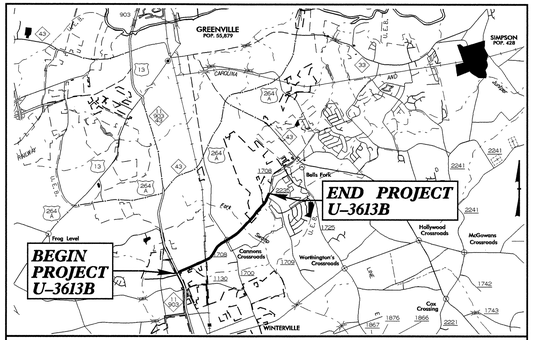
T.I.P. NO.	SHEET NO.
U-3613B	UC-1

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

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

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

EXISTING PIPE LINES WITHIN THE PROJECT LIMITS

WINTERVILLE

(NC- 11)

12" AC WATER LINE
12" SS PVC SDR 35

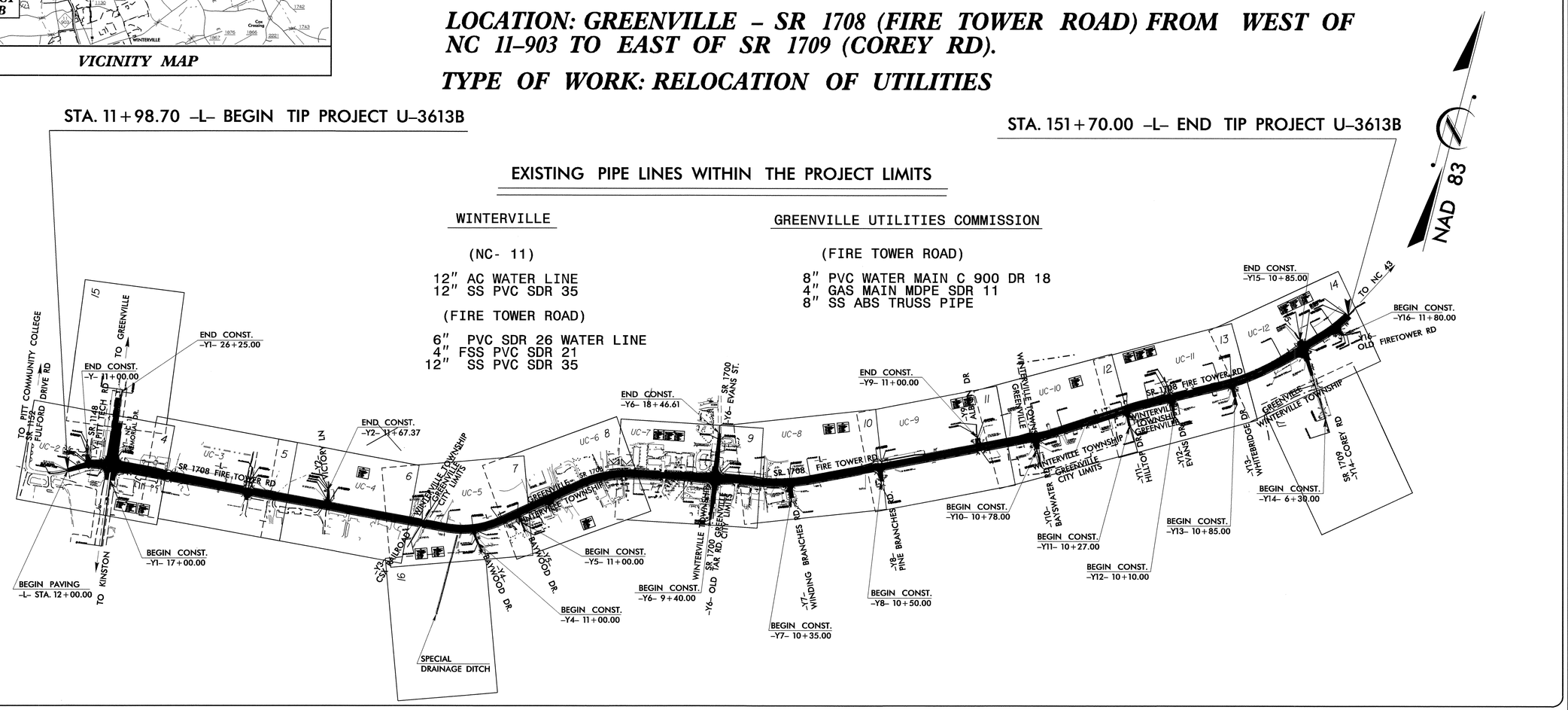
(FIRE TOWER ROAD)

6" PVC SDR 26 WATER LINE
4" FSS PVC SDR 21
12" SS PVC SDR 35

GREENVILLE UTILITIES COMMISSION

(FIRE TOWER ROAD)

8" PVC WATER MAIN C 900 DR 18
4" GAS MAIN MDPE SDR 11
8" SS ABS TRUSS PIPE



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 6" PVC WATER LINES)

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 11/1/06

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

TIP PROJECT: U-3613B

CONTRACT: C201449

09/08/99

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$$$$USERNAME$$$$

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	
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NORTH CAROLINA PROFESSIONAL SEAL 23041 10/23/06 ENGINEER CAREY D. BOUSQUET

UTILITY CONSTRUCTION

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.

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.

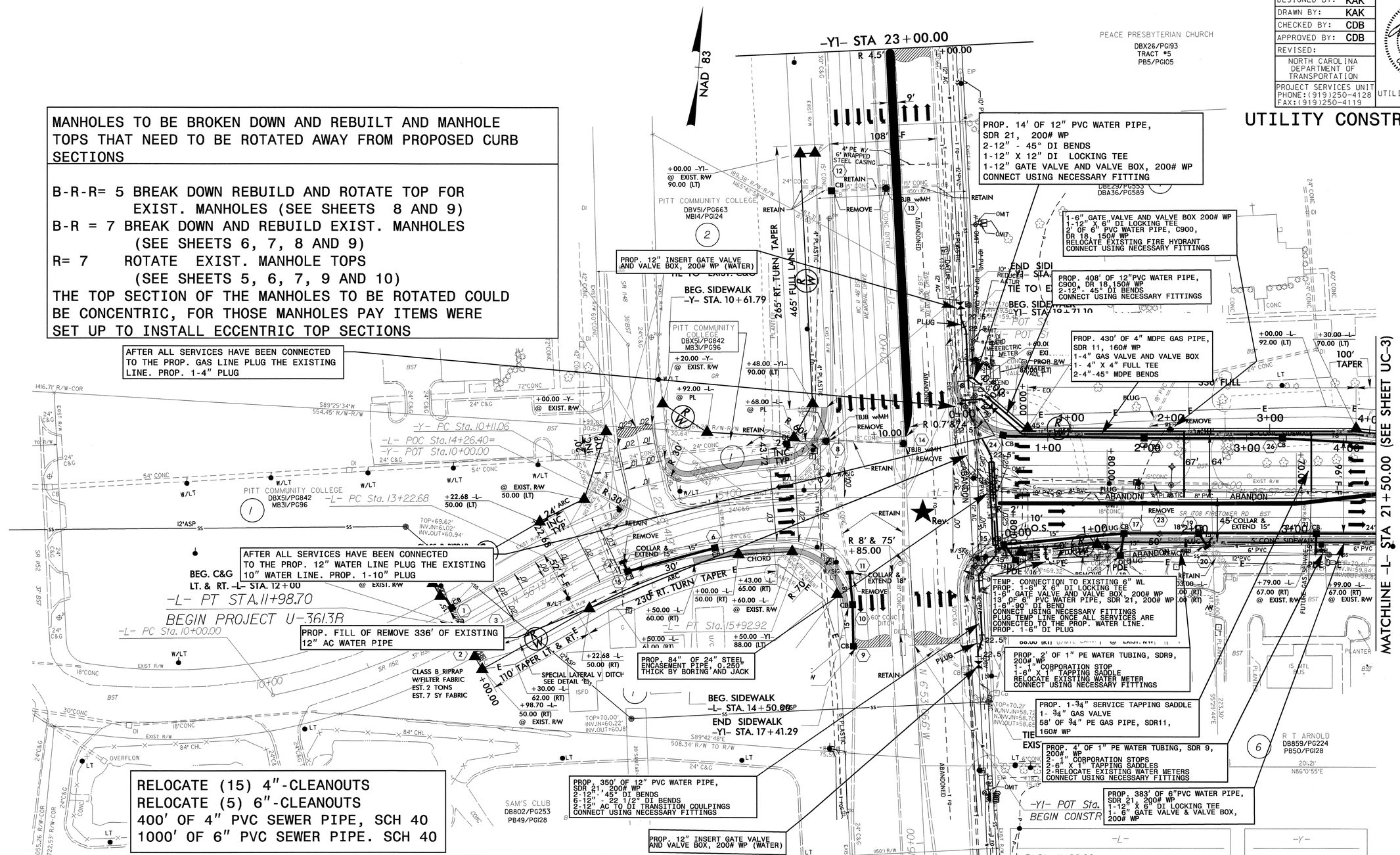
PROJECT REFERENCE NO.	SHEET NO.
U3613B	UC-2
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 23041 7/22/06 CHRIS 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

-L-

PI Sta 11+00.20
Δ = 18° 16' 20.4" (LT)
D = 9° 11' 45.1"
L = 198.70'
T = 100.20'
R = 623.06'

PI Sta 14+60.92
Δ = 29° 43' 31.9" (RT)
D = 11° 00' 00.0"
L = 270.23'
T = 138.23'
R = 520.87'
SE = 0.02-0.025
RO = 180'

-Y-

PI Sta 10+97.75
Δ = 15° 30' 27.9" (RT)
D = 9° 00' 00.0"
L = 172.31'
T = 86.68'
R = 636.62'
SE = EX.

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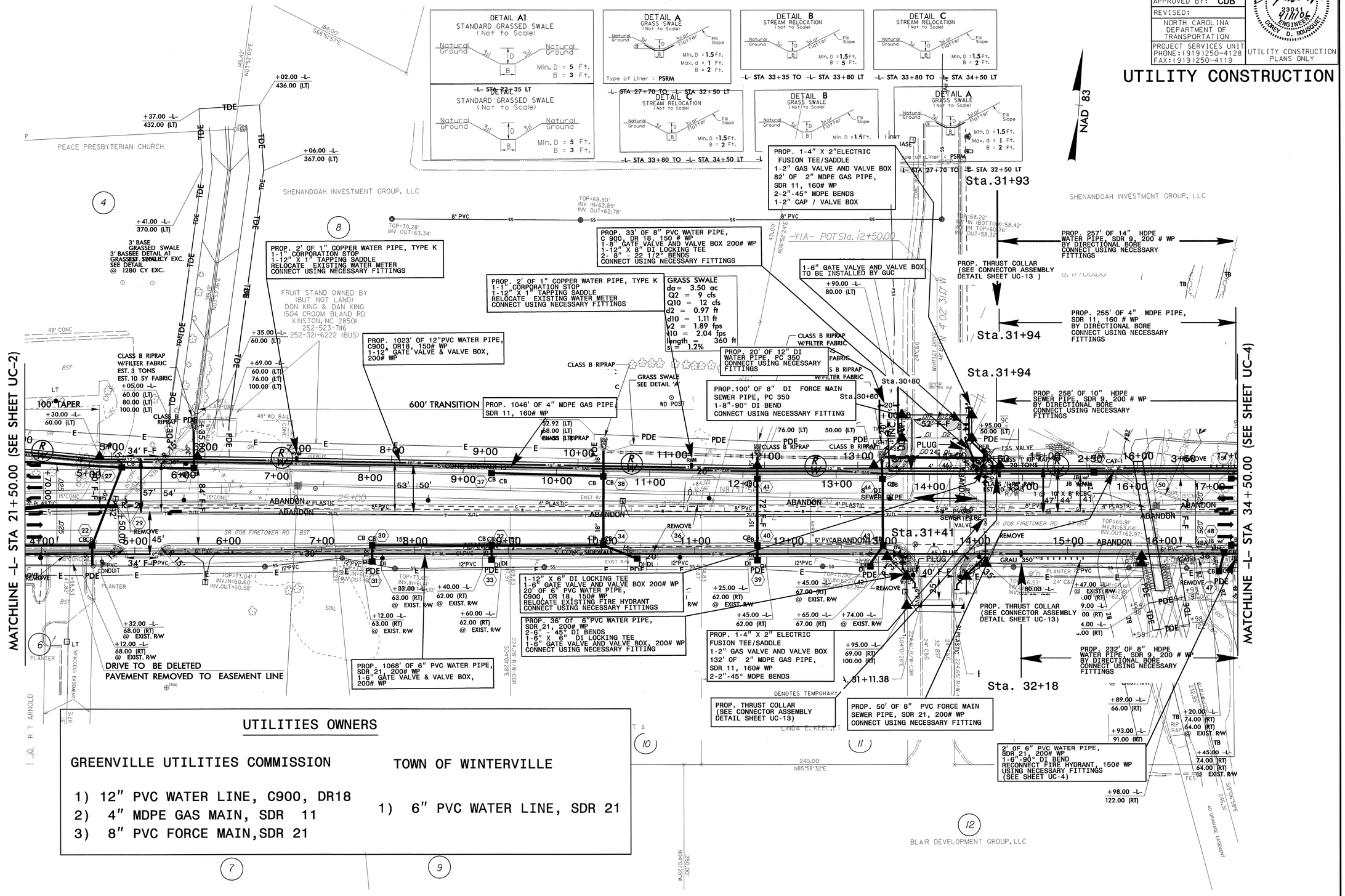
bbowman

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 CAREY 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

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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 23041 3/16/06 ENGINEER CAREY D. BOUSQUET

UTILITY CONSTRUCTION

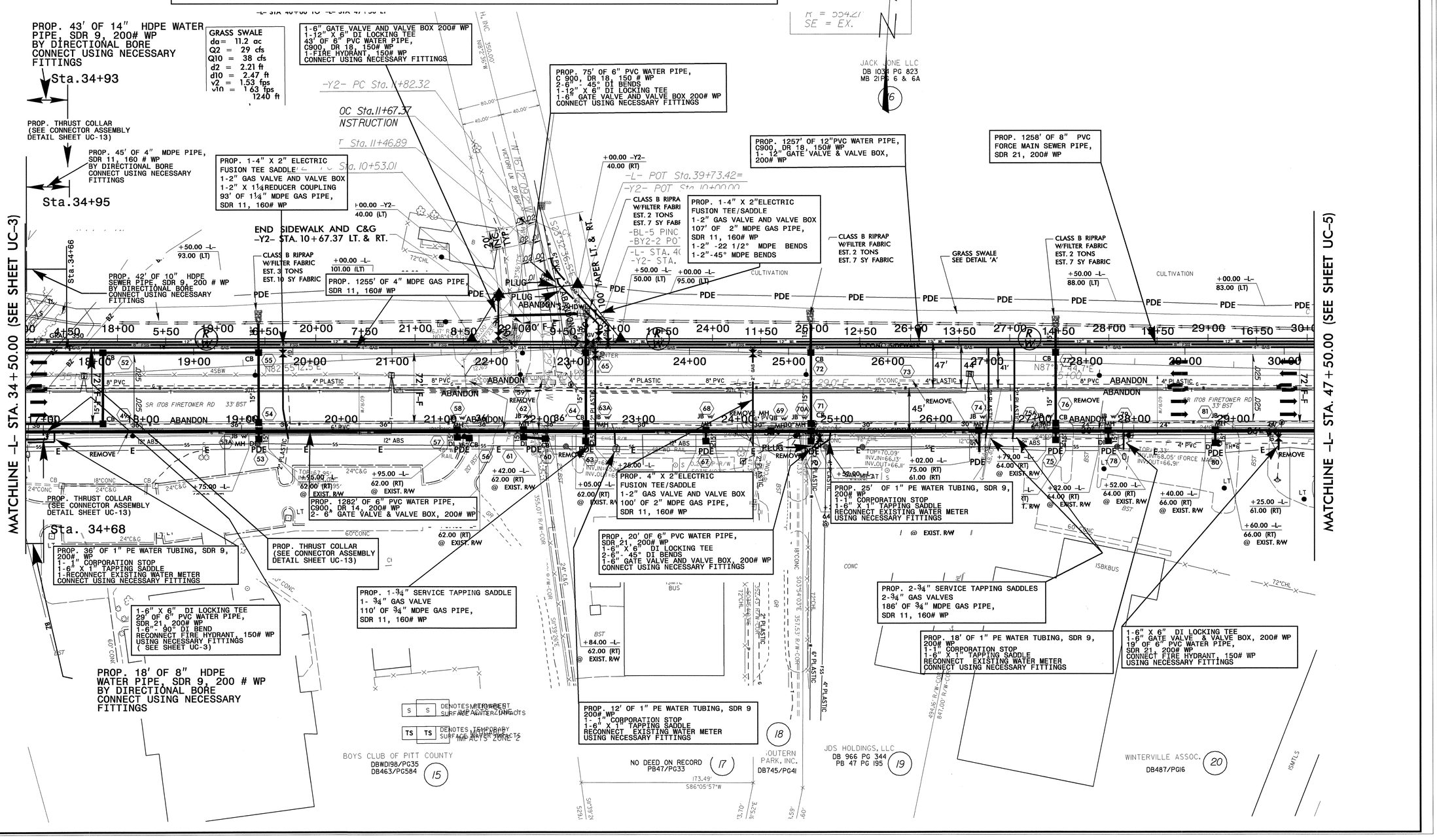
UTILITIES OWNERS

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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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	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 CONRAD D. BOUSQUET 11/1/06

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. 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 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. 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. 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 24" STEEL ENCASEMENT PIPE, 0.375" THICK BY BORING AND JACKING

PROP. 150' OF 18" STEEL ENCASEMENT PIPE, 0.312" THICK BY BORING AND JACKING

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

RELOCATE EXISTING RPZ BACK FLOW PREVENTION SYSTEM CONNECT USING NECESSARY FITTINGS

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 8" STEEL ENCASEMENT PIPE, 0.281" 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

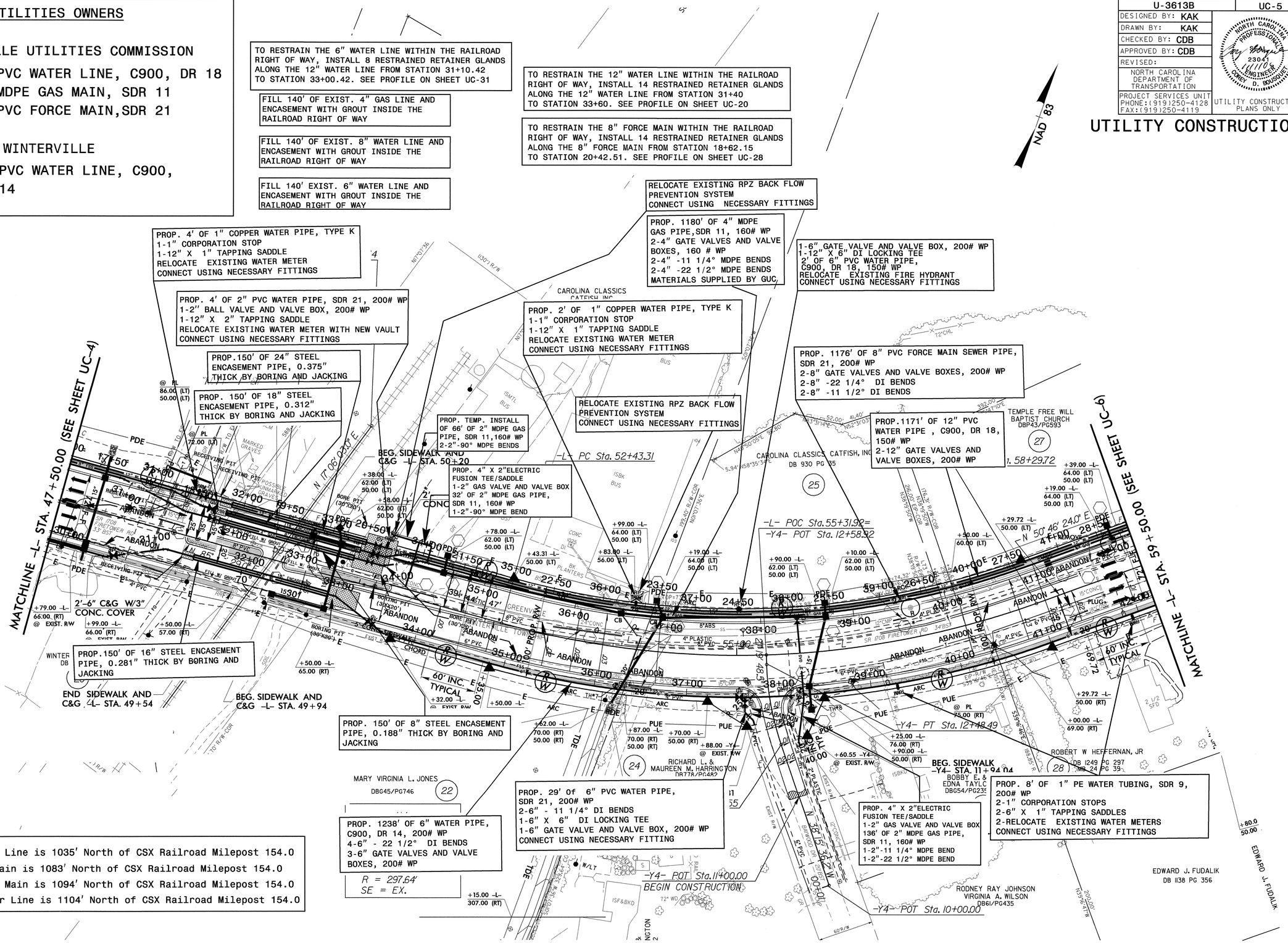
PROP. 1238' OF 6" WATER PIPE, C900, DR 14, 200# WP
4-6" - 22 1/2° DI BENDS
3-6" GATE VALVES AND VALVE BOXES, 200# WP

R = 297.64'
SE = EX.

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



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 ENGINEER COREY D. BOUSQUET 6/15/06

UTILITY CONSTRUCTION

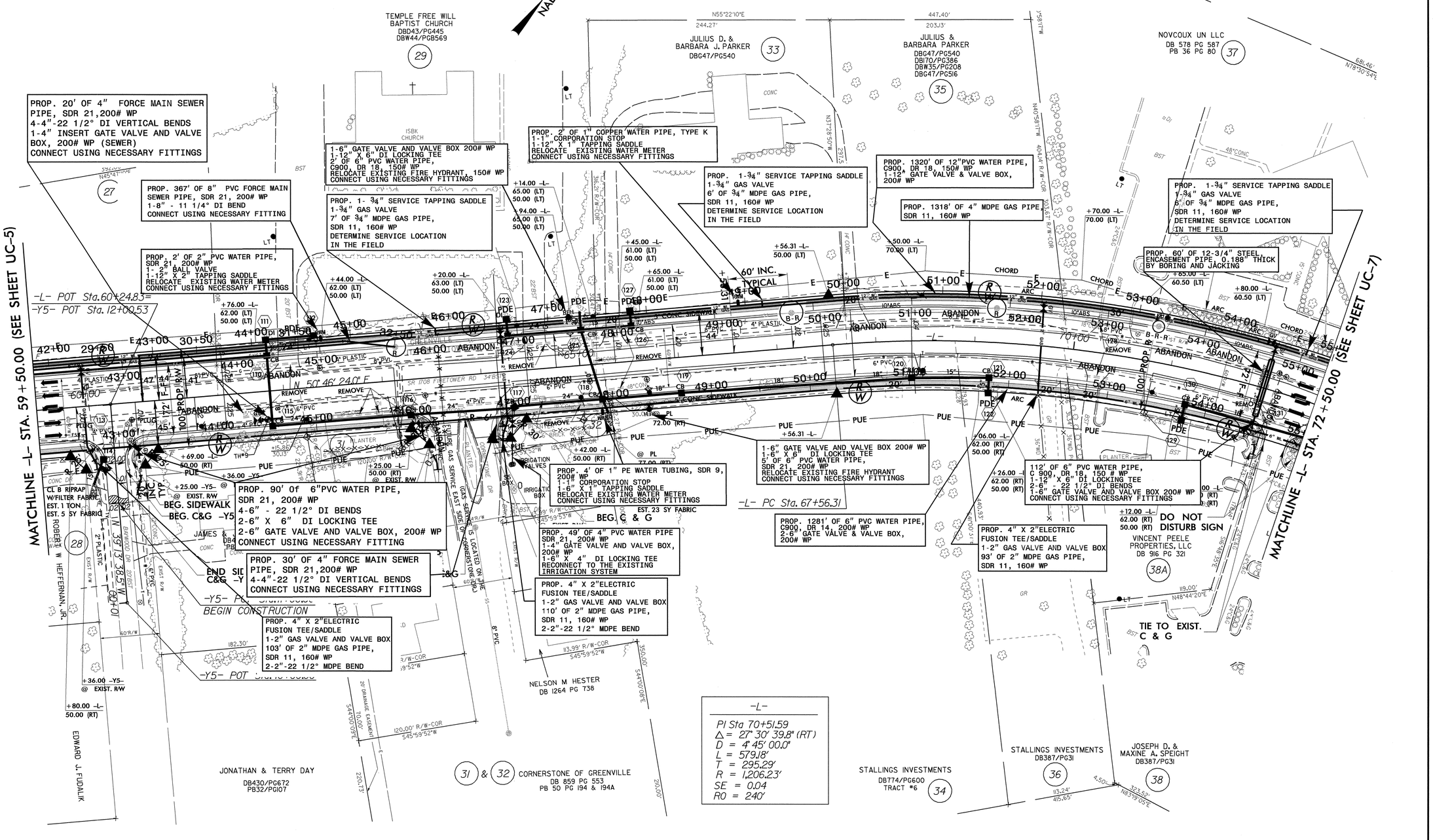
UTILITIES OWNERS

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



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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 23041 ENGINEER CAREY D. BOUSQUET 3/14/06

UTILITY CONSTRUCTION

NAD 83

-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.	

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)

PROP. 21' OF 8" PVC WATER PIPE, C900, DR 18,150# WP
1-12"X 8" DI LOCKING TEE
1-8" GATE VALVE AND VALVE BOX, 200# WP
1- 8' - 90° DI BEND
CONNECT USING NECESSARY FITTINGS

PROP. 18' 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. 1-3/4" SERVICE TAPPING SADDLES
1-¾" GAS VALVES
6' OF ¾" MDPE GAS PIPE,
SDR 11, 160# WP
DETERMINE SERVICE LOCATION
IN THE FIELD

PROP. 4" X 4" FULL TEE
1-4" GAS VALVE AND VALVE BOX
138' OF 4" MDPE GAS PIPE,
SDR 11, 160# WP
2-4"-22 1/2° MDPE BENDS

RELOCATE EXISTING RPZ BACK FLOW PREVENTION SYSTEM
CONNECT USING NECESSARY FITTINGS

1-12" X 6" DI LOCKING TEE
1-6" GATE VALVE AND VALVE BOX 200# WP
10' OF 8" PVC WATER PIPE,
C900, DR 18, 150# WP
CONNECT USING NECESSARY FITTINGS

PROP. 2-¾" SERVICE TAPPING SADDLES
2-¾" GAS VALVES
12' OF ¾" MDPE GAS PIPE,
SDR 11, 160# WP
DETERMINE SERVICE LOCATION
IN THE FIELD

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. 1305' OF 12"PVC WATER PIPE,
C900, DR 18, 150# WP
2-12" GATE VALVE & VALVE BOX,
200# WP

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
1-RELOCAT FIRE HYDRANT, 150 # WP
CONNECT USING NECESSARY FITTINGS

2-RELOCATE EXISTING RPZ BACK FLOW PREVENTION SYSTEMS
CONNECT USING NECESSARY FITTINGS

PROP. 10' OF 1" COPPER WATER PIPE, TYPE K
5- 1" CORPORATION STOPS
5-12" X 1" TAPPING SADDLES
5-RELOCATE EXISTING WATER METERS
CONNECT USING NECESSARY FITTINGS

PROP. 1305' OF 4" MDPE GAS PIPE,
SDR 11, 160# WP
2- 4" GAS VALVE AND VALVE BOX

PROP. 325' OF 12"PVC WATER PIPE,
C900, DR 18, 150# WP
1-12" GATE VALVE AND VALVE BOX,
200# WP
1-12" X 12" DI LOCKING TEE
2-12" - 11 1/4° DI BENDS
CONNECT USING NECESSARY FITTINGS

PROP. 51' OF 8" PVC WATER PIPE,
C900, DR 18,150# WP
1-8" GATE VALVE AND VALVE BOX,
200# WP
1-12" X 8" DI LOCKING TEE
CONNECT USING NECESSARY FITTINGS

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
1-RELOCATE FIRE HYDRANT, 150 # WP
CONNECT USING NECESSARY FITTINGS

PROP. 2-¾" SERVICE TAPPING SADDLES
2-¾" GAS VALVES
204' OF ¾" MDPE GAS PIPE,
SDR 11, 160# WP
DETERMINE SERVICE LOCATION
IN THE FIELD

PROP. 4" X 4" FULL TEE
1-4" GAS VALVE AND VALVE BOX
240' OF 4" MDPE GAS PIPE,
SDR 11, 160# WP
2-4"-22 1/2° MDPE BENDS
1-4"-45° MDPE BEND

PROP. 104' 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

1-6" GATE VALVE AND VALVE BOX 200# WP
1-6"X 6" DI LOCKING TEE
5' OF 6" PVC WATER PIPE,
SDR 21, 200# WP
RELOCATE EXISTING FIRE HYDRANT
CONNECT USING NECESSARY FITTINGS

PROP. 4' OF 1" COPPER WATER PIPE, TYPE K
2-1" CORPORATION STOPS
2-12" X 1" TAPPING SADDLES
2-RELOCATE EXISTING WATER METERS
CONNECT USING NECESSARY FITTINGS

PROP. 99' OF 2" PVC WATER PIPE,
SDR 21, 200# WP
1-2" BALL VALVE AND VALVE BOX
1-12" X 2" TAPPING SADDLE
1-RELOCATE EXISTING WATER METER
CONNECT USING NEGESSARY FITTINGS

PROP. 39' OF 1" COPPER WATER PIPE, TYPE K
2-1" CORPORATION STOPS
PLUG TEMP LINE ONCE ALL SERVICES ARE CONNECTED TO THE PROP. WATER LINE.
PROP. 1-6" DI PLUG

TEMP. CONNECTION TO EXISTING 6" WL
PROP. 1-6" X 6" DI LOCKING TEE
1-6" GATE VALVE AND VALVE BOX, 200# WP
23' OF 6" PVC WATER PIPE, SDR 21, 200# WP
1-6"-90° DI BEND
CONNECT USING NECESSARY FITTINGS
PLUG TEMP LINE ONCE ALL SERVICES ARE CONNECTED TO THE PROP. WATER LINE.
PROP. 1-6" DI PLUG

PROP. 80' OF 8" STEEL ENCASEMENT PIPE
0.188" THICK, BY BORING AND JACKING

PROP. 1046' OF 6" PVC WATER PIPE,
C900, DR 14, 200# WP
2-6" - 22 1/2° DI BENDS
2-6" - 45° DI BENDS
CONNECT USING NECESSARY FITTINGS

PROP. 4" X 2"ELECTRIC
FUSION TEE/SADDLE
1-2" GAS VALVE AND VALVE BOX
104' OF 2" MDPE GAS PIPE,
SDR 11, 160# WP
2-2" -45° MDPE BENDS

PROP. 6" INSERT GATE VALVE AND VALVE BOX, 200# WP (WATER)

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

MATCHLINE -L- STA. 72+50.00 (SEE SHEET UC-6)

MATCHLINE -L- STA. 85+50.00 (SEE SHEET UC-8)

5/14/99

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cbouquet

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 CAREY D. BOUSQUET 3/16/06

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, d, B, 3:1 or Flatter, Fill Slope

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

Type of Liner = PSRM

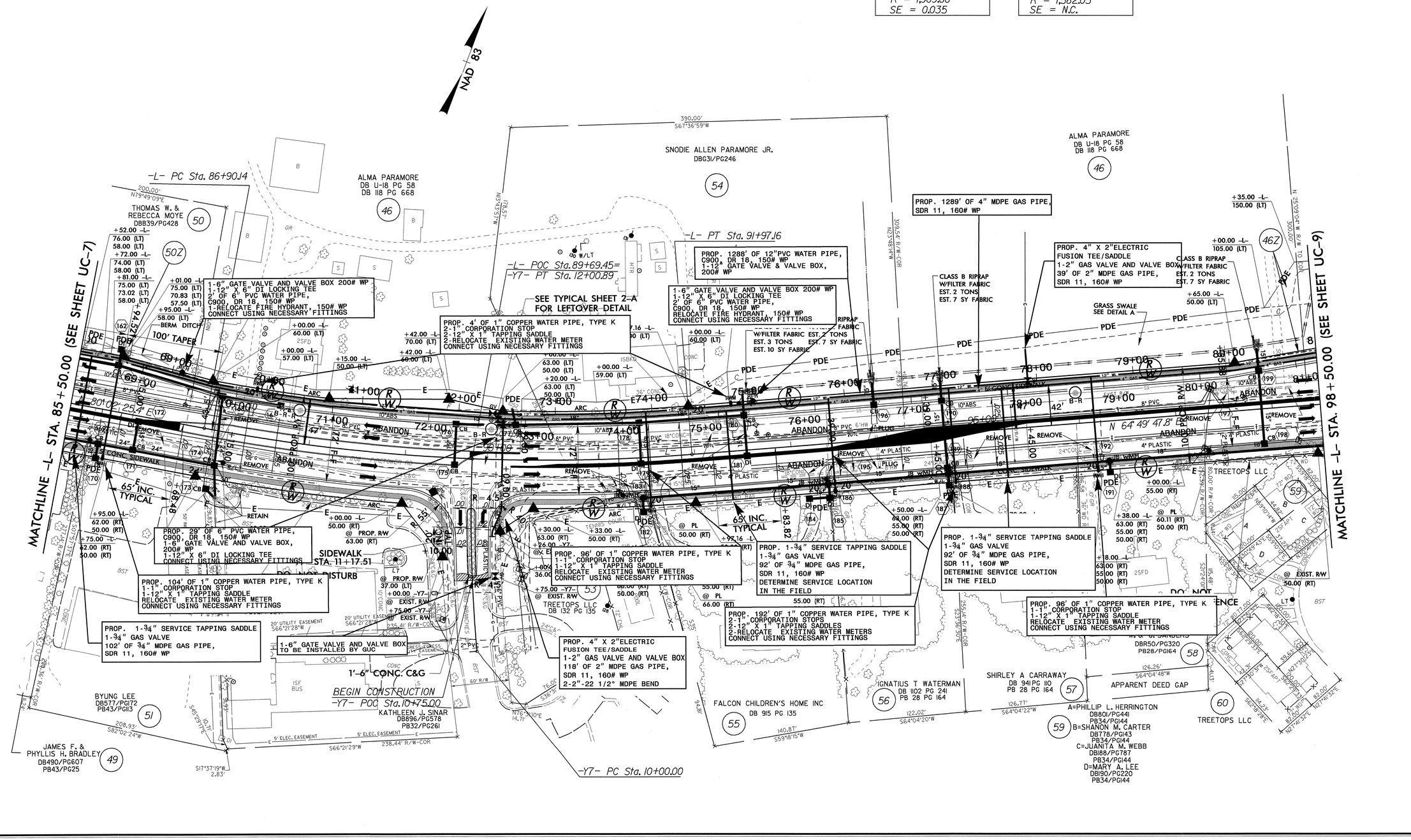
-L- STA 92+50 TO -L- STA 100+50 LT

-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.



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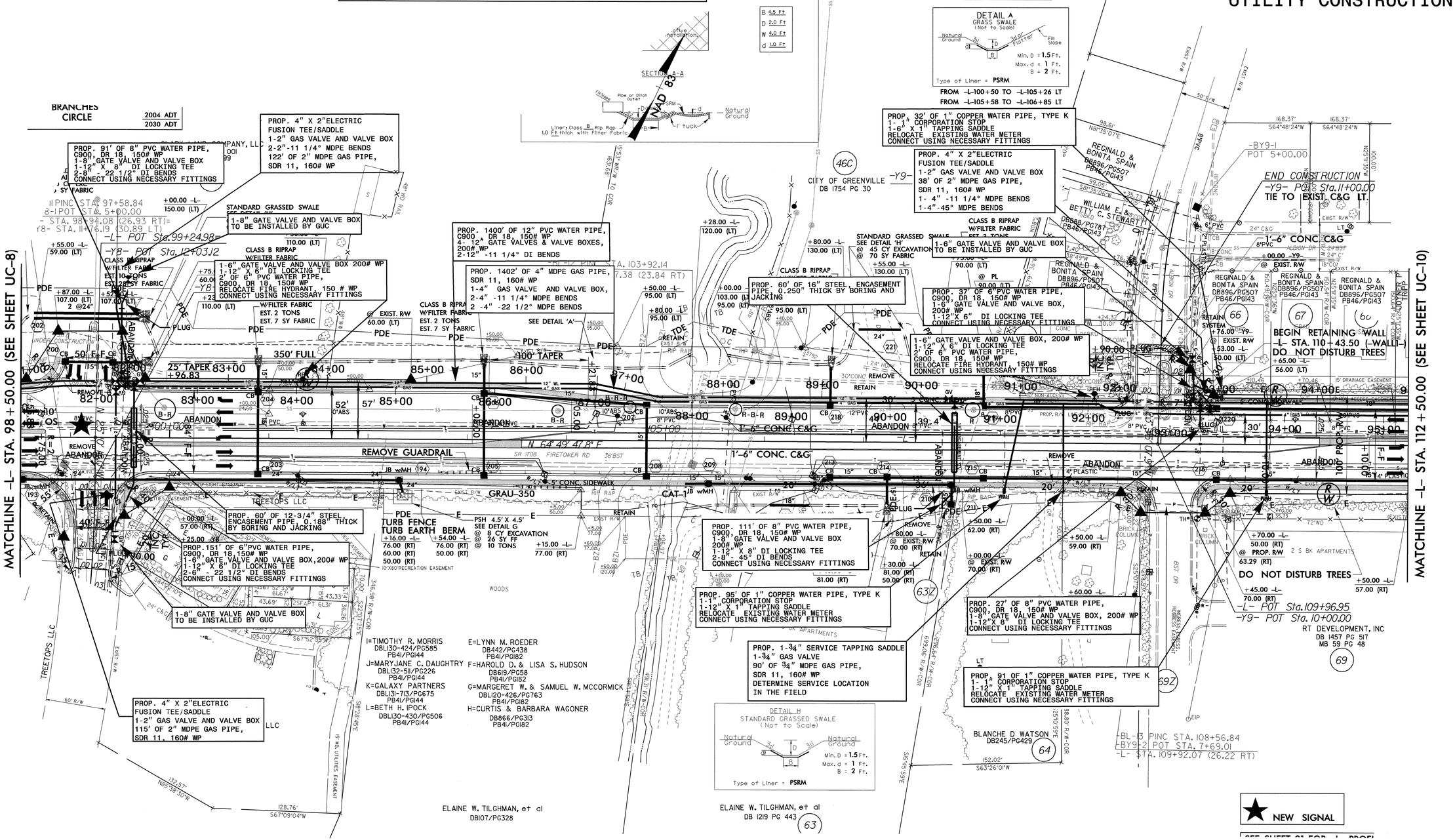
cbousquet

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 CHEY D. BOUSQUET

UTILITY CONSTRUCTION

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



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 3/16/06 ENGINEER COREY D. BOUSQUET

UTILITY CONSTRUCTION

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

NAD 83

-L-
PI Sta 117+56.33
Δ = 7° 13' 04.2" (LT)
D = 2° 30' 00.0"
L = 288.71'
T = 144.55'
R = 2,291.83'
SE = 0.03

END RETAINING WALL
-L- STA. 115+50.00 (-WALL1-)
SEE WALL PLANS FOR GRADING DETAILS

DO NOT DISTURB TREES

-L- PC Sta. 116+11.78

-L- PT Sta. 119+00.50

-BL-14 PINC STA. 114+92.34
-Y10-1POT STA. 5+00.00
-L- STA. 116+27.37 (28.63 RT)=
-Y10- STA. 11+76.78 (36.91 RT)

PROP. 1198' OF 4" MDPE GAS PIPE, SDR 11, 160# WP
1-4" GAS VALVE AND VALVE BOX
2-4"-22 1/2° MDPE BENDS

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. 4" X 2" ELECTRIC FUSION TEE/SADDLE
1-2" GAS VALVE AND VALVE BOX
89' OF 2" MDPE GAS PIPE, SDR 11, 160# WP
2-2"-22 1/2° MDPE BENDS

PROP. 1195' OF 12" PVC WATER PIPE, C900, DR 18, 150# WP
1-12" GATE VALVE & VALVE BOX, 200# WP
2-12"-11 1/4° DI BENDS

PROP. 60' OF 16" STEEL ENCASEMENT PIPE, 0.250" THICK BY BORING AND JACKING

PROP. 143' OF 8" PVC WATER PIPE, C900, DR 18, 150# WP
1-8" GATE VALVE AND VALVE BOX, 200# WP
1-12" X 8" DI LOCKING TEE
2-8" -45° DI BENDS
CONNECT USING NECESSARY FITTINGS

PROP. 184' OF 1" COPPER WATER PIPE, TYPE K
2-1" CORPORATION STOPS
2-12" X 1" TAPPING SADDLES
2-RELOCATE EXISTING WATER METERS
CONNECT USING NECESSARY FITTINGS

2-RELOCATE EXISTING RPZ BACK FLOW PREVENTION SYSTEMS
CONNECT USING NECESSARY FITTINGS

1-6" GATE VALVE AND VALVE BOX 200# WP
1-8" X 6" DI LOCKING TEE
4' OF 6" PVC WATER PIPE, C900, DR 18, 150# WP
RELOCATE FIRE HYDRANT, 150 # WP
CONNECT USING NECESSARY FITTINGS

PROP. 4' OF 1" COPPER WATER PIPE, TYPE K
1-1" CORPORATION STOP
1-8" X 1" TAPPING SADDLE
RELOCATE EXISTING WATER METER
CONNECT USING NECESSARY FITTINGS

PROP. 192' OF 2" PVC WATER PIPE, SDR 21, 200# WP
2-2" BALL VALVES AND VALVE BOXES
2-12" X 2" TAPPING SADDLES
2-RELOCATE EXISTING WATER METERS
CONNECT USING NECESSARY FITTINGS

PROP. 196' OF 1" COPPER WATER PIPE, TYPE K
2-1" CORPORATION STOPS
2-12" X 1" TAPPING SADDLES
2-RELOCATE EXISTING WATER METERS
CONNECT USING NECESSARY FITTINGS

END SIDEWALK
-L- STA. 119+01.36
BEG. C & G
1'-6" CONC. C&G

END SIDEWALK & 2'-6" C&G
BEGIN VALLEY GUTTER
-Y10- STA. 11+21.45 LT

BEGIN CONSTRUCTION
-Y10- Sta. 9+32.00

-Y10- POT Sta.

SEE TYPICAL SHEET 2-A
LEFTOVER DETAIL

SEE DETAIL SHEET 2-I FOR ISLAND CUT FOR FOREST SERVICE EMERGENCY ACCESS

DO NOT DISTURB TOWER

MATCHLINE -L- STA. 112+50.00 (SEE SHEET UC-9)

MATCHLINE -L- STA. 124+50.00 (SEE SHEET UC-11)

CARTRETTE, L.L.C. DB 839, PG. 804 MB 52, PG. 110 (LOTS 56-63)

KAREN W. BRIGHT DB 1636 PG 406

ANTHONY S. HART, et UX DB 1740 PG 643

KERRY P. HOUSE DB 1709 PG 655

MILDRED GODWIN DB 1789 PG 797

ROBERT F FARNHARDT DB 180

MATTHEW DB 1

JOANNE T. CHILDS DB 1799 PG 65

ROCKY RUSSELL BUILDERS, INC. DB 975, PG. 199 MB 52, PG. 110 (LOT 65)

ROCKY RUSSELL BUILDERS, INC. DB 975, PG. 199 MB 52, PG. 110 (LOT 54)

JUDY W. McLAWHORN DB 1275, PG. 328 MB 52, PG. 110 (LOT 55)

REGGIE SPAIN CONSTRUCTION LLC DB 1177, PG. 668 MB 55, PG. 183 TRACT 2 'SHEFFIELD-SECTION 3' SUBDIVISION UNDER CONST.

KAREN W. BRIGHT DB 1636 PG 406

CORY LEE SCOTT DB 1769 PG 419

WILLIAM F HOFFMAN DB 1205 PG456 PB46/PG143

JOYNER F TRIPP DB 100 PG 544 PB 46 PG 143

REGINALD & BONITA SPAIN DB896/PG507 PB46/PG143

LINDA L GADDIS DB 927 PG 97 PB 46 PG 143

OCTAVIO & OGLA FLORES DB849/PG862

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

GREYSTON MOBILE HOME PARK LLC DB 910 PG 674 MB 32 PG 260

GREYSTON MOBILE HOME PARK LLC DB 910 PG 674 MB 32 PG 260

FIRETOWER CROSSING LLC DB 1126 PG 669 MB 32 PG 260

FIRETOWER CROSSING LLC DB 1126 PG 669 MB 32 PG 260

FIRETOWER CROSSING LLC DB 1126 PG 669 MB 32 PG 260

N.C. FOREST SERVICE NO DEED ON RECORD PB23/PG69

WINTERVILLE TOWNSHIP

GREENVILLE

5/14/99

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cbousquet

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 D. BOUSQUET 06/27/06

UTILITY CONSTRUCTION

NAD 83

10+46.00		
= 34' 44.2" (RT)		
8' 15' 00.0"		
31.87'		
46.00'		
694.49'		
0.033		
	Δ = 4' 21' 23.0" (RT)	Δ = 17' 53' 45.4" (LT)
	D = 1° 30' 00.0"	D = 2° 30' 00.0"
	L = 290.43'	L = 715.84'
	T = 145.28'	T = 360.86'
	R = 3,819.72'	R = 2,291.83'
	SE = 0.025	SE = 0.03

Natural Ground, 3:1, D, 3:1, Flat 18", Slope — Min. D = 1.5 Ft.

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

Ground, 3:1, D, d, Flat 11", B, Slope — 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

SITE

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

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

PROP. 1100' OF 4" MDPE GAS PIPE, SDR 11, 160# WP

PROP. 29' OF 6" PVC WATER PIPE, C900, DR 18, 150# WP
1-6" GATE VALVE AND VALVE BOX,
200# WP
1-12" X 6" DI LOCKING TEE
CONNECT USING NECESSARY FITTINGS

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

PROP. 1100' OF 12"PVC WATER PIPE, C900, DR 18, 150# WP
4- 12" GATE VALVES & VALVE BOXES, 200# WP
1-12" - 11 1/4° DI BEND

1-6" GATE VALVE AND VALVE BOX TO BE INSTALLED BY GUC

PROP. 60' OF 12-3/4" STEEL ENCASEMENT PIPE, 0.188" THICK BY BORING AND JACKING

PROP. 4" X 2"ELECTRIC FUSION TEE/SADDLE
1-2" GAS VALVE AND VALVE BOX
127' OF 2" MDPE GAS PIPE,
SDR 11, 160# WP
2-2"-11 1/4° MDPE BENDS

PROP. 34' OF 8" PVC WATER PIPE, C900, DR 18, 150# WP
1-8" GATE VALVE AND VALVE BOX, 200# WP
1-12" X 8" DI LOCKING TEE
2-8" - 45° DI BENDS
CONNECT USING NECESSARY FITTINGS

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

PROP. 4' OF 1" COPPER WATER PIPE, TYPE K
2-1" CORPORATION STOPS
2-12" X 1" TAPPING SADDLES
2-RELOCATE EXISTING WATER METERS
CONNECT USING NECESSARY FITTINGS

PROP. 1-3/4" SERVICE TAPPING SADDLE
1-3/4" GAS VALVE AND GAS VALVE
8' OF 3/4" MDPE GAS PIPE,
SDR 11, 160# WP
DETERMINE SERVICE LOCATION
IN THE FIELD

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 FIRE HYDRANT, 150 # WP
CONNECT USING NECESSARY FITTINGS

Sta. 133+98

PROP. THRUST COLLAR (SEE CONNECTOR ASSEMBLY DETAIL SHEET UC-13)

Sta. 133+94

PROP. 300' OF 14" HDPE WATER PIPE, SDR 9, 200 # WP BY DIRECTIONAL BORE CONNECT USING NECESSARY FITTINGS

Sta. 136+98

PROP. THRUST COLLAR (SEE CONNECTOR ASSEMBLY DETAIL SHEET UC-13)

Sta. 136+94

PROP. 300' OF 4" MDPE GAS PIPE, SDR 11, 1600 # WP BY DIRECTIONAL BORE CONNECT USING NECESSARY FITTINGS

DO NOT DISTURB PARKING LOT

PROP. 1-3/4" SERVICE TAPPING SADDLE & VALVE BOX
91' OF 3/4" MDPE GAS PIPE,
SDR 11, 160# WP
DETERMINE SERVICE LOCATION
IN THE FIELD

PROP. 96' 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. 2-3/4" SERVICE TAPPING SADDLES
2- GAS VALVES
194' OF 3/4" MDPE GAS PIPE,
SDR 11, 160# WP
DETERMINE SERVICE LOCATION
IN THE FIELD

PROP. 161' OF 6"PVC WATER PIPE, C900, DR 18, 150# WP
1-6" GATE VALVE AND VALVE BOX, 200# WP
1-12" X 6" DI LOCKING TEE
2- 6" 45° DI BENDS
CONNECT USING NECESSARY FITTINGS

PROP. 49' OF 1" COPPER WATER PIPE, TYPE K
1-1" CORPORATION STOP
1-6" X 1" TAPPING SADDLE
RECONNECT EXISTING WATER METER
USING NECESSARY FITTINGS

PROP. 96' 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

RELOCATE EXISTING RPZ BACK FLOW PREVENTION SYSTEM
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. 4" X 2"ELECTRIC FUSION TEE/SADDLE
1-2" GAS VALVE AND VALVE BOX
122' OF 2" MDPE GAS PIPE,
SDR 11, 160# WP
2-2"-11 1/4° MDPE BENDS

PROP. 33' OF 6"PVC WATER PIPE, C900, DR 18, 150# WP
1-6" GATE VALVE AND VALVE BOX, 200# WP
1-12" X 6" DI LOCKING TEE
CONNECT USING NECESSARY FITTINGS

BEGIN CONSTRUCTION -Y13- Sta.10+85.00

-Y13- POT Sta.10+00.00

-BYI3-2 POT 7+05.75
-Y13- STA.10+06.60 (30.59 RT)

BEG. SIDEWALK AND C&G -Y12- STA. 11+10.33 LT. AND RT.

END SIDEWALK AND C&G -Y11- STA. 11+27.07

-Y11- PC Sta.10+27.00

-Y11- PC Sta.10+00.00

-Y12- POT Sta.10+10.00

-Y12- POT Sta.10+00.00

-BYI2-2 POT 6+67.75

-BYII-2 POT 6+80.73

DENOTES PERMANENT SURFACE WATER IMPACTS

DENOTES TEMPORARY SURFACE WATER IMPACTS

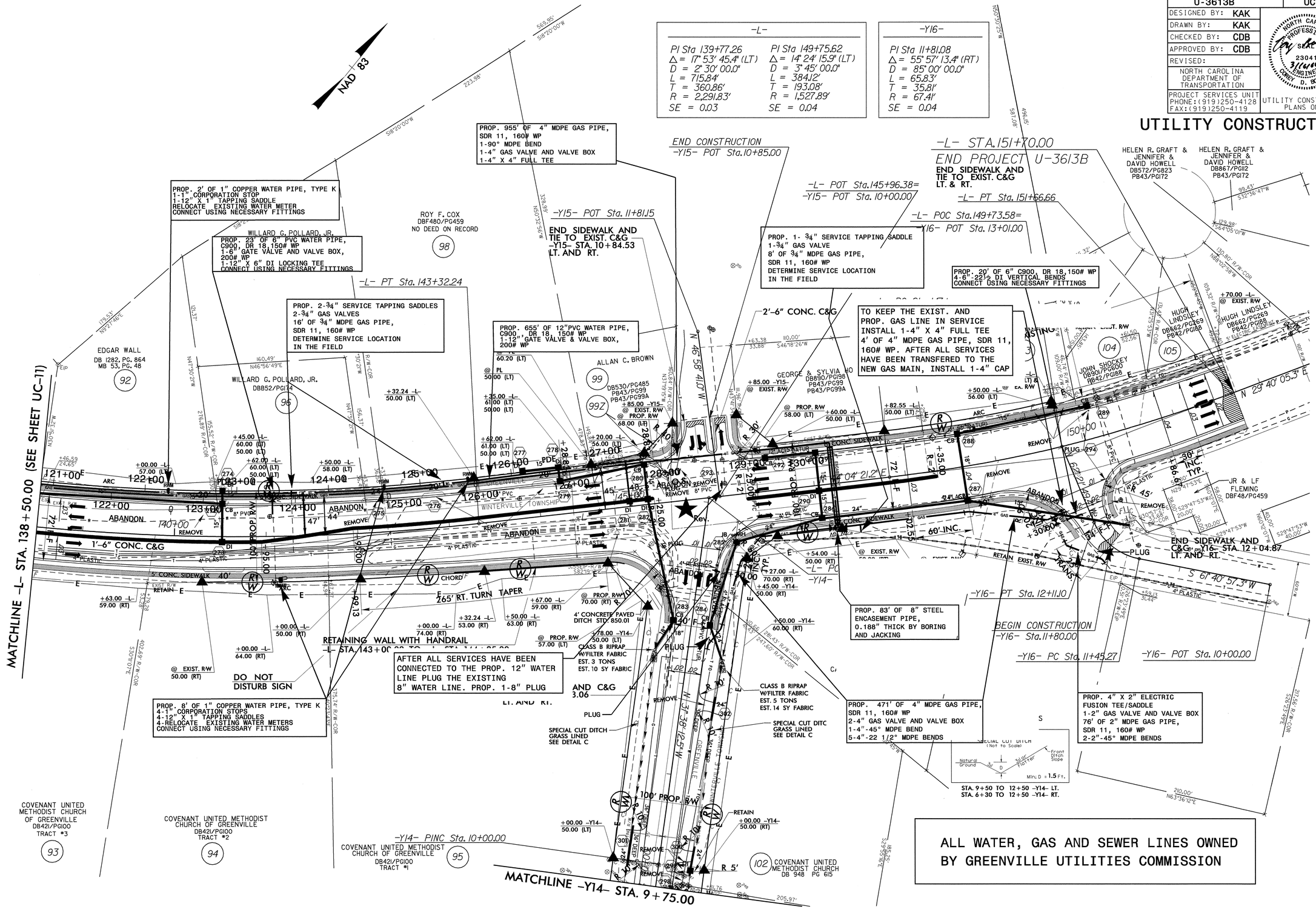
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-12
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

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

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



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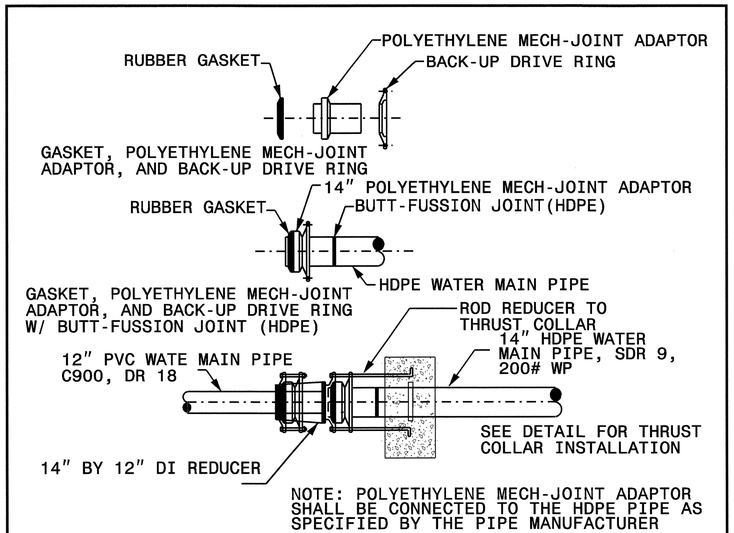
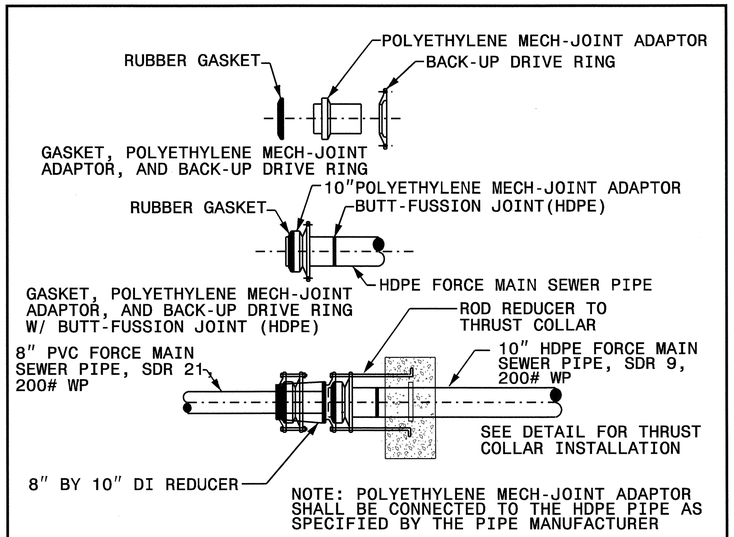
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UC-13
DESIGNED BY: KAK	
DRAWN BY: KAK	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

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

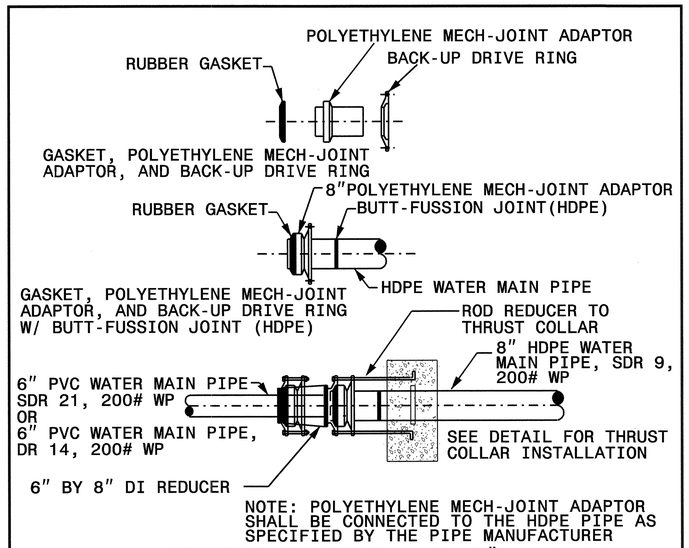
UTILITY CONSTRUCTION



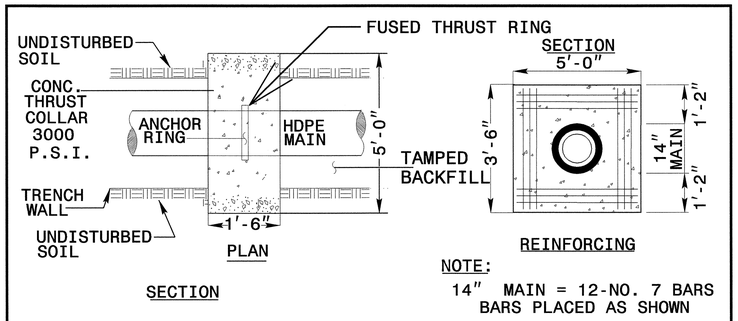
CONNECTOR ASSEMBLY DETAILS - 12" WATER LINE



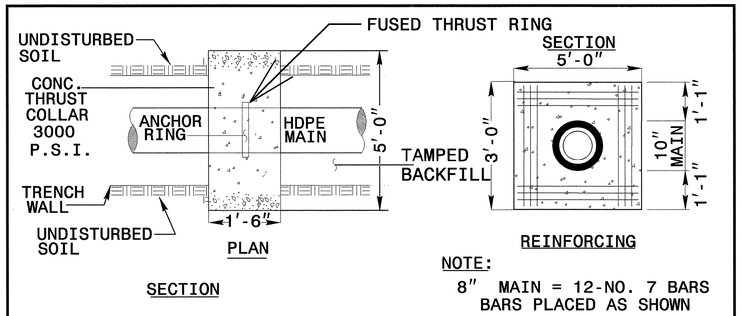
CONNECTOR ASSEMBLY DETAILS - FORCE MAIN SEWER LINE



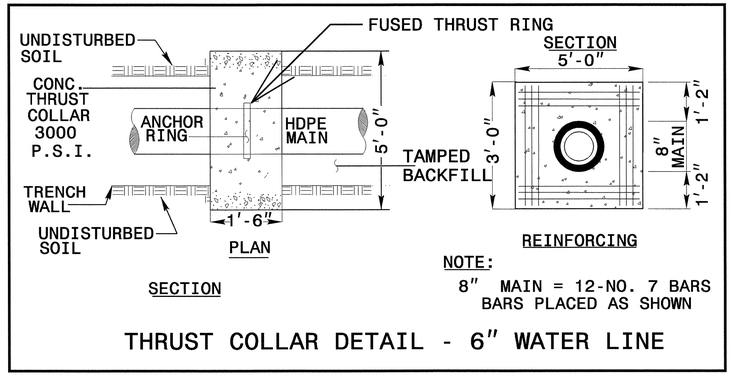
CONNECTOR ASSEMBLY DETAILS - 6" WATER LINE



THRUST COLLAR DETAIL - 12" WATER LINE



THRUST COLLAR DETAIL -8" FORCE MAIN SEWER LINE



THRUST COLLAR DETAIL - 6" WATER LINE

5/14/99

16-MAR-2006 16:05
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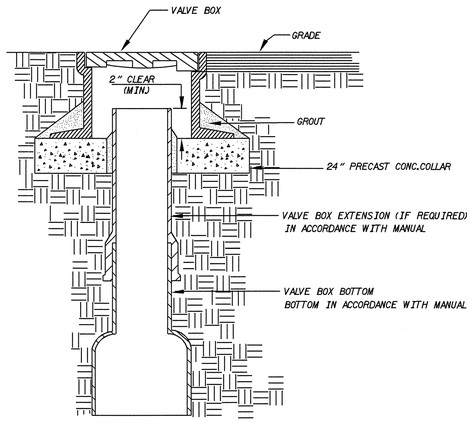
cbousquet AP P22222598

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

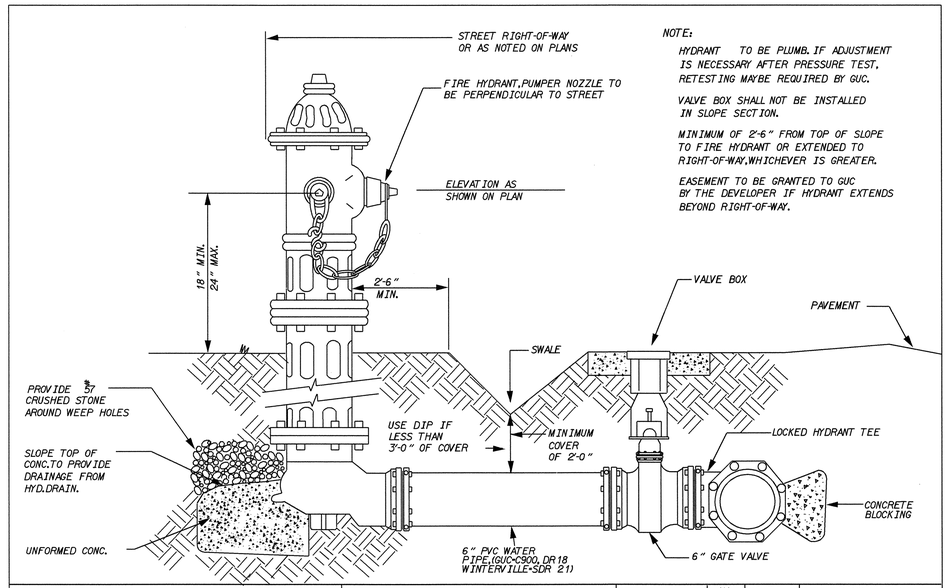
NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER COREY D. BOUSQUET 3/16/06

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 MAY BE REQUIRED BY GUC.

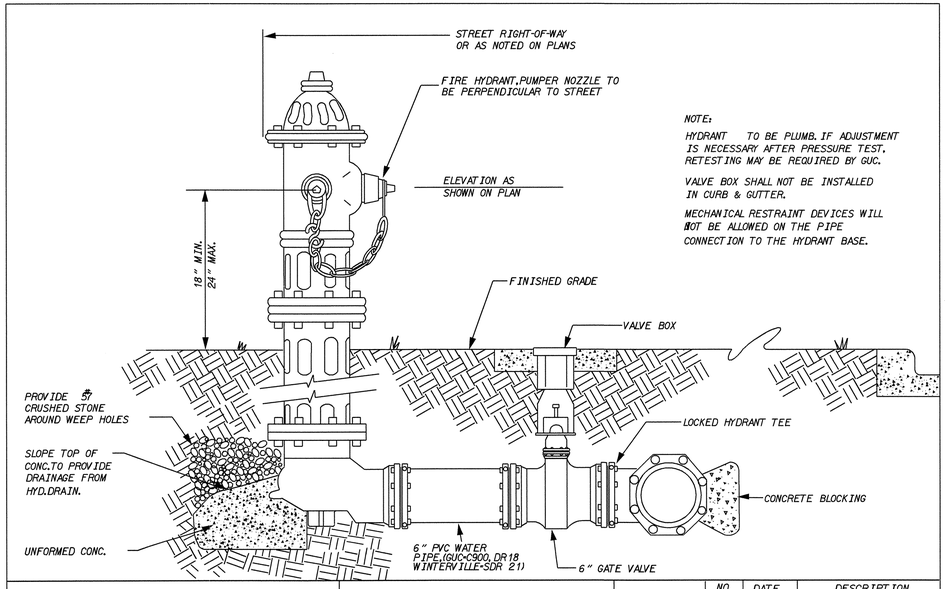
VALVE BOX SHALL NOT BE INSTALLED IN SLOPE SECTION.

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.

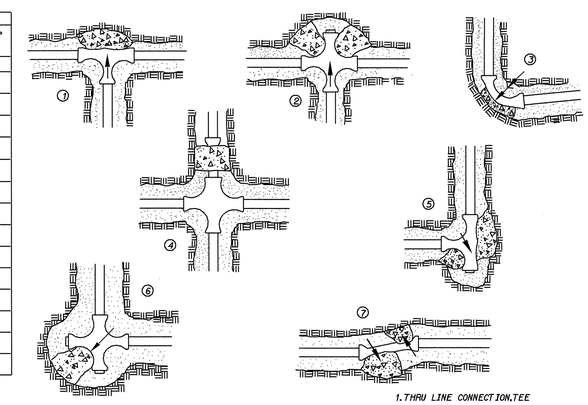
FIRE HYDRANT RELOCATION / INSTALLATION
(FOR AREAS WITH CURB AND GUTTER)

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	31,600	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

TYPES OF THRUST BLOCKING



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.

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

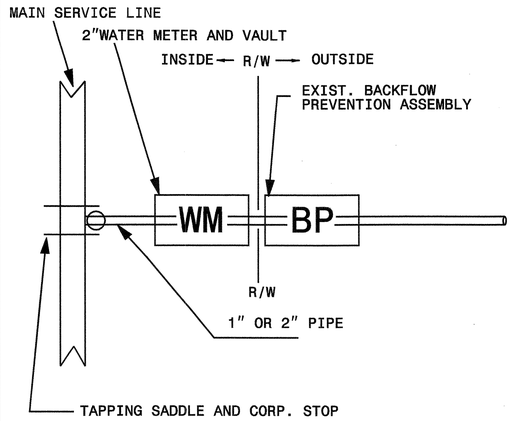
NO.	DATE	DESCRIPTION

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 ENGINEER 23041 COREY D. DUGGUIE

NAD 83

UTILITY CONSTRUCTION



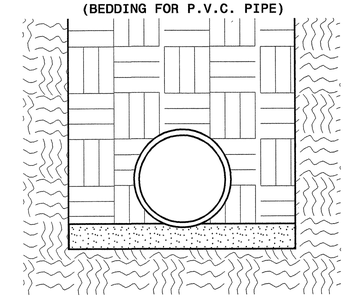
1" OR 2" WATER METER SERVICE AND BACKFLOW ASSEMBLY

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"

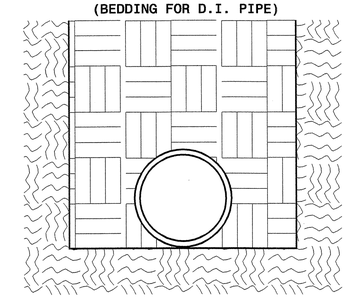
(BEDDING FOR P.V.C. PIPE)



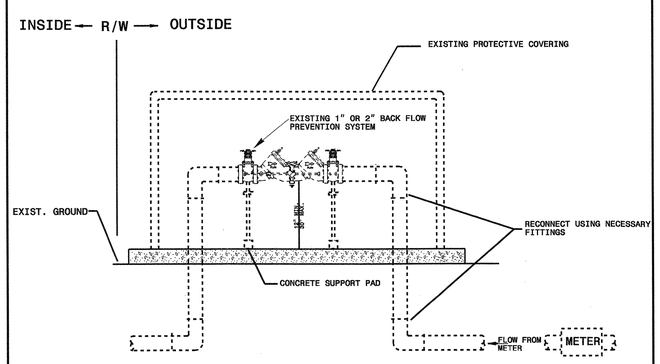
PIPE BEDDED IN LOOSE MATERIAL, LIGHTLY TAMPED WITH A MINIMUM OF 6" UNDER PIPE. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION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

TYPE "2"

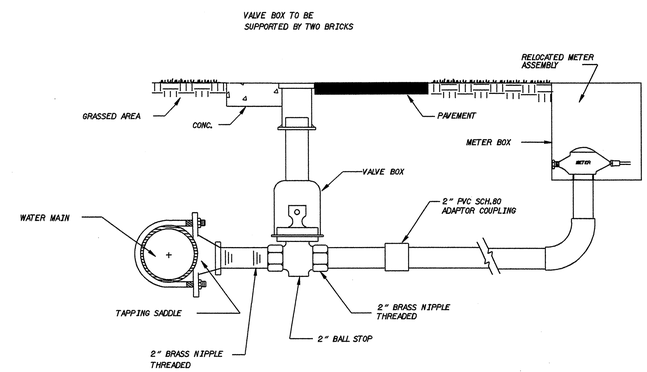
(BEDDING FOR D.I. PIPE)



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.

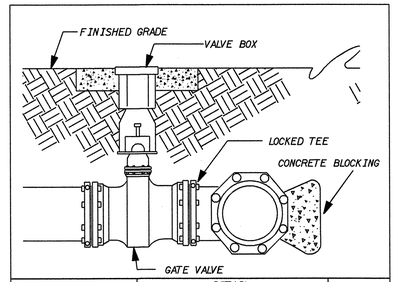


RELOCATE EXISTING 2" OR 1" BACKFLOW ASSEMBLY

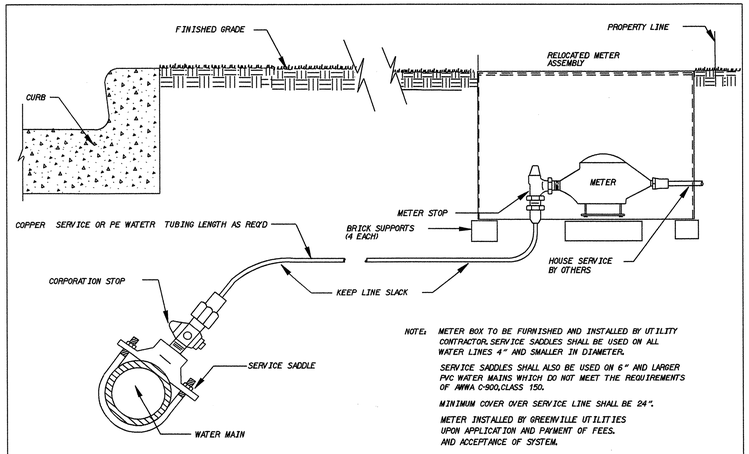


TYPICAL 1-1/2" AND 2" WATER SERVICE CONNECTION

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.

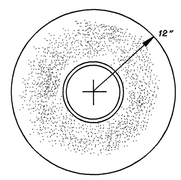
SERVICE SADDLES SHALL ALSO BE USED ON 6" AND LARGER PVC WATER MAINS WHICH DO NOT MEET THE REQUIREMENTS OF AWWA C-900,CLASS 150.

MINIMUM COVER OVER SERVICE LINE SHALL BE 24".

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

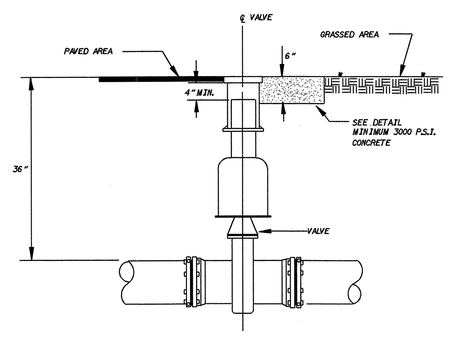
2" - 1" WATER SERVICE DETAIL FOR AREAS WITH CURB AND GUTTER

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

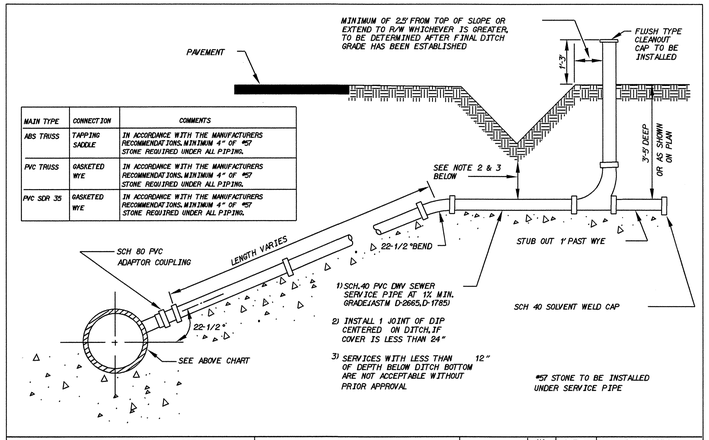
5/14/99

14-MAR-2006 16:14
k:\wmd_95\proj\3613b\s05_ut_uc_detail_1_psh.dgn

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 CAREY D. BOUSQUET 3/16/06

UTILITY CONSTRUCTION

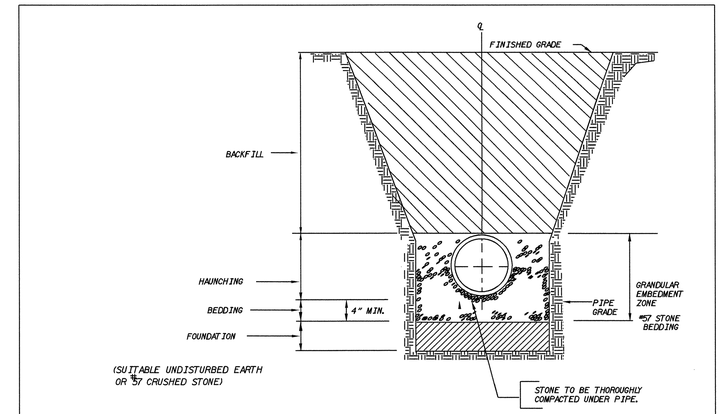


MAIN TYPE	CONNECTION	COMMENTS
ABS TRUSS	TAPPING SADDLE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.
PVC TRUSS	GASKETED WYE	IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MINIMUM 4" OF #57 STONE REQUIRED UNDER ALL PIPING.
PVC SDR 35	GASKETED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

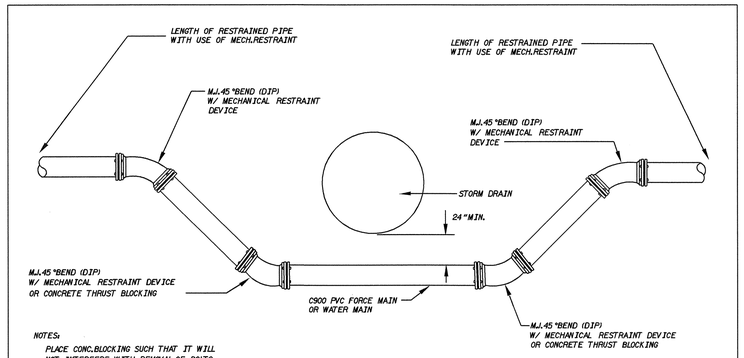
NO.	DATE	DESCRIPTION



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

DWG.NO. S-10

NO.	DATE	DESCRIPTION



NOTES:

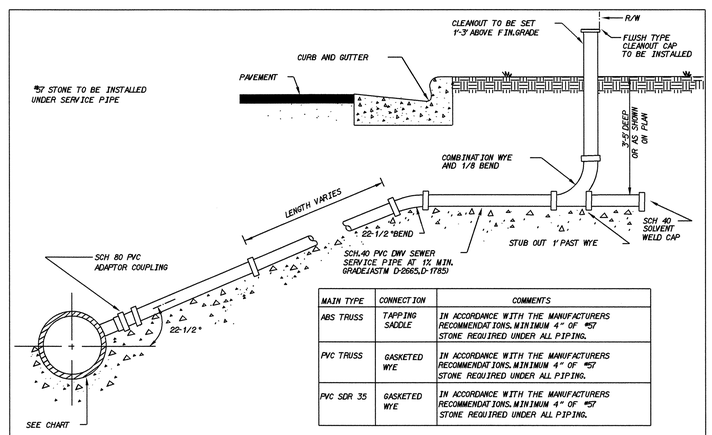
PLACE CONC.BLOCKING SUCH THAT IT WILL NOT INTERFERE WITH REMOVAL OF BOLTS.

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

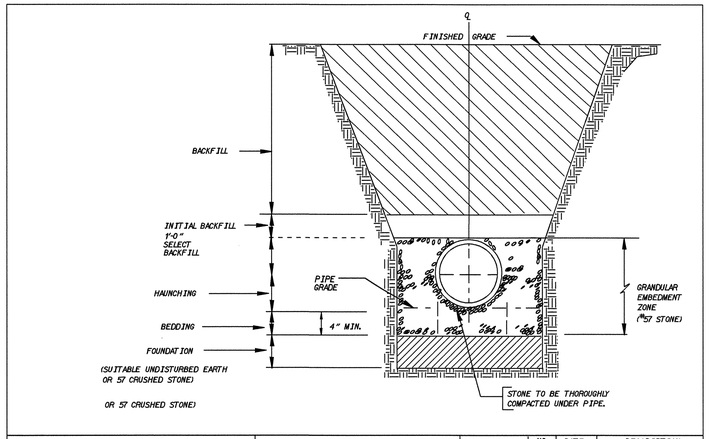
5/14/99

16-MAR-2006 16:06
u:\pdb\u3613bs05_ut_uc_detail1.pshdgn
cbousquet
PS22x34

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 ENGINEER COREY D. BOUGOUIT 4/18/06

UTILITY CONSTRUCTION

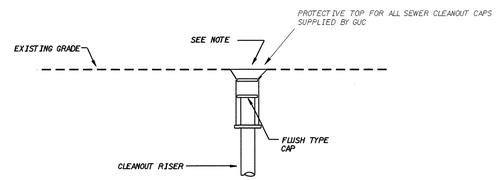


TRENCH SECTION DETAIL FOR THE INSTALLATION OF PVC SANITARY SEWER PIPE (NOT INCLUDING TRUSS)			NO.	DATE	DESCRIPTION
SHEET 1 OF 1	DWG.NO. S-9				

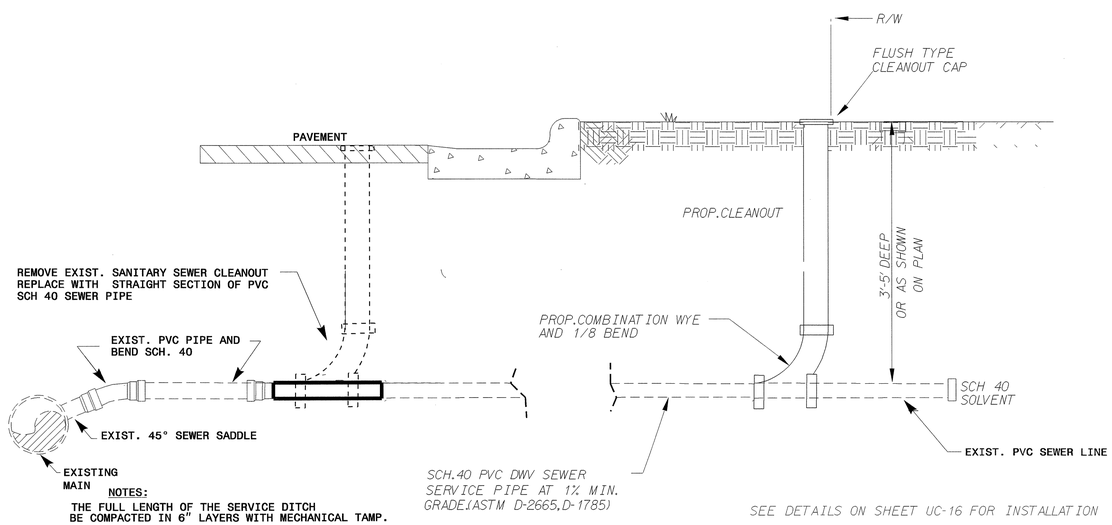
NOTE

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



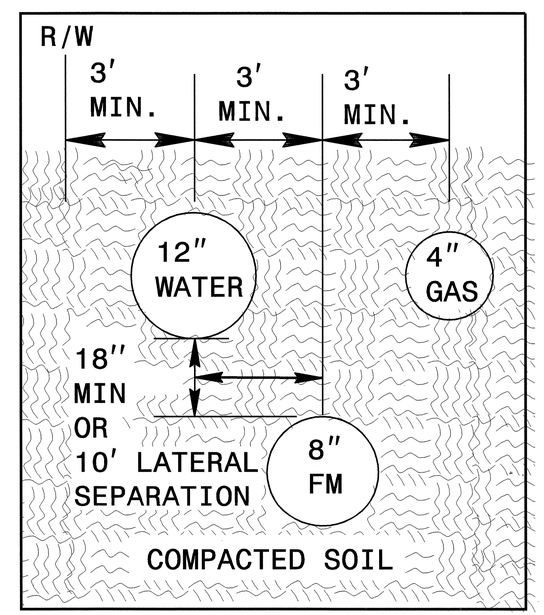
CLEANOUT DETAIL FOR PAVED AREAS			NO.	DATE	DESCRIPTION
	DWG.NO. S-3				



NOTES:
THE FULL LENGTH OF THE SERVICE DITCH BE COMPACTED IN 6" LAYERS WITH MECHANICAL TAMP.

RELOCATED SANITARY SEWER CLEANOUT CONNECTION

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



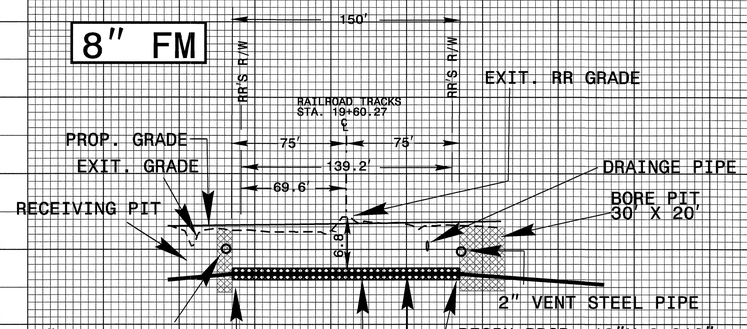
LAY 12" PVC WATER LINE AT LEAST 10 FEET LATERALLY OR 18" ABOVE THE 8" PVC FM, UNLESS THE WATER LINE IS ABOVE THE FM AND BOTH LINES ARE MADE OF FERROUS MATERIAL

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	UTILITY CONSTRUCTION PLANS ONLY

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

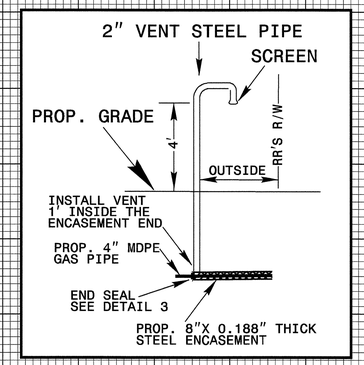
UTILITY CONSTRUCTION

8" FM

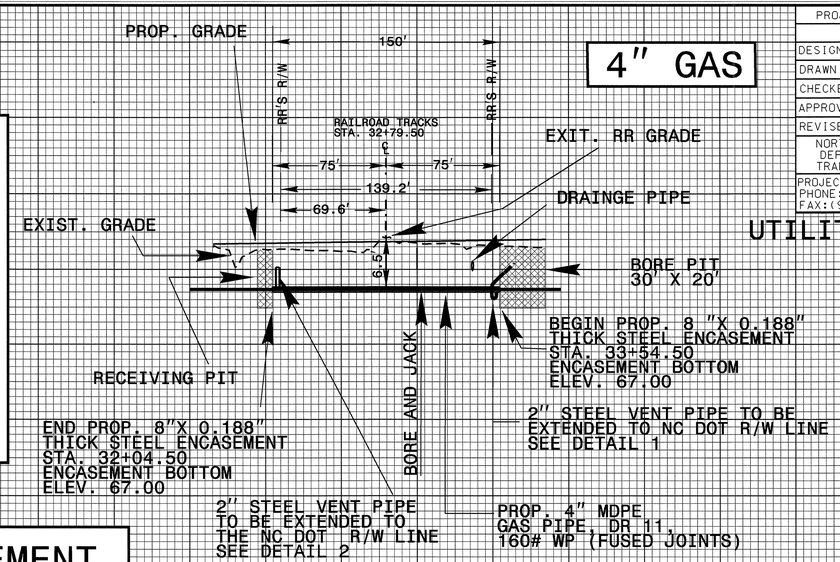


SEE SHEET UC-28 FOR THE RESTRAINT LIMITS ON THE 8" PVC FM INSIDE THE RAILROAD R/W AND FOR VALVE LOCATIONS

DETAIL 2

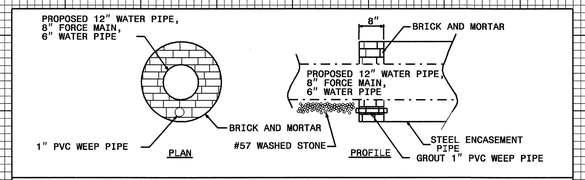


4" GAS

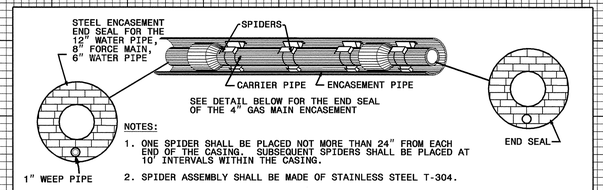


SEE SHEET UC-24 FOR THE 4" MDPE GAS (FUSED JOINT) PIPE BEYOND THE RAILROAD R/W THE JOINTS AND FOR VALVE LOCATIONS

PROPOSED ENCASEMENT INSTALLATION DETAIL



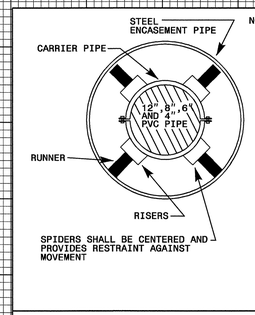
END SEAL ENCASEMENT DETAIL



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

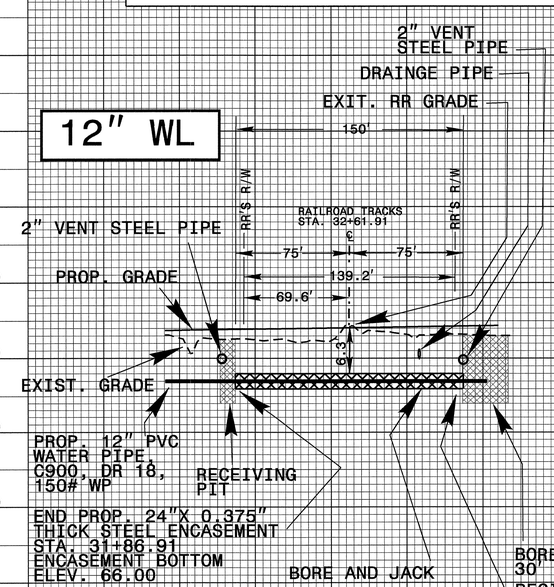


NOTES:

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 - ⅜", 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 6" IN HEIGHT SHALL HAVE ADDITIONAL REINFORCEMENT. RUNNERS SHALL BE MADE OF UTRA HIGH MOLECULAR WEIGHT POLYMER WITH A LOW COEFFICIENT OF FRICTION.

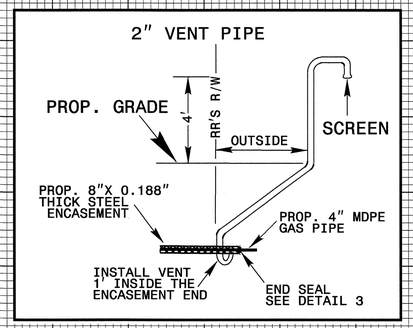
STEEL ENCASEMENT PIPE

12" WL

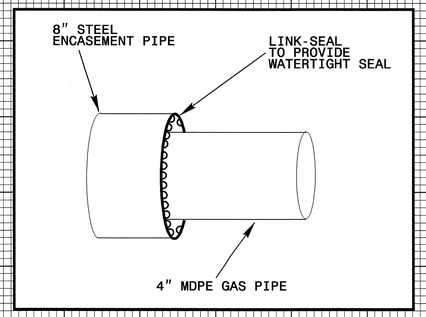


SEE SHEET UC-20 FOR THE RESTRAINT LIMITS ON THE 12" PVC WL INSIDE THE RAILROAD R/W AND FOR VALVE LOCATIONS

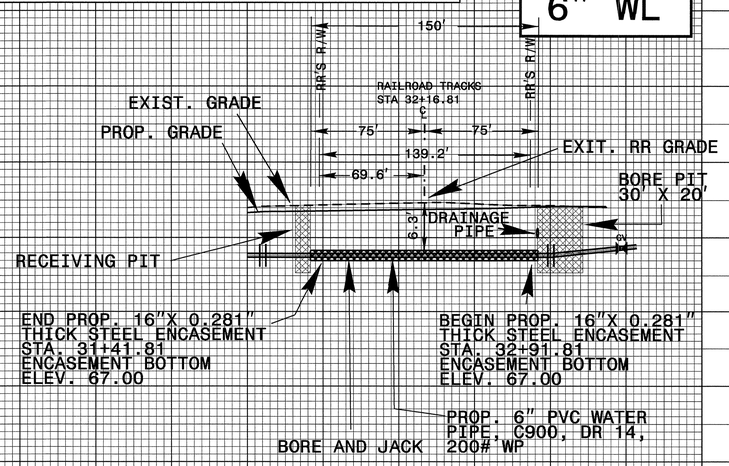
DETAIL 1



DETAIL 3



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 PS222248

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

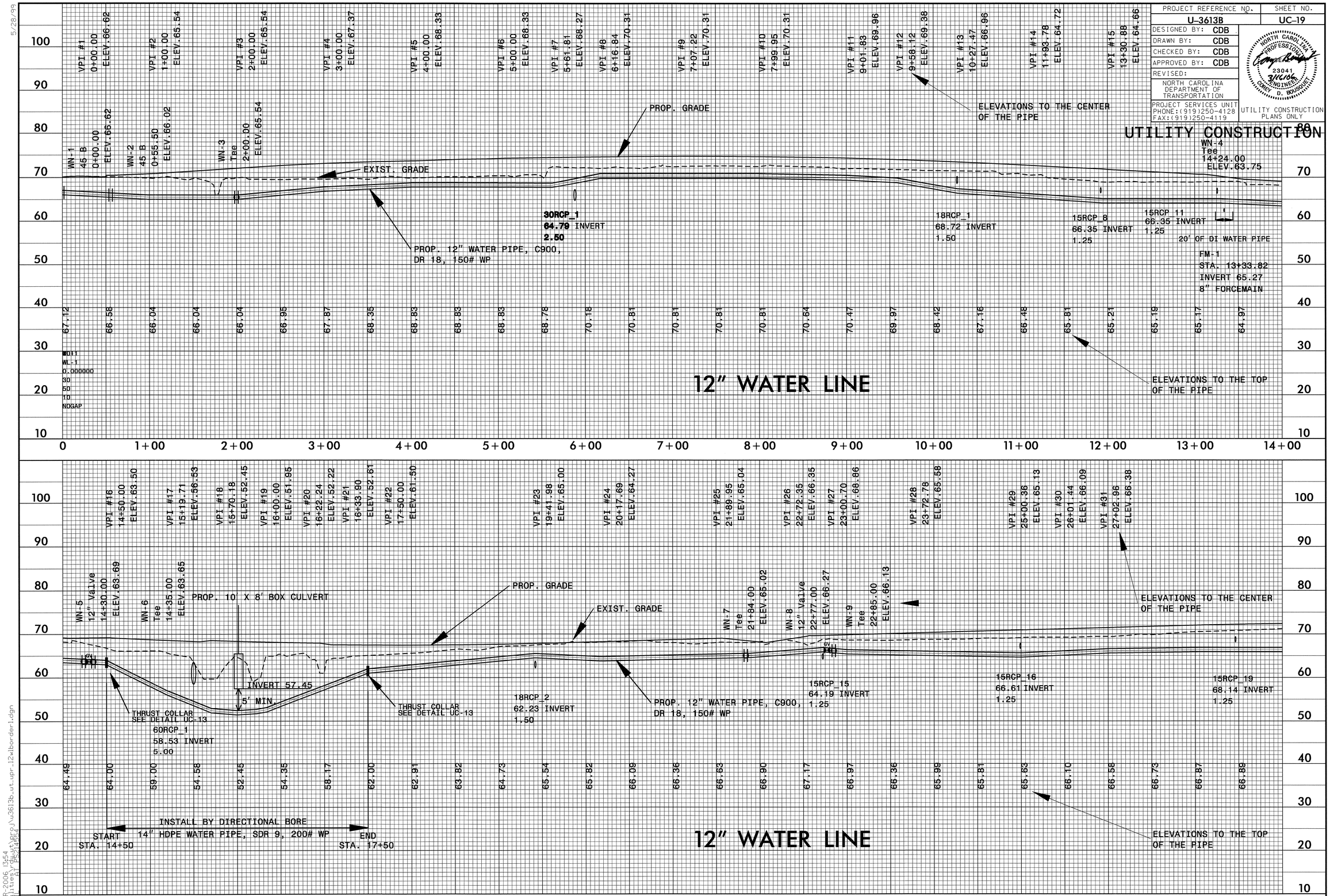
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

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

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 CHRISTOPHER D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

16-MAR-2006 13:54
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kkamil
ATT PS214554

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

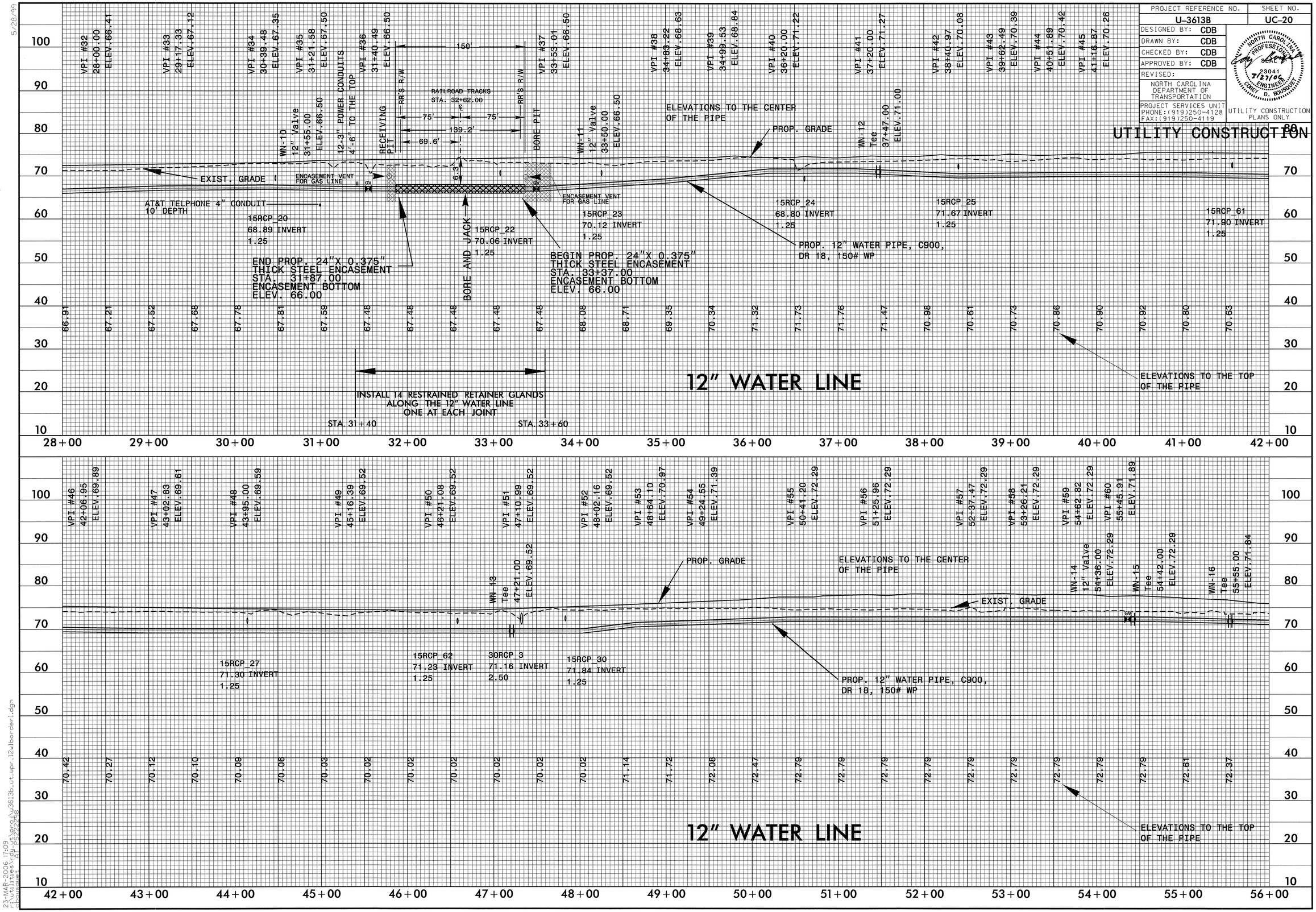
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

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

NORTH CAROLINA PROFESSIONAL SEAL 23041 7/27/06 ENGINEER CAREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

23-MAR-2006 17:09
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cbousquet
at PS22x28

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

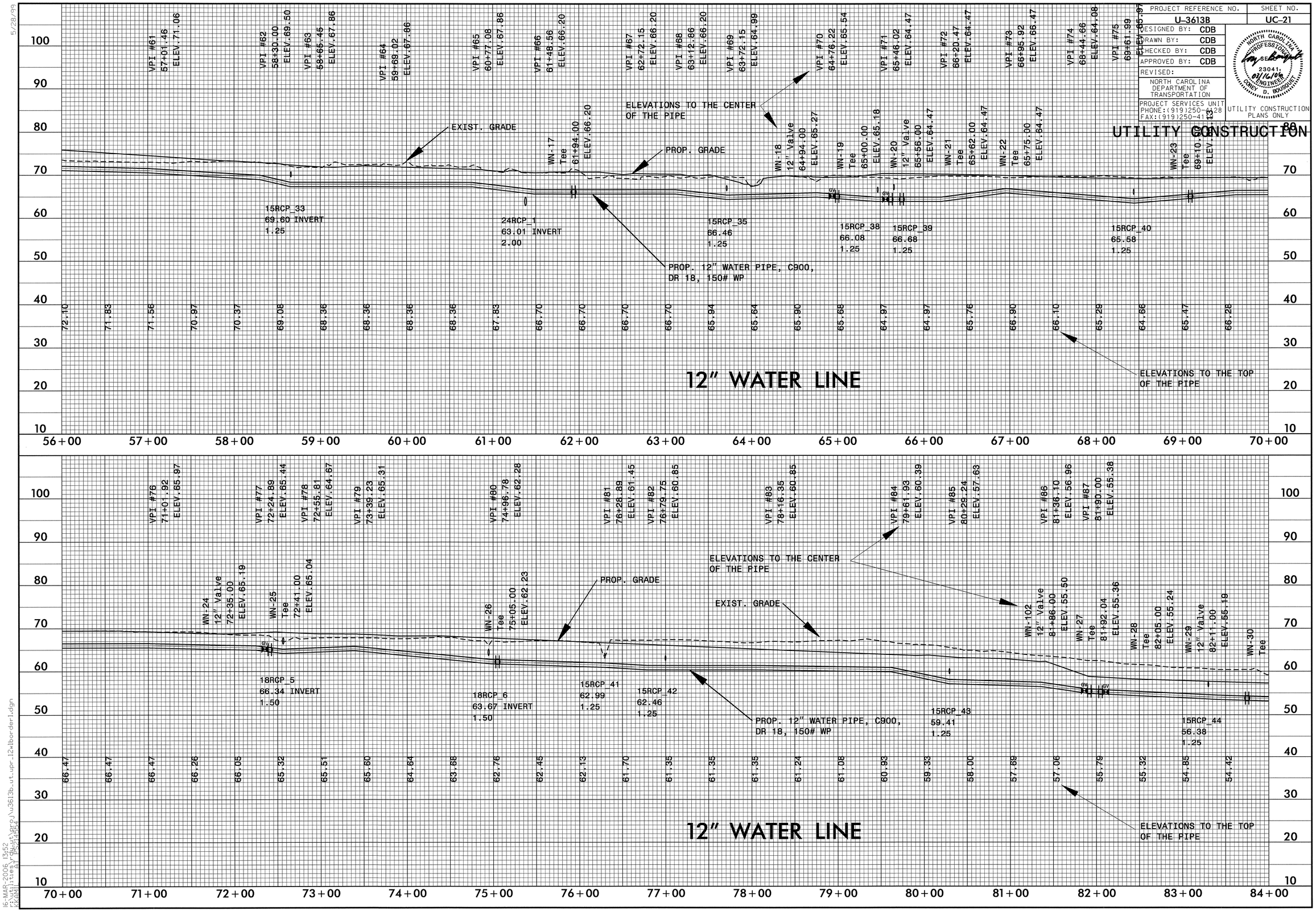
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

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 CHRIS D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

16-MAR-2006 13:52
R:\Utilities\Proj\u3613b_ut_upr_12wborder1.dgn
rkamil
AT PS214454

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

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

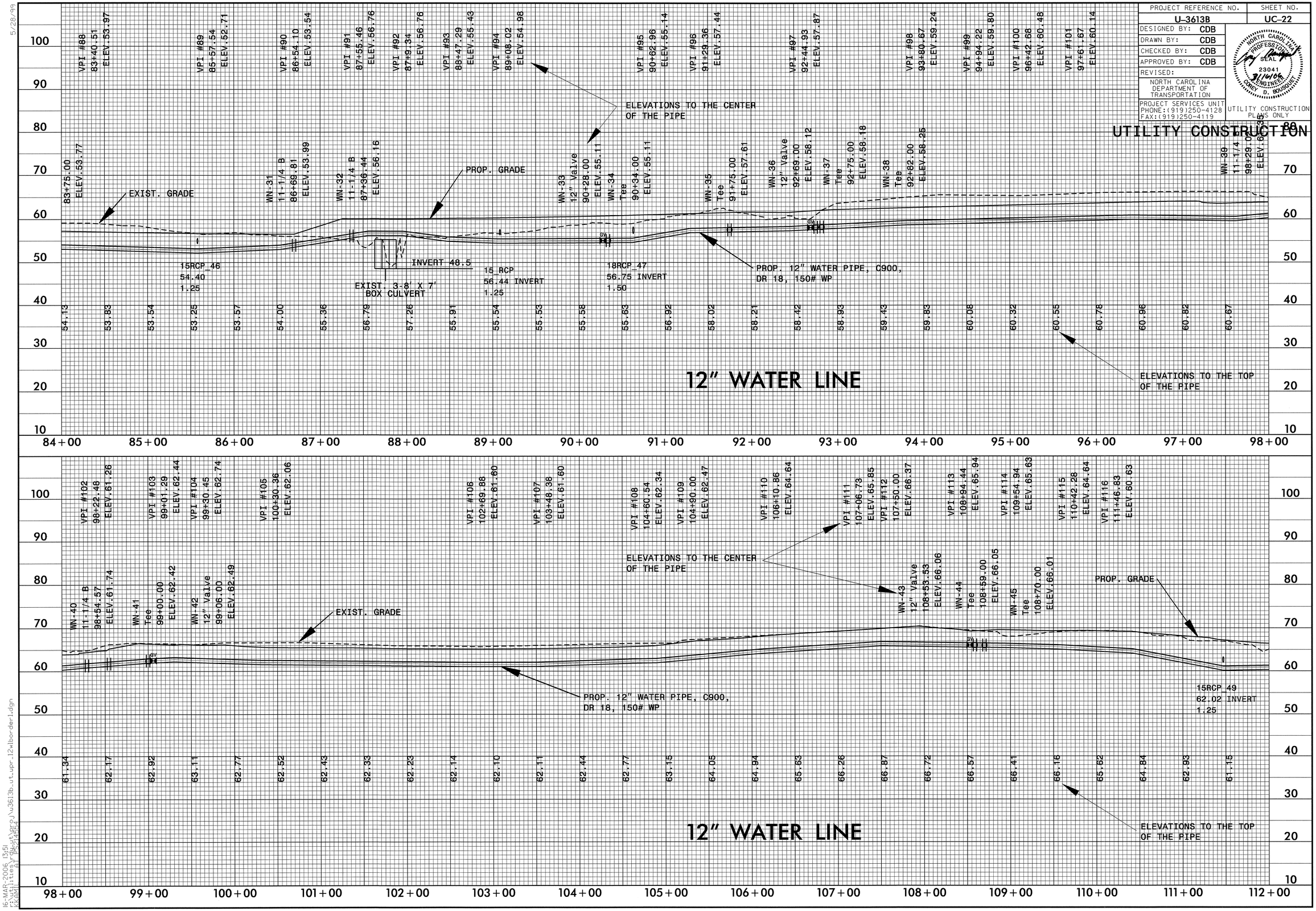
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

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

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



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kkAMI AT PS24454

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

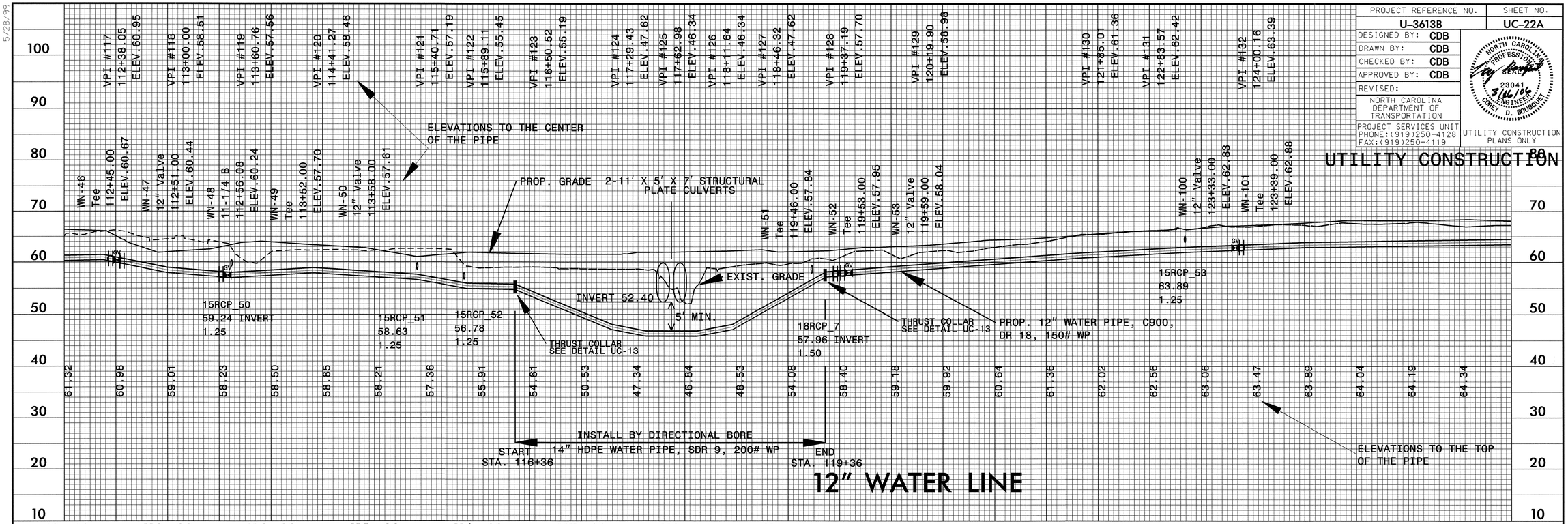
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

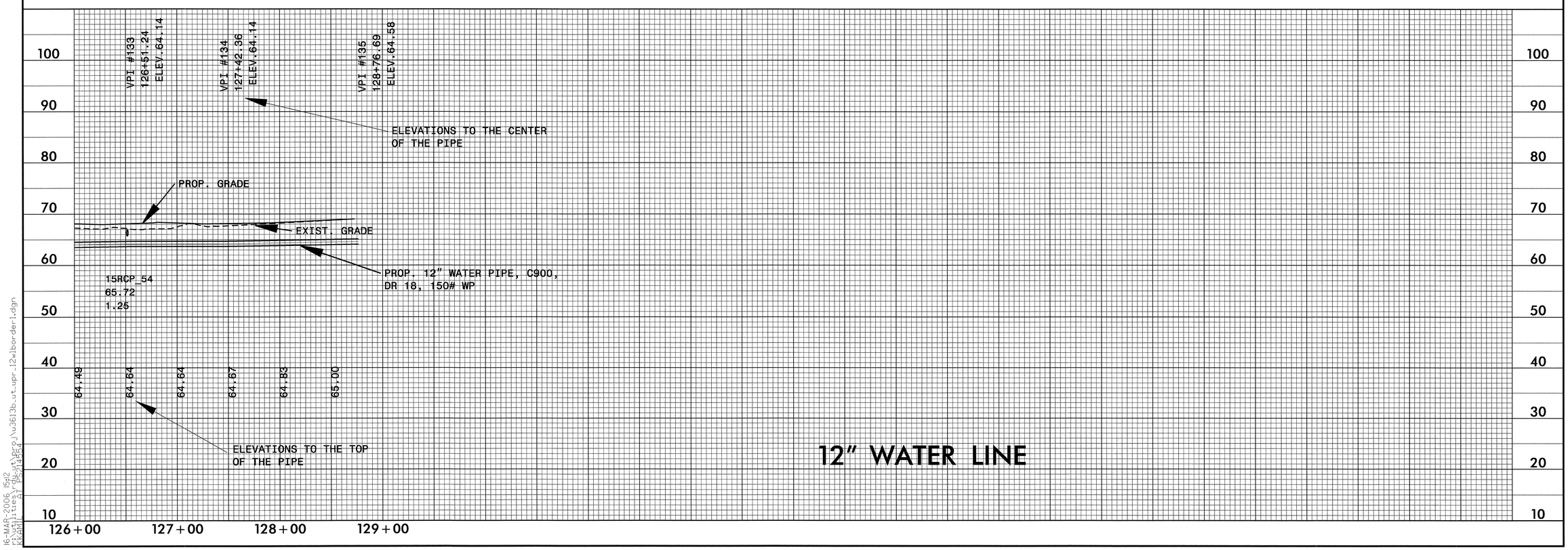
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

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

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





5/28/99

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KKAMIL AT PS#14554

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

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

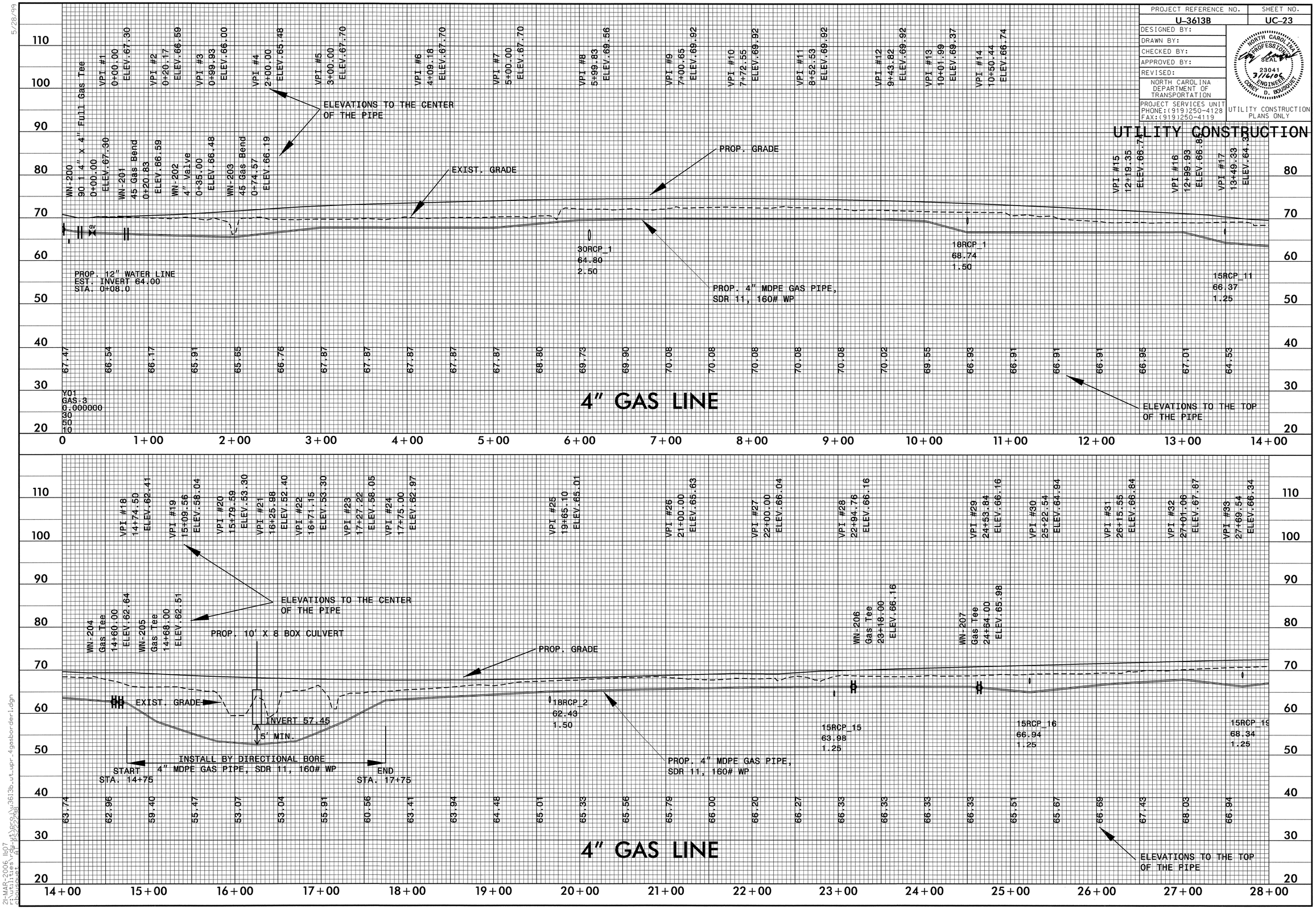
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

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

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

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cbousquet at PS2222X8

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

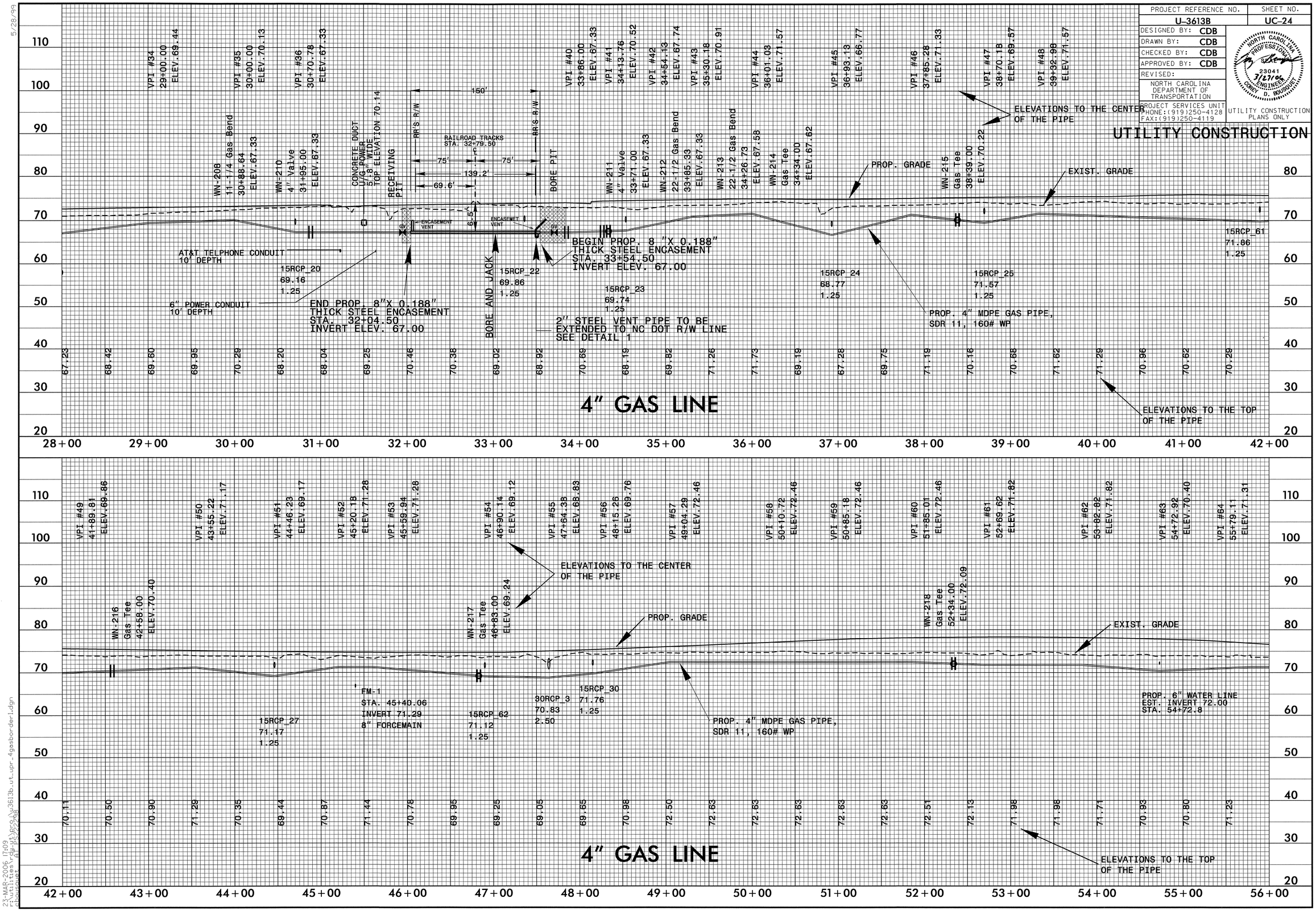
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

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 CAREY D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

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cbousquet
AT PS22238

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

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

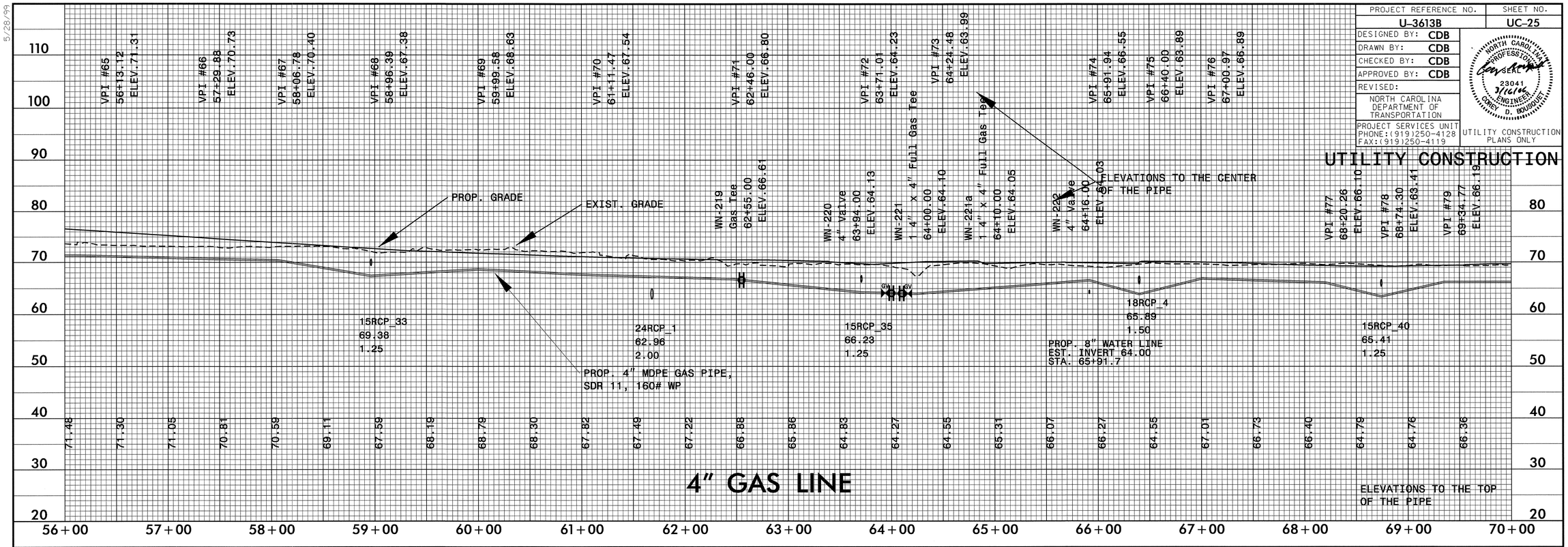
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

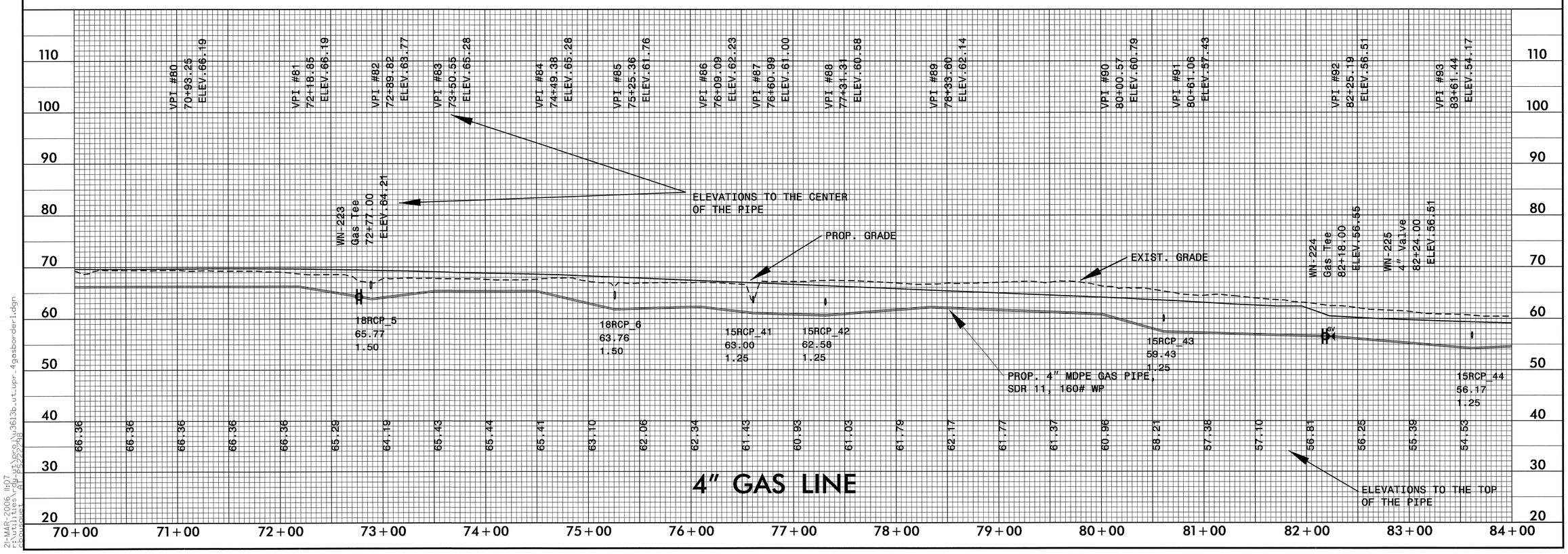
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 3/16/06 CARL D. GOUSOULIS

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





5/28/99

27-MAR-2006 11:07
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cbousquet AT PS22298

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

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

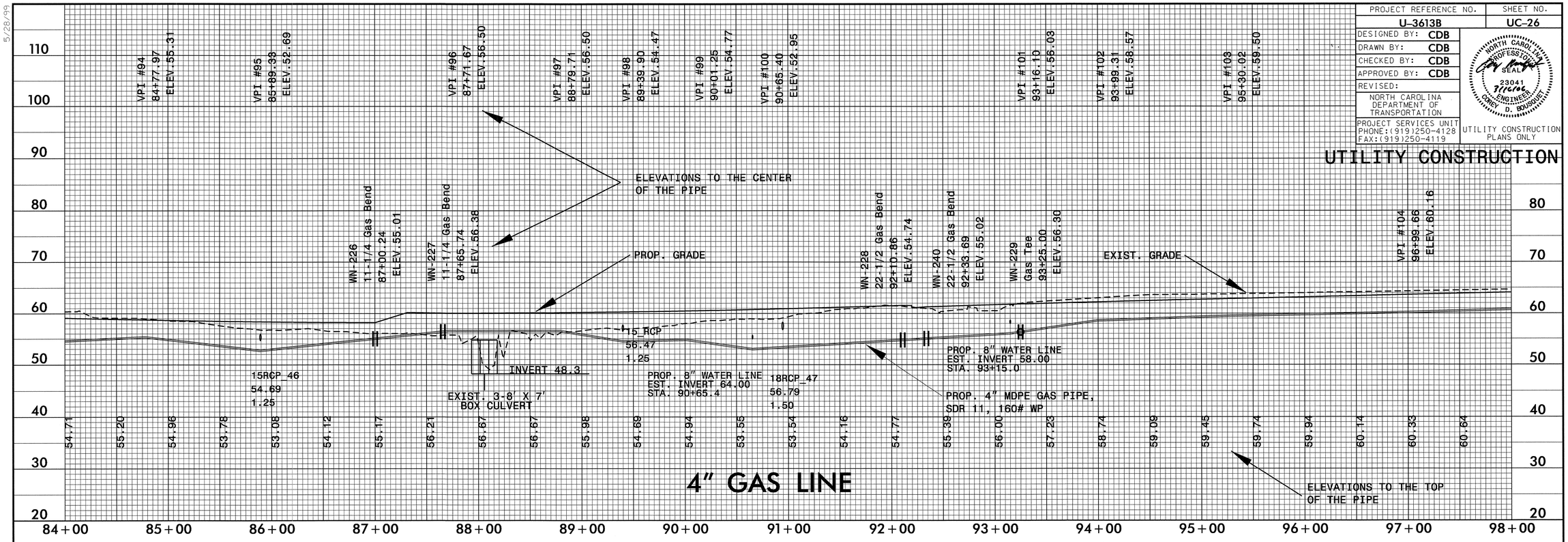
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

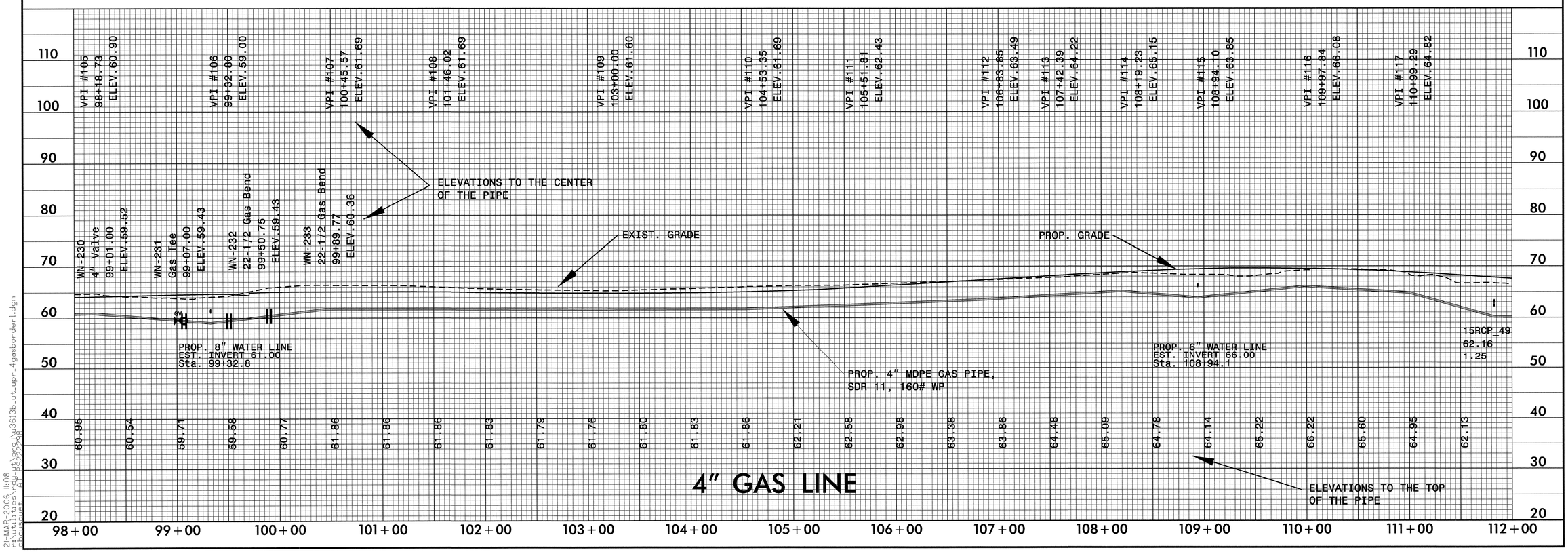
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER CHRIS D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





5/28/99

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cbousquet ATP PS22298

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

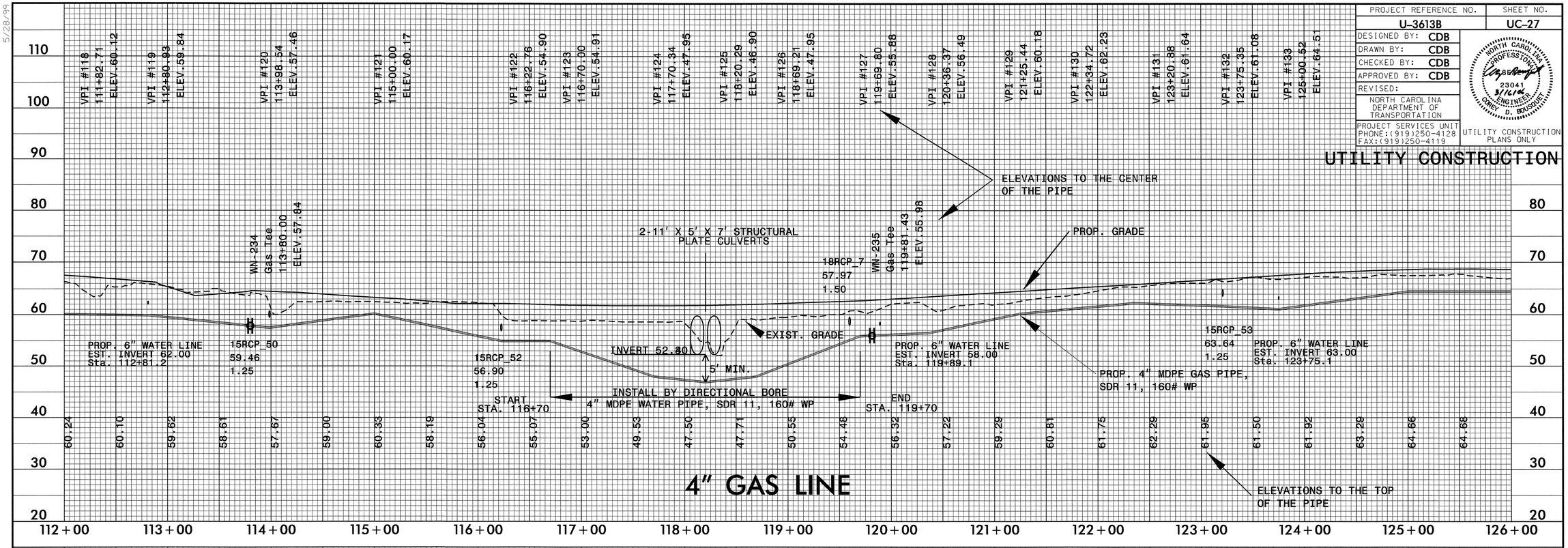
DESIGNED BY: CDB
DRAWN BY: CDB
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

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

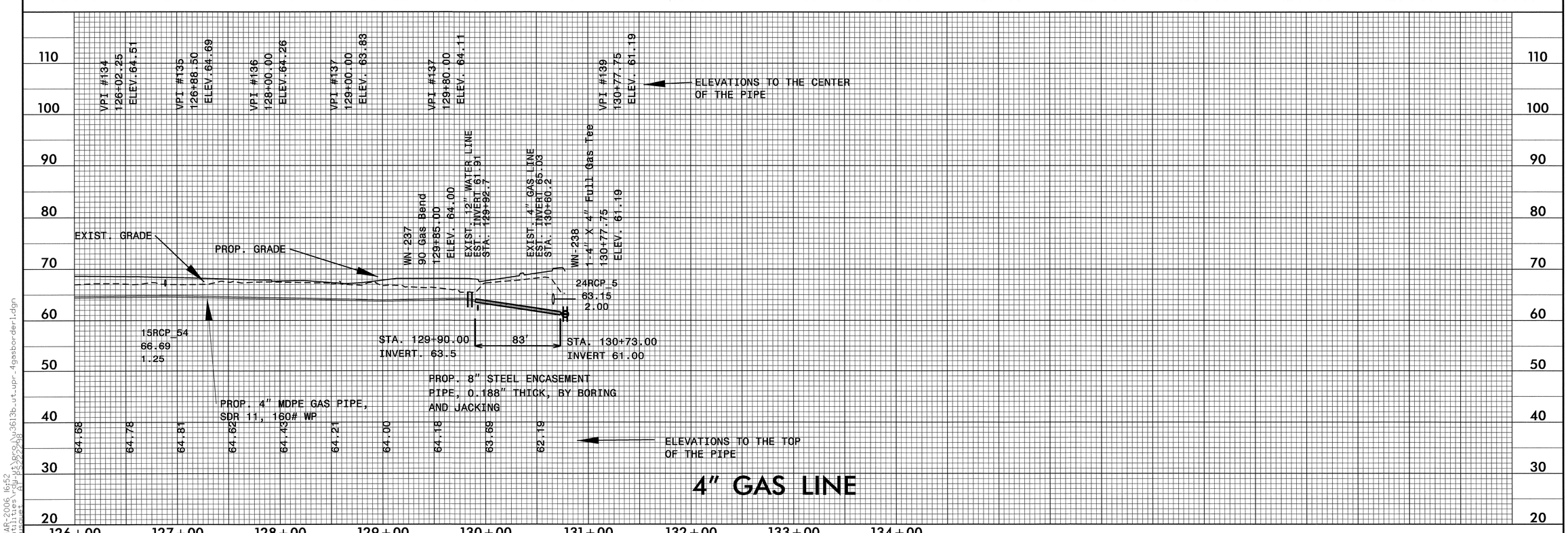
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 23041 5/16/06 CHRISTOPHER D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



4" GAS LINE



4" GAS LINE

5/28/99

21-MAR-2006 16:52
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cbousquet AT PS2222x8

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

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

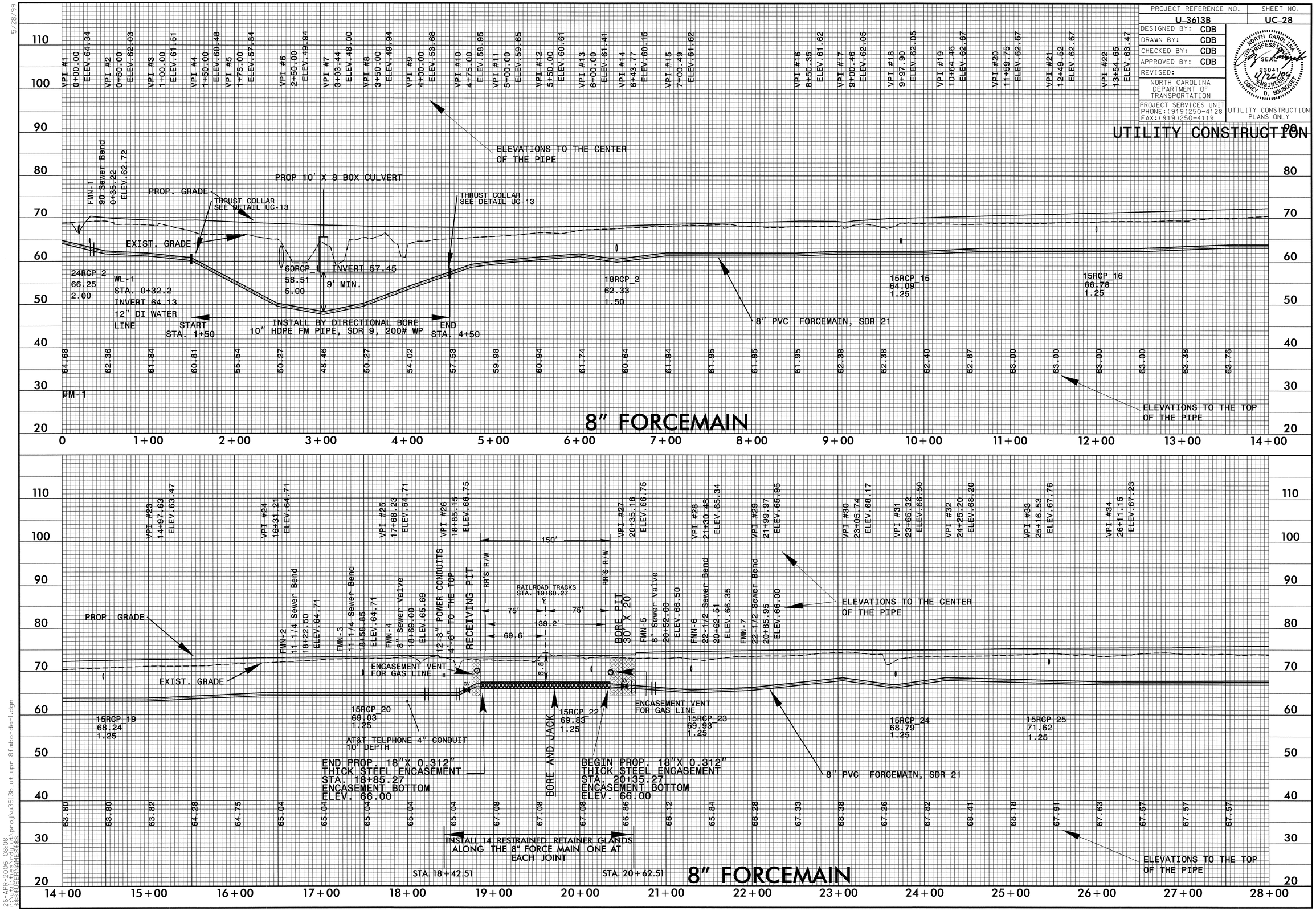
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

UTILITY CONSTRUCTION PLANS ONLY

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

UTILITY CONSTRUCTION



5/28/99

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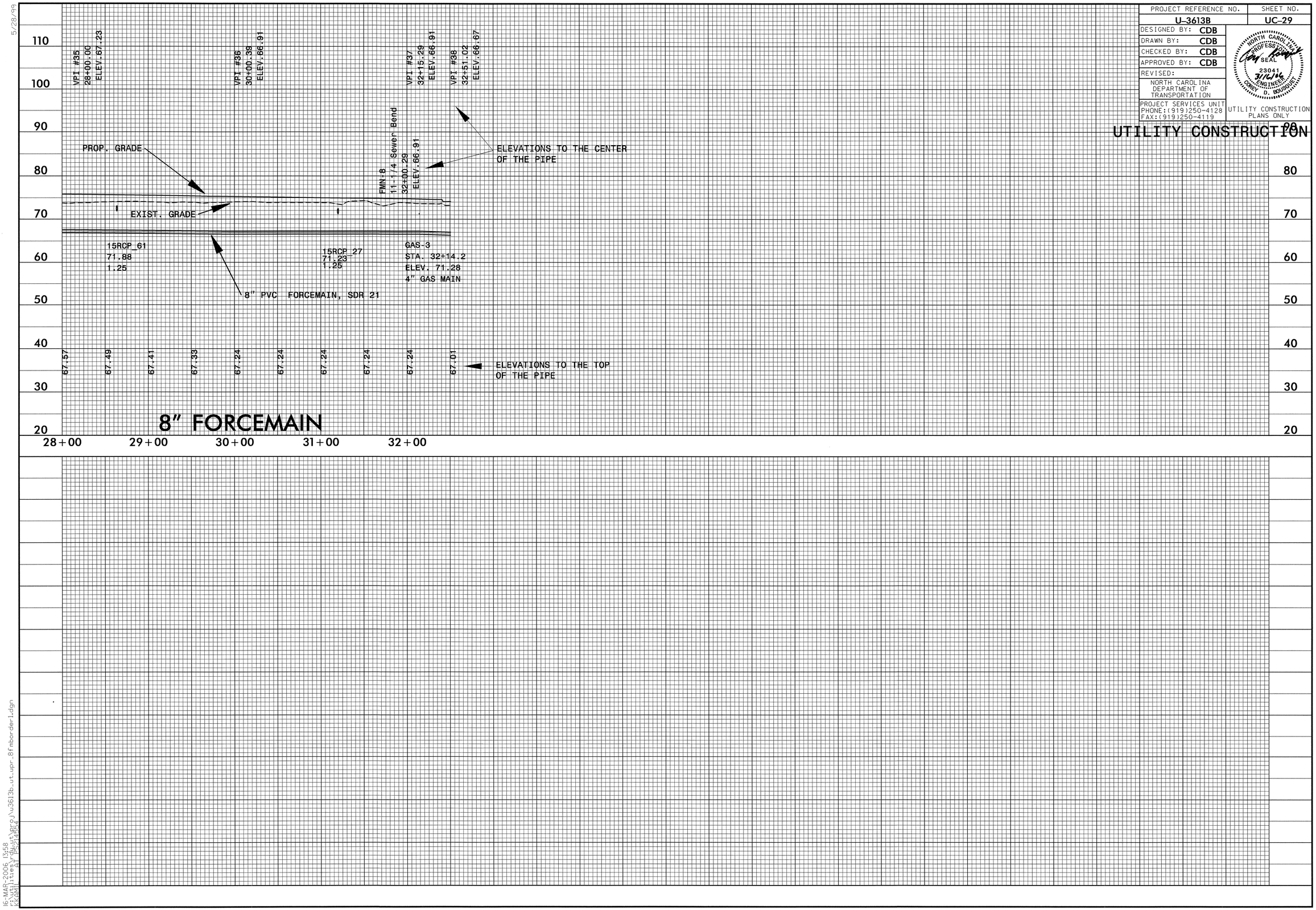
110
100
90
80
70
60
50
40
30
20
VPI #35
28+00.00
ELEV.67.23
VPI #36
30+00.39
ELEV.66.91
VPI #37
32+15.29
ELEV.66.91
VPI #38
32+51.02
ELEV.66.67
PROP. GRADE
EXIST. GRADE
FMN-8
11-1/4 Sewer Bend
32+00.29
ELEV.66.91
ELEVATIONS TO THE CENTER OF THE PIPE
15RCP 61
71.88
1.25
15RCP 27
71.23
1.25
GAS-3
STA. 32+14.2
ELEV. 71.28
4" GAS MAIN
8" PVC FORCEMAIN, SDR 21
67.57
67.49
67.41
67.33
67.24
67.24
67.24
67.24
67.24
67.01
ELEVATIONS TO THE TOP OF THE PIPE
8" FORCEMAIN
28+00
29+00
30+00
31+00
32+00
PROJECT REFERENCE NO.
U-3613B
SHEET NO.
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 CAREY D. BOUSQUET
UTILITY CONSTRUCTION PLANS ONLY
UTILITY CONSTRUCTION
5/28/99
16-MAR-2006 13:58
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KKAMI
AT PS214454

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

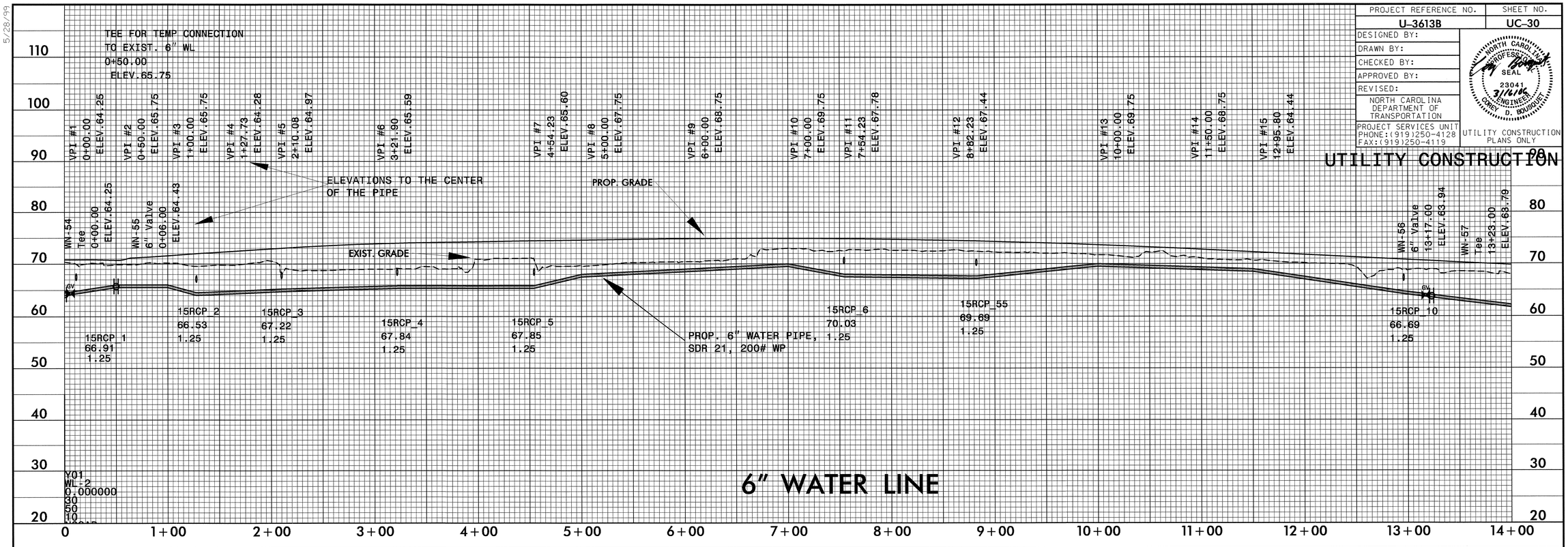
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:
REVISED:

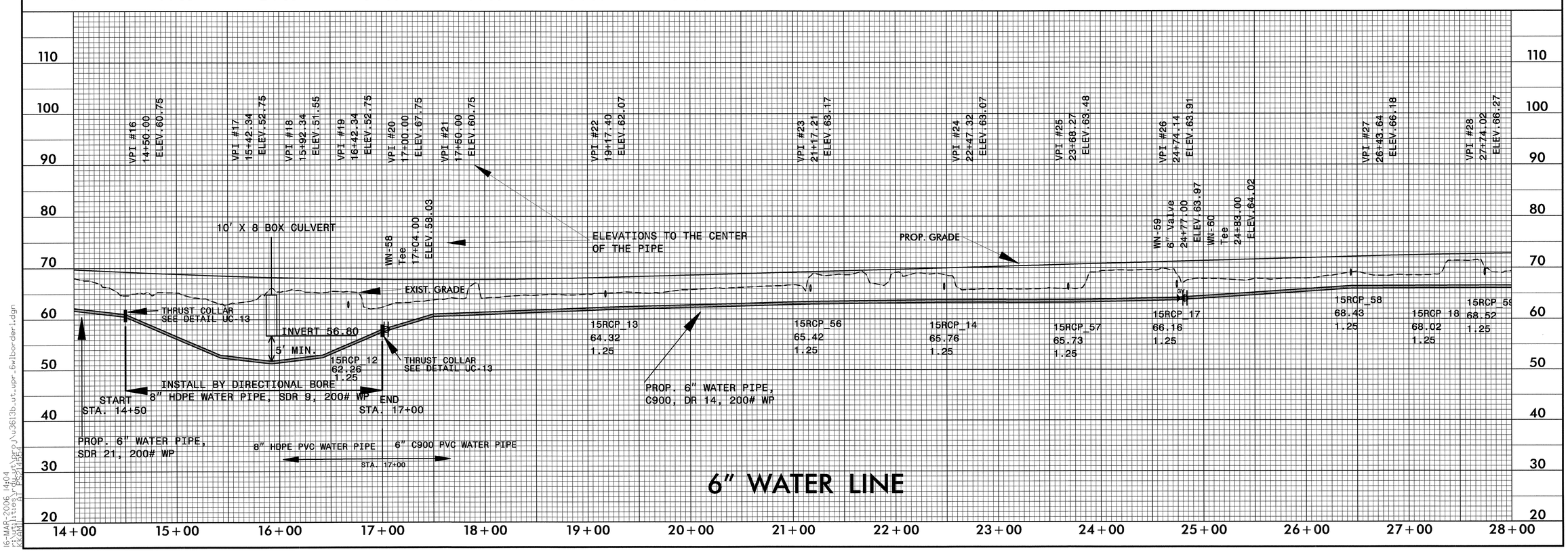
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE: (919)250-4128
FAX: (919)250-4119

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

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





5/28/99

16-MAR-2006 14:04
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rkamm AT PS214454

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

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

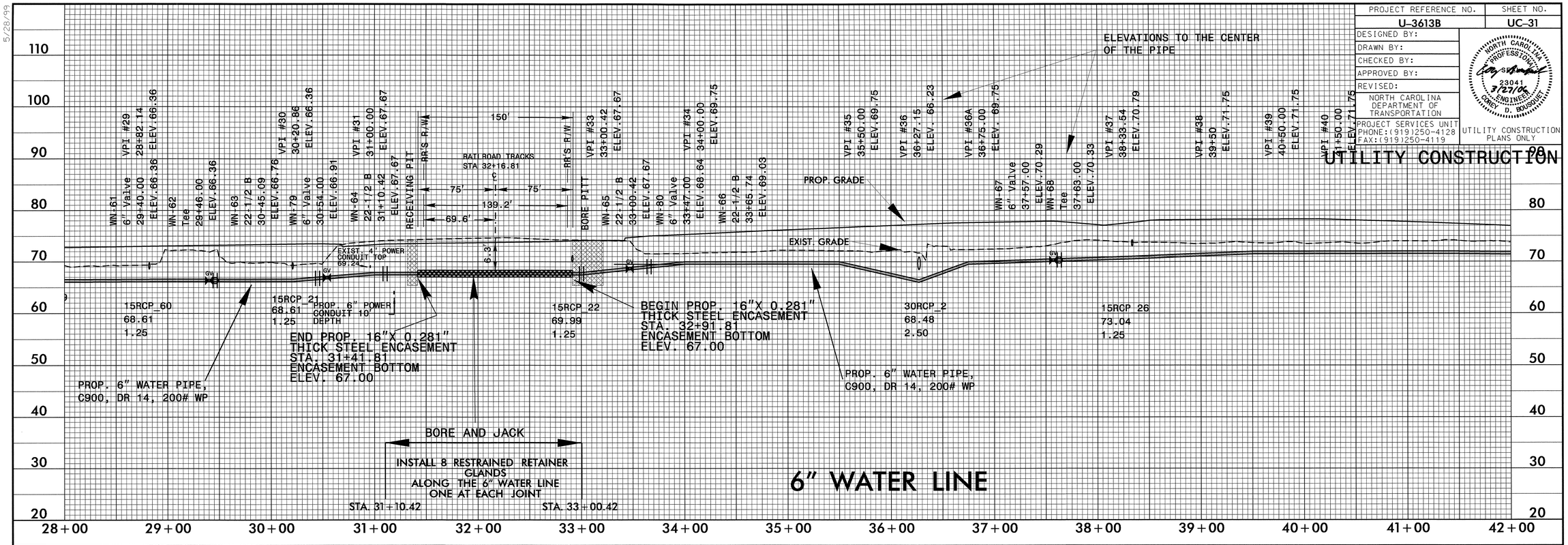
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

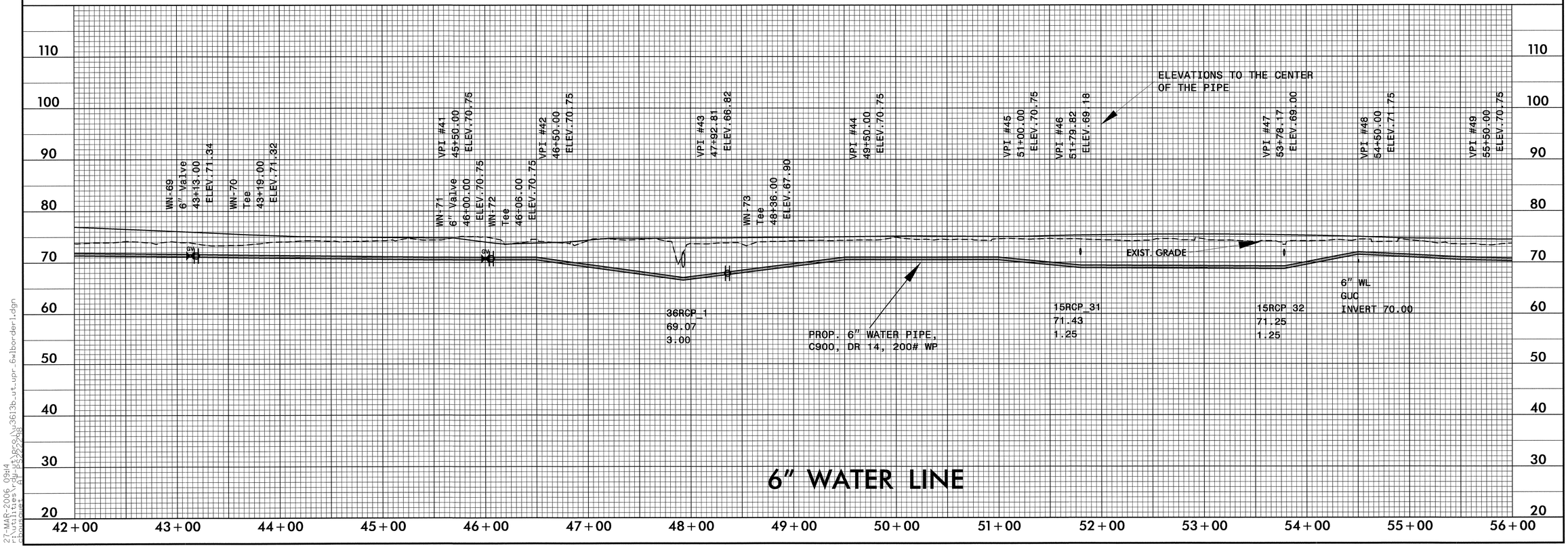
PROJECT SERVICES UNIT
PHONE: (919)250-4128
FAX: (919)250-4119

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

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





5/28/99

27-MAR-2006 09:14
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cbonsquet AT PS22248

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

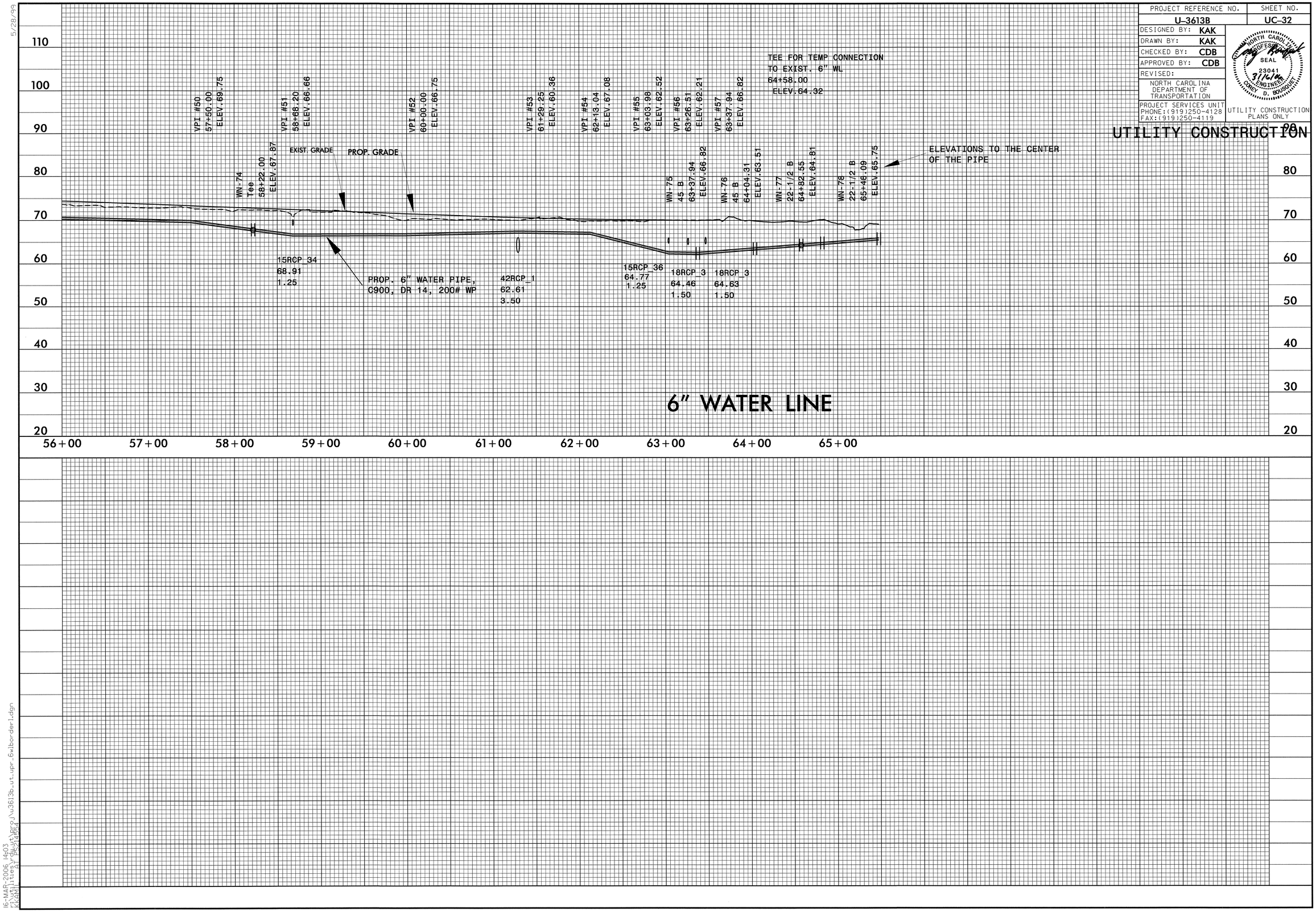
DESIGNED BY: KAK
DRAWN BY: KAK
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

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

NORTH CAROLINA PROFESSIONAL SEAL 23041 ENGINEER CHRIS D. BOUSQUET

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/28/99

16-MAR-2006 14:03
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kkaml AT PS914454

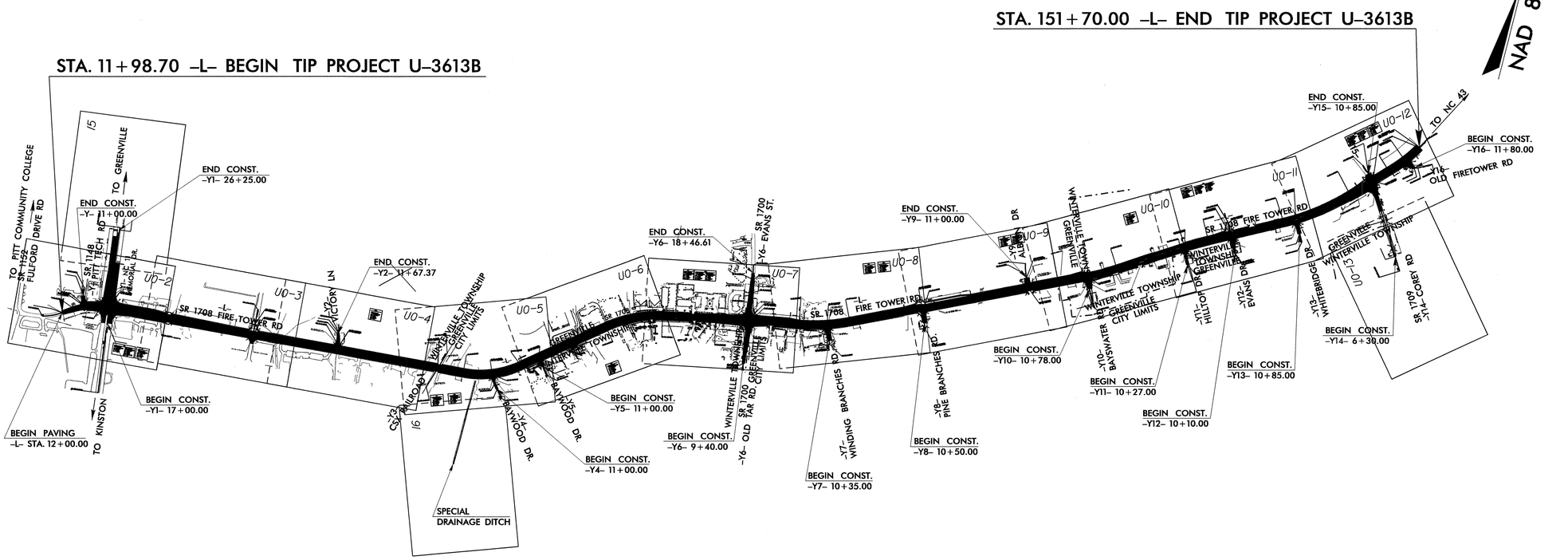
T.I.P. NO.	SHEET NO.
U-3613B	UO-1

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



TIP PROJECT: U-3613B

09/08/99

09-MAR-2006 12:11
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bohemphill AT PS24553

GRAPHIC SCALES

0 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
PHONE (919) 250-4128
FAX (919) 250-4119

Roger Worthington, P.E.	UTILITIES SECTION ENGINEER
Corey Bousquet, P.E.	UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill	UTILITIES PROJECT DESIGNER

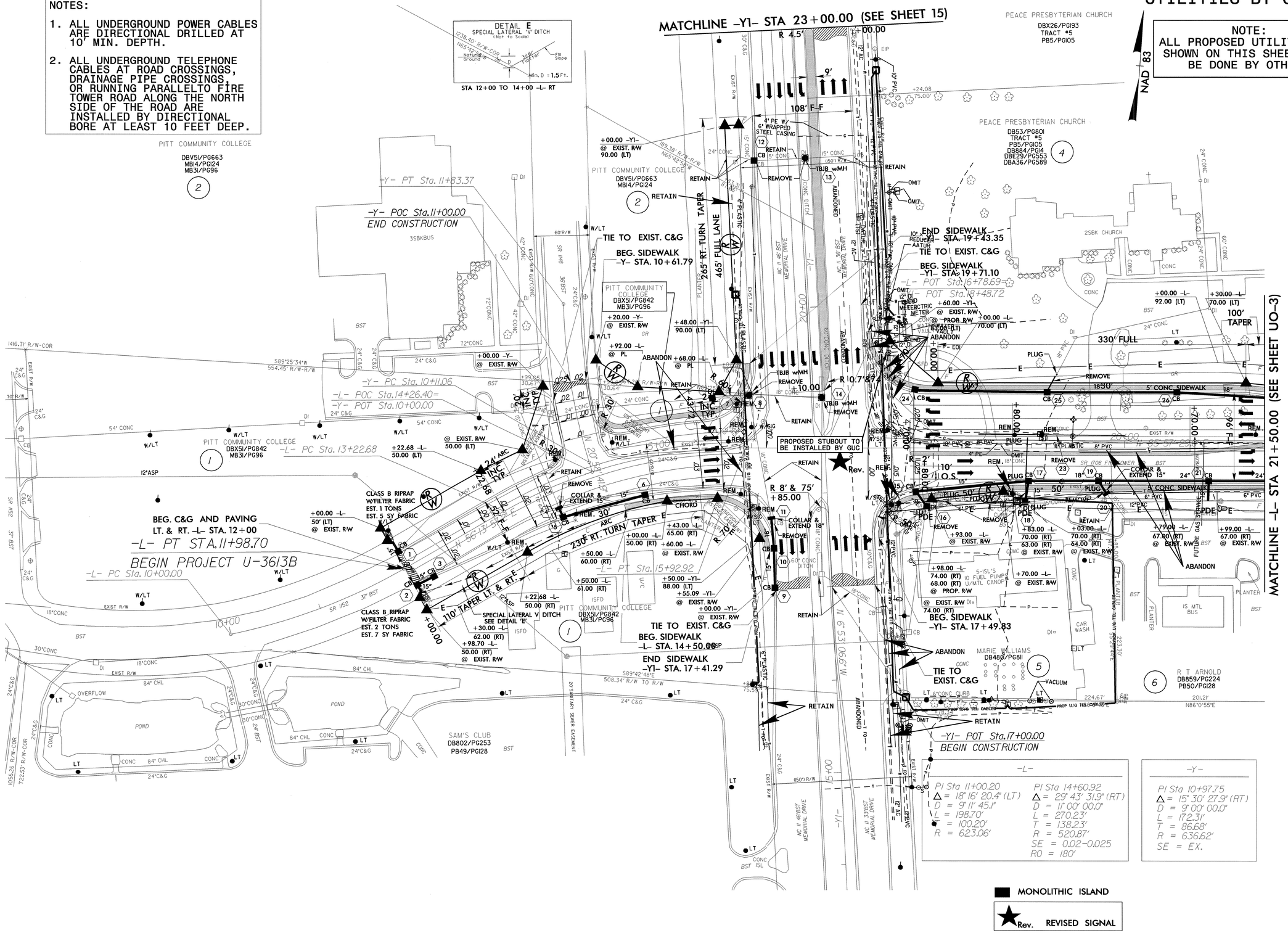
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	UO-2

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



-L-

PI Sta 11+00.20
Δ = 18° 16' 20.4" (LT)
D = 9° 11' 45.1"
L = 198.70'
T = 100.20'
R = 623.06'

PI Sta 14+60.92
Δ = 29° 43' 31.9" (RT)
D = 11° 00' 00.0"
L = 270.23'
T = 138.23'
R = 520.87'
SE = 0.02-0.025
RO = 180'

-Y-

PI Sta 10+97.75
Δ = 15° 30' 27.9" (RT)
D = 9° 00' 00.0"
L = 172.31'
T = 86.68'
R = 636.62'
SE = EX.

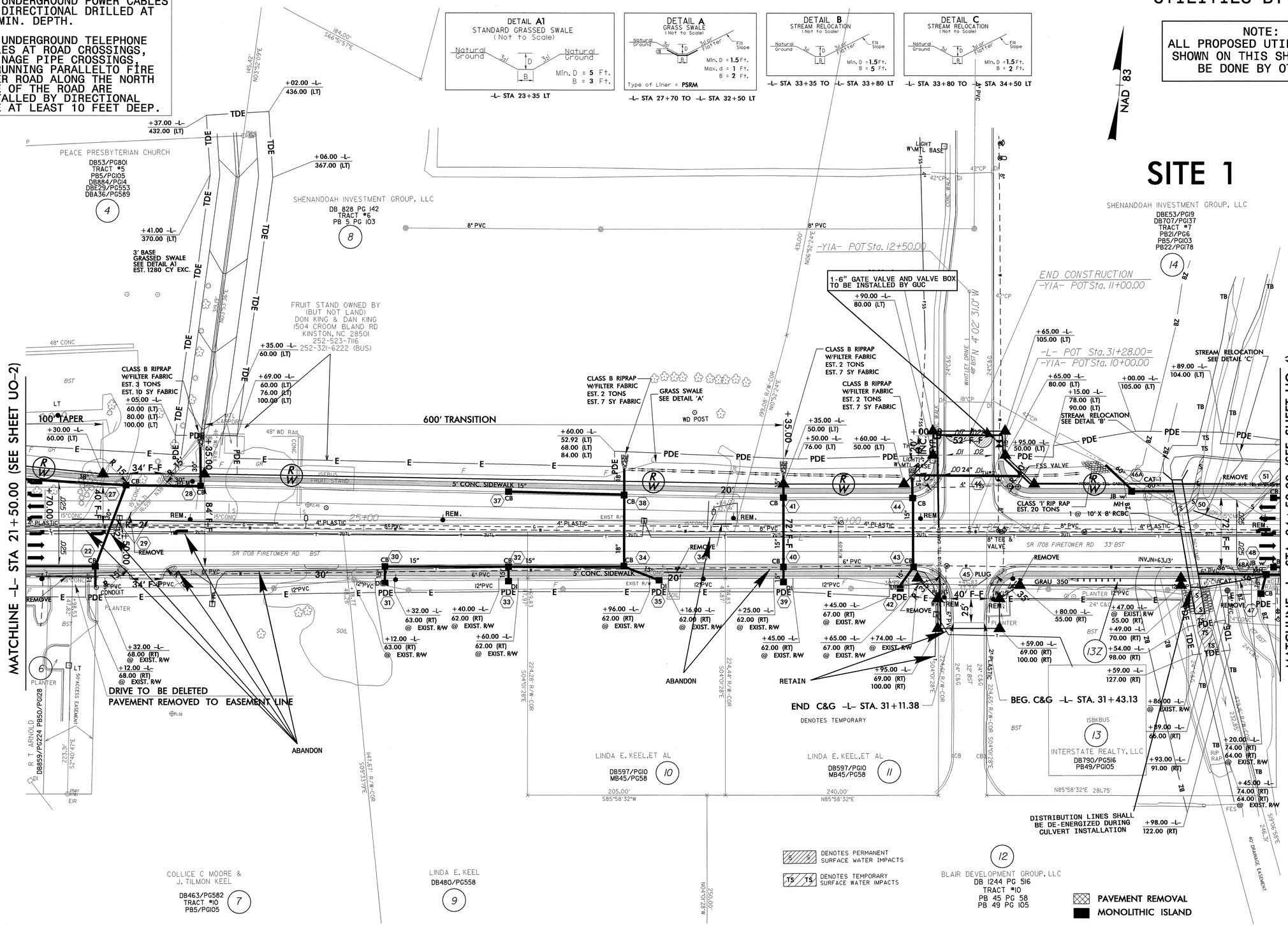
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-3

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



5/14/99

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30-JUN-2006 13:51

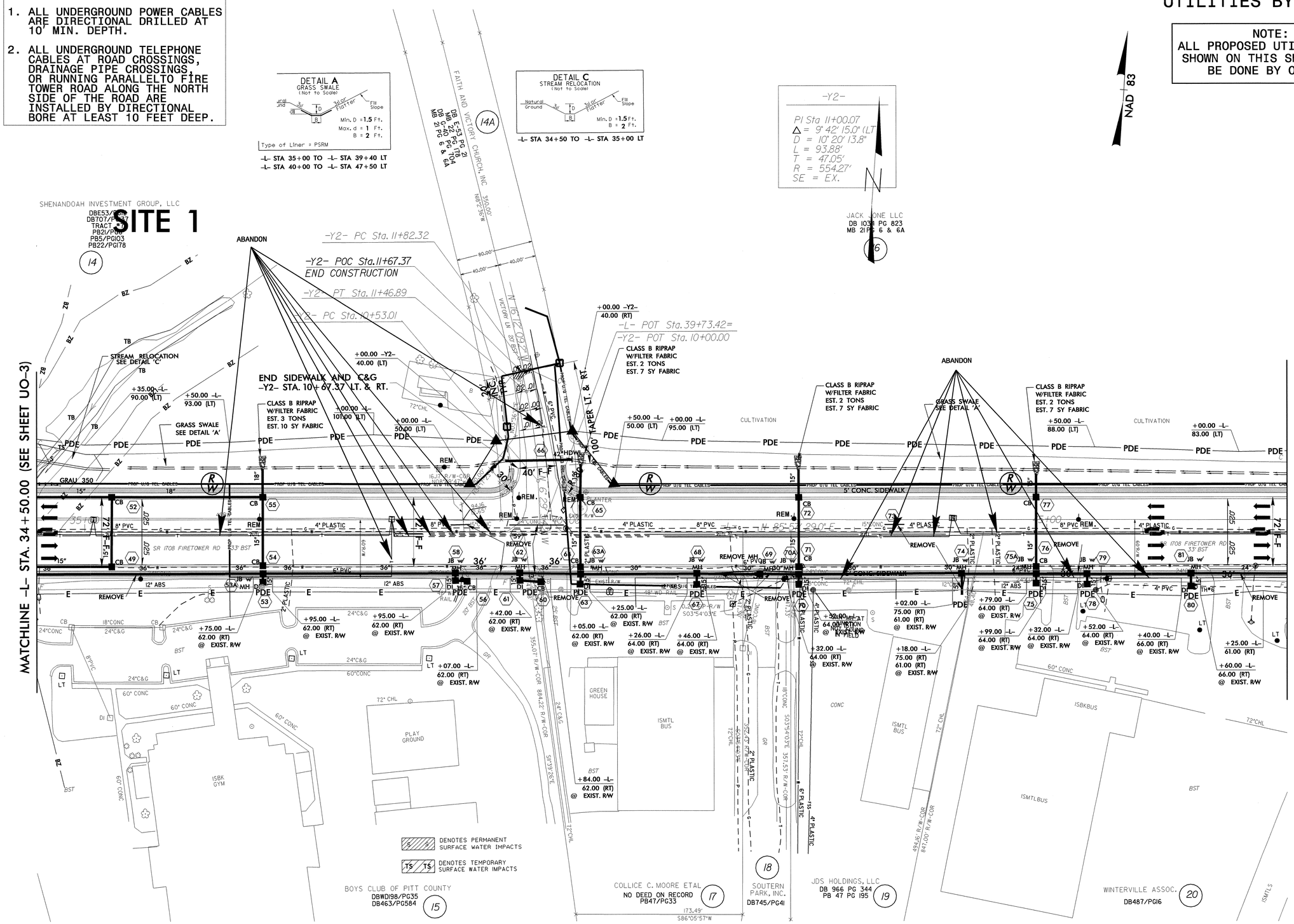
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-4

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



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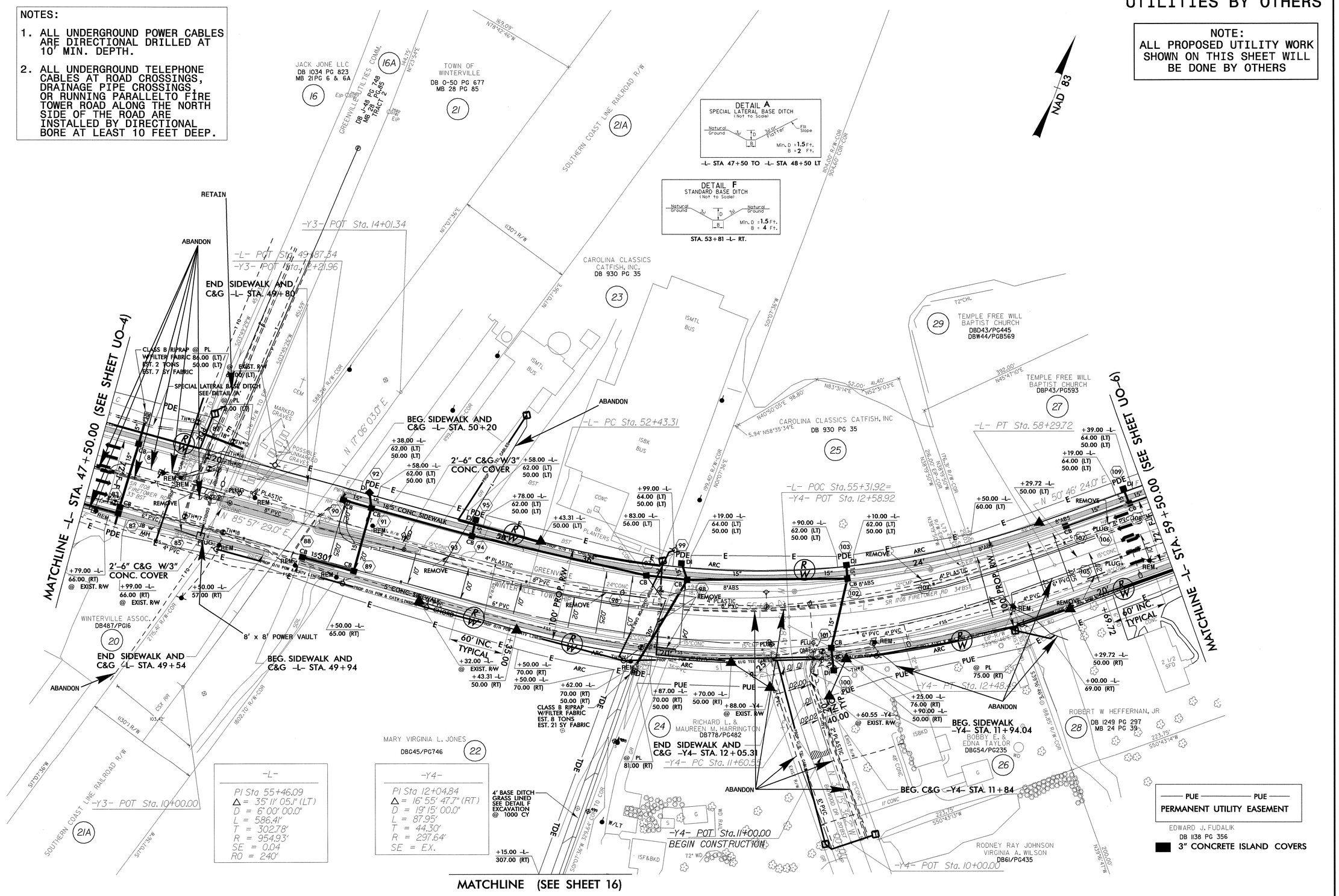
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-5

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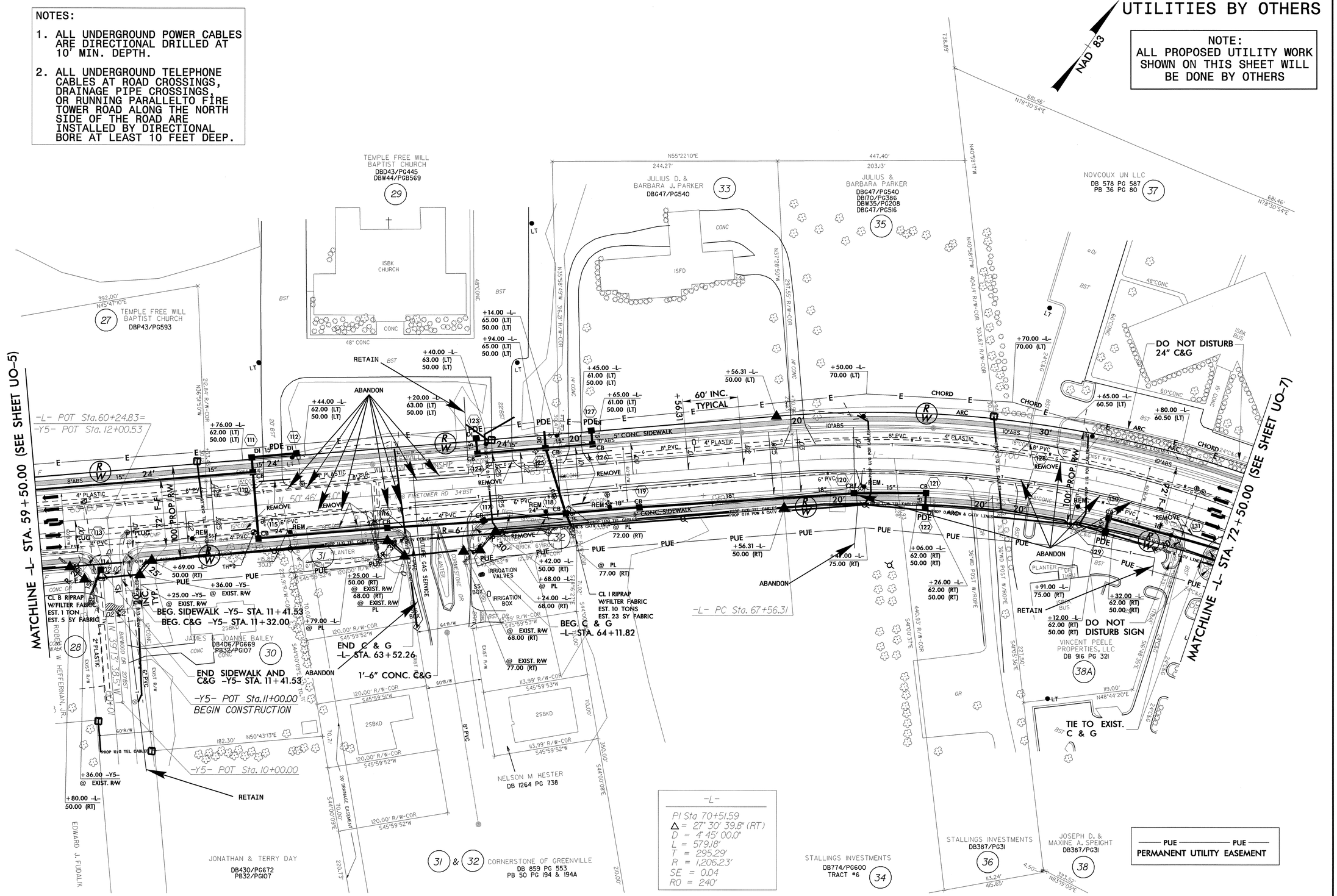
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-6

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

NOTES:

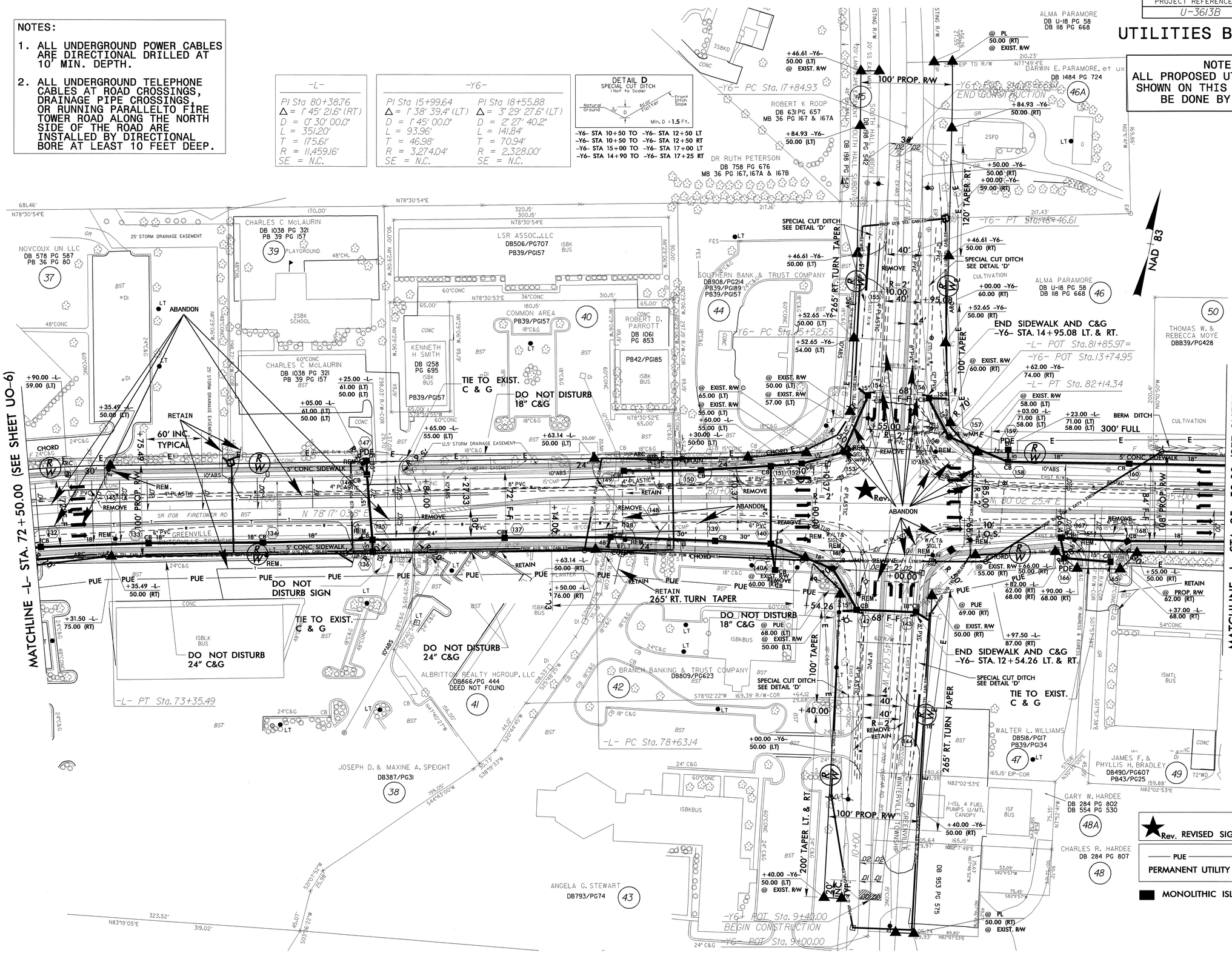
1. ALL UNDERGROUND POWER CABLES ARE DIRECTIONAL DRILLED AT 10' MIN. DEPTH.
2. ALL UNDERGROUND TELEPHONE CABLES AT ROAD CROSSINGS, DRAINAGE PIPE CROSSINGS, OR RUNNING PARALLELTO FIRE TOWER ROAD ALONG THE NORTH SIDE OF THE ROAD ARE INSTALLED BY DIRECTIONAL BORE AT LEAST 10 FEET DEEP.

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

-L-	-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; 6:1 or Flatter; Front Ditch 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

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

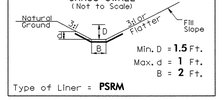
UTILITIES BY OTHERS

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.

DETAIL A
GRASS SWALE
(Not to Scale)



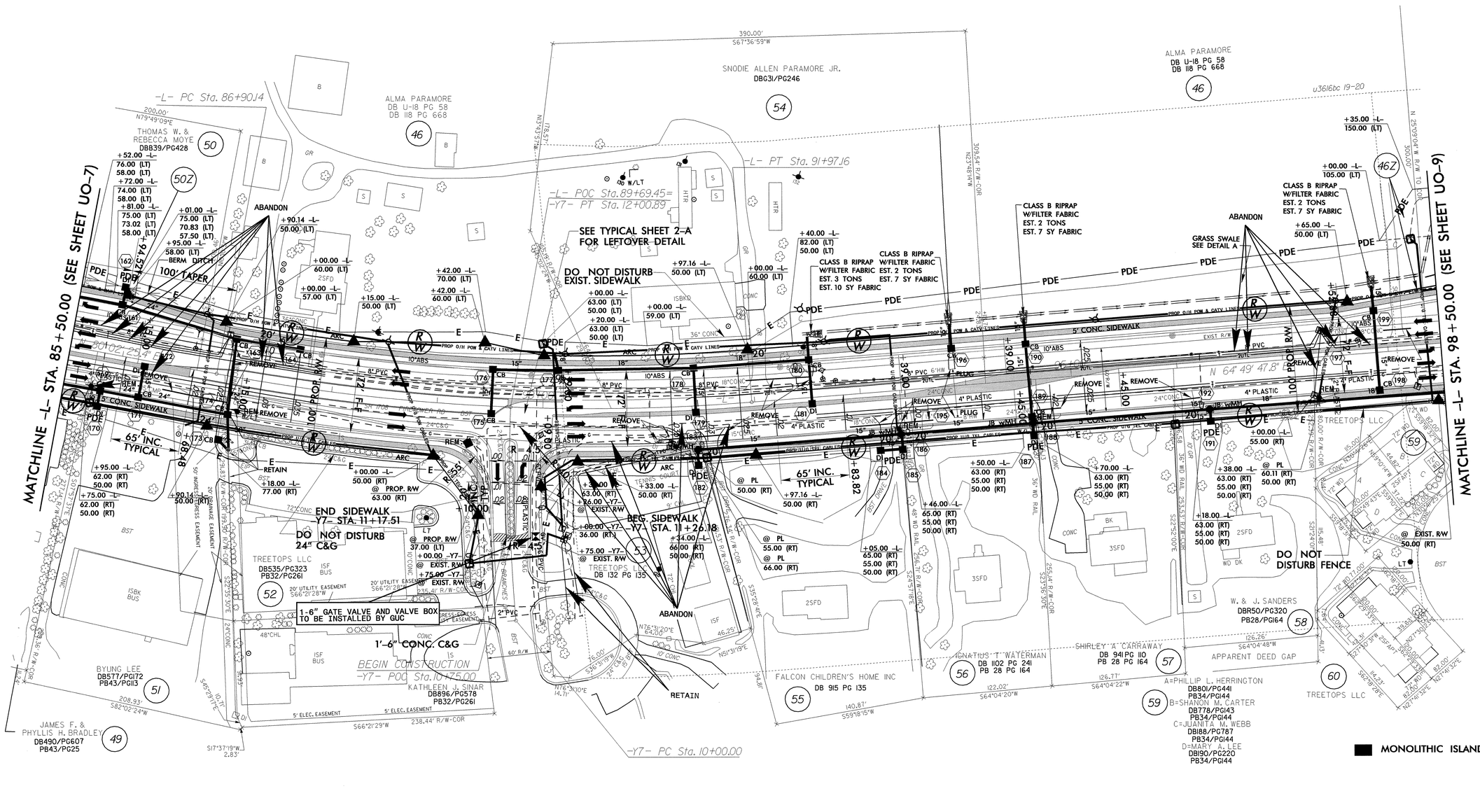
Min. D = **1.5** Ft.
Max. d = **1** Ft.
B = **2** Ft.
Type of Liner = **PSRM**

-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.

NAD 83



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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-
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

-Y9-
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 61 PG 99

CITY OF GREENVILLE
DB 1754 PG 30

-Y9- PT Sta. 12+44.41
-Y9- PC Sta. 11+34.21
END CONSTRUCTION
-Y9- POT Sta. 11+00.00
TIE TO EXIST. C&G LT. & RT.

-L- POT Sta. 99+24.98
-Y8- POT Sta. 12+03.12
-Y8- PT Sta. 11+63.89

STANDARD GRASSED SWALE
SEE DETAIL 'H'
@ 140 CY EXC
@ 45 SY FABRIC

STANDARD GRASSED SWALE
SEE DETAIL 'H'
@ 45 CY EXCAVATION
@ 70 SY FABRIC

1-8" GATE VALVE AND VALVE BOX TO BE INSTALLED BY GUC

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

ABANDON

350' FULL
100' TAPER
25' TAPER
96 PSI

REMOVE GUARDRAIL
SR 1708 FIRETOWER RD 36'BST
N 64° 49' 47" F

1'-6" CONC. C&G
5' CONC. SIDEWALK
GRAU-350
CAT-1

DO NOT DISTURB FENCE
DO NOT DISTURB EARTH BERM

PSH 4.5'X 4.5'
SEE DETAIL G
@ 8 CY EXCAVATION
@ 26 SY FF
@ 10 TONS

+16.00 -L- 76.00 (RT) 60.00 (RT) 50.00 (RT)
+54.00 -L- 76.00 (RT) 50.00 (RT)
+15.00 -L- 77.00 (RT)

10'X80' RECREATION EASEMENT

GRASS SWALE
SEE DETAIL 'A'

+40.00 -L- 81.00 (RT)
+30.00 -L- 81.00 (RT) 50.00 (RT)
+80.00 -L- 70.00 (RT)
+00.00 -L- @ EXIST. R/W 70.00 (RT)
+50.00 -L- 62.00 (RT)
+50.00 -L- 59.00 (RT)
+60.00 -L- @ EXIST. R/W
+80.00 -L- 70.00 (RT)
+70.00 -L- 50.00 (RT) @ PROP. R/W 63.29 (RT)
+45.00 -L- 70.00 (RT)
+50.00 -L- 57.00 (RT)

DO NOT DISTURB TREES

ABANDON
2 S BK APARTMENTS

BEGIN RETAINING WALL
-L- STA. 110+43.50 (-WALL-)
DO NOT DISTURB TREES

1'-6" CONC. C&G
+00.00 -Y9-
@ EXIST. R/W

RETAIN SYSTEM
+76.00 -Y9-
@ EXIST. R/W
+53.00 -L- 50.00 (LT)
+65.00 -L- 56.00 (LT)

-L- POT Sta. 109+96.95
-Y9- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y8- PC Sta. 10+00.00

75' MEDIAN TRANSITION

+00.00 -L- 50.00 (RT)
+00.00 -L- 57.00 (RT)
+25.00 -Y8- @ EXIST. R/W
+65.00 -Y8- @ EXIST. R/W
+00.63 -Y8- @ EXIST. R/W
+50.00 -Y8- @ EXIST. R/W

+55.00 -L- 59.00 (LT)
+52.00 -L- 107.00 (LT)
+75.00 -L- 60.00 (LT)
+23.00 -L- 110.00 (LT)
+28.00 -L- 120.00 (LT)
+50.00 -L- 95.00 (LT)
+80.00 -L- 95.00 (LT)
+00.00 -L- 103.00 (LT) 95.00 (LT)
+40.00 -L- 95.00 (LT)
+55.00 -L- 130.00 (LT)
+80.00 -L- 130.00 (LT)
+00.00 -L- @ PL 90.00 (LT)

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. JPOCK
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

TREETOPS LLC

ELAINE W. TILGHMAN, et al
DB107/PG328

ELAINE W. TILGHMAN, et al
DB 1219 PG 443

BLANCHE D WATSON
DB245/PG429

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

REGINALD & BONITA SPAIN
DB896/PG507
PB46/PG143

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

CYNTHIA B. GROATHOUSE
DB868/PG522
PB46/PG143

NEW SIGNAL

MONOLITHIC ISLAND

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

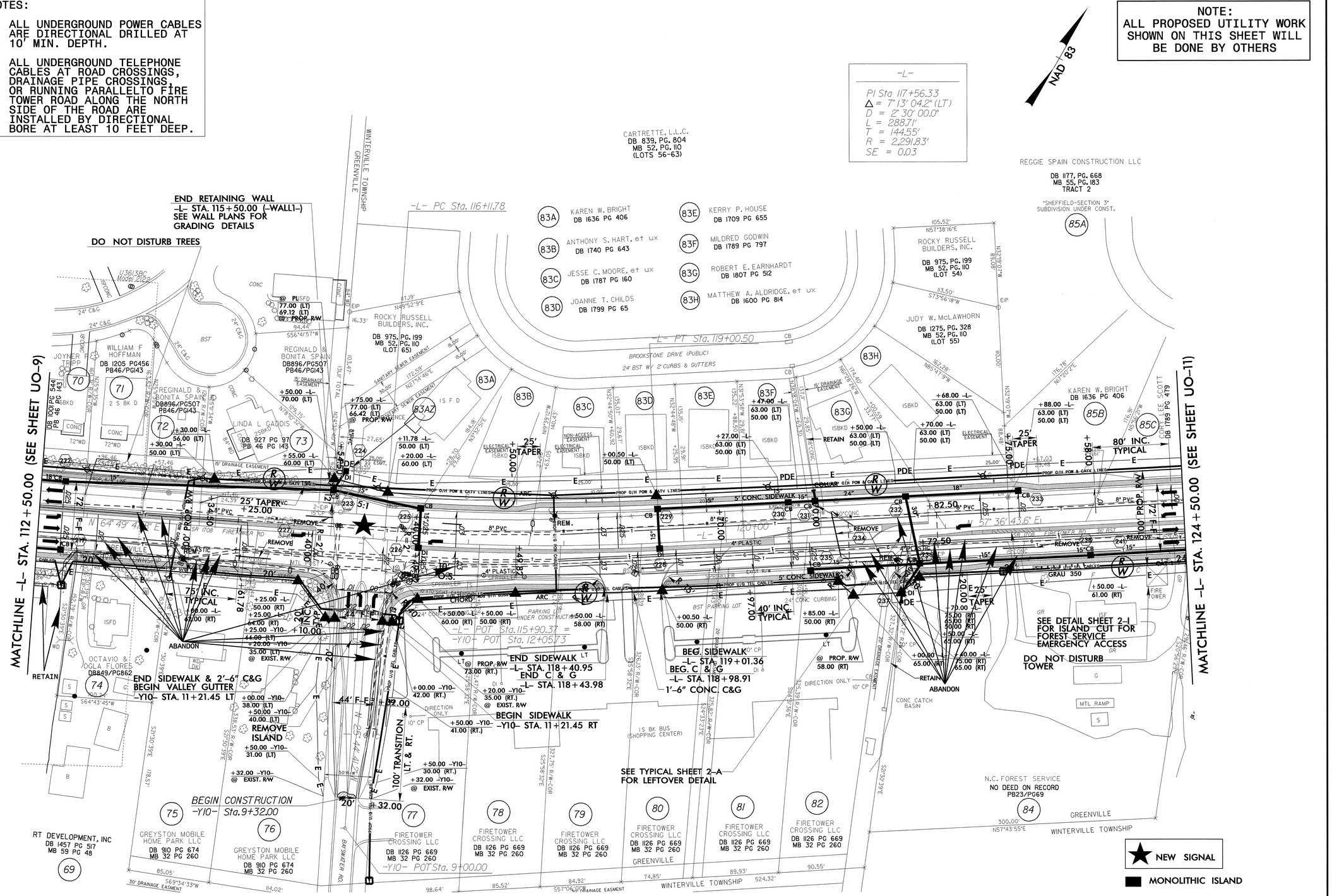
UTILITIES BY OTHERS

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

-L-
PI Sta 117+56.33
Δ = 7° 13' 04.2" (LT)
D = 2° 30' 00.0"
L = 288.71'
T = 144.55'
R = 2,291.83'
SE = 0.03



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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

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

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

Natural Ground — Slope — Min. D = 1.5 Ft.

Ground — Slope — 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

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

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

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

-L- POC Sta.126+03.67=
-Y11- POT Sta. 11+99.49

-L- POC Sta.125+56.25

-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- POT Sta.130+82.58=
-Y12- POT Sta. 11+96.59

-L- POC Sta.137+39.39=
-Y13- POT Sta. 12+33.13

-L- PC Sta. 136+16.40

-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
-Y12- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y13- Sta.10+85.00

END SIDEWALK AND C&G
-Y11- STA. 11+27.07

BEG. SIDEWALK AND C&G -Y12- STA. 11+10.33 LT. AND RT.

END SIDEWALK -Y13- STA 11+67.95 LT. AND RT

SEE TYPICAL SHEET 2-A FOR LEFTOVER DETAIL

2'-6" CONC. C&G

1'-6" CONC. C&G

CLASS B RIPRAP W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC

1-6" GATE VALVE AND VALVE BOX TO BE INSTALLED BY GUC

CLASS B RIPRAP W/FILTER FABRIC
EST. 8 TONS
EST. 24 SY FABRIC

CLASS B RIPRAP W/FILTER FABRIC
EST. 7 TONS
EST. 21 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 +01.50 -L-
@ 10 TONS

DO NOT DISTURB PARKING LOT

90' INC. TYPICAL

40' INC. TYPICAL

25' TAPER

100' TAPER LT. & RT. TYP.

SPECIAL CUT DITCH SEE DETAIL 'C'

GRASS SWALE SEE DETAIL 'A'

NOTE: 15"CSP IS PIPED THROUGH STRUCTURE WITH 24" DRIVE PIPE

DISTRIBUTION LINES SHALL BE DE-ENERGIZED DURING CULVERT INSTALLATION

ABANDON

RETAIN

JUDY WORTHINGTON McLAWHORN
GOLD WORTHINGTON WALKER
WILL BK. E-89-353
MB 55, PG. 183

FIRST SOUTH BANK
DB 1768 PG 585
DB 61 PG 181

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

JOHNNY LEE SCOTT
DB 1789 PG 479

RANDOLPH JEFF
DB 1584 PG 16

EDWARD GILBERT
DB 1591 PG 286

BOBBY DIXON
DB 1578 PG 133

HARRY H. MCLEAN
DBU52/PG574

RALPH C. TUCKER
DBW43/PG330

LINDA LOU EVANS
DBF41/PG283

WILTON E. & LENA J. EVANS
DB44/PG333
PB23/PG69

WILTON E. & LENA J. EVANS
DB44/PG333
PB23/PG69

FLANDERS EQUITY CORP.
DB446/PG325
PB42/PG101

COVENANT UNITED METHODIST CHURCH OF GREENVILLE
DB421/PG100
TRACT #3

W. G. ROLLARD, JR.
DB 458, PG. 613
DB 1005, PG. 282
MB 53, PG. 48

WINTERVILLE TOWNSHIP

GREENVILLE

DENOTES FILL IN SURFACE WATER

DENOTES TEMPORARY FILL IN SURFACE WATER

NEW SIGNAL

MONOLITHIC ISLAND

PUE — PUE
PERMANENT UTILITY EASEMENT

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

UTILITIES BY OTHERS

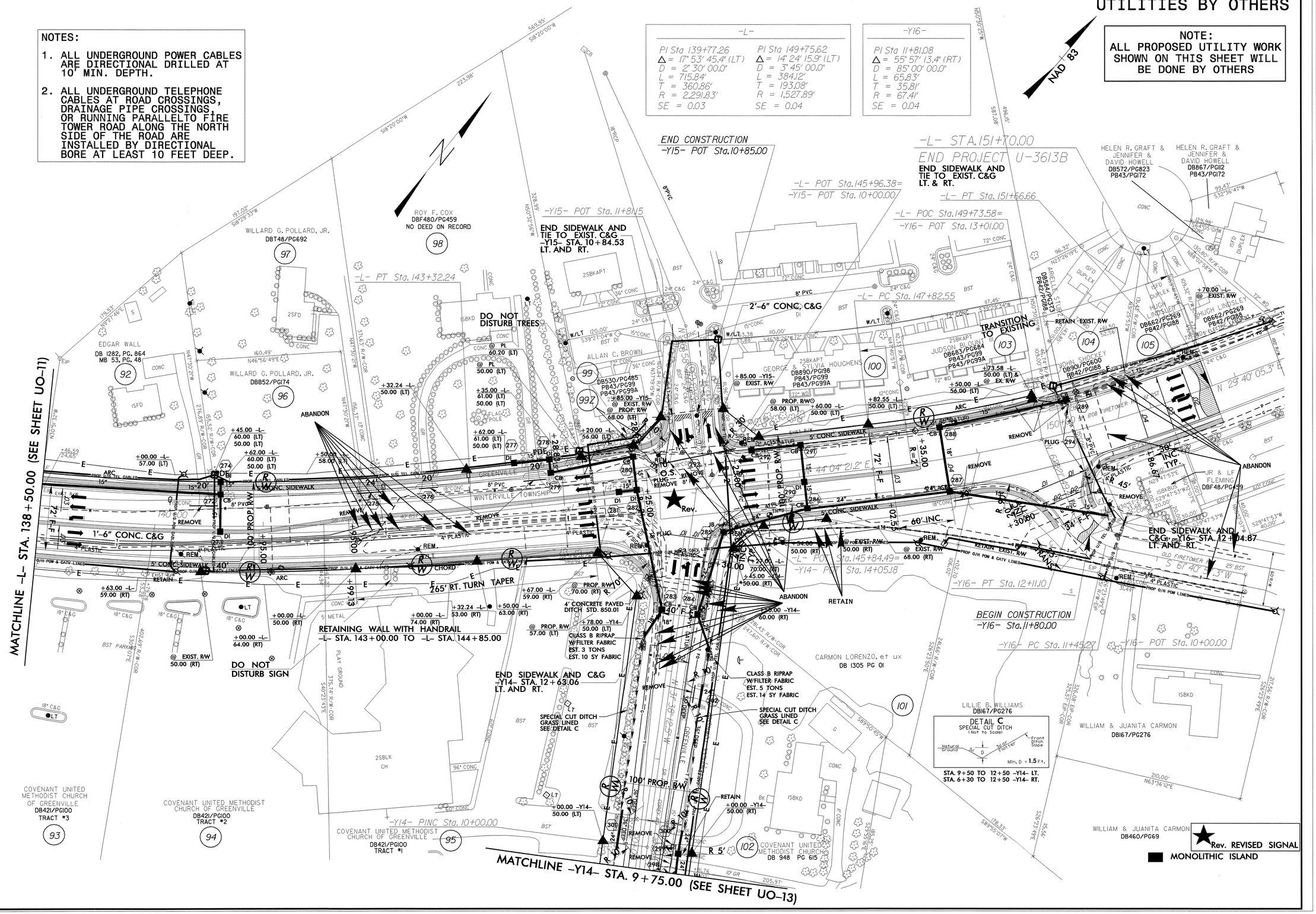
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

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-	
PI Sta 139+77.26	PI Sta 149+75.62
△ = 17° 53' 45.4" (LT)	△ = 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
△ = 55° 57' 13.4" (RT)
D = 85° 00' 00.0"
L = 65.83'
T = 35.81'
R = 67.41'
SE = 0.04



★ Rev. REVISED SIGNAL

■ MONOLITHIC ISLAND

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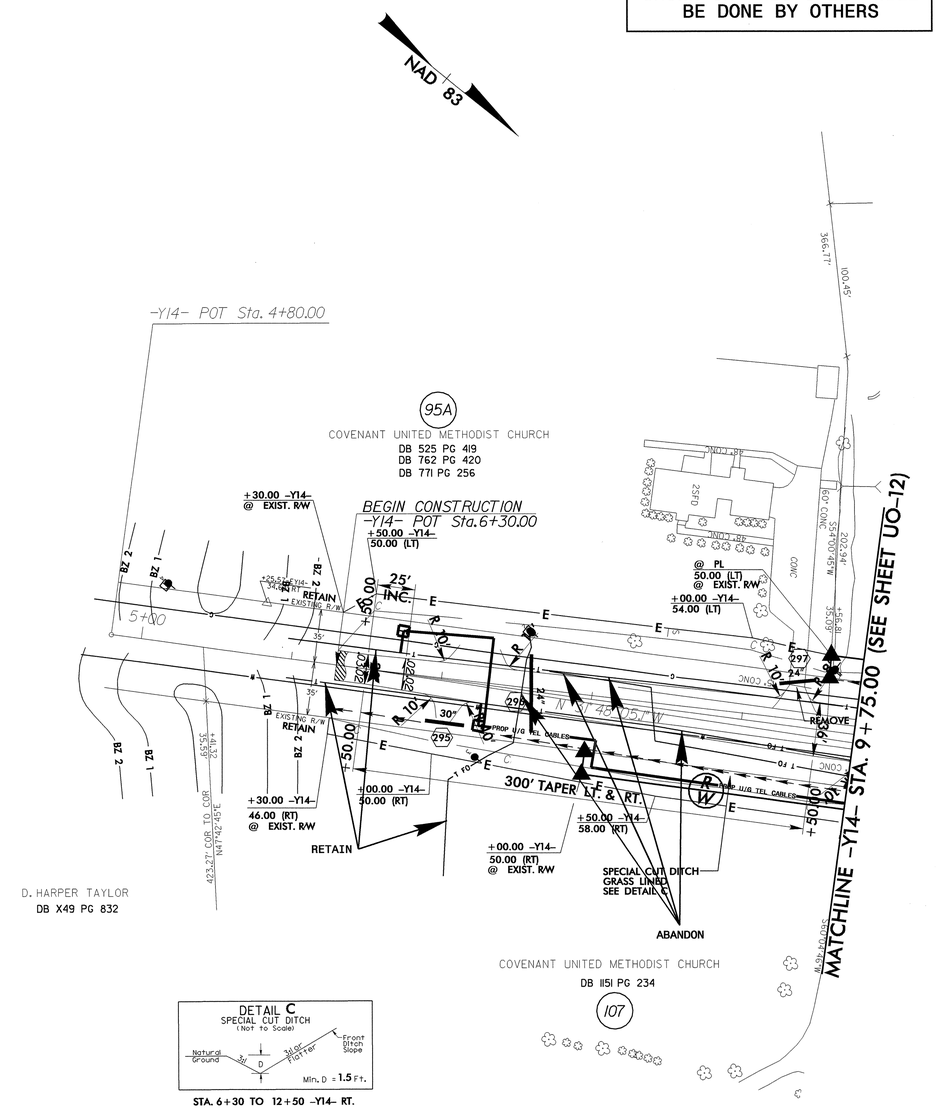
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	U0-13

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.