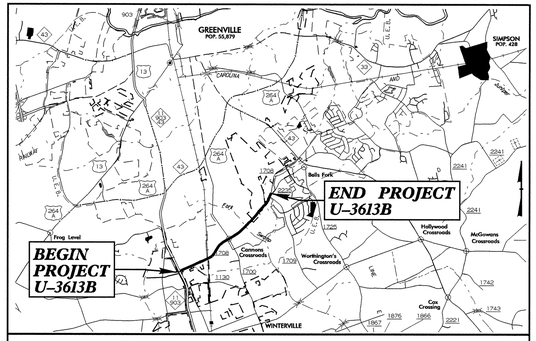
T.I.P. NO.	SHEET NO.
U-3613B	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY CONSTRUCTION PLANS
PITT COUNTY



VICINITY MAP

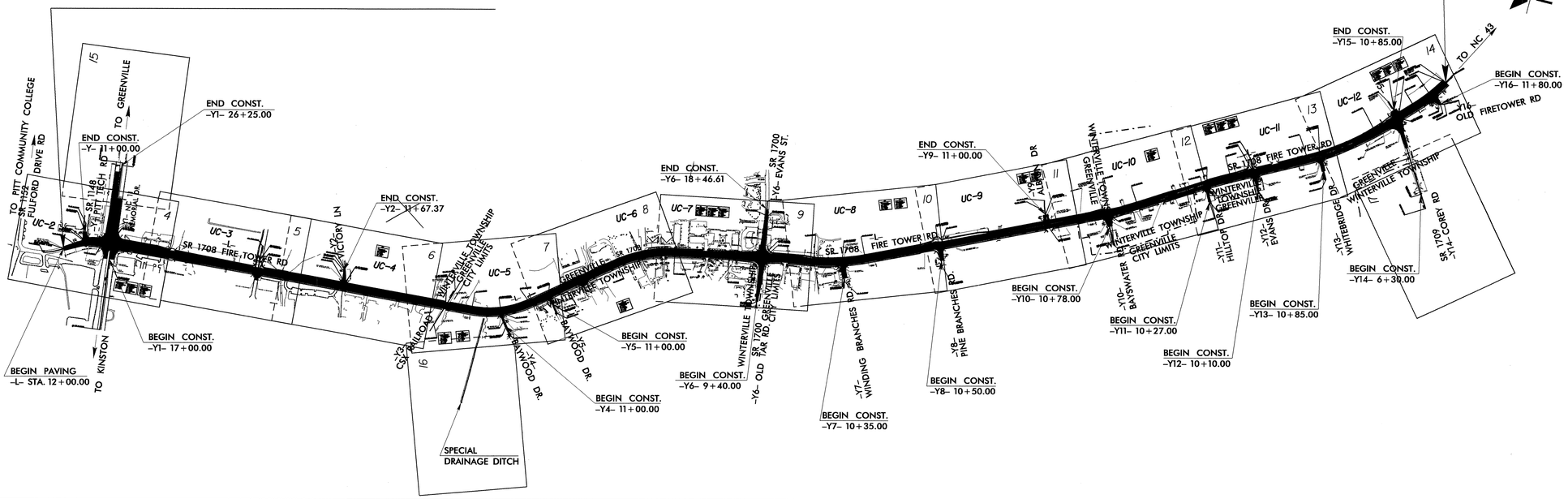
LOCATION: GREENVILLE – SR 1708 (FIRE TOWER ROAD) FROM WEST OF NC 11-903 TO EAST OF SR 1709 (COREY RD).

TYPE OF WORK: RELOCATION OF UTILITIES

NAD 83

STA. 11+98.70 -L- BEGIN TIP PROJECT U-3613B

STA. 151+70.00 -L- END TIP PROJECT U-3613B



TIP PROJECT: U-3613B

CONTRACT: C201449

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

5 25 0 5 10
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-12	UTILITY CONSTRUCTION PLAN SHEETS
UC-13 THRU UC- 18	DETAILS SHEET(S)
UC-19 THRU UC-32	PROFILE SHEET(S)

WATER AND SEWER OWNERS ON PROJECT

(1) GREENVILLE UTILITIES COMMISSION (12" PVC WATER LINE)
(2) GREENVILLE UTILITIES COMMISSION (8" PVC FORCE MAIN)
(3) GREENVILLE UTILITIES COMMISSION (4" MDPE GAS PIPE)
(4) TOWN OF WINTERVILLE (12" AND 8" PVC WATER LINES)

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 23044 ENGINEER COREY D. BOUSQUET 3/16/06

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
Kifah Kamil — UTILITIES PROJECT DESIGNER

09/08/99
16-MAR-2006 13:48
r:\utilities\cpy_ut\proj\u3613b_ut_ucl.dgn
KKAMIL AT PS214534

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-1A
DESIGNED BY: CDB	
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

NORTH CAROLINA PROFESSIONAL ENGINEER 23041 4/12/06 DONEY D. BOUSQUET

NOTES TO THE CONTRACTOR

LOCKING TEE AND VALVE SHALL BE INSTALLED AT ALL BRANCH LINES AND FIRE HYDRANTS

ALL 2″ GAS SERVICE LINES INSTALLED TO THE SOUTH SIDE OF FIRE TOWER ROAD SHALL BE DIRECTIONAL BORED. DIRECTIONAL BORE A MIN. OF 2′ BELOW ALL UNDERCUT.

INSTALL WATER LINE ENCASEMENTS A MIN. OF 1′ BELOW THE UNDERCUT.

THE CONTRACTOR SHALL KEEP THE EXISTING WATER LINES AND GAS LINE IN SERVICE UNTIL ALL SERVICES AND BRANCH LINES ARE PUT INTO SERVICE FROM THE PROPOSED LINES.

THE TOWN OF WINTERVILLE WILL NOT ALLOW CROSS CONNECTIONS TO GUC WATER SYSTEM, NO WATER FROM GUC WATER SYSTEM SHALL BE ALLOWED TO ENTER THE TOWN OF WINTERVILLE WATER SYSTEM.

ALL MATERIALS FOR THE GAS LINE WILL BE SUPPLIED BY GUC.

AT ALL STREAM CROSSING THE CONTRACTOR SHALL INSTALL THE UNDERGROUND UTILITIES WITHOUT DISTURBING THE BUFFER ZONES EXCEPT FOR THE INSTALLATIONS THAT ARE PERMITTED TO.

ALL DI FITTINGS AND PIPES SHALL BE ENCASED WITH POLYETHYLENE WRAP IN ACCORDANCE WITH ANSI A21.588 (AWWA STANDARD C105).

THE FIRE HYDRANTS LOCATED IN PROPOSED FILL SECTIONS MAY NEED TO BE ADJUSTED MULTIPLE TIMES. THE COST TO RAISE THE FIRE HYDRANTS WILL BE CONSIDERED INCIDENTAL TO RELOCATE FIRE HYDRANT.

THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE 36″ DRAINAGE PIPE ON THE SOUTH SIDE OF FIRE TOWER ROAD FROM EAST OF WHITLEY DRIVE TO JUST WEST OF THE RAILROAD TRACKS TO ENSURE THERE WILL BE NO DAMAGE TO THE PROPOSED 6″ WATER LINE.

UPON APPROVAL OF THE WORK, THE CONTRACTOR SHALL SUBMIT AS BUILT PLANS TO GUC, WINTERVILLE AND CSX RAILROAD (300′ EAST AND WEST OF THE TRACKS) EITHER IN A REPRODUCIBLE MYLAR OR DIGITAL COPY FORMAT. ONE (1) PRINT OF THE FINAL AS-BUILT PLANS SHALL ALSO BE PROVIDED. THE AS BUILT PLANS SHALL INCLUDE BOTH WATER AND SEWER COMBINED ON EACH DRAWING. THE MINIMUM SHEET SIZE FOR AS BUILT DRAWINGS SHALL BE 18″ X 24″. THE RAILROAD REQUIRES 11″ X 17″.

THE INSTALLATION OF UNDERGROUND UTILITIES WILL BE EXTREMELY CLOSE TO TRANSMISSION POWER POLES. THE CONTRACTOR SHALL PROTECT THE TRANSMISSION POLES FROM BEING DAMAGED.

THERE ARE EXISTING UNDERGROUND HIGH VOLTAGE POWER LINES 20′ TO 50′ WEST OF THE RAILROAD TRACKS, WITH ALL THE UNDERGROUND UTILITIES BEING INSTALLED IN THIS AREA THE CONTRACTOR WILL NEED TO COORDINATE THEIR INSTALLATION WITH GUC POWER.

IN THE AREAS WHERE THE PROP. WATER MAINS ARE BEING INSTALLED LESS THAN THREE FEET BELOW THE EXISTING GRADE IN FILL SECTIONS, THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS NOT TO DAMAGE THE PIPE OR VALVES.

WATER METERS THAT ARE RELOCATED TEMPORARILY TO STAGE THE WATER LINE CONSTRUCTION WILL BE PAID FOR AS RELOCATE WATER METER.

UTILITY CONSTRUCTION

THE INSERT VALVES SHALL BE RESTRAINED USING A THRUST COLLAR AND RODS. THE CONTRACTOR SHALL DESIGN A THRUST COLLAR FOR THE ENGINEER'S APPROVAL. ALL COST FOR THE THRUST COLLARS WILL BE INCIDENTAL TO THE COST OF THE INSERT VALVE.

THE TYPE LINES THE INSERT VALVES SHALL BE INSTALL ON:

AC WATER LINE
PVC FORCE MAIN
PVC WATER MAIN

THE INSERT VALVES WILL BE INSTALLED ON ACTIVE WATER LINES OR FORCE MAINS THAT CAN NOT BE SHUT DOWN DURING THE INSTALLATION.

DRAINAGE INVERTS SHOWN ON THE PROFILES NEED TO BE FIELD VERIFIED BEFORE THE UNDERGROUND UTILITIES ARE INSTALLED. THE 12″ WATER AND 4″ GAS MAIN SHALL BE INSTALLED A MIN. OF 2′ BELOW THE INVERT OF THE DRAINAGE PIPES, MEASURED TO THE TOP OF THE 12″ WATER AND 4″ GAS MAIN. ON THE PROFILES, THE 2′ SEPARATION WERE SHOWN TO THE CENTER OF THE PIPES AND SHOULD HAVE BEEN SHOWN TO THE TOP.

THE 8″ FORCE MAIN SHALL BE INSTALLED A MIN. OF 18″ BELOW THE 12″ WATER LINE EXCEPT WHERE THERE IS 10′ HORIZONTAL SEPARATION OR BOTH PIPES ARE MADE OF FERROUS MATERIALS.

FOR Y-LINES THAT CAN NOT BE OPEN CUT, 120′ OF 24″ STEEL ENCASEMENT WAS ADDED TO THE CONTRACT.

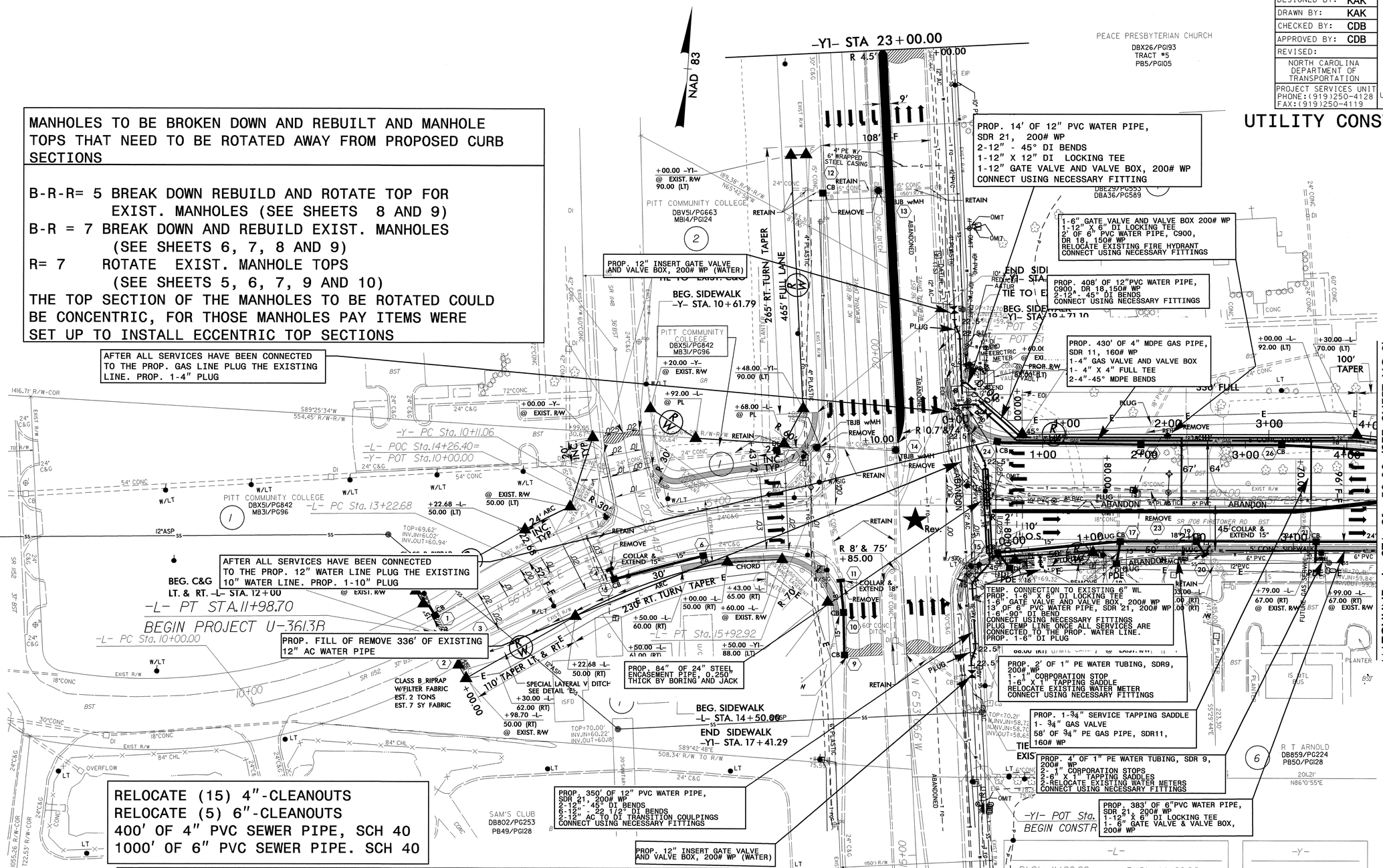
PROJECT REFERENCE NO.	SHEET NO.
U3613B	UC-2
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 23041 7/22/06 ENGINEER COREY D. BOUSQUET

UTILITY CONSTRUCTION

MANHOLES TO BE BROKEN DOWN AND REBUILT AND MANHOLE TOPS THAT NEED TO BE ROTATED AWAY FROM PROPOSED CURB SECTIONS

B-R-R= 5 BREAK DOWN REBUILD AND ROTATE TOP FOR EXIST. MANHOLES (SEE SHEETS 8 AND 9)
B-R = 7 BREAK DOWN AND REBUILD EXIST. MANHOLES (SEE SHEETS 6, 7, 8 AND 9)
R= 7 ROTATE EXIST. MANHOLE TOPS (SEE SHEETS 5, 6, 7, 9 AND 10)
THE TOP SECTION OF THE MANHOLES TO BE ROTATED COULD BE CONCENTRIC, FOR THOSE MANHOLES PAY ITEMS WERE SET UP TO INSTALL ECCENTRIC TOP SECTIONS



RELOCATE (15) 4"-CLEANOUTS
RELOCATE (5) 6"-CLEANOUTS
400' OF 4" PVC SEWER PIPE, SCH 40
1000' OF 6" PVC SEWER PIPE. SCH 40

UTILITIES OWNERS

GREENVILLE UTILITIES COMMISSION

1) 12" PVC WATER LINE, C900, DR18
2) 4" MDPE GAS MAIN, SDR 11

TOWN OF WINTERVILLE

1) 6" PVC WATER LINE, SDR 21
2) 12" PVC WATER LINE, SDR 21

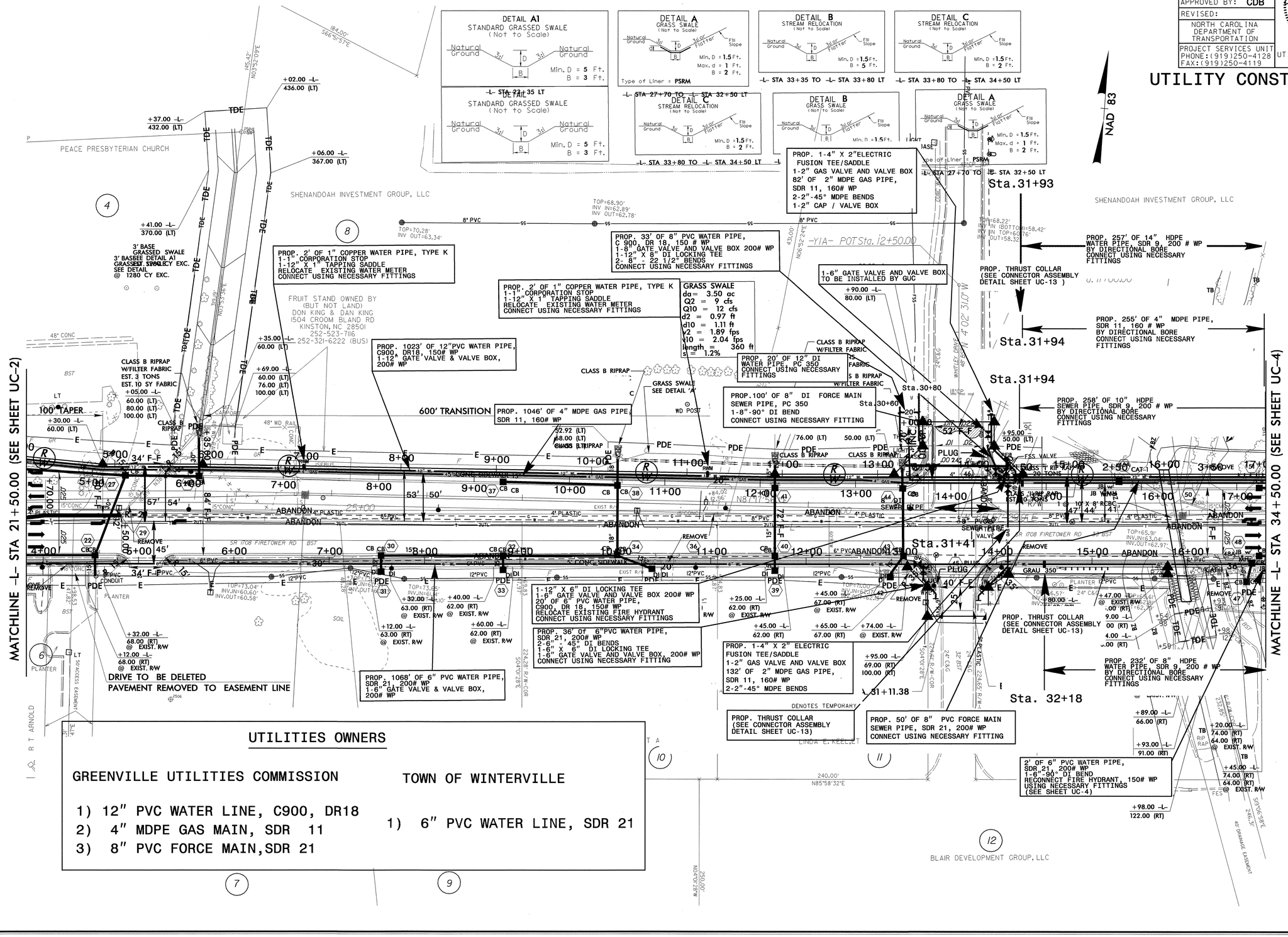
5/14/99

22-MAR-2006 07:29
cbousquet

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-3
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 4/11/06

UTILITY CONSTRUCTION



UTILITIES OWNERS

GREENVILLE UTILITIES COMMISSION

1) 12" PVC WATER LINE, C900, DR18
2) 4" MDPE GAS MAIN, SDR 11
3) 8" PVC FORCE MAIN, SDR 21

TOWN OF WINTERVILLE

1) 6" PVC WATER LINE, SDR 21

5/14/99

PS214554 4/11/2006 u3613bs05_ut_uc3_psh kkamil PS_Oce34dtbond

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-4
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

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 7/16/06 COREY D. BUSQUIET

UTILITY CONSTRUCTION

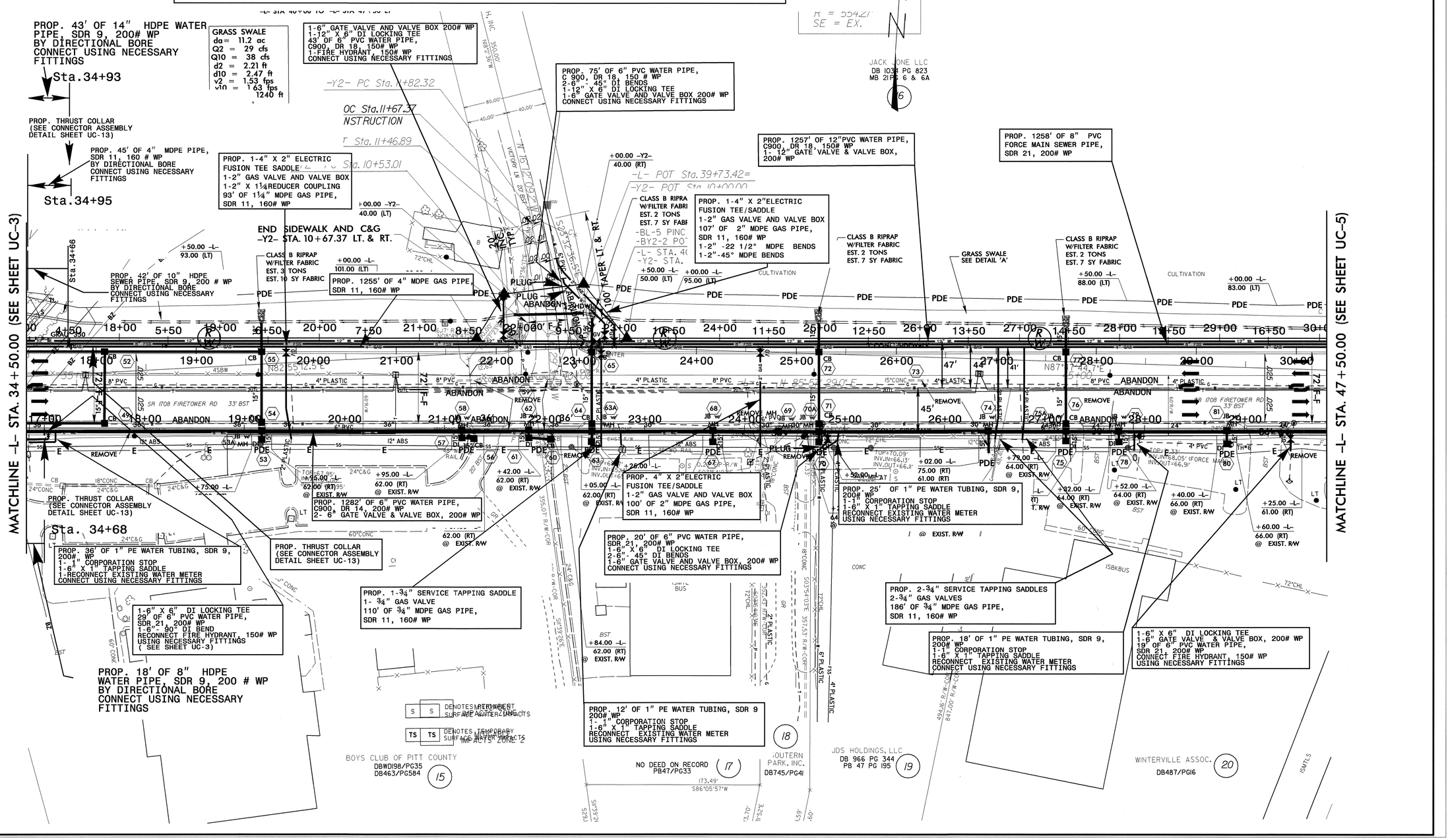
UTILITIES OWNERS

GREENVILLE UTILITIES COMMISSION

1) 12" PVC WATER LINE, C900, DR18
2) 4" MDPE GAS MAIN, SDR 11
3) 8" PVC FORCE MAIN, SDR 21

TOWN OF WINTERVILLE

1) 6" PVC WATER LINE, C900, DR14



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cbowman

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-5

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 COREY D. BOUSQUET
4/26/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

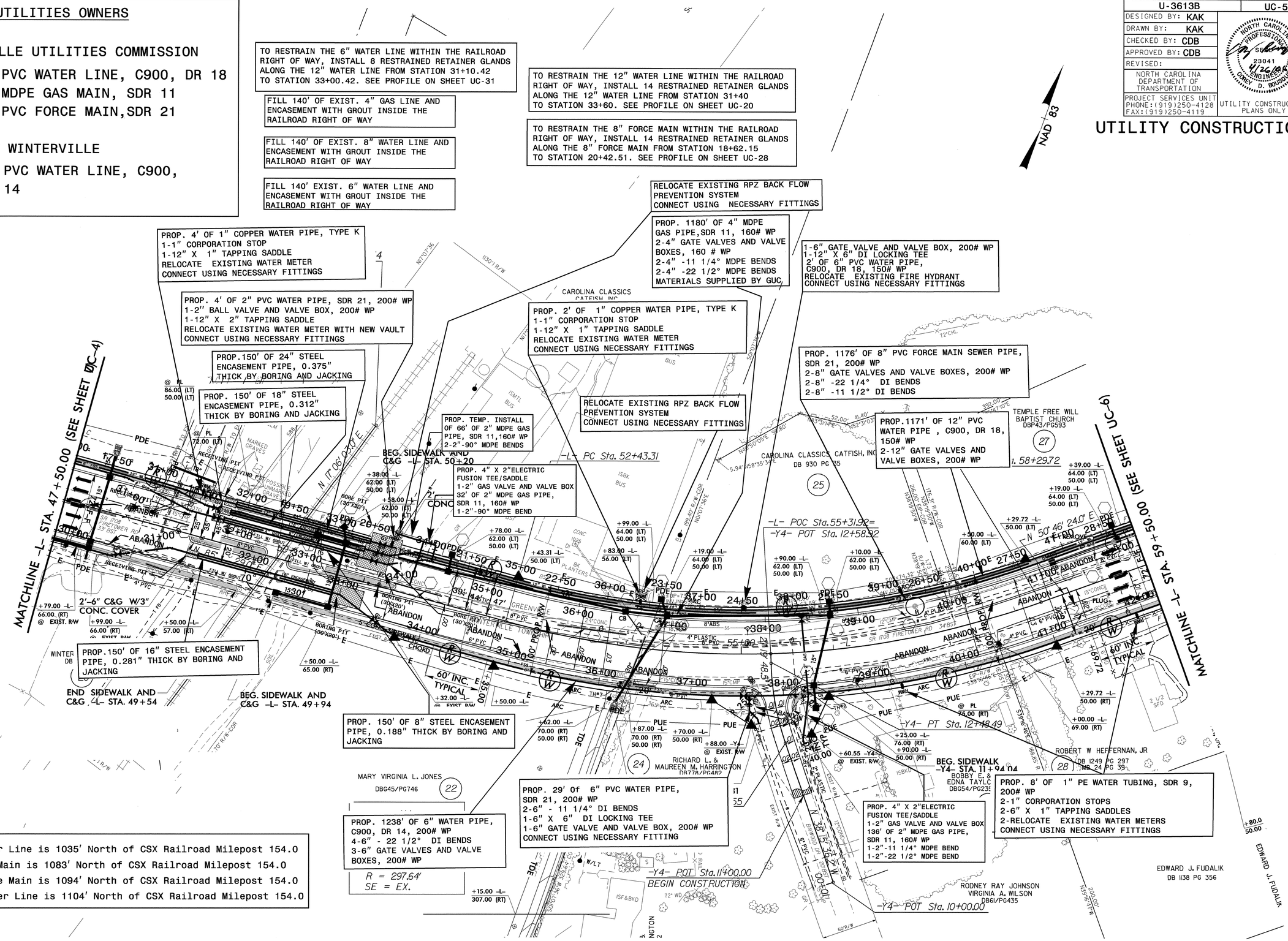
UTILITIES OWNERS

GREENVILLE UTILITIES COMMISSION

1) 12″ PVC WATER LINE, C900, DR 18
2) 4″ MDPE GAS MAIN, SDR 11
3) 8″ PVC FORCE MAIN, SDR 21

TOWN OF WINTERVILLE

1) 6″ PVC WATER LINE, C900, DR 14



TO RESTRAIN THE 6″ WATER LINE WITHIN THE RAILROAD RIGHT OF WAY, INSTALL 8 RESTRAINED RETAINER GLANDS ALONG THE 12″ WATER LINE FROM STATION 31+10.42 TO STATION 33+00.42. SEE PROFILE ON SHEET UC-31

FILL 140′ OF EXIST. 4″ GAS LINE AND ENCASEMENT WITH GROUT INSIDE THE RAILROAD RIGHT OF WAY

FILL 140′ OF EXIST. 8″ WATER LINE AND ENCASEMENT WITH GROUT INSIDE THE RAILROAD RIGHT OF WAY

FILL 140′ EXIST. 6″ WATER LINE AND ENCASEMENT WITH GROUT INSIDE THE RAILROAD RIGHT OF WAY

TO RESTRAIN THE 12″ WATER LINE WITHIN THE RAILROAD RIGHT OF WAY, INSTALL 14 RESTRAINED RETAINER GLANDS ALONG THE 12″ WATER LINE FROM STATION 31+40 TO STATION 33+60. SEE PROFILE ON SHEET UC-20

TO RESTRAIN THE 8″ FORCE MAIN WITHIN THE RAILROAD RIGHT OF WAY, INSTALL 14 RESTRAINED RETAINER GLANDS ALONG THE 8″ FORCE MAIN FROM STATION 18+62.15 TO STATION 20+42.51. SEE PROFILE ON SHEET UC-28

RELOCATE EXISTING RPZ BACK FLOW PREVENTION SYSTEM
CONNECT USING NECESSARY FITTINGS

PROP. 4′ OF 1″ COPPER WATER PIPE, TYPE K
1-1″ CORPORATION STOP
1-12″ X 1″ TAPPING SADDLE
RELOCATE EXISTING WATER METER
CONNECT USING NECESSARY FITTINGS

PROP. 1180′ OF 4″ MDPE GAS PIPE, SDR 11, 160# WP
2-4″ GATE VALVES AND VALVE BOXES, 160 # WP
2-4″ -11 1/4° MDPE BENDS
2-4″ -22 1/2° MDPE BENDS
MATERIALS SUPPLIED BY GUC

1-6″ GATE VALVE AND VALVE BOX, 200# WP
1-12″ X 6″ DI LOCKING TEE
2′ OF 6″ PVC WATER PIPE, C900, DR 18, 150# WP
RELOCATE EXISTING FIRE HYDRANT
CONNECT USING NECESSARY FITTINGS

PROP. 4′ OF 2″ PVC WATER PIPE, SDR 21, 200# WP
1-2″ BALL VALVE AND VALVE BOX, 200# WP
1-12″ X 2″ TAPPING SADDLE
RELOCATE EXISTING WATER METER WITH NEW VAULT
CONNECT USING NECESSARY FITTINGS

PROP. 2′ OF 1″ COPPER WATER PIPE, TYPE K
1-1″ CORPORATION STOP
1-12″ X 1″ TAPPING SADDLE
RELOCATE EXISTING WATER METER
CONNECT USING NECESSARY FITTINGS

PROP. 150′ OF 24″ STEEL ENCASEMENT PIPE, 0.375″ THICK BY BORING AND JACKING

PROP. 1176′ OF 8″ PVC FORCE MAIN SEWER PIPE, SDR 21, 200# WP
2-8″ GATE VALVES AND VALVE BOXES, 200# WP
2-8″ -22 1/4° DI BENDS
2-8″ -11 1/2° DI BENDS

PROP. 150′ OF 18″ STEEL ENCASEMENT PIPE, 0.312″ THICK BY BORING AND JACKING

RELOCATE EXISTING RPZ BACK FLOW PREVENTION SYSTEM
CONNECT USING NECESSARY FITTINGS

PROP. TEMP. INSTALL OF 66′ OF 2″ MDPE GAS PIPE, SDR 11,160# WP
2-2″-90° MDPE BENDS

PROP. 1171′ OF 12″ PVC WATER PIPE, C900, DR 18, 150# WP
2-12″ GATE VALVES AND VALVE BOXES, 200# WP

PROP. 4″ X 2″ELECTRIC FUSION TEE/SADDLE
1-2″ GAS VALVE AND VALVE BOX
32′ OF 2″ MDPE GAS PIPE, SDR 11, 160# WP
1-2″-90° MDPE BEND

PROP. 150′ OF 16″ STEEL ENCASEMENT PIPE, 0.281″ THICK BY BORING AND JACKING

PROP. 150′ OF 8″ STEEL ENCASEMENT PIPE, 0.188″ THICK BY BORING AND JACKING

PROP. 29′ Of 6″ PVC WATER PIPE, SDR 21, 200# WP
2-6″ - 11 1/4° DI BENDS
1-6″ X 6″ DI LOCKING TEE
1-6″ GATE VALVE AND VALVE BOX, 200# WP
CONNECT USING NECESSARY FITTING

PROP. 1238′ OF 6″ WATER PIPE, C900, DR 14, 200# WP
4-6″ - 22 1/2° DI BENDS
3-6″ GATE VALVES AND VALVE BOXES, 200# WP

PROP. 4″ X 2″ELECTRIC FUSION TEE/SADDLE
1-2″ GAS VALVE AND VALVE BOX
136′ OF 2″ MDPE GAS PIPE, SDR 11, 160# WP
1-2″-11 1/4° MDPE BEND
1-2″-22 1/2° MDPE BEND

PROP. 8′ OF 1″ PE WATER TUBING, SDR 9, 200# WP
2-1″ CORPORATION STOPS
2-6″ X 1″ TAPPING SADDLES
2-RELOCATE EXISTING WATER METERS
CONNECT USING NECESSARY FITTINGS

6″ Water Line is 1035′ North of CSX Railroad Milepost 154.0
4″ Gas Main is 1083′ North of CSX Railroad Milepost 154.0
8″ Force Main is 1094′ North of CSX Railroad Milepost 154.0
12″ Water Line is 1104′ North of CSX Railroad Milepost 154.0

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PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-6
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 6/15/06 ENGINEER CARLEY D. BOUSQUET

UTILITY CONSTRUCTION

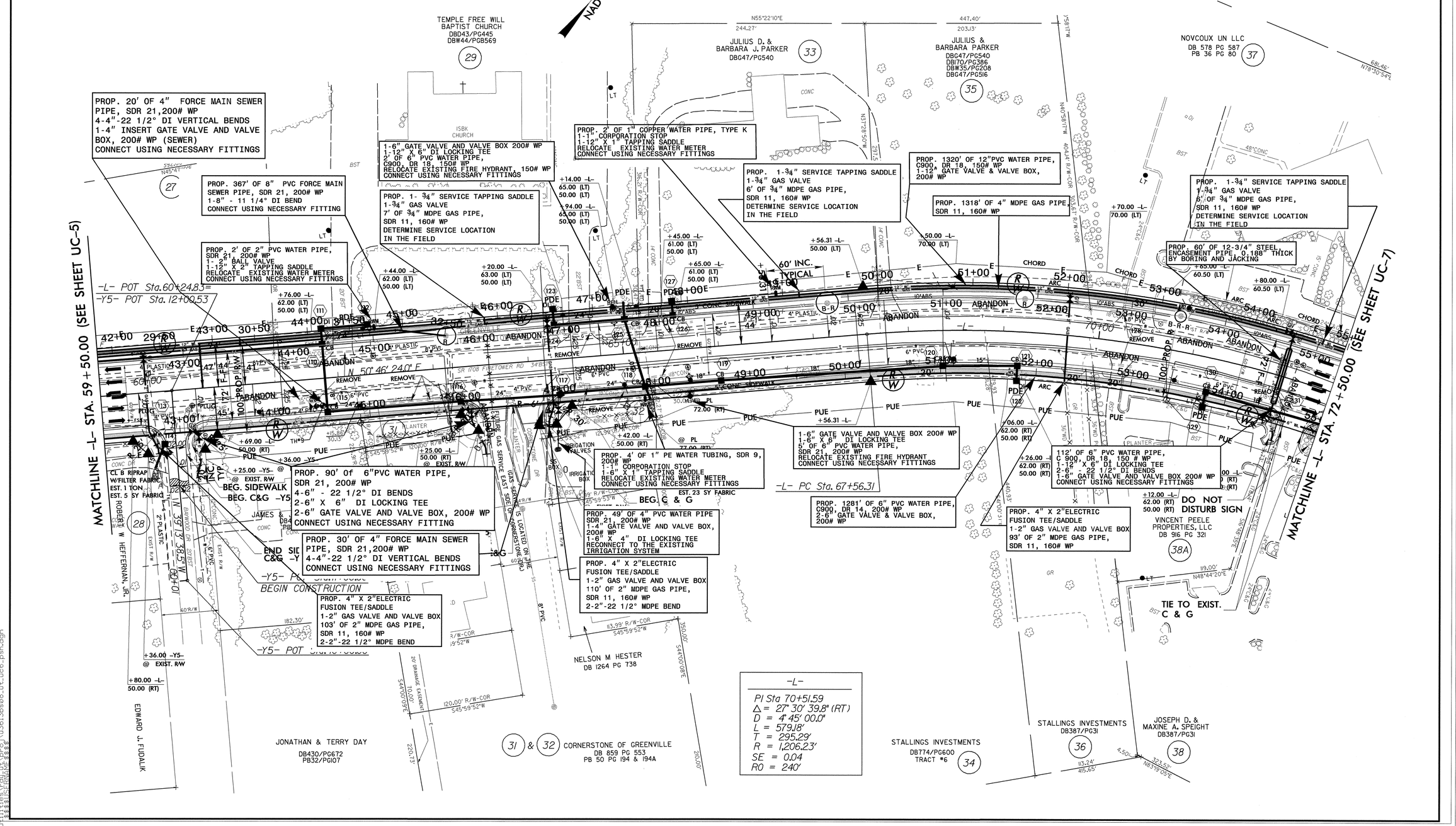
UTILITIES OWNERS

GREENVILLE UTILITIES COMMISSION

1) 12" PVC WATER LINE, C900, DR 18
2) 4" MDPE GAS MAIN, SDR 11
3) 8" PVC FORCE MAIN, SDR 21

TOWN OF WINTERVILLE

1) 6" PVC WATER LINE, C900, DR 14

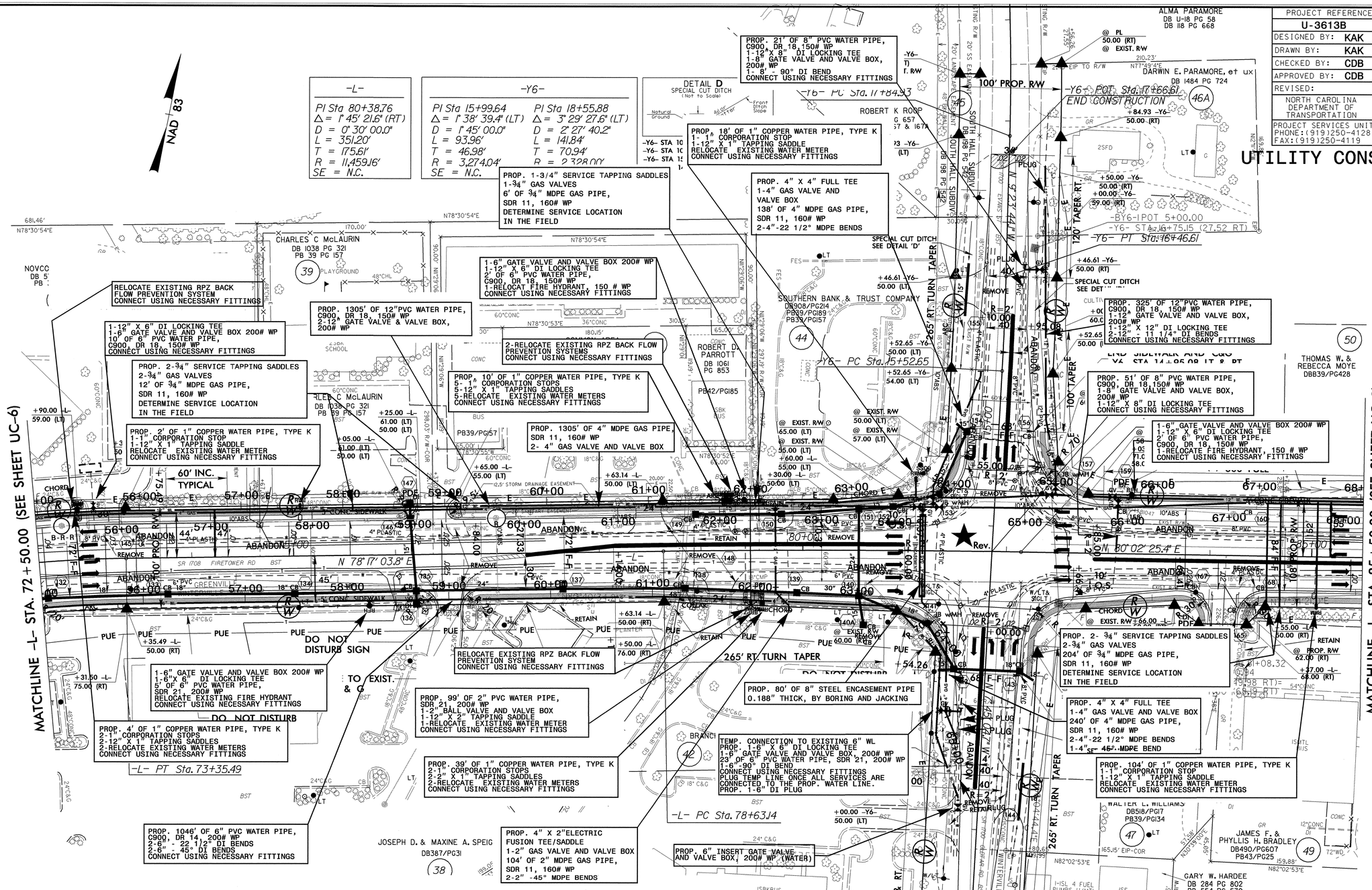


PS222298 6/15/2006 u3613bs08_ut_uc6_psh cbousquet PS-Oce34dtbond

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-7
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

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 3/14/06 COREY D. BOUSQUET

UTILITY CONSTRUCTION



UTILITIES OWNERS

GREENVILLE UTILITIES COMMISSION

1) 12" PVC WATER LINE, C900, DR 18
2) 4" MDPE GAS MAIN, SDR 11
3) 8" PVC FORCE MAIN, SDR 21

TOWN OF WINTERVILLE

1) 6" PVC WATER LINE, C900, DR 14

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-8
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 7/16/09

UTILITY CONSTRUCTION

ALL WATER, GAS AND SEWER LINES OWNED BY GREENVILLE UTILITIES COMMISSION

DETAIL A
GRASS SWALE
(Not to Scale)

Natural Ground, 3:1, D, B, 3:1 or Flatter, Fill Slope

Min. D = 1.5 Ft.
Max. d = 1 Ft.
B = 2 Ft.

Type of Liner = PSRM

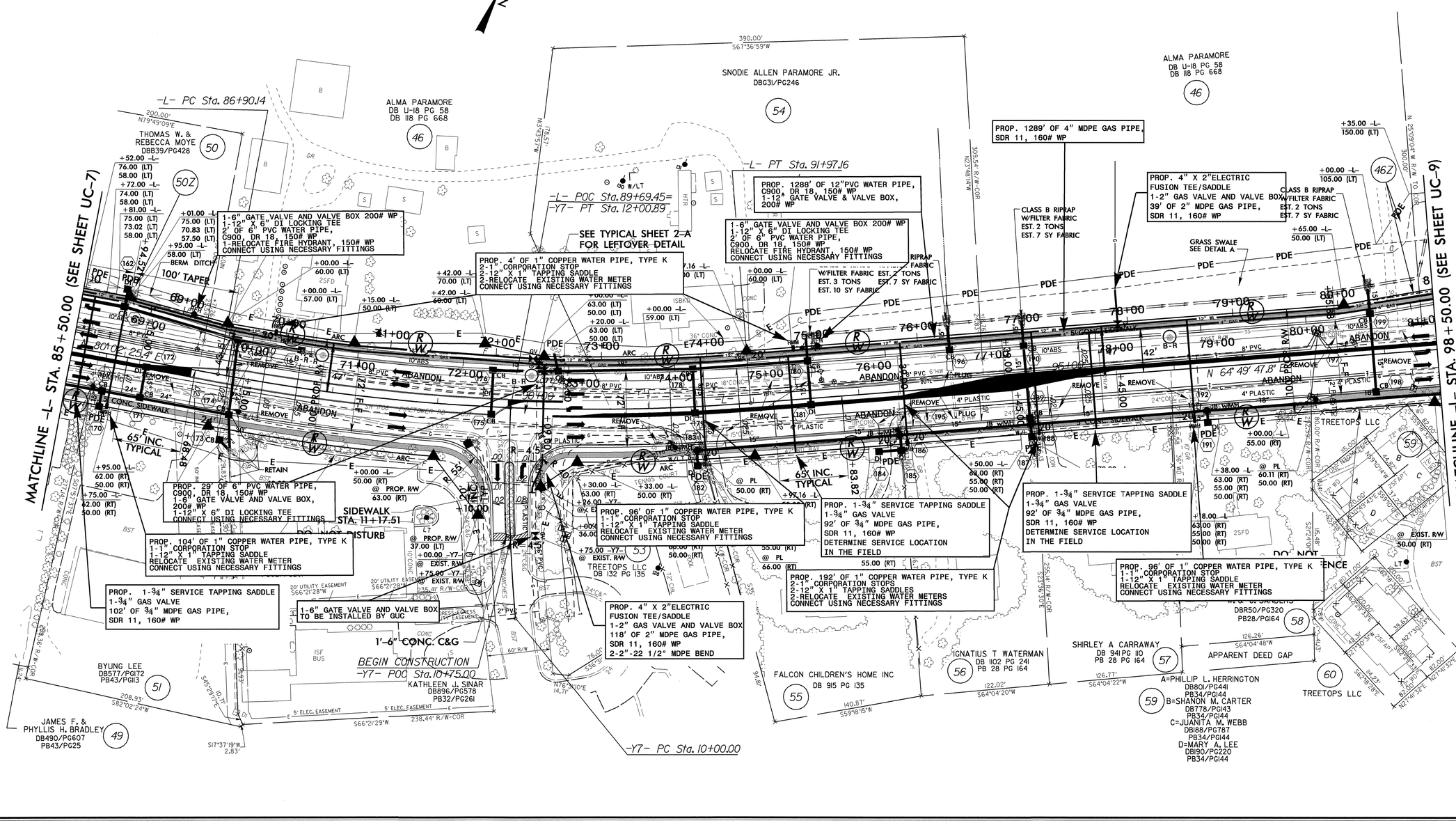
-L- STA 92+50 TO -L- STA 100+50 LT

-L-

PI Sta 89+45.15
Δ = 15° 12' 37.6" (LT)
D = 3° 00' 00.0"
L = 507.01'
T = 255.01'
R = 1,909.86'
SE = 0.035

-Y7-

PI Sta 11+00.58
Δ = 7° 16' 31.7" (RT)
D = 3° 37' 17.8"
L = 200.89'
T = 100.58'
R = 1,582.05'
SE = N.C.

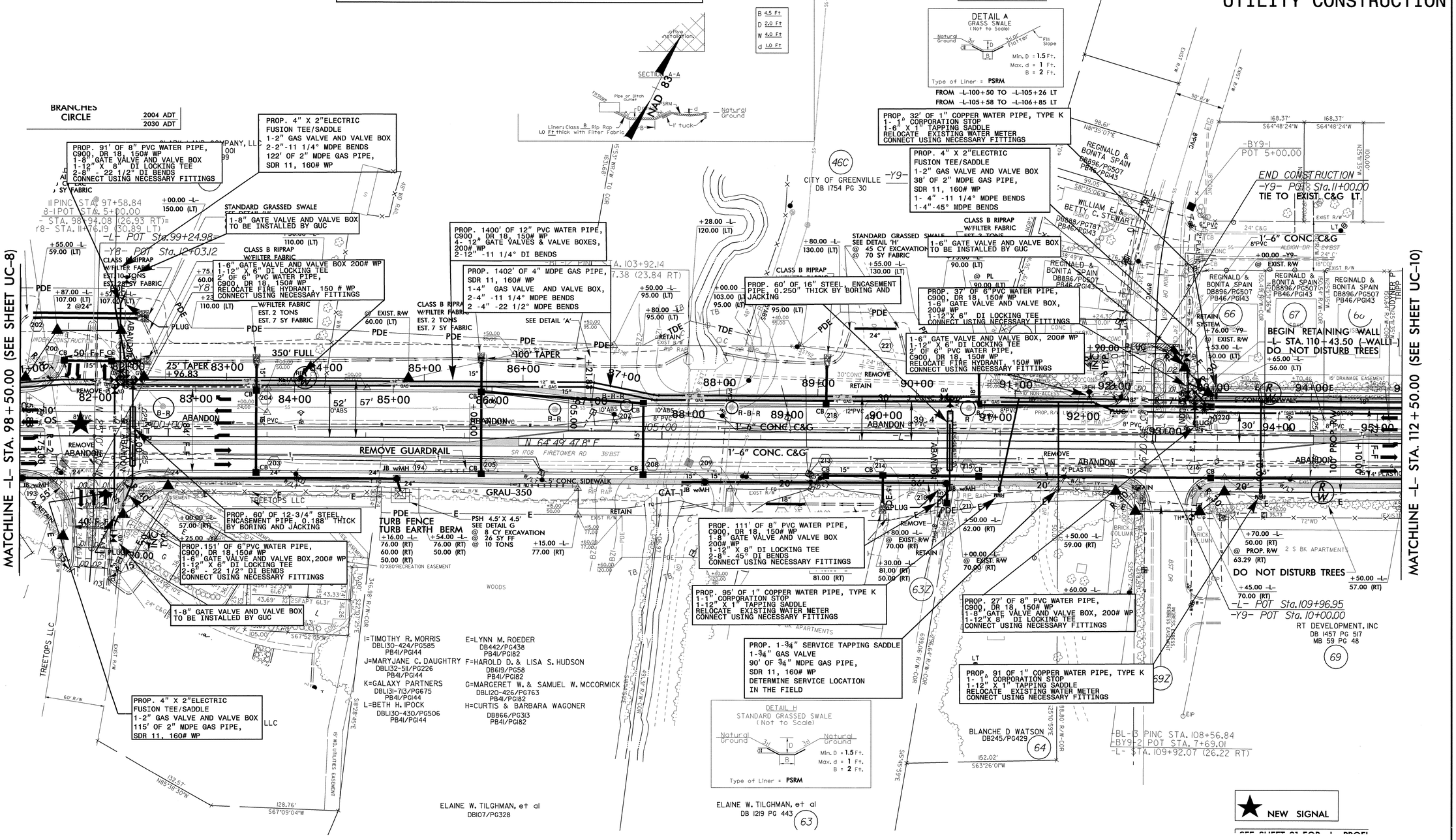


PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-9
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 09/05/06 CARDY D. BOUSQUET

UTILITY CONSTRUCTION

ALL WATER, GAS AND SEWER LINES OWNED BY GREENVILLE UTILITIES COMMISSION



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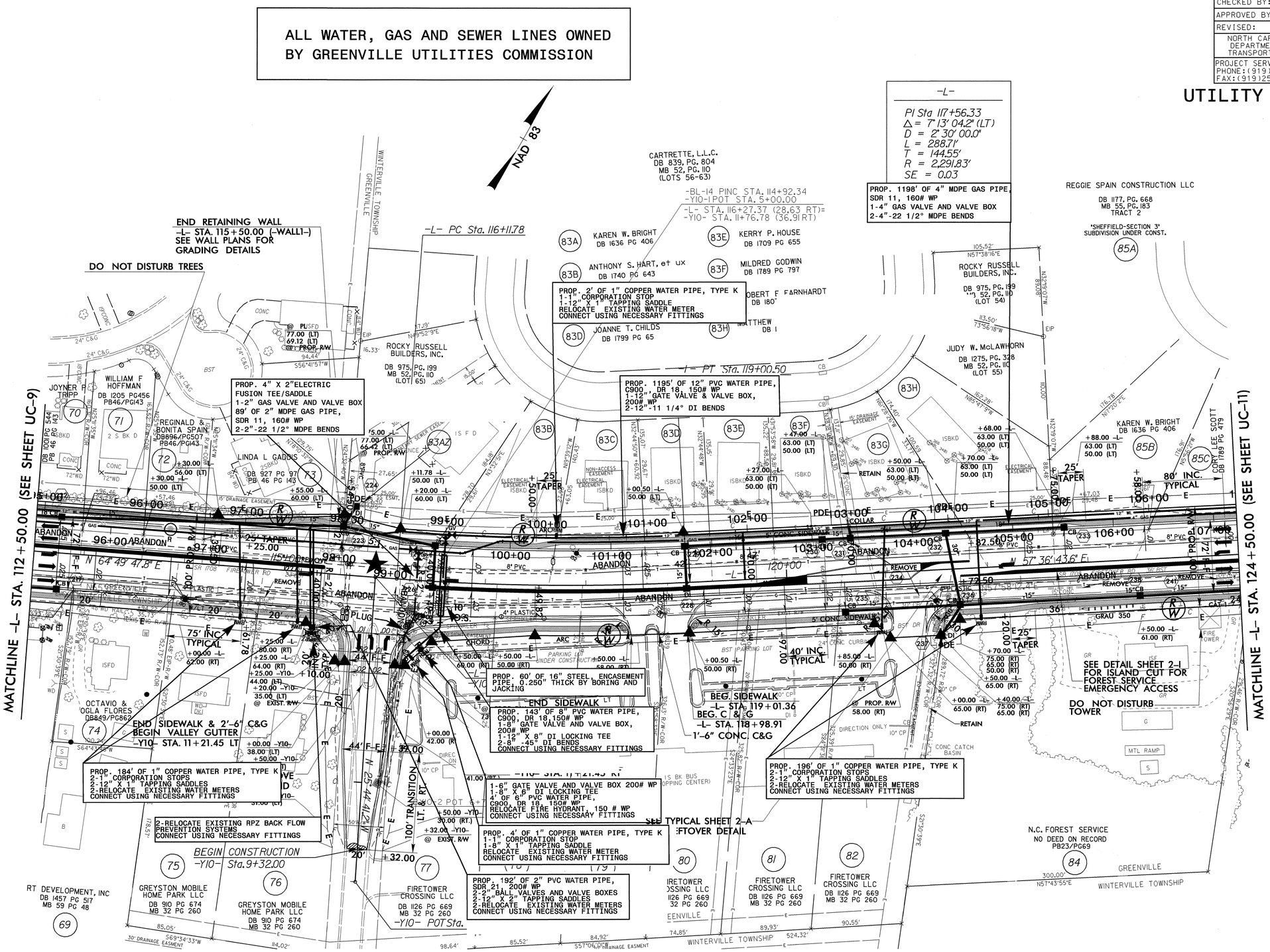
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-10
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. SOUSOUET 3/16/06

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-11
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. SUSOJEV 06/21/06

UTILITY CONSTRUCTION

NAD 83

Δ = 4° 21' 23.0" (RT)
D = 1° 30' 00.0"
L = 290.43'
T = 145.28'
R = 3,819.72'
SE = 0.025

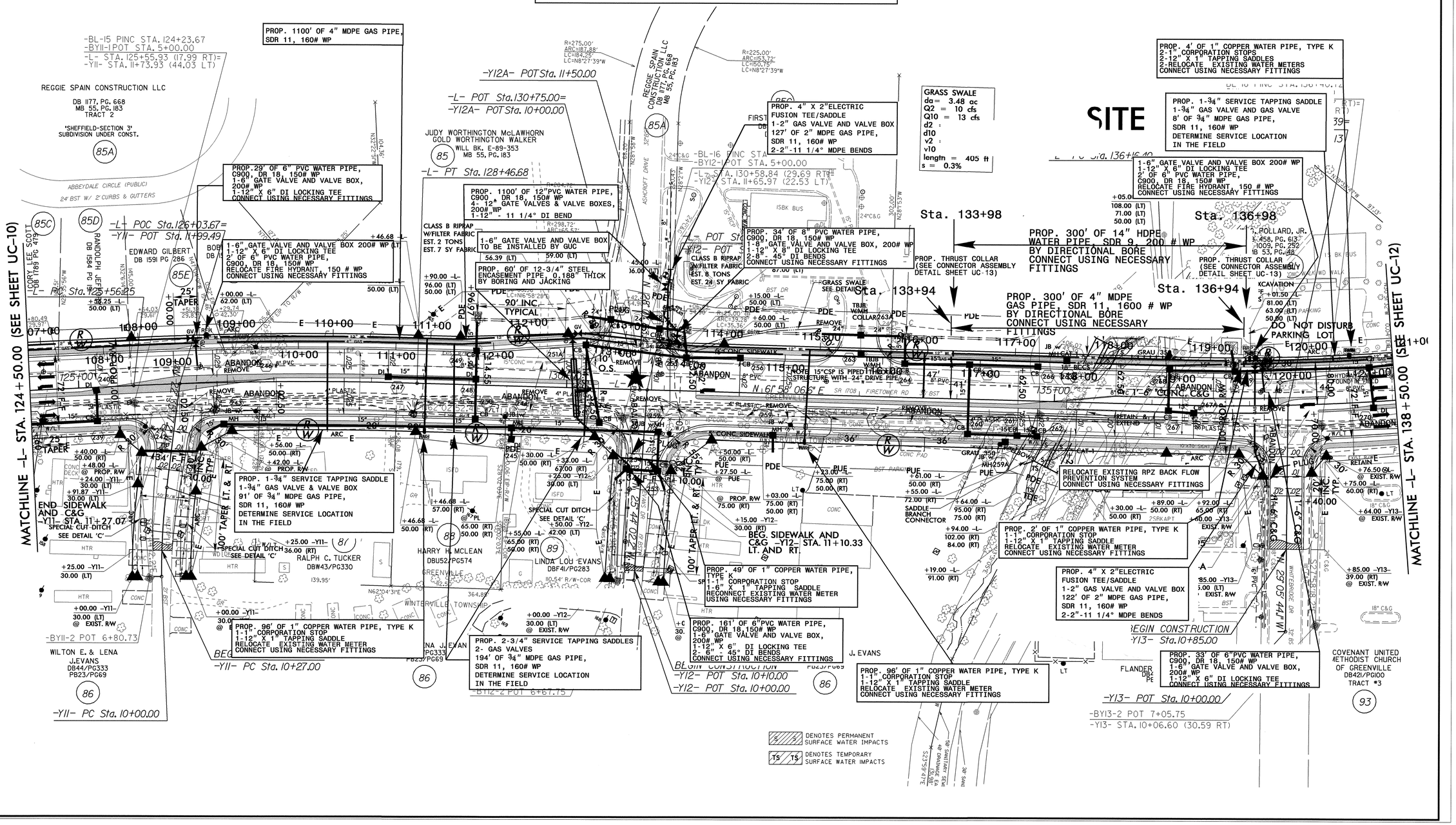
Δ = 17° 53' 45.4" (LT)
D = 2° 30' 00.0"
L = 715.84'
T = 360.86'
R = 2,291.83'
SE = 0.03

Natural Ground — Slope — Flat 6" — Min. D = 1.5 Ft.

-Y11- STA 10+00 TO 11+50 RT & LT
-Y12- STA 10+00 TO 11+50 RT & LT

Ground — Slope — Flat — Min. D = 1.5 Ft. — Max. d = 1 Ft. — B = 2 Ft.
Type of Liner = PSRM
FROM -L-129+00 TO -L-135+50

ALL WATER, GAS AND SEWER LINES OWNED BY GREENVILLE UTILITIES COMMISSION



5/14/99

23-JUN-2006 09:20
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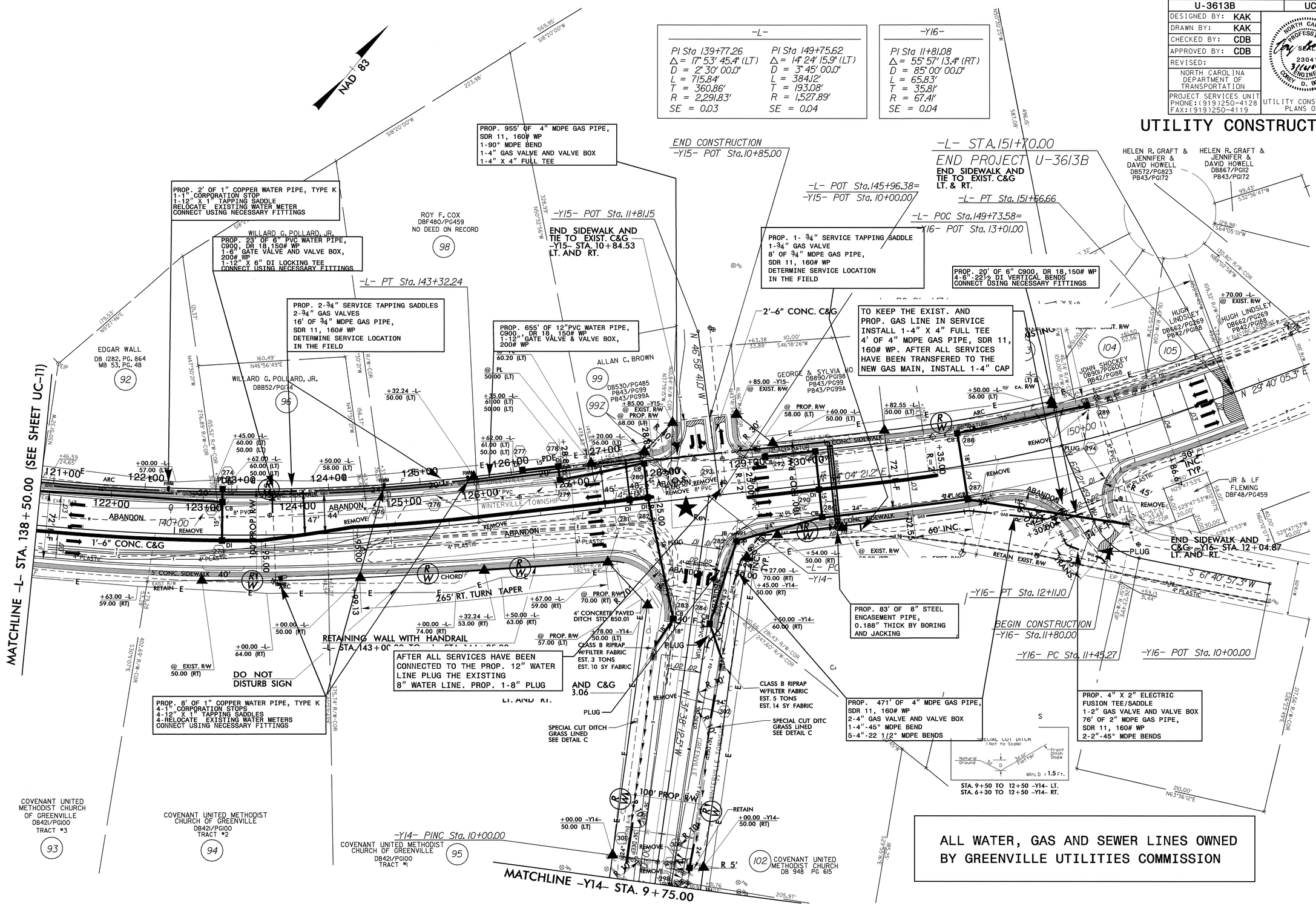
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-12
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER CHRISTOPHER D. BOUSQUET 3/16/06

UTILITY CONSTRUCTION

-L-	
PI Sta 139+77.26	PI Sta 149+75.62
Δ = 17° 53' 45.4" (LT)	Δ = 14° 24' 15.9" (LT)
D = 2° 30' 00.0"	D = 3° 45' 00.0"
L = 715.84'	L = 384.12'
T = 360.86'	T = 193.08'
R = 2,291.83'	R = 1,527.89'
SE = 0.03	SE = 0.04

-Y16-
PI Sta 11+81.08
Δ = 55° 57' 13.4" (RT)
D = 85° 00' 00.0"
L = 65.83'
T = 35.81'
R = 67.41'
SE = 0.04



5/14/99

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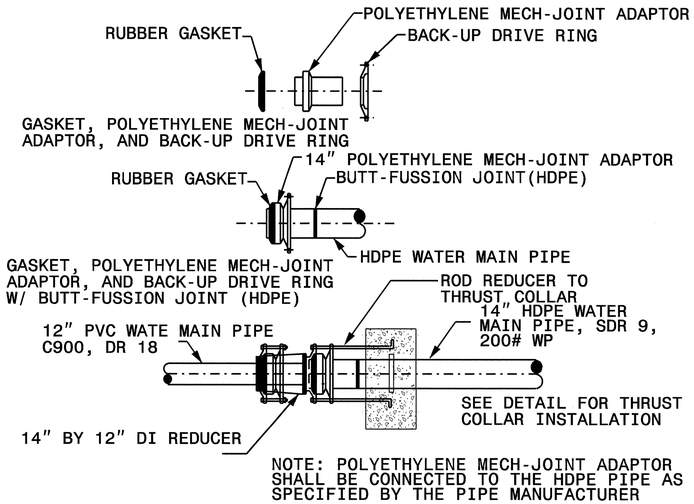
cbousquet

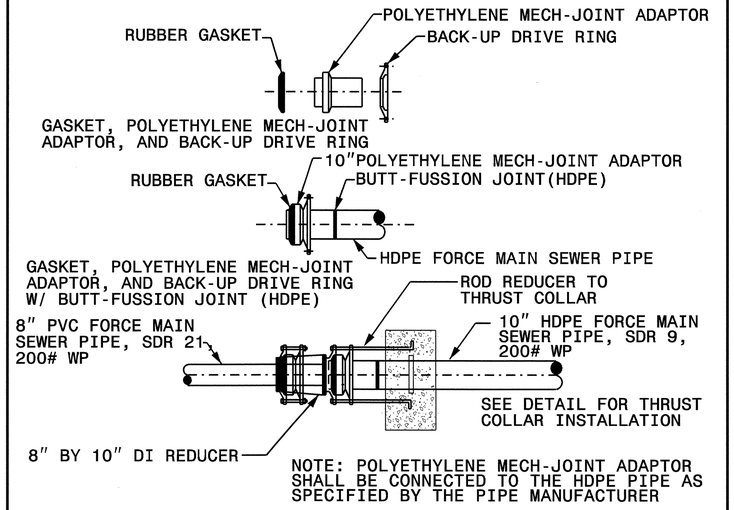
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-13
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 3/16/06

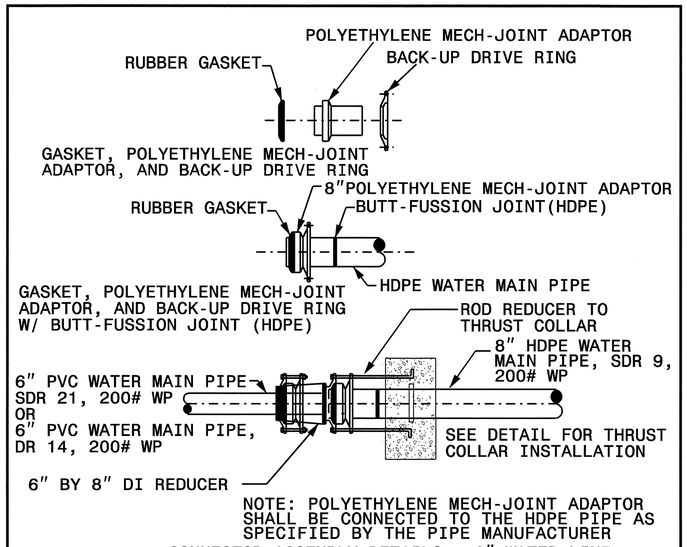
UTILITY CONSTRUCTION



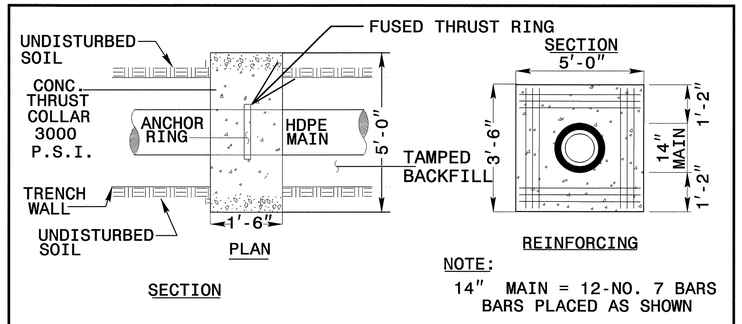
CONNECTOR ASSEMBLY DETAILS - 12" WATER LINE



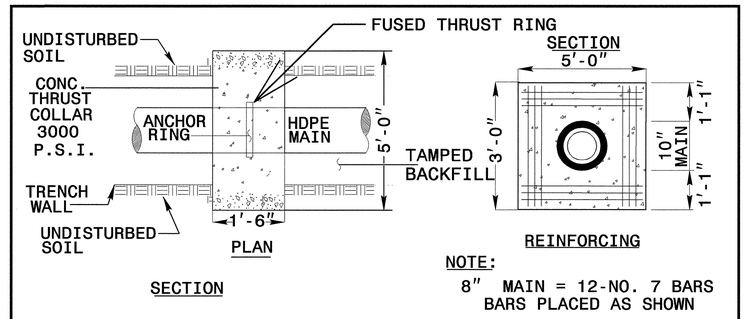
CONNECTOR ASSEMBLY DETAILS - FORCE MAIN SEWER LINE



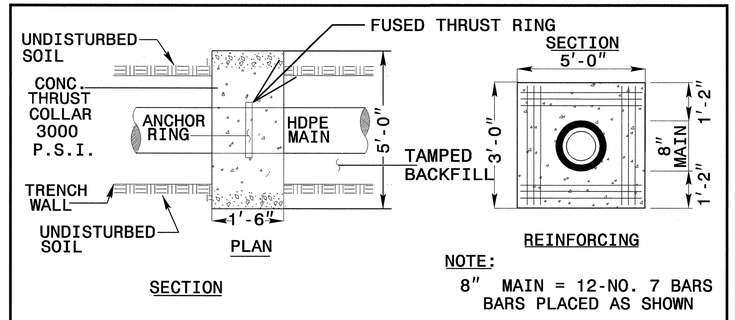
CONNECTOR ASSEMBLY DETAILS - 6" WATER LINE



THRUST COLLAR DETAIL - 12" WATER LINE



THRUST COLLAR DETAIL -8" FORCE MAIN SEWER LINE

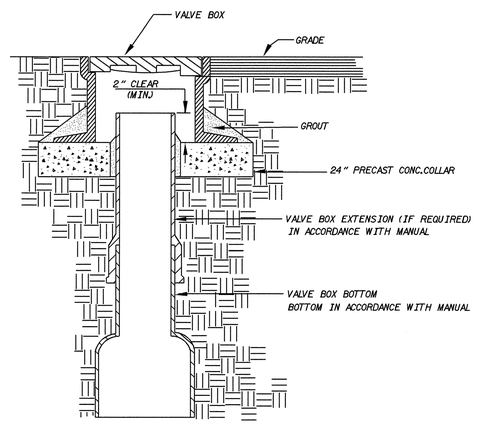


THRUST COLLAR DETAIL - 6" WATER LINE

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-14
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

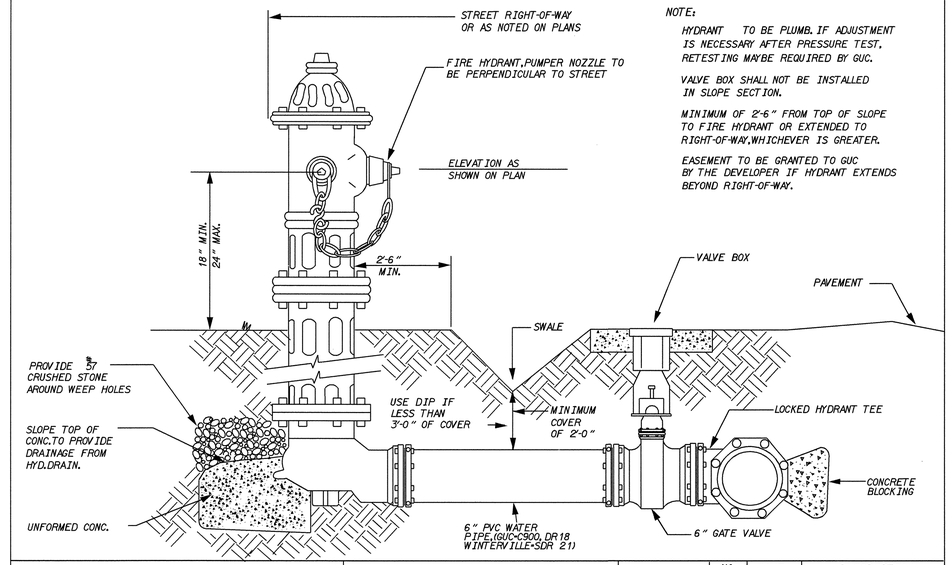
NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 3/16/06

UTILITY CONSTRUCTION



VALVE BOX DETAIL
FOR VALVES 12" AND LARGER

NO.	DATE	DESCRIPTION



NOTE:

HYDRANT TO BE PLUMB. IF ADJUSTMENT IS NECESSARY AFTER PRESSURE TEST, RETESTING MAYBE REQUIRED BY GUC.

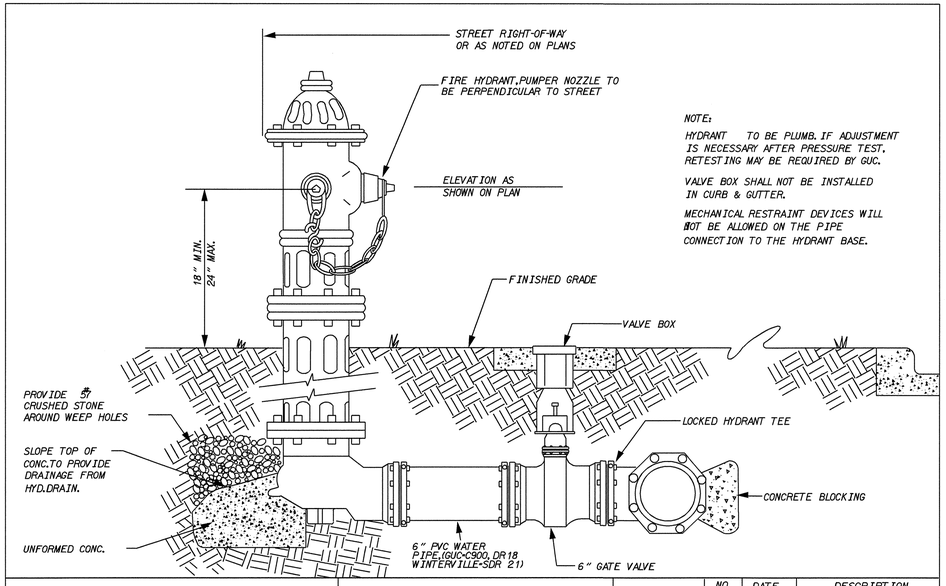
VALVE BOX SHALL NOT BE INSTALLED IN SLOPE SECTION.

MINIMUM OF 2'-6" FROM TOP OF SLOPE TO FIRE HYDRANT OR EXTENDED TO RIGHT-OF-WAY,WHICHEVER IS GREATER.

EASEMENT TO BE GRANTED TO GUC BY THE DEVELOPER IF HYDRANT EXTENDS BEYOND RIGHT-OF-WAY.

FIRE HYDRANT RELOCATION / INSTALLATION
(FOR AREAS WITHOUT CURB & GUTTER)

NO.	DATE	DESCRIPTION



NOTE:

HYDRANT TO BE PLUMB. IF ADJUSTMENT IS NECESSARY AFTER PRESSURE TEST, RETESTING MAY BE REQUIRED BY GUC.

VALVE BOX SHALL NOT BE INSTALLED IN CURB & GUTTER.

MECHANICAL RESTRAINT DEVICES WILL NOT BE ALLOWED ON THE PIPE CONNECTION TO THE HYDRANT BASE.

FIRE HYDRANT RELOCATION / INSTALLATION
(FOR AREAS WITH CURB AND GUTTER)

NO.	DATE	DESCRIPTION

RESULTANT THRUST AT FITTING AT 150 PSI WATER PRESSURE

NOM. PIPE DIA.	TOTAL POUNDS DEAD END	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4"	2,700	3,800	2,100	1,100	530
6"	5,600	8,000	4,300	2,200	1,100
8"	9,700	13,600	7,400	3,800	1,900
10"	14,500	20,500	11,100	5,700	2,900
12"	20,500	29,000	15,700	8,000	4,000
14"	27,600	39,000	21,100	11,000	5,400
16"	35,700	50,400	27,300	14,000	7,000
18"	44,800	63,400	34,400	17,500	8,800
20"	55,000	77,000	42,100	21,500	10,800
24"	78,500	110,000	60,000	31,000	15,400
30"	120,600	170,600	92,300	47,100	23,600
36"	172,800	244,400	132,300	67,500	33,900
42"	233,300	330,000	178,600	91,000	45,700
48"	304,000	430,000	232,700	118,600	59,600
54"	384,100	543,200	294,000	149,000	75,300

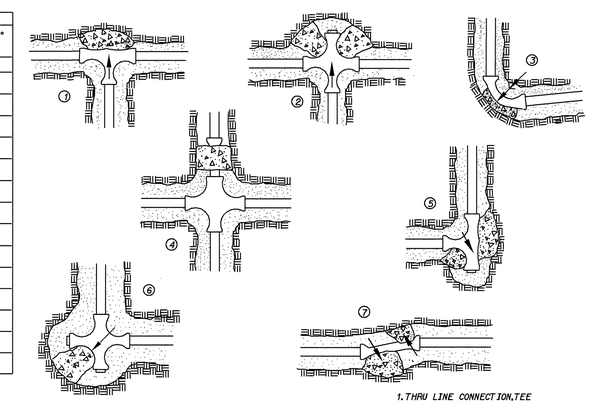
SOIL	BEARING LOAD (LB./SQ.FT.)
MUCK	0
SOFT CLAY	1,000
SILT	1,500
SANDY SILT	3,000
SAND	4,000
SANDY CLAY	6,000
HARD CLAY	9,000

POLYWRAP SHALL BE USED TO COVER FITTINGS AND BOLTS.

TO DETERMINE THE SIZE OF A CONCRETE THRUST BLOCK,DIVIDE THE TOTAL FORCE BY THE BEARING VALUES OF THE SOIL.THE QUOTIENT WILL BE THE SIZE OF THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET.APPROXIMATE VALUES FOR VARIOUS TYPES OF SOIL ARE LISTED IN TABLE.

NO RESPONSIBILITY CAN BE ASSUMED FOR THE ACCURACY OF THE DATA IN THIS TABLE DUE TO THE WIDE VARIATION OF BEARING LOAD CAPABILITIES FOR EACH SOIL TYPE.

TYPES OF THRUST BLOCKING



1. THRU LINE CONNECTION,TEE
2. THRU LINE CONNECTION,TEE CROSS USED AS TEE
3. DIRECTION CHANGE,ELBOW
4. CHANGE LINE SIZE,REDUCER
5. DIRECTION CHANGE,TEE USED AS ELBOW
6. DIRECTION CHANGE,CROSS USED AS ELBOW
7. DIRECTION CHANGE

THRUST BLOCKING DETAIL

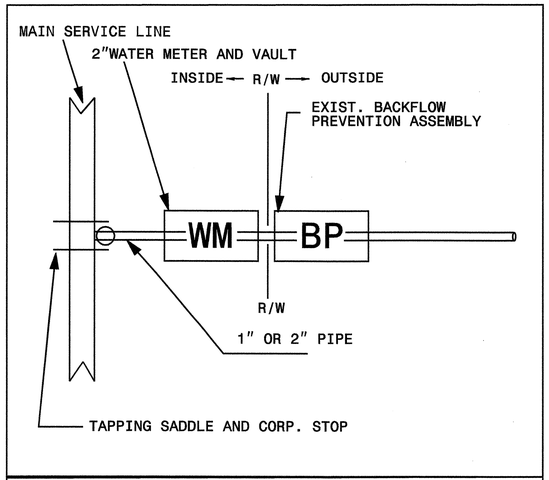
NO.	DATE	DESCRIPTION

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-15
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 3/16/06

NAD 83

UTILITY CONSTRUCTION



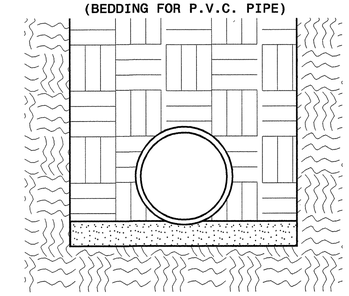
1" OR 2" WATER METER SERVICE AND BACKFLOW ASSEMBLY

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		

CLASS "C"

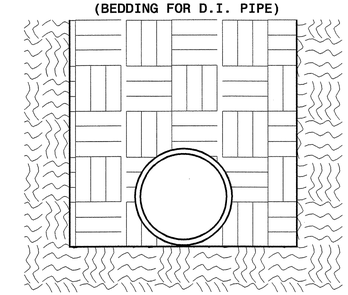
(BEDDING FOR P.V.C. PIPE)



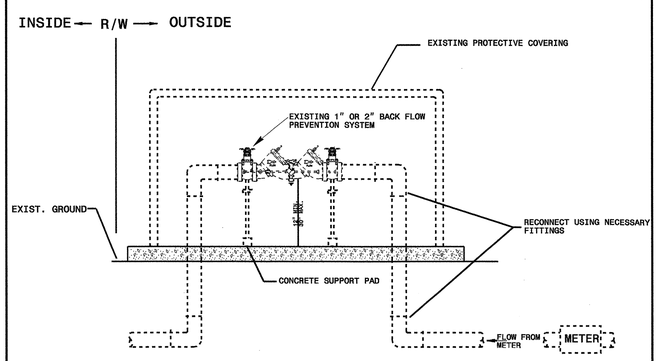
PIPE BEDDED IN LOOSE MATERIAL, LIGHTLY TAMPED WITH A MINIMUM OF 6" UNDER PIPE. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

TYPE "2"

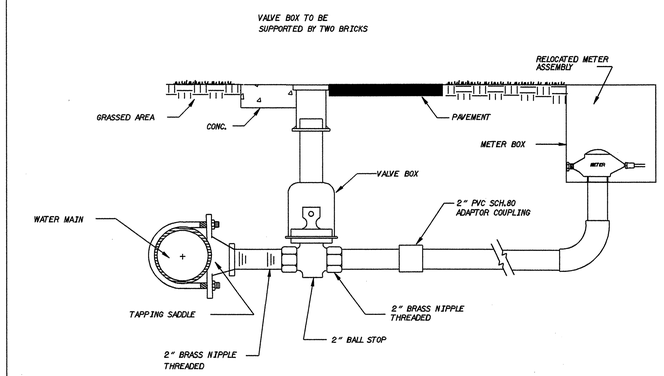
(BEDDING FOR D.I. PIPE)



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.

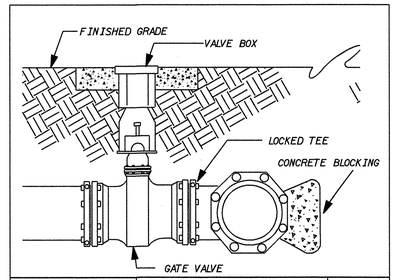


RELOCATE EXISTING 2" OR 1" BACKFLOW ASSEMBLY

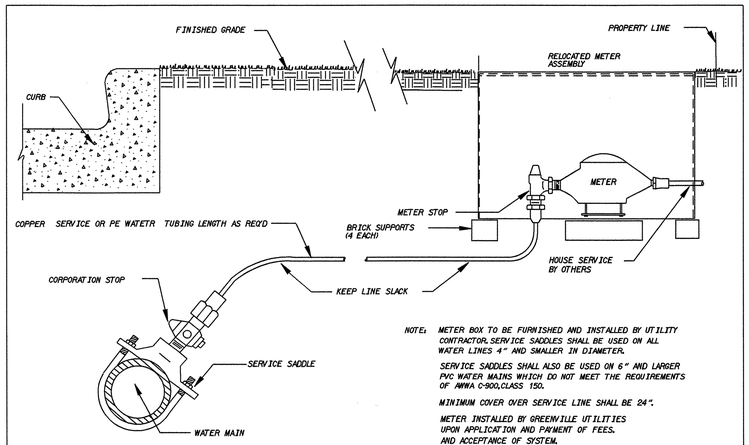


TYPICAL 1-1/2" AND 2" WATER SERVICE CONNECTION

NO.	DATE	DESCRIPTION



DETAIL
LOCKING TEE & GATE VALVE
ALL TEES & VALVES SHALL BE LOCKING TEES& VALVES



NOTE: METER BOX TO BE FURNISHED AND INSTALLED BY UTILITY CONTRACTOR.SERVICE SADDLES SHALL BE USED ON ALL WATER LINES 4" AND SMALLER IN DIAMETER.

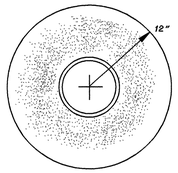
SERVICE SADDLES SHALL ALSO BE USED ON 6" AND LARGER PVC WATER MAINS WHICH DO NOT MEET THE REQUIREMENTS OF AWWA C-900,CLASS 150.

MINIMUM COVER OVER SERVICE LINE SHALL BE 24".

METER INSTALLED BY GREENVILLE UTILITIES UPON APPLICATION AND PAYMENT OF FEES. AND ACCEPTANCE OF SYSTEM.

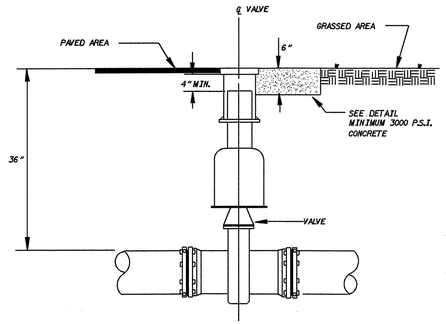
2" - 1" WATER SERVICE DETAIL FOR AREAS WITH CURB AND GUTTER

NO.	DATE	DESCRIPTION



DETAIL

PRECAST CONCRETE COLLAR



NOTE:

VALVE BOX SHALL NOT BE INSTALLED IN CURB AND GUTTER.

VALVE BOX SHALL BE IN ACCORDANCE WITH MANUAL.

VALVE BOX SHALL BE CENTERED AND PLUMBED OVER VALVE.

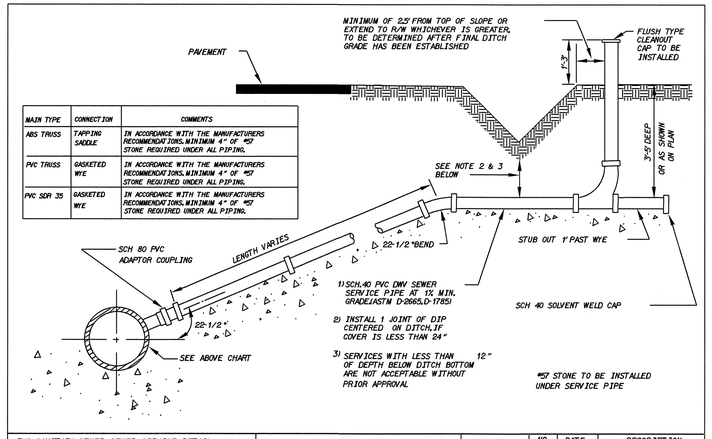
VALVE BOX DETAIL FOR VALVES SMALLER THAN 12"

NO.	DATE	DESCRIPTION

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-16
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER CREY D. BOUSQUET 3/16/06

UTILITY CONSTRUCTION

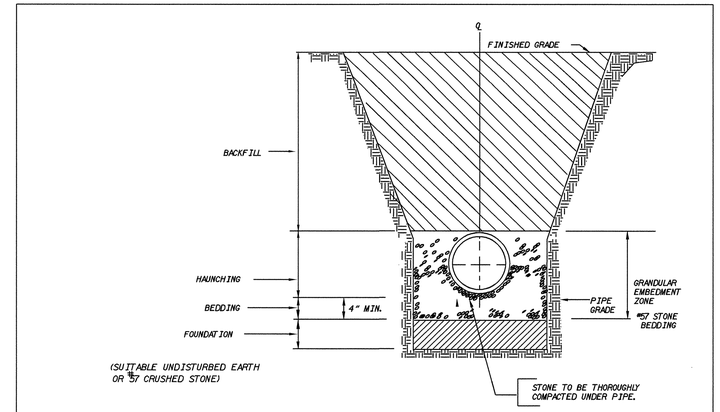


MAIN TYPE	CONNECTION	COMMENTS
ABS TRUSS	TAPPING SADDLE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.
PVC TRUSS	GASKETED WYE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.
PVC SDR 35	GASKETED WYE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.

PVC SANITARY SEWER SEWER SERVICE DETAIL FOR AREAS WITHOUT CURB AND GUTTER FOR MAINS WITH A MAXIMUM DEPTH OF 12'

S-2

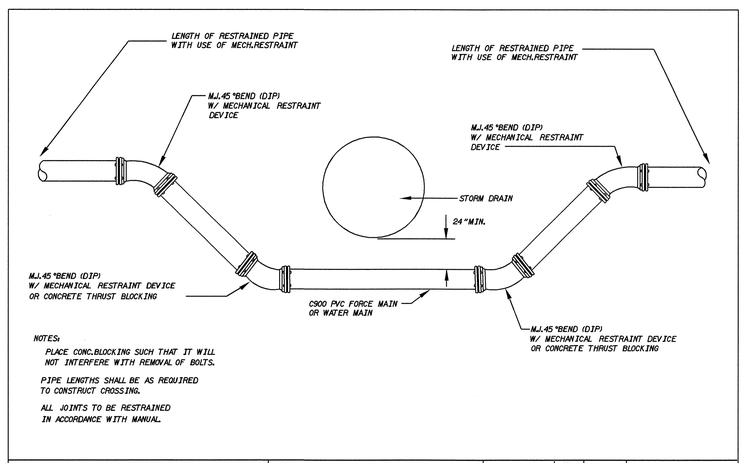
NO.	DATE	DESCRIPTION



TRENCH SECTION DETAIL FOR THE INSTALLATION OF PVC SANITARY SEWER SERVICE PIPE - SCH40 DWV

DWG.NO. S-10

NO.	DATE	DESCRIPTION



NOTES:

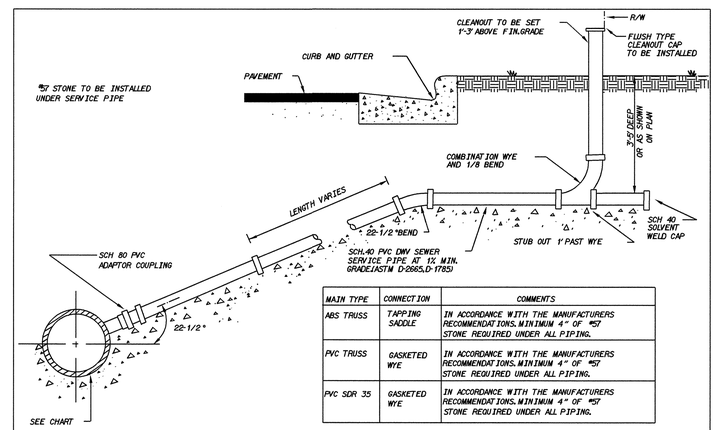
PLACE CONC.BLOCKING SUCH THAT IT WILL NOT INTERFERE WITH REMOVAL OF BOLTS.

PIPE LENGTHS SHALL BE AS REQUIRED TO CONSTRUCT CROSSING.

ALL JOINTS TO BE RESTRAINED IN ACCORDANCE WITH MANUAL.

FORCE MAIN WATER MAIN AND STORM DRAIN CROSSING

NO.	DATE	DESCRIPTION



MAIN TYPE	CONNECTION	COMMENTS
ABS TRUSS	TAPPING SADDLE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.
PVC TRUSS	GASKETED WYE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.
PVC SDR 35	GASKETED WYE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.

PVC SANITARY SEWER SERVICE DETAIL FOR AREA WITH CURB AND GUTTER FOR MAINS WITH A MAXIMUM DEPTH OF 12'

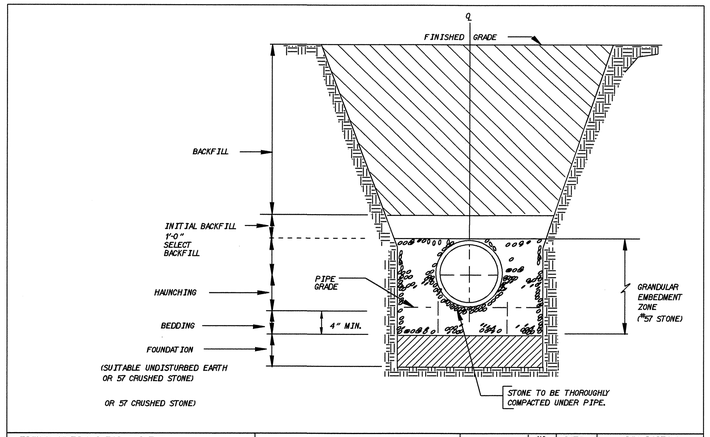
DWG.NO. S-1

NO.	DATE	DESCRIPTION

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-17
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 4/18/06 ENGINEER CAREY D. BOUSQUET

UTILITY CONSTRUCTION

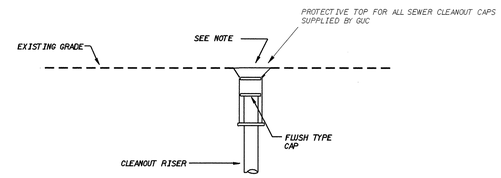


TRENCH SECTION DETAIL FOR THE INSTALLATION OF PVC SANITARY SEWER PIPE (NOT INCLUDING TRUSS)				NO.	DATE	DESCRIPTION
SHEET 1 OF 1	DWG.NO. S-9					

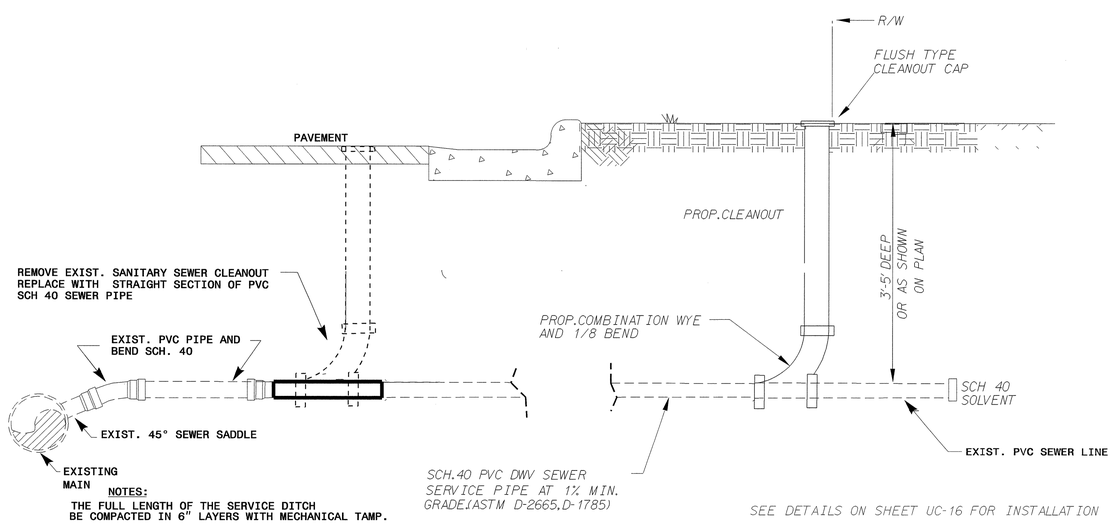
NOTE

FOR 4" SERVICE,BOX TO BE VULCAN MODEL WITH #G8460 LID MARKED SEWER. #G8471

FOR 6" SERVICE,BOX TO BE EAST JORDAN W/LID MARKED SEWER. #1574Z

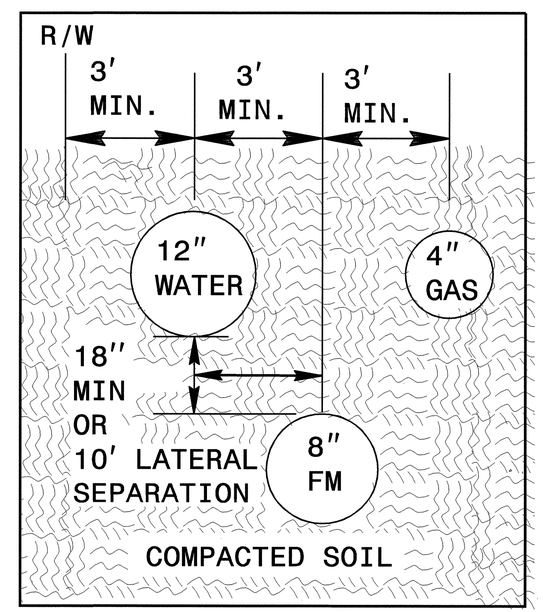


CLEANOUT DETAIL FOR PAVED AREAS				NO.	DATE	DESCRIPTION
	DWG.NO. S-3					



RELOCATED SANITARY SEWER CLEANOUT CONNECTION

THE TYPICAL SECTION FOR THE UTILITY INSTALLATIONS LEFT OF LINE -L- FROM STA. 30+78 TO STA. 63+16



LAY 12" PVC WATER LINE AT LEAST 10 FEET LATERALLY OR 18" ABOVE THE 8" PVC FM, UNLESS THE WATER LINE IS ABOVE THE FM AND BOTH LINES ARE MADE OF FERROUS MATERIAL

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-18

DESIGNED BY: KAK
DRAWN BY: KAK
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

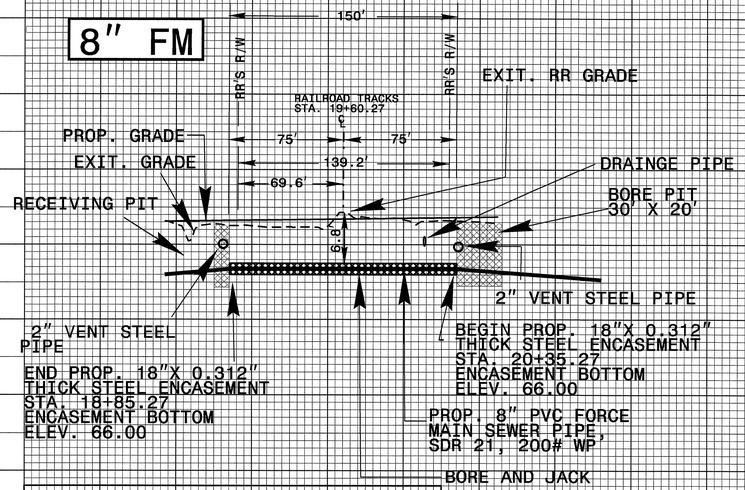
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23941 3/27/06 COREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

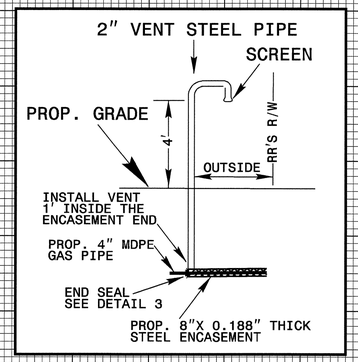
UTILITY CONSTRUCTION

8" FM

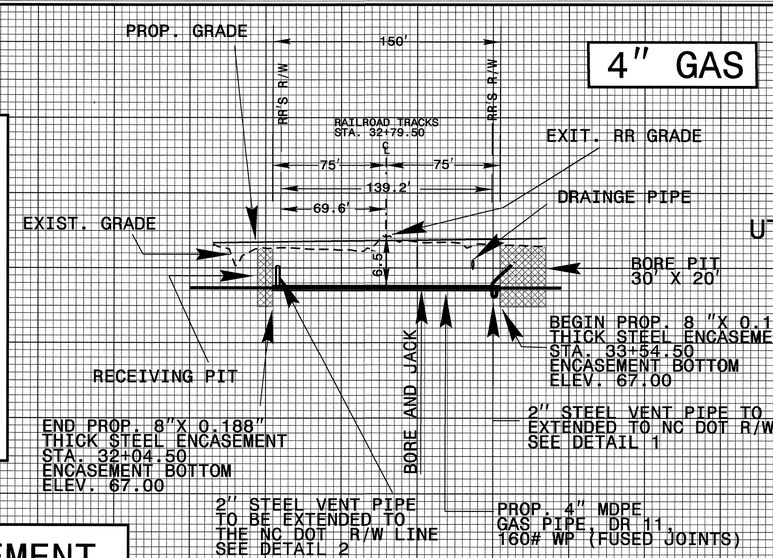


SEE SHEET UC-28 FOR THE RESTRAINT LIMITS ON THE 8" PVC FM INSIDE THE RAILROAD R/W AND FOR VALVE LOCATIONS

DETAIL 2

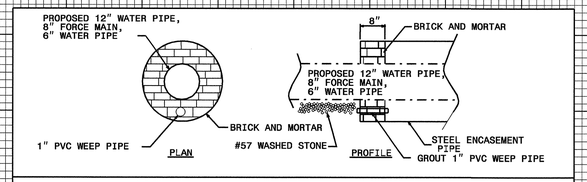


4" GAS

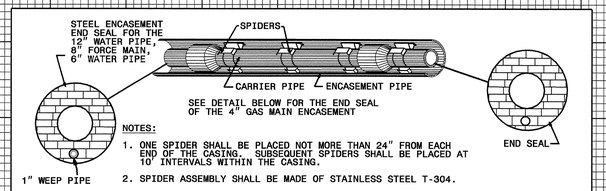


SEE SHEET UC-24 FOR THE 4" MDPE GAS (FUSED JOINT) PIPE BEYOND THE RAILROAD R/W THE JOINTS AND FOR VALVE LOCATIONS

PROPOSED ENCASEMENT INSTALLATION DETAIL



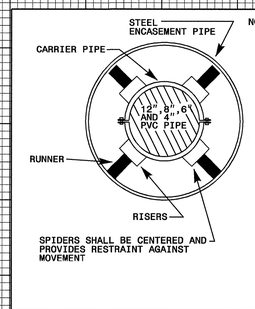
END SEAL ENCASEMENT DETAIL



NOTES:

1. ONE SPIDER SHALL BE PLACED NOT MORE THAN 24" FROM EACH END OF THE CASING. SUBSEQUENT SPIDERS SHALL BE PLACED AT 10' INTERVALS WITHIN THE CASING.
2. SPIDER ASSEMBLY SHALL BE MADE OF STAINLESS STEEL T-304.

PROPOSED PIPE ENCASEMENT DETAIL

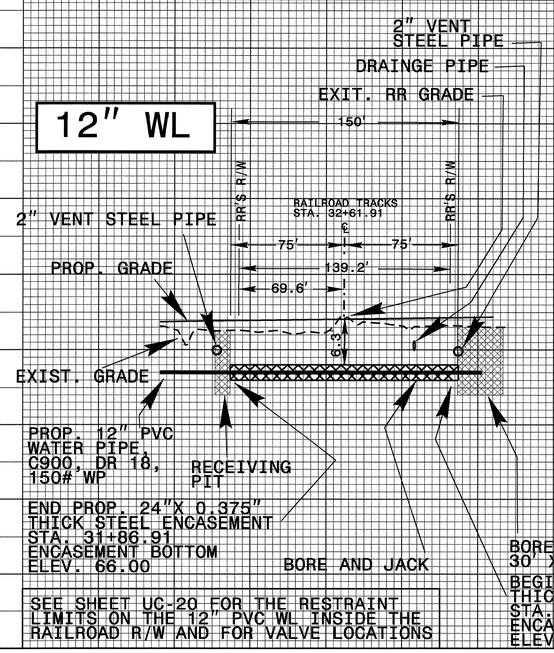


NOTES:

1. ONE SPIDER SHALL BE PLACED NOT MORE THAN 24" FROM EACH END OF THE CASING. SUBSEQUENT SPIDERS SHALL BE PLACED AT 10' INTERVALS WITHIN THE CASING.
2. CAP THE ENDS OF THE ENCASEMENT WITH BRICK AND MORTAR OR FLEXIBLE END SEAL, SEE DETAIL.
3. THE CASING SPIDERS SHALL BE MADE OF TWO PIECE SHELL T-304 STAINLESS STEEL OF A MINIMUM 14 GAGE THICKNESS. EACH CONNECTING FLANGE SHALL HAVE A MIN. OF 3 - 5/8", T-304 STAINLESS STEEL BOLTS. THE SHELL SHALL BE LINED WITH A RIBBED PVC EXTRUSTION WITH A RETAINING SECTION THAT OVERLAPS THE EDGES OF THE SHELL AND PREVENTS SLIPPAGE.
4. RISERS SHALL BE MADE OF T-304 STAINLESS STEEL OF A MINIMUM THICKNESS OF 10 GAUGE. ALL RISERS OVER 8" IN HEIGHT SHALL HAVE ADDITIONAL REINFORCEMENT. RUNNERS SHALL BE MADE OF ULTRA HIGH MOLECULAR WEIGHT POLYMER WITH A LOW COEFFICIENT OF FRICTION.

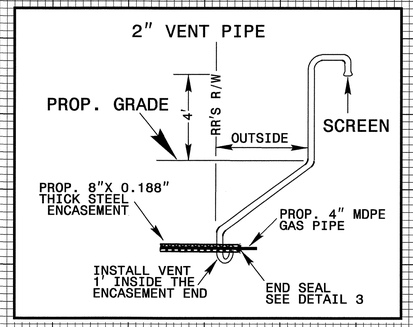
STEEL ENCASEMENT PIPE

12" WL



SEE SHEET UC-20 FOR THE RESTRAINT LIMITS ON THE 12" PVC WL INSIDE THE RAILROAD R/W AND FOR VALVE LOCATIONS

DETAIL 1



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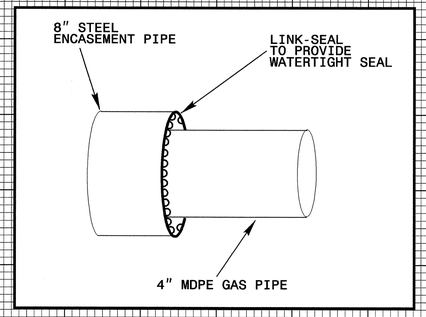
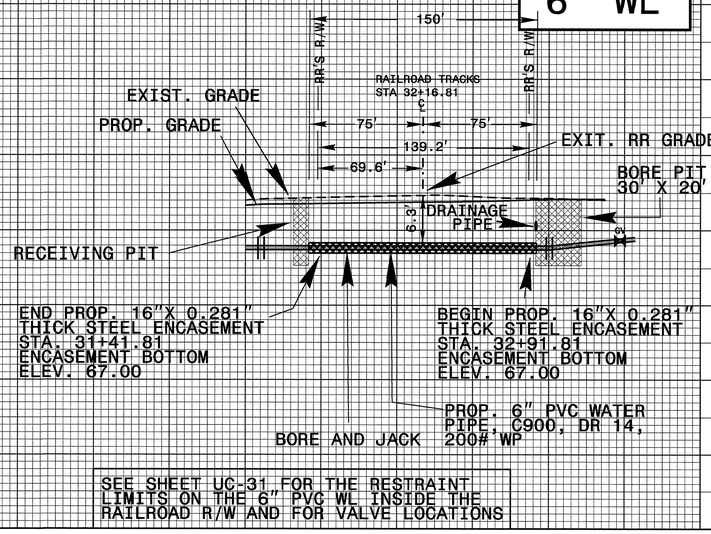


6" WL



SEE SHEET UC-31 FOR THE RESTRAINT LIMITS ON THE 6" PVC WL INSIDE THE RAILROAD R/W AND FOR VALVE LOCATIONS

5/14/99

27-MAR-2006 09:15
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cbousquet AT 25.22.248

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-19

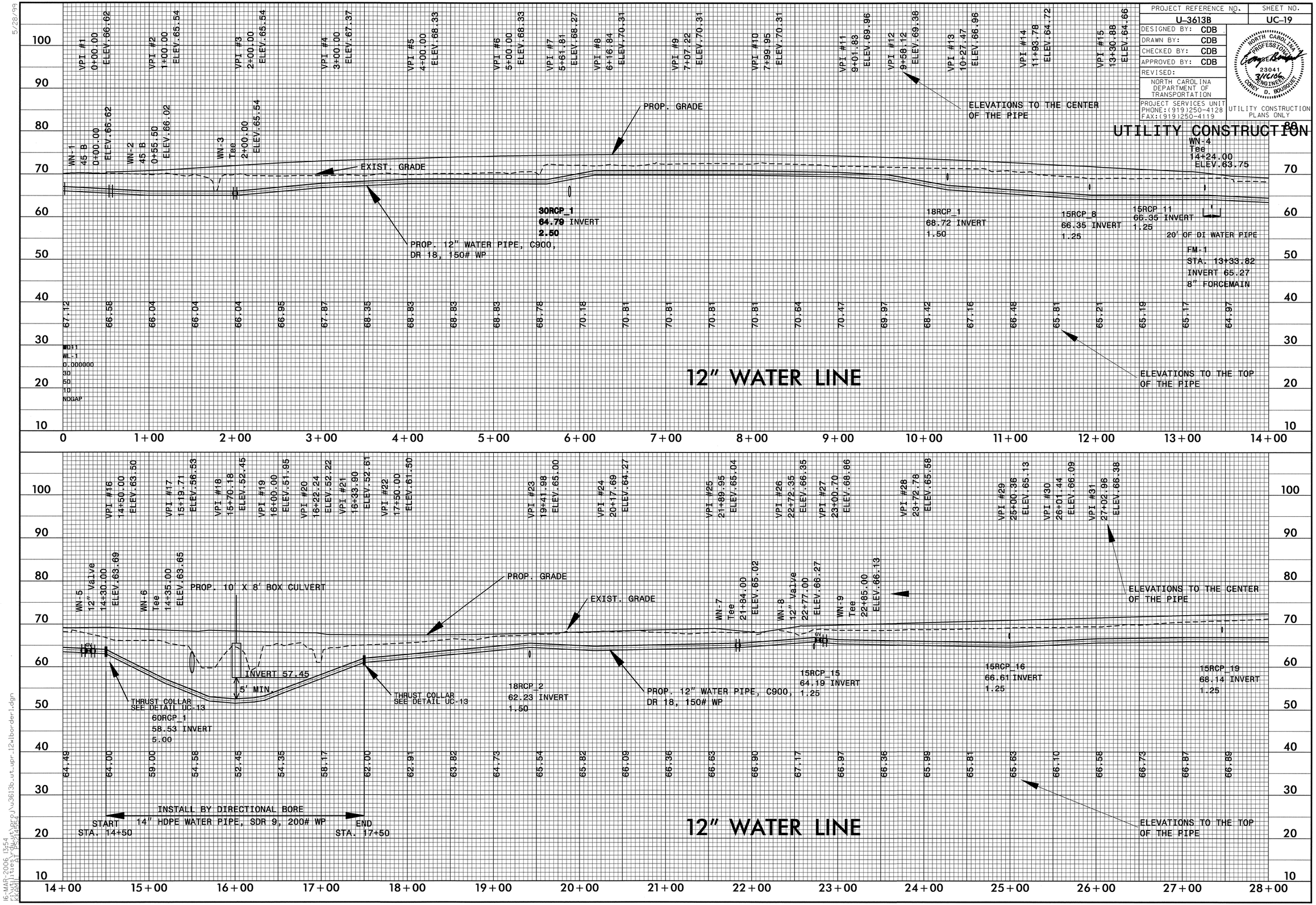
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER CHRIS D. SOUSOUIS

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

16-MAR-2006 13:54
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kkamm
AT PS214454

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-20

DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

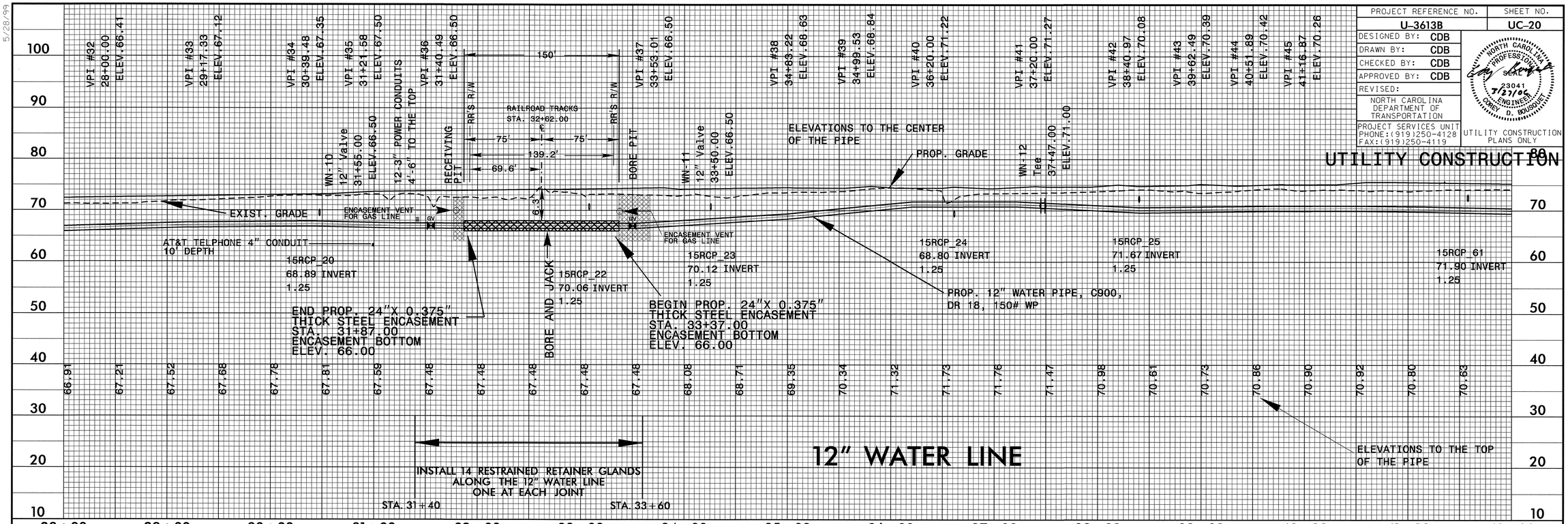
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

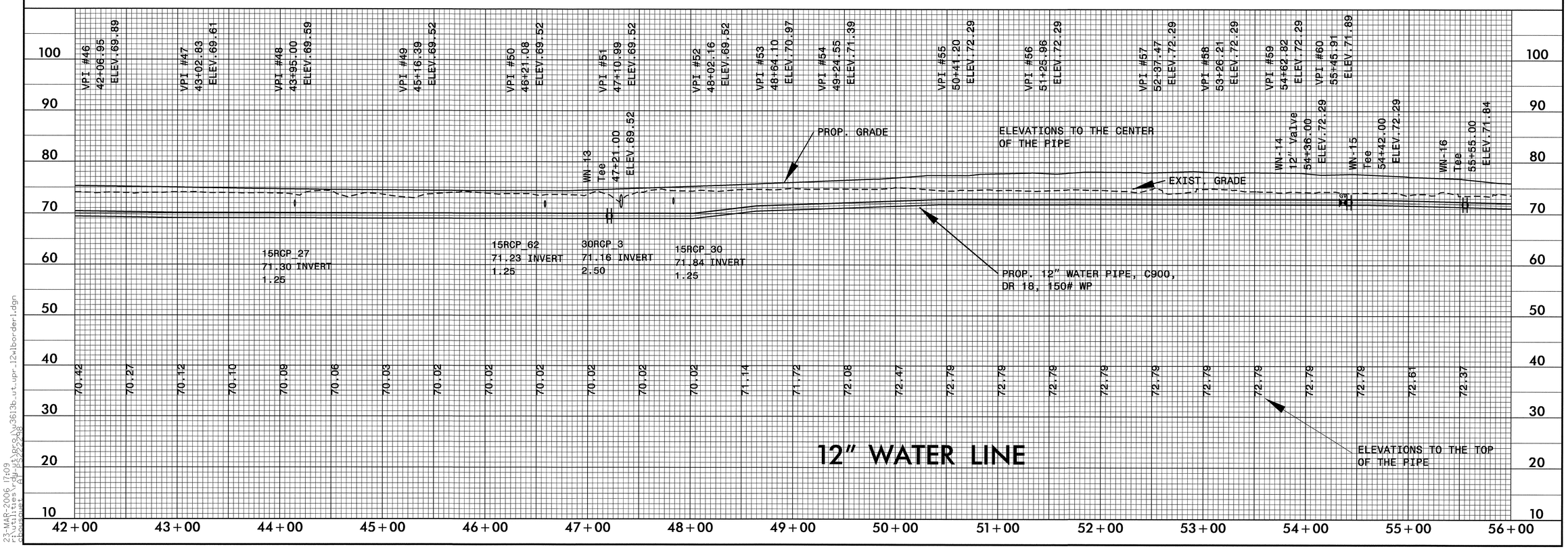
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL 23041 3/27/06 ENGINEER COREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





5/28/99

23-MAR-2006 17:09
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cbousquet AT PS22248

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-21

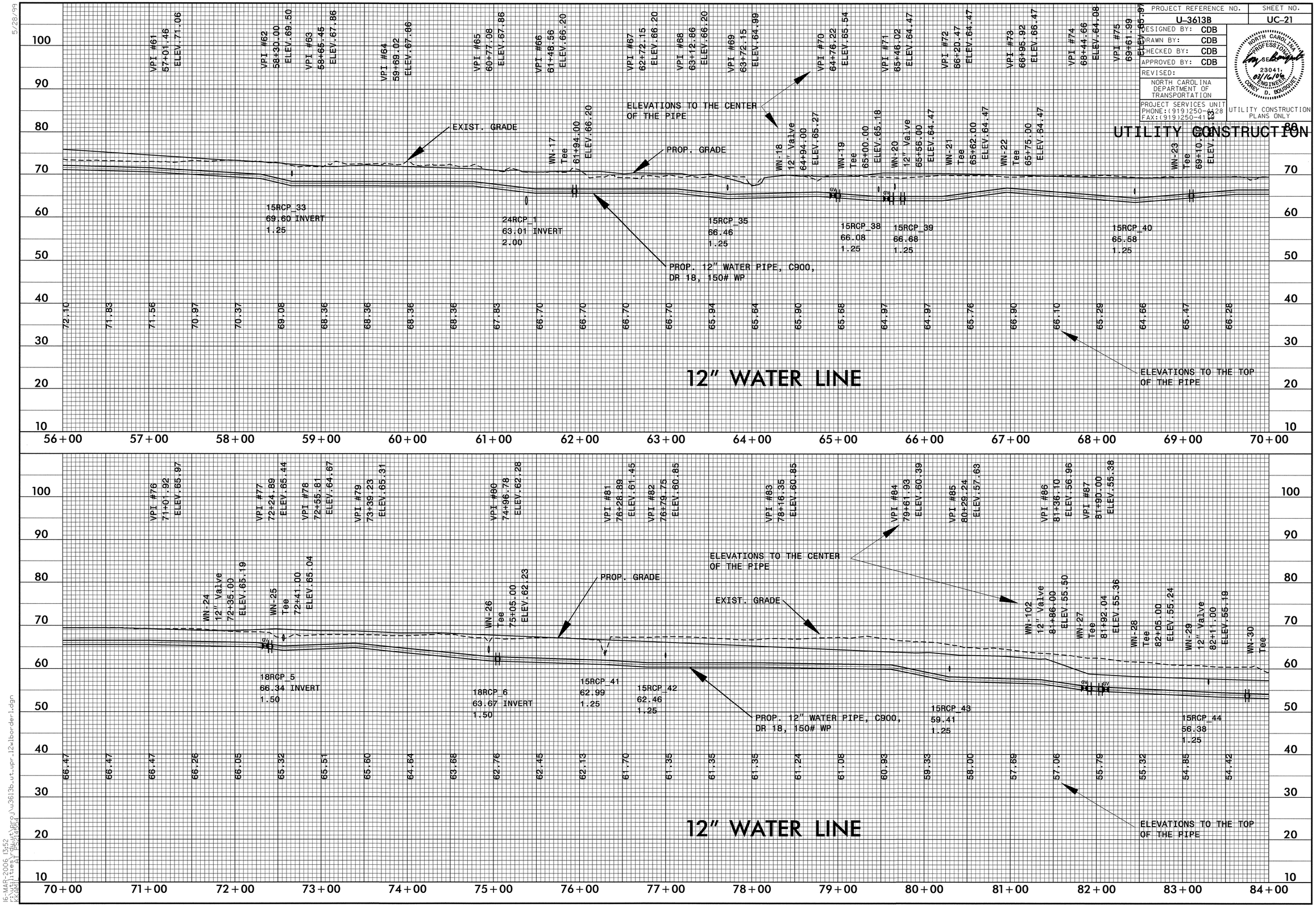
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4113

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 03/16/06 COREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



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16-MAR-2006 13:52
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AT PS214454

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-22

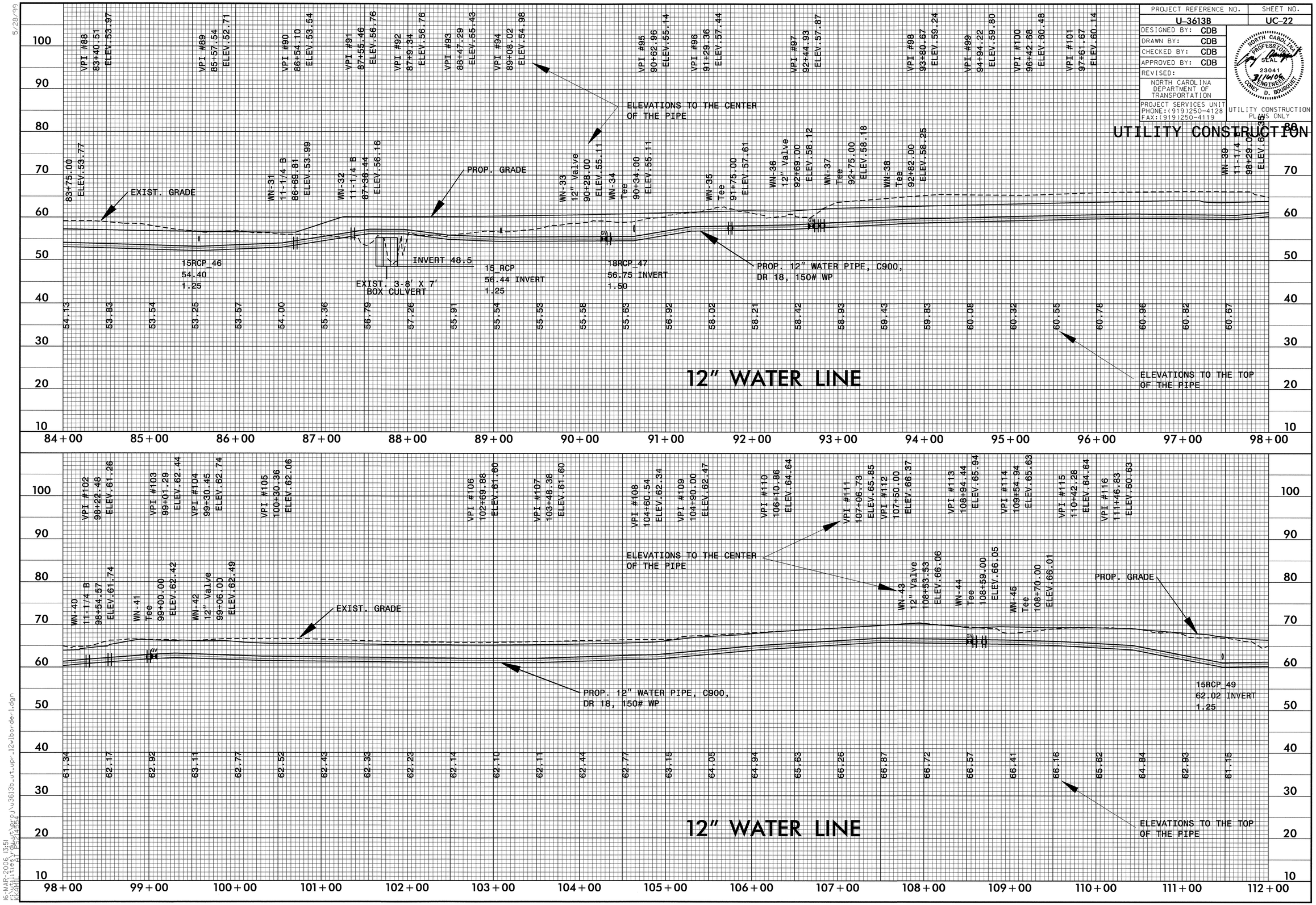
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 3/16/06 CHRIS D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

16-MAR-2006 13:51
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KKAHN
AT PS214554

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-22A

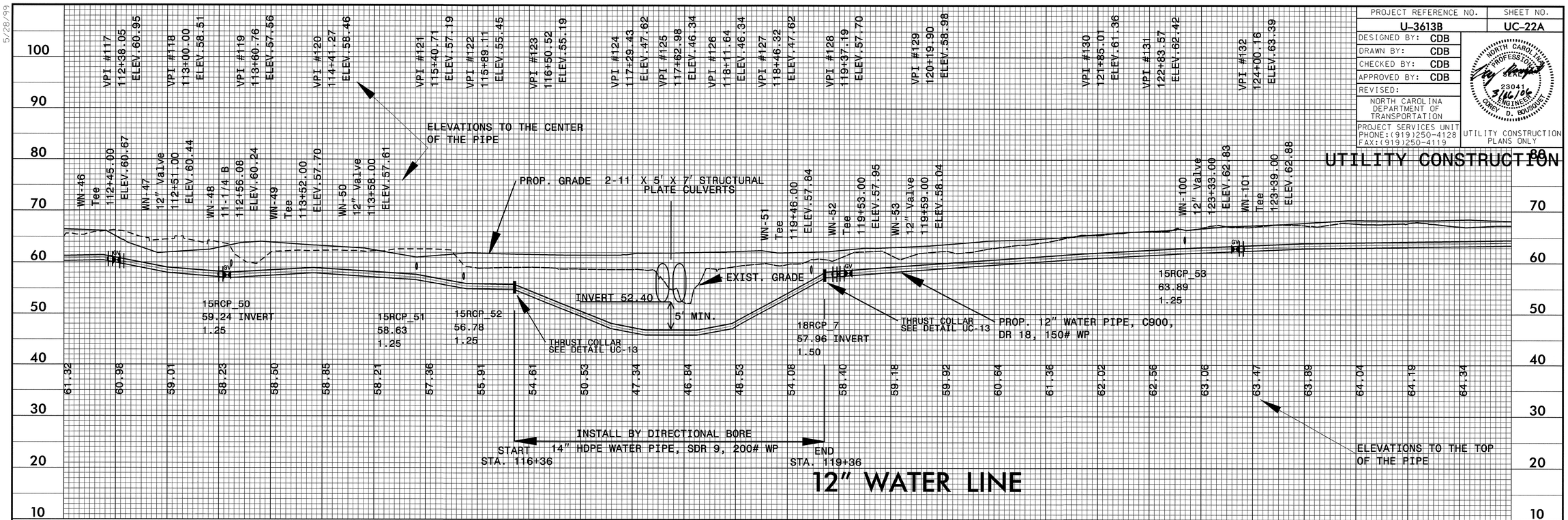
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

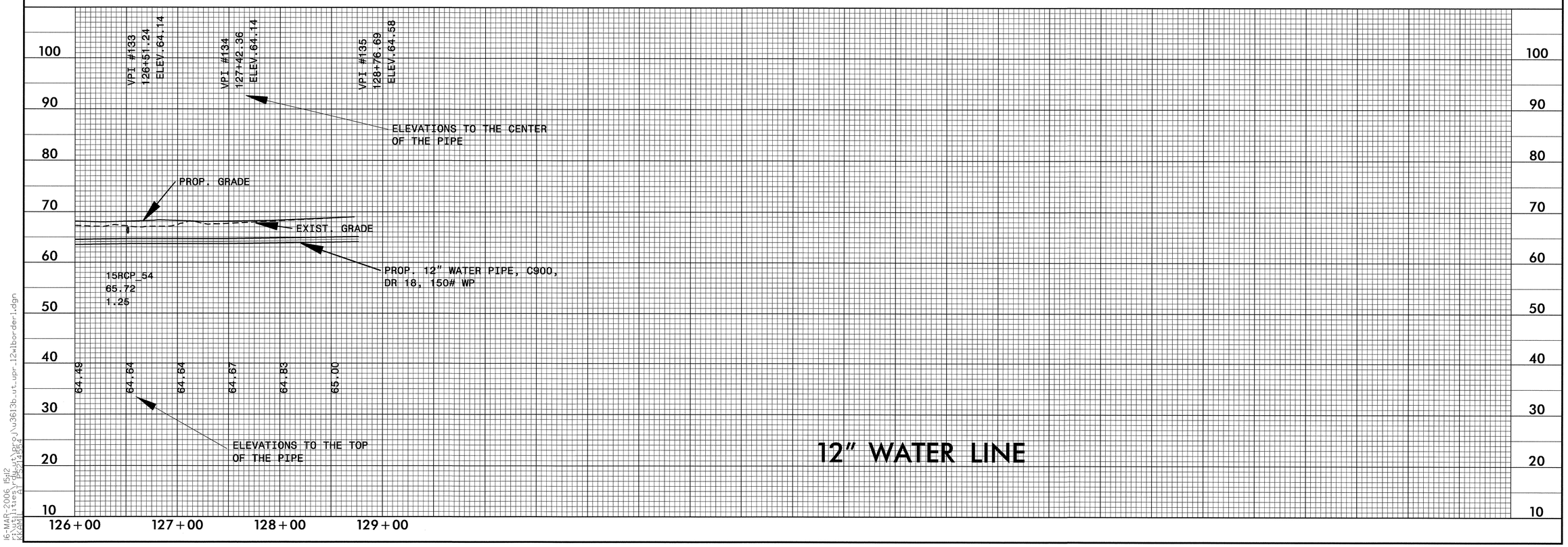
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 3/16/06 COREY D. BUSQUIET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





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kkaw
AY 25214554

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-23

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:

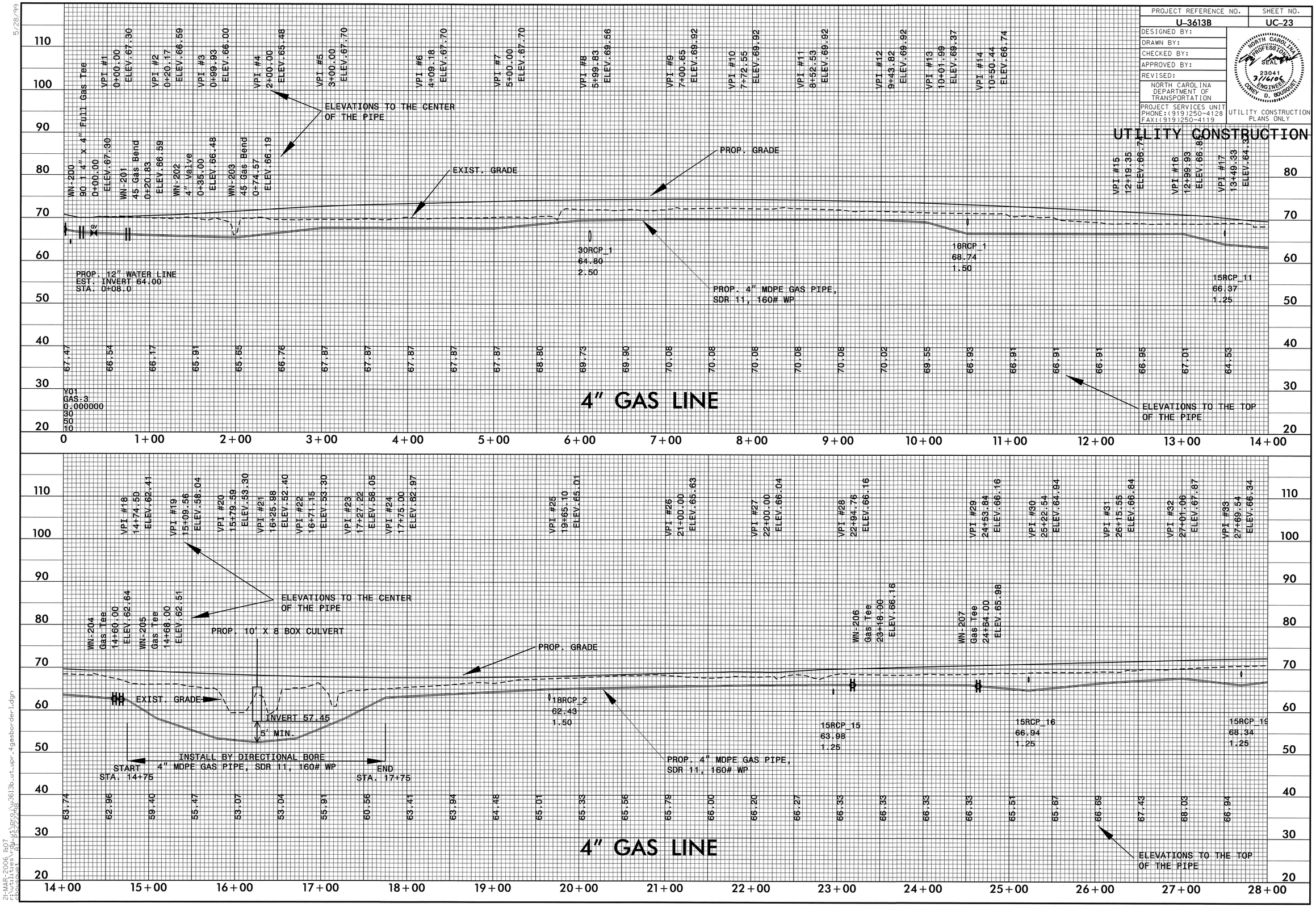
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 3/16/06 COREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



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Bousquet AT PS22228

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-24

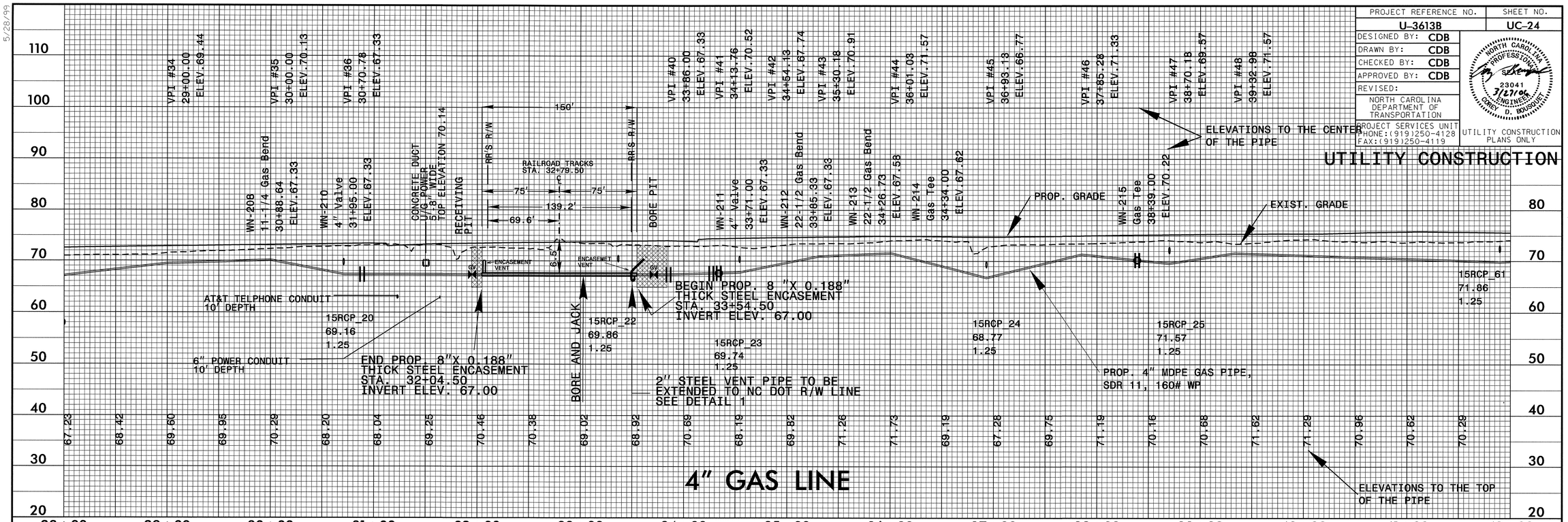
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

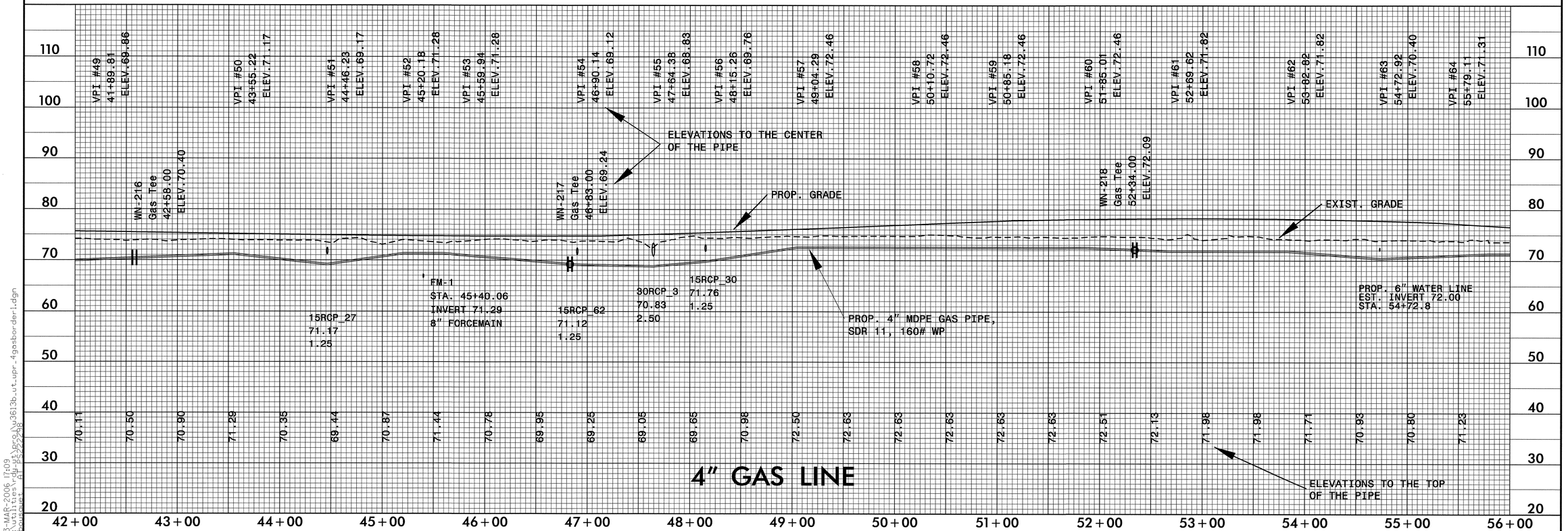
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 3/27/06 COREY D. BOUGUES

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





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PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-25

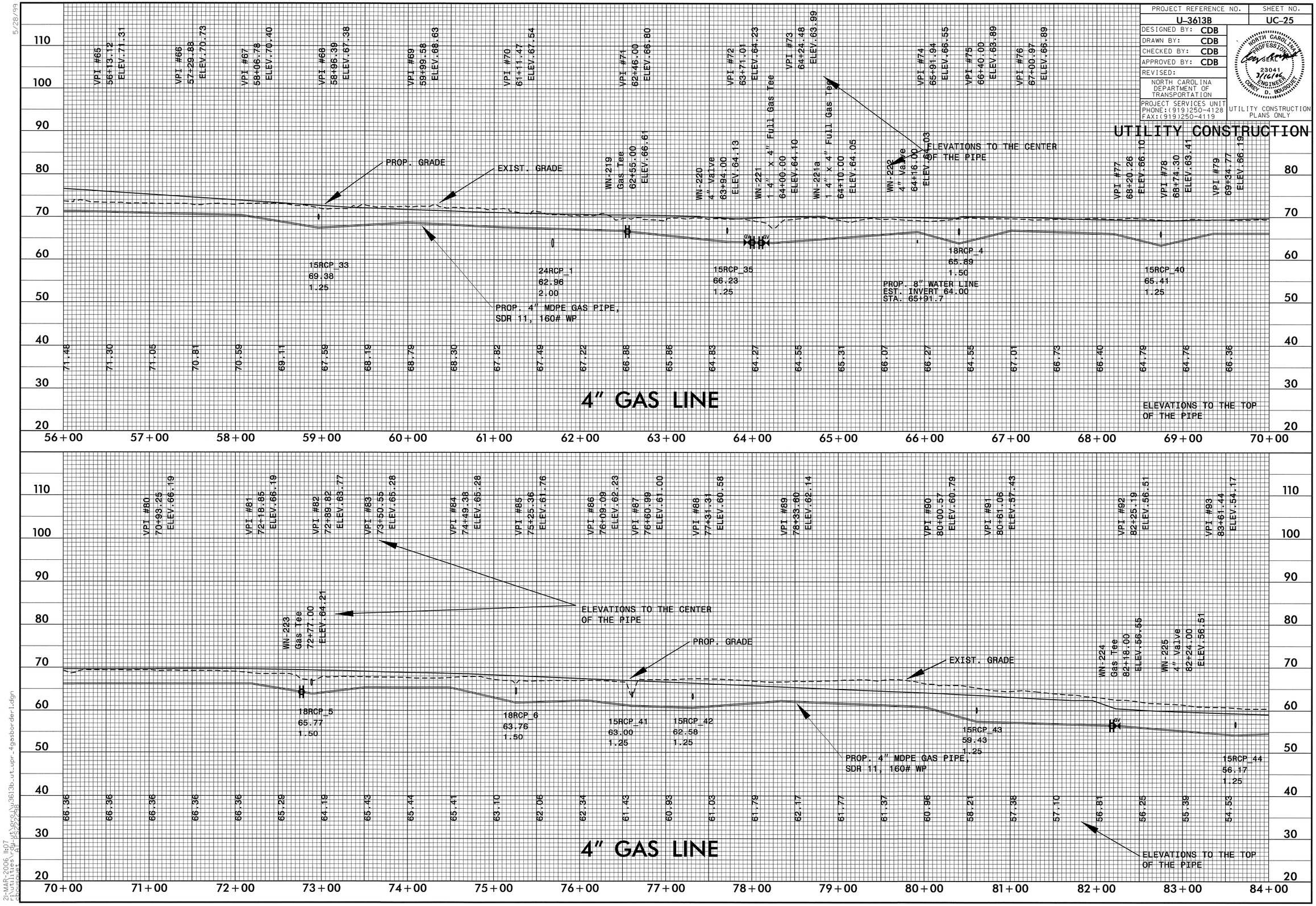
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 CREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

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bousquet
41-PS/22/98

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-26

DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

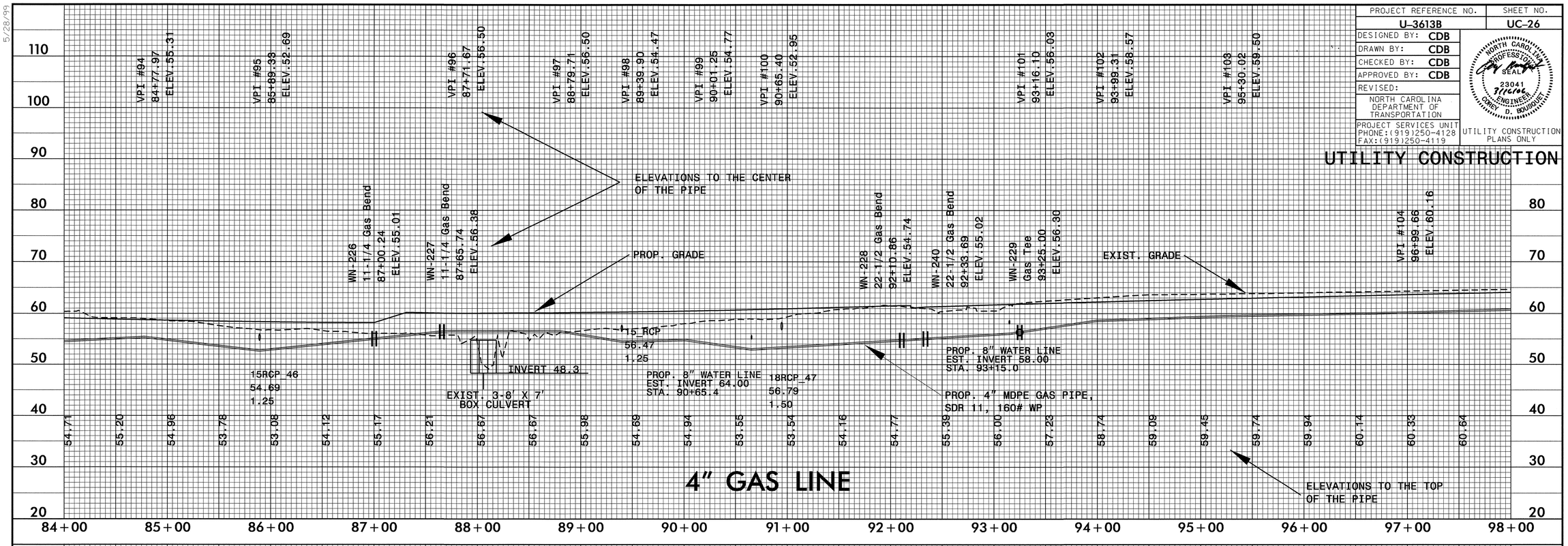
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

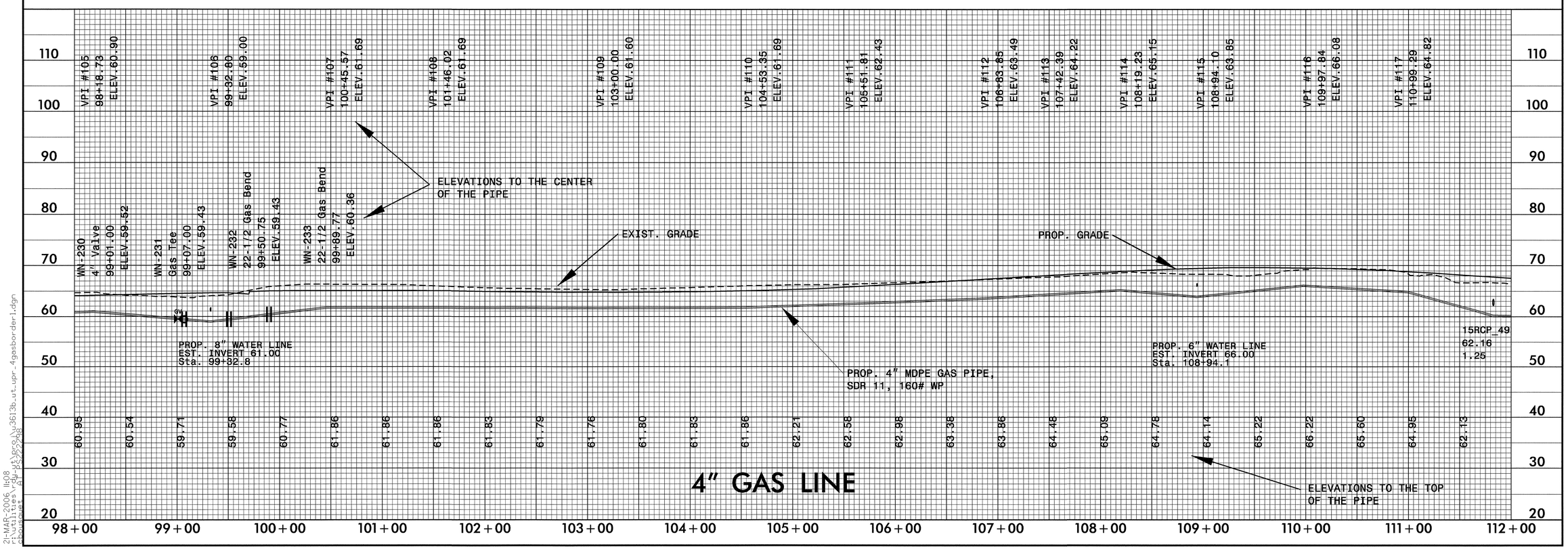
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





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cbousquet AT PSC22298

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-27

DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

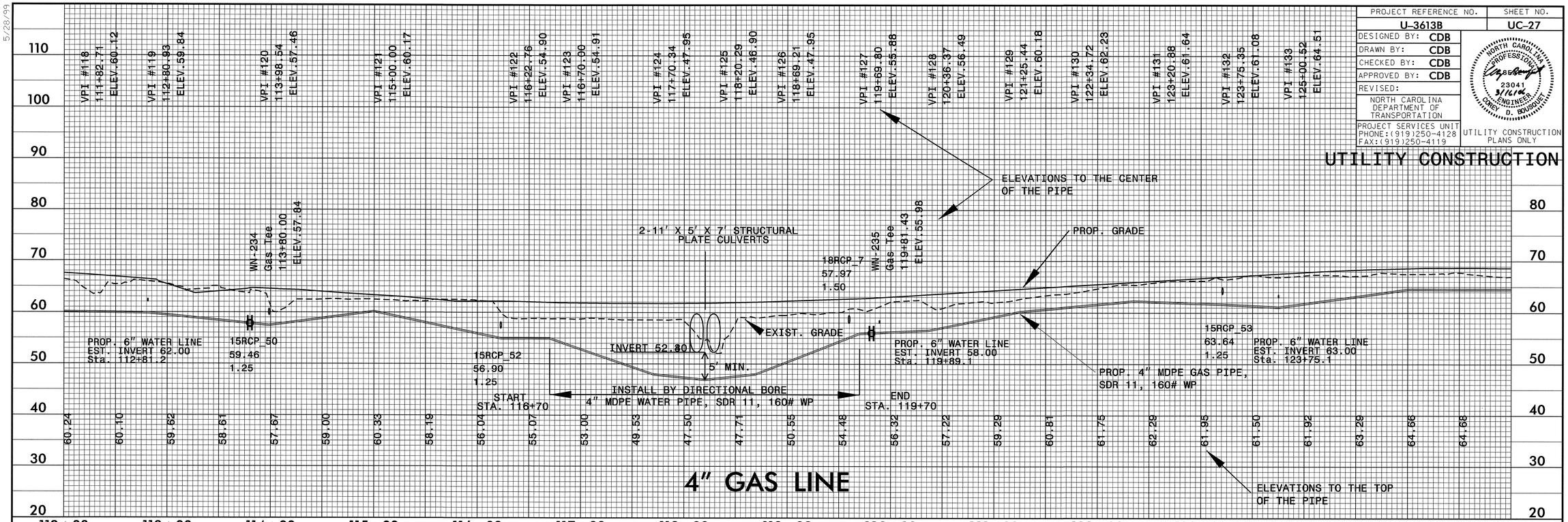
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

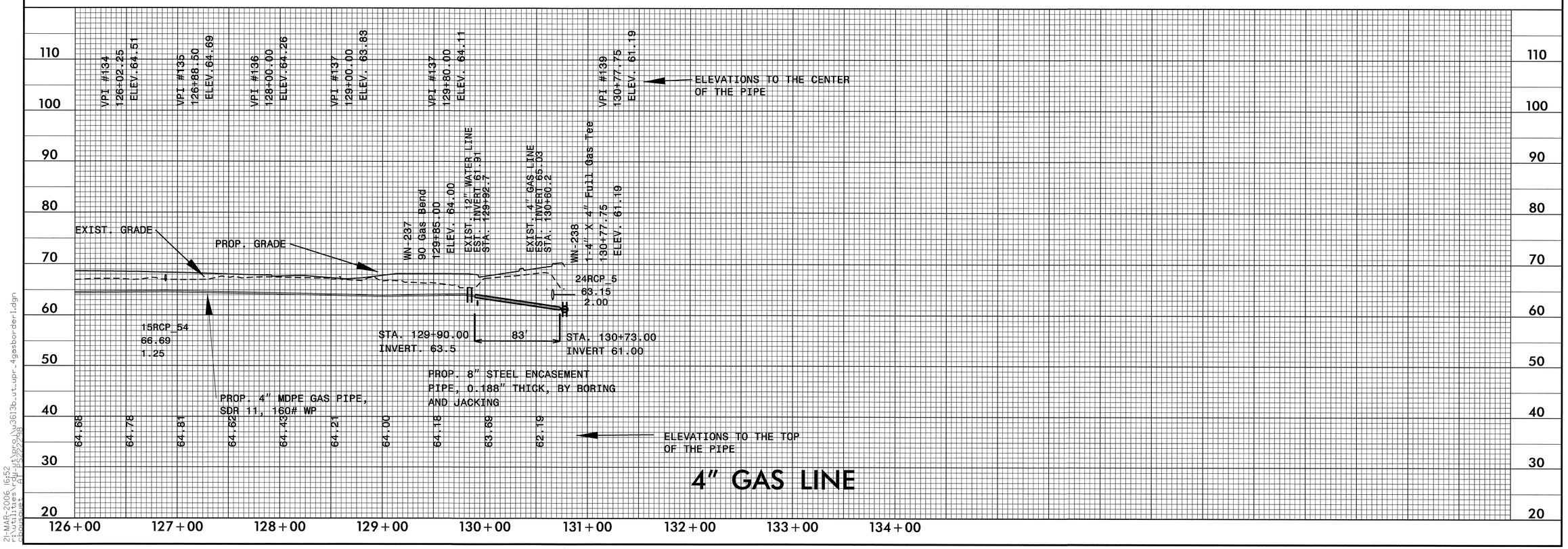
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 3/16/06 COREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





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cbousquet

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-28

DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

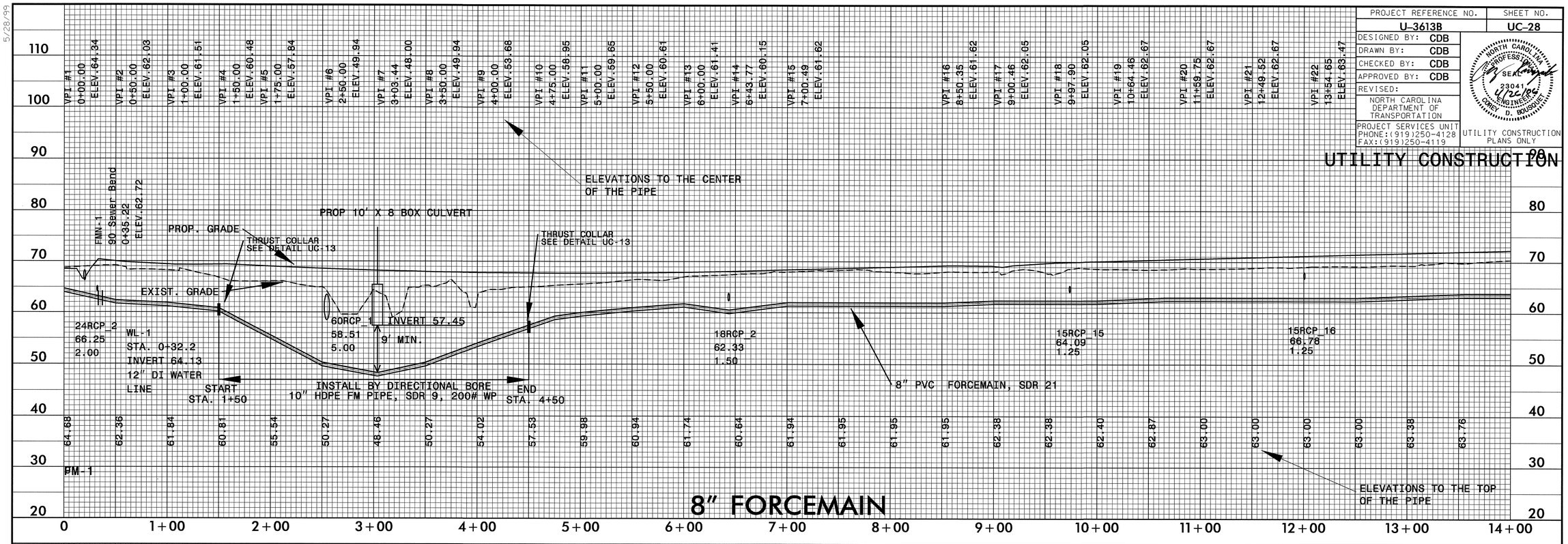
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER CHRIS D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

26-APR-2006 08:08
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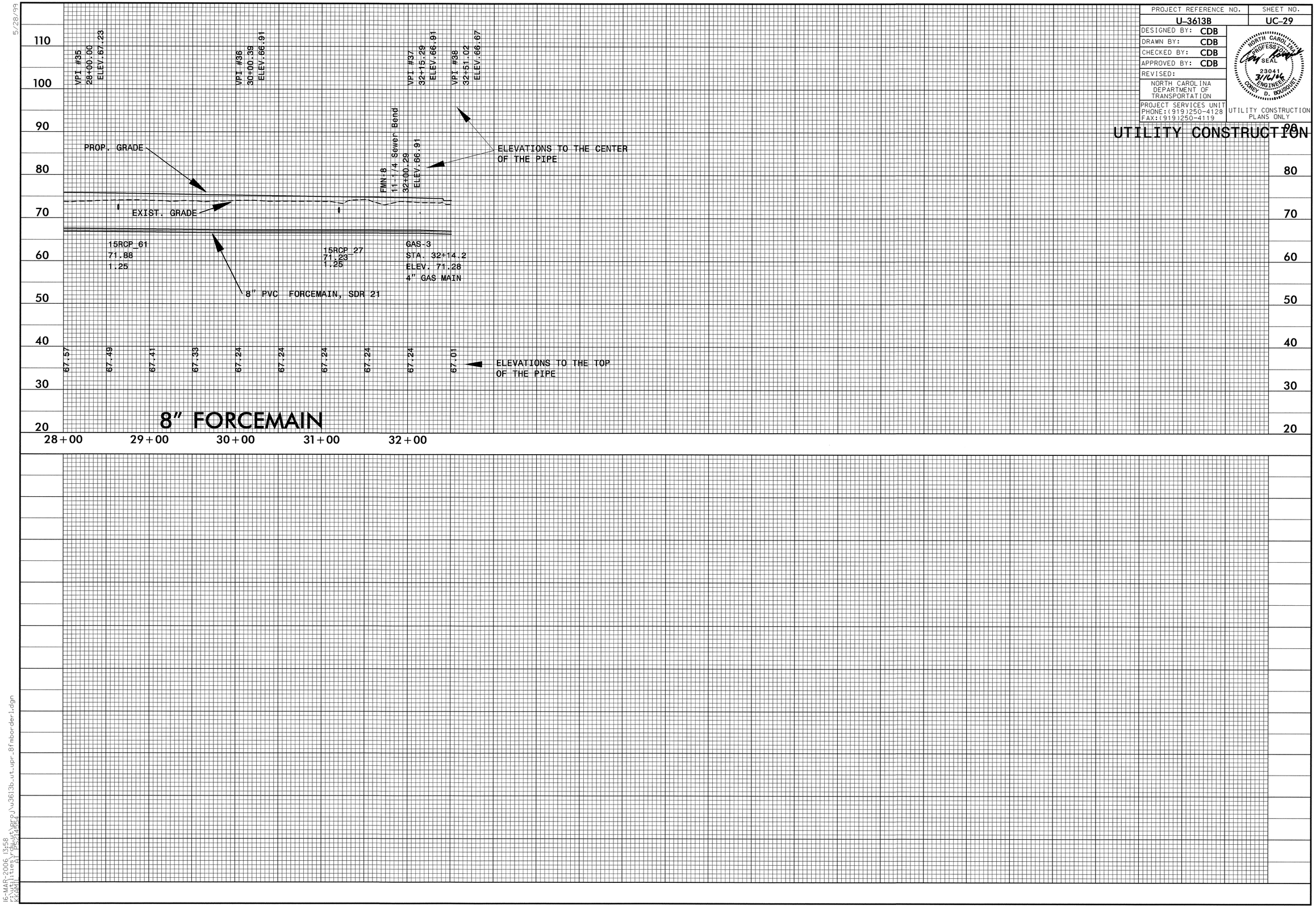


PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-29

DESIGNED BY: CDB
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

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER CHRISTOPHER D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

5/28/99

16-MAR-2006 13:58
r:\utilities\rdu-pt\proj\u3613b_ut_upr_8fmborder1.dgn
kkamil
A1 pk24454

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-30

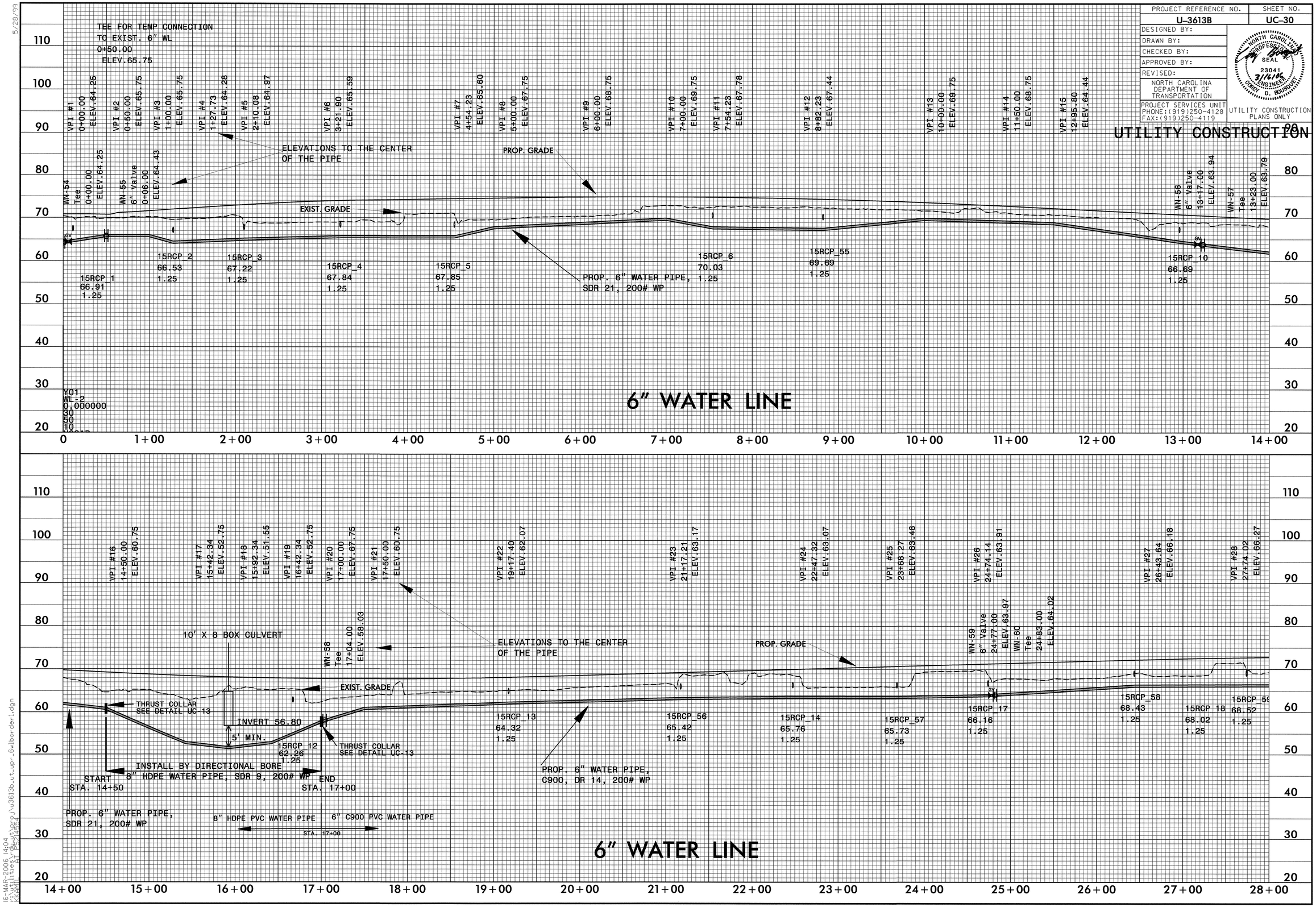
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 3/16/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

16-MAR-2006 14:04
r:\utilities\rdout\proj\u3613b_ut_upr_6wlborder1.dgn
kkami

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-31

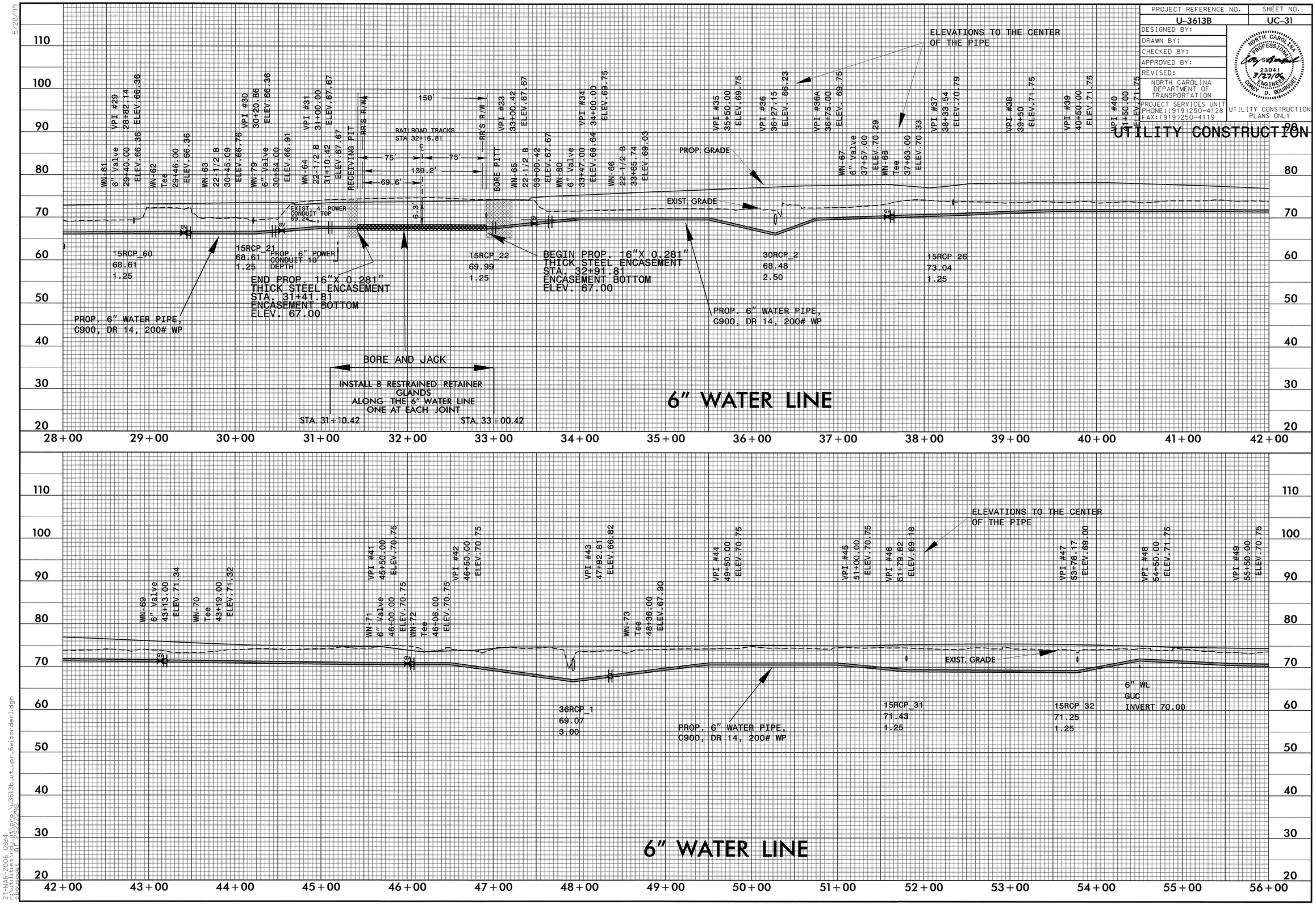
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 3/27/06 GREG D. BUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

27-MAR-2006 09:14
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cbowman

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-32

DESIGNED BY: KAK
DRAWN BY: KAK
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

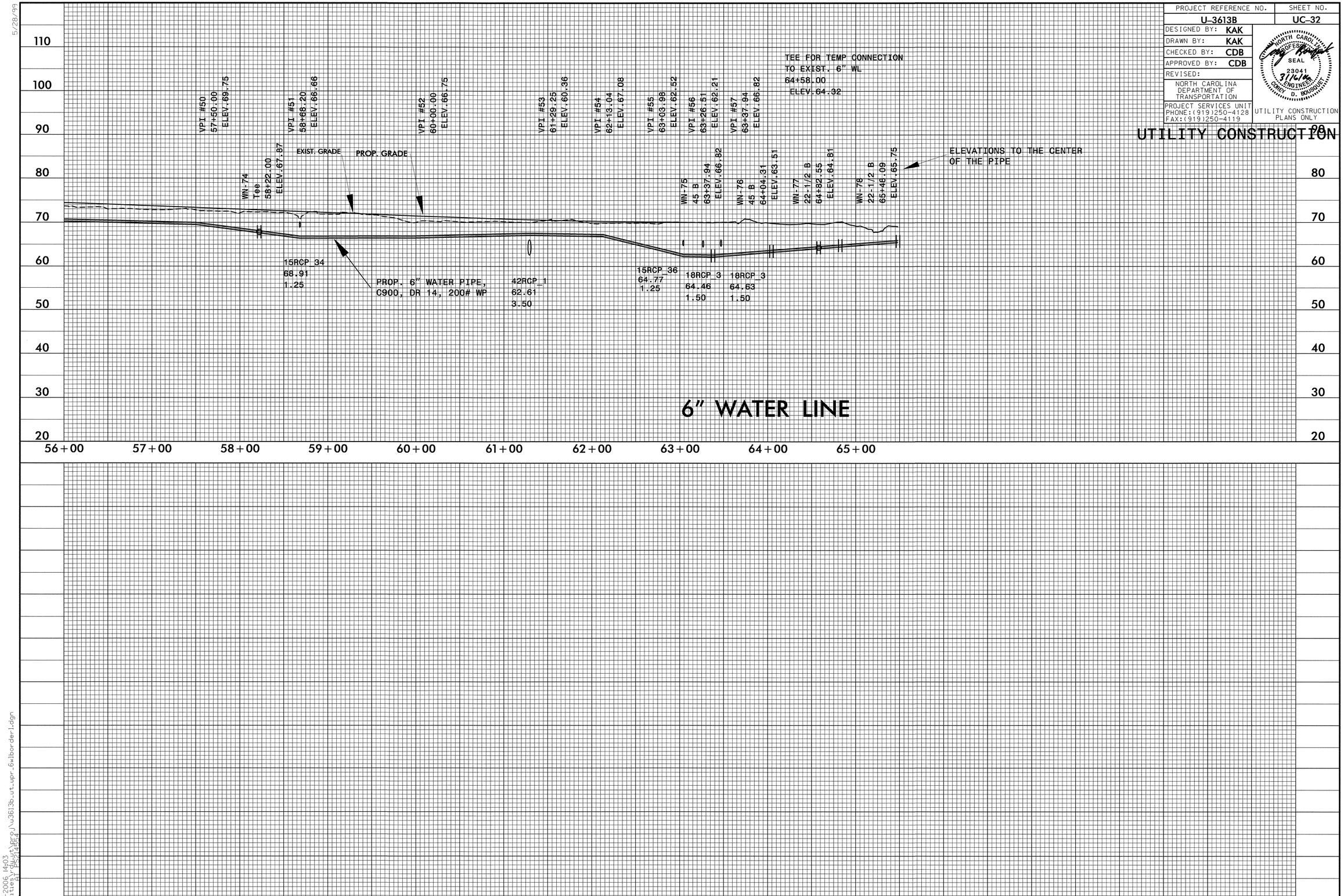
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

SEAL 23041 ENGINEER

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

16-MAR-2006 14:03
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(KAM)
AT PS214454

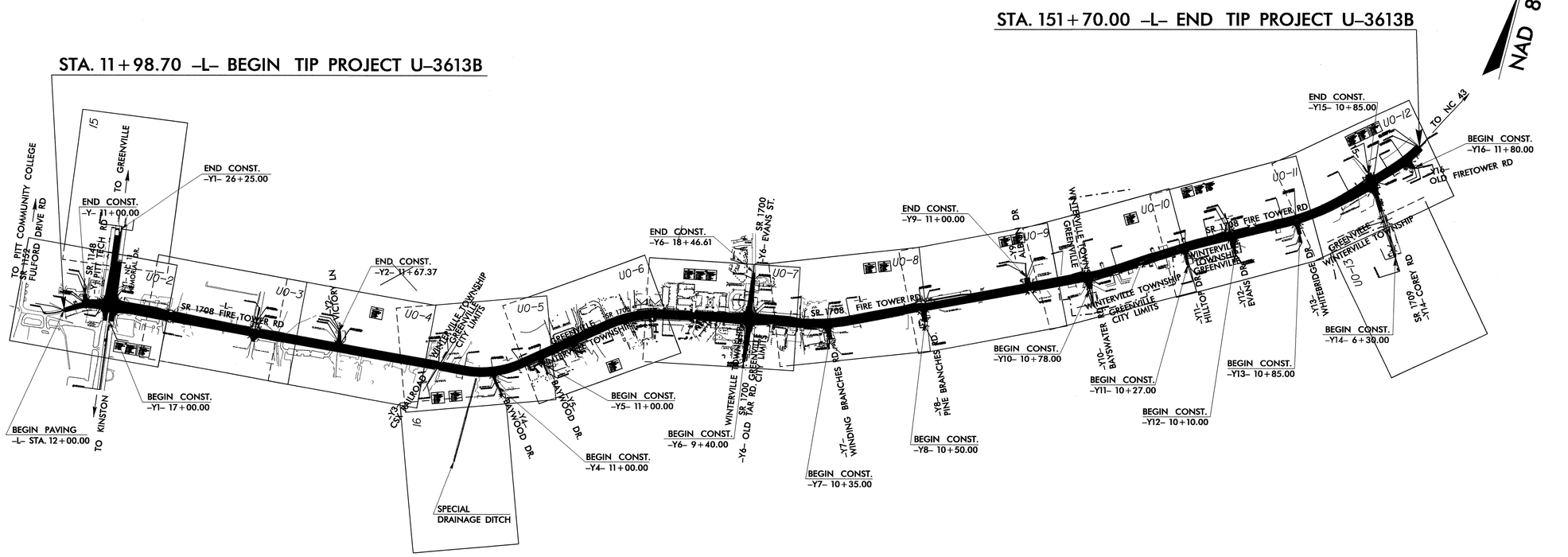
T.I.P. NO.	SHEET NO.
U-3613B	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITY BY OTHERS PLANS
PITT COUNTY

LOCATION: GREENVILLE – SR 1708 (FIRE TOWER ROAD) FROM WEST OF NC 11-903 TO EAST OF SR 1709 (COREY RD).

TYPE OF WORK: UTILITIES



GRAPHIC SCALES

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PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-13	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(1) GUC POWER
(2) SPRINT
(3) AT&T
(4) COX COMMUNICATIONS

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
DESIGN SERVICES
UTILITY SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
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Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Corey Bousquet, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill — UTILITIES PROJECT DESIGNER

TIP PROJECT: U-3613B

09/08/99

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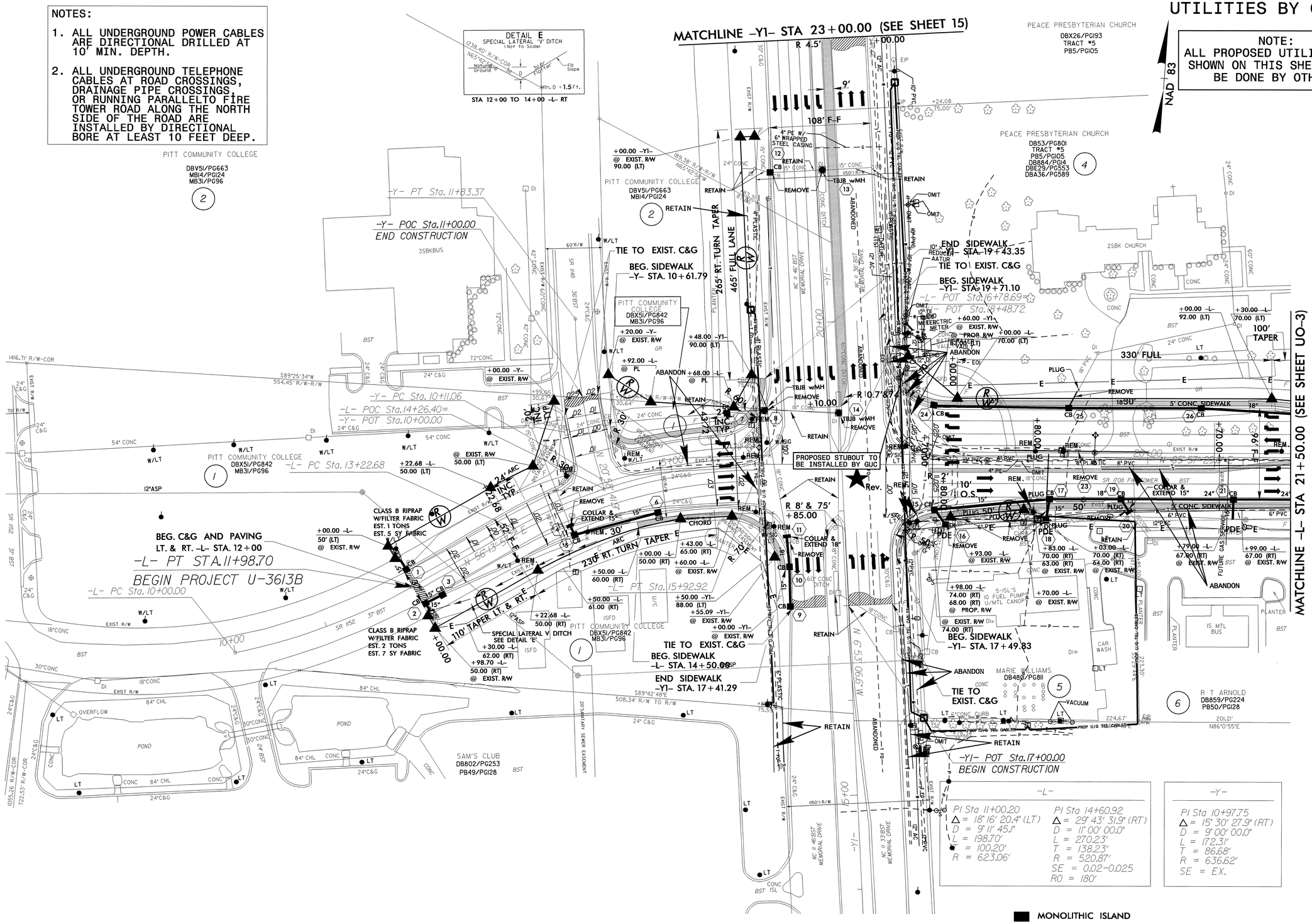
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-2

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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



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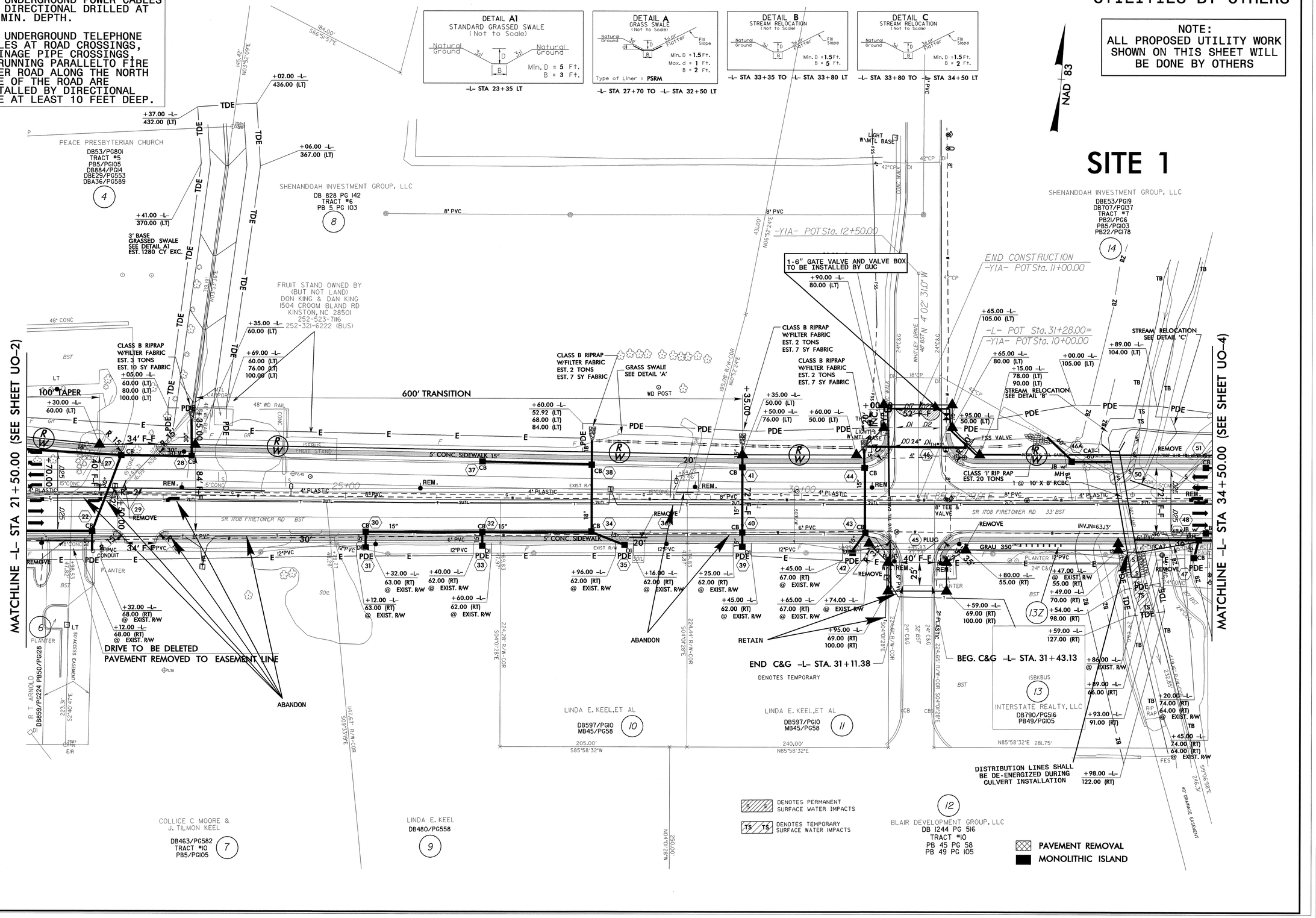
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-3

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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



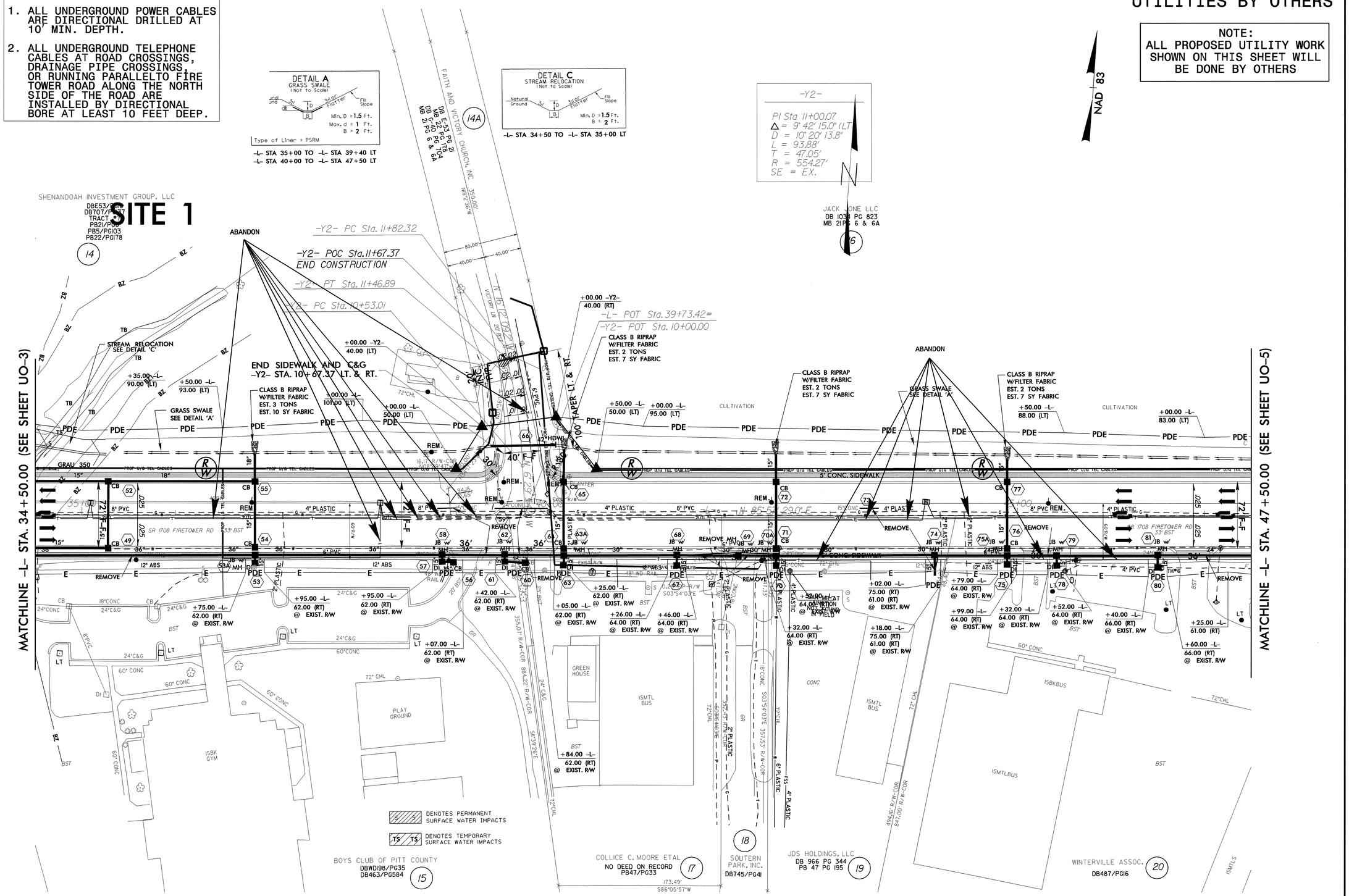
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-4

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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



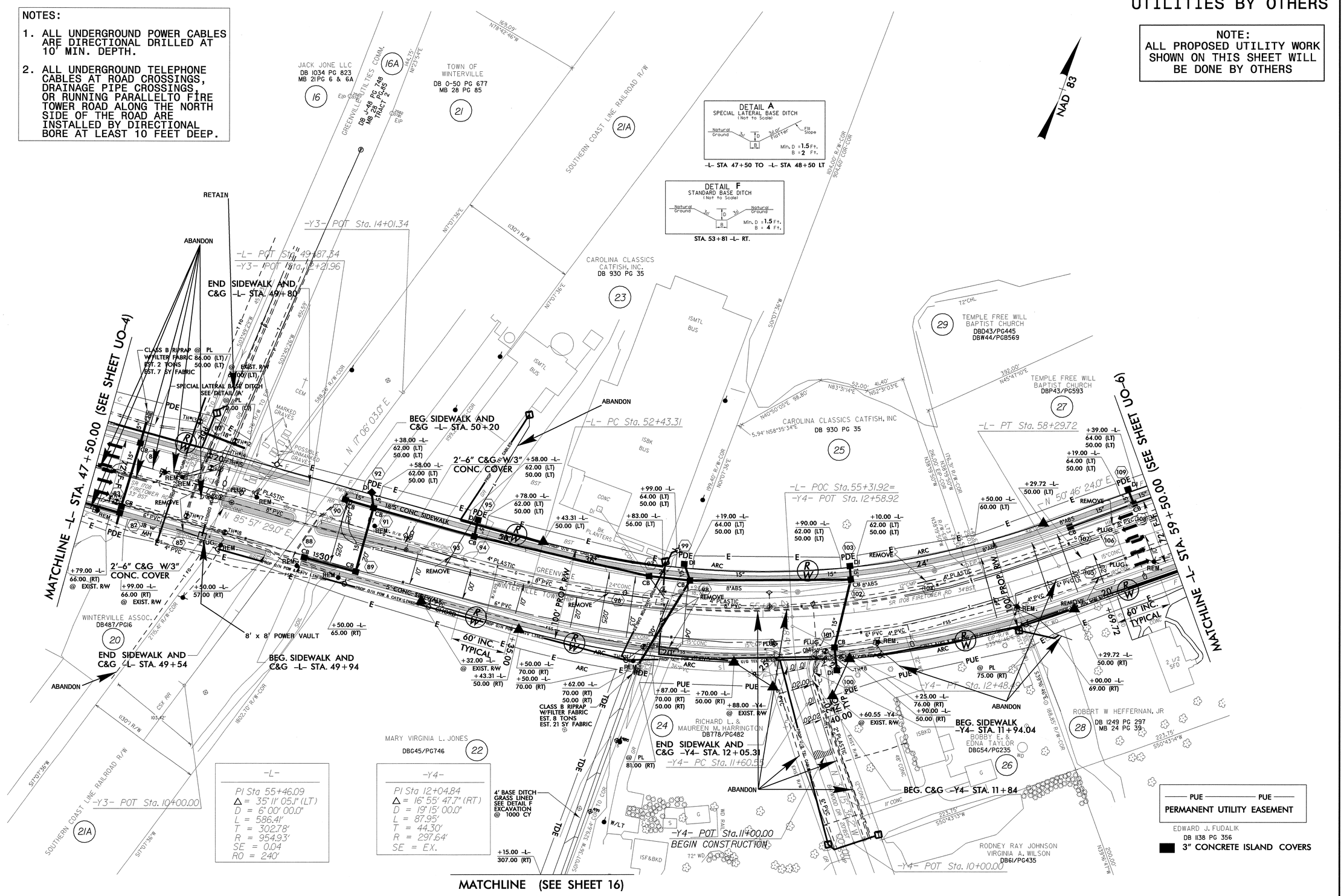
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UO-5

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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



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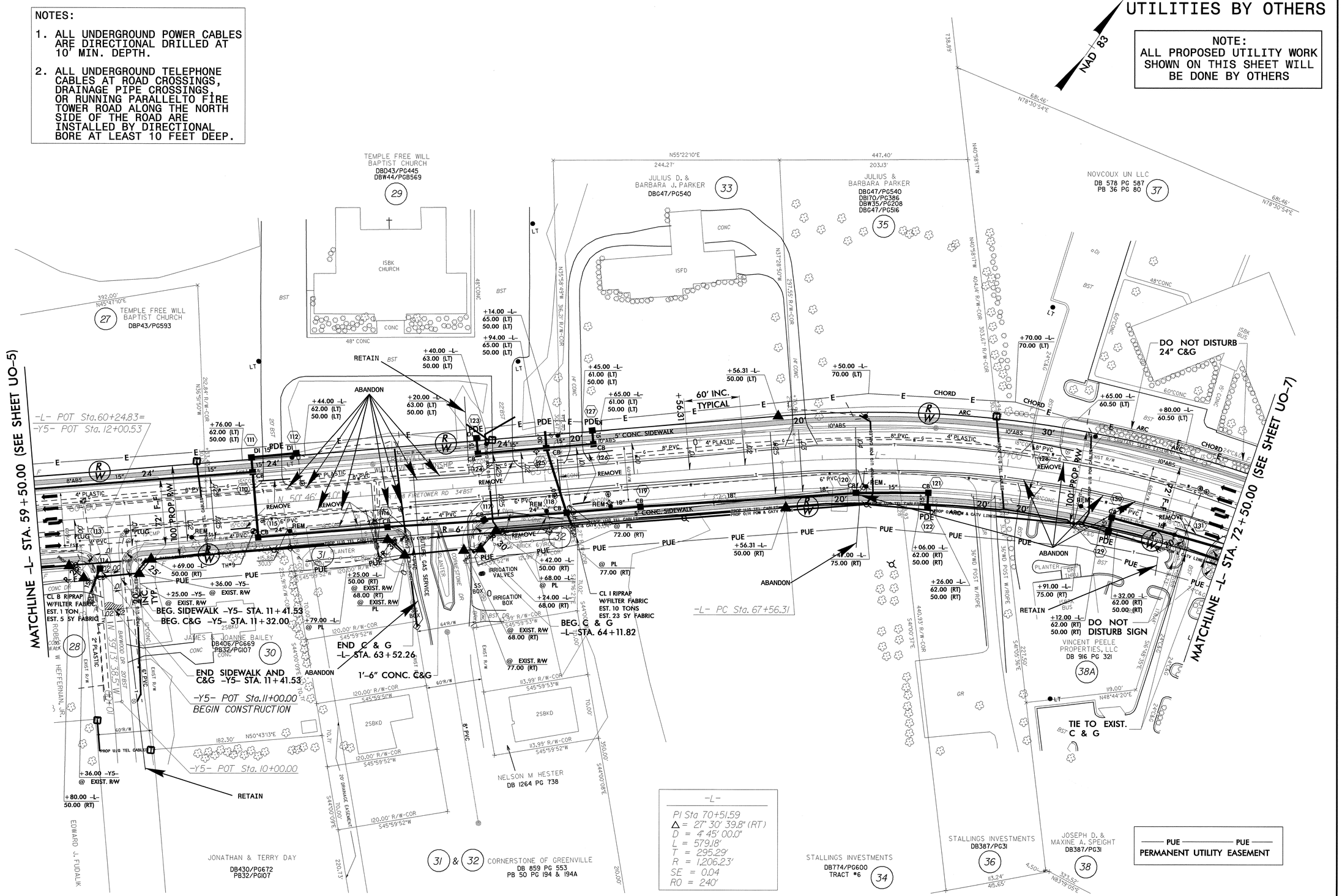
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-6

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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



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PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-7

UTILITIES BY OTHERS

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

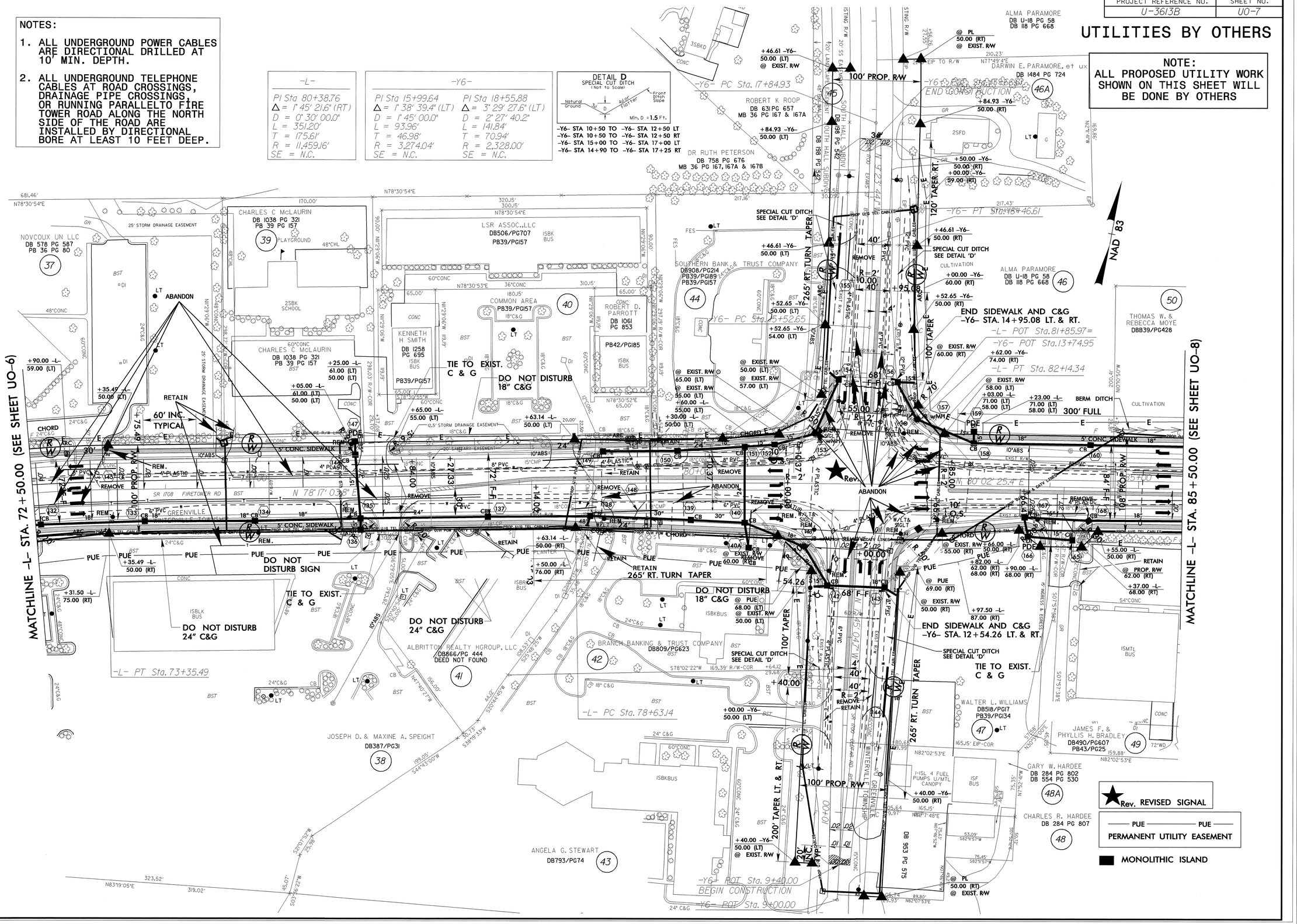
NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

-L-	-Y6-	
PI Sta 80+38.76	PI Sta 15+99.64	PI Sta 18+55.88
Δ = 1° 45' 21.6" (RT)	Δ = 1° 38' 39.4" (LT)	Δ = 3° 29' 27.6" (LT)
D = 0° 30' 00.0"	D = 1° 45' 00.0"	D = 2° 27' 40.2"
L = 351.20'	L = 93.96'	L = 141.84'
T = 175.61'	T = 46.98'	T = 70.94'
R = 11,459.16'	R = 3,274.04'	R = 2,328.00'
SE = N.C.	SE = N.C.	SE = N.C.

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground; 3:1; D; Add or Fill 1.0'; Front Slope
Min. D = 1.5 Ft.

-Y6- STA 10+50 TO -Y6- STA 12+50 LT
-Y6- STA 10+50 TO -Y6- STA 12+50 RT
-Y6- STA 15+00 TO -Y6- STA 17+00 LT
-Y6- STA 14+90 TO -Y6- STA 17+25 RT



★ Rev. REVISED SIGNAL

—— PUE —— PUE ——
PERMANENT UTILITY EASEMENT

■ MONOLITHIC ISLAND

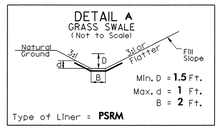
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-8

UTILITIES BY OTHERS

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

NOTES:

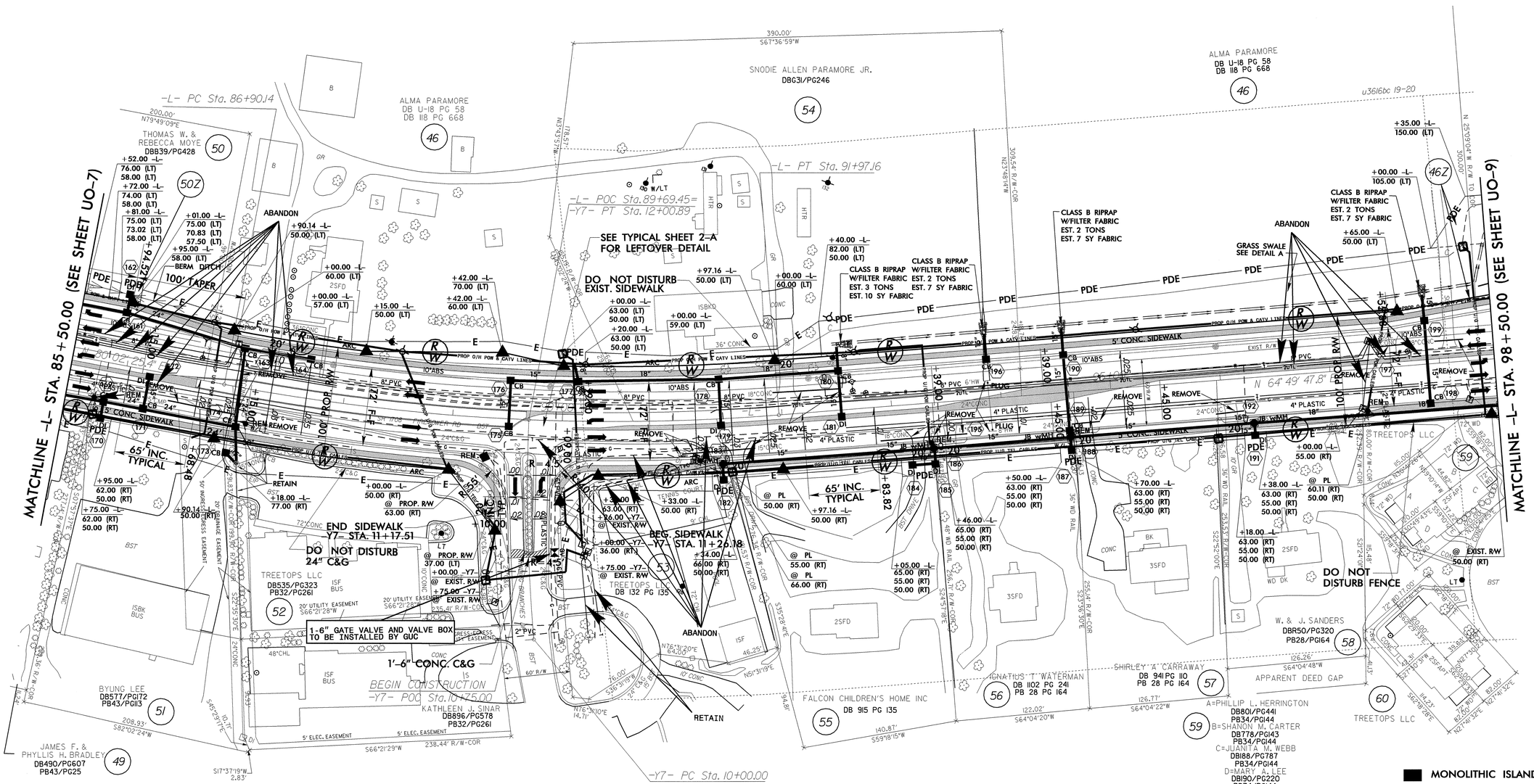
1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.



-L- STA 92+50 TO -L- STA 100+50 LT

-L-
PI Sta 89+45.15
Δ = 15° 12' 37.6" (LT)
D = 3° 00' 00.0"
L = 507.01'
T = 255.01'
R = 1,909.86'
SE = 0.035

-Y7-
PI Sta 11+00.58
Δ = 7° 16' 31.7" (RT)
D = 3° 37' 17.8"
L = 200.89'
T = 100.58'
R = 1,582.05'
SE = N.C.



PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-9

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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

-Y8-	-Y9-
PI Sta 10+82.04 Δ = 6° 33' 20.5" (LT) D = 4° 00' 00.0" L = 163.89' T = 82.04' R = 1,432.39' SE = 0.025	PI Sta 11+89.53 Δ = 12° 23' 53.4" (RT) D = 11° 15' 00.0" L = 110.21' T = 55.32' R = 509.30' SE = 0.035

NAD 83

DETAIL A
GRASS SWALE
(Not to Scale)
Natural Ground, 3:1, d, D, B, 3:1 or Flatter, Fill Slope
Min. D = 1.5 Ft.
Max. d = 1 Ft.
B = 2 Ft.
Type of Liner = PSRM

FROM -L-100+50 TO -L-105+26 LT
FROM -L-105+58 TO -L-106+85 LT
FROM -L-107+60 TO -L-108+20 LT
FROM -L-105+18 TO -L-107+15 RT

GRASS SWALE
da = 1.97 ac
Q2 = 6 cfs
Q10 = 8 cfs
d2 = 0.96 ft
d10 = 1.09 ft
v2 = 1.29 fps
v10 = 1.39 fps
length = 210 ft
s = 1.0%

GRASS SWALE
da = 11.61 ac
Q2 = 29 cfs
Q10 = 38 cfs
d2 = 1.93 ft
d10 = 2.17 ft
v2 = 1.93 fps
v10 = 2.07 fps
length = 1170 ft
s = 1.0 %

PSH
da = 3.52 ac
Q10 = 8 cfs

GRASS SWALE
da = 1.11 ac
Q2 = 4.7 cfs
Q10 = 6 cfs
d2 = 1.13 ft
d10 = 1.26 ft
v2 = 0.77 fps
v10 = 0.82 fps
length = 111 ft
s = 0.3%

DETAIL H
STANDARD GRASSED SWALE
(Not to Scale)
Natural Ground, 3:1, d, D, B, 3:1, Natural Ground
Min. D = 1.5 Ft.
Max. d = 1 Ft.
B = 2 Ft.
Type of Liner = PSRM

MATCHLINE -L- STA. 98+50.00 (SEE SHEET UO-8)

MATCHLINE -L- STA. 112+50.00 (SEE SHEET UO-10)

CLARK LAND COMPANY, LLC
DB 1723 PG 001
MB 61PG 99

CITY OF GREENVILLE
DB 1754 PG 30

REGINALD & BONITA SPAIN
DB896/PG507
PB46/PG143

WILLIAM E. & BETTY C. STEWART
DB888/PG787
PB46/PG143

CYNTHIA B. GROATHOUSE
DB868/PG522
PB46/PG143

TREETOPS LLC

RT DEVELOPMENT, INC
DB 1457 PG 517
MB 59 PG 48

BLANCHE D WATSON
DB245/PG429

ELAINE W. TILGHMAN, et al
DB107/PG328

ELAINE W. TILGHMAN, et al
DB 1219 PG 443

I=TIMOTHY R. MORRIS
DBL130-424/PG585
PB41/PG144

J=MARYJANE C. DAUGHTRY
DBL132-511/PG226
PB41/PG144

K=GALAXY PARTNERS
DBL131-713/PG675
PB41/PG144

L=BETH H. JDOCK
DBL130-430/PG506
PB41/PG144

E=LYNN M. ROEDER
DB442/PG438
PB41/PG182

F=HAROLD D. & LISA S. HUDSON
DB619/PG58
PB41/PG182

G=MARGERET W. & SAMUEL W. MCCORMICK
DBL120-426/PG763
PB41/PG182

H=CURTIS & BARBARA WAGONER
DB866/PG313
PB41/PG182

★ NEW SIGNAL
■ MONOLITHIC ISLAND

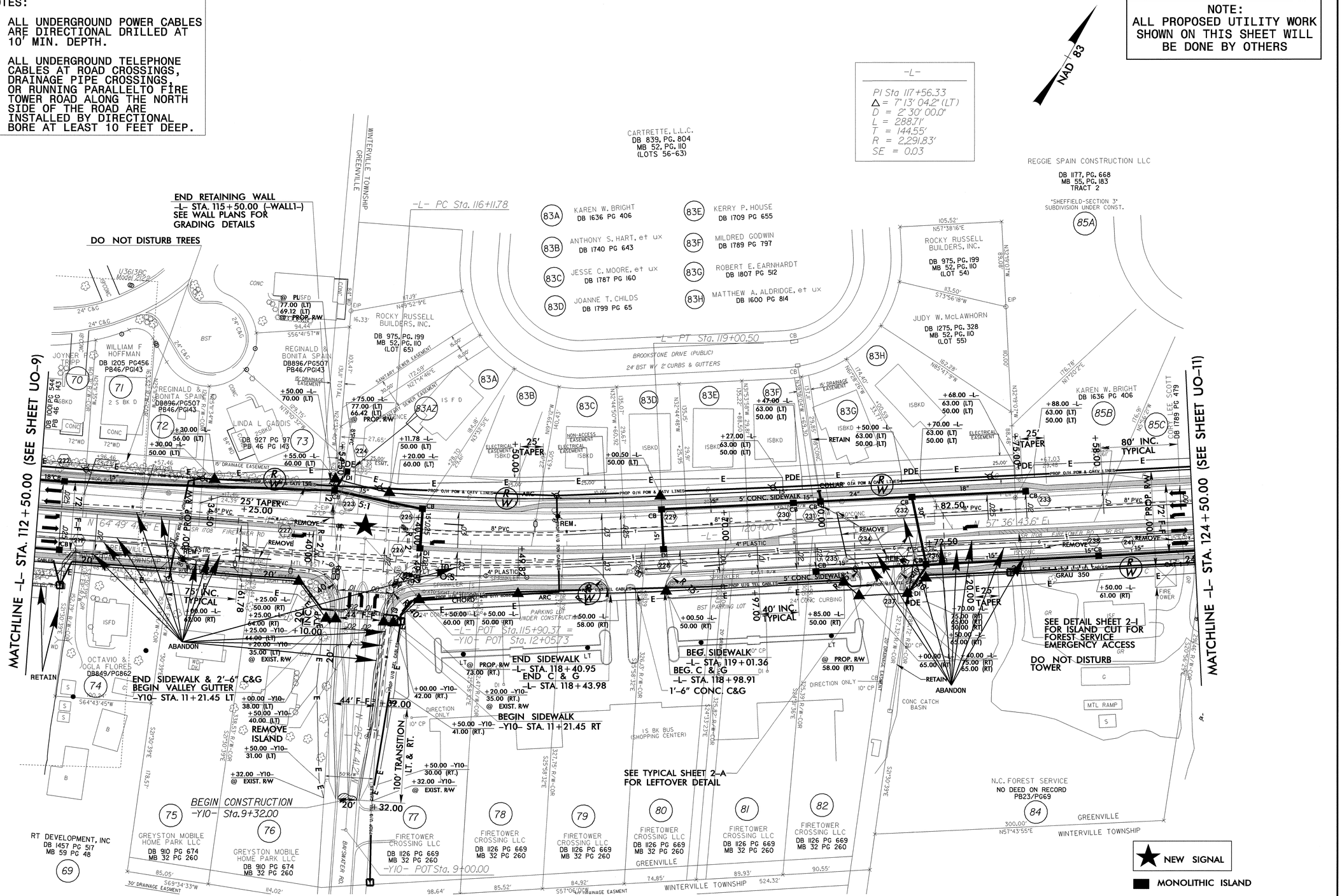
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-10

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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



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PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-11

UTILITIES BY OTHERS

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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

= 34' 44.2" (RT)	Δ = 4' 21' 23.0" (RT)	Δ = 17' 53' 45.4" (LT)
5' 15' 00.0"	D = 1' 30' 00.0"	D = 2' 30' 00.0"
11.87'	L = 290.43'	L = 715.84'
46.00'	T = 145.28'	T = 360.86'
694.49'	R = 3,819.72'	R = 2,291.83'
0.033	SE = 0.025	SE = 0.03

-Y11- STA 10+00 TO 11+50 RT & LT
-Y12- STA 10+00 TO 11+00 RT & LT
Min. D = 1.5 Ft.

Min. D = 1.5 Ft.
Max. d = 1 Ft.
B = 2 Ft.
Type of Liner = PSRM
FROM -L-129+00 TO -L-135+50

NAD 83

PSH
da= 1.56 ac
Q10 = 8 cfs

GRASS SWALE
da= 3.48 ac
Q2 = 10 cfs
Q10 = 13 cfs
d2 = 1.39 ft
d10 = 1.56 ft
v2 = 1.16 fps
v10 = 1.24 fps
length = 405 ft
s = 0.3%

SITE 2

REGGIE SPAIN CONSTRUCTION LLC
DB 1177, PG. 668
MB 55, PG. 183
TRACT 2

SHEFFIELD-SECTION 3 SUBDIVISION UNDER CONST.

ABBEYDALE CIRCLE (PUBLIC)
24' BST W/ 2' CURBS & GUTTERS

MATCHLINE -L- STA. 124+50.00 (SEE SHEET UO-10)

MATCHLINE -L- STA. 138+50.00 (SEE SHEET UO-12)

-Y12A- POT Sta. 11+50.00
-L- POT Sta.130+75.00=
-Y12A- POT Sta. 10+00.00
-L- PT Sta. 128+46.68
-L- POC Sta.126+03.67=
-Y11- POT Sta. 11+99.49
-L- PT Sta. 125+56.15
-L- POT Sta.130+83.58=
-Y12- POT Sta. 11+96.59
-L- PC Sta. 136+16.40
-L- POC Sta.137+39.39=
-Y13- POT Sta. 12+33.13
-Y11- PT Sta. 10+91.87
-Y11- PC Sta. 10+27.00
-Y11- PC Sta. 10+00.00
-Y12- POT Sta. 10+10.00
-Y12- POT Sta. 10+00.00
-Y13- POT Sta. 10+00.00

BEGIN CONSTRUCTION -Y11- PC Sta. 10+27.00
BEGIN CONSTRUCTION -Y12- POT Sta. 10+10.00
BEGIN CONSTRUCTION -Y13- Sta. 10+85.00

END SIDEWALK AND C&G -Y11- STA. 11+27.07
END SIDEWALK -Y13- STA. 11+67.95 LT. AND RT.
BEG. SIDEWALK AND C&G -Y12- STA. 11+10.33 LT. AND RT.

2'-6" CONC. C&G
1'-6" CONC. C&G
1-6" GATE VALVE AND VALVE BOX TO BE INSTALLED BY GUC
CLASS B RIPRAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
CLASS B RIPRAP W/FILTER FABRIC EST. 7 TONS EST. 21 SY FABRIC
CLASS B RIPRAP W/FILTER FABRIC EST. 8 TONS EST. 24 SY FABRIC
2 @ 11'5" X 7'1" STRUCTURAL PLATE ALUMINUM
PSH 4.5' X 4.5' SEE DETAIL @ 8 CY EXCAVATION @ 26 SY FF @ 10 TONS
DO NOT DISTURB PARKING LOT
SEE TYPICAL SHEET 2-A FOR LEFTOVER DETAIL
NOTE: 15"CSP IS PIPED THROUGH STRUCTURE WITH 24" DRIVE PIPE
DISTRIBUTION LINES SHALL BE DE-ENERGIZED DURING CULVERT INSTALLATION
SPECIAL CUT DITCH SEE DETAIL 'C'
90' INC. TYPICAL
40' INC. TYPICAL
100' TAPER LT. & RT.
25' TAPER
GRASS SWALE SEE DETAIL 'A'
SADDLE BRANCH CONNECTOR
ABANDON
RETAIN
RETAIN & EXTEND
EXIST. R/W
PROP. R/W
PROP. U/G TEL CABLES
CONC. SIDEWALK
CONC. WALK
FIRST SOUTH BANK DB 1768 PG 585 DB 61 PG 181
JUDY WORTHINGTON McLAWHORN GOLD WORTHINGTON WALKER WILL BK. E-89-353 MB 55, PG. 183
EDWARD GILBERT DB 1591 PG 286
BOBBY DIXON DB 1578 PG 133
RANDOLPH JEFF DB 1584 PG 191
HARRY H. MCLEAN DBU52/PG574
RALPH C. TUCKER DBW43/PG330
LINDA LOU EVANS DBF41/PG283
WILTON E. & LENA J. EVANS DB44/PG333 PB23/PG69
WINTERVILLE TOWNSHIP
FLANDERS EQUITY CORP. DB446/PG325 PB42/PG101
COVENANT UNITED METHODIST CHURCH OF GREENVILLE DB421/PG100 TRACT #3
W.C. ROLLARD, JR. DB. 458, PG. 613 DB 1009, PG. 252 MB 53, PG. 48
GREENVILLE
FIRETOWER RD
WHITEBRIDGE DR
ASHCROFT DRIVE
ISBK BUS
I.S BK BUS
NEW SIGNAL
MONOLITHIC ISLAND
DENOTES FILL IN SURFACE WATER
DENOTES TEMPORARY FILL IN SURFACE WATER
PUE — PUE
PERMANENT UTILITY EASEMENT

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PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UO-12

UTILITIES BY OTHERS

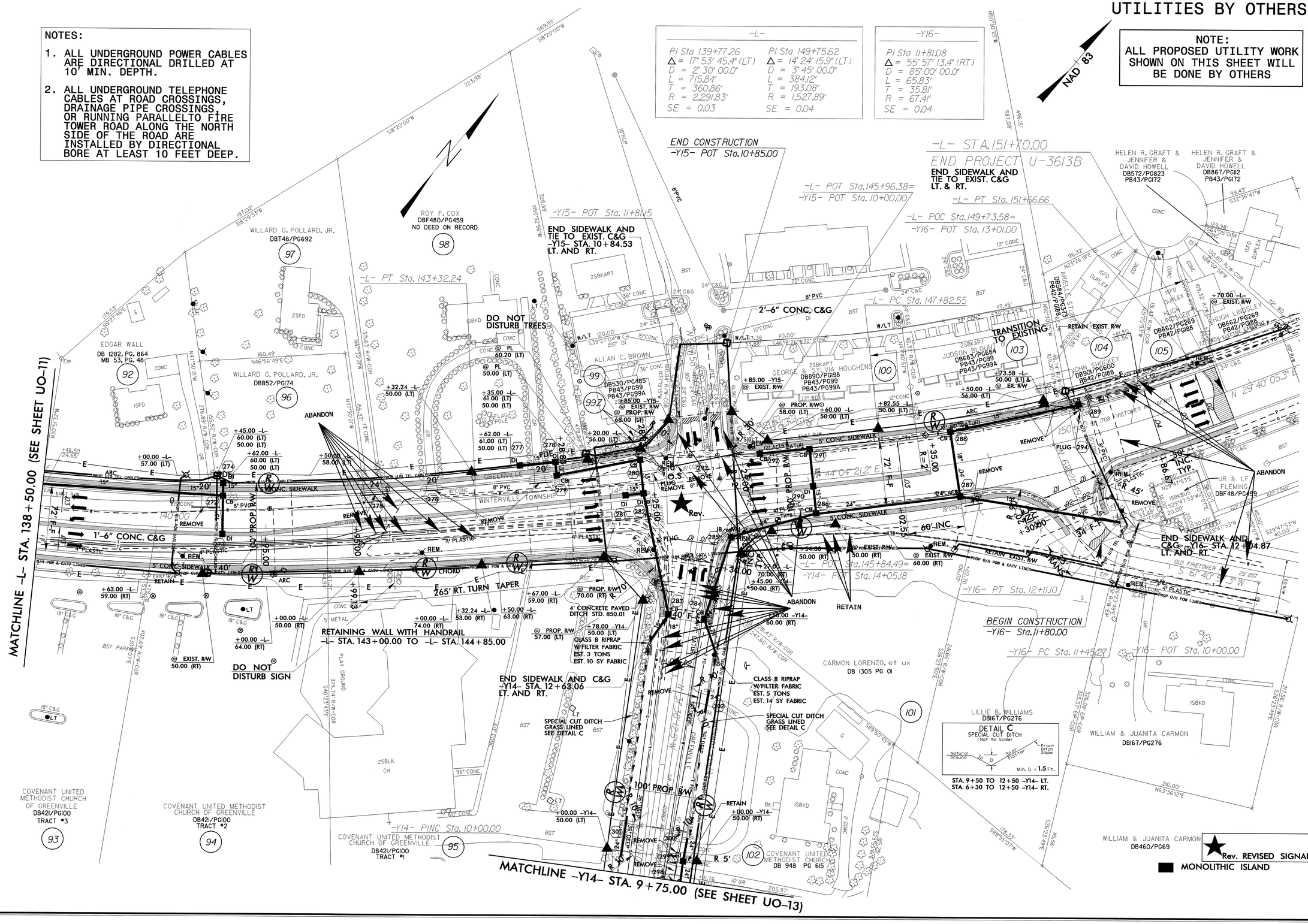
NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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

-L-	
PI Sta 139+77.26	PI Sta 149+75.62
Δ = 17° 53' 45.4" (LT)	Δ = 14° 24' 15.9" (LT)
D = 2° 30' 00.0"	D = 3° 45' 00.0"
L = 715.84'	L = 384.12'
T = 360.86'	T = 193.08'
R = 2,291.83'	R = 1,527.89'
SE = 0.03	SE = 0.04

-Y16-
PI Sta 11+81.08
Δ = 55° 57' 13.4" (RT)
D = 85° 00' 00.0"
L = 65.83'
T = 35.81'
R = 67.41'
SE = 0.04



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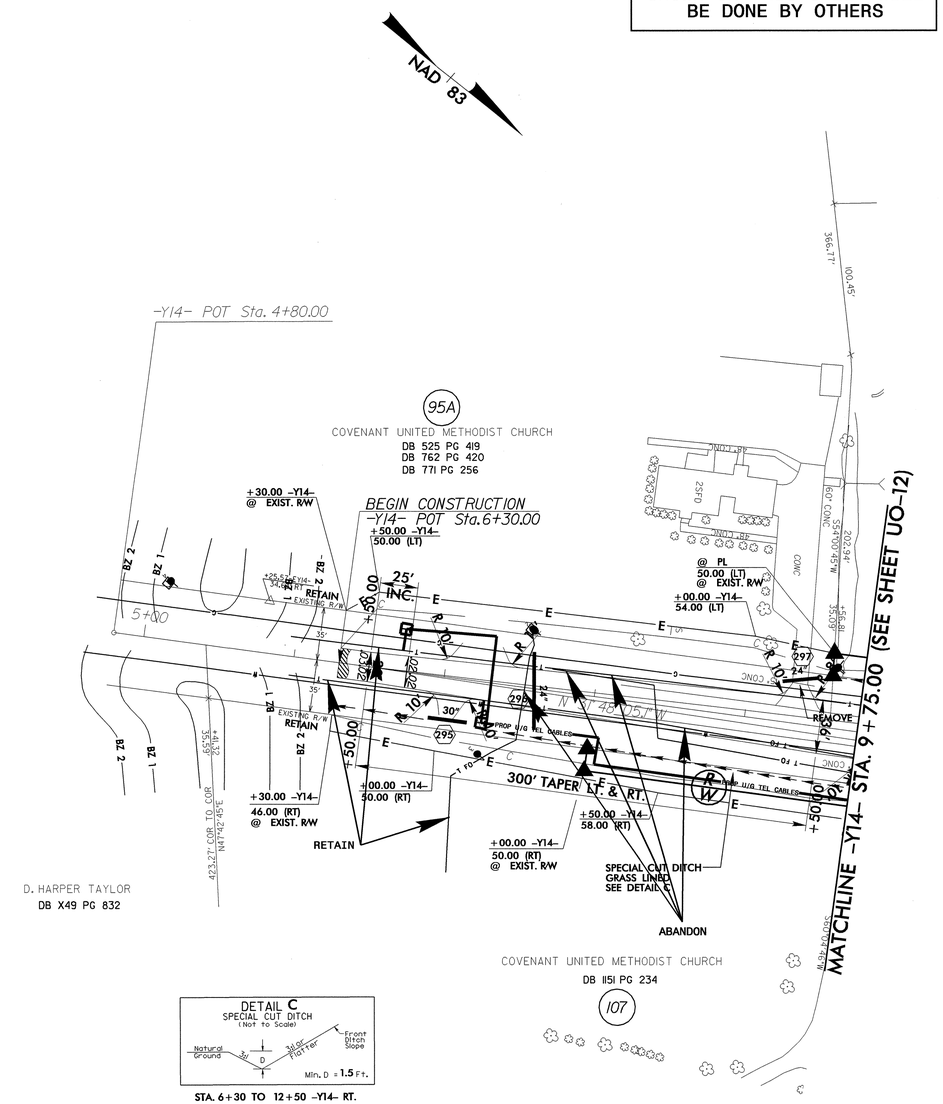
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UO-13

UTILITIES BY OTHERS

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

NOTES:

1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.



STA. 6+30 TO 12+50 -Y14- RT.