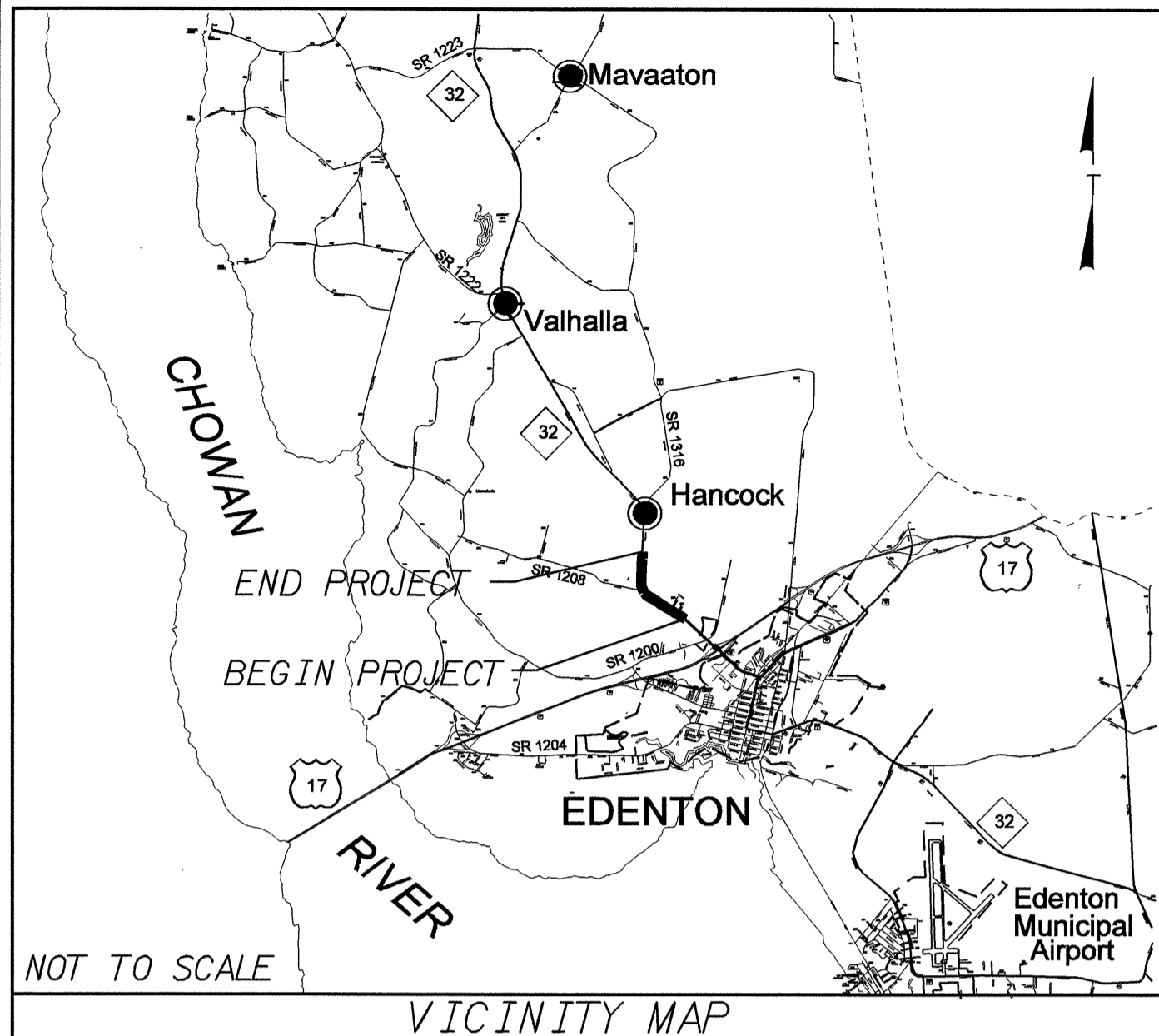


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

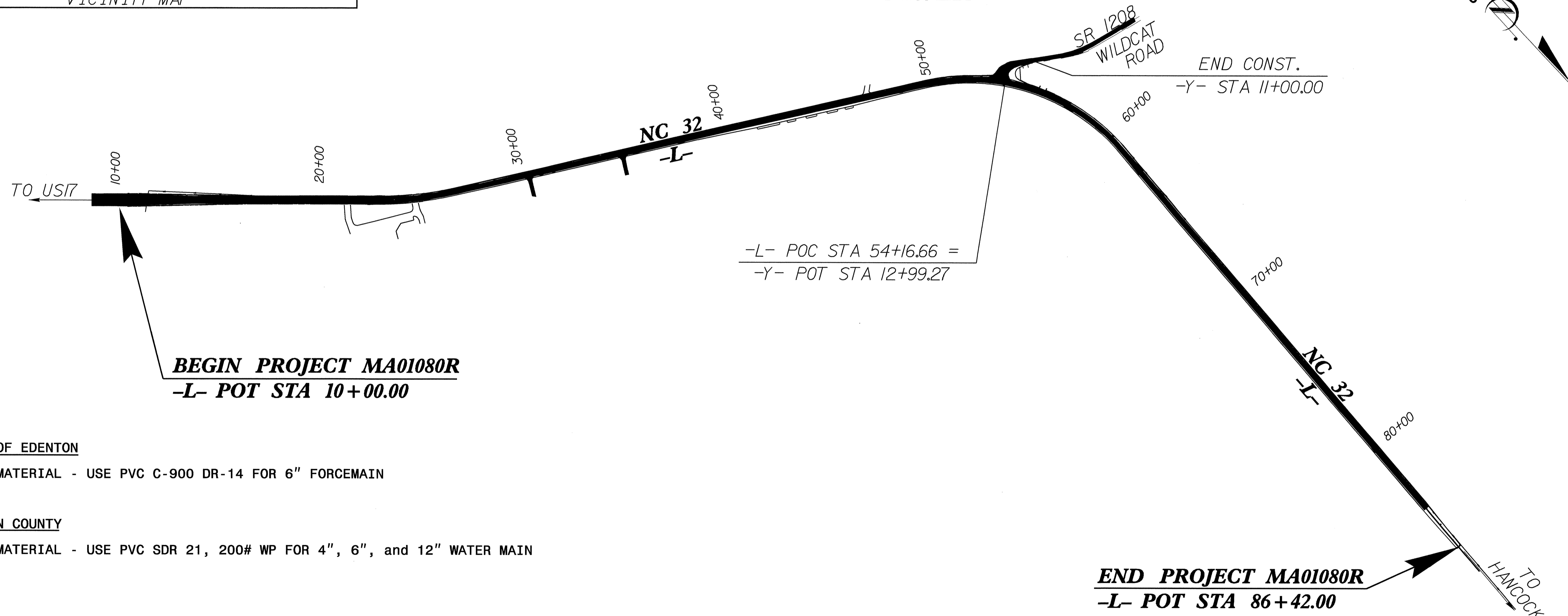
**UTILITY CONSTRUCTION PLANS  
CHOWAN COUNTY**

**LOCATION: NC 32 FROM 0.25 MILES NW OF INTERSECTION  
WITH US-17 TO 0.52 MILES NORTH OF  
INTERSECTION OF SR 1208**

**TYPE OF WORK: WATER AND SEWER**

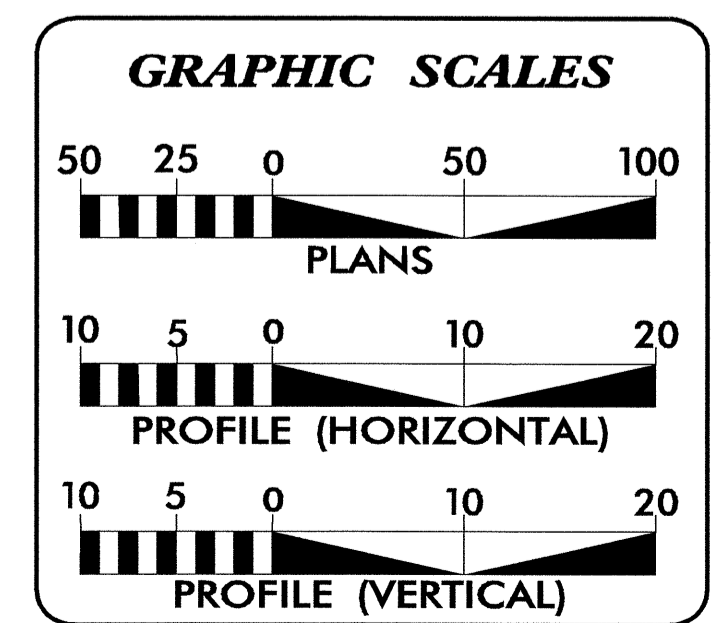


**PROJECT: (MA 01080R) WBS 39417**



**TOWN OF EDENTON**  
PIPE MATERIAL - USE PVC C-900 DR-14 FOR 6" FORCEMAIN

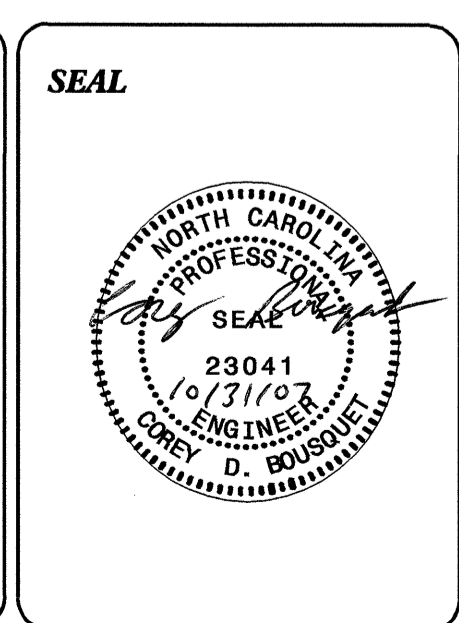
**CHOWAN COUNTY**  
PIPE MATERIAL - USE PVC SDR 21, 200# WP FOR 4", 6", and 12" WATER MAIN



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-8	UTILITY CONSTRUCTION PLAN SHEETS
UC-9 THRU UC-17	PROFILE SHEETS
UC-18	DETAILS SHEET

**WATER AND SEWER OWNERS ON PROJECT**

- (1) WATER - CHOWAN COUNTY
- (2) WATER - TOWN OF EDENTON
- (3) SANITARY SEWER - TOWN OF EDENTON

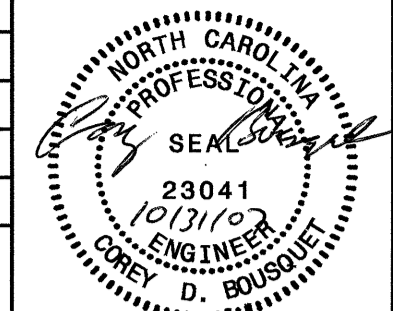


PREPARED IN THE OFFICE OF:  
**DIVISION OF HIGHWAYS  
PROJECT SERVICES  
UTILITY SECTION**

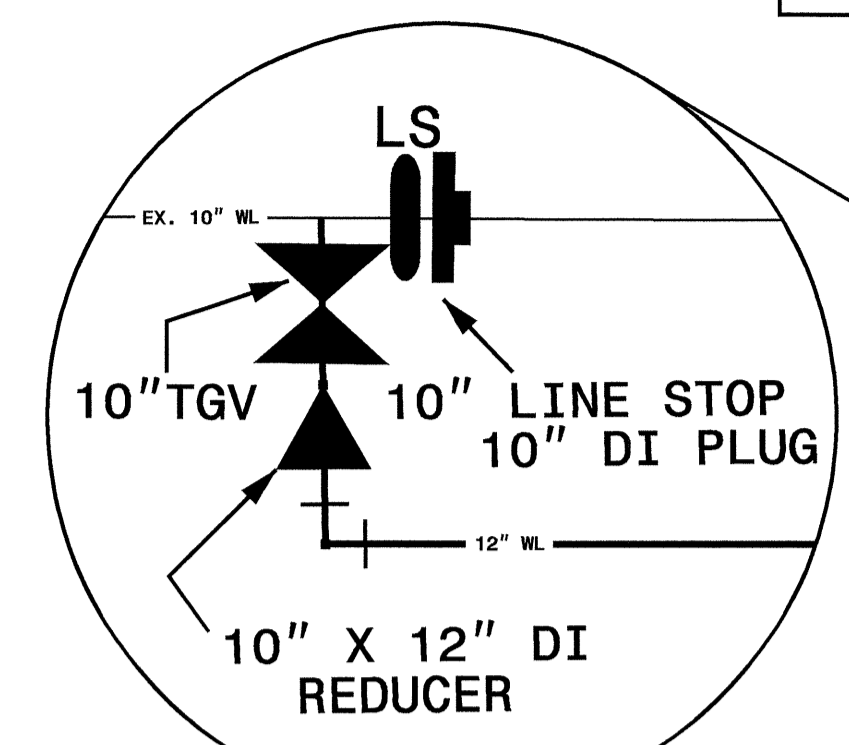
1591 MAIL SERVICES CENTER  
RALEIGH NC 27699-1591  
PHONE (919) 250-4128  
FAX (919) 250-4119

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

06-NOV-2007 09:42  
S:\specdes\utilites\cdb\projects\nc 32 chowan\ma01080r\_ut\_tsh\_ucl.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$



UTILITY CONSTRUCTION



PROP. 620' OF 12" WATER LINE

PROP. 442' OF 6" FORCE MAIN SEWER  
 FORCE MAIN 1 - PROFILE  
 SEE SHEETS UC-9 TO UC-14

RELOCATE WATER METER  
 3/4" SERVICE

RELOCATE WATER METER  
 3/4" SERVICE

RELOCATE WATER METER  
 1" SERVICE & RPZ

2 - RELOCATE WATER METERS  
 1" SERVICE

RELOCATE WATER METER  
 3/4" SERVICE

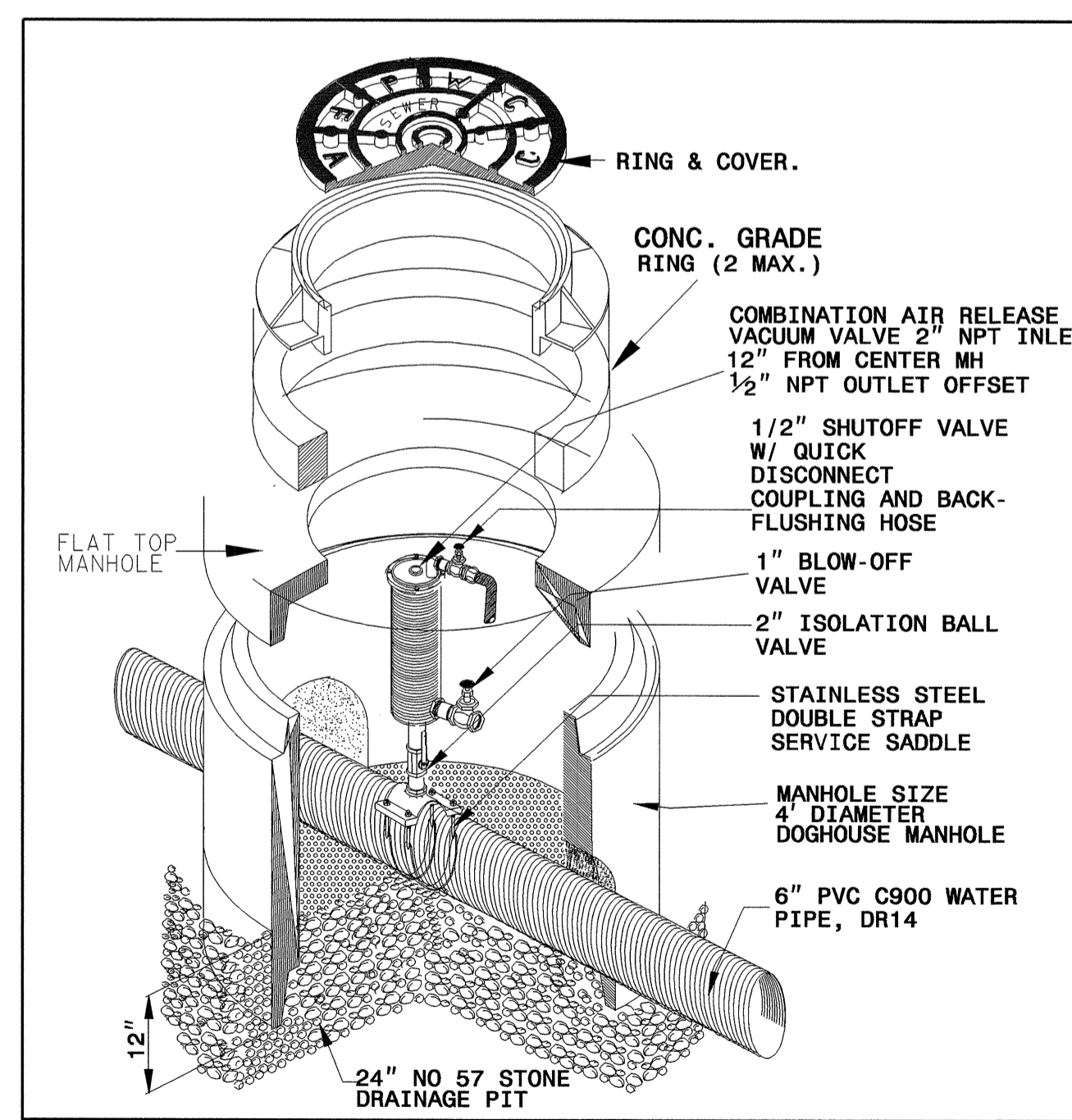
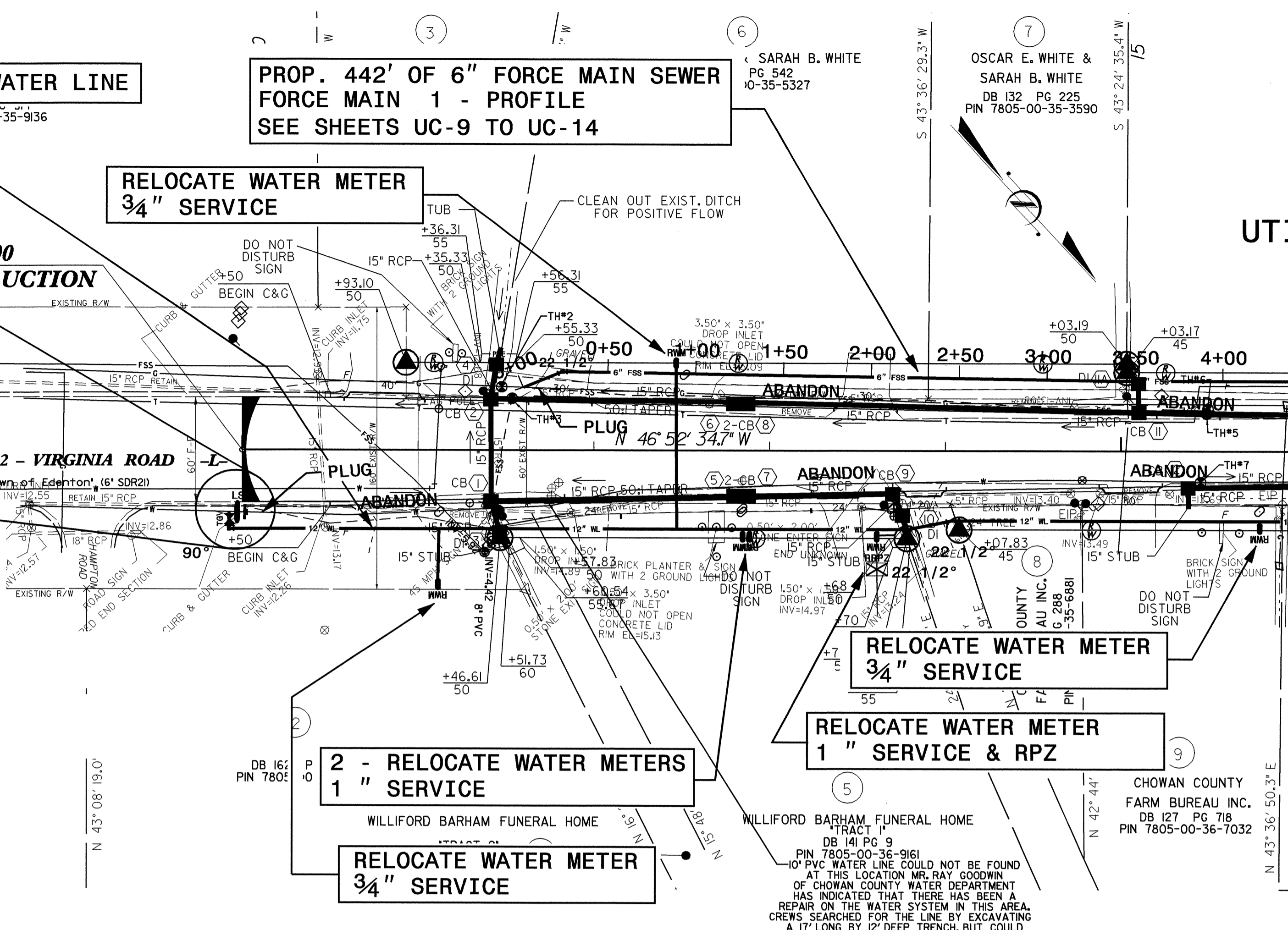
NOTES TO THE CONTRACTOR

CHOWAN COUNTY

- THE 10" WATER LINE ON THE EAST SIDE OF NC 32 IS OWNED BY CHOWAN COUNTY WATER DEPARTMENT. THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. CHOWAN COUNTY SHALL BE NOTIFIED TWO WEEKS BEFORE COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTIONS.
- ALL EXISTING FIRE HYDRANTS TO BE RELOCATED WILL BE REPLACED WITH NEW FIRE HYDRANTS SUPPLIED BY CHOWAN COUNTY WATER DEPARTMENT. THE EXISTING FIRE HYDRANTS SHALL BE DISPOSED OF BY THE CONTRACTOR AND WILL BE CONSIDERED INCIDENTAL TO THE COST OF RELOCATING EXISTING FIRE HYDRANTS.
- ALL 3/4" TO 2" WATER SERVICE LINES WILL BE PE TUBING SDR 9, 200# WP
- THE NEW 12" WATER LINE SHALL BE INSTALLED THE ENTIRE LENGTH OF THE PROJECT AND CONNECTED TO THE EXISTING 10" WATER LINE PRIOR TO ANY SERVICES BEING SWITCHED OVER. THE CONTRACTOR WILL BE REQUIRED TO HAVE THE EXISTING 10" WATER LINE AND 12" WATER LINE ACTIVE UNTIL ALL SERVICE LINES HAVE BEEN SWITCHED OVER TO THE NEW 12" WATER LINE.
- RELOCATE PROPOSED 12" WATER LINE 5' INSIDE THE PROPOSED R/W LINE ON EAST SIDE OF NC 32

TOWN OF EDENTON

- THE EXIST 6" FORCE MAIN ON THE WEST SIDE OF NC 32 IS OWNED BY TOWN OF EDENTON. THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. TOWN OF EDENTON SHALL BE NOTIFIED TWO WEEKS BEFORE COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTIONS.
- THE EXIST 6" FORCE MAIN CAN ONLY BE SHUT DOWN FROM 3:00 PM TO 5:00 AM.

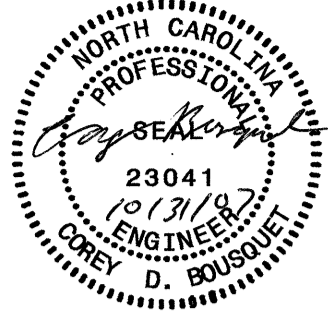


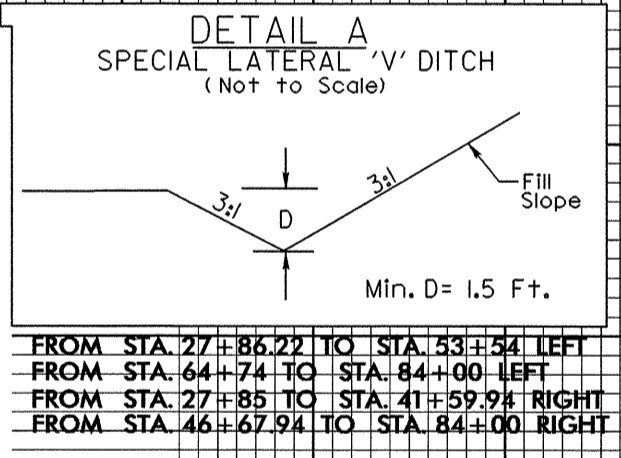
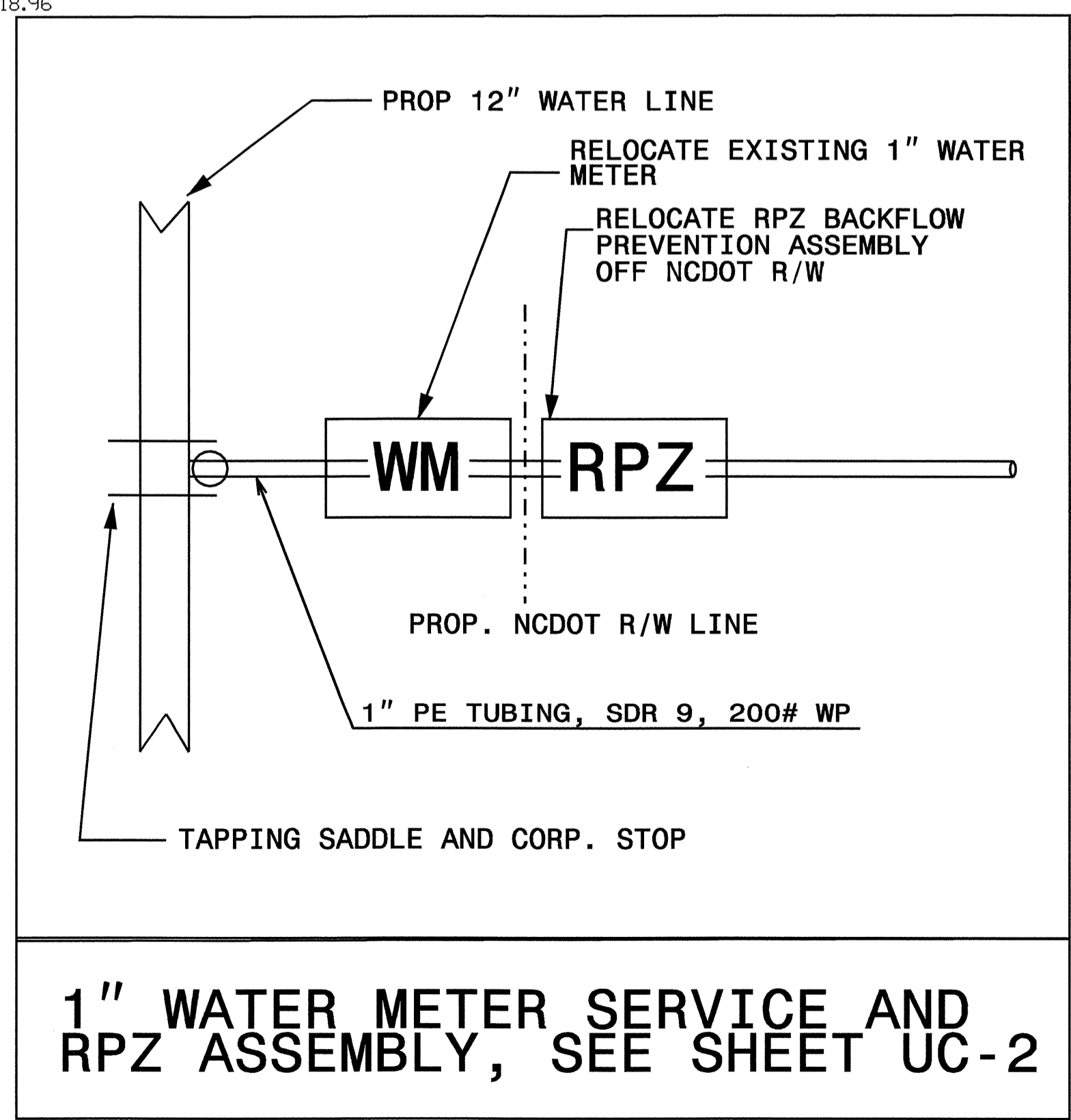
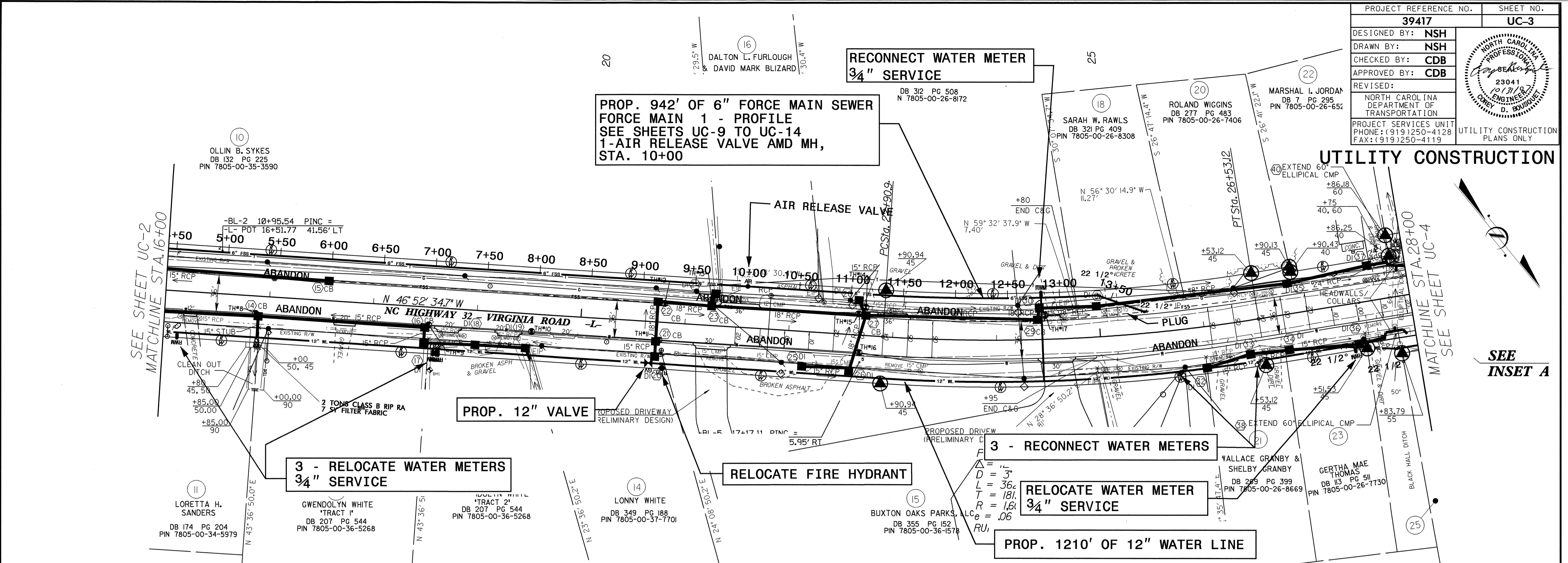
- NOTES:
- COMBINATION AIR VALVES SHALL BE OF THE SINGLE HOUSING STYLE THAT COMBINES THE OPERATING FEATURES OF BOTH AN AIR/VACUUM AND AIR RELEASE VALVE.
  - THE AIR VACUUM SHALL AUTOMATICALLY EXHAUST LARGE QUANTITIES OF AIR DURING THE FILLING OF THE PIPELINE AND AUTOMATICALLY ALLOWS AIR TO RE-ENTER THE PIPELINE WHEN THE INTERNAL PRESSURE OF THE PIPELINE APPROACHES A NEGATIVE VALUE DUE TO COLUMN SEPARATION, DRAINING OF THE PIPELINE, POWER OUTAGE, PIPELINE BREAK ETC.
  - THE AIR RELEASE PORT SHALL AUTOMATICALLY RELEASE SMALL POCKETS OF AIR FROM THE PIPELINE WHILE THE PIPELINE IS IN OPERATION AND UNDER PRESSURE.
  - THE COMBINATION AIR VALVE SHALL HAVE 2" INLET AND OUTLET CONNECTIONS AND A 3/16" DIAMETER ORIFICE FOR A MAX. WORKING PRESSURE OF 150 PSI. ENGINEER SHALL DESIGN VALVE ORIFICE/SIZE TO ACCOMMODATE PARTICULAR CIRCUMSTANCES OF THE MAINLINE.
  - ALL MATERIALS SHALL MEET THE STANDARDS AND SPECIFICATIONS OF CHOWAN COUNTY.
  - MANHOLE FRAME AND COVER SHALL BE IN ACCORDANCE WITH NCDOT STANDARD DETAIL.

COMBINATION AIR RELEASE  
 VACUUM VALVE (SEWER SERVICE)

MATCHLINE STA 16+00 -L-  
 SEE SHEET UC-3

05-NOV-2007 10:38  
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 \$\$\$\$ USER:RNSM \*\*\*\*\*

PROJECT REFERENCE NO.	SHEET NO.
39417	UC-3
DESIGNED BY: NSH	
DRAWN BY: NSH	
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	

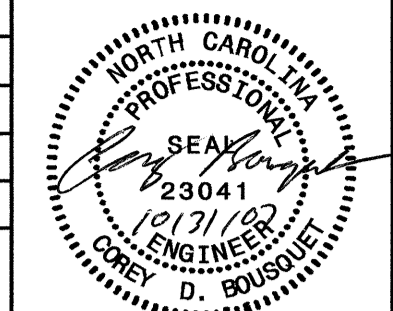


5/14/09

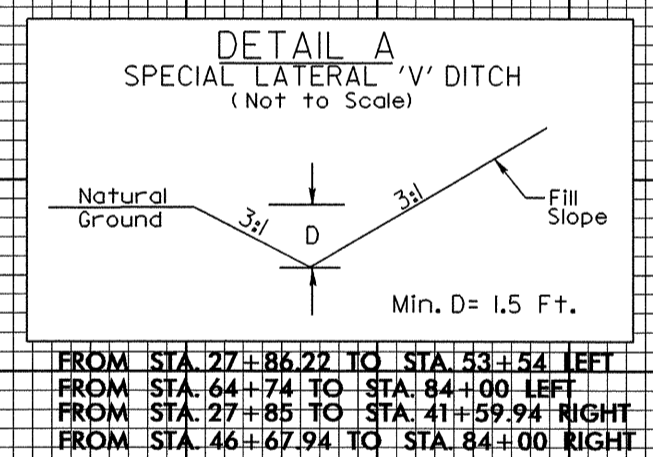
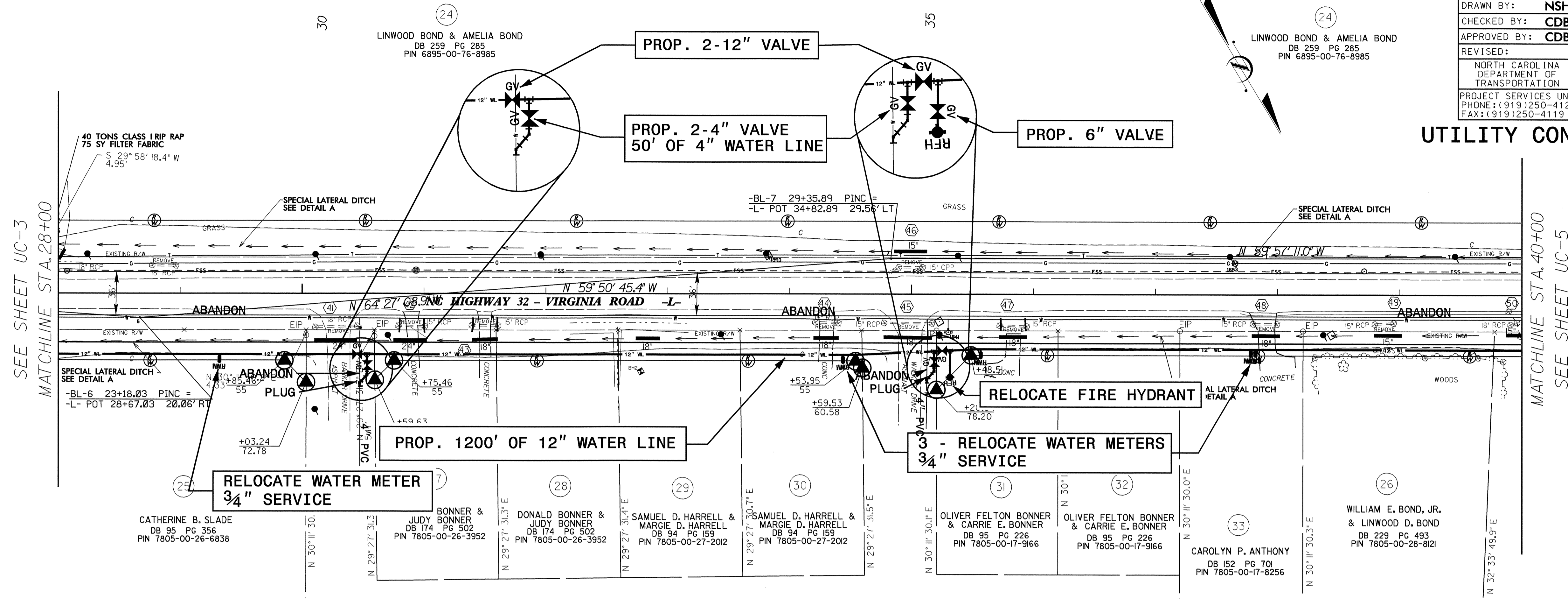
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20  
15  
10  
5

16 17 18 19 20 21 22 23 24 25



UTILITY CONSTRUCTION



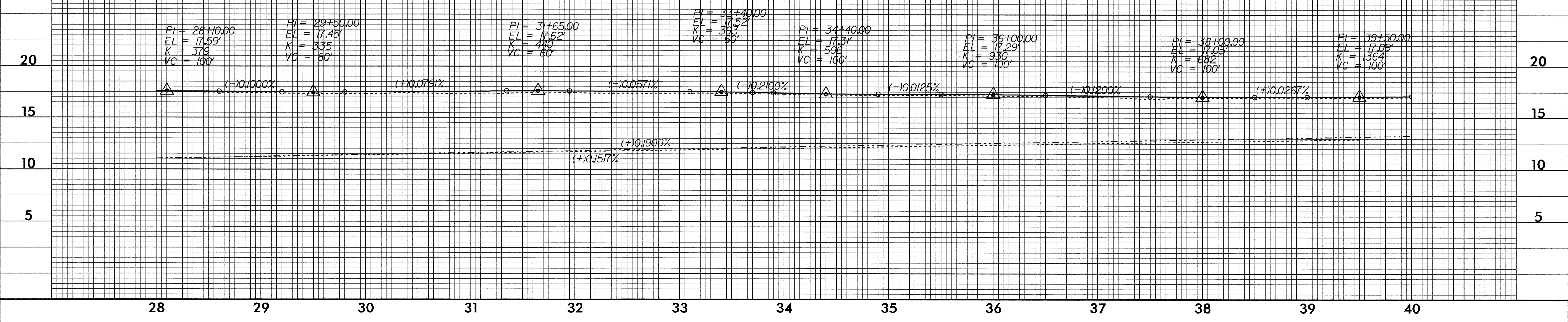
-L- STA 30+30 (RT) SR 1331 (BARKER DRIVE)  
 PROP. 24" RCP PIPE

DRAINAGE AREA	= 26.6 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 11.4 CFS
DESIGN HW ELEV	= 13.1 FT
Q100 DISCHARGE	= 18.2 CFS
Q100 ELEVATION	= 14 FT
OVERTOPPING FREQUENCY	=
OVERTOPPING DISCHARGE	=
OVERTOPPING ELEVATION	=

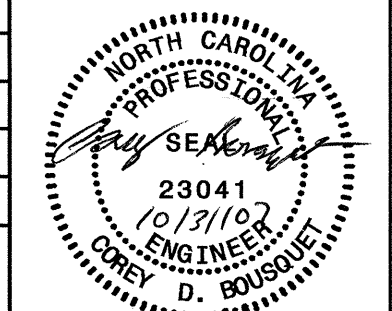
BM #2  
 -BL- STA. 27+24.01  
 76.63 RT  
 ELEV. 18.03

-L- STA 35+00 (RT) SR 1332 (WALKER DRIVE)  
 PROP. 18" RCP PIPE

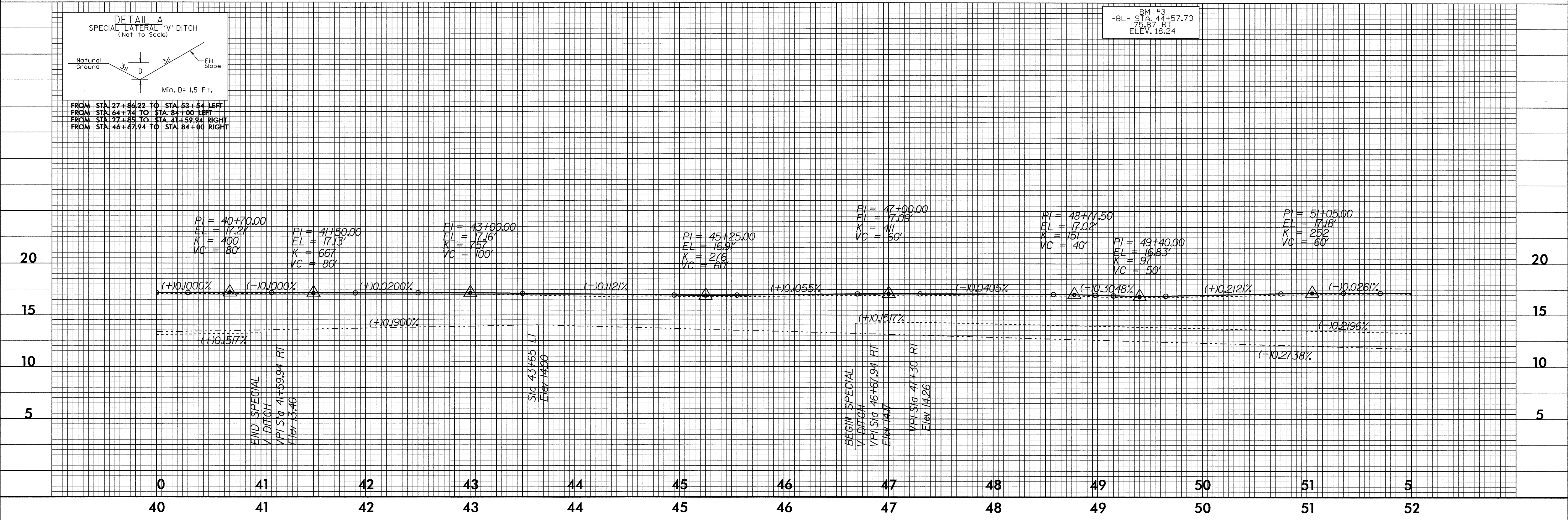
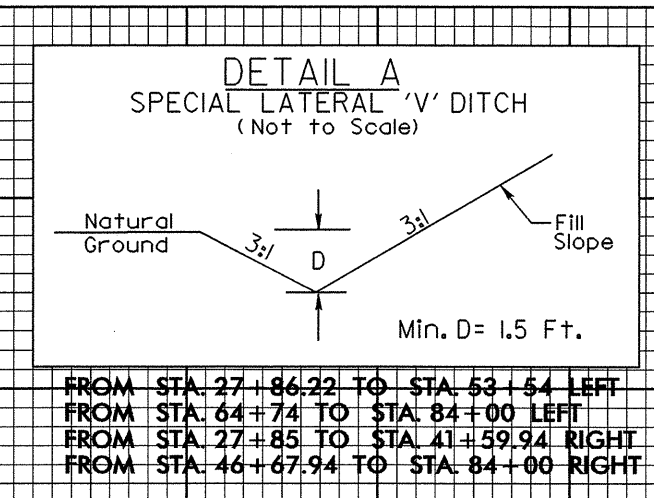
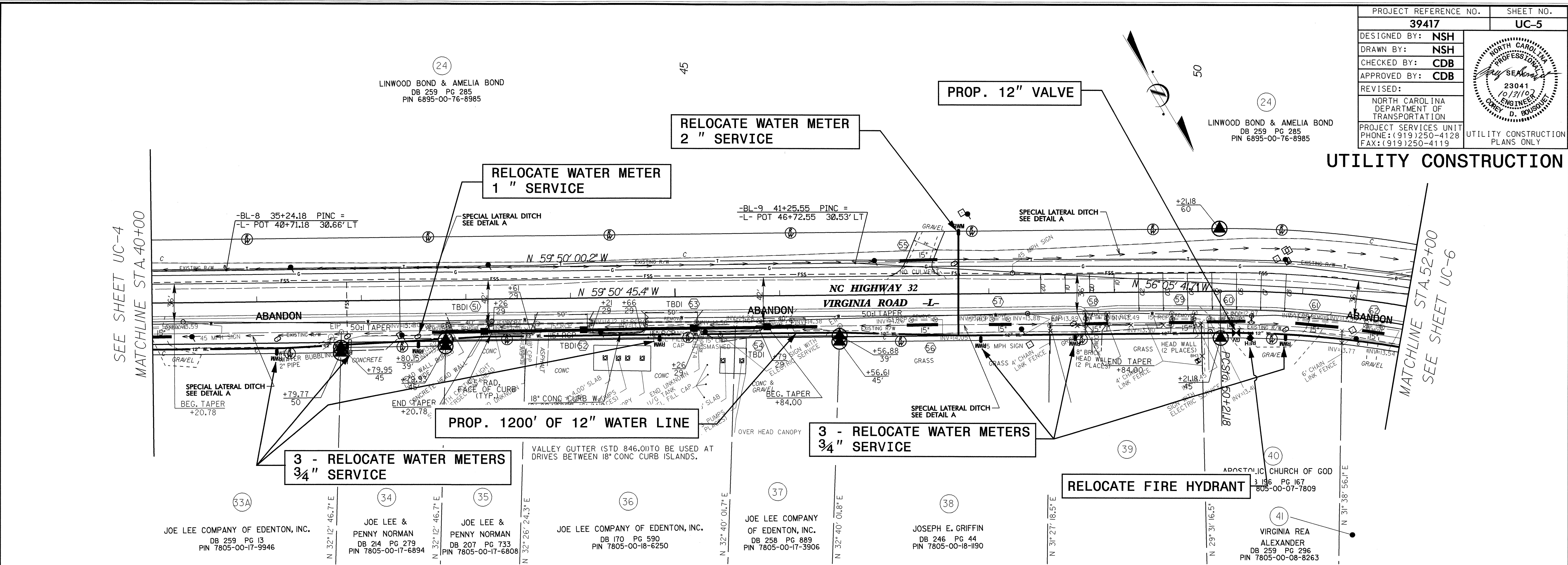
DRAINAGE AREA	= 18 AC
DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 9 CFS
DESIGN HW ELEV	= 14.1 FT
Q100 DISCHARGE	= 14.3 CFS
Q100 ELEVATION	= 15.8 FT
OVERTOPPING FREQUENCY	=
OVERTOPPING DISCHARGE	=
OVERTOPPING ELEVATION	=



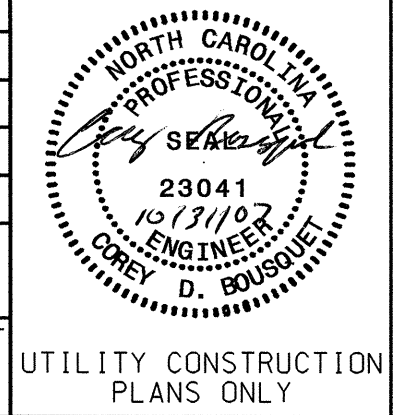
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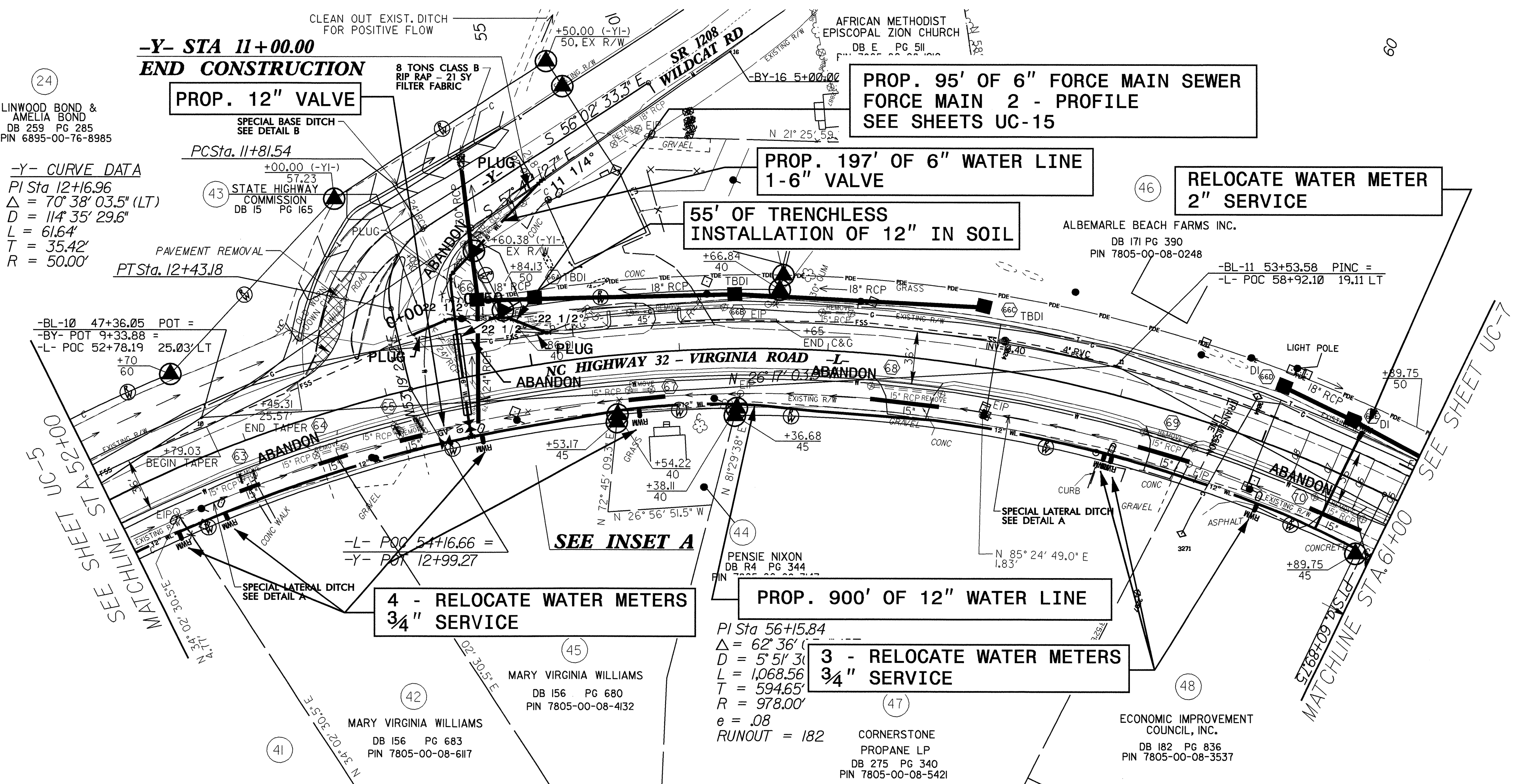
UTILITY CONSTRUCTION



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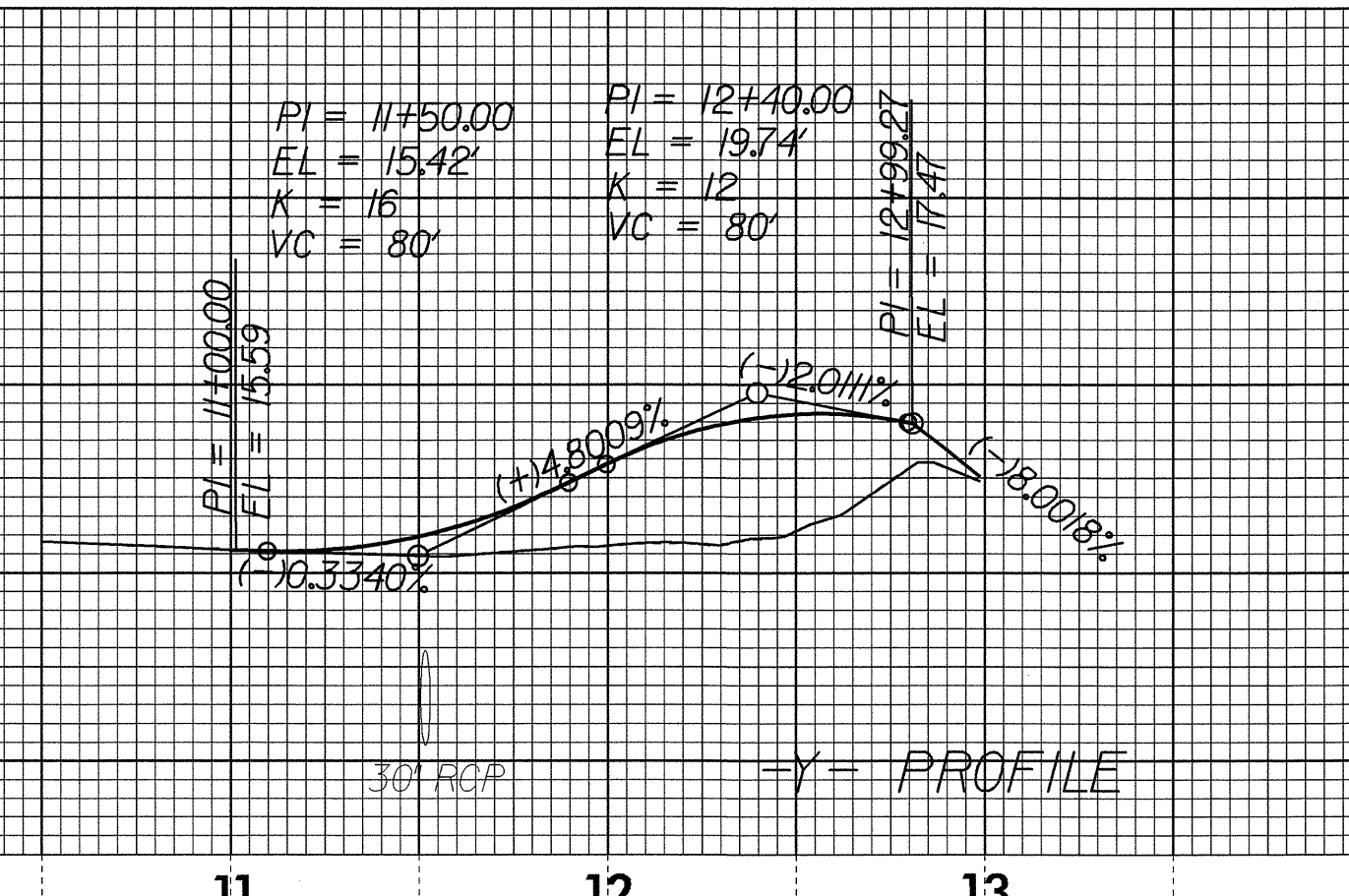
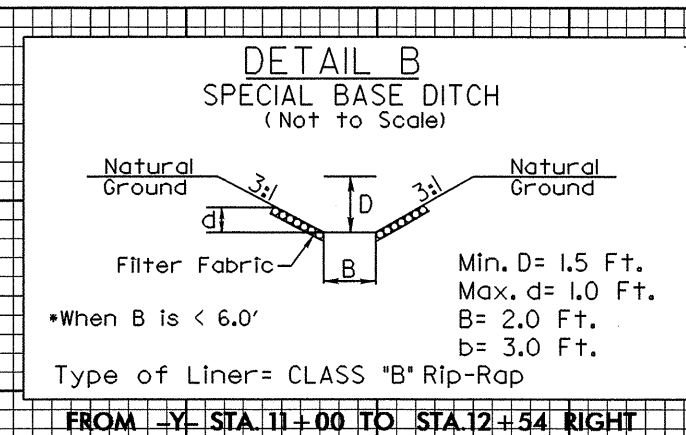
UTILITY CONSTRUCTION



24  
 LINWOOD BOND &  
 AMELIA BOND  
 DB 259 PG 285  
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 PI Sta 12+16.96  
 $\Delta = 70^\circ 38' 03.5''$  (LT)  
 $D = 114' 35'' 29.6''$   
 $L = 61.64'$   
 $T = 35.42'$   
 $R = 50.00'$

SEE SHEET UC-5  
 MATCHLINE STA 52+00

SEE SHEET UC-7  
 MATCHLINE STA 61+00

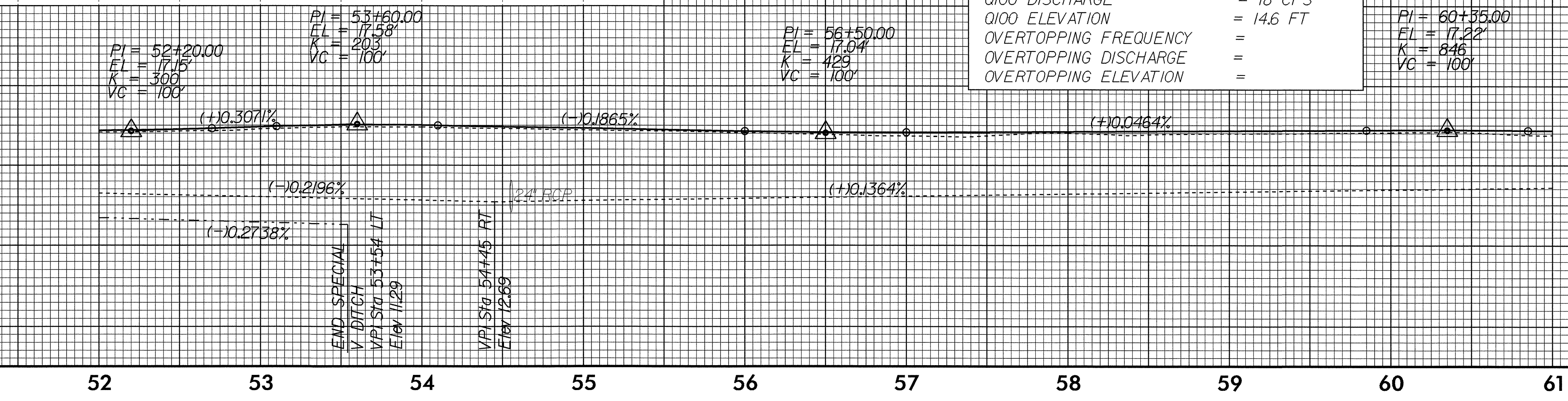
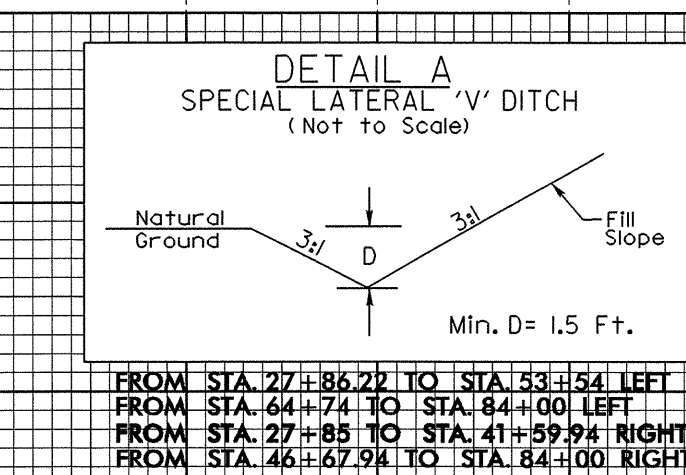


-Y- STA 11+50 PROP. 30" RCP PIPE

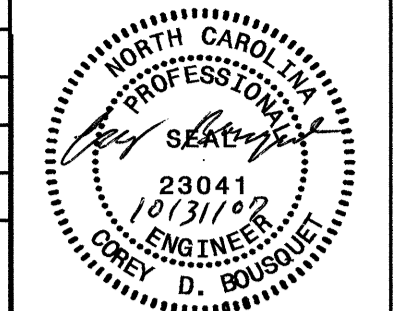
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DESIGN FREQUENCY	= 25 YRS
DESIGN DISCHARGE	= 14 CFS
DESIGN HW ELEV	= 12.3 FT
Q100 DISCHARGE	= 22 CFS
Q100 ELEVATION	= 12.75 FT
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OVERTOPPING ELEVATION	=

STA 54+57 PROP. 24" RCP PIPE

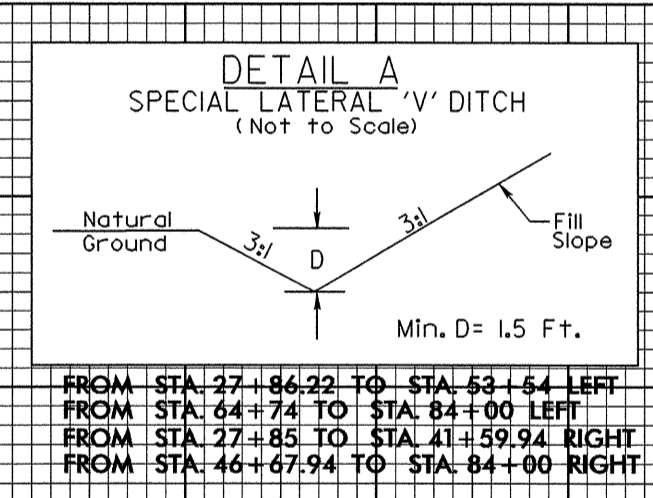
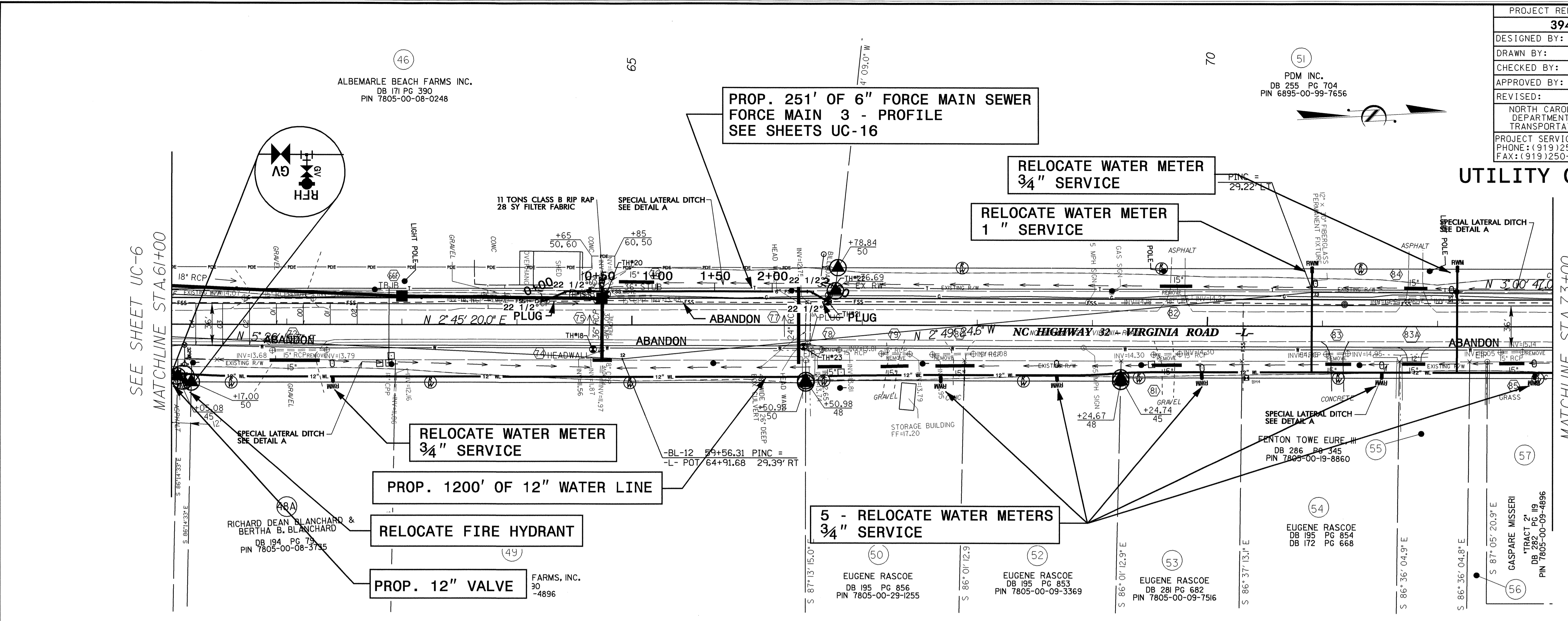
DRAINAGE AREA	= 29 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 15 CFS
DESIGN HW ELEV	= 14.2 FT
Q100 DISCHARGE	= 18 CFS
Q100 ELEVATION	= 14.6 FT
OVERTOPPING FREQUENCY	=
OVERTOPPING DISCHARGE	=
OVERTOPPING ELEVATION	=



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UTILITY CONSTRUCTION

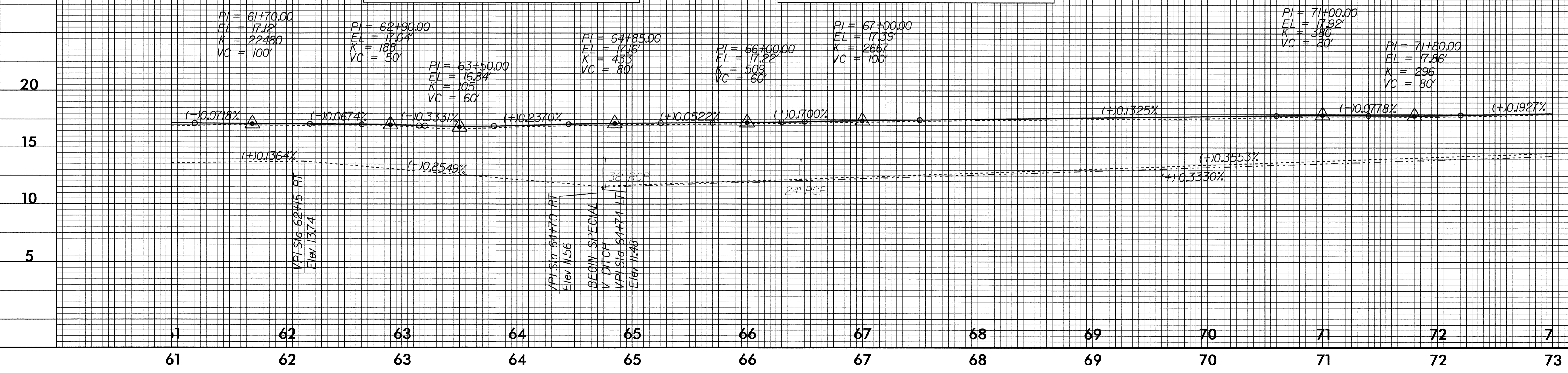


STA 64+74 PROP. 36" RCP PIPE

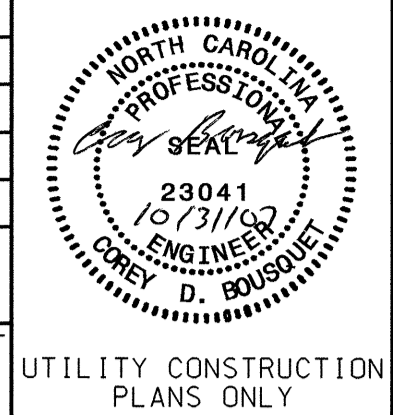
DRAINAGE AREA	= 24 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 14 CFS
DESIGN HW ELEV	= 13.1 FT
Q100 DISCHARGE	= 17 CFS
Q100 ELEVATION	= 13.4 FT
OVERTOPPING FREQUENCY	=
OVERTOPPING DISCHARGE	=
OVERTOPPING ELEVATION	=

STA 66+45 PROP. 24" RCP PIPE

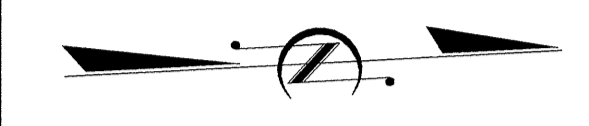
DRAINAGE AREA	= 17.5 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 15.2 CFS
DESIGN HW ELEV	=
Q100 DISCHARGE	= 18.4 CFS
Q100 ELEVATION	=
OVERTOPPING FREQUENCY	=
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OVERTOPPING ELEVATION	=



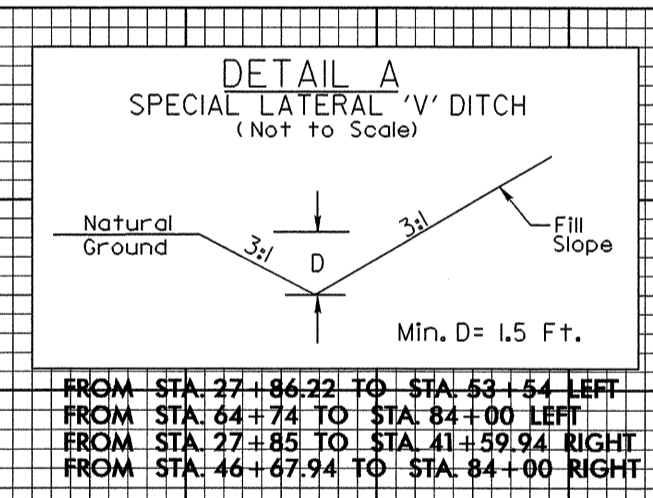
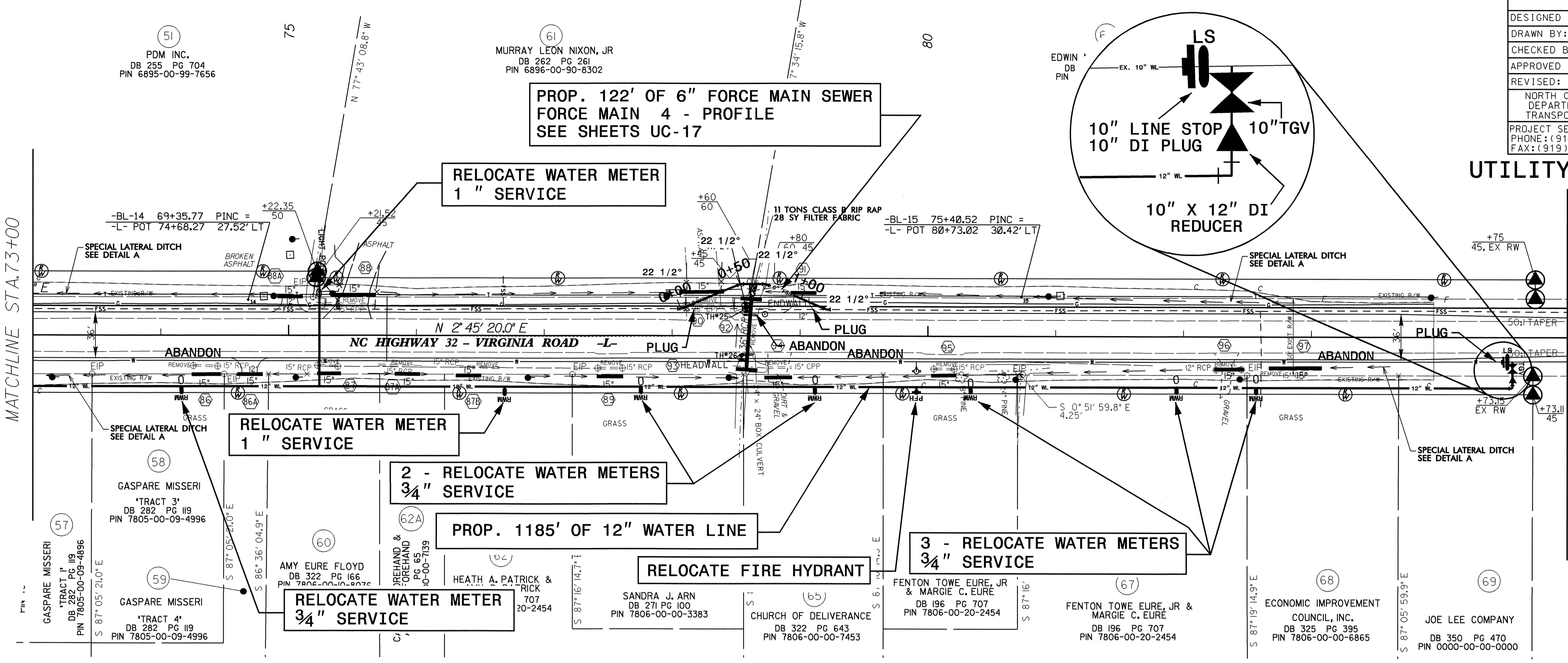
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UTILITY CONSTRUCTION

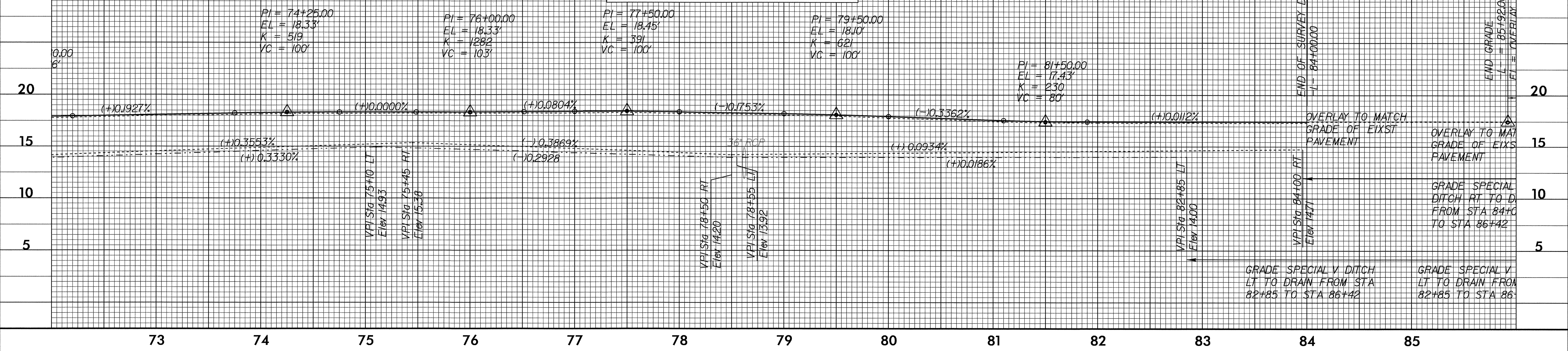


SEE SHEET UC-7  
 MATCHLINE STA. 73+00



STA 78+60 PROP. 36" RCP PIPE


DRAINAGE AREA	= 13.7 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 9 CFS
DESIGN HW ELEV	= 14.8 FT
Q100 DISCHARGE	= 11 CFS
Q100 ELEVATION	=
OVERTOPPING FREQUENCY	=
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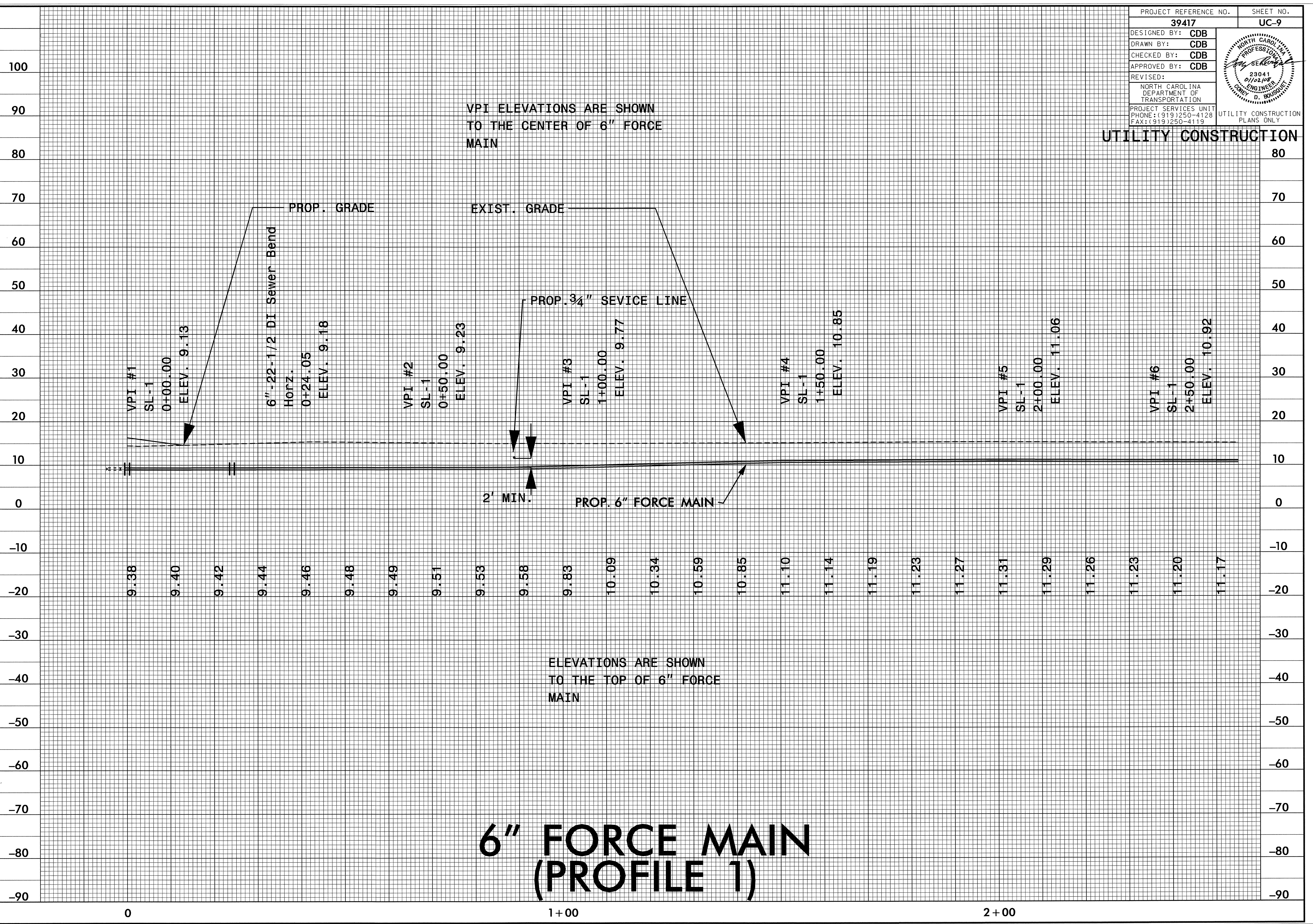
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PROJECT REFERENCE NO. <b>39417</b>	SHEET NO. <b>UC-9</b>
DESIGNED BY: <b>CDB</b>	
DRAWN BY: <b>CDB</b>	
CHECKED BY: <b>CDB</b>	
APPROVED BY: <b>CDB</b>	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

### UTILITY CONSTRUCTION



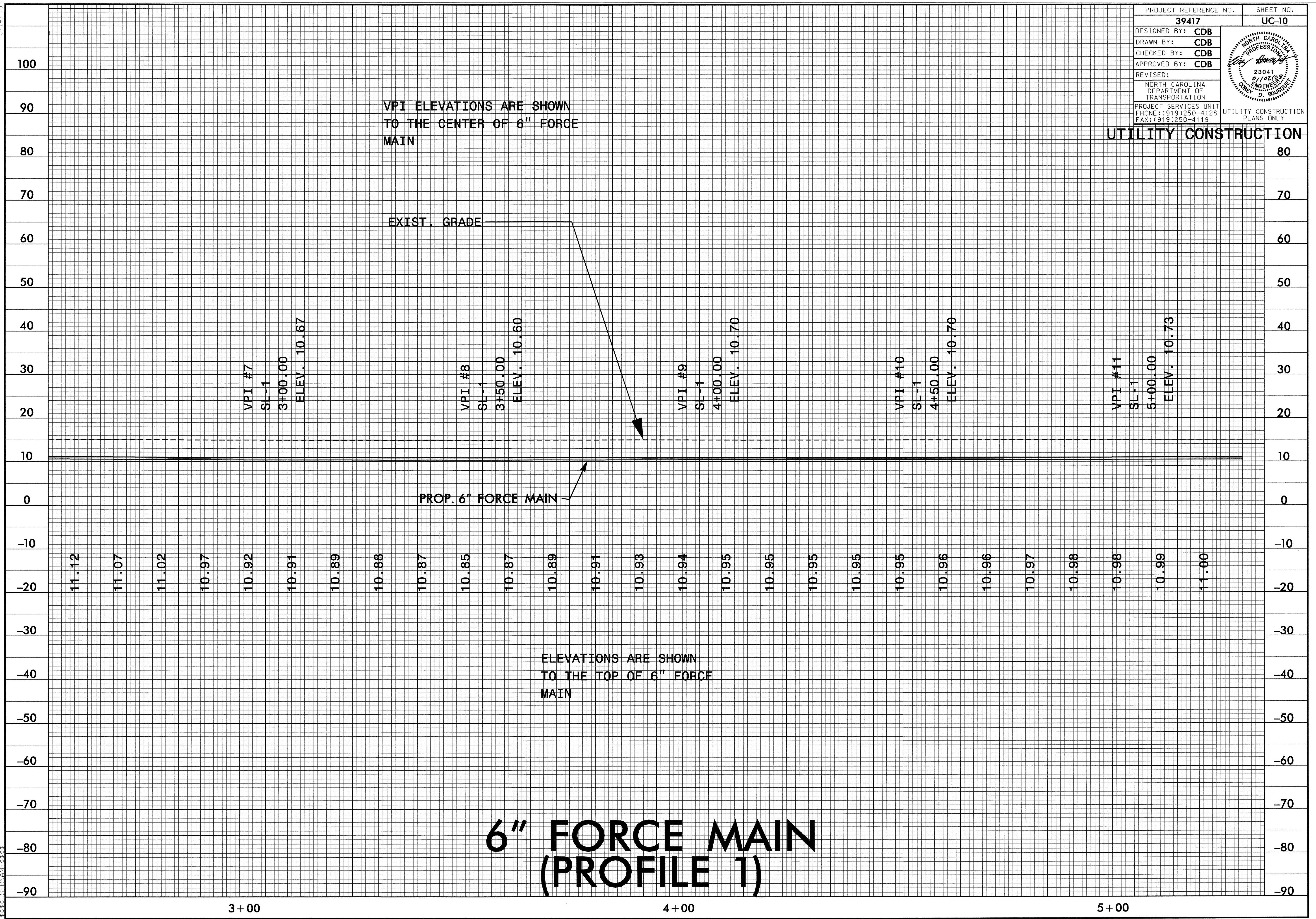
# 6" FORCE MAIN (PROFILE 1)

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
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DRAWN BY: CDB	
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	

### UTILITY CONSTRUCTION



VPI ELEVATIONS ARE SHOWN TO THE CENTER OF 6" FORCE MAIN

EXIST. GRADE

PROP. 6" FORCE MAIN

ELEVATIONS ARE SHOWN TO THE TOP OF 6" FORCE MAIN

# 6" FORCE MAIN (PROFILE 1)

3+00

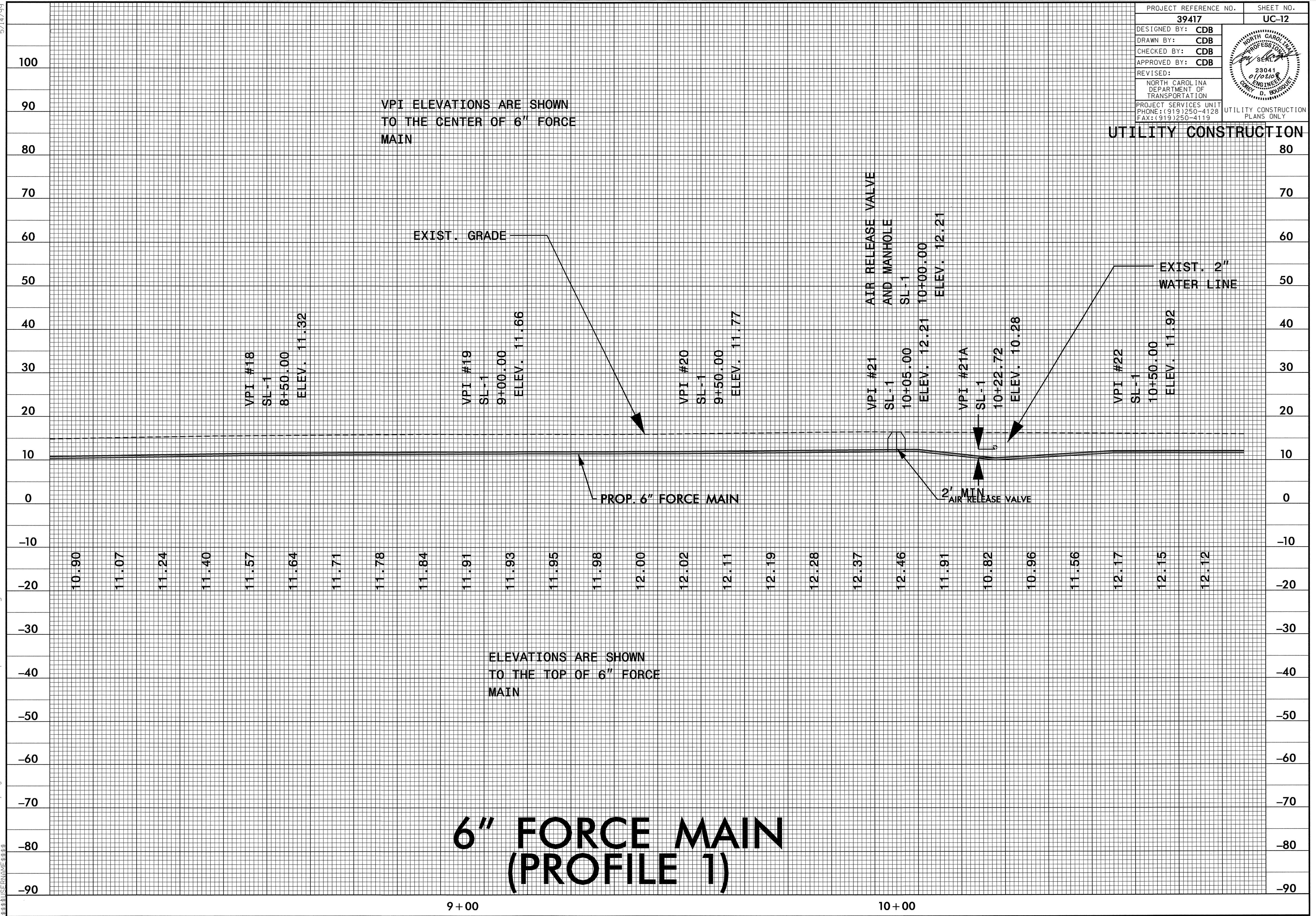
4+00

5+00



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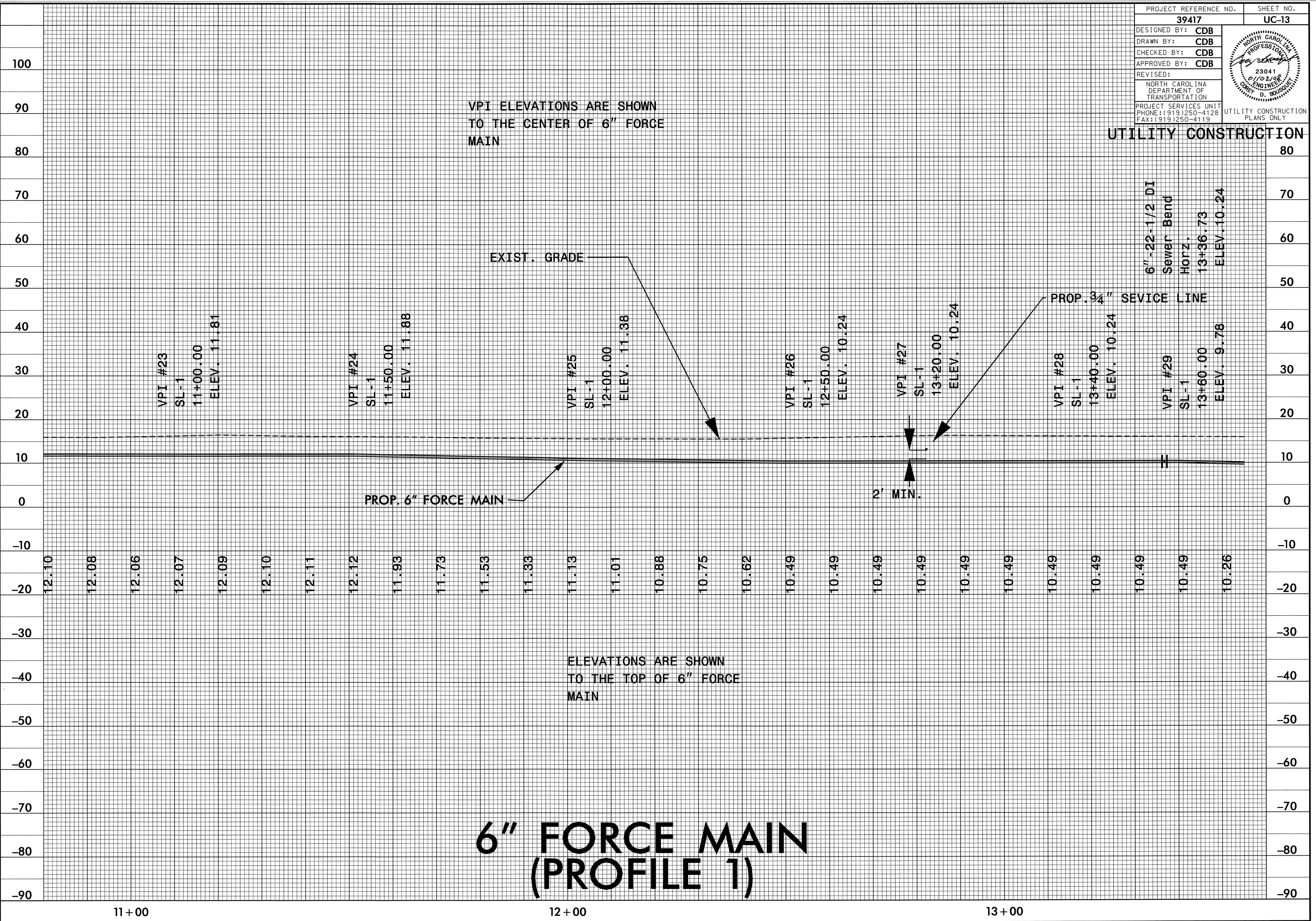
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DRAWN BY: CDB	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	



5/14/99

02-JAN-2008 09:54  
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PROJECT REFERENCE NO.	SHEET NO.
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DRAWN BY: CDB	
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	

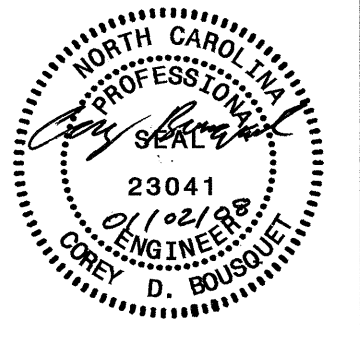


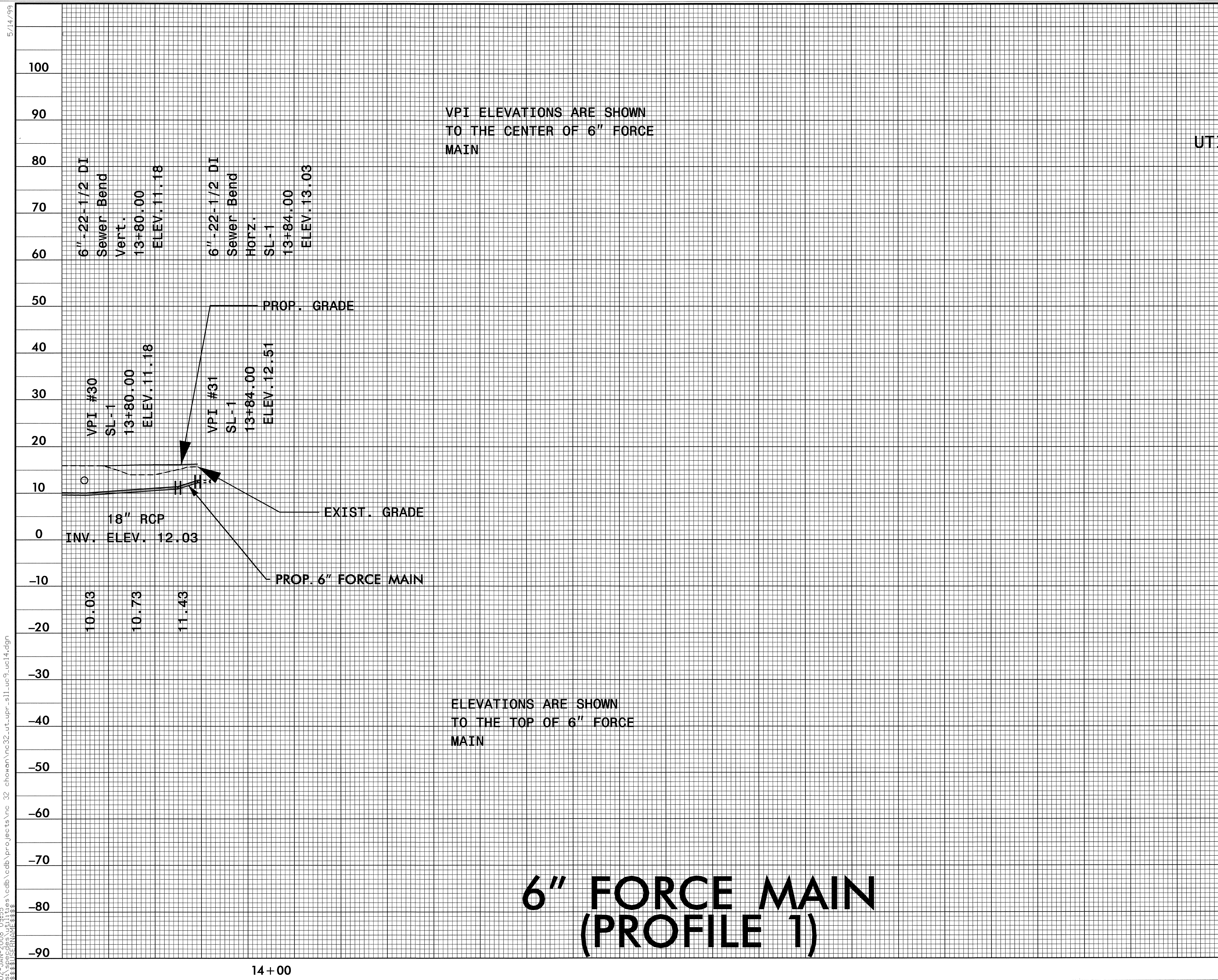
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DRAWN BY:	CDB		
CHECKED BY:	CDB		
APPROVED BY:	CDB		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY	
PROJECT SERVICES UNIT PHONE: (919)250-4128 FAX: (919)250-4119			



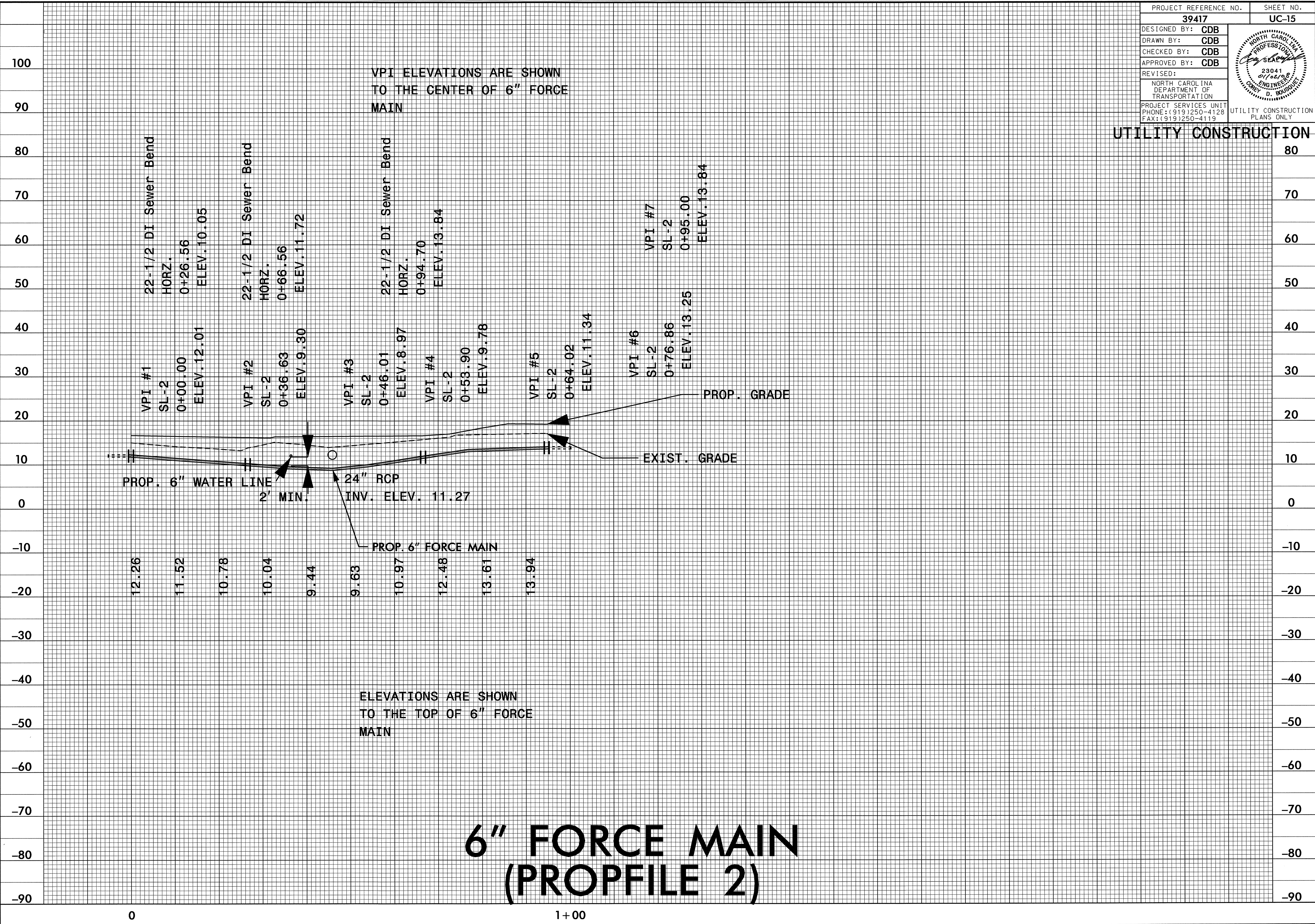
# 6" FORCE MAIN (PROFILE 1)

5/14/99

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PROJECT REFERENCE NO. <b>39417</b>	SHEET NO. <b>UC-15</b>
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DRAWN BY: <b>CDB</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	

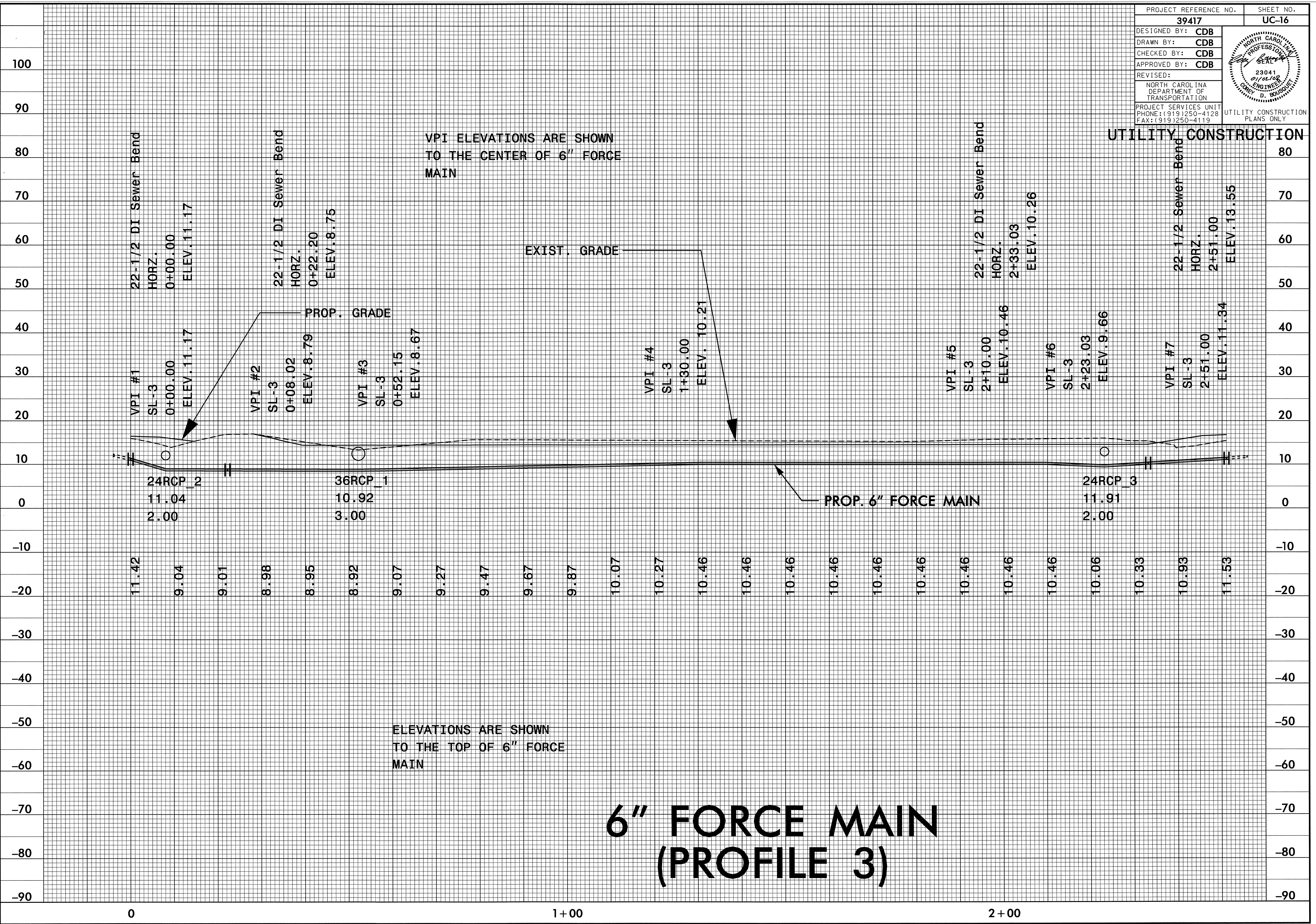
### UTILITY CONSTRUCTION



5/14/99

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PROJECT REFERENCE NO. <b>39417</b>	SHEET NO. <b>UC-16</b>
DESIGNED BY: <b>CDB</b>	
DRAWN BY: <b>CDB</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	



# 6" FORCE MAIN (PROFILE 3)

0

1+00

2+00

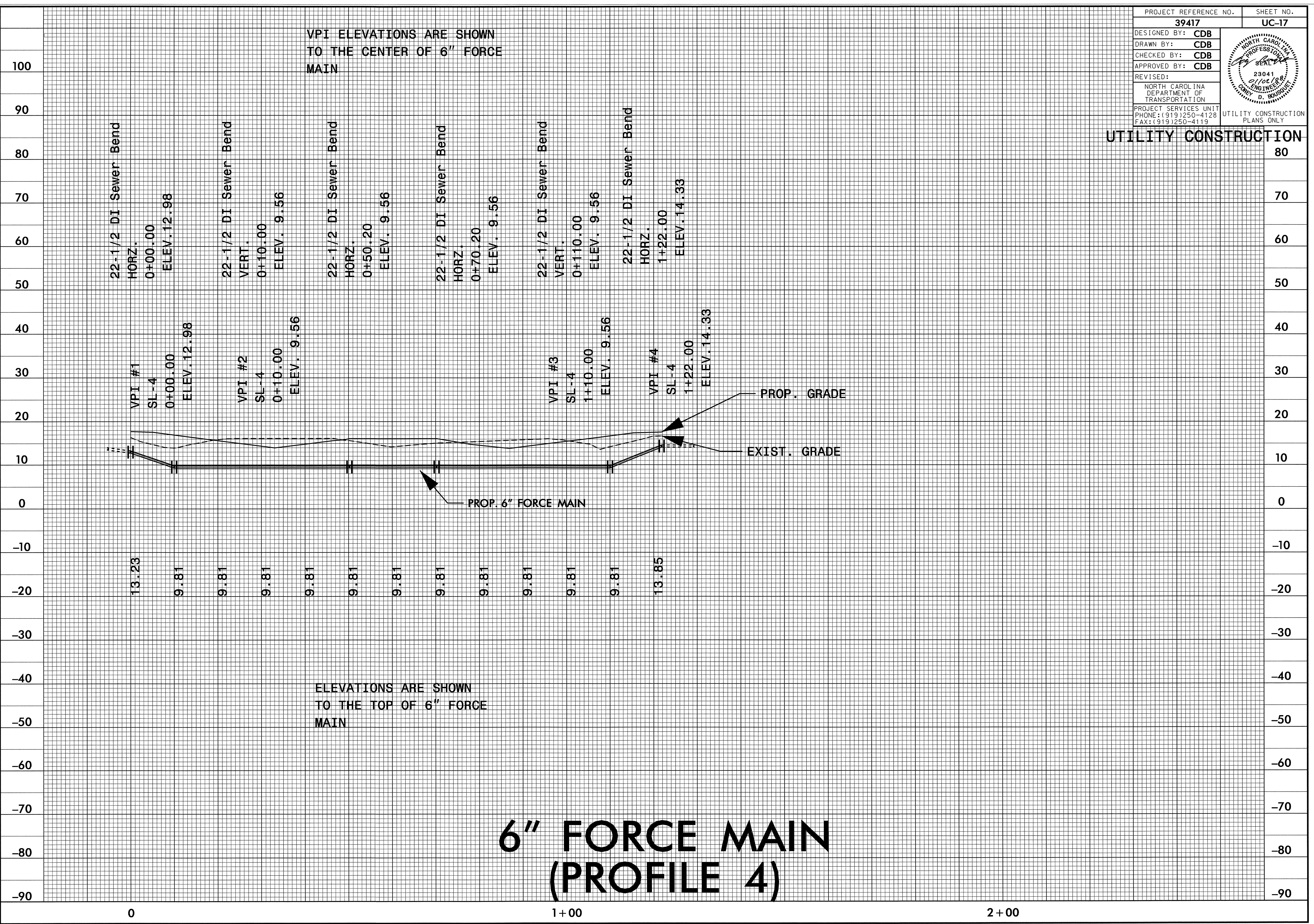


5/14/99

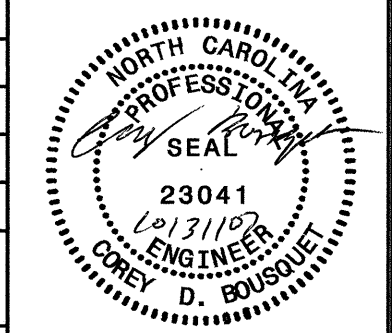
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PROJECT REFERENCE NO. <b>39417</b>	SHEET NO. <b>UC-17</b>
DESIGNED BY: <b>CDB</b>	
DRAWN BY: <b>CDB</b>	
CHECKED BY: <b>CDB</b>	
APPROVED BY: <b>CDB</b>	
REVISID:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

### UTILITY CONSTRUCTION



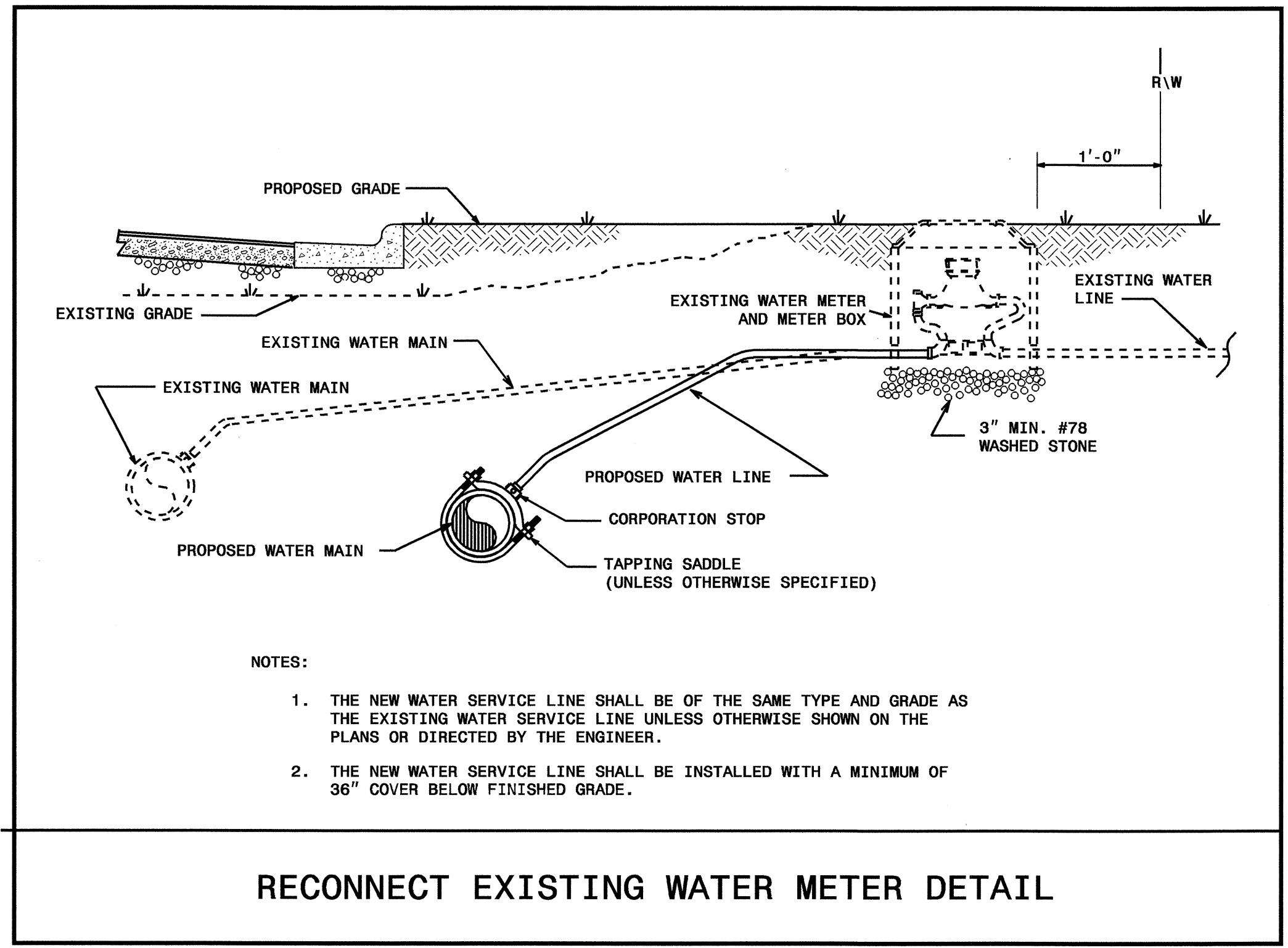
# 6" FORCE MAIN (PROFILE 4)



**UTILITY CONSTRUCTION**

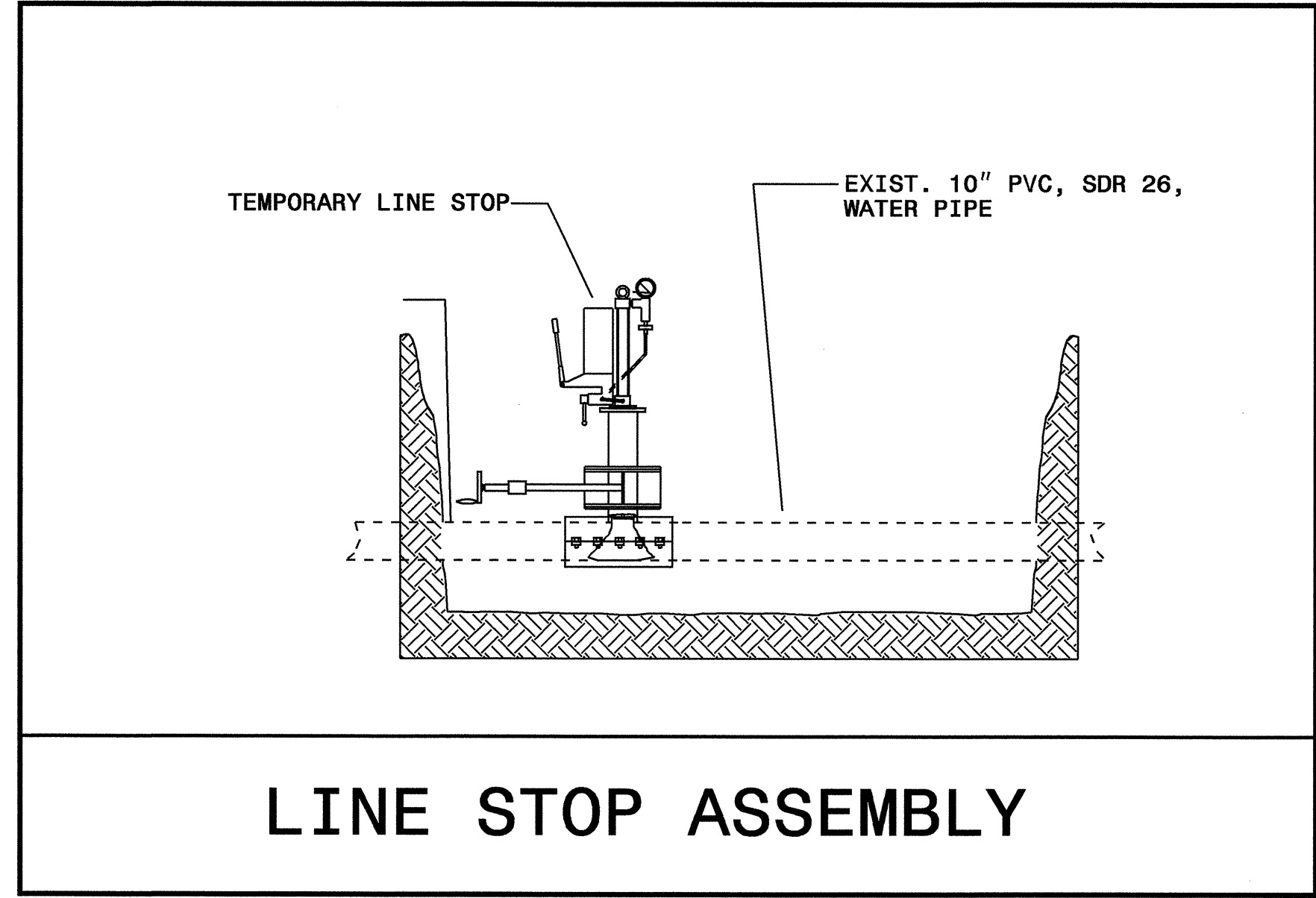
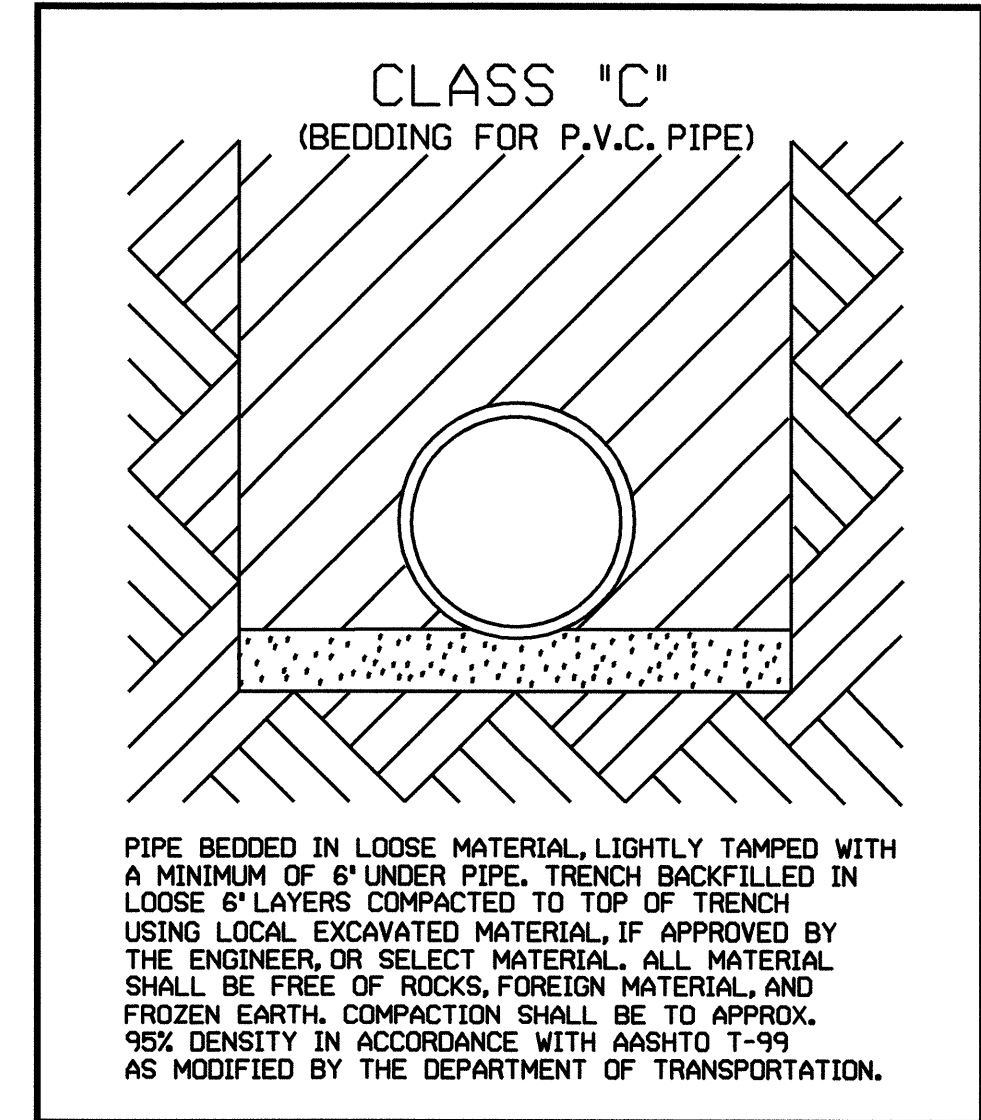
MAXIMUM TRENCH WIDTH AT TOP OF PIPE

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		

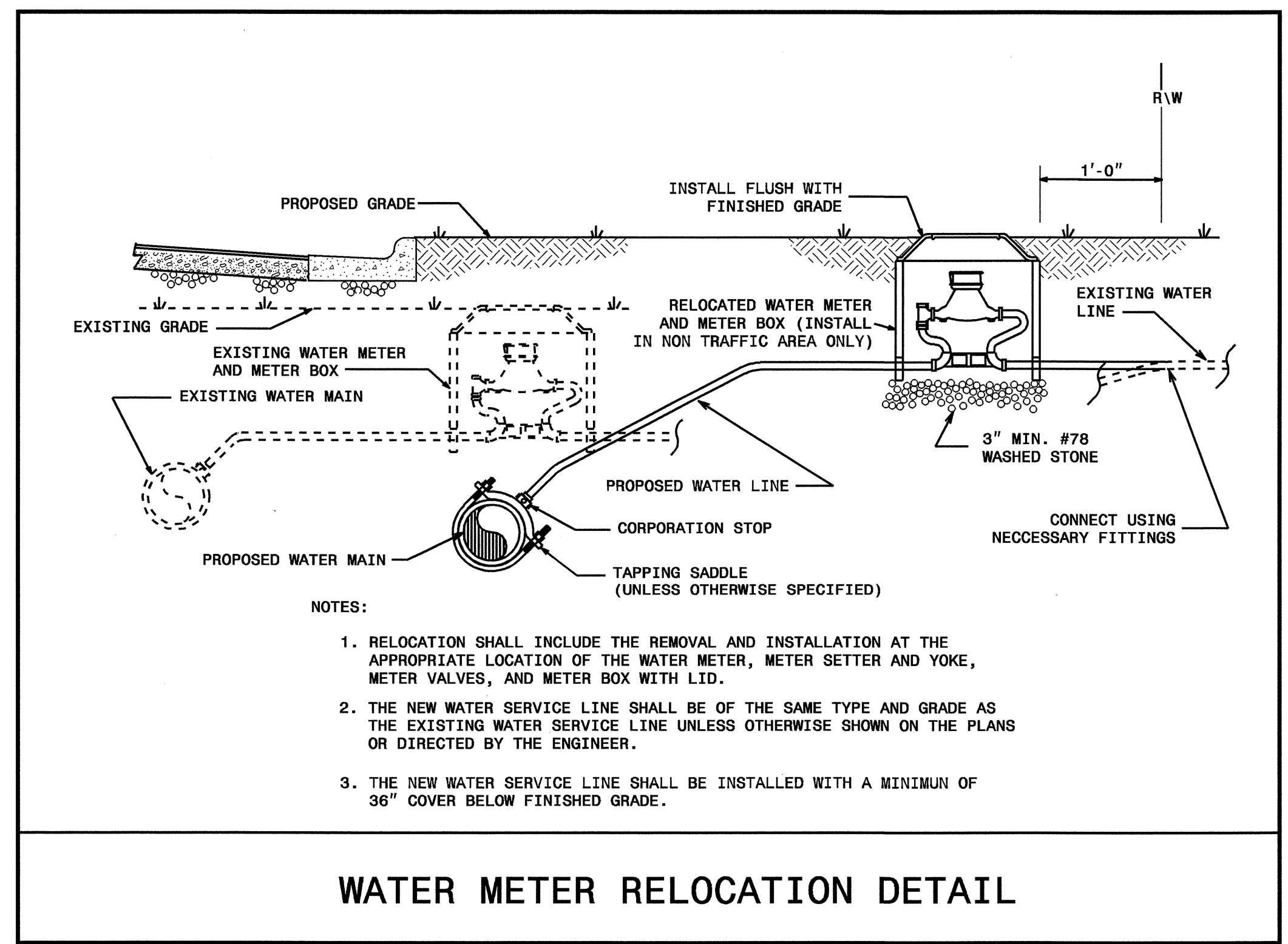


- NOTES:
1. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
  2. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM OF 36" COVER BELOW FINISHED GRADE.

**RECONNECT EXISTING WATER METER DETAIL**

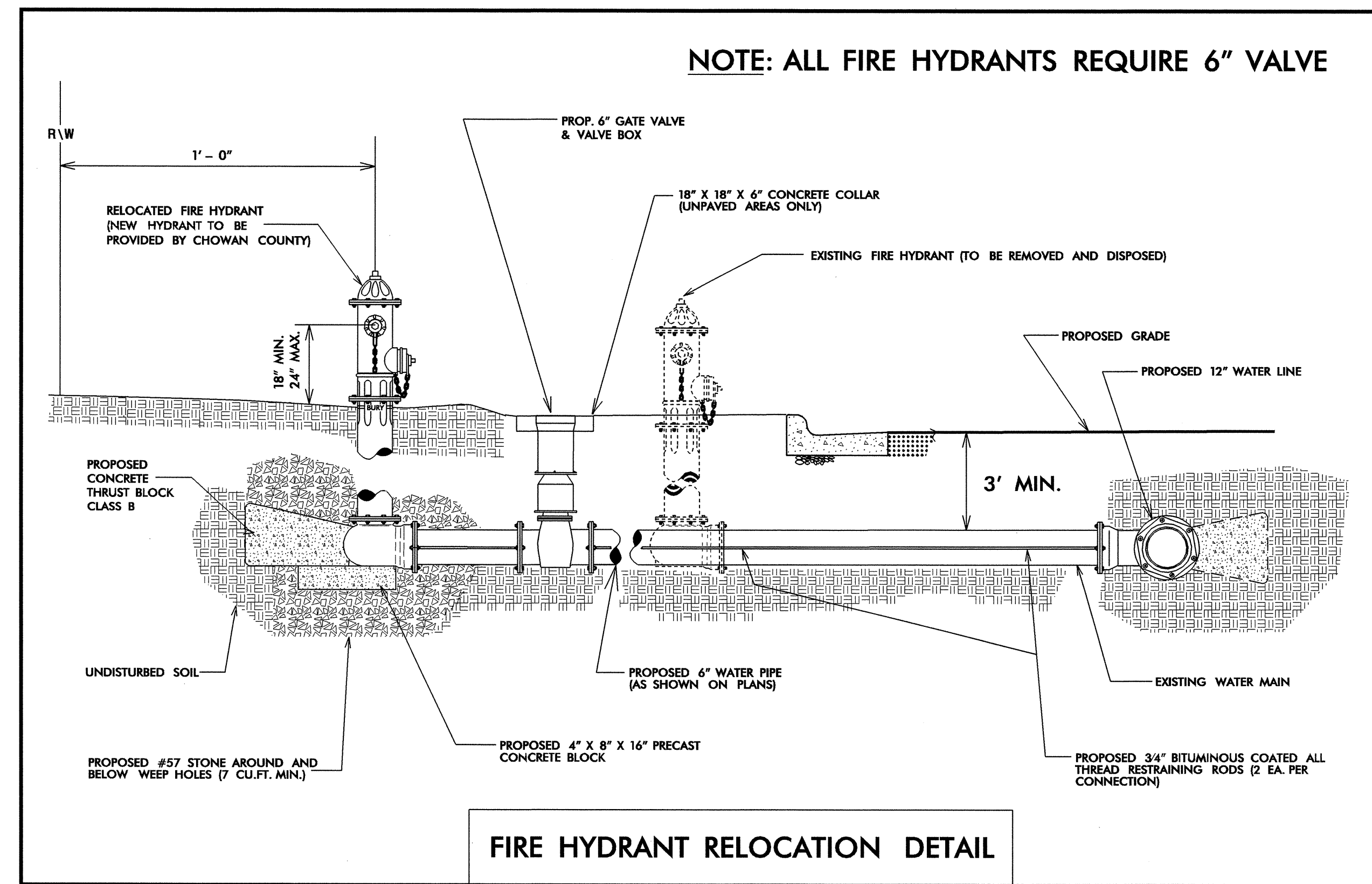


**LINE STOP ASSEMBLY**



- 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**



**NOTE: ALL FIRE HYDRANTS REQUIRE 6" VALVE**

**FIRE HYDRANT RELOCATION DETAIL**

5/14/99  
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