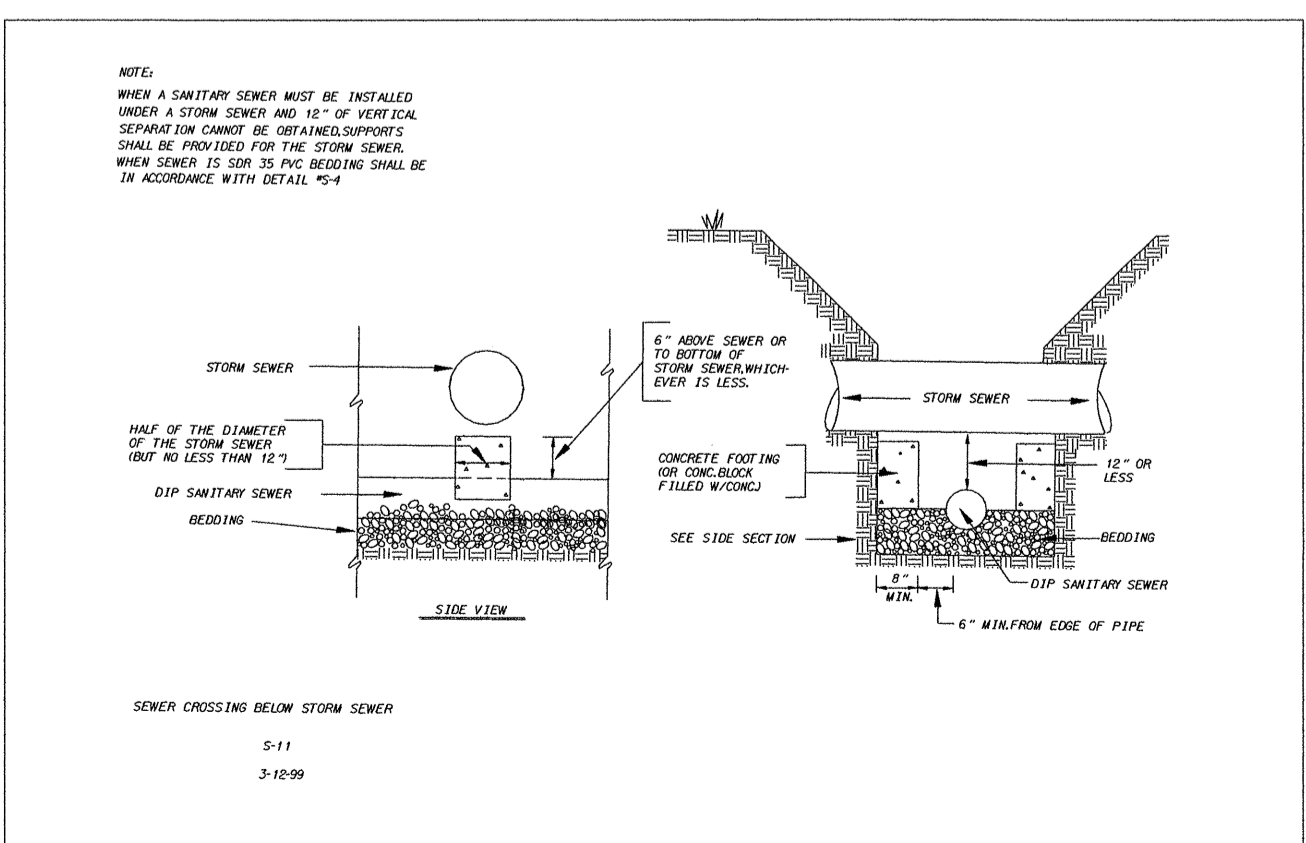
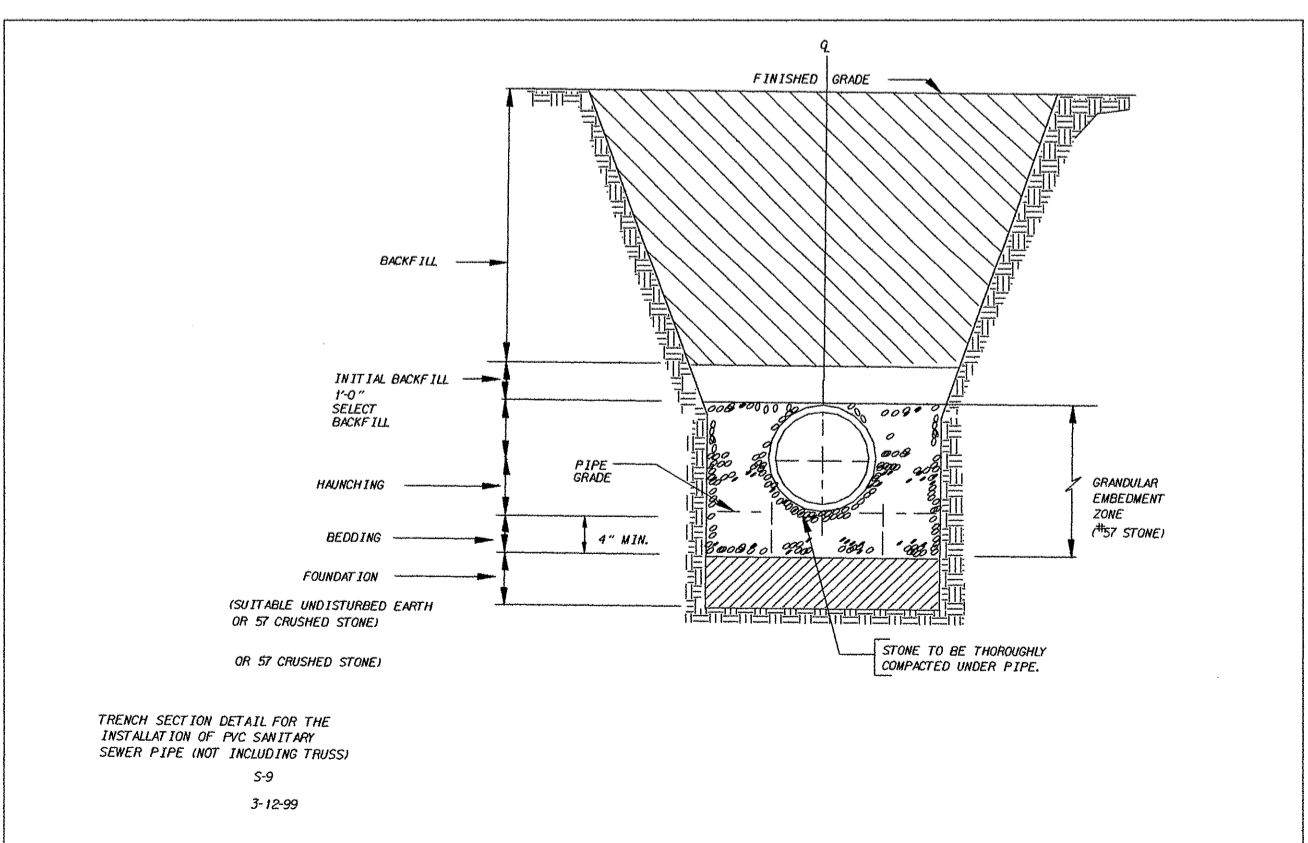
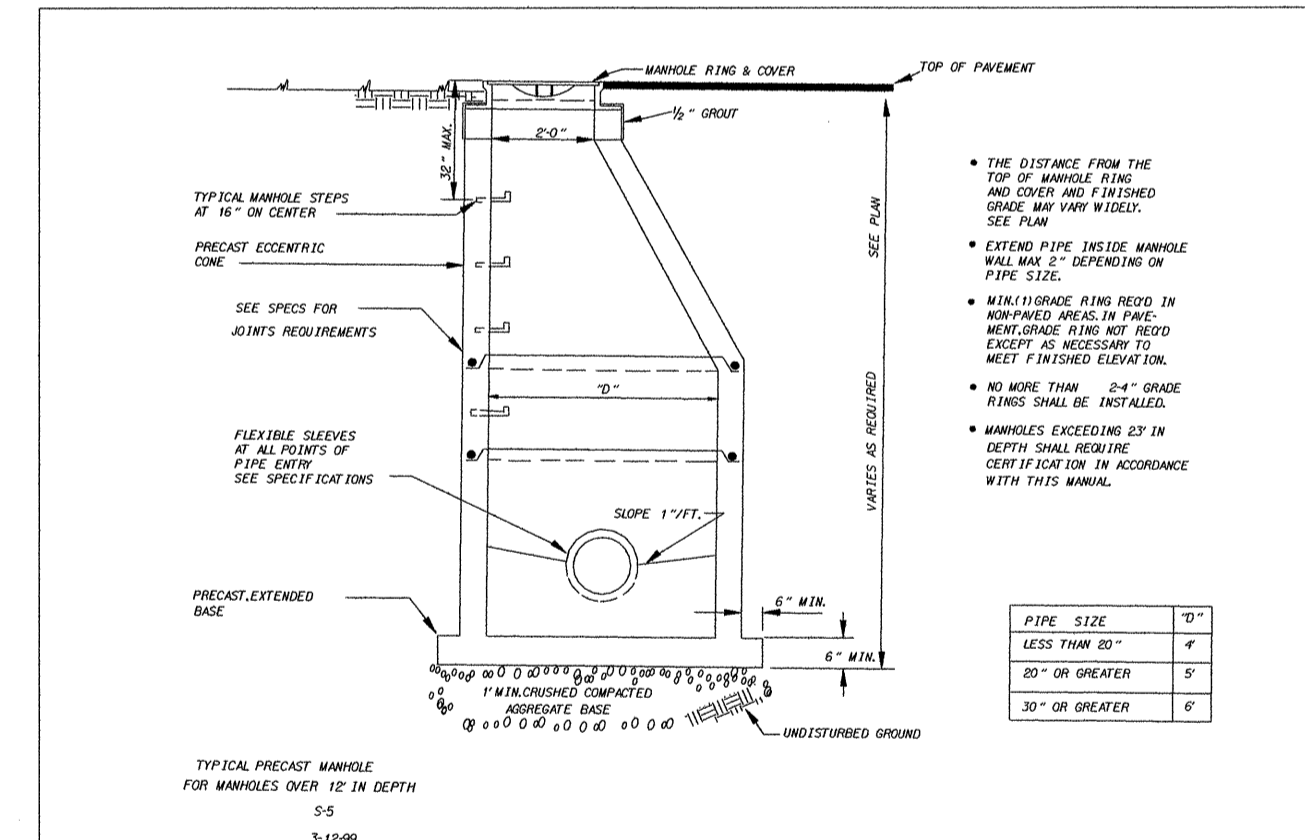
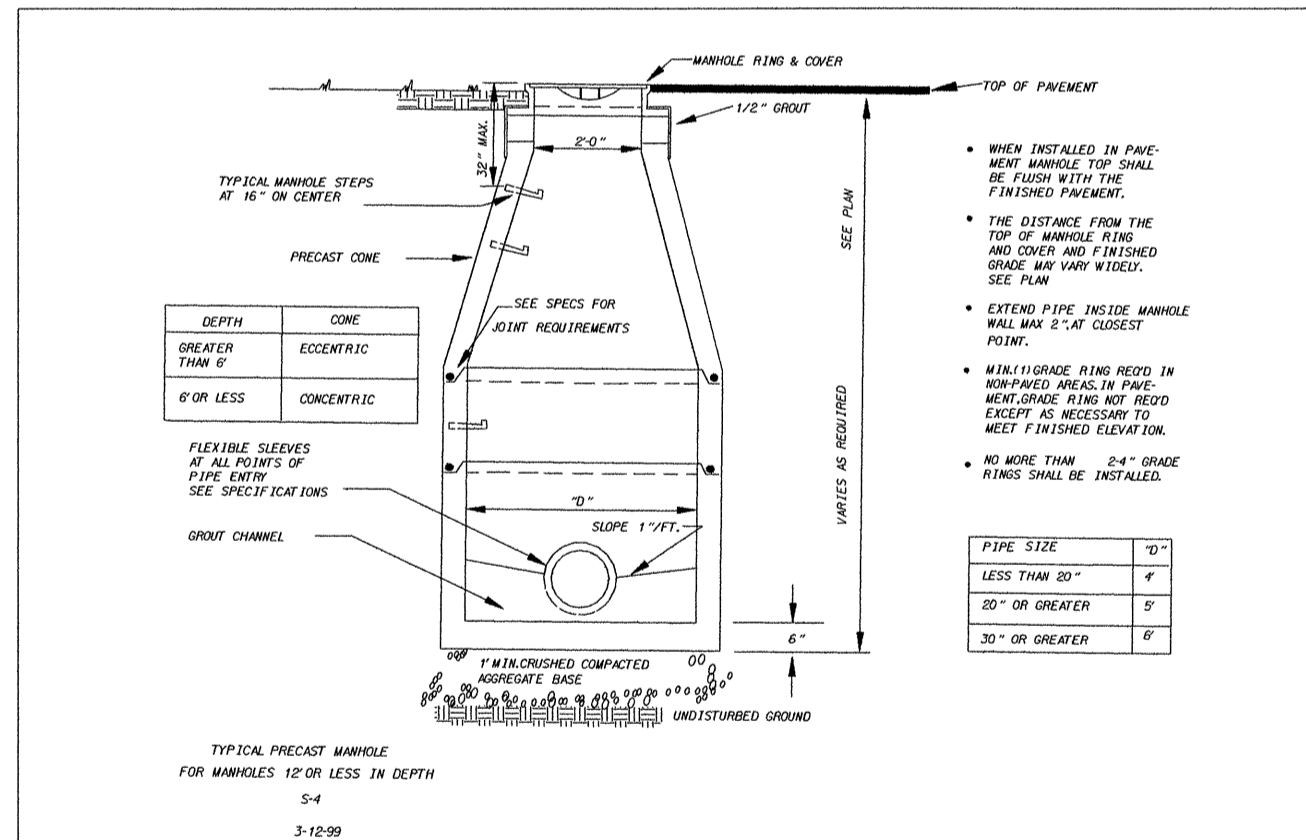
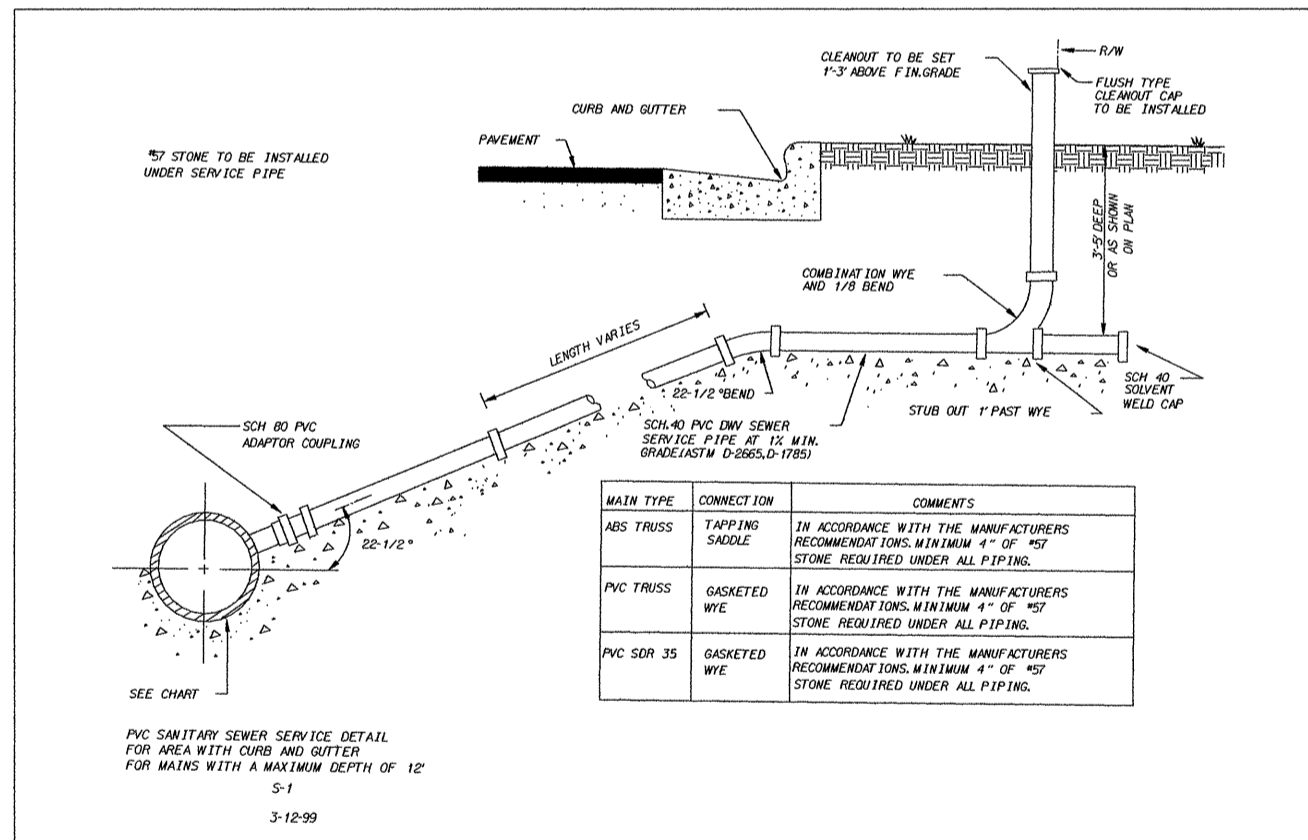
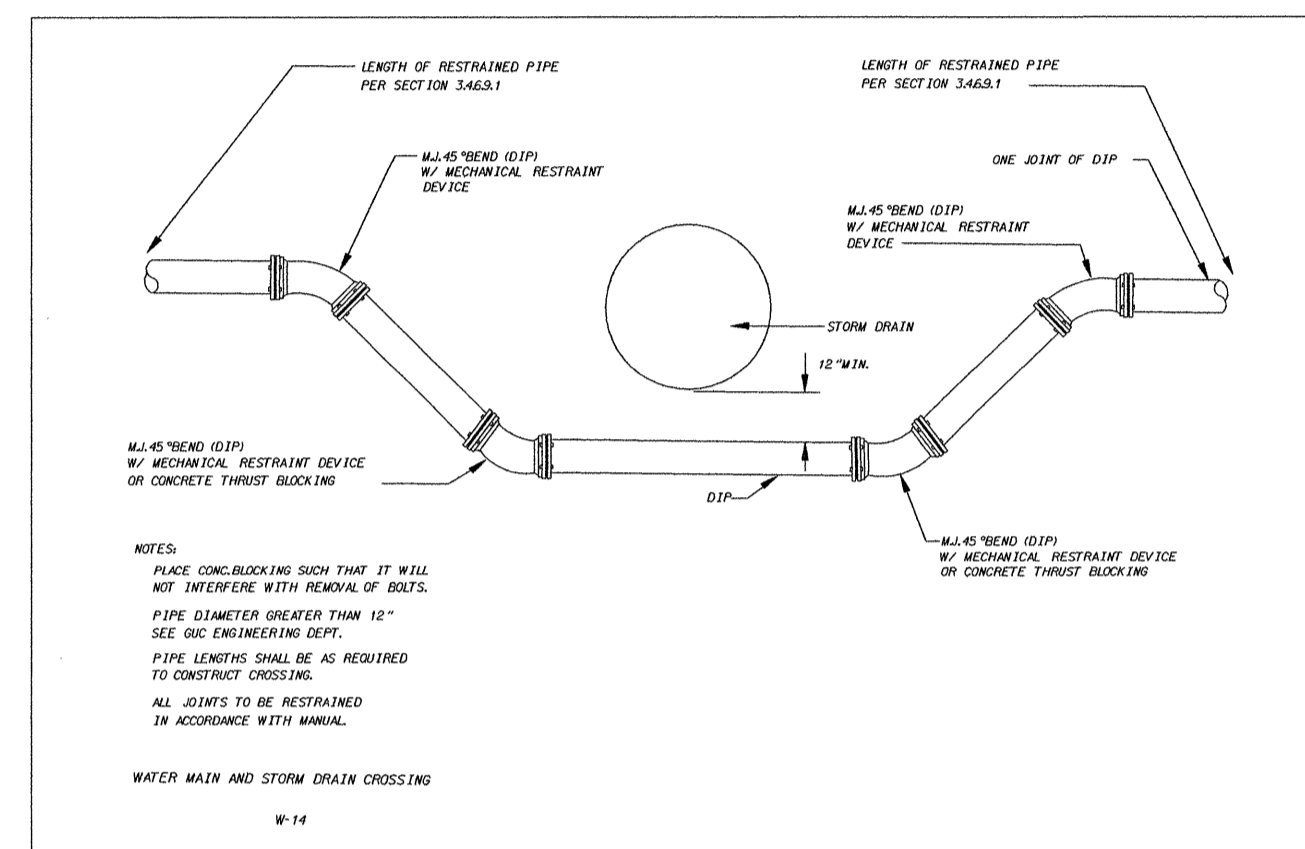
GREENVILLE UTILITIES
WATER & SEWER DETAILS



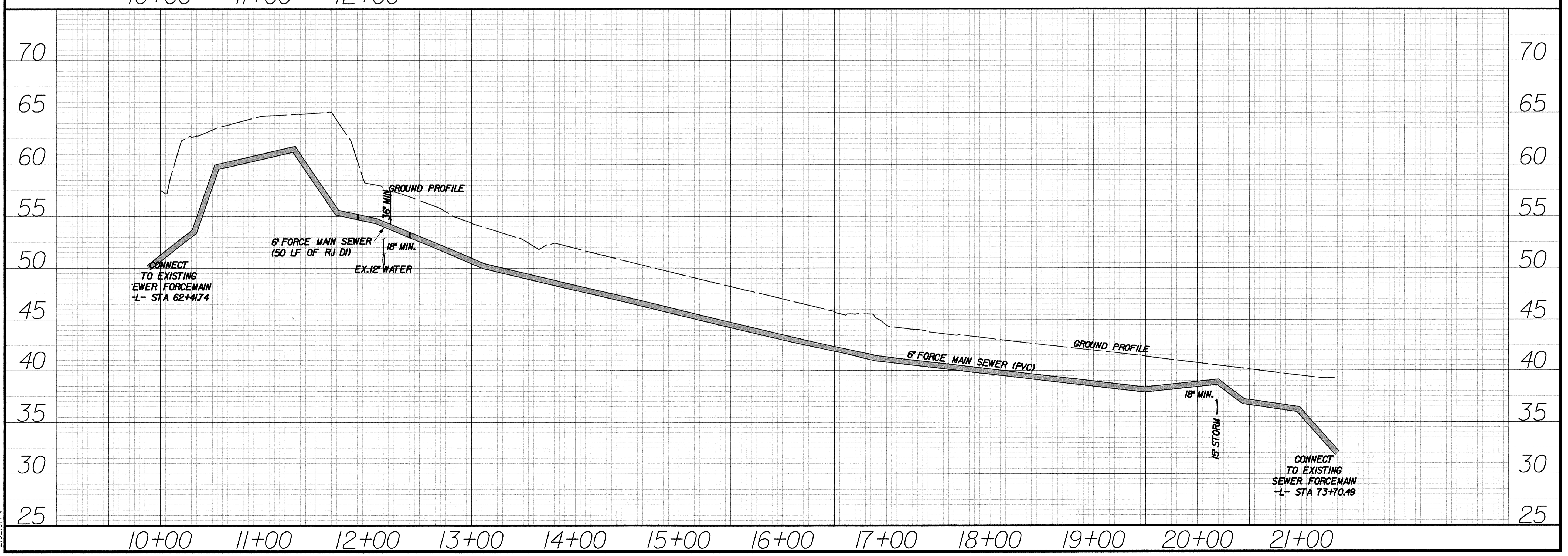
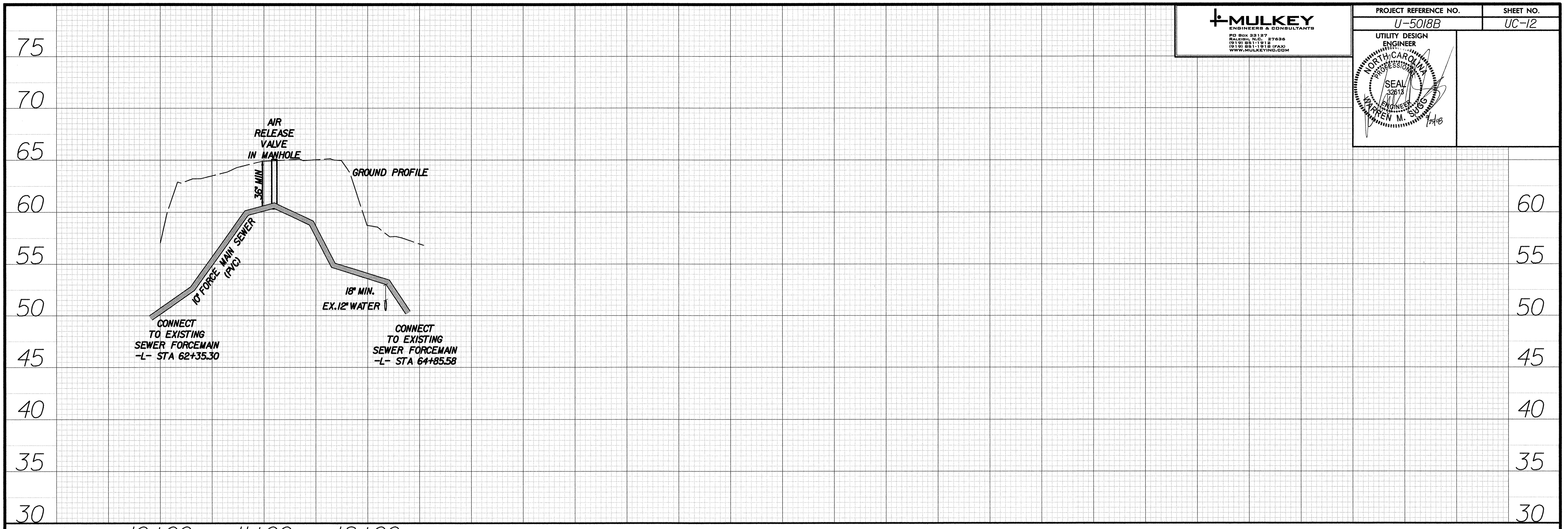
RESISTANT THROAT AT FITTING AT 150 PSI WATER PRESSURE

PIPE SIZE	TOTAL CHARGES			
	80"	40"	20 1/2"	10 1/4"
4"	2300	2800	2100	1100
6"	3400	4000	3000	1500
8"	4500	5200	3900	2000
10"	5600	6500	4800	2500
12"	6700	7800	5700	3000
14"	7800	9200	6600	3500
16"	8900	10600	7500	4000
18"	10000	12000	8400	4500
20"	11100	13400	9300	5000
24"	13300	16200	11100	6000
30"	15500	19000	12900	7000
36"	17700	21800	14700	8000
42"	19900	24600	16500	9000
48"	22100	27400	18300	10000
54"	24300	30200	20100	11000

THRUST BLOCKING DETAIL
W-12

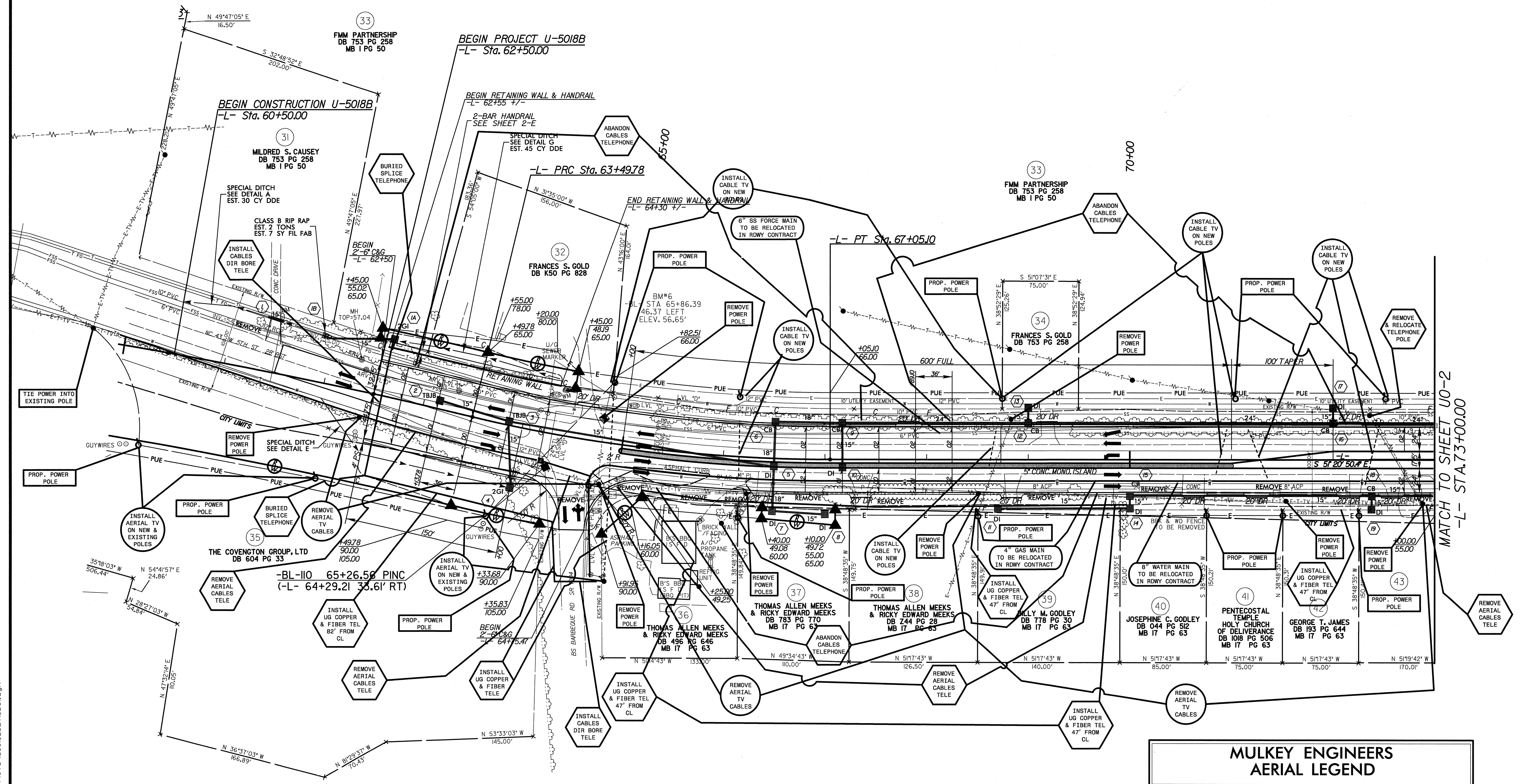


5/28/99 8:25/2008 R:\Utilities\Relo Plots\U5018B\url\UC11.dgn



9/25/2008 R:\Utilities\8\SECTION BAUtility Relo Plots\U5018B_uf1_UC12.dgn 12:32:01 PM

5/28/99



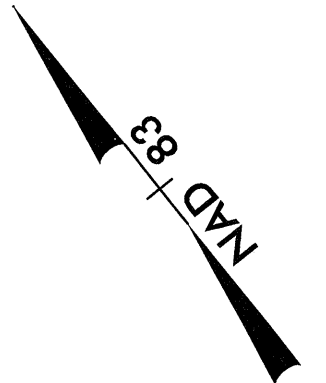
MATCH TO SHEET U0-2
-L- STA. 73+00.00

**MULKEY ENGINEERS
AERIAL LEGEND**

---E---	ELECTRIC
---E-T---	ELECTRIC W/ TELEPHONE
---E-TV---	ELECTRIC W/ TELEPHONE & TV
---T---	TELEPHONE
---TV---	TV CABLE

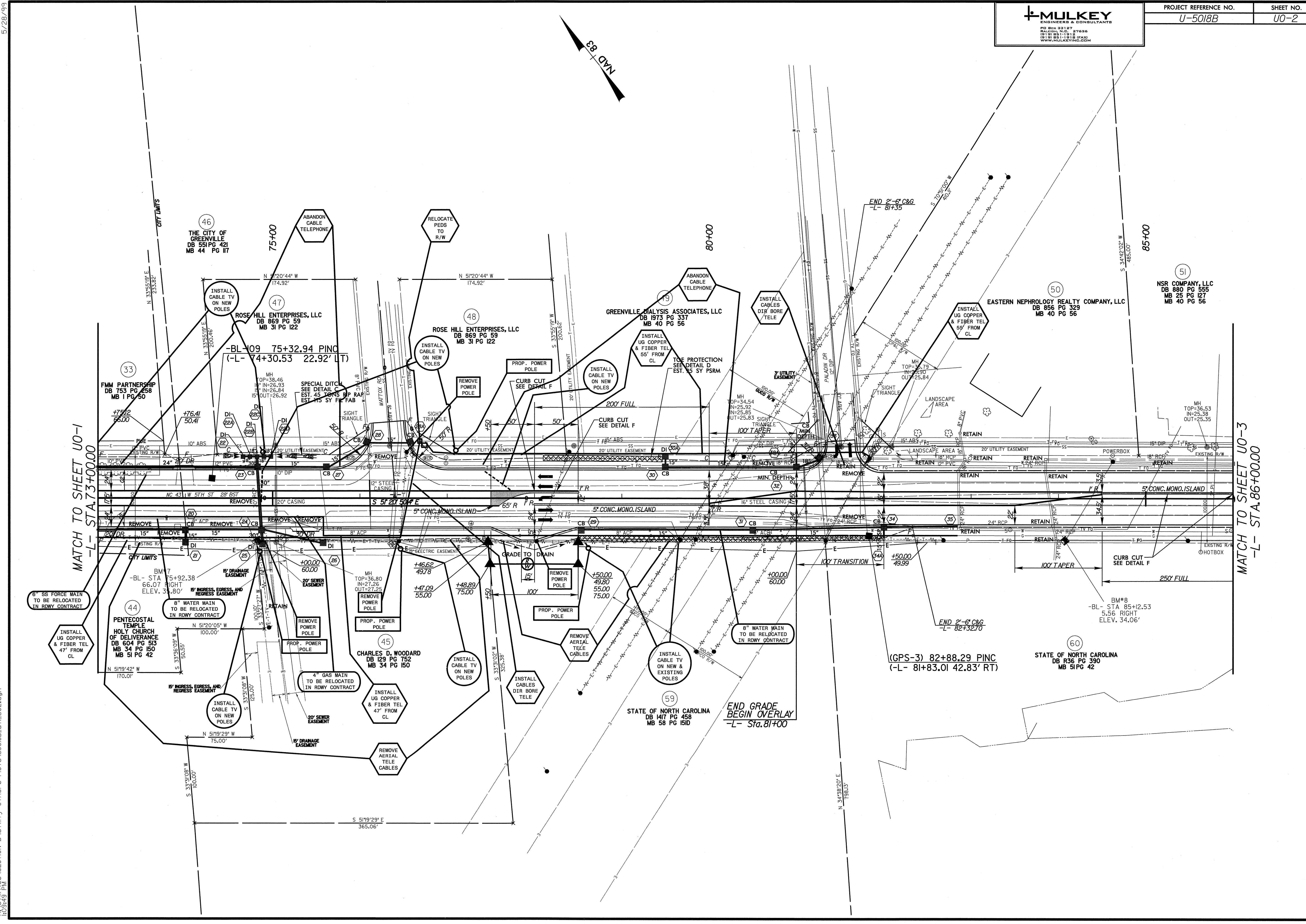
5/7/2009 10:50 AM SECTION B\Utility Others\Plots\U5018B_U0-1.dgn

5/28/99



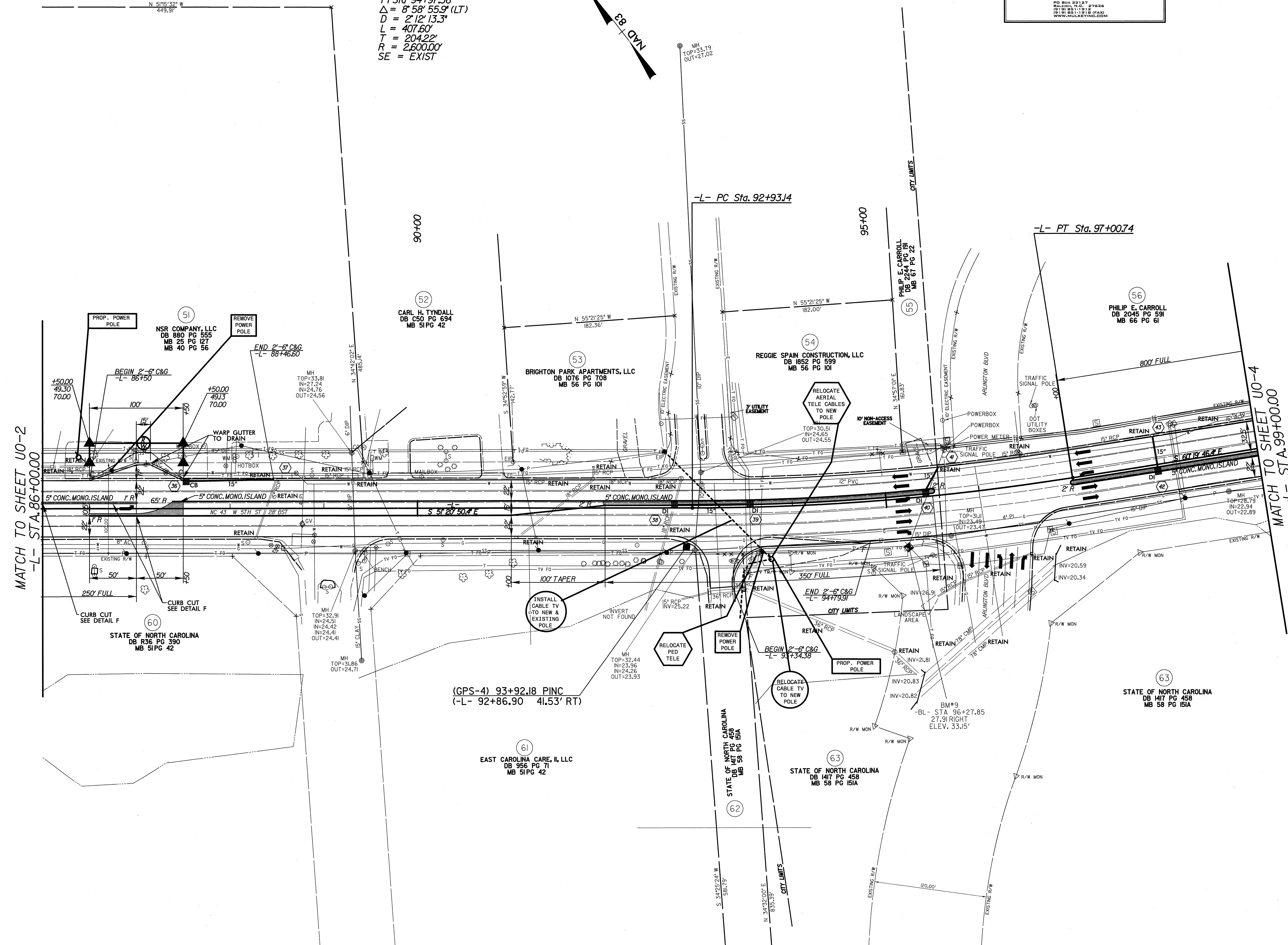
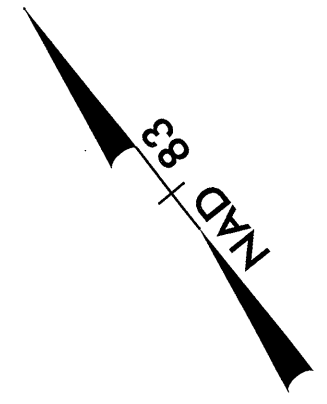
MATCH TO SHEET UO-1
-L- STA. 73+00.00

MATCH TO SHEET UO-3
-L- STA. 86+00.00



5/17/2009
C:\Users\jpl\Documents\SECTION BA\Utility Others\U5018B_Utl_UO2.dgn
10:54:19 AM

PI Sta 94+97.36
 $\Delta = 8' 58" 55.9" (LT)$
 $D = 2' 12" 13.3"$
 $L = 407.60'$
 $T = 204.22'$
 $R = 2,600.00'$
 SE = EXIST



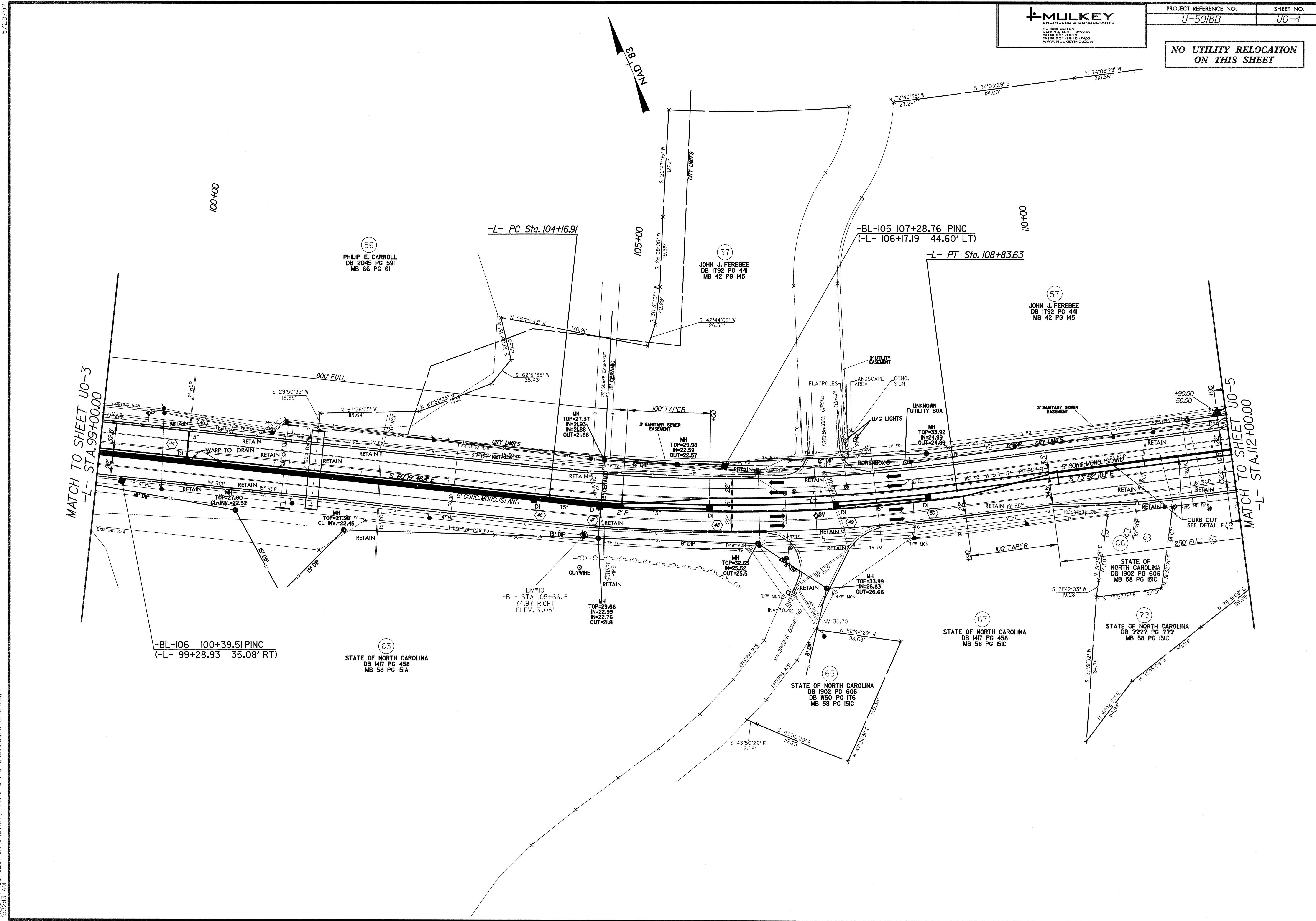
MATCH TO SHEET U0-2
 -L- STA. 86+00.00

MATCH TO SHEET U0-4
 -L- STA. 99+00.00

(GPS-4) 93+92.18 PINC
 (-L- 92+86.90 41.53' RT)

4/13/2009
 R:\Utilities\SECTION B\Utility Others\Plots\U018B_U03.dgn
 2:20:56 PM

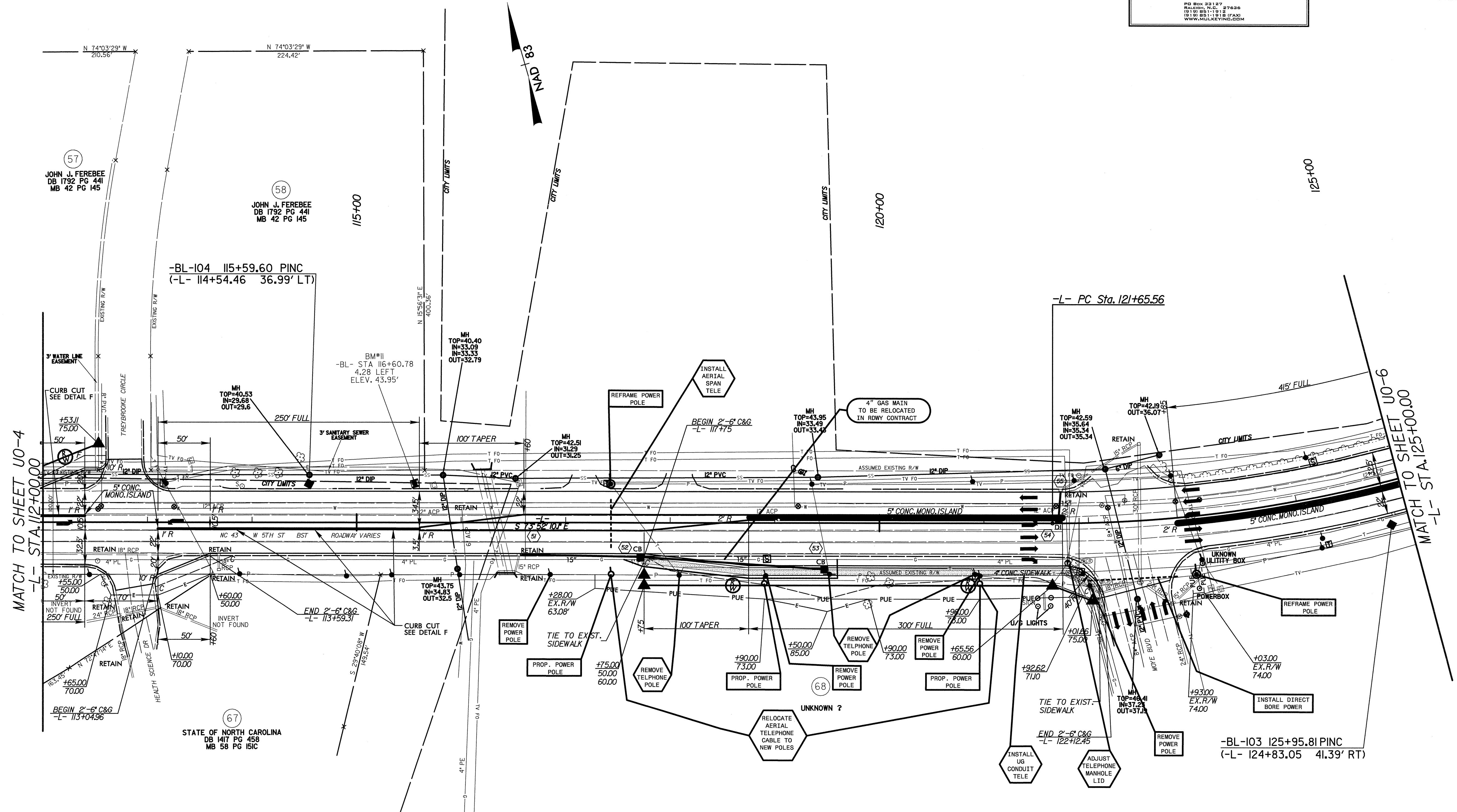
NO UTILITY RELOCATION ON THIS SHEET



MATCH TO SHEET U0-3
-L- STA. 99+00.00

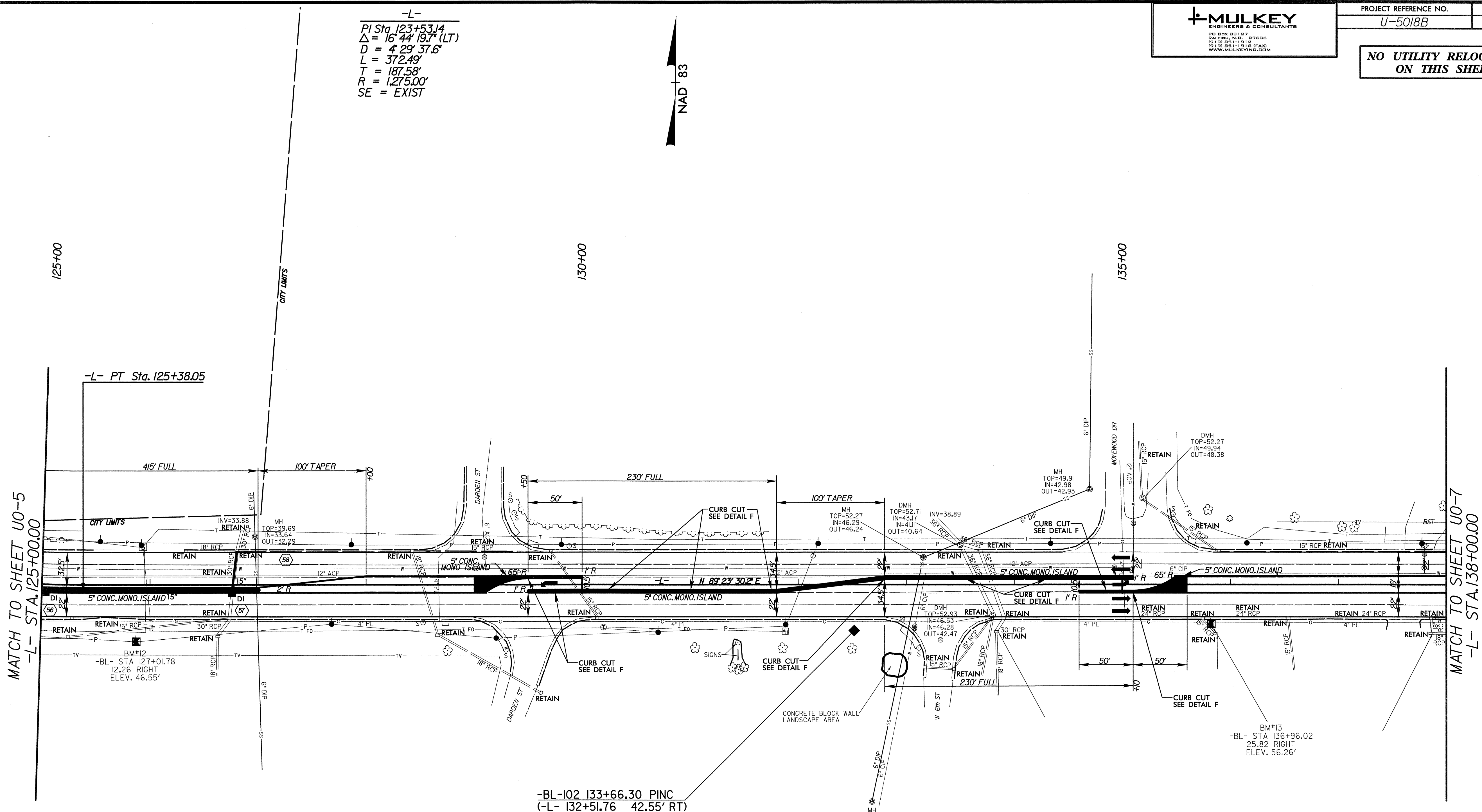
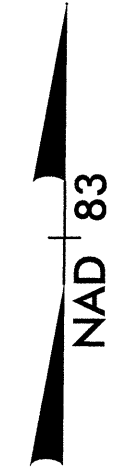
MATCH TO SHEET U0-5
-L- STA. 112+00.00

8/28/2008 5:30:11 PM \\S:\SECTION BA\Utility Others Plots\U5018B_u0-4.dgn



**NO UTILITY RELOCATION
ON THIS SHEET**

-L-
PI Sta. 123+53.14
 $\Delta = 16' 44" 19.7" (LT)$
 $D = 4' 29" 37.6"$
 $L = 372.49'$
 $T = 187.58'$
 $R = 1,275.00'$
SE = EXIST



-L- PT Sta. 125+38.05

MATCH TO SHEET U0-5
-L- STA. 125+00.00

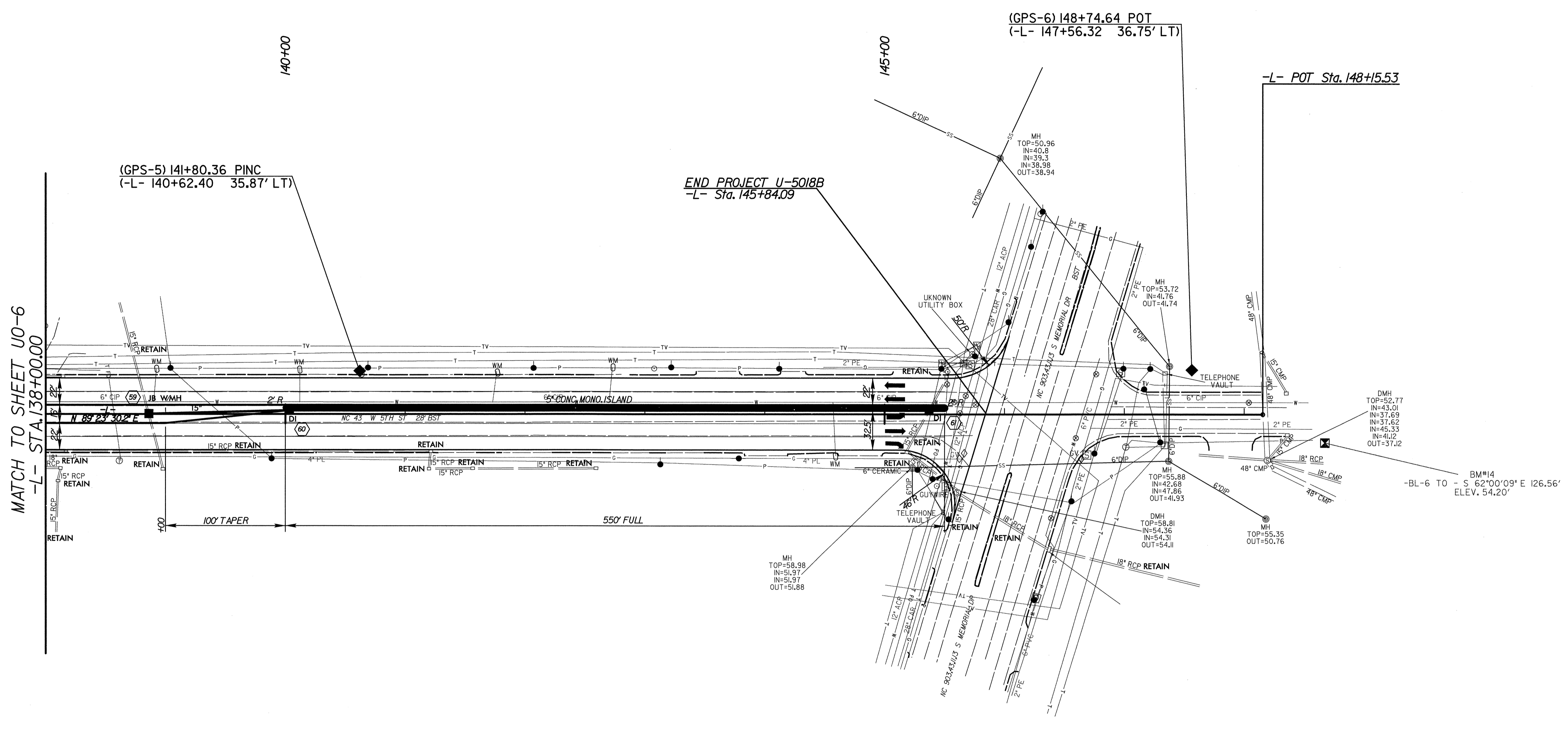
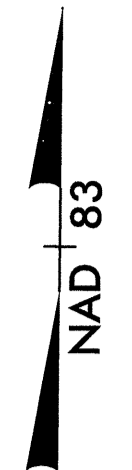
MATCH TO SHEET U0-7
-L- STA. 138+00.00

-BL-102 133+66.30 PINC
(-L- 132+51.76 42.55' RT)

BM#13
-BL- STA 136+96.02
25.82 RIGHT
ELEV. 56.26'

BM#12
-BL- STA 127+01.78
12.26 RIGHT
ELEV. 46.55'

**NO UTILITY RELOCATION
ON THIS SHEET**



MATCH TO SHEET U0-6
-L- STA. 138+00.00

END PROJECT U-5018B
-L- Sta. 145+84.09

(GPS-5) 141+80.36 PINC
(-L- 140+62.40 35.87' LT)

(GPS-6) 148+74.64 POT
(-L- 147+56.32 36.75' LT)

-L- POT Sta. 148+15.53