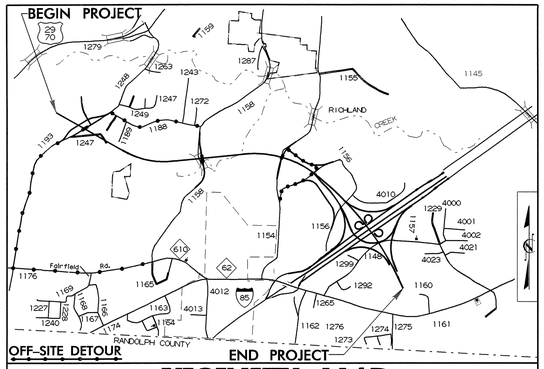
TIP: R-0609IA

CONTRACT: 201275



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

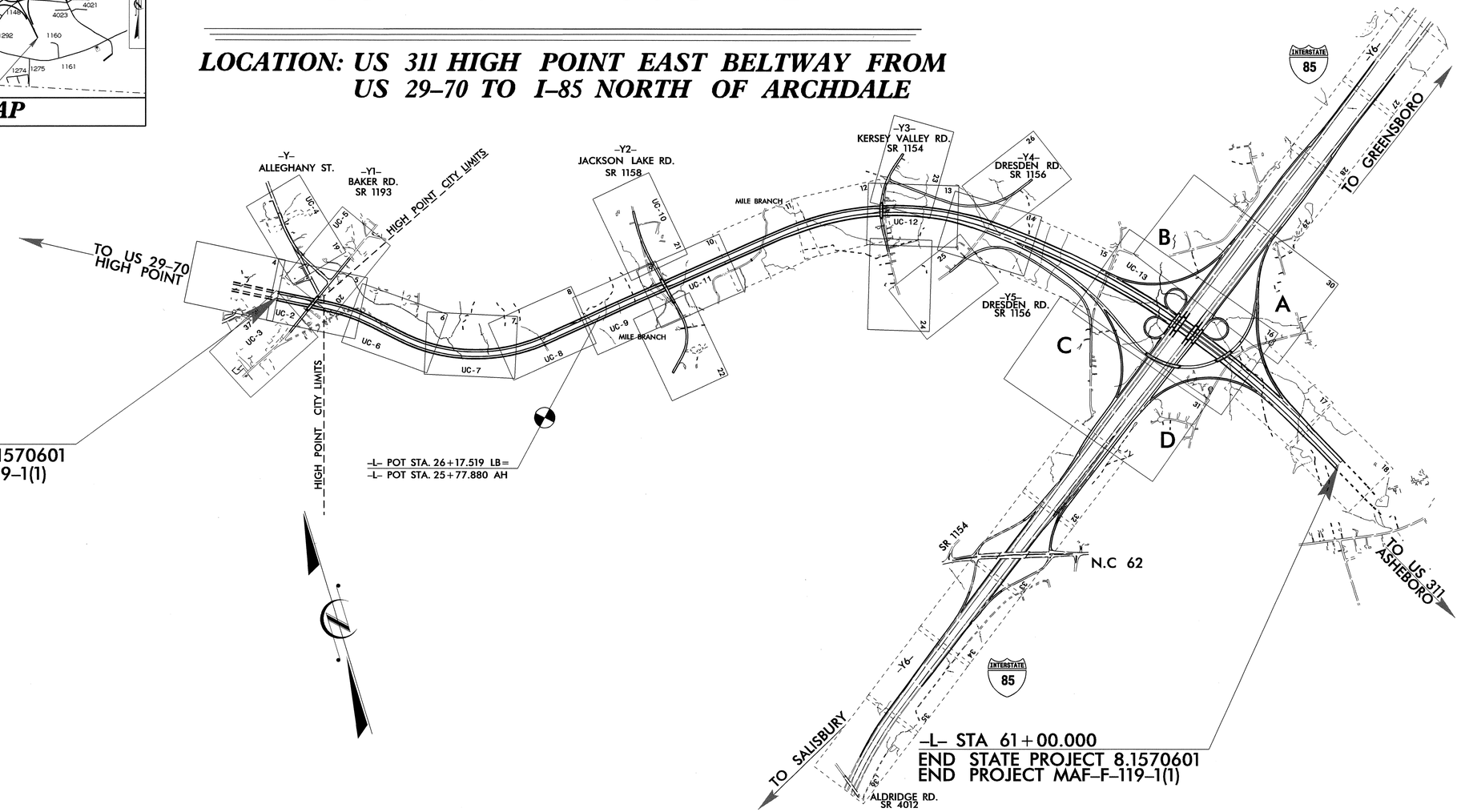
METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

T.I.P. NO.	SHEET NO.
R-0609IA	UC-1

UTILITY CONSTRUCTION PLANS
GUILFORD COUNTY

LOCATION: US 311 HIGH POINT EAST BELTWAY FROM US 29-70 TO I-85 NORTH OF ARCHDALE



GRAPHIC SCALES

5 0 10
PLANS

5 0 10
PROFILE (HORIZONTAL)

1 0 2
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-13	UTILITY CONSTRUCTION PLAN SHEETS
UC-14 THRU UC-20	PROFILE SHEETS
UC-21 THRU UC-22	DETAILS SHEETS

WATER AND SEWER OWNERS ON PROJECT

(1) WATER CITY OF HIGH POINT
(2) SANITARY SEWER CITY OF HIGH POINT
(3) SANITARY SEWER CITY OF ARCHDALE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS
10/10/06

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
Ron B. Wilkins, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
John Nigro, P.E. — UTILITIES PROJECT DESIGNER

PROJECT REFERENCE NO.	SHEET NO.
R- 0609IA	UC-2

METRIC — 5 0 10 SCALE

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

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

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

POT STA 11+98.805 -L- BEGIN TIP PROJECT R-0609IA
POT STA 11+98.805 -L- BEGIN FA PROJECT MAF-F-119-1(1)

PROP - 1- RELOCATE EXISTING FIRE HYDRANT
1 - 300mm x 300mm X 150mm HYDRANT TEE
1 - 150mm GATE VALVE & VALVE BOX, 1.38 MPA WP
11M - 150mm DI WATER PIPE, PC 2.41MPA

WATER LINE 2

PROP - 123M - 300mm DI RESTRAINED JOINT WATER PIPE, PC 2.41 MPA
65M - 300mm DI WATER PIPE, PC 2.41 MPA
41M - 200mm DI RESTRAINED JOINT WATER PIPE, 2.41 MPA
2 - 300mm GATE VALVE & VALVE BOX, 1.38 MPA WP
1 - 200mm GATE VALVE & VALVE BOX, 1.38 MPA WP
4 - 45° 300mm DI RESTRAINED JOINT WATER PIPE FITTINGS, 1.72 MPA MIN WP
6 - 45° 200mm DI RESTRAINED JOINT WATER PIPE FITTINGS, 1.72 MPA MIN WP
1 - 22 1/4° 200mm DI RESTRAINED JOINT WATER PIPE FITTING, 1.72 MPA MIN WP
1 - 300mm x 300mm x 200mm TEE DI RESTRAINED JOINT WATER PIPE FITTING, 1.72 MPA MIN WP
2 - RELOCATE EXISTING WATER METER
1 - 300mm x 20mm TAPPING SADDLE
33M - 20mm COPPER WATER PIPE , TYPE K
1 - 20mm CORPORATION STOP
120M - FILL OR REMOVE ABANDONED 300mm PIPE, DI WATER
2 - REMOVE EXISTING WATER METER
CONNECT USING NECESSARY FITTINGS

PROP - 1 - SANITARY SEWER CLEANOUT
CONNECT USING NECESSARY FITTINGS

PROP 1 - INSTALL & REMOVE FIRE HYDRANT
6M - 150mm DI WATER PIPE, PC 2.41 MPA
1 - 300mm x 300mm x 150mm HYDRANT TEE
1 - 300mm PLUG

PLUG MANHOLE

THRUST COLLAR

PROP - 30M - FILL OR REMOVE ABANDONED 150mm PIPE, CI WATER
1 - REMOVE EXISTING WATER METER

WATER LINE 1

PROP - 24M - FILL OR REMOVE ABANDONED
200mm PIPE, TC SEWER

PLUG MANHOLE

PROP 1200mm MH F1
STATION 5+00

PROP - 30M - FILL OR REMOVE
ABANDONED 200mm PIPE, TC SEWER

EX 1200mm MH I1
STATION 6+90.183

PROP 1200mm MH H1
STATION 5+97

PROP 1200mm MH G1
STATION 5+35

PROP 1 - INSTALL & REMOVE FIRE HYDRANT
5M - 150mm DI WATER PIPE, PC 2.41 MPA
1 - 300mm x 300mm x 150mm HYDRANT TEE
1 - 300mm PLUG

THRUST COLLAR

SEWER LINE 1

PROP. - 193.2M - 200mm PVC
SEWER PIPE, SDR 26
3 - 1200mm DIA PRECAST CONC
SEWER MANHOLE 0 - 1.8M DEPTH

PROP - 1 - RELOCATE EXISTING FIRE HYDRANT
1 - 150mm x 150mm x 150mm HYDRANT TEE
1 - 150mm GATE VALVE & VALVE BOX, 1.38 MPA WP
8M - 150mm DI WATER PIPE, PC 2.41 MPA
1 - 150mm PLUG
1 - REMOVE EXISTING WATER METER

PROP - 1 - SANITARY SEWER CLEANOUT
CONNECT USING NECESSARY FITTINGS

MATCHLINE SHEET UC-4
MATCHLINE SHEET UC-5
MATCHLINE SHEET UC-6
MATCHLINE SHEET UC-3
MATCHLINE SHEET STA. 11+75

NAD 83

10-OCT-2006 16:44
r:\utilities\projects\0609ia_utc_uc2.pshdgn

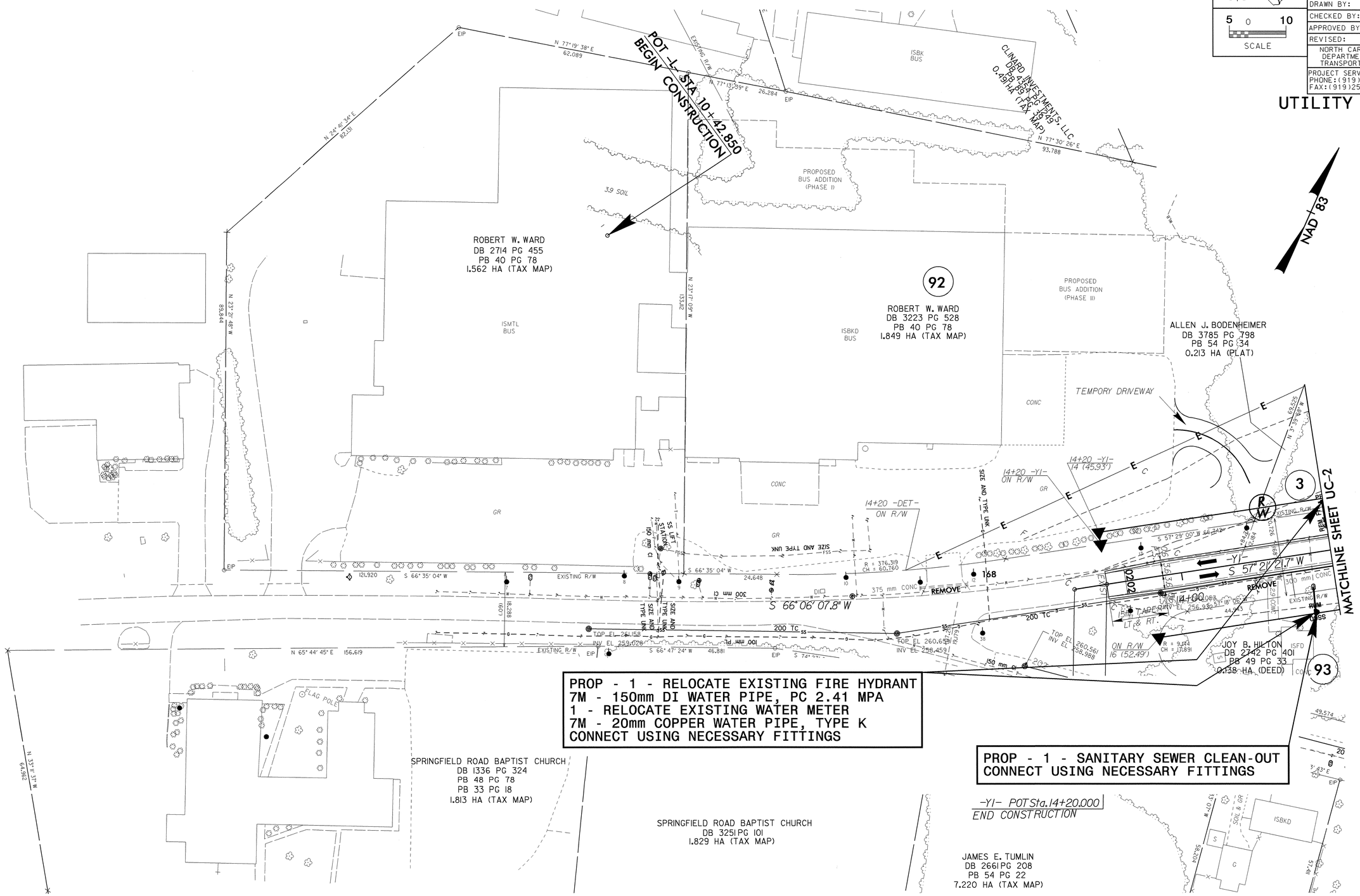
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-3
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY.

METRIC

5 0 10
SCALE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 10157 RONALD B. WILKINS 10/10/06

UTILITY CONSTRUCTION



PROP - 1 - RELOCATE EXISTING FIRE HYDRANT
7M - 150mm DI WATER PIPE, PC 2.41 MPA
1 - RELOCATE EXISTING WATER METER
7M - 20mm COPPER WATER PIPE, TYPE K
CONNECT USING NECESSARY FITTINGS

PROP - 1 - SANITARY SEWER CLEAN-OUT
CONNECT USING NECESSARY FITTINGS

SEE SHEET 2-J FOR CURVE DATA
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 63 FOR -Y1- PROFILE
SEE SHEET 70 FOR -DET- PROFILE

10-OCT-2006 16:41
r:\utilities\proj\r0609ia_ut_37_uc3_psh.dgn
Jnigro
PS:12216

PROJECT REFERENCE NO.	SHEET NO.
R0609IA	UC-4

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

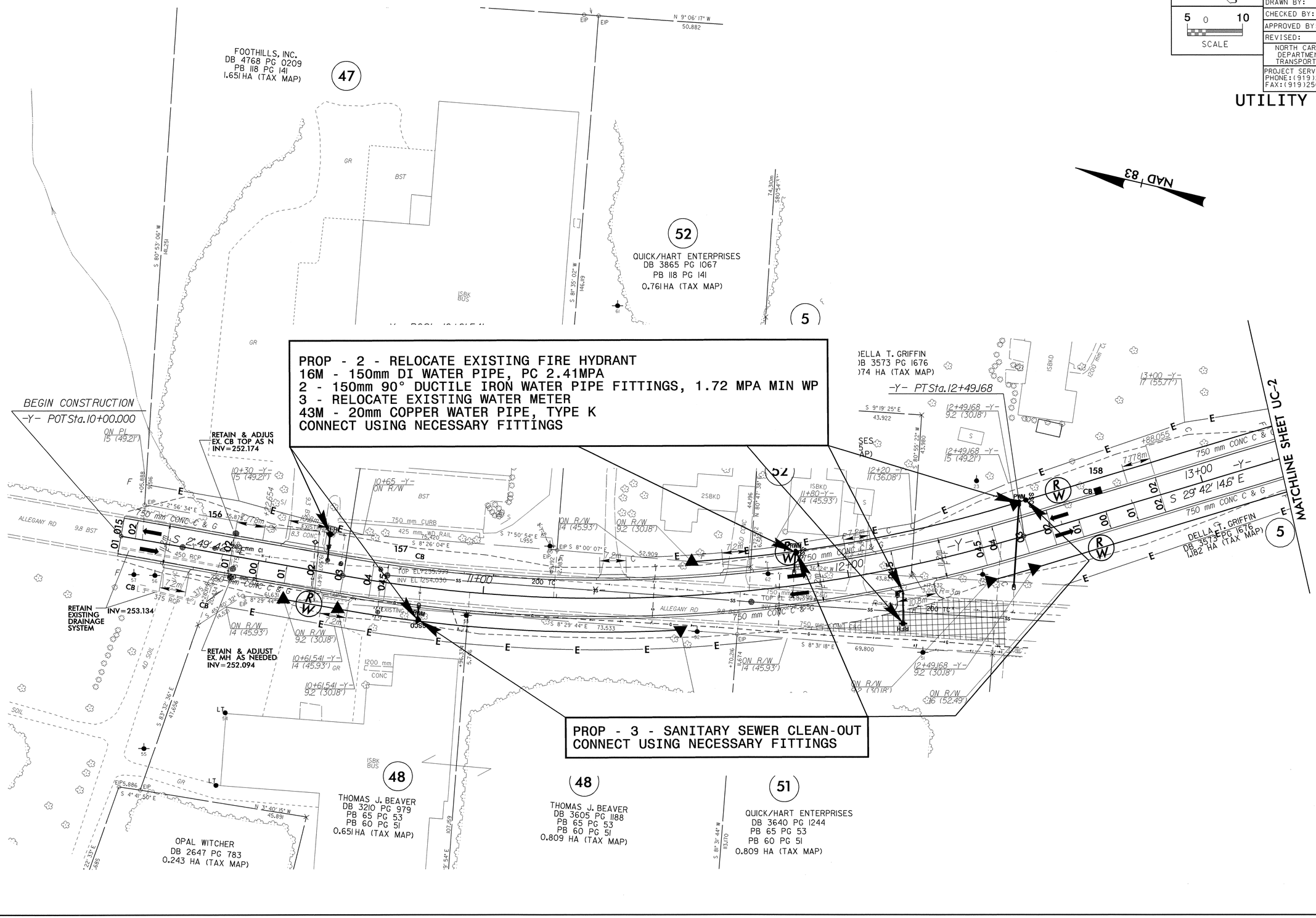
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

METRIC
5 0 10
SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



r:\utilities\r0609ia_ut19_uc4_psh.dgn
10-OCT-2006 16:39
jangray

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-5

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

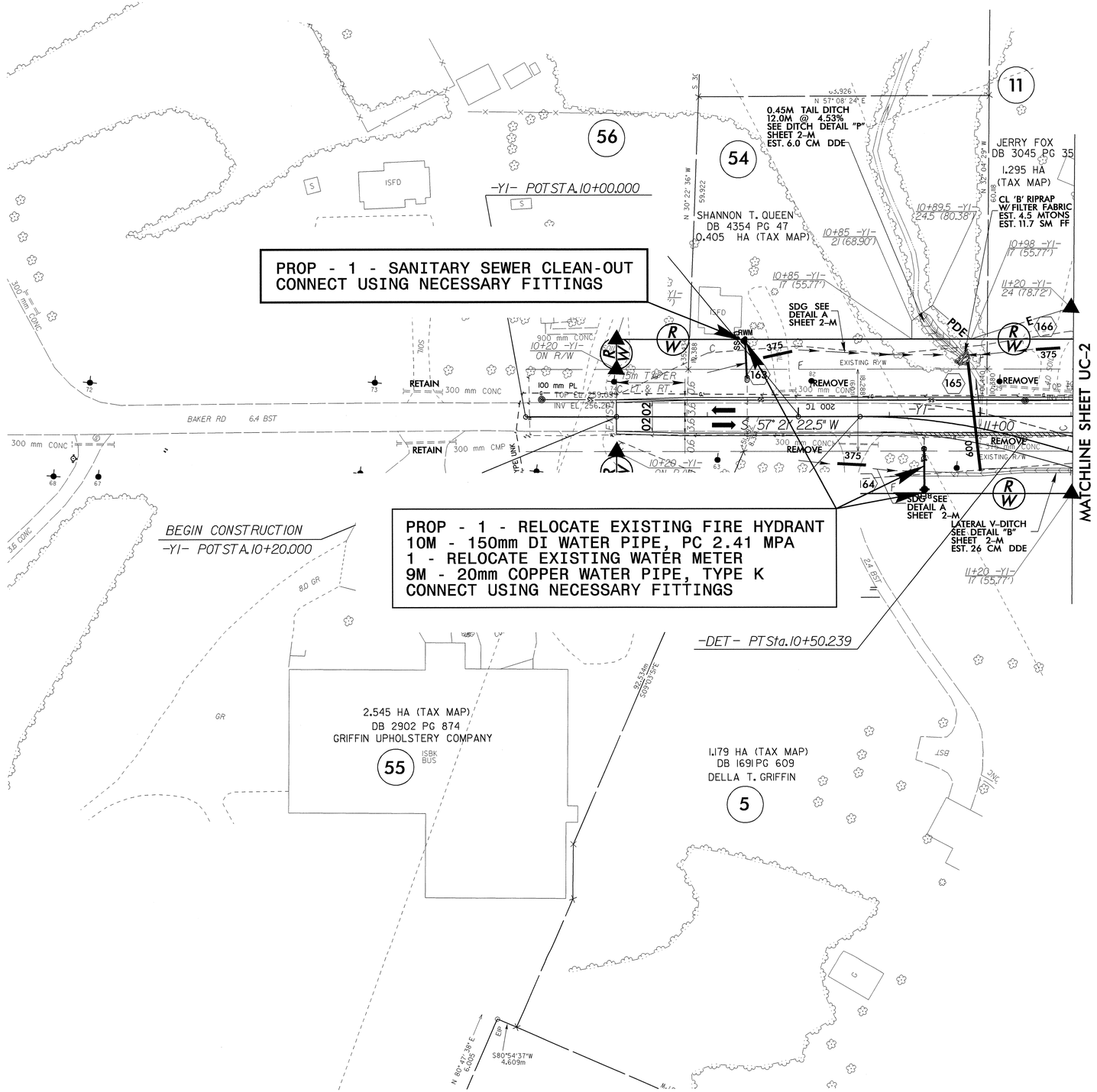
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

METRIC
5 0 10
SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS 10/10/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



SEE SHEET 2-J FOR CURVE DATA
SEE SHEET 2-K FOR DITCH DETAILS
SEE SHEET 70 FOR -DET- PROFILE
SEE SHEET 63 FOR -Y1- PROFILE

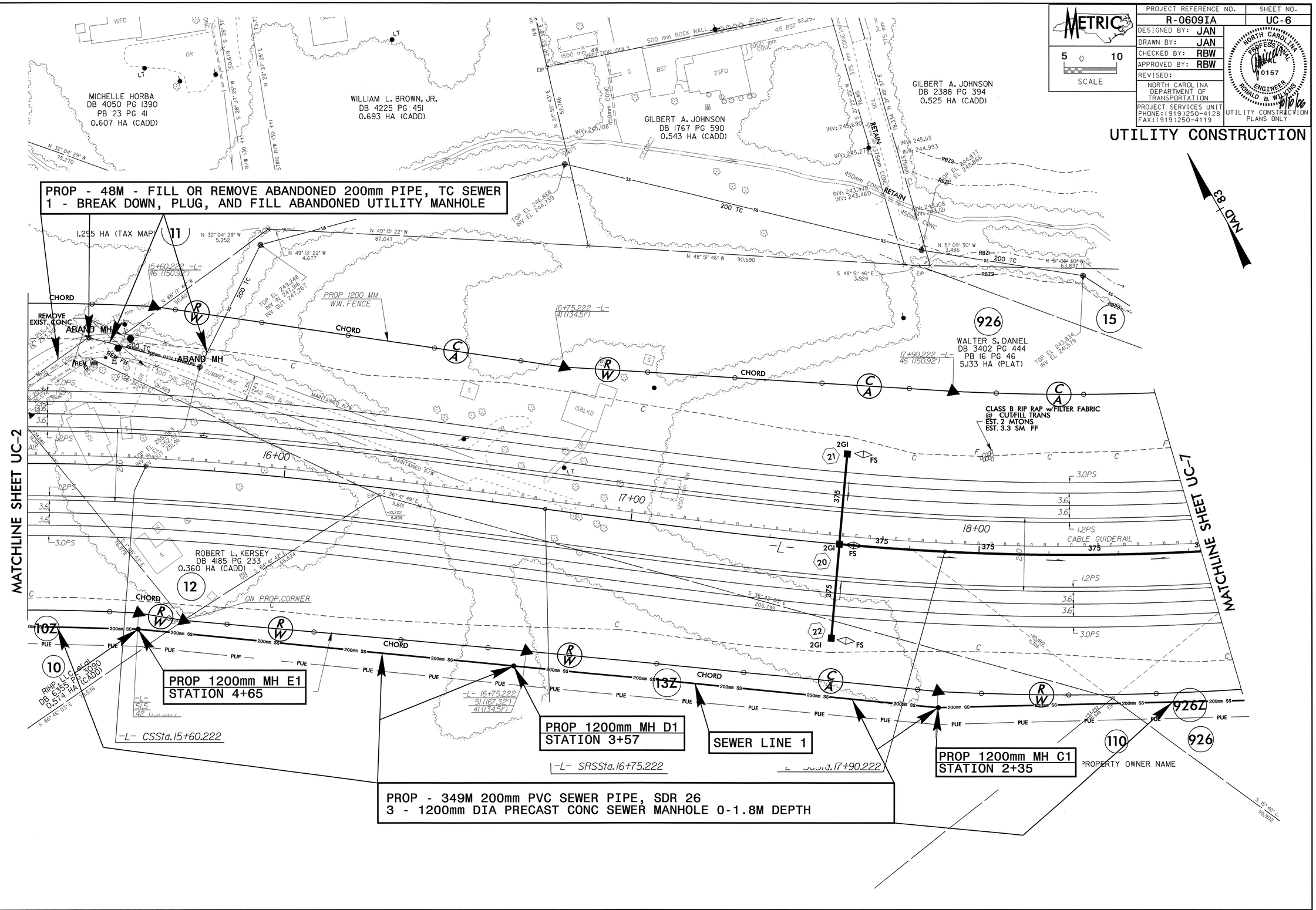
10-OCT-2006 16:55
r:\utilities\projects\r0609ia\ut_20_uc5_psh.dgn
jnorris

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-6
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

METRIC SCALE 5 0 10

NORTH CAROLINA PROFESSIONAL SEAL 0157 ENGINEER RONALD B. WALKING 10/10/06

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-7

METRIC

5 0 10
SCALE

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

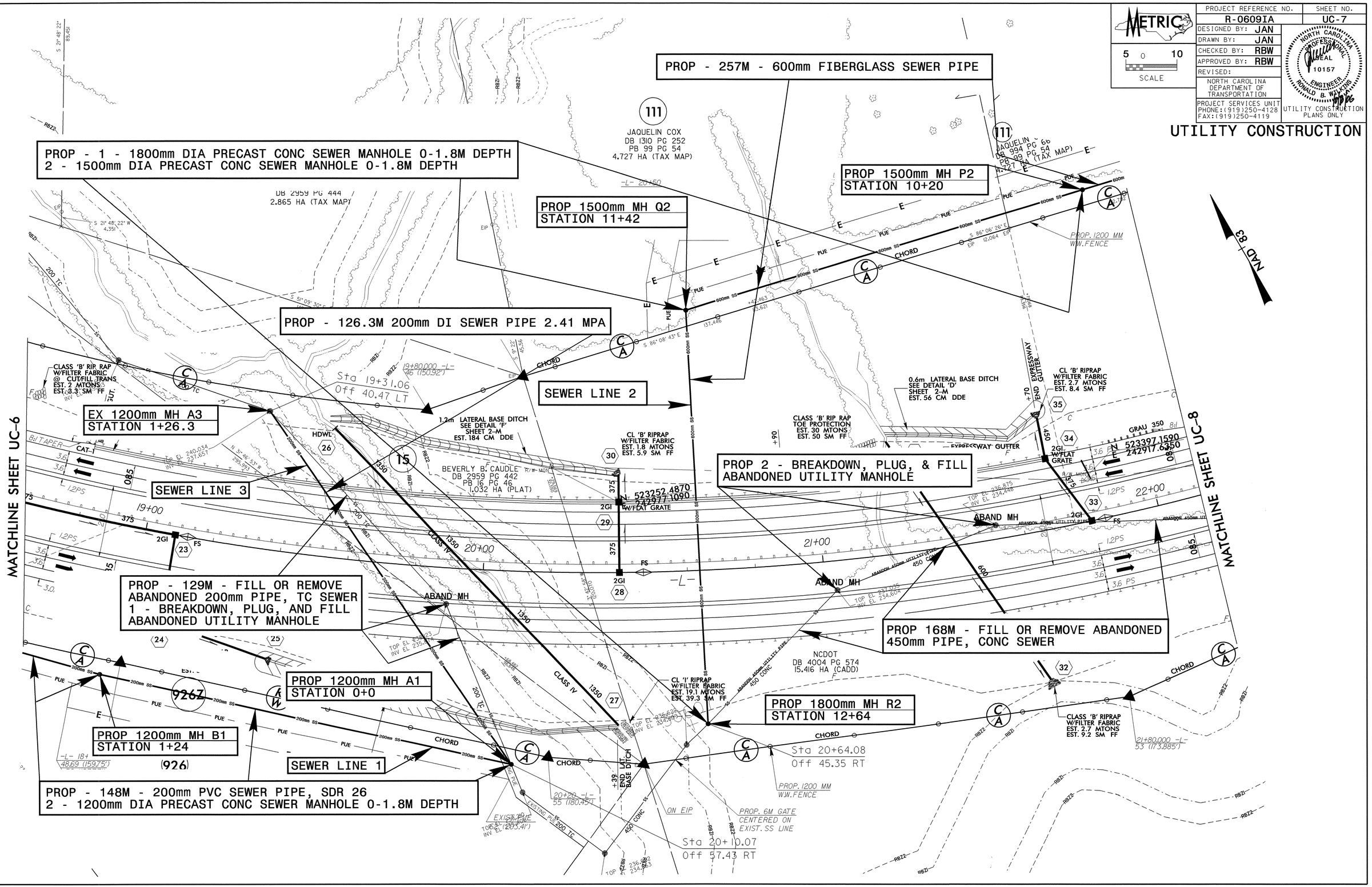
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-8
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	

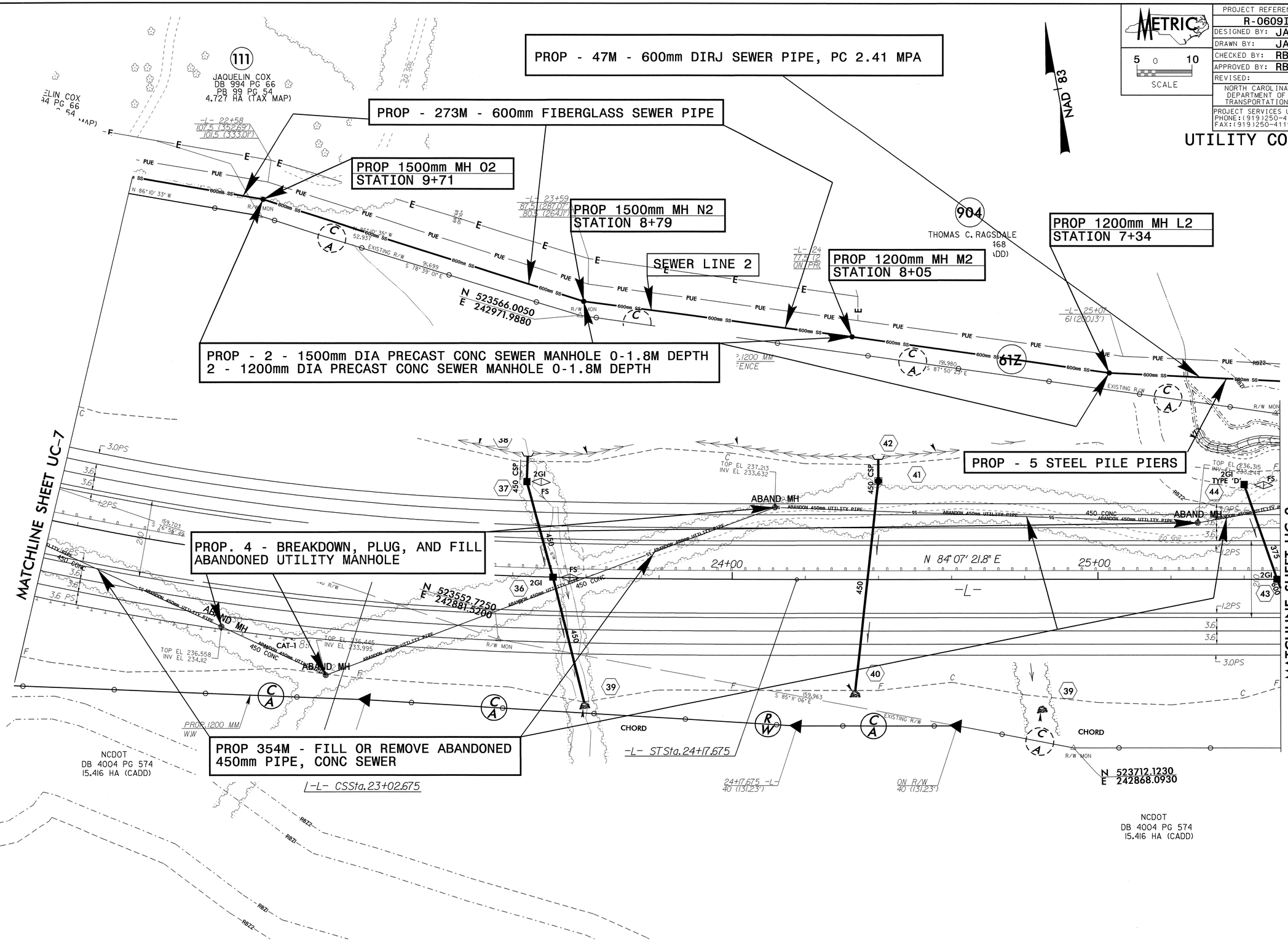
METRIC
5 0 10
SCALE

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

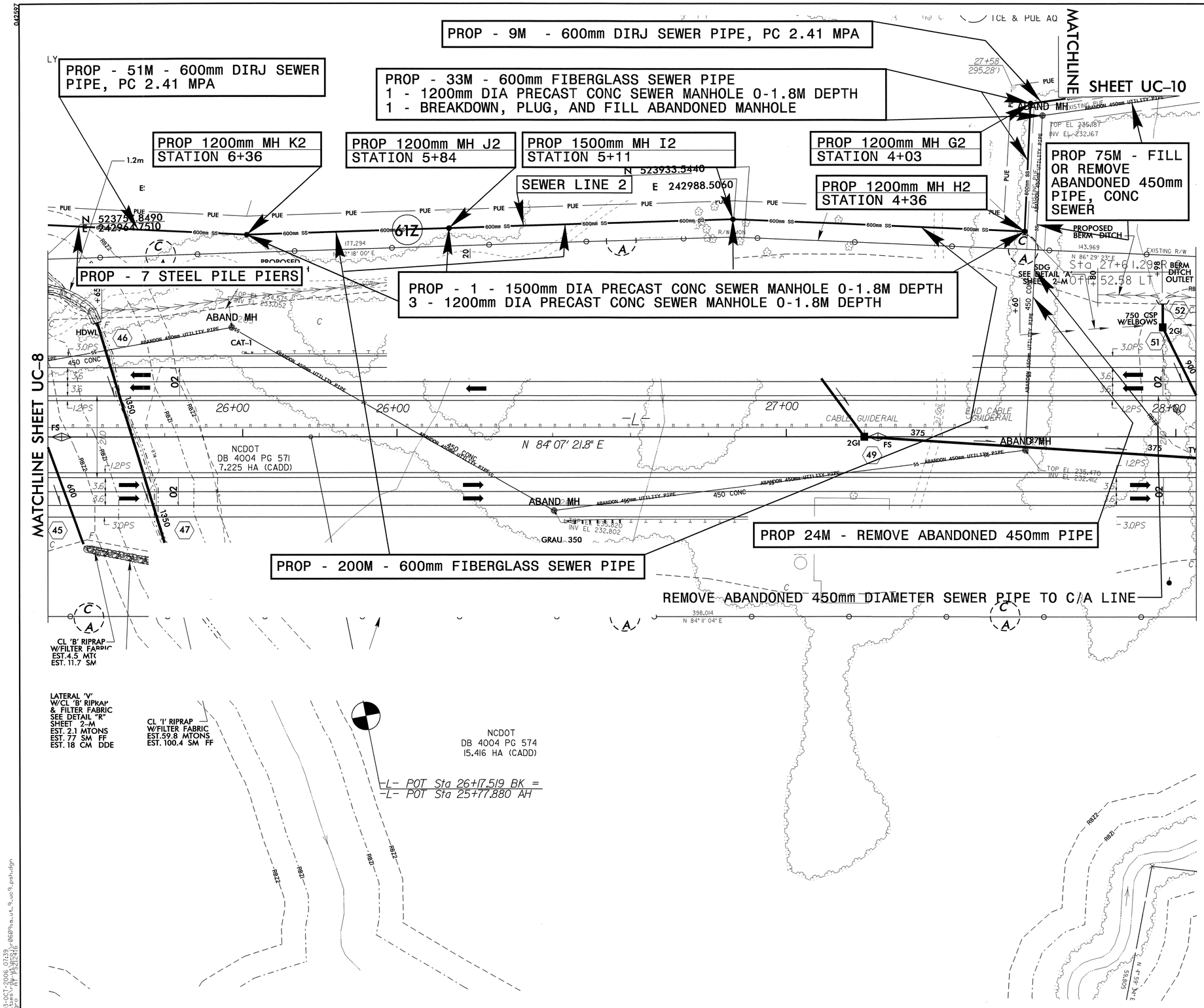
NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



03-OCT-2006 07:37
r:\units\rw\r0609ia_ut_8_uc8_psh.dgn



METRIC

5 0 10

SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-9

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS 10/9/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

03-OCT-2006 07:39
r:\utilities\r0609ia_utl_9_uc9_psh.dgn
AM 1.5.2216

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC 10
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	

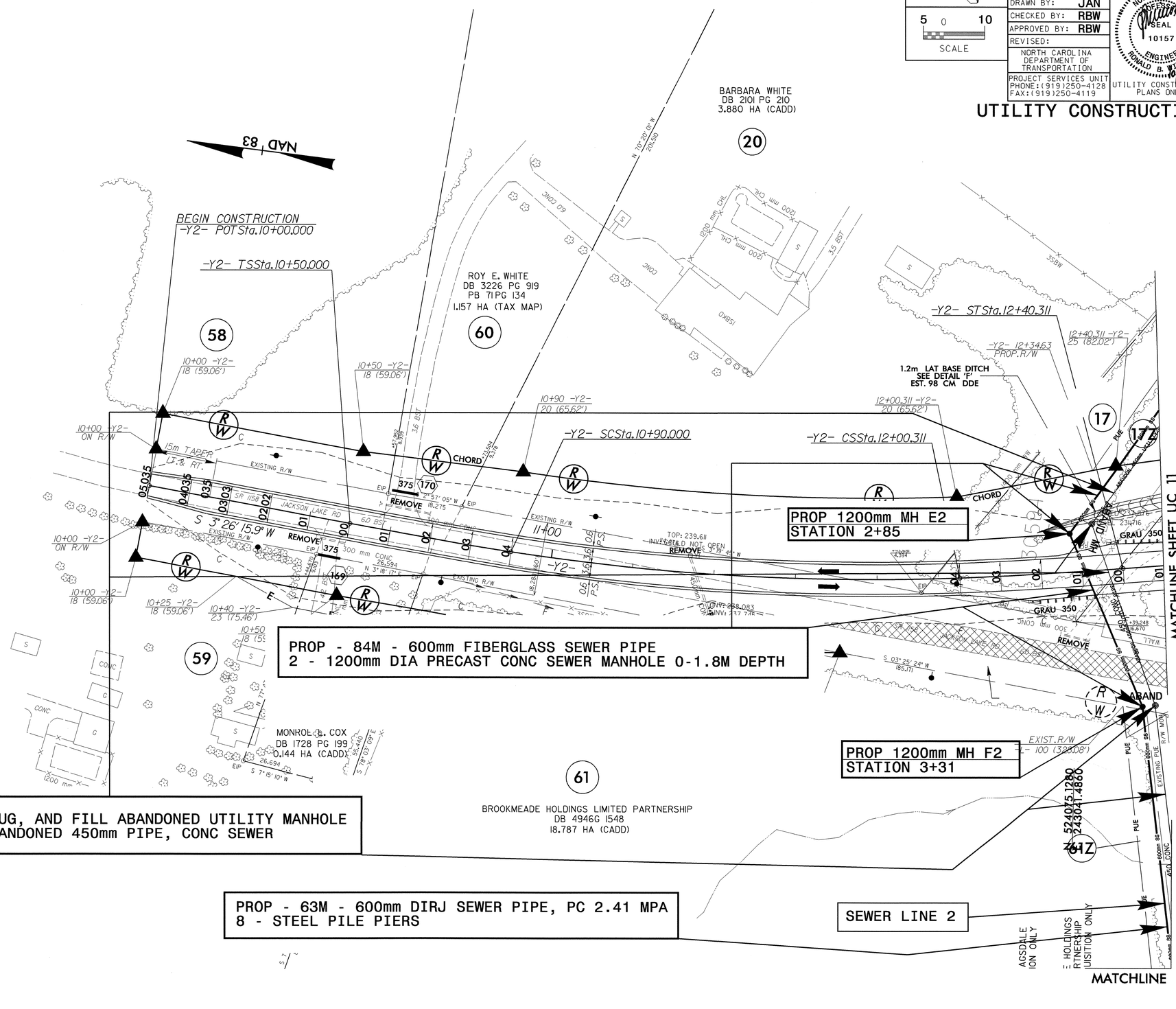
METRIC
5 0 10
SCALE

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

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS 10/10/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-11

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

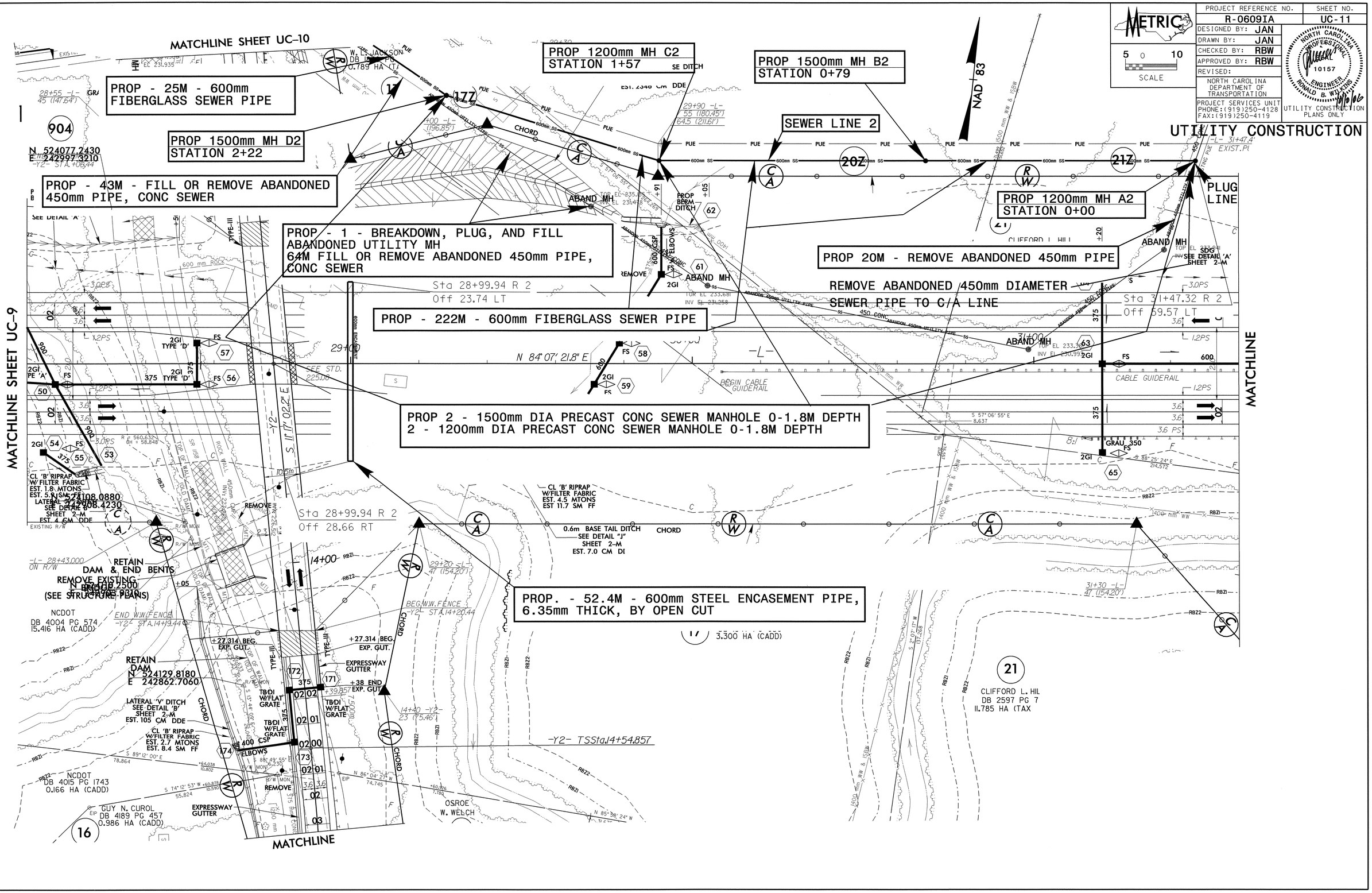
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

METRIC
5 0 10
SCALE

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER 10157 RONALD B. WILKINS 10/10/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-12
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	

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

METRIC
5 0 10
SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WALKING
10/10/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

-Y4- ST Sta.14+18.573=
-DET 2- POT Sta.12+37.210
-Y4- CS Sta.13+78.573

MATCHLINE

MARTIN MARIETTA MATERIALS
DB 4712 PG 2086
7.588 HA (TAX MAP)

FRANK MARTINEZ
DB 3816 PG 316
PB 27 PG 73

RONNIE A. RILEY
DB 2718 PG 134
PB 27 PG 73
0.186 HA (CADD)

NCDOT
DB 4095 PG 451
1.000 HA (CADD)

ALINE B. CLODFELTER
DB 3877 PG 1608
PB 27 PG 73
0.116 HA (CADD)

MARTHA A. HODGES
DB 3163 PG 561
PB 27 PG 73
0.116 HA (CADD)

MARJORIE SURRETT
DB 3201 PG 486
4.848 HA (TAX MAP)

AUBREY S. PARDUE
DB 2153 PG 726
PB 27 PG 73

NCDOT
FORMERLY CHARLES E. BOYD
DB 4662 PG 1900

NCDOT
DB 4523 PG 1594
5.866 HA (DEED)

CHARLES E. BOYD
DB 2720 PG 650
1.061 HA (CADD)

ELDRIED A. MEADOWS
DB 2893 PG 639
0.334 HA (CADD)

PHYLLIS P. NANCE
DB 4176 PG 723
5.621 HA (CADD)

ROSA BOYD

-Y3-POC Sta.12+61.464
-L- POC Sta.38+45.624=
△ = 86° 24' 42.82"
@ INTERSECTION

Sta 38+19.93 R 2
Off 27.00 LT

Sta 38+19.94 R 2
Off 27.50 RT

-Y3- ST Sta.13+66.449

CL 'B' RIPRAP W/ FILTER FABRIC
EST. 2.7 MTONS
EST. 8.4 SM FF

CL 'B' RIPRAP W/ FILTER FABRIC
EST. 1.8 MTONS
EST. 5.9 SM FF

CL 'I' RIPRAP W/ FILTER FABRIC
EST. 36.2 MTONS
EST. 65.2 SM FF

0.6M LAT BASE DITCH
SEE DETAIL "D"
SHEET 2-M
EST. 67 CM DDE

1.0M TAIL BASE DITCH
SEE DETAIL "Z"
SHEET 2-M
EST. 25 MTONS
20.0 SM FF
EST. 20 CM DDE

EMERGENCY SPILL BASIN
SEE DETAIL SHEET 2-M

0.6M LAT BASE DITCH
SEE DETAIL "E"
SHEET 2-M
EST. 17 CM DDE
EST. 39 MTON
EST. 103 SM FF

LATERAL "V" DITCH
SEE DETAIL "B"
SHEET 2-M
EST. 80 CM DDE

1.2M LAT BASE DITCH
SEE DETAIL "F"
SHEET 2-M
EST. 148 CM DDE

1.2M BASE BERM DITCH
SEE DETAIL "N"
SHEET 2-M
EST. 265 CM DDE

CLASS 'B' RIP RAP TOE PROTECTION
EST 5 MTONS
EST. 19 SM FF

BEGIN CABLE GUIDERAIL

CABLE GUIDERAIL

MCF (SEE DETAILS 2-U 7 2-U1

EXPRESSWAY GUTTER

SDG
SEE DETAIL "A"
SHEET 2-M

PROP - 54.5M - 600mm STEEL ENCASEMENT PIPE, 6.35mm THICK, BY OPEN CUT

NAD 83

10-OCT-2006 15:55
r:\utilities\proj\r0609ia_ut_13_uc12_psh.dgn
mgrs AT PS2416

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-13
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

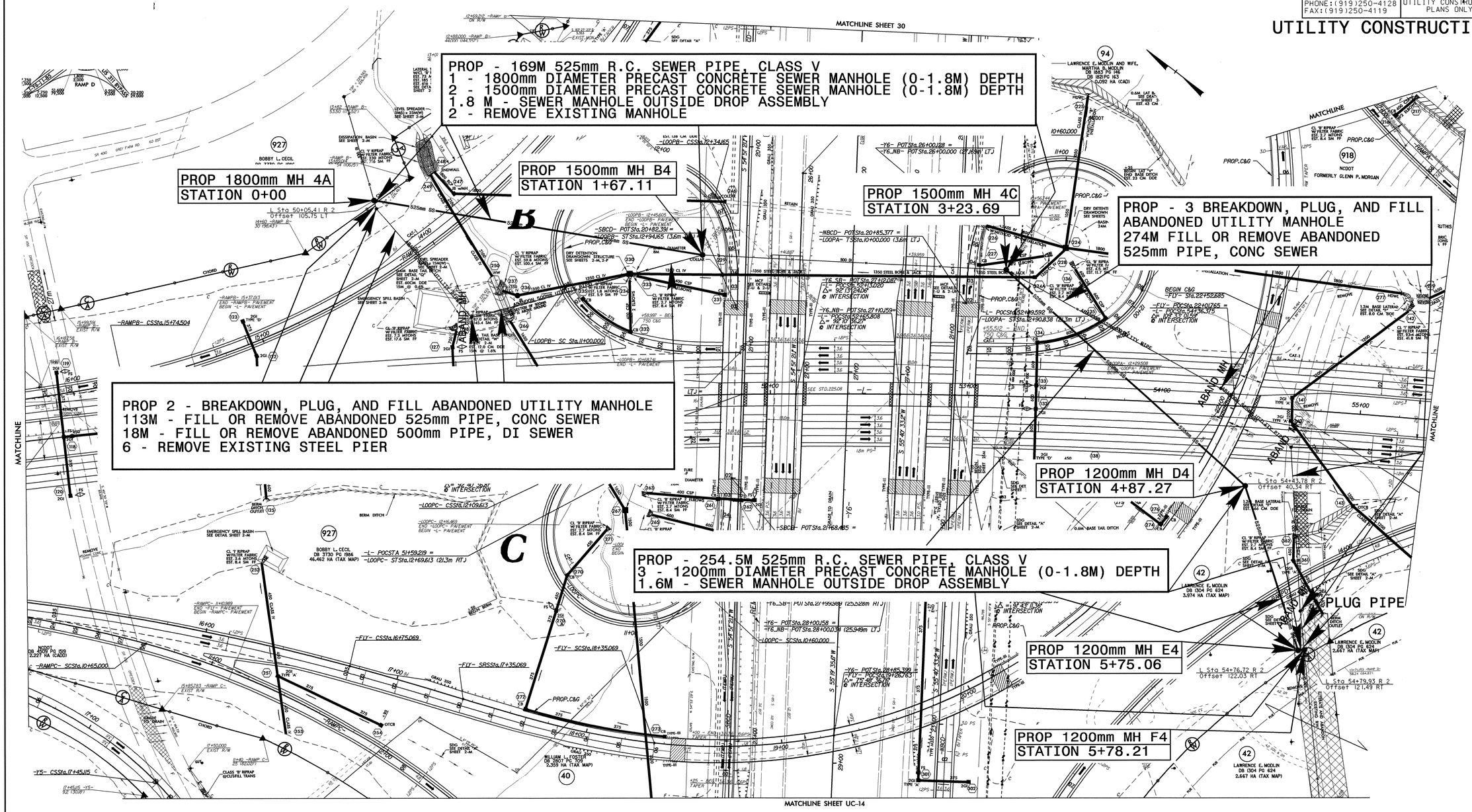
METRIC

10 0 20

SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. ROBBINS 10/10/06

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-14

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

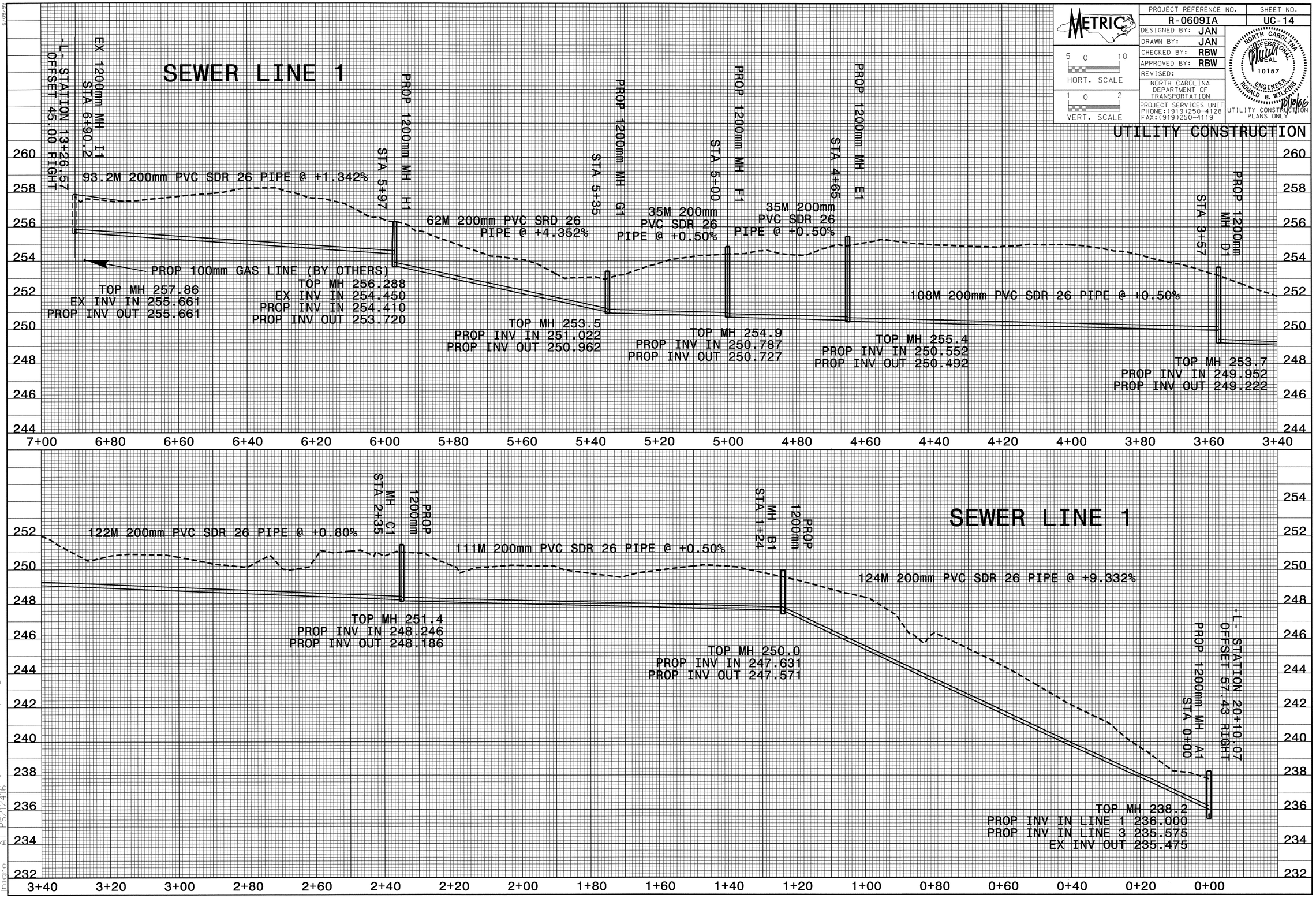
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

METRIC
5 0 10 HORT. SCALE
1 0 2 VERT. SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS 10/10/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



6/09/99

03-OCT-2006 07:45
r:\utilities\rdy\ut\proj\r0609ia_ut_upr.dgn
injaro AT PS212416

PS212416 10/2/2006 0609ia_ut_upr injaro PS_Ops24dtbord

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-15

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

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

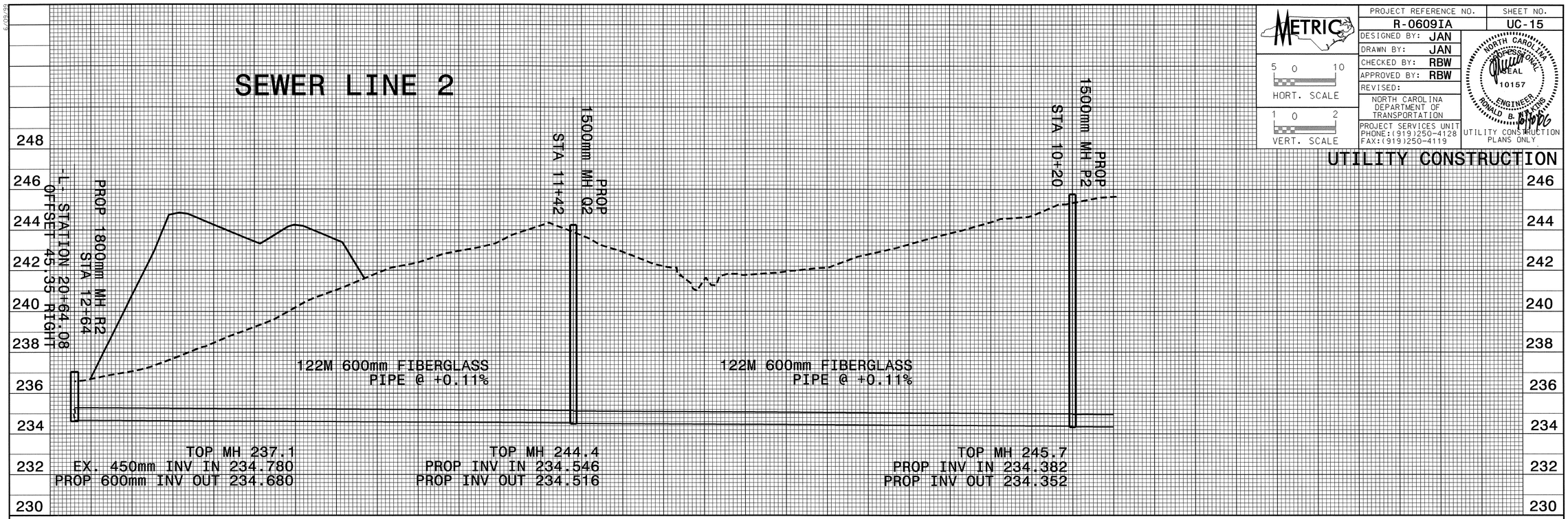
METRIC

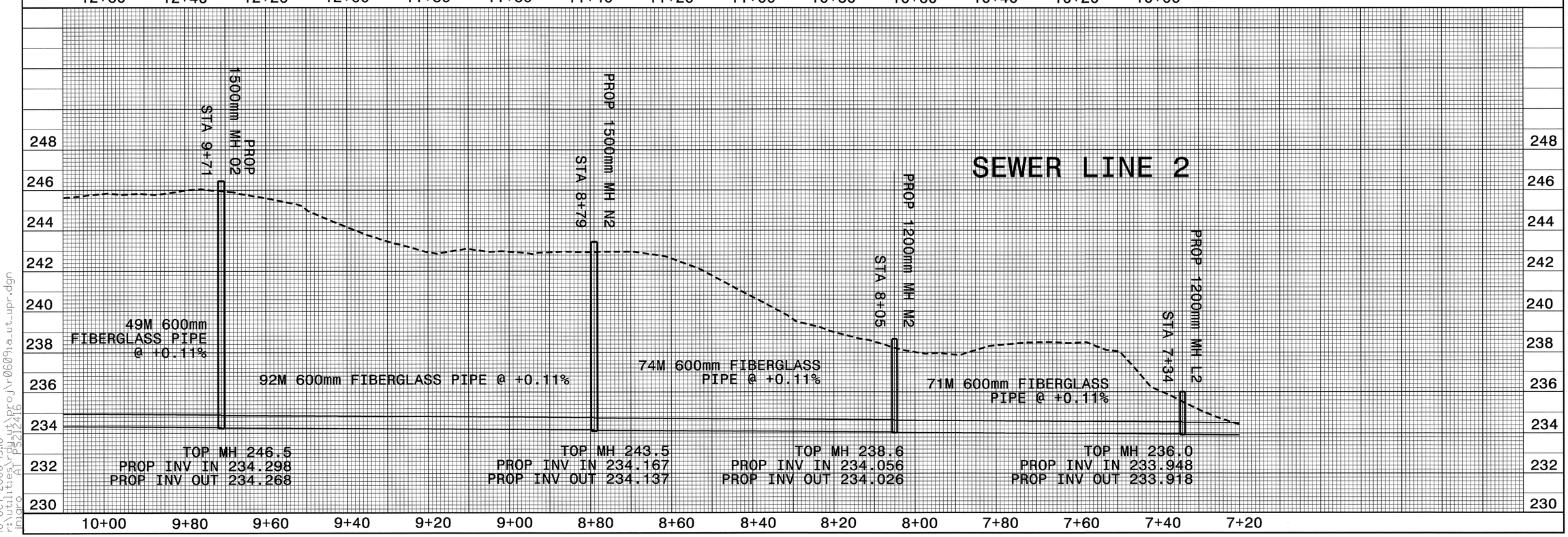
5 0 10 HORT. SCALE
1 0 2 VERT. SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION





10-OCT-2006 15:8
r:\utilities\projects\proj\r0609ia_ut_upr.dgn
mjaro AT PS212416

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-16

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

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

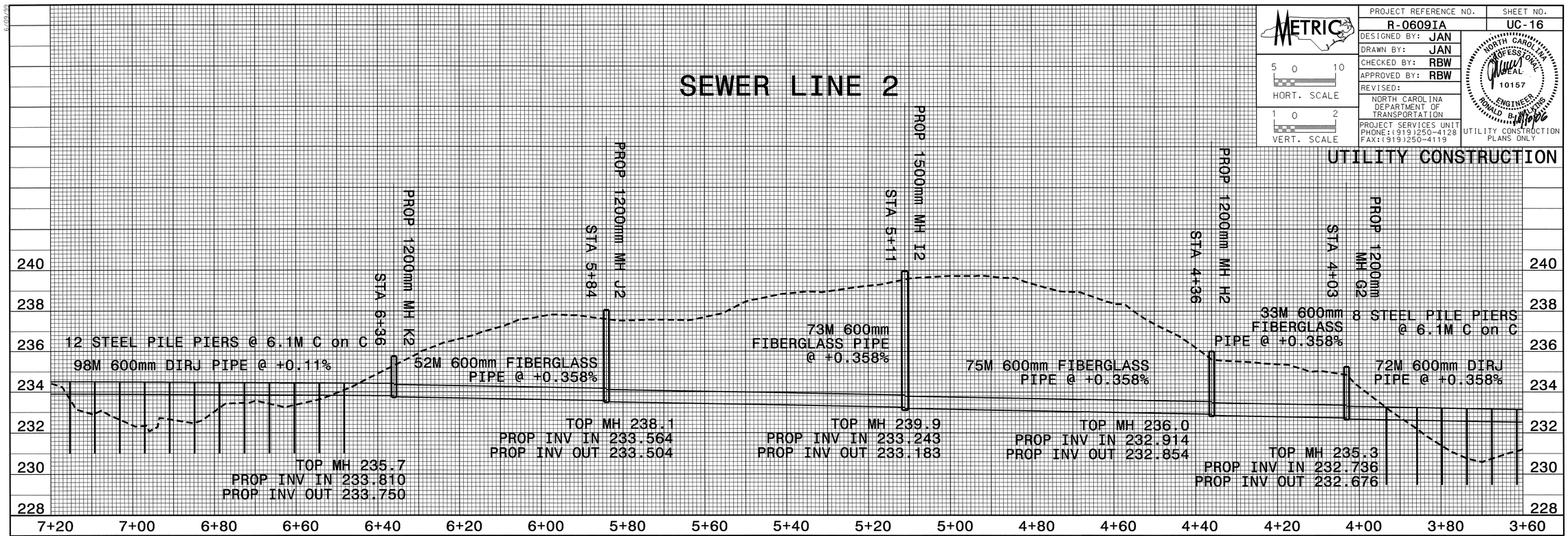
METRIC

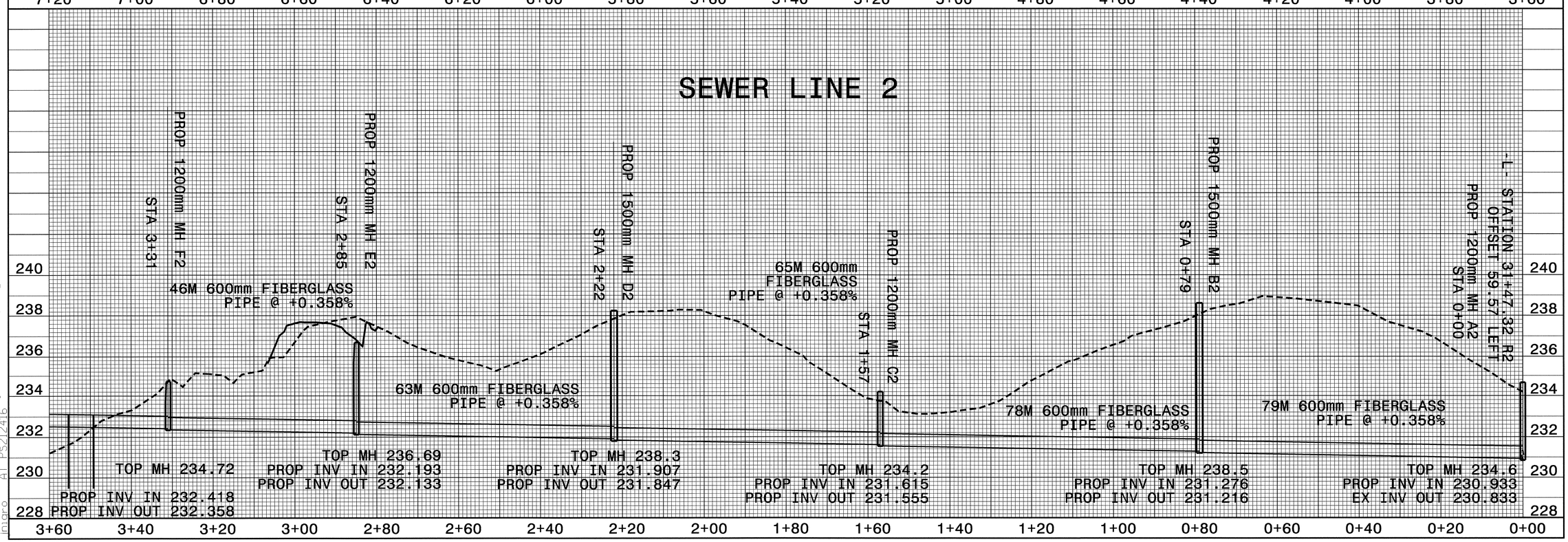
5 0 10 HORT. SCALE
1 0 2 VERT. SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WALKING

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

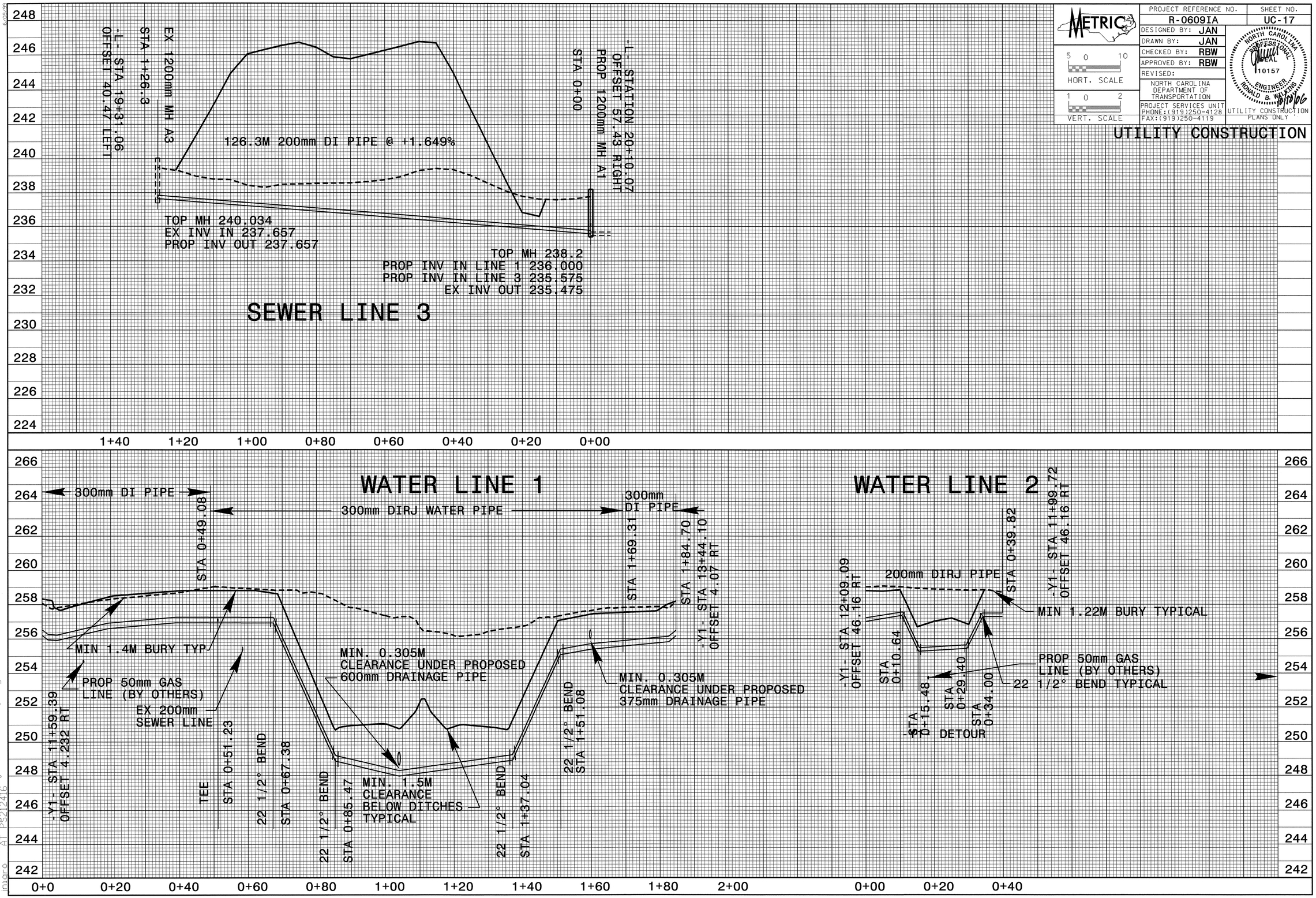




10-OCT-2006 16:13
r:\utilities\rdb\ut\proj\r0609ia_ut_upr.dgn
inlaro
41 PS212416

METRIC	PROJECT REFERENCE NO.	SHEET NO.
	R-0609IA	UC-17
	DESIGNED BY: JAN	
	DRAWN BY: JAN	
	CHECKED BY: RBW	
	APPROVED BY: RBW	
	REVISED:	
5 0 10 HORT. SCALE	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WALTHIS 10/10/06
1 0 2 VERT. SCALE	PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



6/09/99
03-OCT-2006 07:43
r:\utilities\rdy_ut\proj\r0609ia_ut_upr.dgn
AT PS212416
Inigro

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-18

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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

METRIC

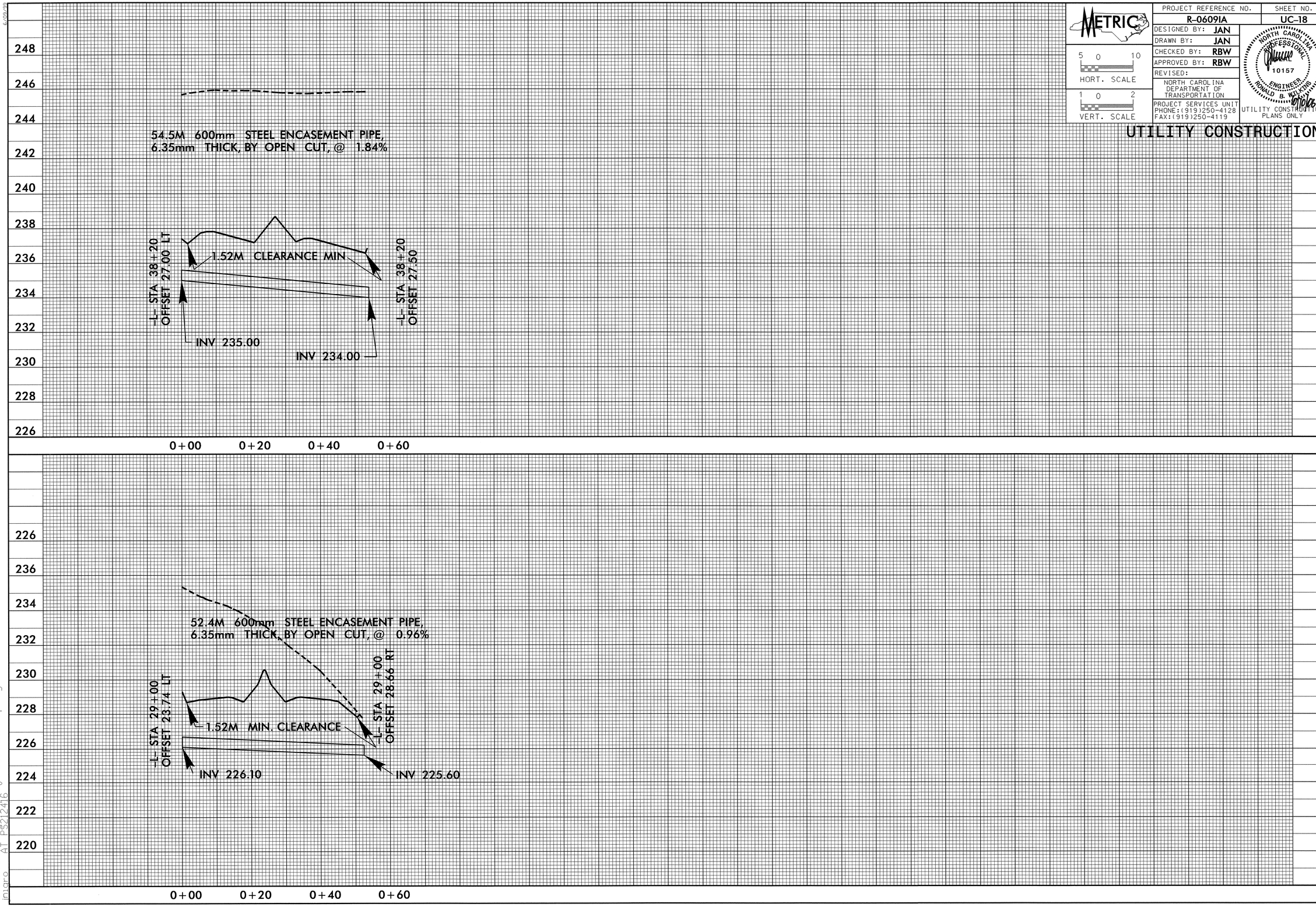
5 0 10 HORT. SCALE

1 0 2 VERT. SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



10-OCT-2006 14:55
r:\utilities\proj\r0609ia_ut_upr.dgn
mjaro
AT PS212416

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-19

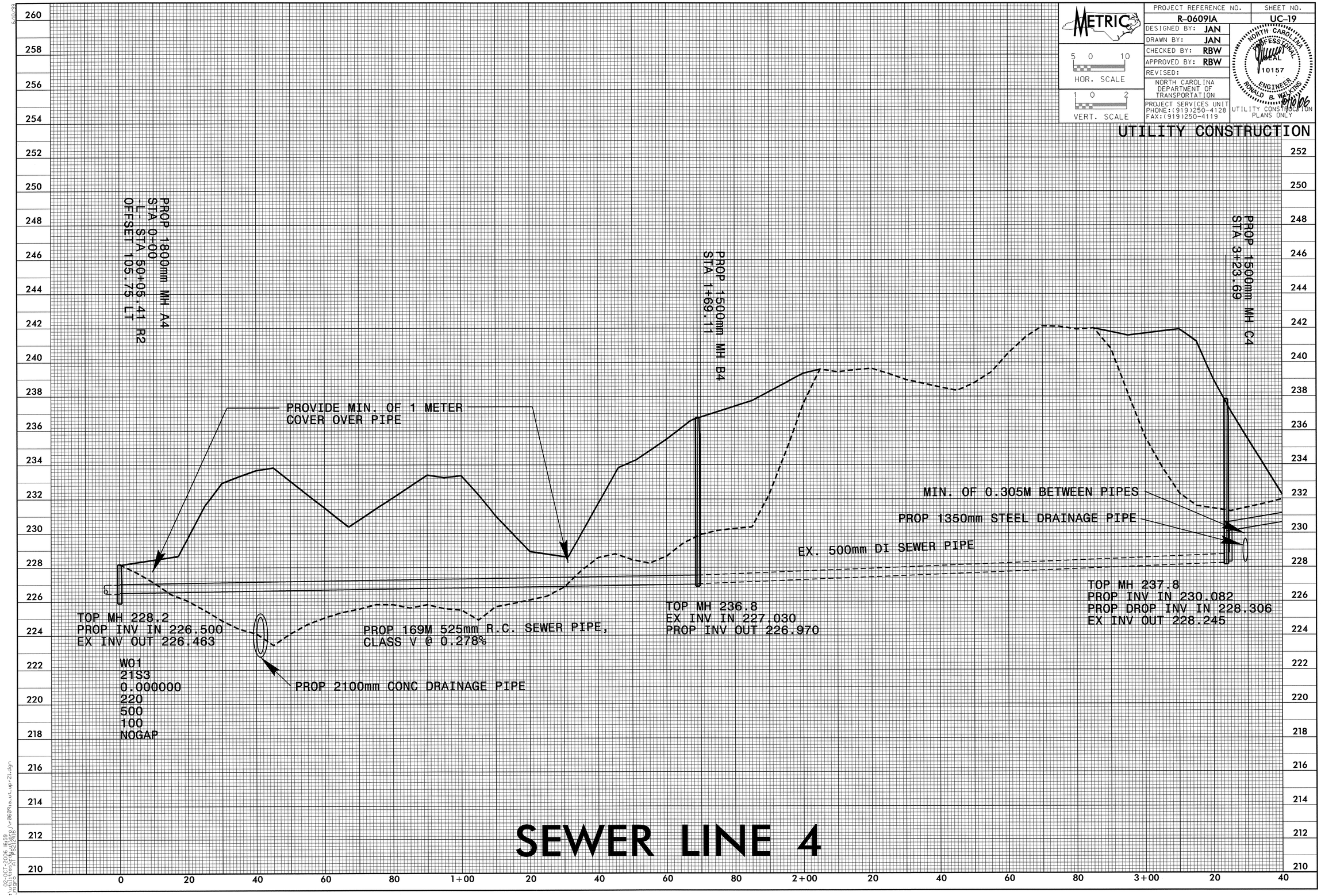
DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

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

METRIC
HOR. SCALE 5 0 10
VERT. SCALE 1 0 2

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS
10/10/06
UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-20

DESIGNED BY: JAN
DRAWN BY: JAN
CHECKED BY: RBW
APPROVED BY: RBW
REVISED:

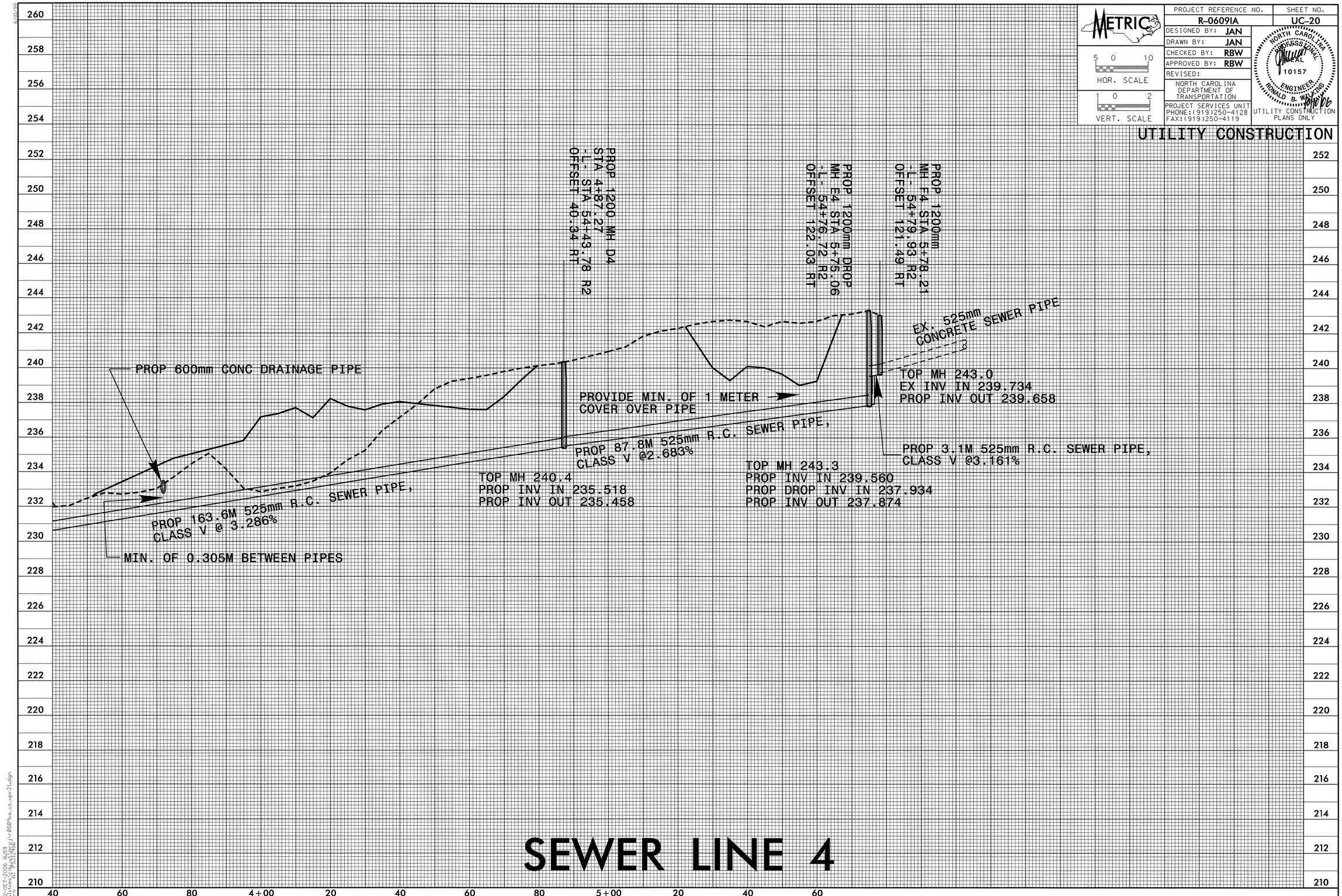
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT SERVICES UNIT
PHONE:(919)250-4128
FAX:(919)250-4119

METRIC
HOR. SCALE 5 0 10
VERT. SCALE 1 0 2

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS 10/2/06

UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION



5/10/99

02-OCT-2006 16:59
r:\utilities\proj\0609ia_ut_wpr21.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UC-21
DESIGNED BY: JAN	
DRAWN BY: JAN	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

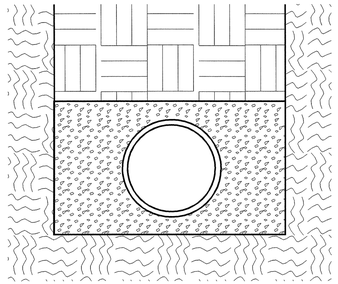
METRIC

0 SCALE

NORTH CAROLINA PROFESSIONAL SEAL 10157 ENGINEER RONALD B. WILKINS 10/10/06

UTILITY CONSTRUCTION

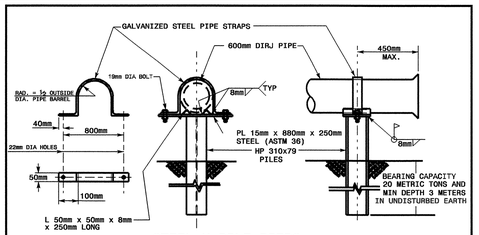
PIPE BEDDING DETAIL



PIPE BEDDED IN LOOSE 150mm LAYERS OF GRANULAR MATERIAL COMPACTED TO 150mm OVER TOP OF PIPE, 150mm MINIMUM UNDER PIPE. REMAINDER OF TRENCH BACKFILLED IN LOOSE 150mm LAYERS OF LOCAL SELECT MATERIAL COMPACTED TO TOP OF TRENCH (SEE PROJECT SPECIAL PROVISIONS).

MAXIMUM TRENCH WIDTH AT TOP OF PIPE

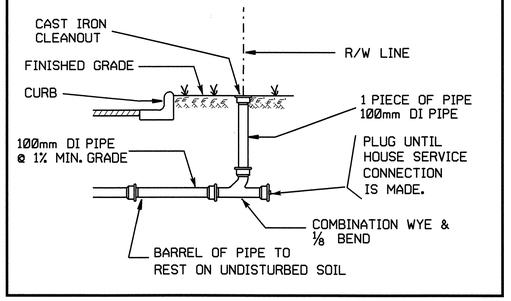
NOMINAL PIPE SIZE (mm)	TRENCH WIDTH (meters)	NOMINAL PIPE SIZE (mm)	TRENCH WIDTH (meters)
100	0.72	500	1.12
150	0.76	610	1.22
200	0.81	750	1.37
250	0.86	900	1.57
300	0.91	1050	1.68
350	0.97	1200	1.83
400	1.02	1400	1.98
450	1.07		



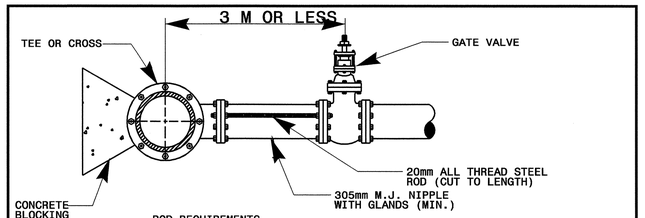
STEEL H-PILE PIERS

NOT TO SCALE

SANITARY SEWER CLEANOUT



STANDARD VALVE RODDING



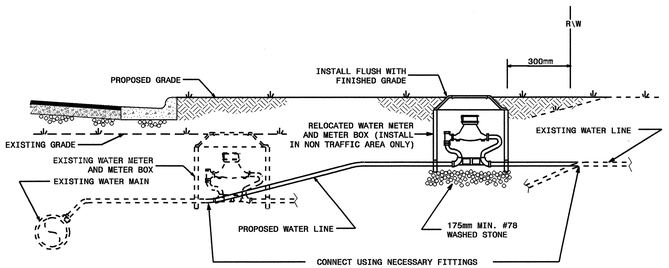
ROD REQUIREMENTS

BRANCH SIZE	NO. OF RODS
100 mm	2
150 mm	2
200 mm	4
300 mm	4
400 mm	6
600 mm	6

GENERAL NOTES:

1. ONCE INSTALLED AND TIGHT, THE STEEL RODS AND BOLTS SHALL BE COATED WITH 2 COATS OF BITUMINOUS BASE PAINT.
2. SEE STANDARD THRUST BLOCK.
3. CONCRETE SHALL NOT CONTACT BOLTS OF ENDS OF MECHANICAL FITTINGS.

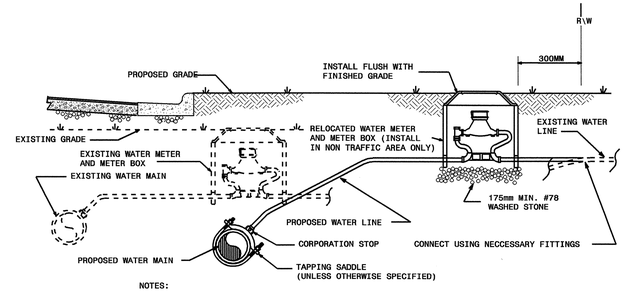
WATER METER RELOCATION DETAIL



NOTES:

1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, AND METER BOX WITH LID.
2. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUN OF 1M COVER BELOW FINISHED GRADE.

WATER METER RELOCATION DETAIL

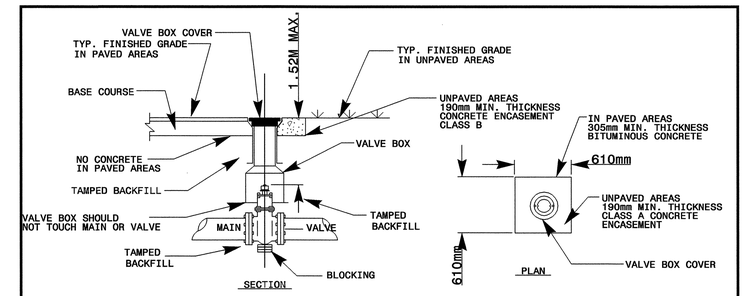


NOTES:

1. RELOCATION SHALL INCLUDE THE REMOVAL AND INSTALLATION AT THE APPROPRIATE LOCATION OF THE WATER METER, METER SETTER AND YOKE, METER VALVES, AND METER BOX WITH LID.
2. THE NEW WATER SERVICE LINE SHALL BE OF THE SAME TYPE AND GRADE AS THE EXISTING WATER SERVICE LINE UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. THE NEW WATER SERVICE LINE SHALL BE INSTALLED WITH A MINIMUN OF 1M COVER BELOW FINISHED GRADE.

WATER METER RELOCATION DETAIL

STANDARD VALVE BOX INSTALLATION

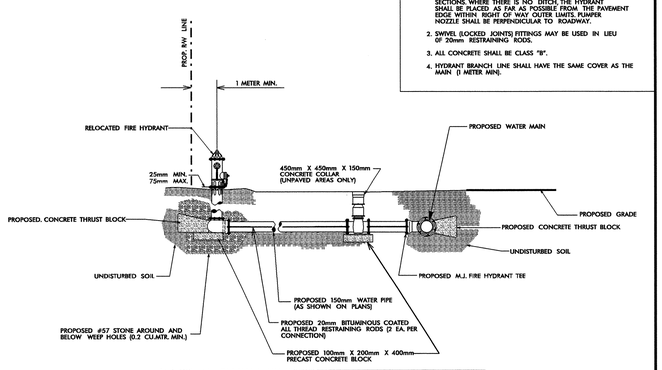


NOTES:

1. DUCTILE IRON PIPE MAY BE USED FOR VAVLE BOX EXTENSIONS.
2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAT 1.52M FROM THE SURFACE, USING A MANUFACTURER APPROVED EXTENSION KIT.
3. PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREAS.

GENERAL NOTES:

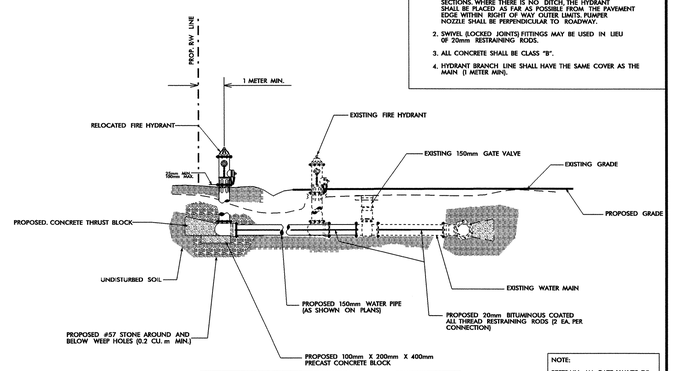
1. RELOCATED FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 2 METERS BACK OF CURB IN CURB AND GUTTER SECTIONS AND 2 METERS BACK OF DITCH IN ROADWAY SECTIONS. WHERE THERE IS NO DITCH, THE HYDRANT SHALL BE PLACED AS FAR AS POSSIBLE FROM THE PAVEMENT EDGE WITHIN RIGHT OF WAY OUTER LIMITS. PUMPER NOZZLE SHALL BE PERPENDICULAR TO ROADWAY.
2. SWIVEL (LOCKED JOINTS) FITTINGS MAY BE USED IN LIEU OF 20mm RESTRAINING RODS.
3. ALL CONCRETE SHALL BE CLASS "B".
4. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (1 METER MIN).



RELOCATED FIRE HYDRANT INSTALLATION DETAIL

GENERAL NOTES:

1. RELOCATED FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 2 METERS BACK OF CURB IN CURB AND GUTTER SECTIONS AND 2 METERS BACK OF DITCH IN ROADWAY SECTIONS. WHERE THERE IS NO DITCH, THE HYDRANT SHALL BE PLACED AS FAR AS POSSIBLE FROM THE PAVEMENT EDGE WITHIN RIGHT OF WAY OUTER LIMITS. PUMPER NOZZLE SHALL BE PERPENDICULAR TO ROADWAY.
2. SWIVEL (LOCKED JOINTS) FITTINGS MAY BE USED IN LIEU OF 20mm RESTRAINING RODS.
3. ALL CONCRETE SHALL BE CLASS "B".
4. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (1 METER MIN).



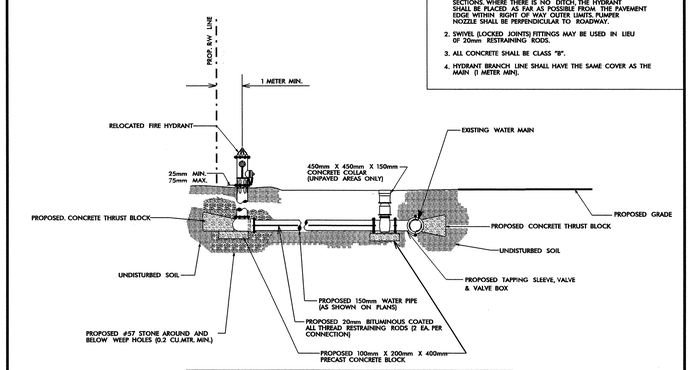
NOTE:

RESTRAIN ALL GATE VALVES TO WATER MAIN BEFORE REMOVING FIRE HYDRANT FOR RELOCATION

FIRE HYDRANT RELOCATION DETAIL

GENERAL NOTES:

1. RELOCATED FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 2 METERS BACK OF CURB IN CURB AND GUTTER SECTIONS AND 2 METERS BACK OF DITCH IN ROADWAY SECTIONS. WHERE THERE IS NO DITCH, THE HYDRANT SHALL BE PLACED AS FAR AS POSSIBLE FROM THE PAVEMENT EDGE WITHIN RIGHT OF WAY OUTER LIMITS. PUMPER NOZZLE SHALL BE PERPENDICULAR TO ROADWAY.
2. SWIVEL (LOCKED JOINTS) FITTINGS MAY BE USED IN LIEU OF 20mm RESTRAINING RODS.
3. ALL CONCRETE SHALL BE CLASS "B".
4. HYDRANT BRANCH LINE SHALL HAVE THE SAME COVER AS THE MAIN (1 METER MIN).



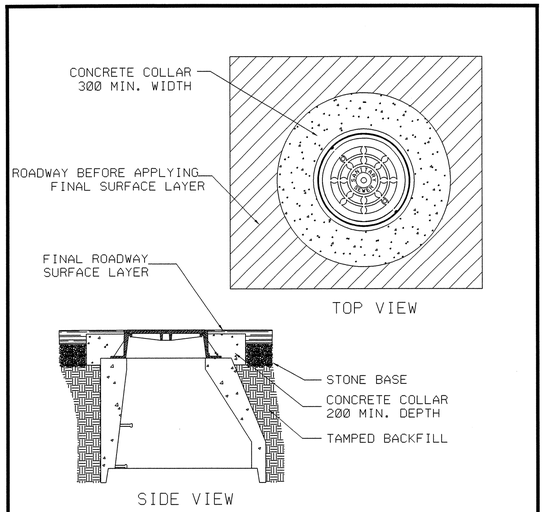
RELOCATED FIRE HYDRANT INSTALLATION DETAIL

8/17/93
02-OCT-2006 17:22
r:\roadway\proj\r0609ia_ut_ut.dgn
jnorris

METRIC	PROJECT REFERENCE NO.	SHEET NO.
0 SCALE	R-0609IA	UC-22
	DESIGNED BY: JAN	
	DRAWN BY: JAN	
	CHECKED BY: RBW	
	APPROVED BY: RBW	
	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 10157 ENGINEER RONALD B. WIGGINS

UTILITY CONSTRUCTION

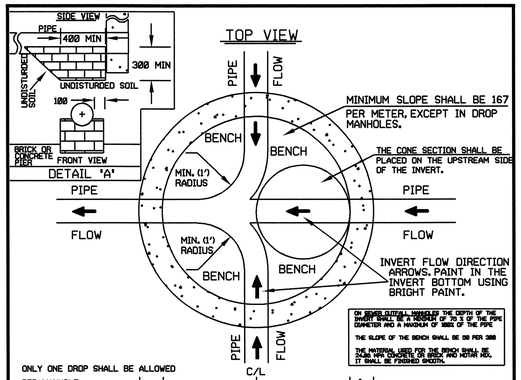


NOTES:

A. A CONCRETE COLLAR SHALL BE UTILIZED ON ALL ROADWAY STRUCTURE ADJUSTMENTS.
B. CONCRETE SHALL BE CLASS A
C. THE CONCRETE COLLAR SHALL BE SET IN ONE POURING. AT NO TIME WILL THE CONCRETE BE PLACED IN LIFTS.
D. THE RING CASTING SHALL BE PLACED ACCORDING TO THE SLOPE OF THE ROADWAY. THE CONCRETE COLLAR WILL BE ADJUSTED TO ALLOW FOR A FINAL LAYER OF ASPHALT TO BE PLACED OVER THE CONCRETE.

• ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

STANDARD DETAIL DRAWING
TYPICAL CONCRETE COLLAR
FOR ROADWAY STRUCTURES

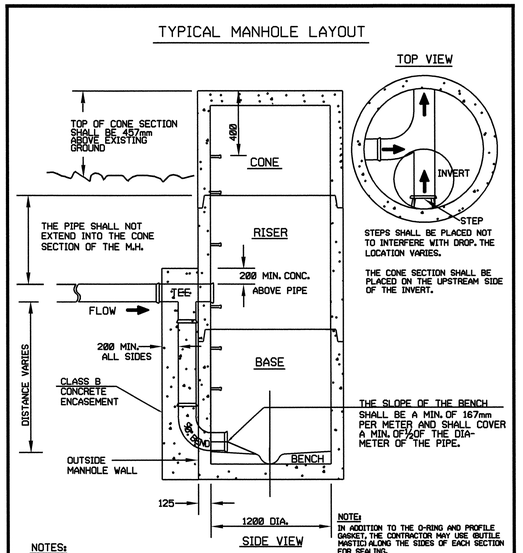


NOTES:

- THE MAXIMUM NUMBER OF SEWER SERVICES ALLOWED IN A MANHOLE SHALL BE (3).
- THE INVERT FOR A SERVICE MUST BE A MINIMUM OF 12 ABOVE THE BENCH AREA.
- THE MAXIMUM DISTANCE BETWEEN PIPE INVERTS BEFORE A DROP MANHOLE IS REQUIRED IS 750.
- BOOTS SHALL BE REQUIRED FOR ALL SEWER SERVICES ENTERING THE MANHOLE.
- PRECAST INVERTS SHALL BE ALLOWED. MOOR-BASE PRECAST INVERTS SHALL NOT.
- THE MANUFACTURER SHALL IDENTIFY THE FLOW DIRECTION OF ALL INVERTS WITH AN PAINTED ARROW IN THE INVERT.

• ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

STANDARD DETAIL DRAWING
SANITARY SEWER TYPICAL
MANHOLE INVERT

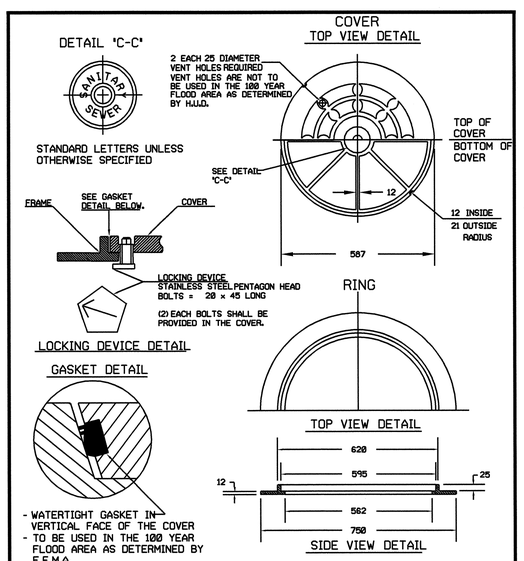


NOTES:

- ALL STANDARD SEWER MANHOLE SECTIONS SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C478.
- ALL STEPS INSTALLED IN MANHOLE SECTIONS SHALL HAVE SERRATED TREAD & TALL END LUGS TO PREVENT FEET FROM SLIPPING. THE PULLOUT STRENGTH SHALL BE 13.79 MPa MINIMUM WHEN TESTED ACCORDING TO ASTM C497.
- A DROP MANHOLE SHALL BE USED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 762mm.
- A 1200 DIAMETER MANHOLE MAY BE USED WITH OUTSIDE DROP SEWER LINE.

• ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

STANDARD DETAIL DRAWING
SANITARY SEWER MANHOLE
WITH OUTSIDE DROP

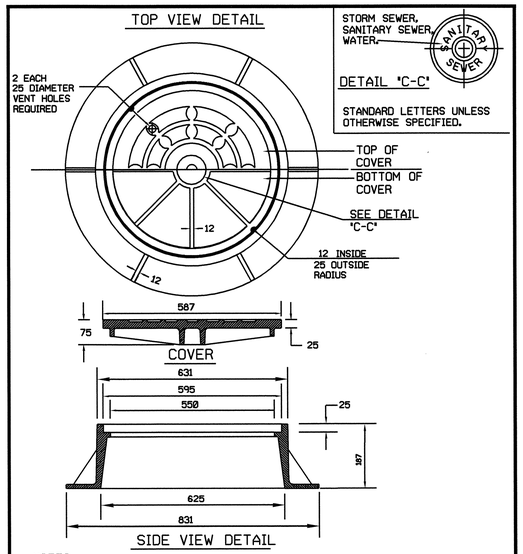


NOTES

- MATERIAL SHALL BE GRAY CAST IRON (ASTM A-48-83), CLASS 30.
- FOR OUTFALL USE ONLY - NOT FOR USE ON MANHOLES LOCATED IN ROADWAYS.
- RING & COVER SHALL BE ASTM (A-48-83)

• ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

STANDARD DETAIL DRAWING
SANITARY SEWER OUTFALL
LOCKABLE M.H. RING & COVER



NOTES:

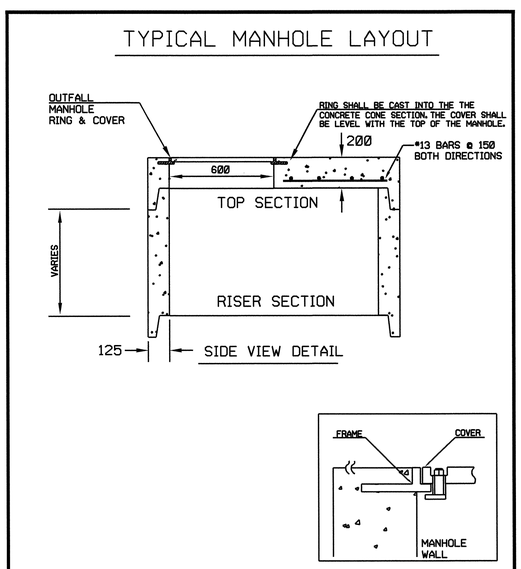
- MINIMUM AVERAGE WEIGHT:

COVER	56.70 KGS.
FRAME	86.18 KGS.
UNIT	142.88 KGS.

- MATERIAL SHALL BE GRAY CAST IRON.
- RING & COVER SHALL BE ASTM A-48-83 (CLASS 30B)

• ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

STANDARD DETAIL DRAWING
MANHOLE RING AND COVER



NOTES:

ALL STANDARD SEWER MANHOLE SECTIONS SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM C478. THE RING AND COVER SHALL BE PER DETAIL. RING TO BE CAST INTO THE CONCRETE FLAT TOP SECTION.

• ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

STANDARD DETAIL DRAWING
SANITARY SEWER MANHOLE
OUTFALL TOP SECTION

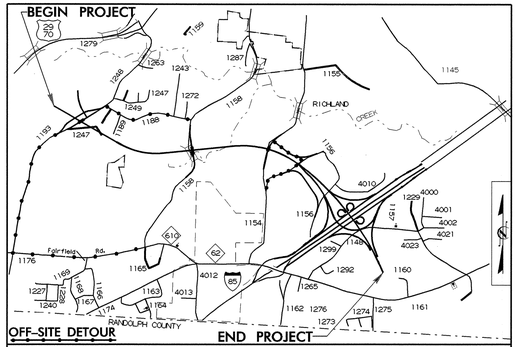
8/17/99

10-OCT-2006 15:47
r:\utilities\rdwg\proj\r0609ia_ut_udt.dgn
mgro A1 PS212416

TIP: R-0609IA

CONTRACT: C201275

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

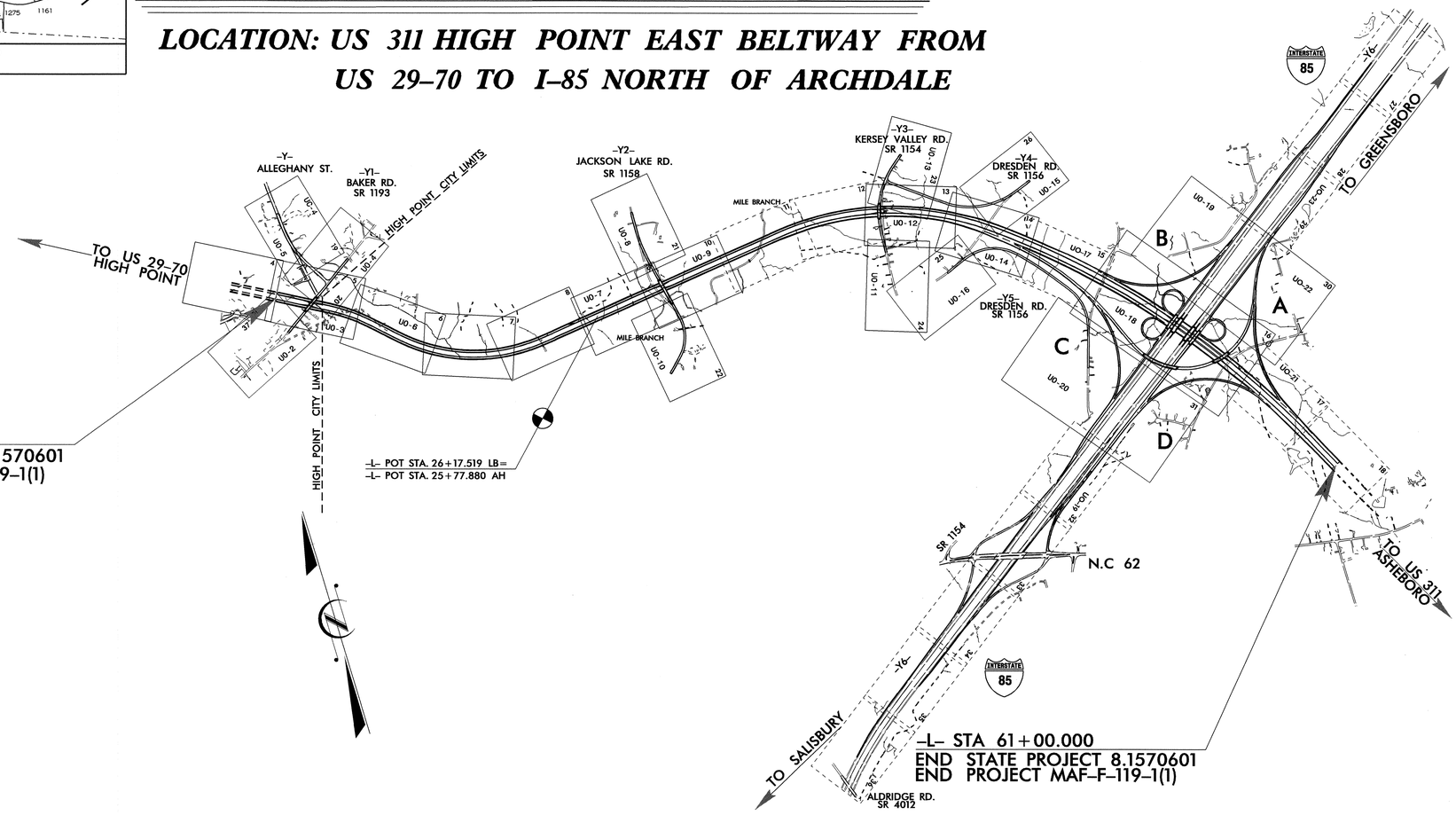
METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

T.I.P. NO.	SHEET NO.
R-0609IA	UO-1

UTILITY BY OTHERS PLANS
GUILFORD COUNTY

LOCATION: US 311 HIGH POINT EAST BELTWAY FROM US 29-70 TO I-85 NORTH OF ARCHDALE



GRAPHIC SCALES

5 0 10 — PLANS

5 0 10 — PROFILE (HORIZONTAL)

1 0 2 — PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UO-1	*TITLE SHEET*
UO-2 THRU UO-23	*UTILITY BY OTHERS PLAN SHEETS*

UTILITY OWNERS ON PROJECT

(1) CITY OF HIGH POINT - ELECTRIC DISTRIBUTION
(2) DUKE POWER - ELECTRIC DISTRIBUTION
(3) NORTH STATE COMMUNICATIONS - TELEPHONE
(4) PIEDMONT NATURAL GAS - NATURAL GAS
(5) CITY OF ARCHDALE - SANITARY SEWER
(6) TIME WARNER CABLE - CABLE TV

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*
Ron B. Wilkins, P.E.	*UTILITIES SQUAD LEADER PROJECT ENGINEER*
John A. Nigro, P.E.	*UTILITIES PROJECT DESIGNER*

9/09/99
14-JUN-2006 15:30
r:\utilities\ru_ut\proj\r0609a_ut_tsh_uo1_tsh.dgn
ru_ut_tsh
$$$$USER$$$$

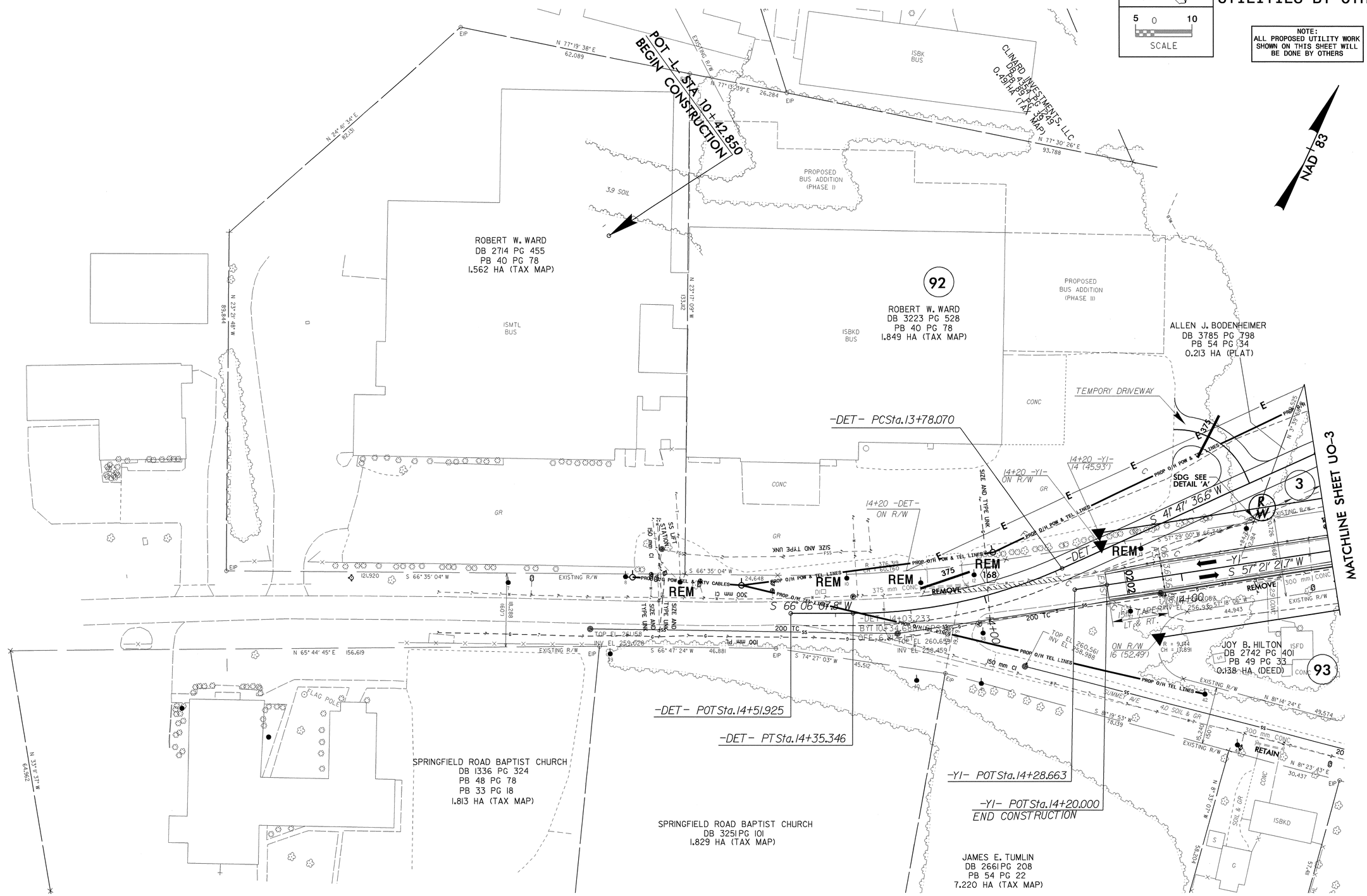
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-2

UTILITIES BY OTHERS

METRIC

5 0 10
SCALE

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



8/17/99

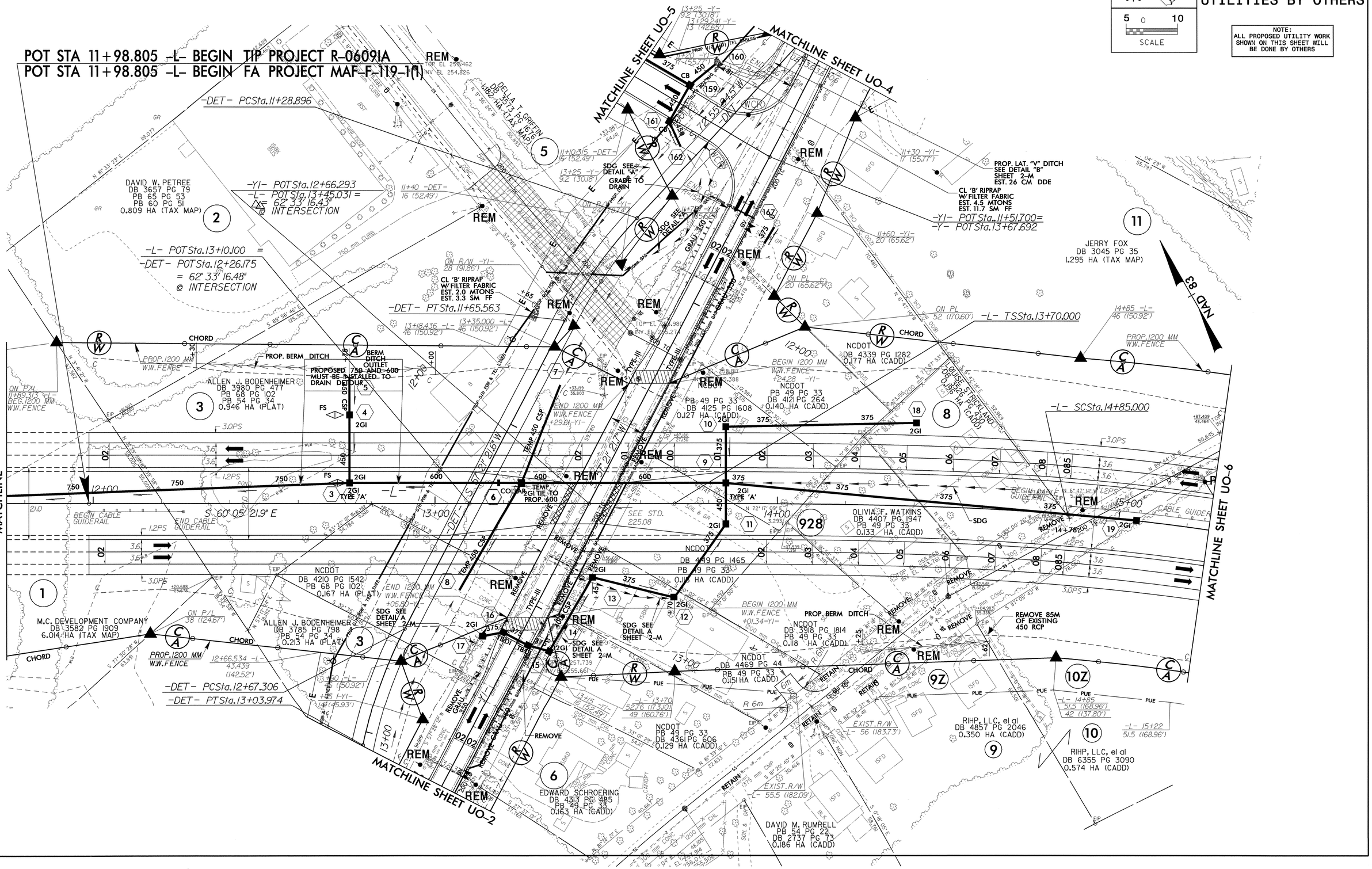
15-JUN-2006 10:04
r:\utilities\proj\0609ia_ut_37_u02_psh.dgn
pmgrc
R1 FS:21.5

PROJECT REFERENCE NO.	SHEET NO.
R- 0609IA	U0-3

UTILITIES BY OTHERS

METRIC
5 0 10
SCALE

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



PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-4

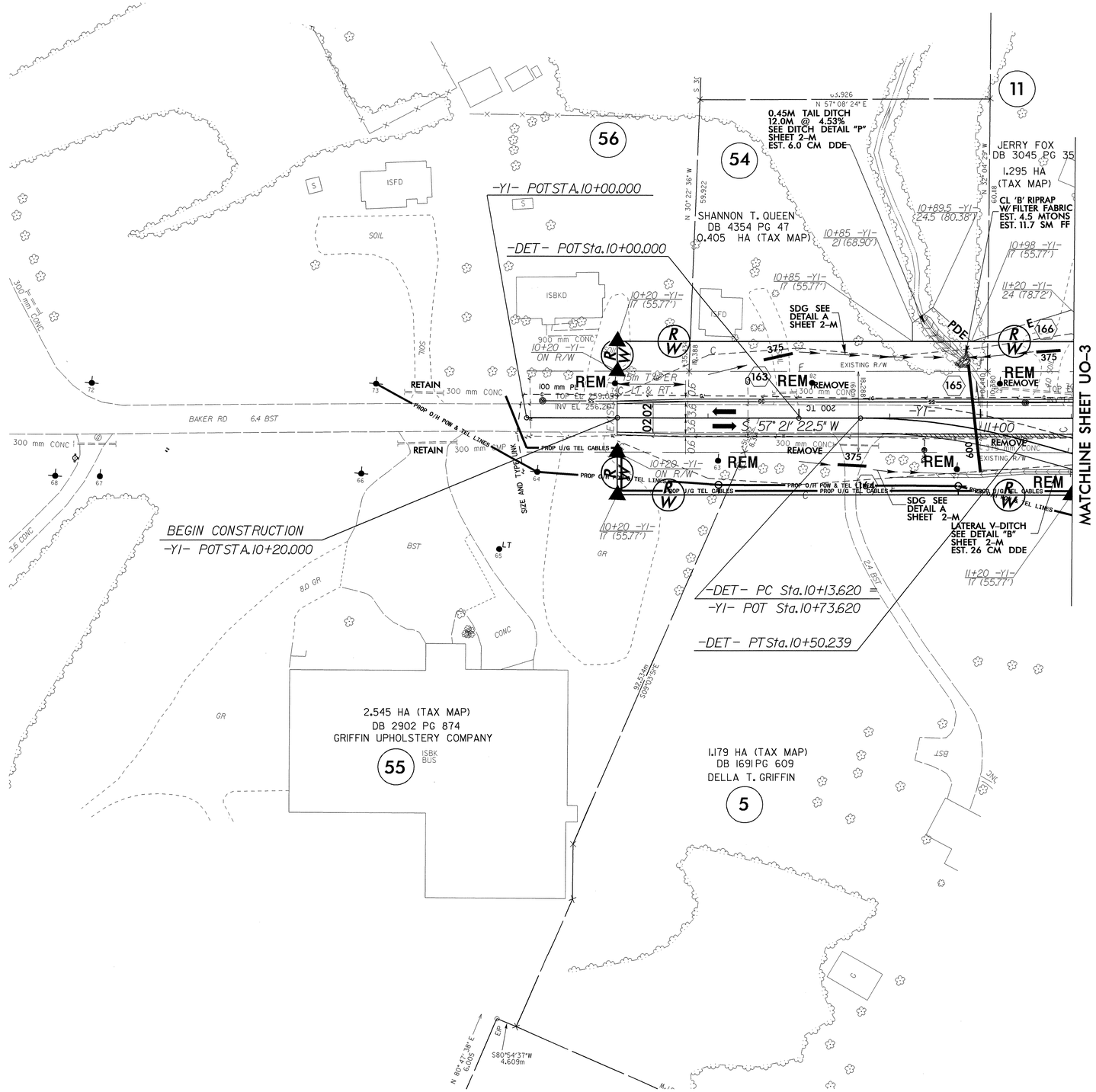
UTILITIES BY OTHERS

METRIC

5 0 10

SCALE

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



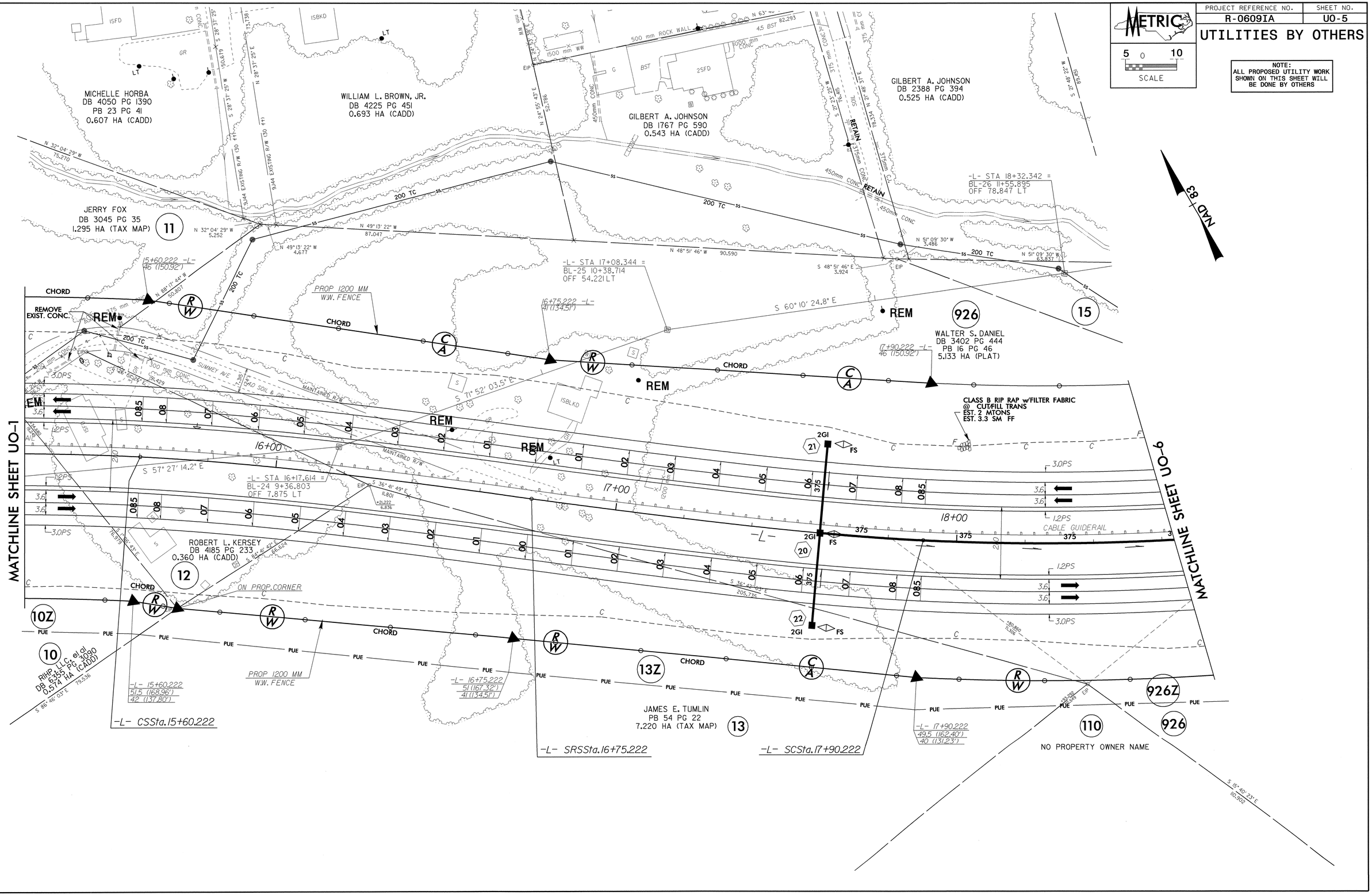
04-MAY-2006 14:51
r:\utilities\proj\r0609ia_ut_20_uo4_psh.dgn
jnigro
PS:1=1 P:1=1

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-5

UTILITIES BY OTHERS

METRIC
5 0 10
SCALE

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



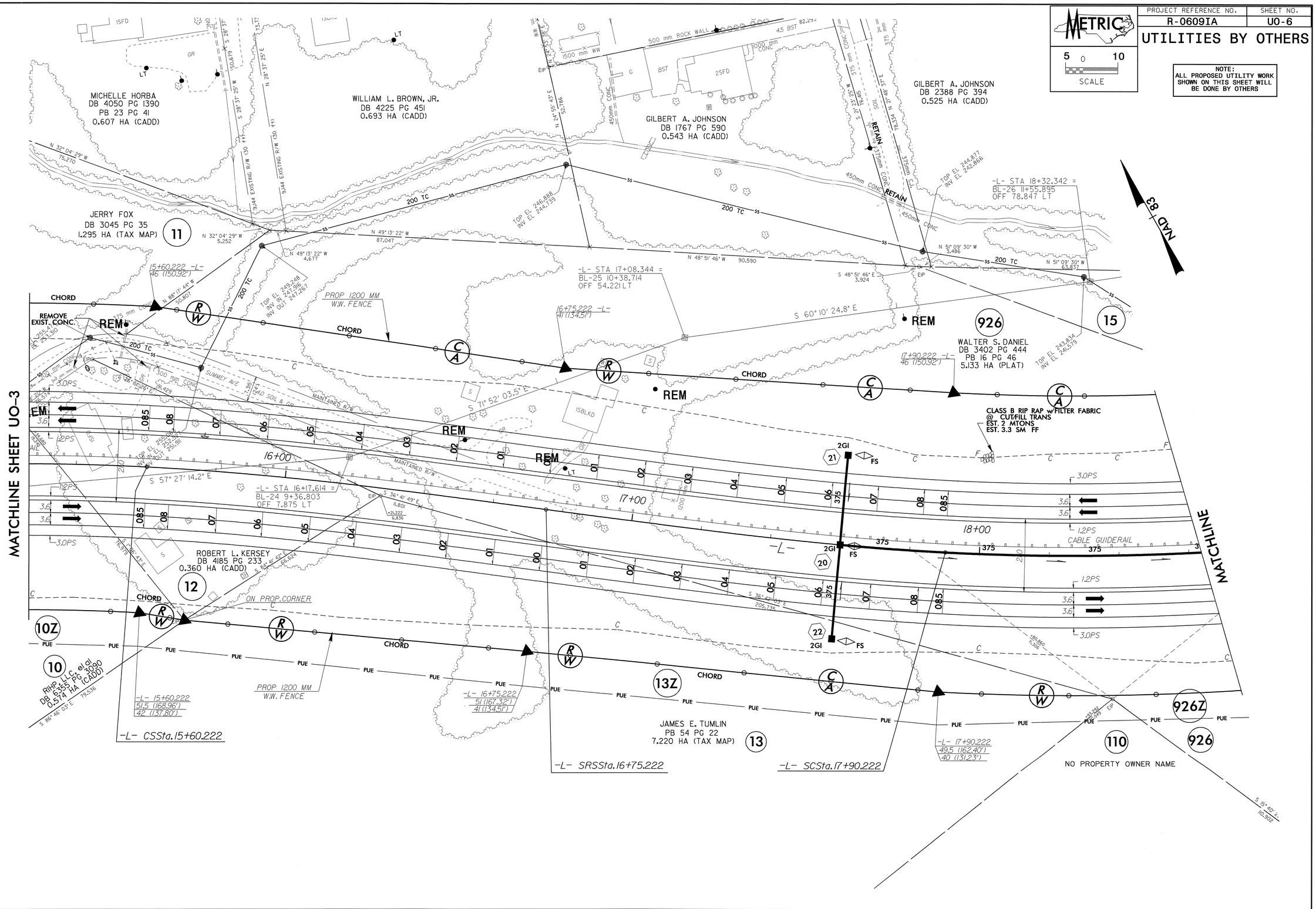
r:\wu\04-MAY-2006 14:50
jnetres 04-MAY-2006 14:50
pw:\\pwpsc01\projects\0609ia_ut_6_uo5_psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-6

UTILITIES BY OTHERS

METRIC SCALE 5 0 10

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



8/17/99

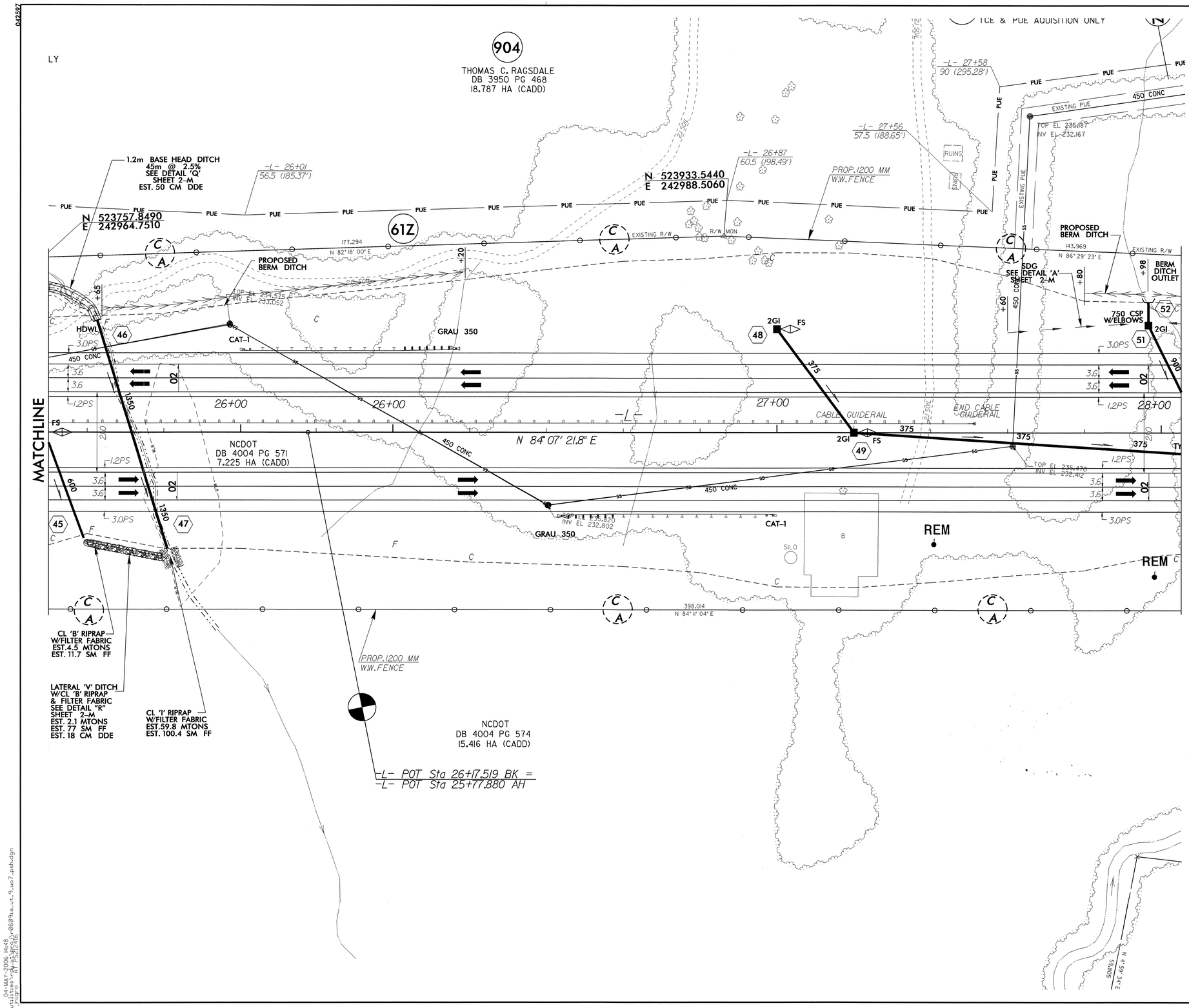
14-JUN-2006 15:28
r:\utilities\proj\r0609ia_ut_6_u06_psh.dgn
pshe

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-7

UTILITIES BY OTHERS

METRIC
5 0 10
SCALE

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



04-MAY-2006 14:48
r:\utilities\projects\r0609ia_ut9_uo7_psh.dgn
jnigro
AV PS:312416

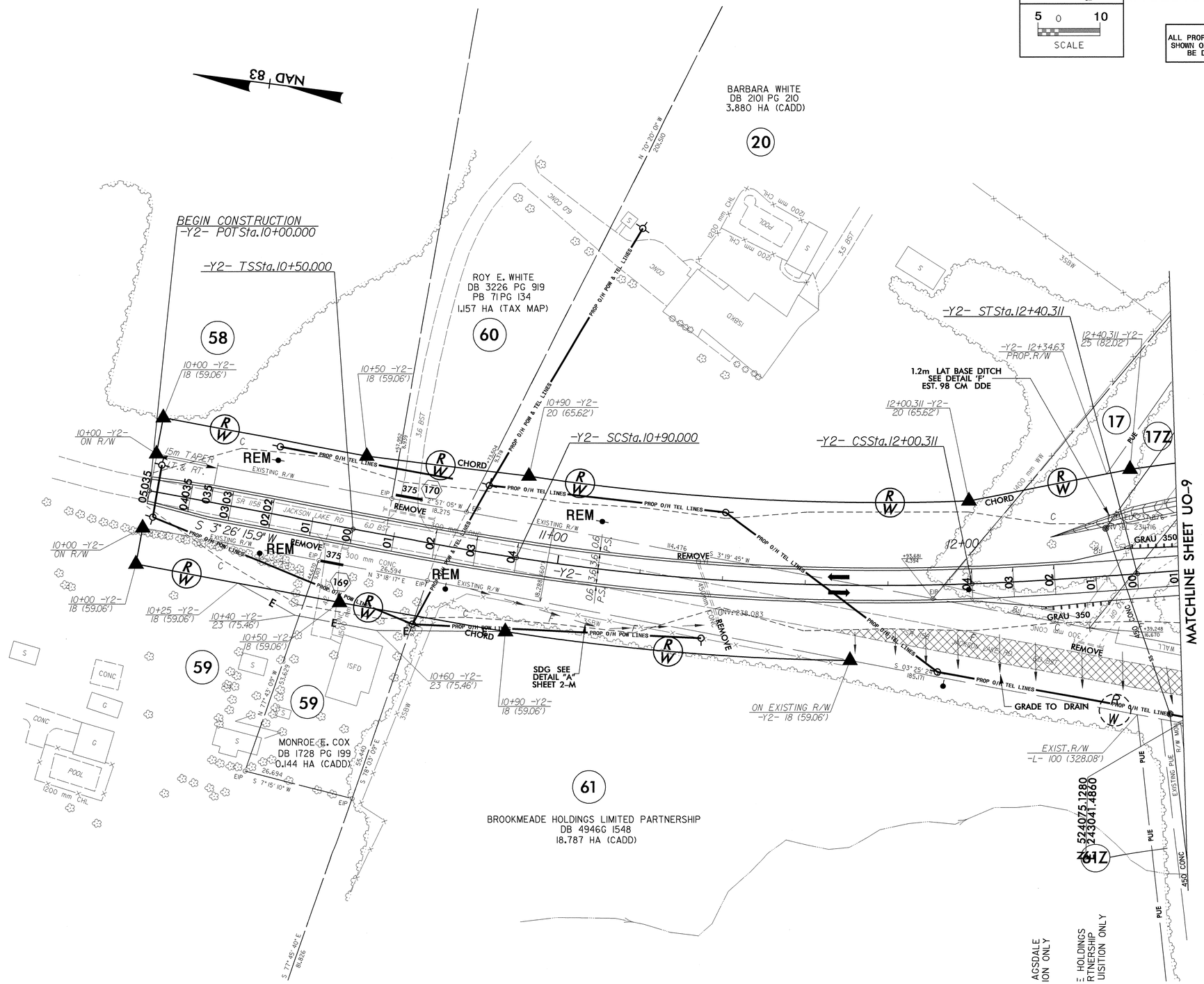
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-8

UTILITIES BY OTHERS

METRIC

5 0 10
SCALE

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



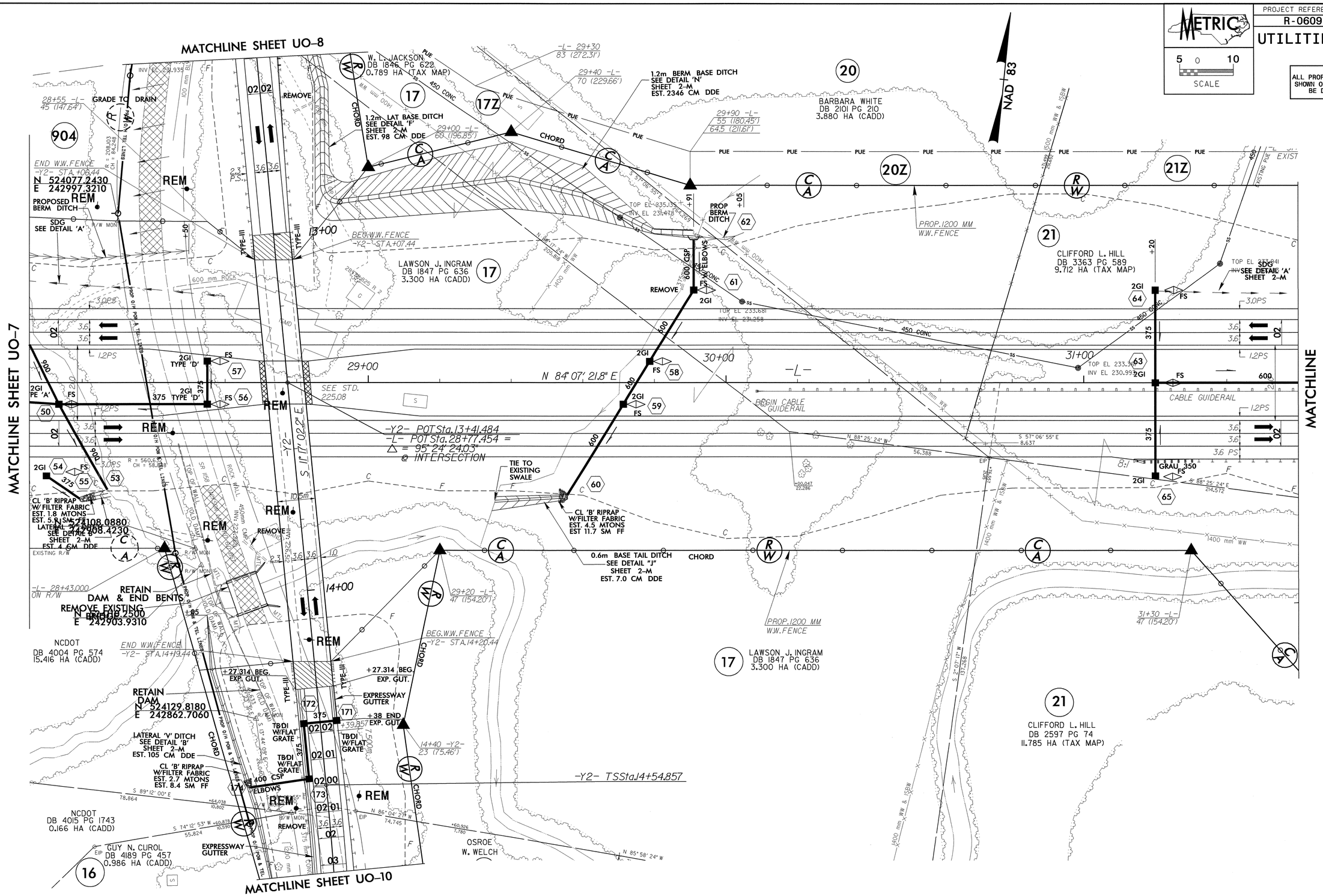
04-MAY-2006 14:46
r:\utilities\proj\0609ia_ut21_u08_psh.dgn
jnagro
PS:212:16

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-9

UTILITIES BY OTHERS

METRIC
5 0 10
SCALE

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



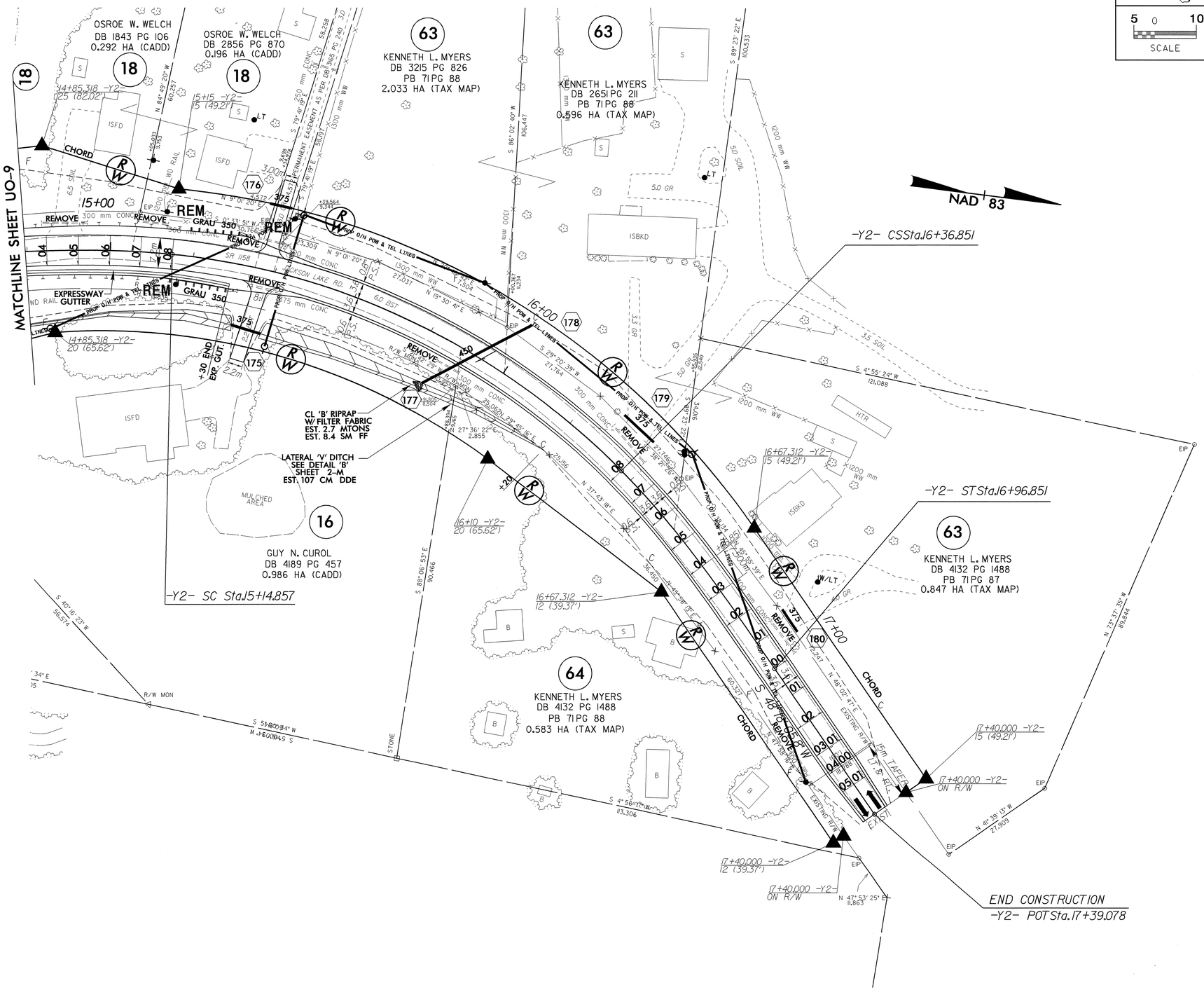
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-10

UTILITIES BY OTHERS

METRIC

5 0 10
SCALE

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



04-MAY-2006 14:14
r:\utilities\r0609ia_ut22_u010_psh.dgn
jhaire
PT PS92416

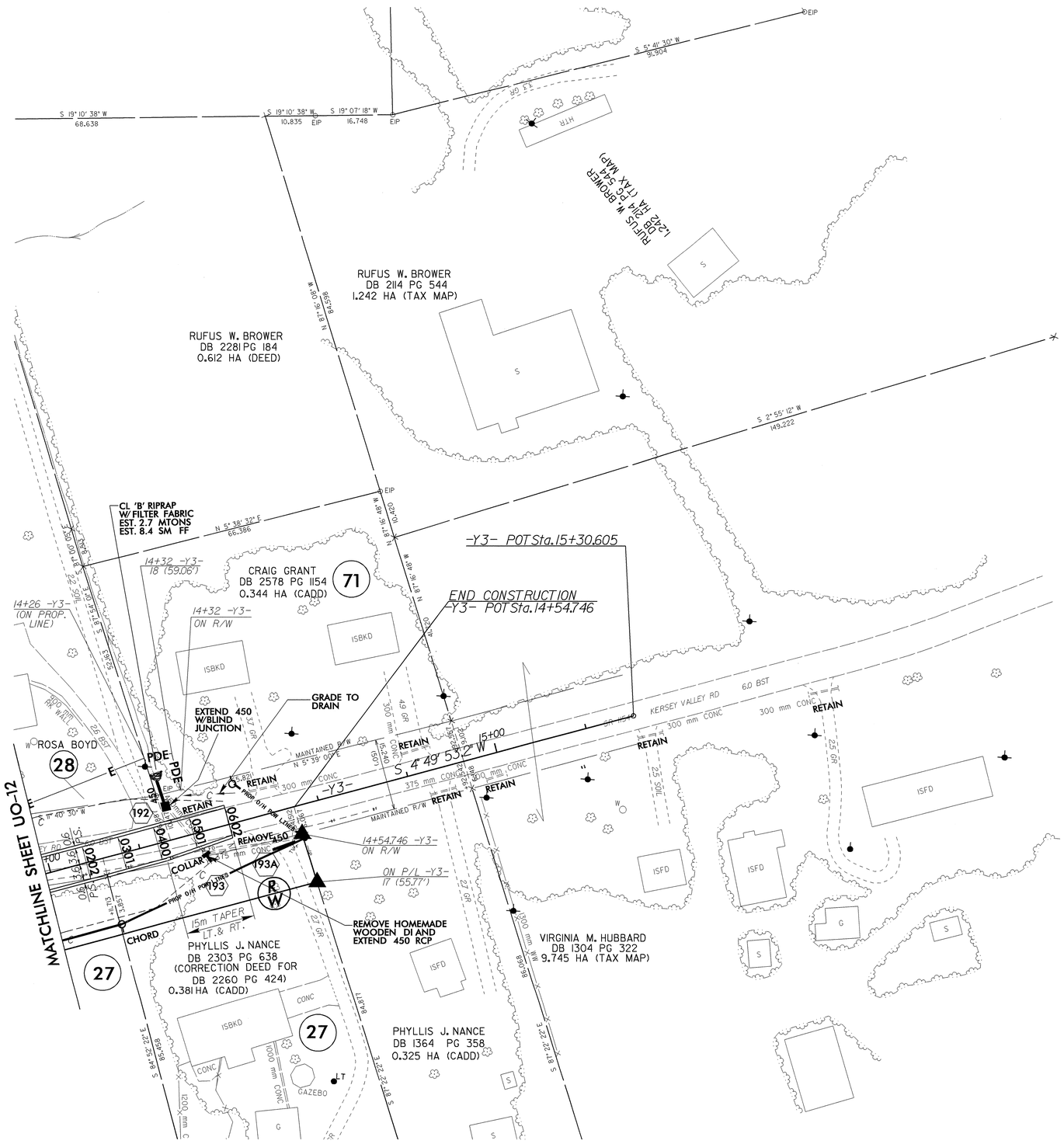
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-11

UTILITIES BY OTHERS

METRIC

5 0 10
SCALE

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



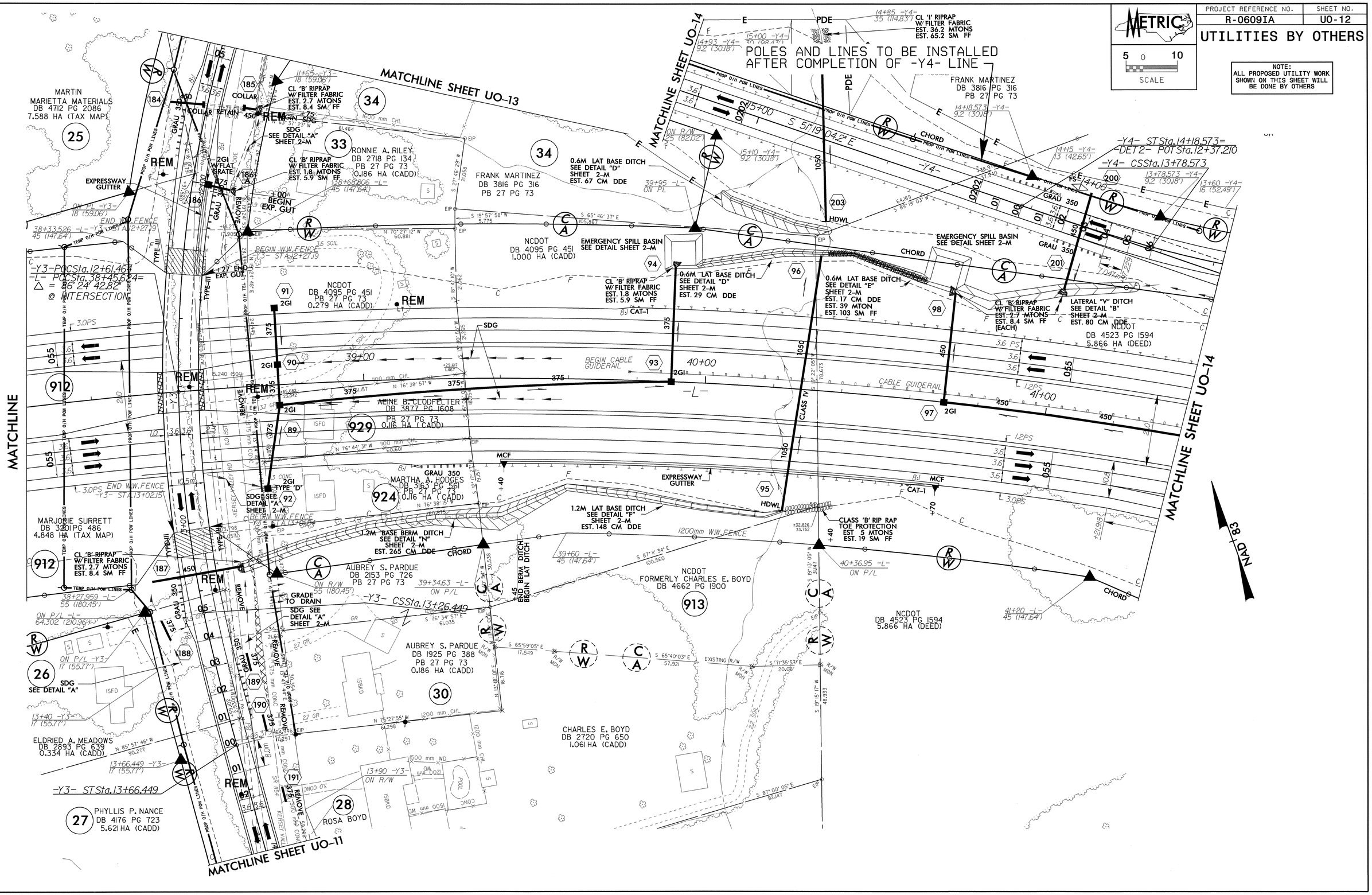
04-MAY-2006 14:43
r:\utilities\projects\r0609ia_ut_24_u011_psh.dgn
jnigro
PW:PS3124\16

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-12

UTILITIES BY OTHERS

METRIC
5 0 10
SCALE

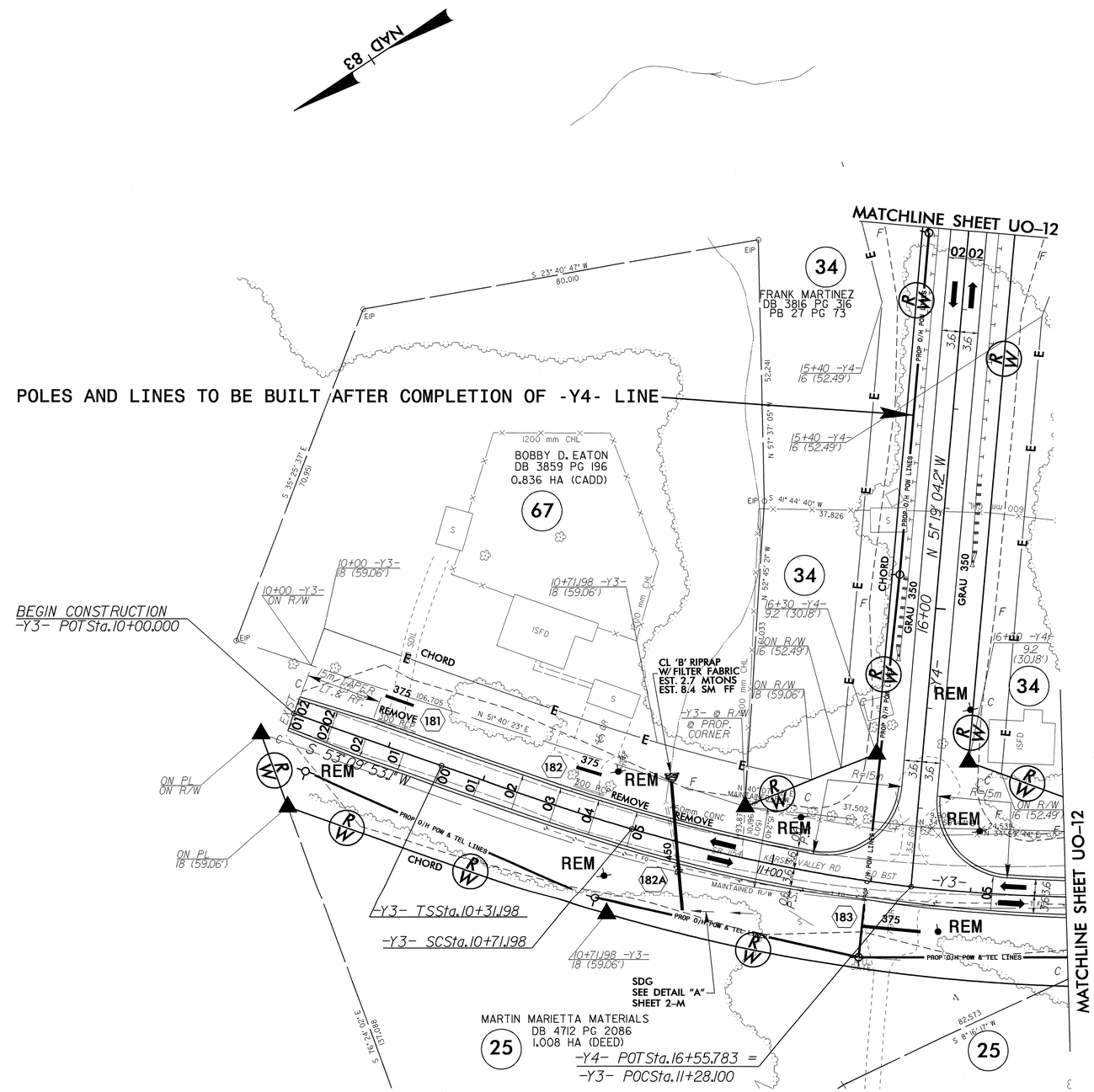
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10 SCALE	R-0609IA	U0-13

UTILITIES BY OTHERS

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



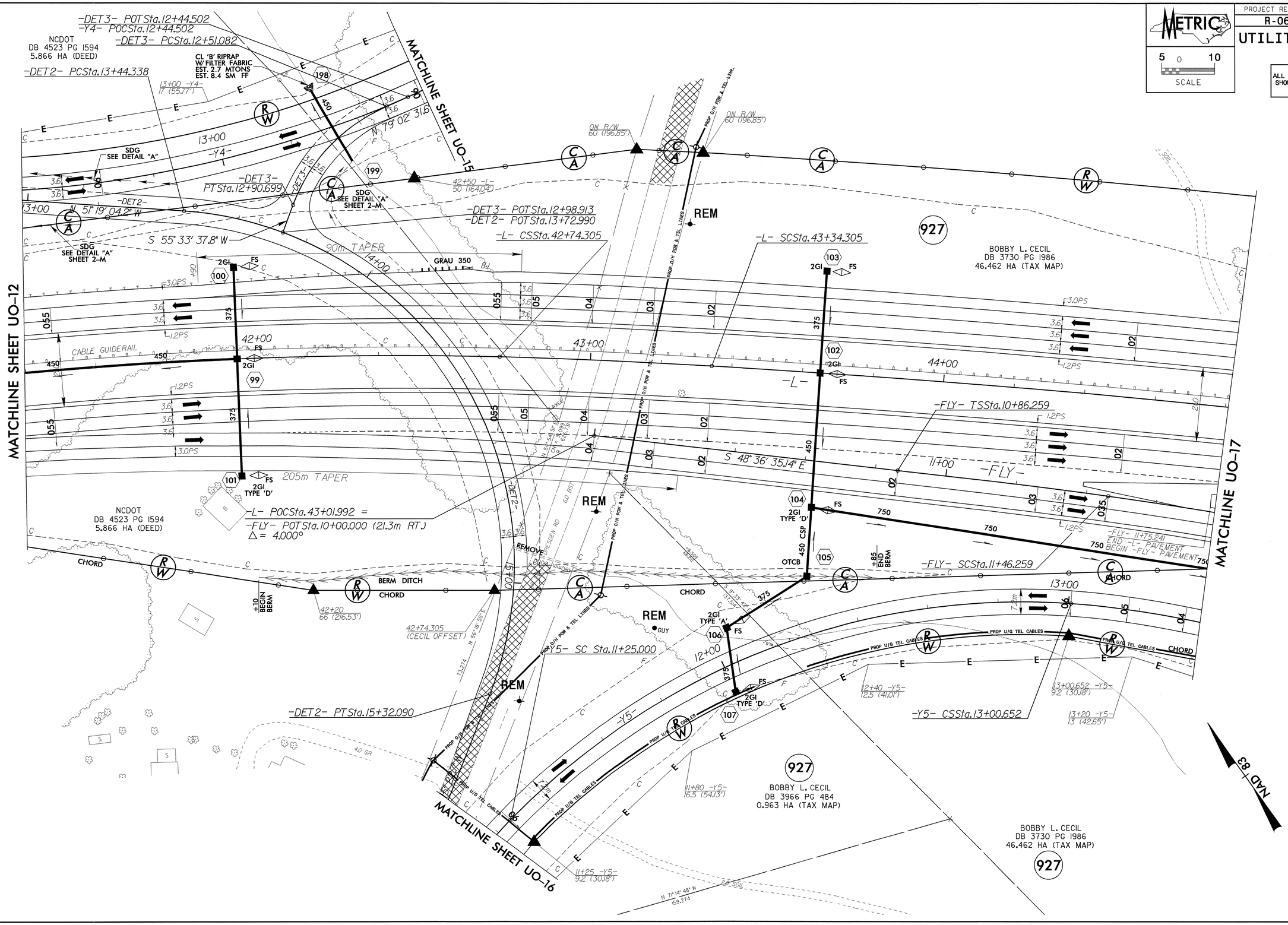
r:\util\r0609ia\u0\r0609ia_ut_23_ut13_psh.dgn
04-MAY-2006 14:41
bmcguire
24" PS:24"H

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UO-14

UTILITIES BY OTHERS

METRIC
5 0 10
SCALE

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



04-MAY-2006 14:34
r:\utilities\proj\2060909a_ut_14_uo14.pshdgn
jhigro
PW-PS52416

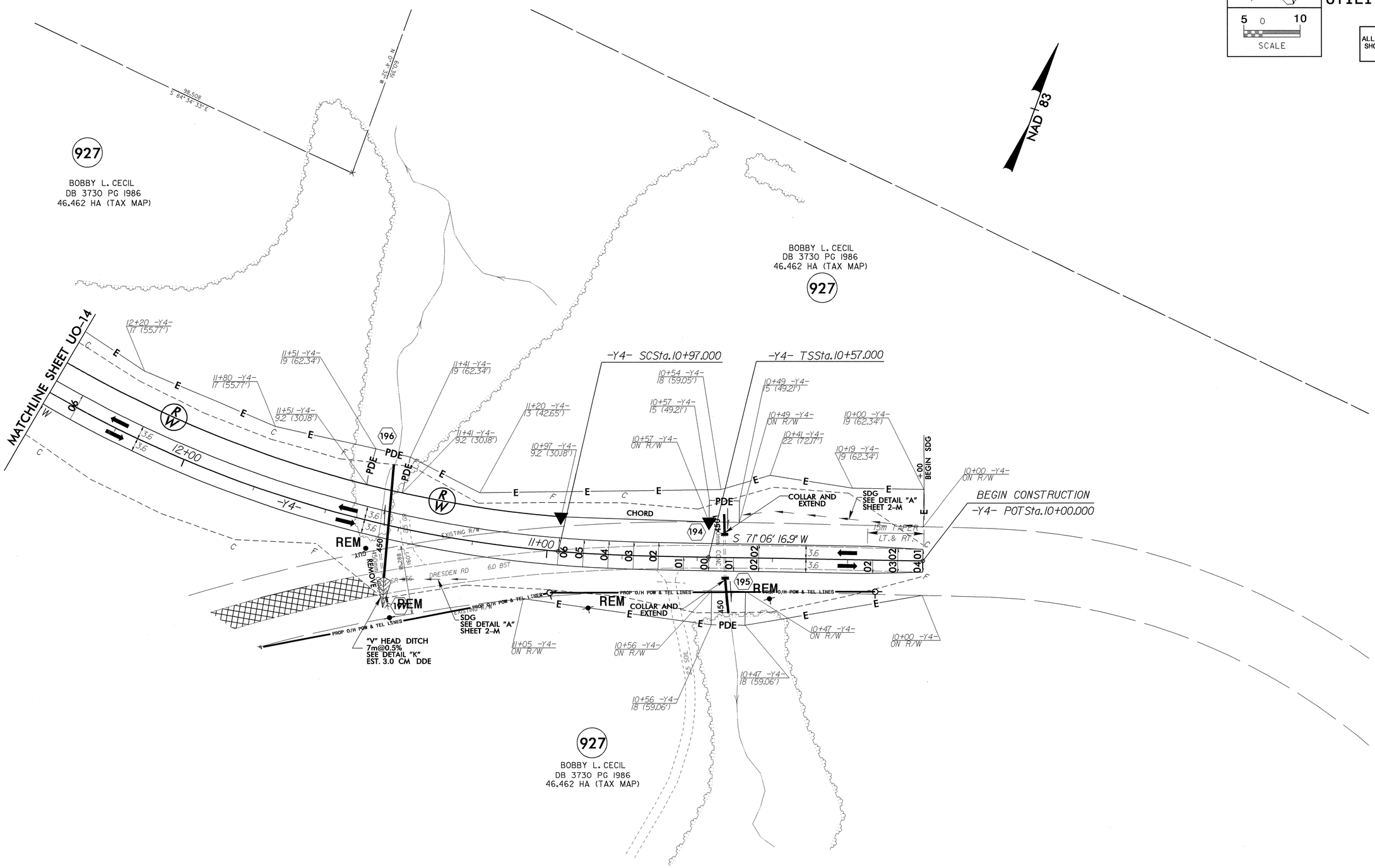
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-15

UTILITIES BY OTHERS

METRIC

5 0 10
SCALE

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



04-MAY-2006 14:31
r:\utilities\proj\r0609ia_ut_26_u015_pah.dgn
jnagro
PT-PS2416

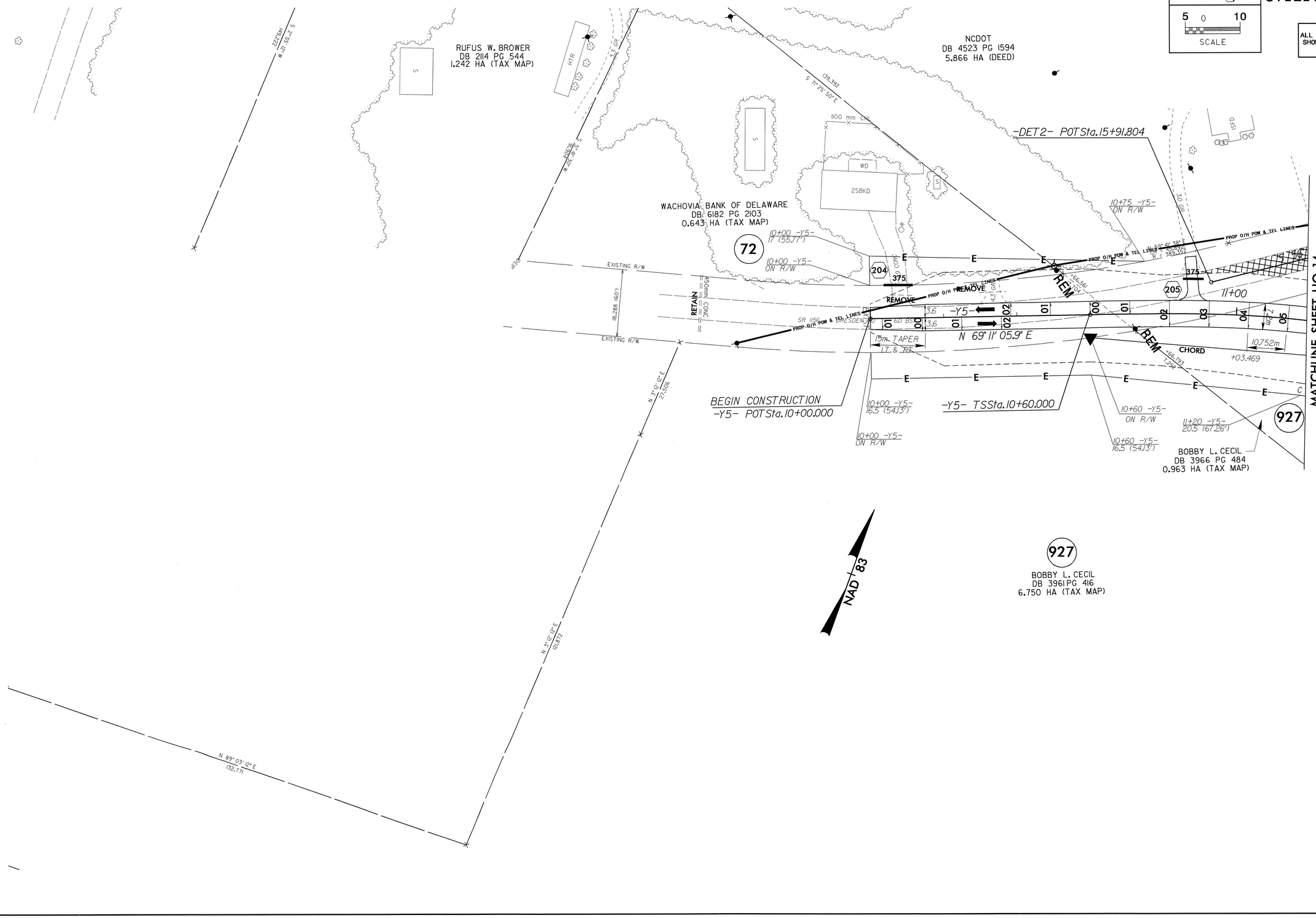
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-16

UTILITIES BY OTHERS

METRIC

5 0 10
SCALE

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



042597

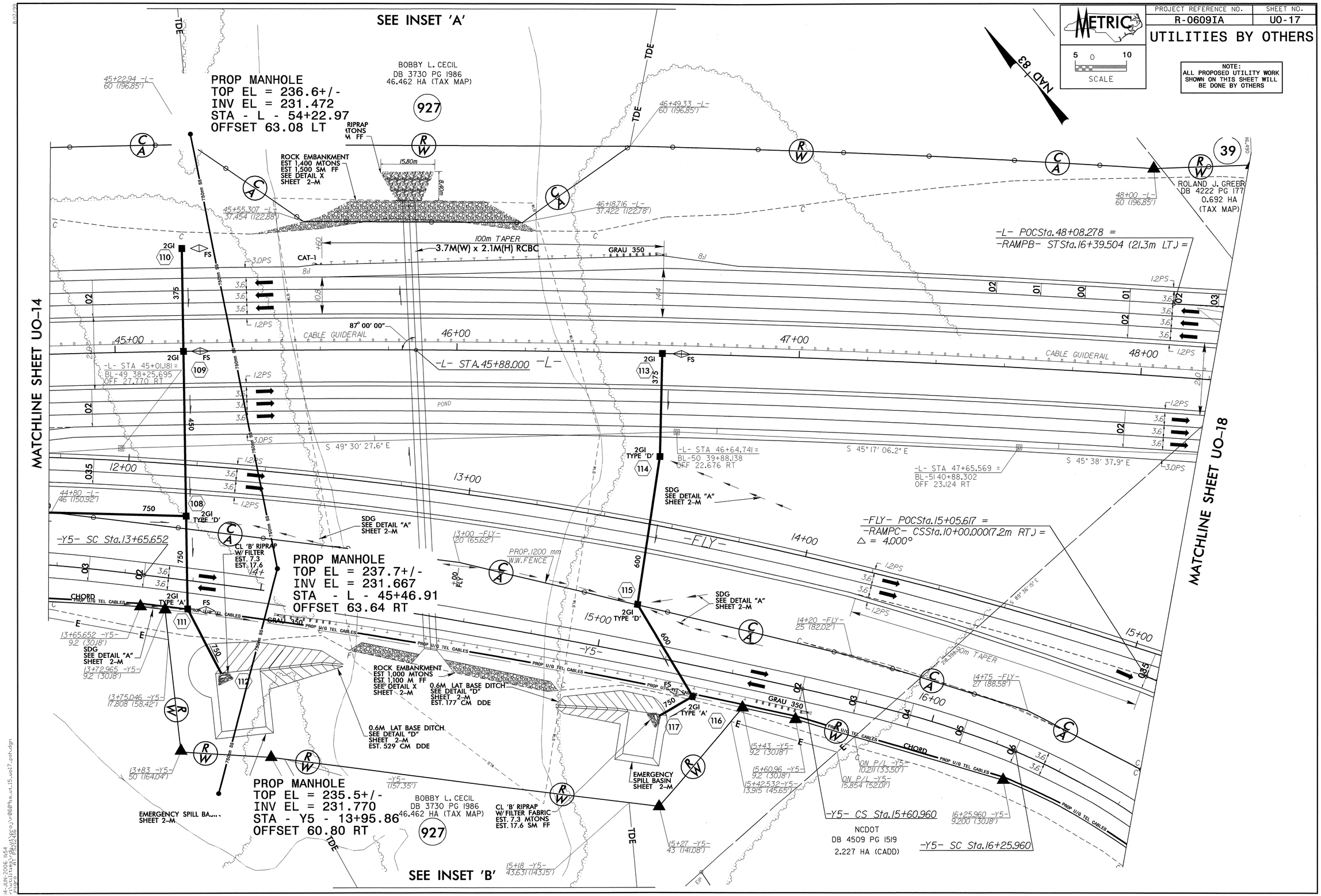
04-MAY-2006 14:30
r:\utilities\projects\0609%a_ut_25_u016_pth.dgn
pmacey

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-17

UTILITIES BY OTHERS

METRIC SCALE 5 0 10

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



042597

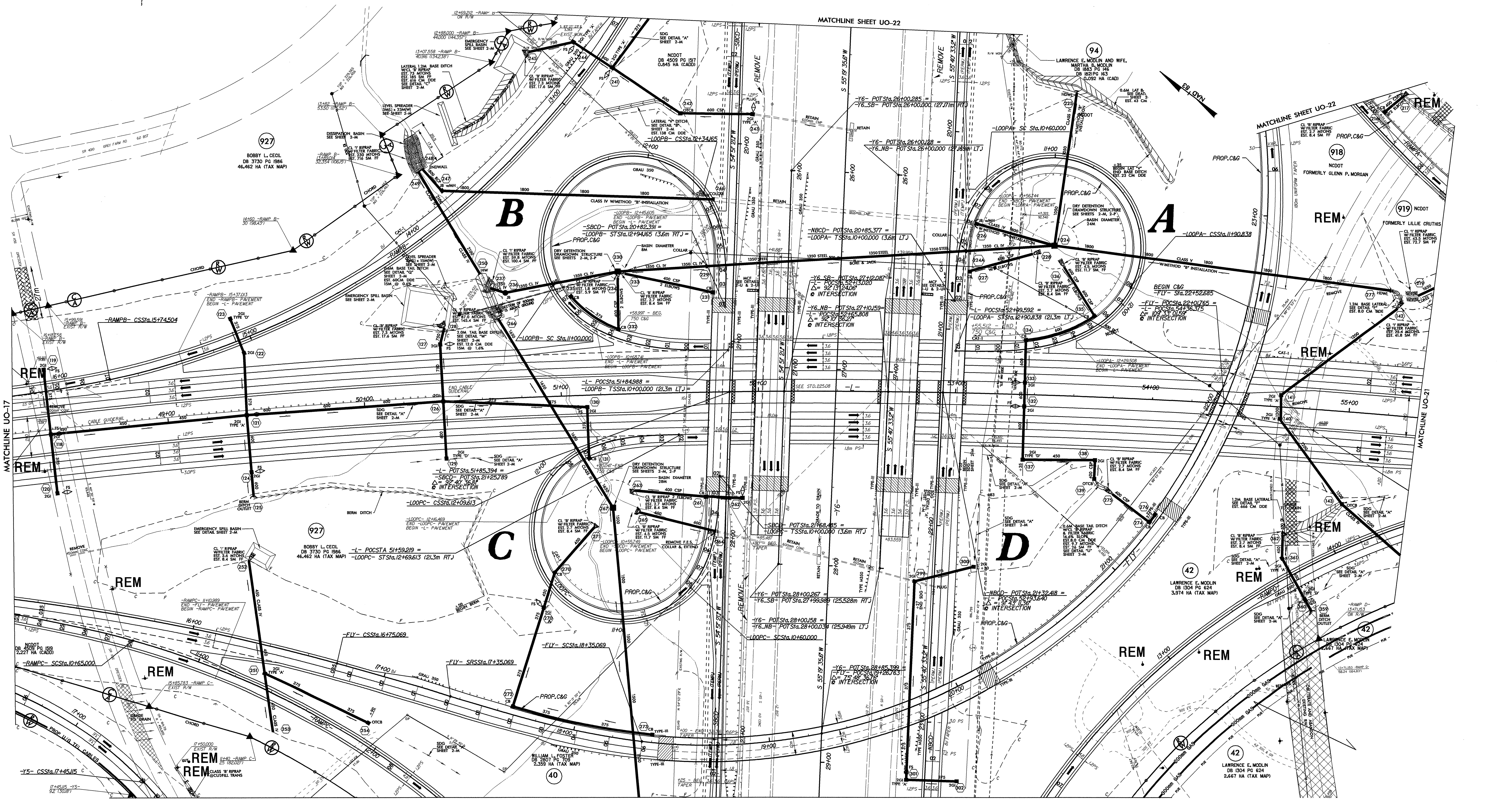
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UO-18

UTILITIES BY OTHERS

METRIC

10 0 20
SCALE

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

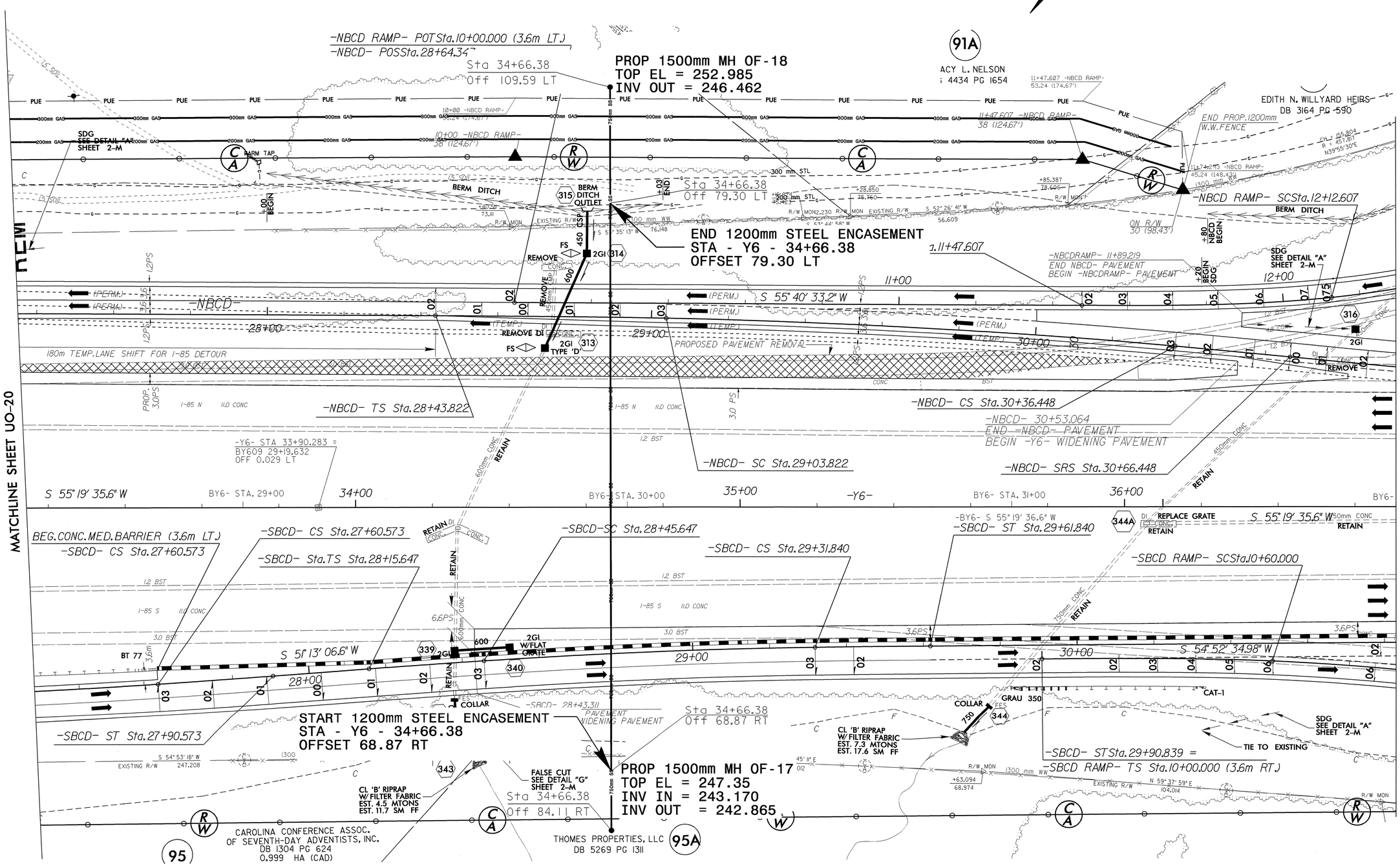


PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-19

UTILITIES BY OTHERS

METRIC — 5 0 10 SCALE

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



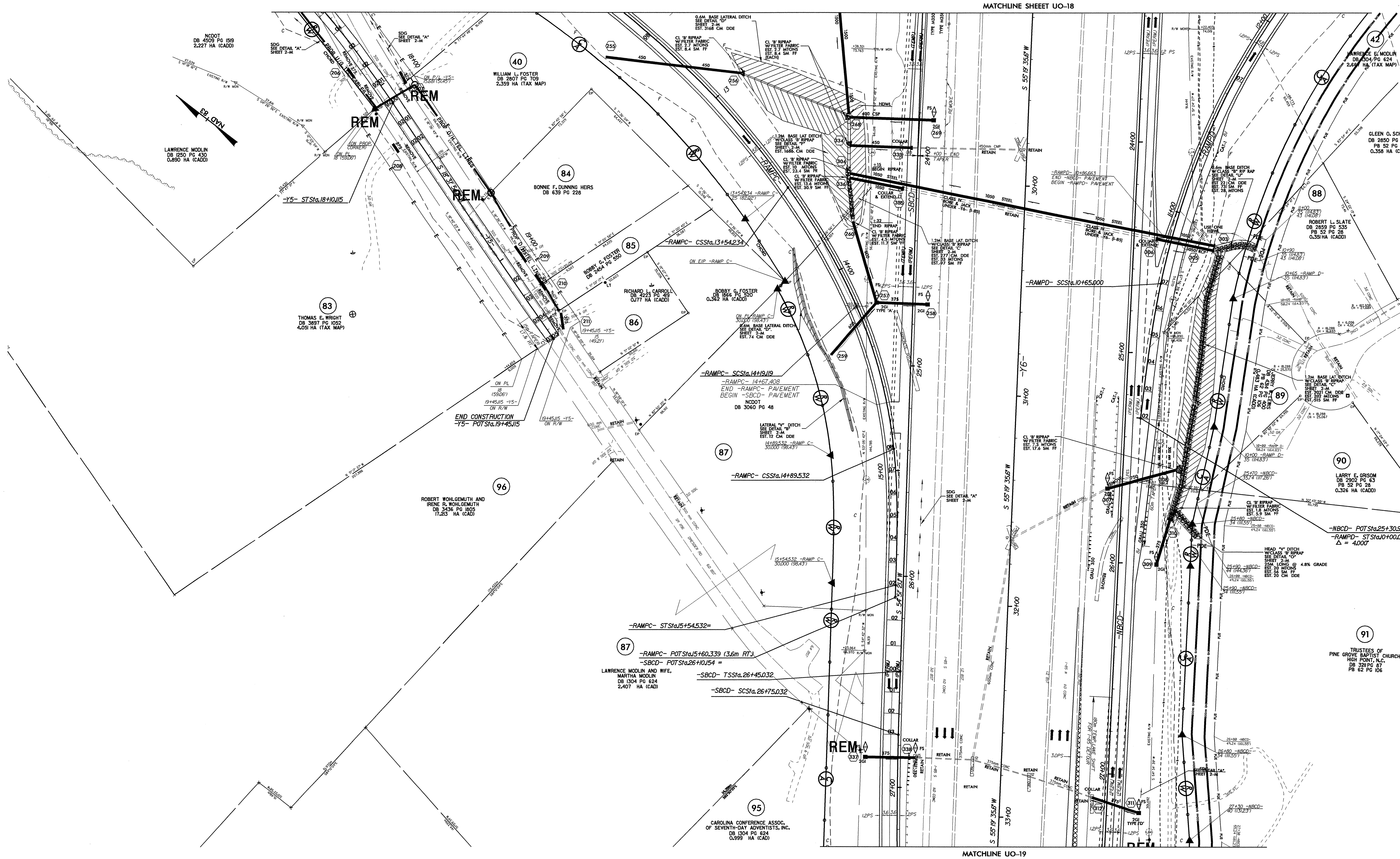
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	UO-20

UTILITIES BY OTHERS

METRIC

10 0 20
SCALE

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

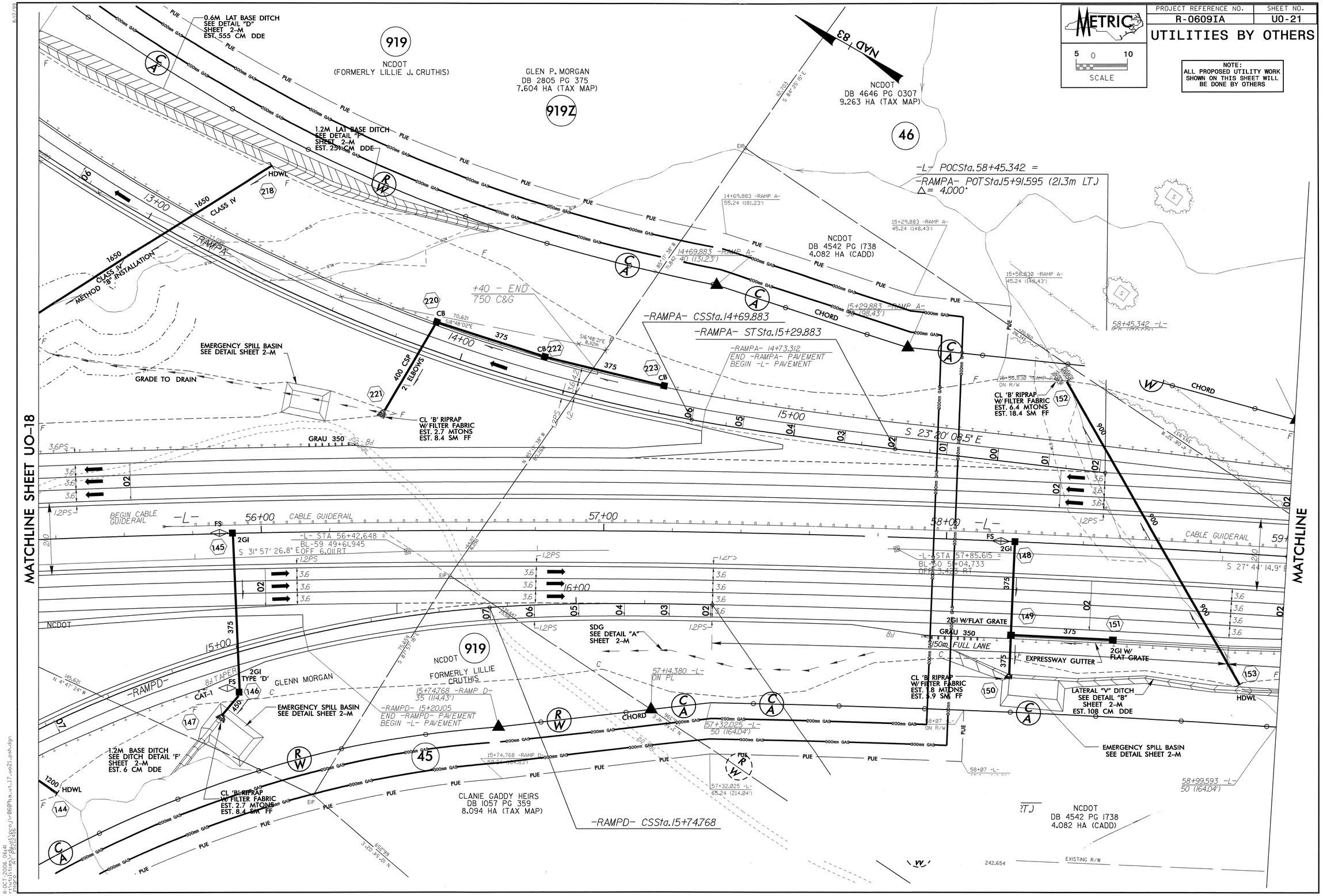


PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-21

UTILITIES BY OTHERS

METRIC SCALE 5 0 10

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



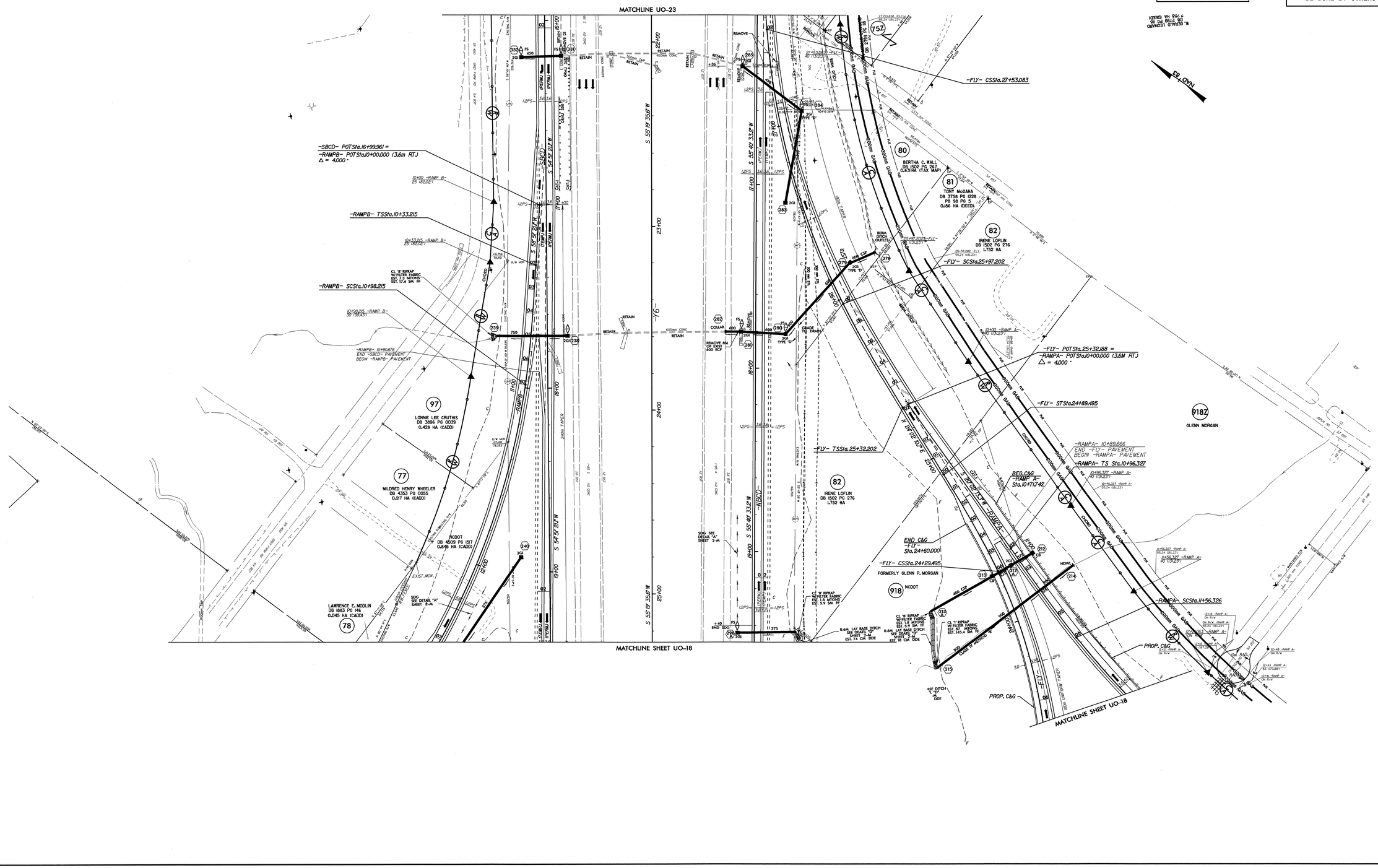
PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-22

UTILITIES BY OTHERS

METRIC

10 0 20
SCALE

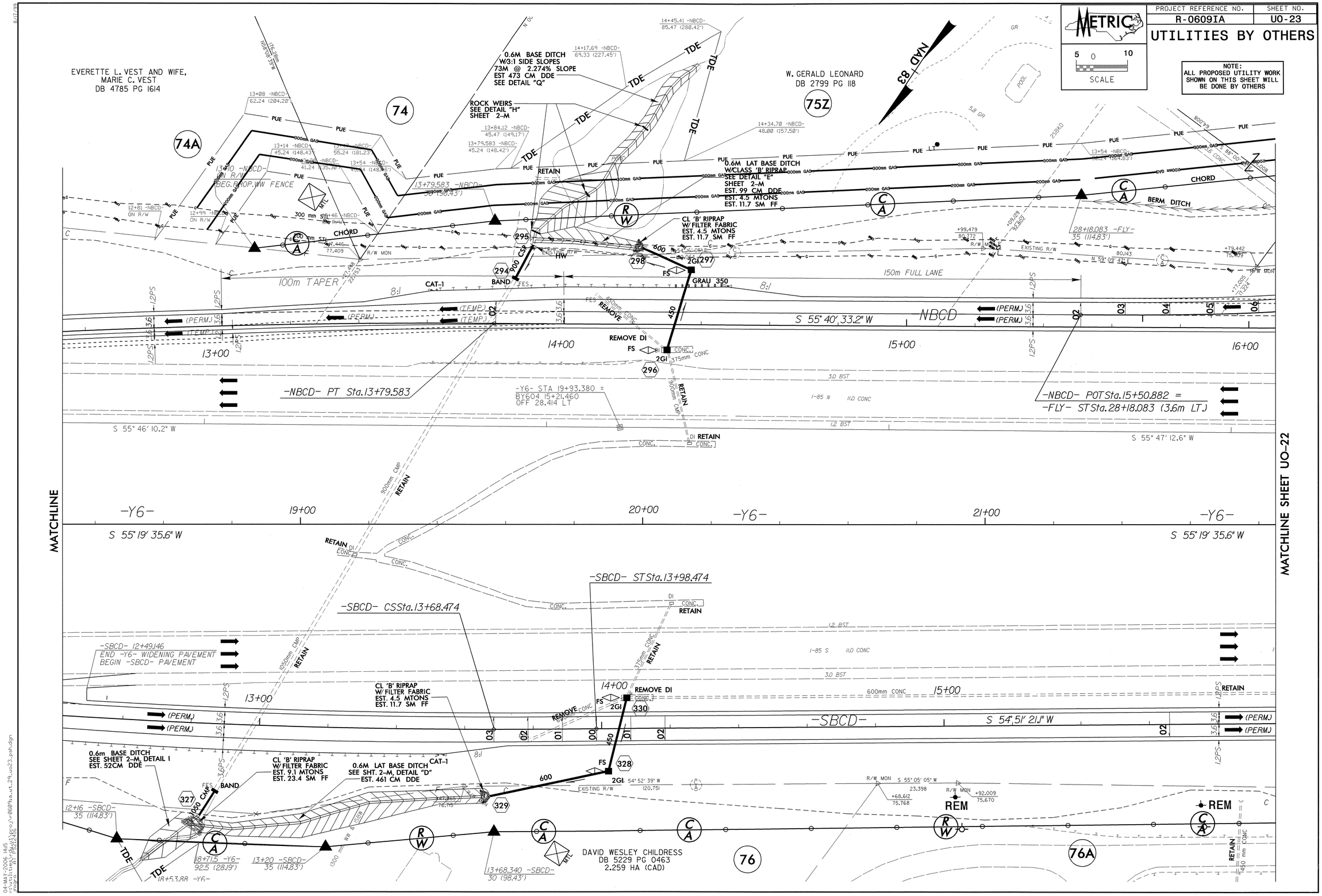
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS



r:\utilities\proj\r0609ia_ut_30_uo22_psh.dgn
12-JUN-2006 08:57
mcarey
pw:\\pwdc1\pwdc1_01\pw_work\documents\36512416\r0609ia_ut_30_uo22_psh.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-0609IA	U0-23

UTILITIES BY OTHERS

METRIC SCALE 5 0 10

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