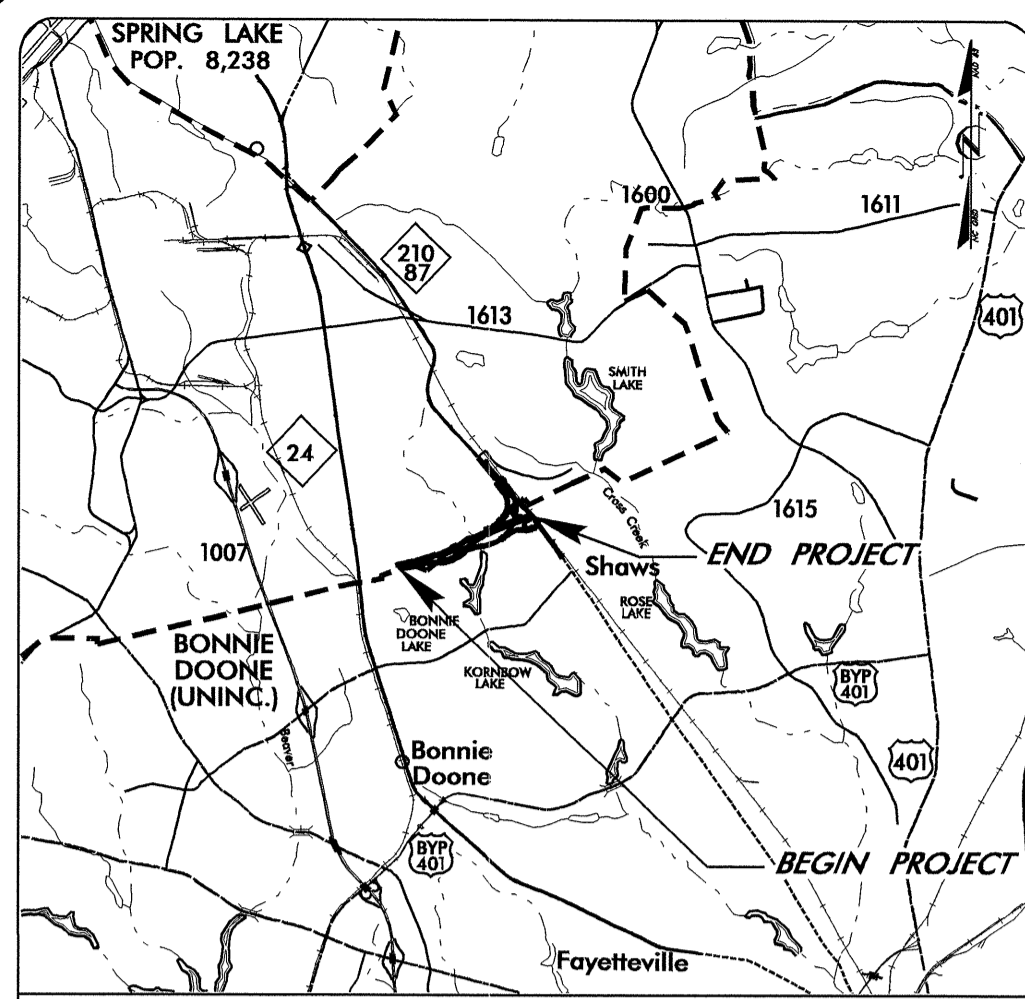


9/09/99

TIP PROJECT: X-0002B



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

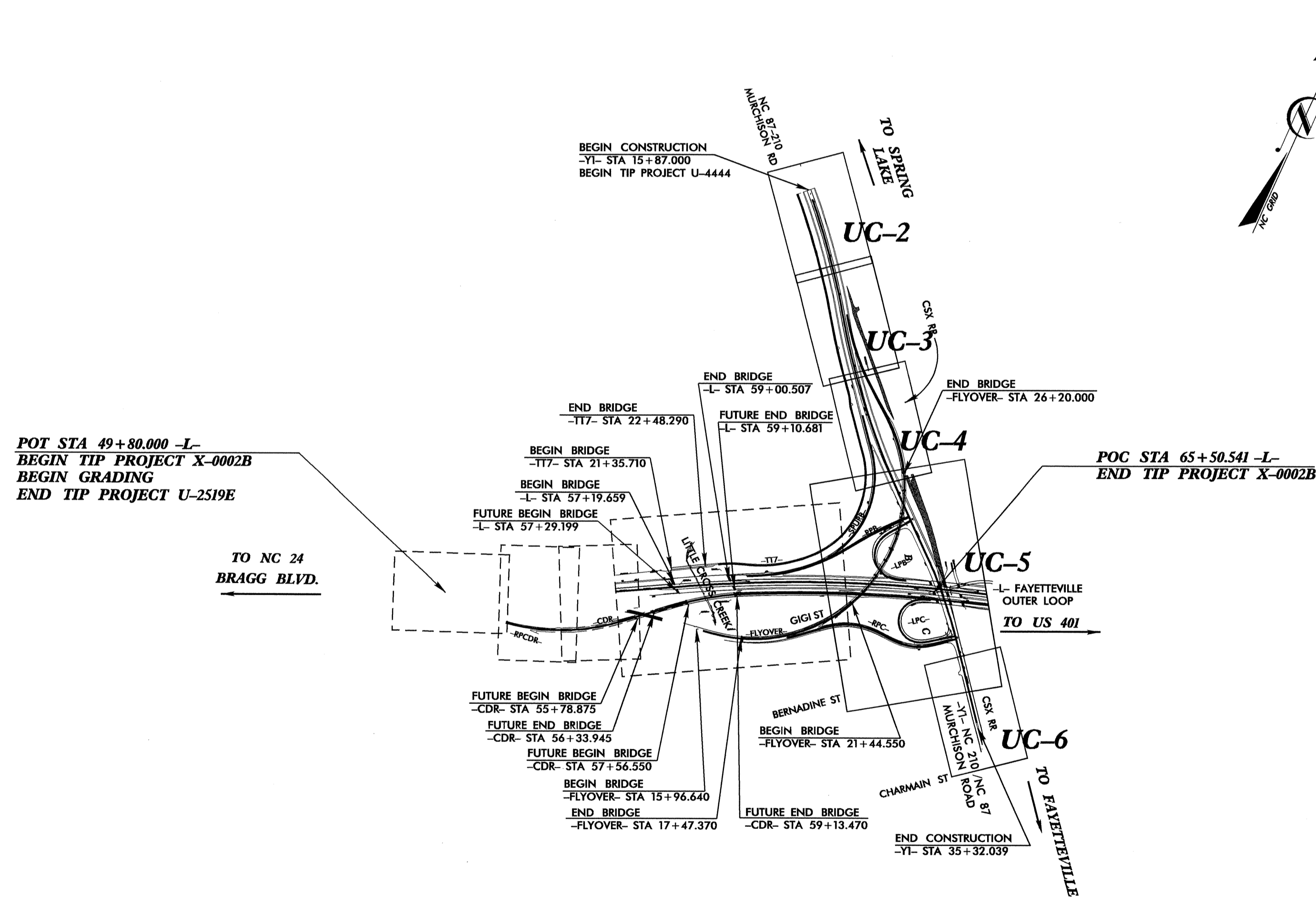
**UTILITY CONSTRUCTION PLANS
CUMBERLAND COUNTY**

**LOCATION: FAYETTEVILLE OUTER LOOP FROM EAST
OF NC 24 (BRAGG BLVD.) TO
NC 87 / NC 210 (MURCHISON RD.)**

TYPE OF WORK: UTILITY CONSTRUCTION

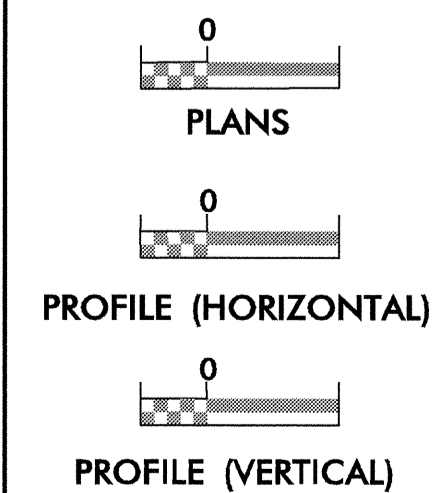
METRIC
ALL DIMENSIONS IN
THESE PLANS ARE IN METERS
AND/OR MILLIMETERS
UNLESS OTHERWISE SHOWN

T.I.P. NO.	SHEET NO.
X-0002B	UC-1



PART 2 OF 2

GRAPHIC SCALES



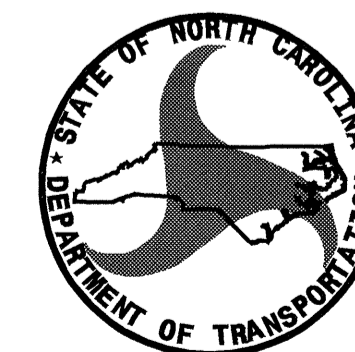
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2 THRU UC-6	UTILITY CONSTRUCTION PLAN SHEETS
UC-7	PROFILE SHEET
UC-8	DETAIL SHEET

WATER AND SEWER OWNERS ON PROJECT

(1) WATER - FAYETTEVILLE PWC

SEAL

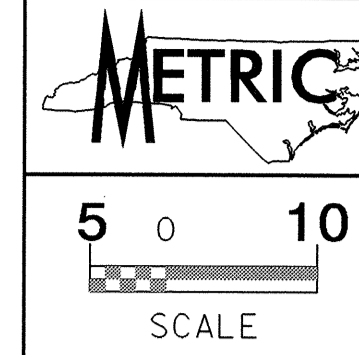


PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
PROJECT SERVICES
UTILITY SECTION**

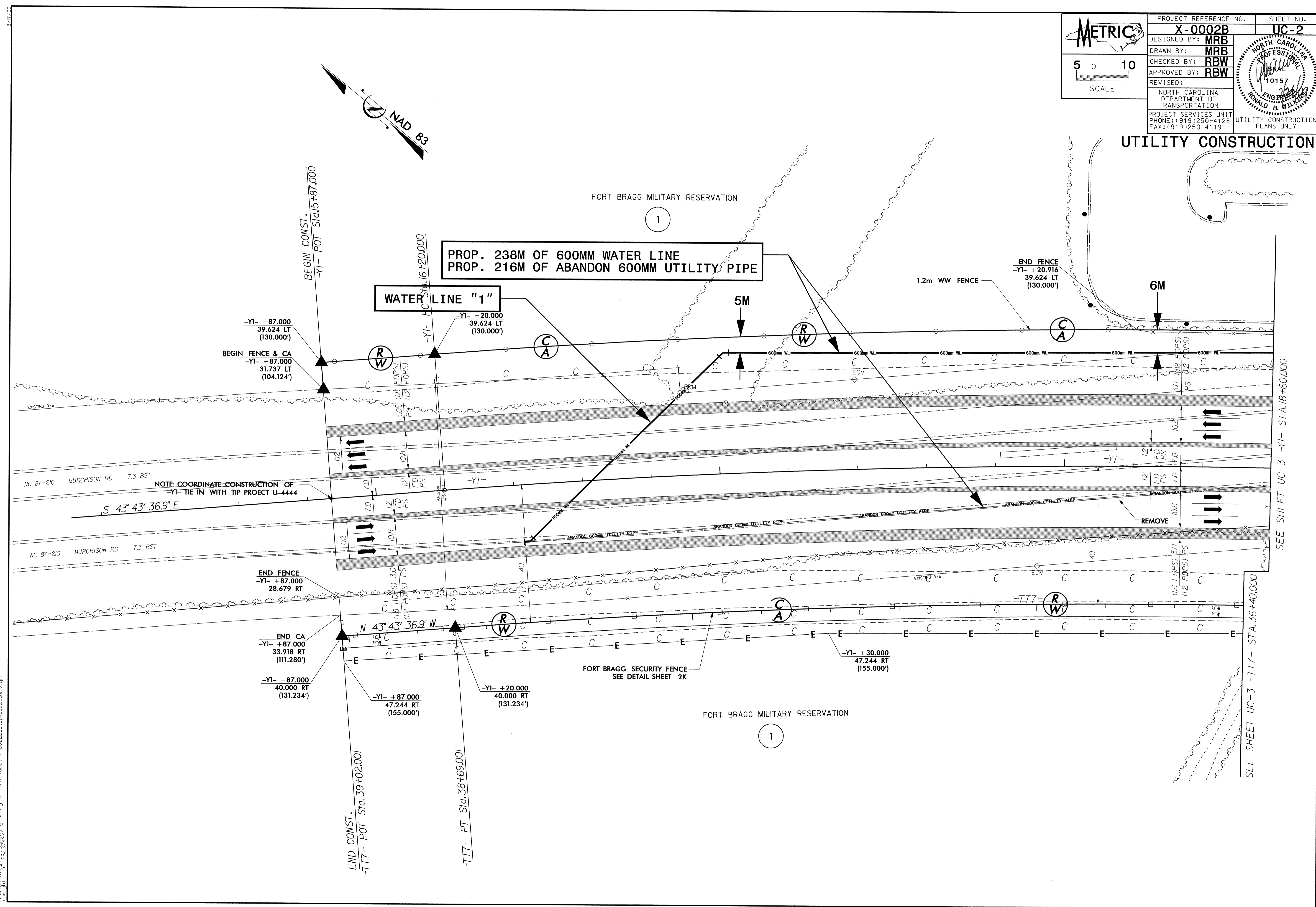
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
R. B. WILKINS, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
MICHAEL R. BRIGHT UTILITIES PROJECT DESIGNER


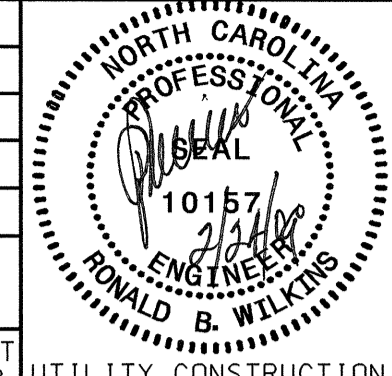
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albert@pdc.com



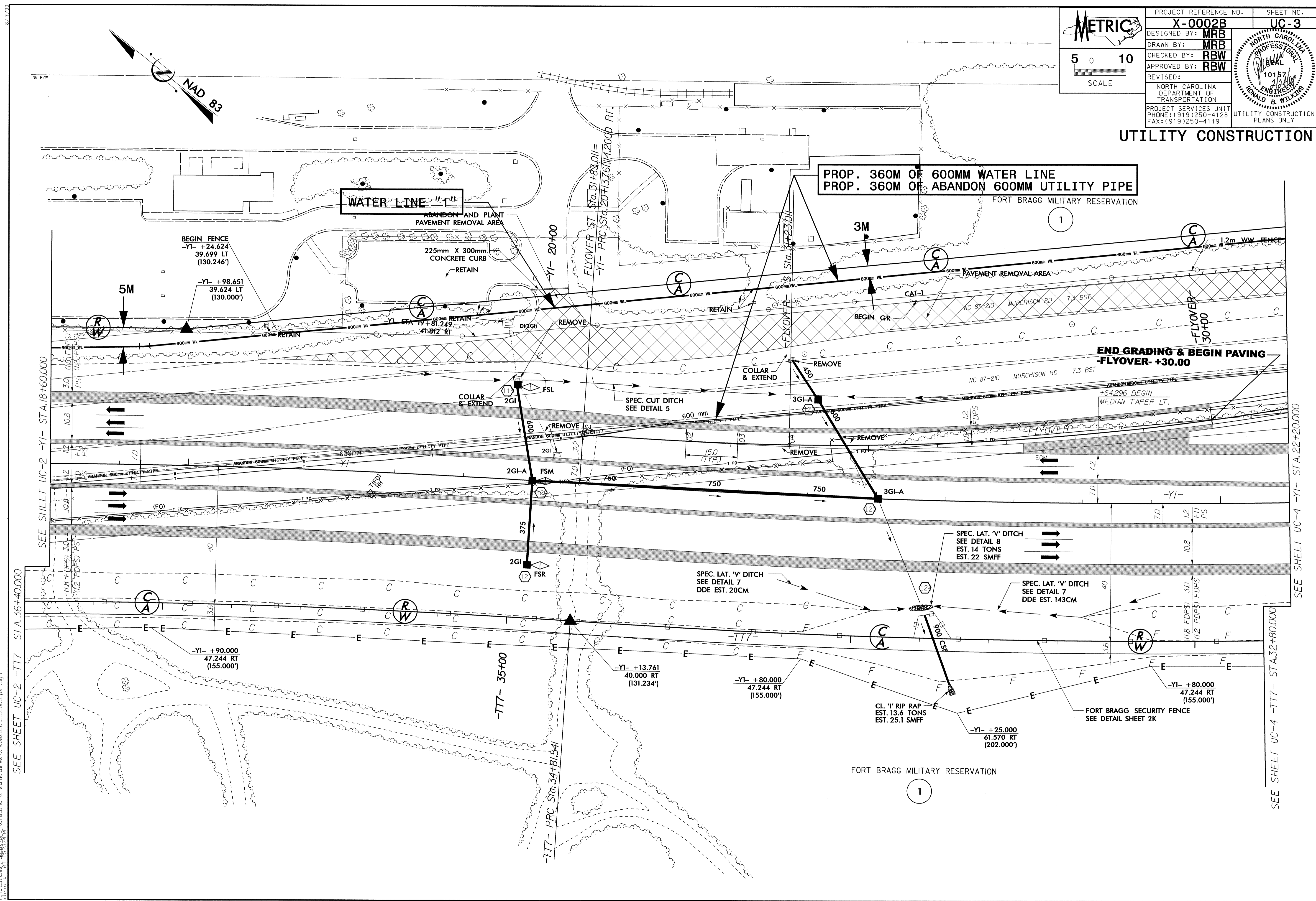
PROJECT REFERENCE NO.	X-0002B	SHEET NO.	UC-2
DESIGNED BY:	MRB		
DRAWN BY:	MRB		
CHECKED BY:	RBW		
APPROVED BY:	RBW		
REVISER:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION			



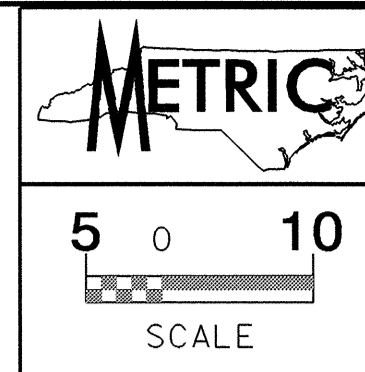
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 8/17/09

 5 0 10 SCALE	PROJECT REFERENCE NO.	X-0002B	SHEET NO.	UC-3
	DESIGNED BY:	MRB		
	DRAWN BY:	MRB		
	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



23-FEB-2009 08:47
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 Plot: UC3.dwg

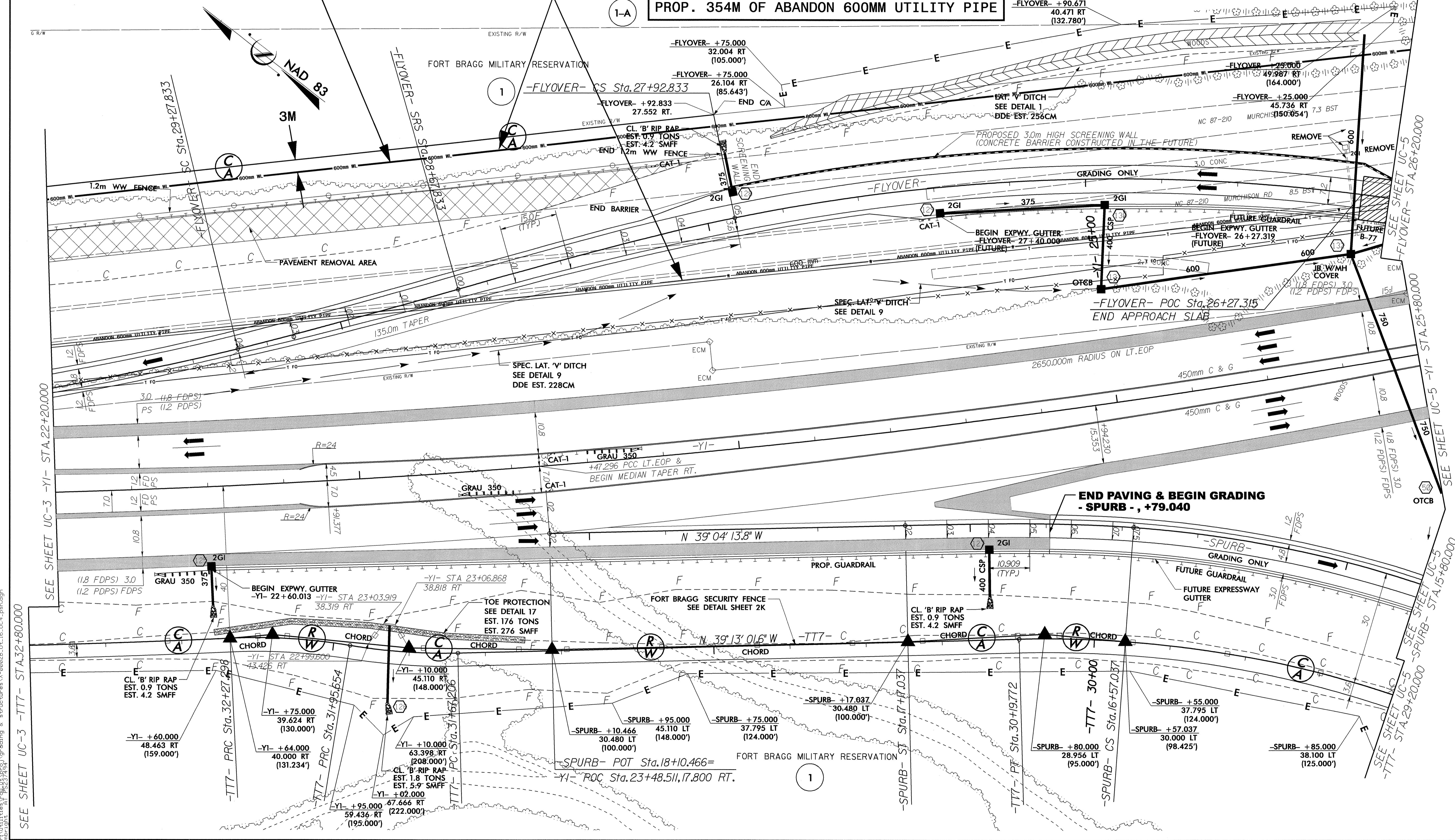


PROJECT REFERENCE NO.	SHEET NO.
X-0002B	UC-4
DESIGNED BY: MRB	
DRAWN BY: MRB	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119	
UTILITY CONSTRUCTION PLANS ONLY	

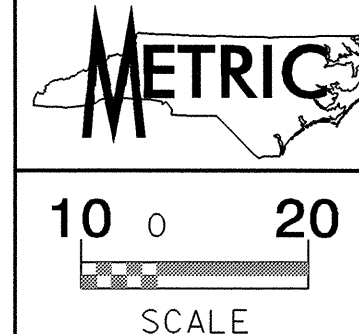
WATER LINE "1"

PROP. 360M OF 600MM WATER LINE
PROP. 354M OF ABANDON 600MM UTILITY PIPE

UTILITY CONSTRUCTION



23-FEB-2009 08:47
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 See SHEET UC-3 -TT7- STA 32+80.000
 See SHEET UC-3 -YI- STA 22+20.000
 See SHEET UC-5 -TT7- STA 29+20.000
 See SHEET UC-5 -SPURB- STA 15+80.000
 See SHEET UC-5 -FLYOVER- STA 26+20.000
 See SHEET UC-5 -YI- STA 25+80.000



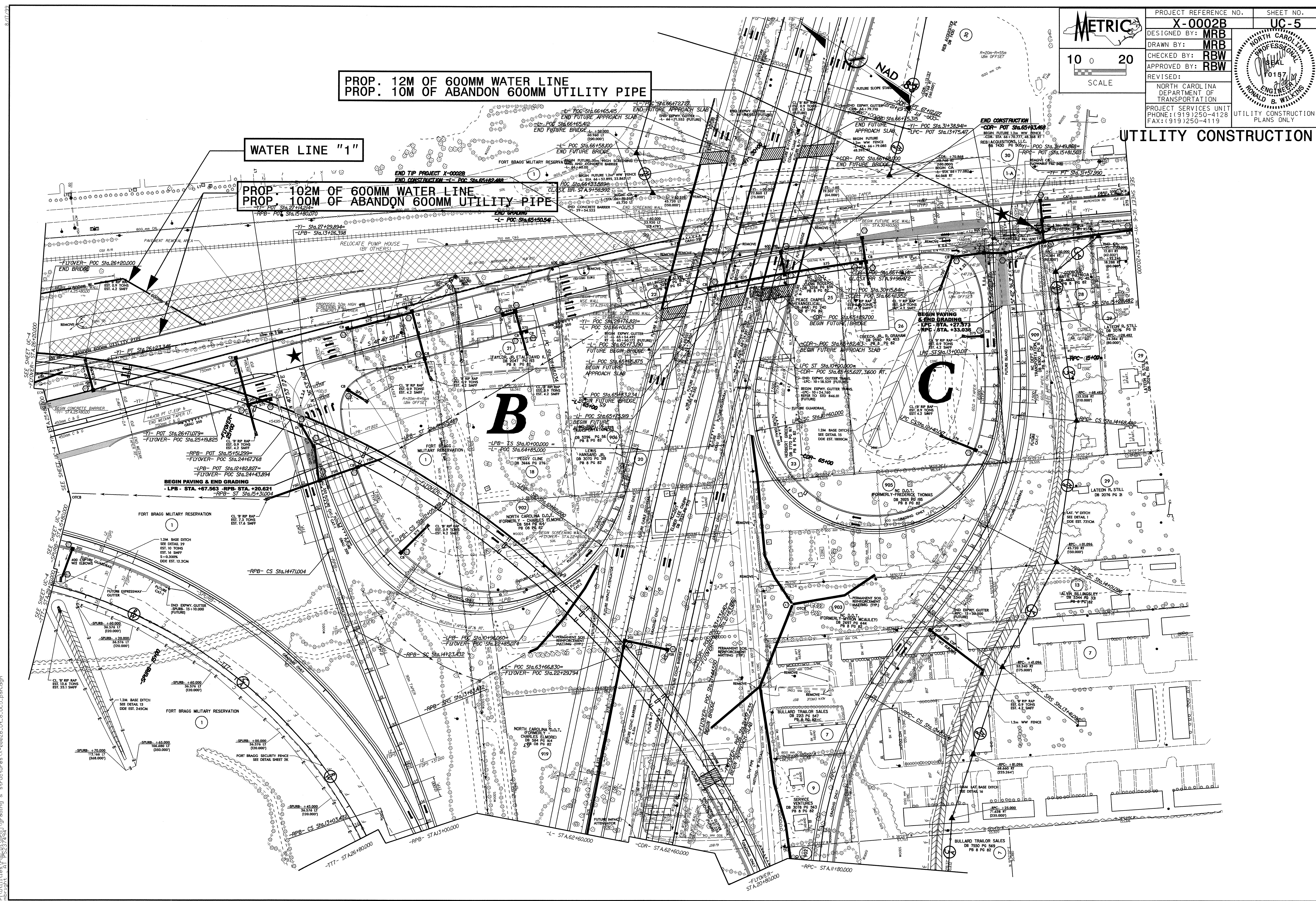
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DESIGNED BY:	MRB		
DRAWN BY:	MRB		
CHECKED BY:	RBW		
APPROVED BY:	RBW		
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE: (919) 250-4128 FAX: (919) 250-4119		UTILITY CONSTRUCTION PLANS ONLY	

**PROP. 12M OF 600MM WATER LINE
PROP. 10M OF ABANDON 600MM UTILITY PIPE**

WATER LINE "1"

**PROP. 102M OF 600MM WATER LINE
PROP. 100M OF ABANDON 600MM UTILITY PIPE**

UTILITY CONSTRUCTION

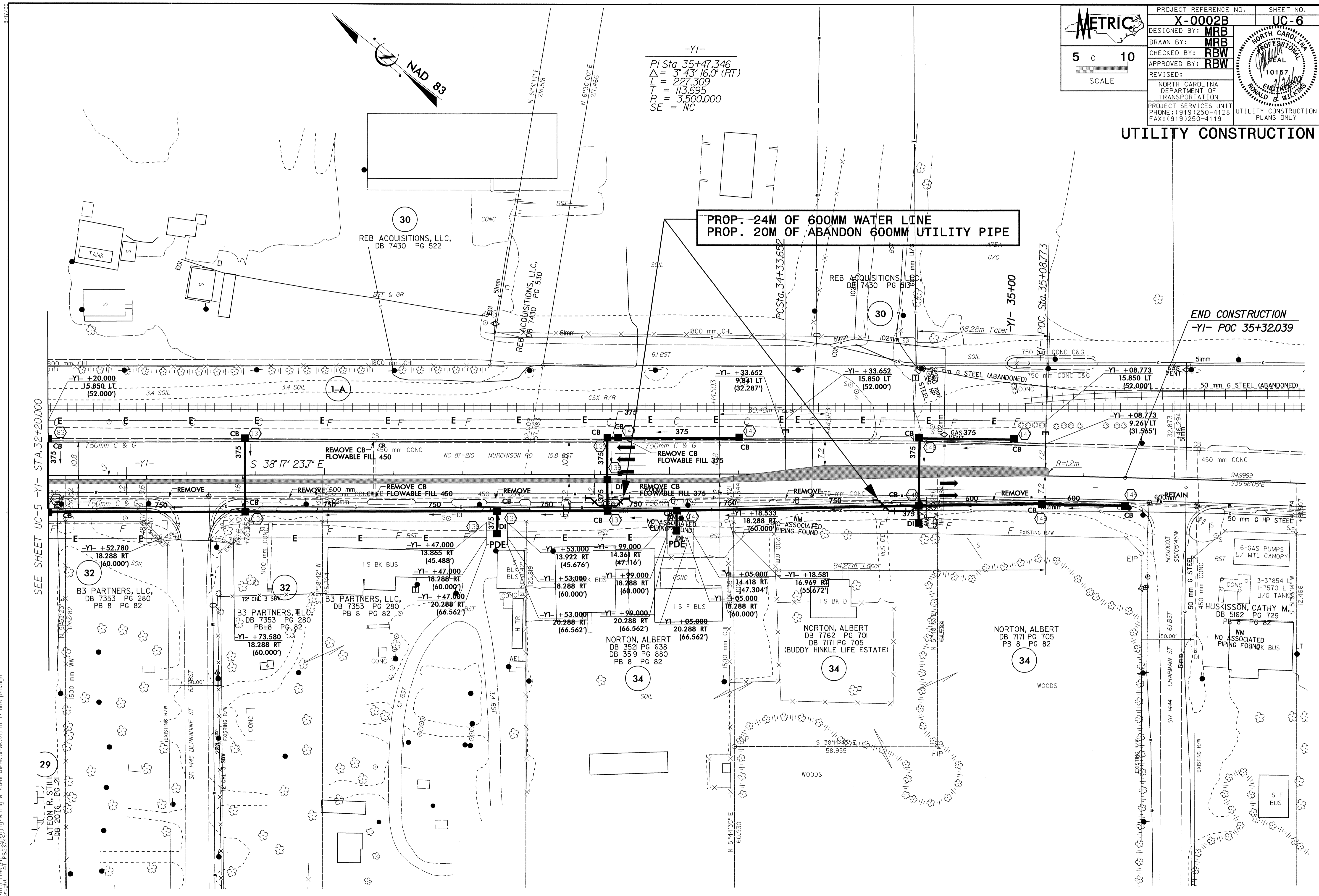


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UTILITY CONSTRUCTION

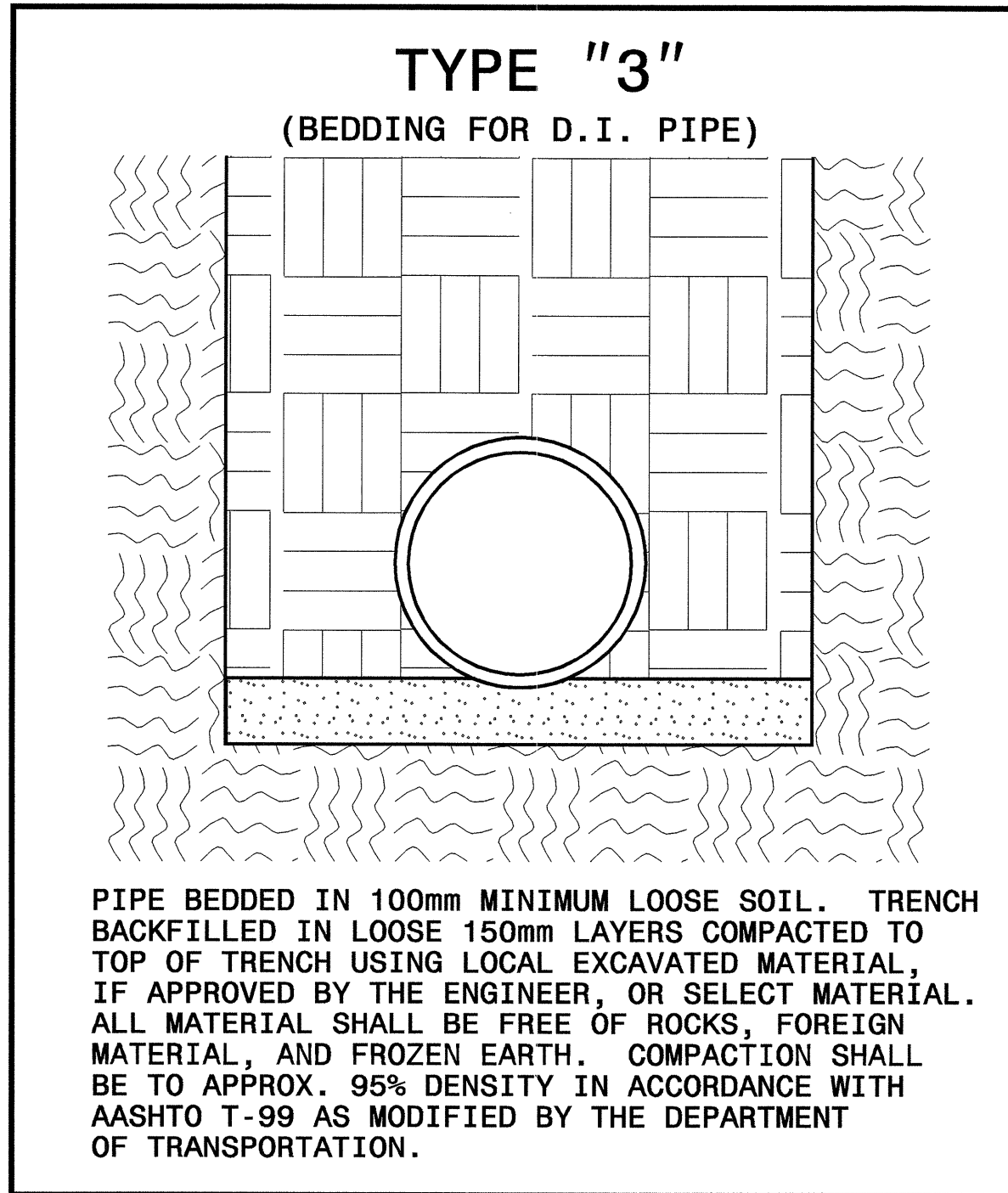
-YI-
 PI Sta 35+47.346
 $\Delta = 3^{\circ} 43' 16.0''$ (RT)
 L = 227.309
 R = 113,695
 SE = 3,500.000
 SE = NC

PROP. 24M OF 600MM WATER LINE
 PROP. 20M OF ABANDON 600MM UTILITY PIPE



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 User: b1 p5237254

8/17/99



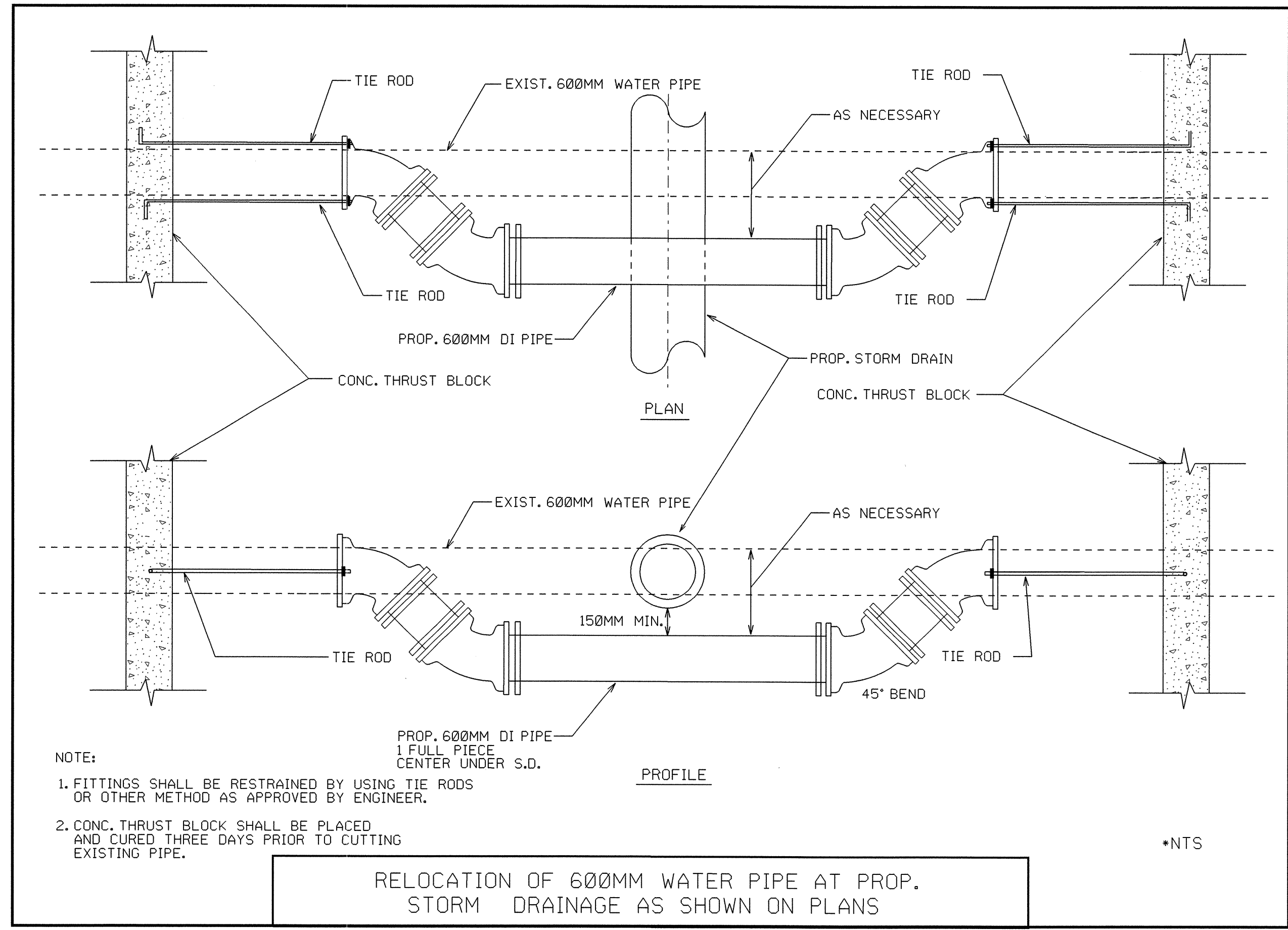
MAXIMUM TRENCH WIDTH AT TOP OF PIPE

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		

SCALE

PROJECT REFERENCE NO.	SHEET NO.
X-0002B	UC-8
DESIGNED BY: MRB	
DRAWN BY: MRB	
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

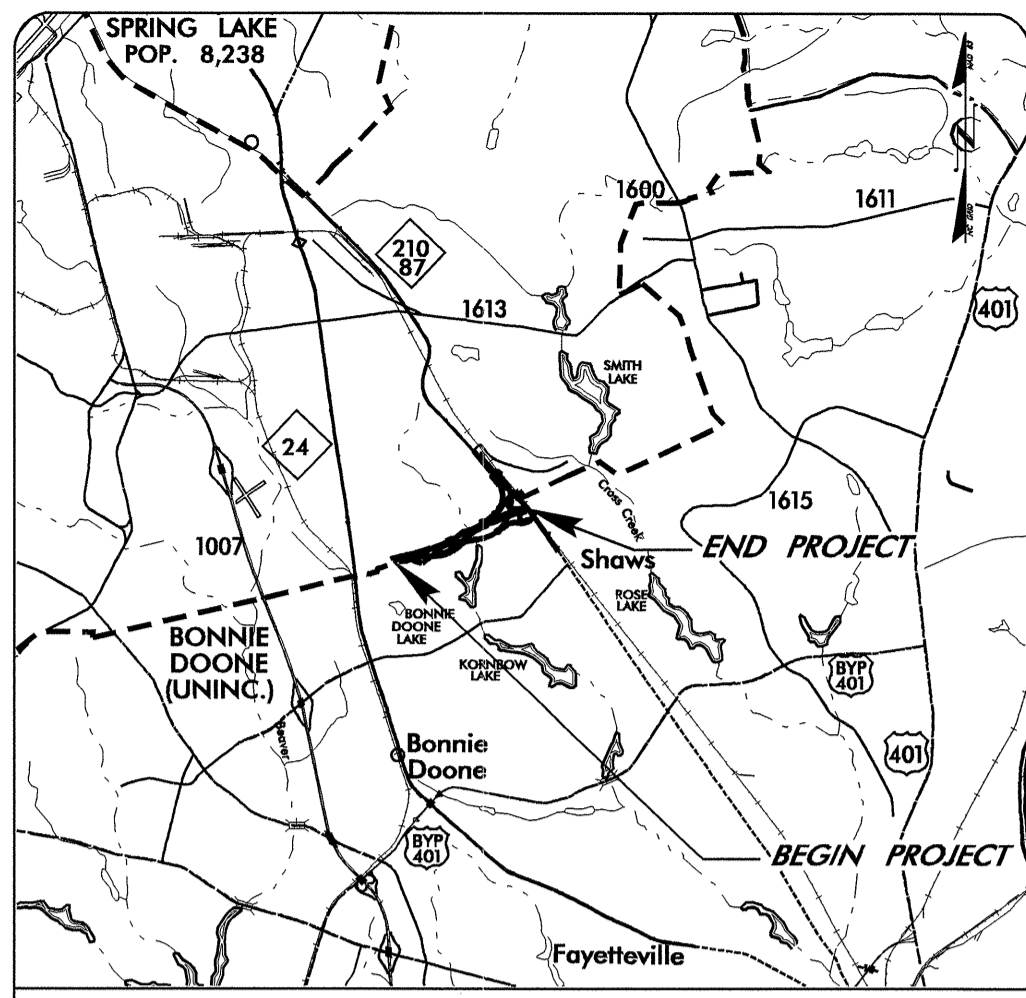
UTILITY CONSTRUCTION



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TIP PROJECT: X-0002B

9/09/99



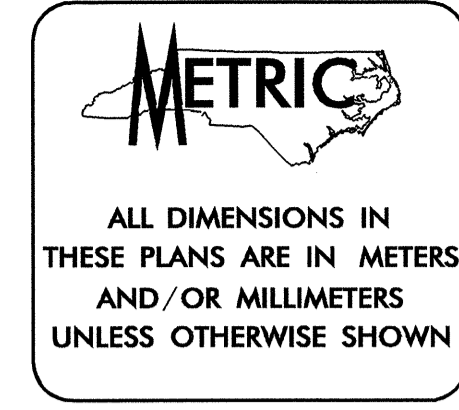
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

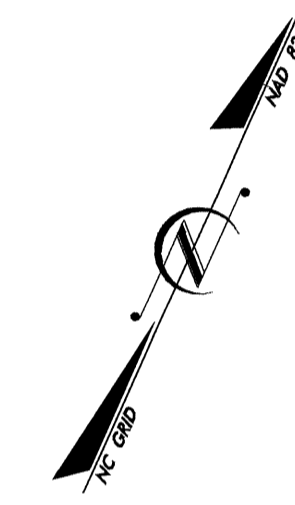
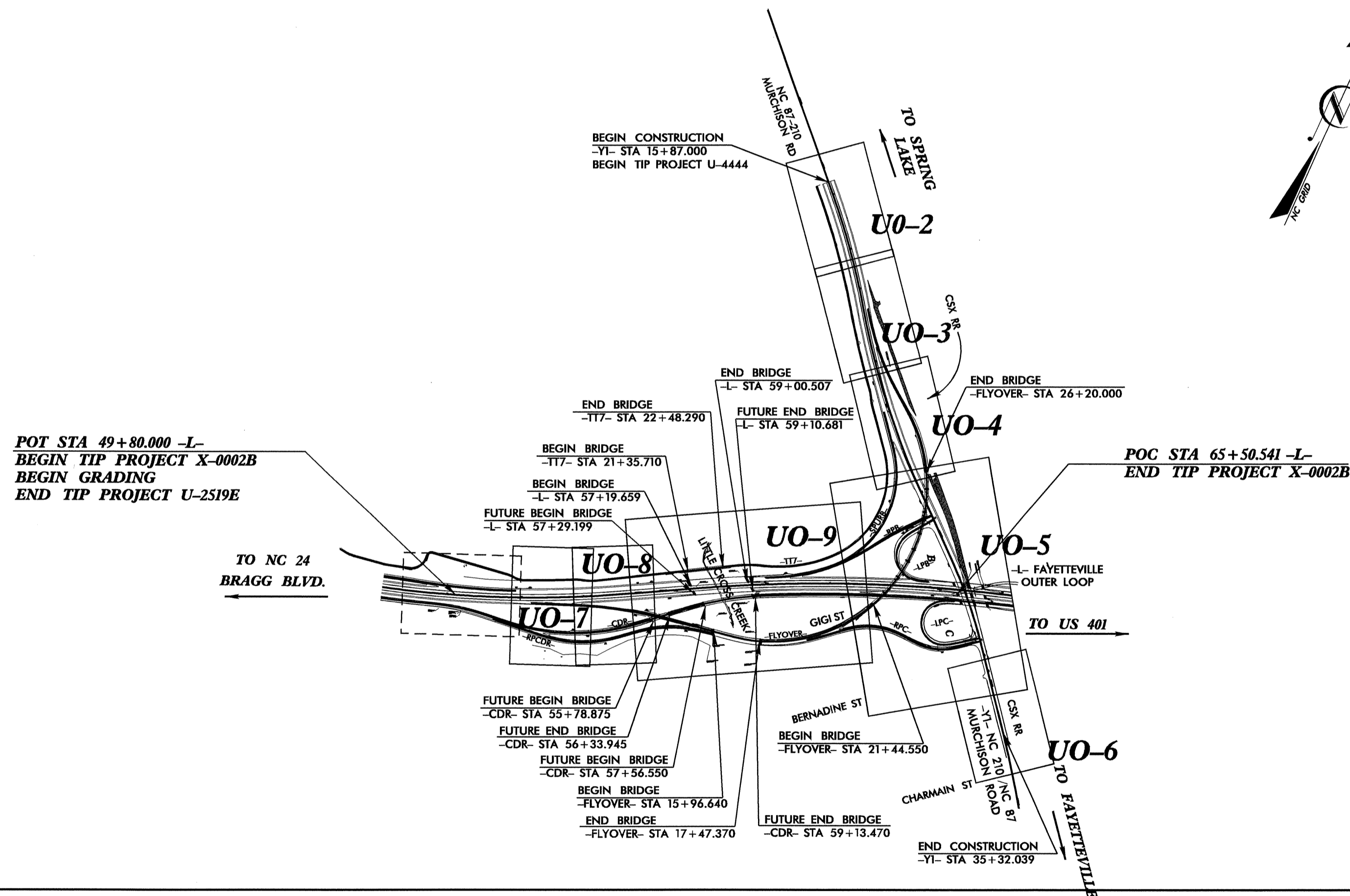
**UTILITY BY OTHERS PLANS
CUMBERLAND COUNTY**

LOCATION: FAYETTEVILLE OUTER LOOP FROM EAST OF NC 24 (BRAGG BLVD.) TO NC 87 /NC 210 (MURCHISON RD.)

TYPE OF WORK: UTILITIES BY OTHERS

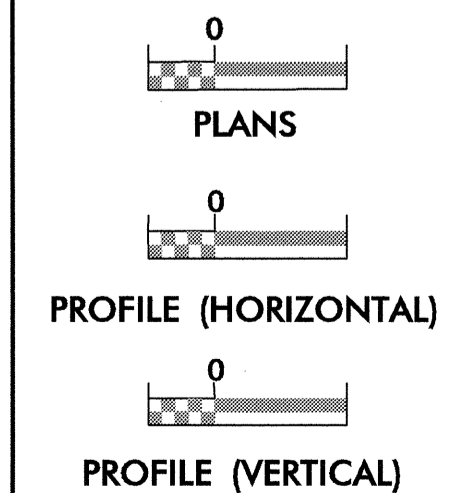


T.I.P. NO.	SHEET NO.
X-0002B	UO-1



PART 2 OF 2

GRAPHIC SCALES

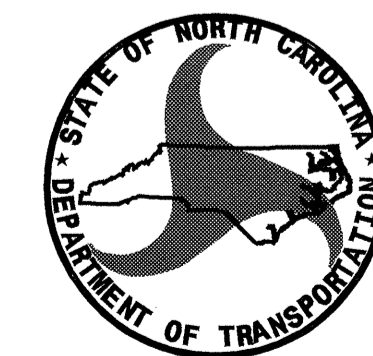


INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-9	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

- (1) FAYETTEVILLE PWC - POWER (DISTRIBUTION)
- (2) EMBARQ - TELEPHONE
- (3) TIME WARNER CABLE - CATV
- (4) PIEDMONT NATURAL GAS
- (5) SANDHILL UTILITIES - POWER (DISTRIBUTION)
- (6) FAYETTEVILLE PWC - WATER (BOOSTER STATION)
- (7) LEVEL 3 COMMUNICATIONS (TELEPHONE)

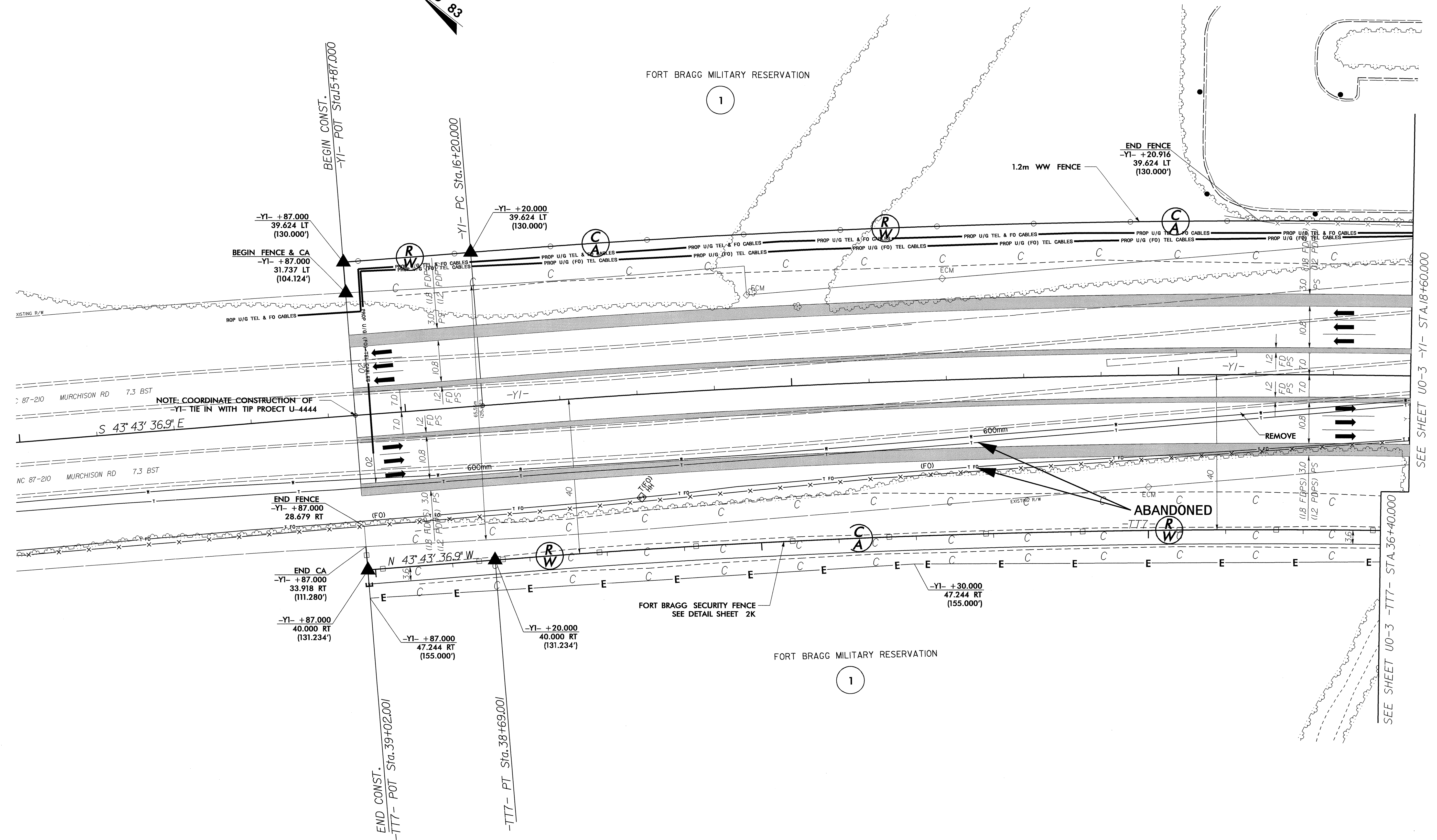
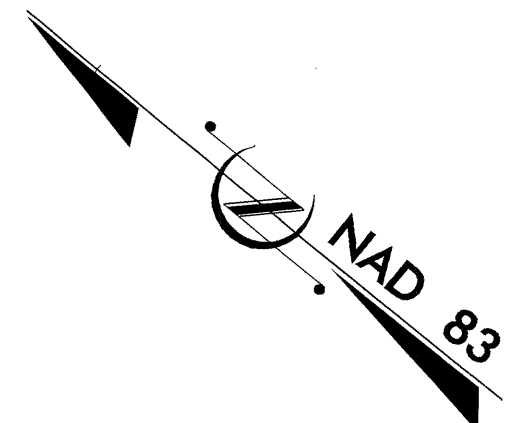


PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
DESIGN SERVICES
UTILITY SECTION**
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
R. B. WILKINS, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
MICHAEL R. BRIGHT UTILITIES PROJECT DESIGNER

23-FEB-2009 08:21 r:\utilities\2305\grading & structures\X-0002b-ut-t.tle.uol_psh.dgn

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



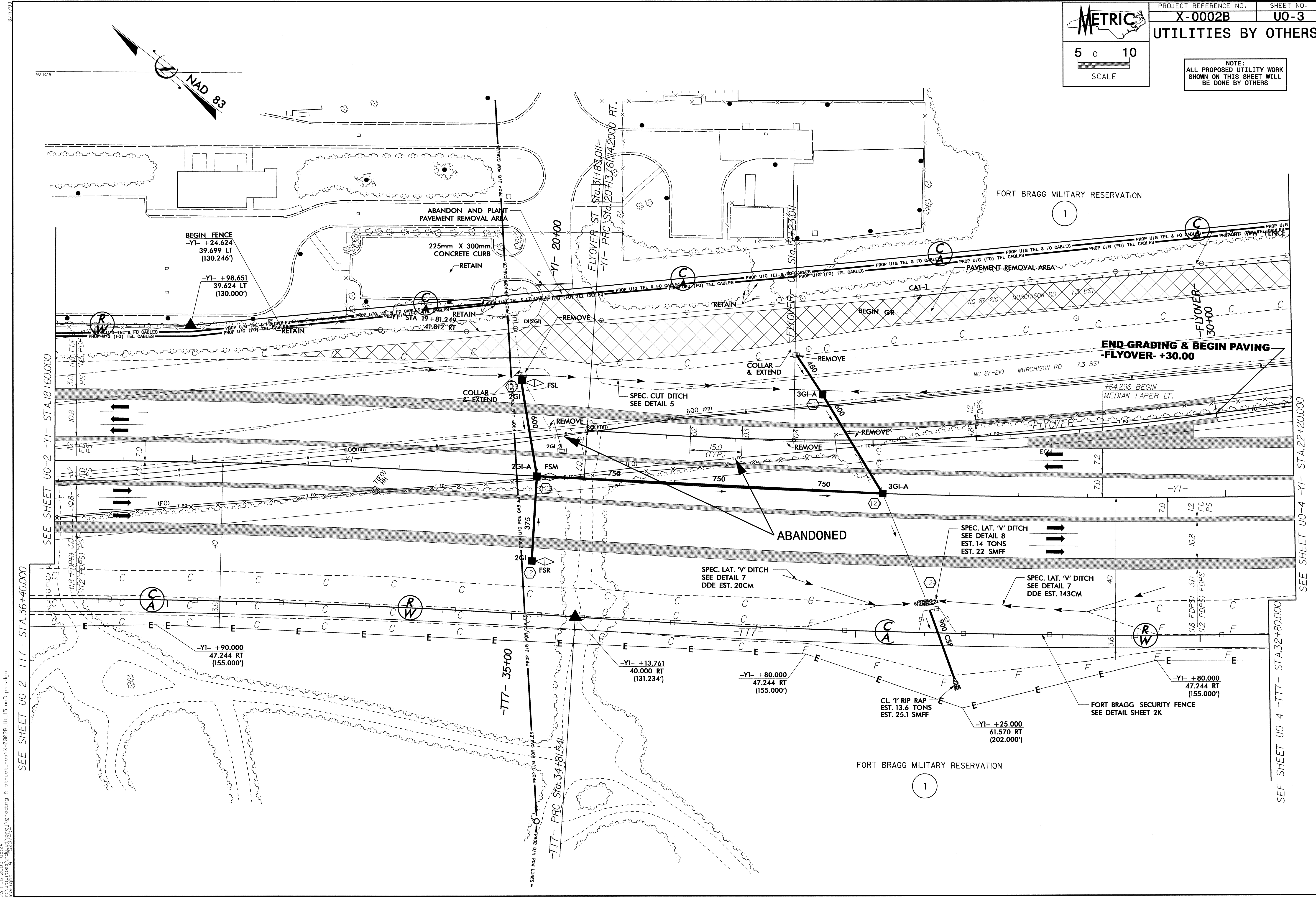
SEE SHEET U0-3 -Y1- STA.18+60.000

SEE SHEET U0-3 -TT7- STA.36+40.000

METRIC

5 0 10
SCALE

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



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8/17/08

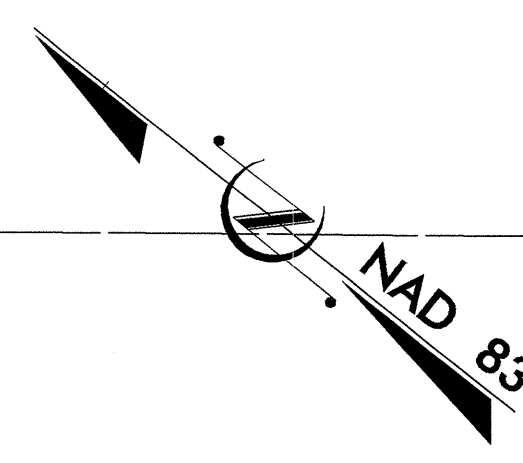
SEE SHEET UO-2 -YI- STA.18+60.000

SEE SHEET UO-2 -TTT- STA.36+40.000

SEE SHEET UO-4 -YI- STA.22+20.000

SEE SHEET UO-4 -TTT- STA.32+80.000

NG R/W



FORT BRAGG MILITARY RESERVATION

FORT BRAGG MILITARY RESERVATION

BEGIN FENCE
-YI- +24.624
39.699 LT
(130.246')

-YI- +98.651
39.624 LT
(130.000')

STA 19+81.249
41.812 RT

-YI- 20+00

FLYOVER ST. STA. 31+88.011
-YI- PRC STA. 30+73.761/42000 RT.

ABANDONED

SPEC. LAT. 'V' DITCH
SEE DETAIL 7
DDE EST. 20CM

SPEC. LAT. 'V' DITCH
SEE DETAIL 8
EST. 14 TONS
EST. 22 SMFF

SPEC. LAT. 'V' DITCH
SEE DETAIL 7
DDE EST. 143CM

CL. 1' RIP RAP
EST. 13.6 TONS
EST. 25.1 SMFF

FORT BRAGG SECURITY FENCE
SEE DETAIL SHEET 2K

-YI- +90.000
47.244 RT
(155.000')

-YI- +13.761
40.000 RT
(131.234')

-YI- +80.000
47.244 RT
(155.000')

-YI- +25.000
61.570 RT
(202.000')

-YI- +80.000
47.244 RT
(155.000')

-TTT- 35+00

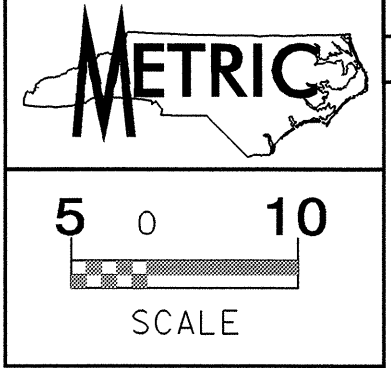
-TTT- PRC STA. 34+81.541

SEE SHEET UO-2 -YI- STA.18+60.000

SEE SHEET UO-2 -TTT- STA.36+40.000

SEE SHEET UO-4 -YI- STA.22+20.000

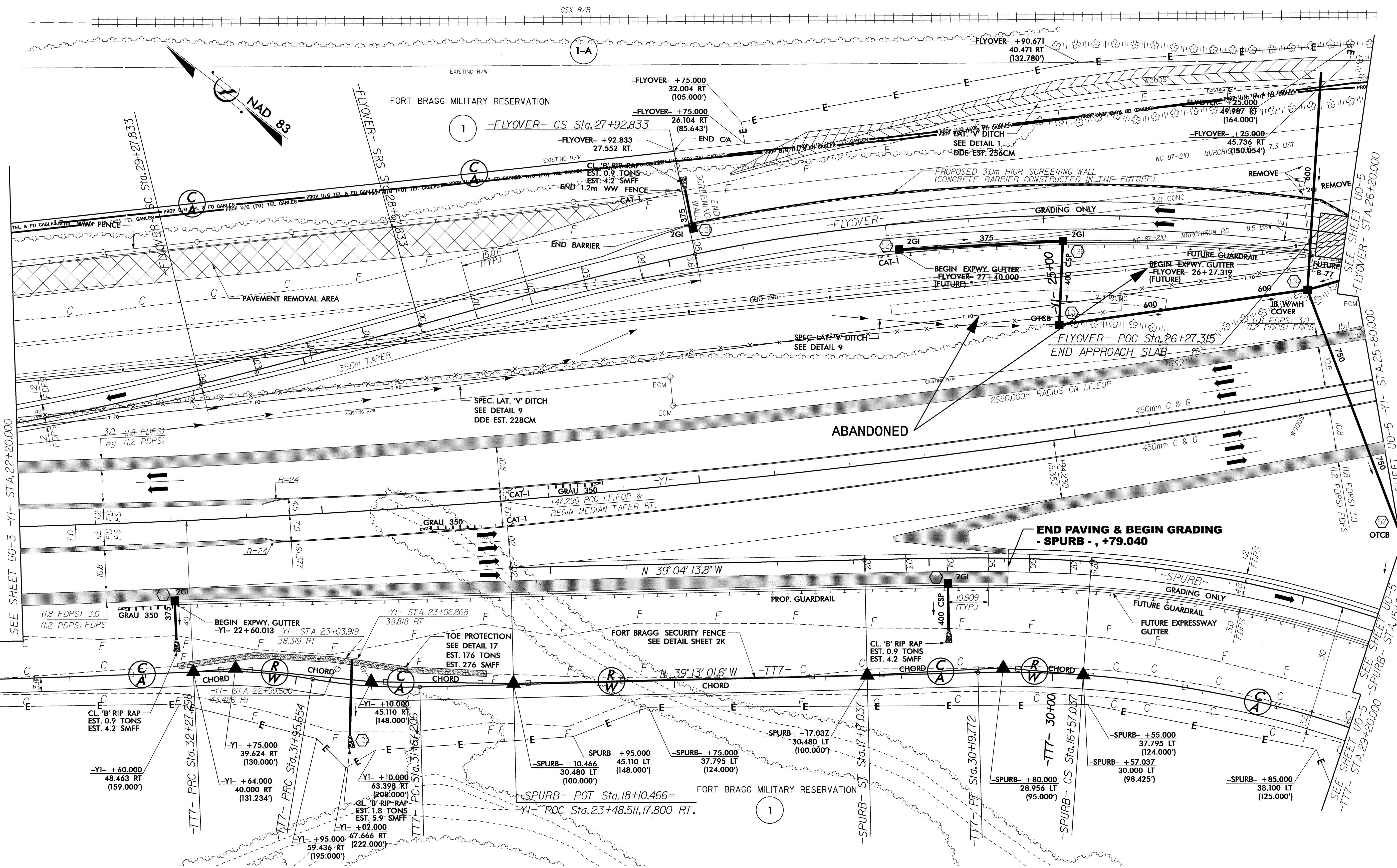
SEE SHEET UO-4 -TTT- STA.32+80.000



UTILITIES BY OTHERS

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

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 23-FEB-2009 08:25
 16-002b-ct-16.u04_psh.dgn
 SEE SHEET U0-3 -YI- STA.22+20.000
 SEE SHEET U0-3 -TT7- STA.32+80.000
 SEE SHEET U0-5
 SEE SHEET U0-5 -YI- STA.25+80.000
 SEE SHEET U0-5 -SPURB- STA.15+80.000
 SEE SHEET U0-5 -FLYOVER- STA.26+20.000



SEE SHEET U0-3 -YI- STA.22+20.000

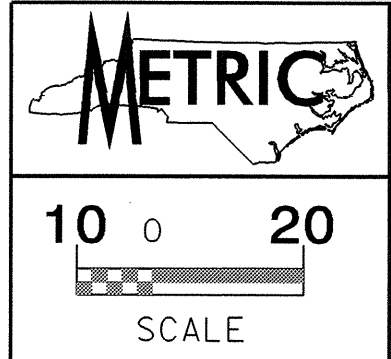
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SEE SHEET U0-5

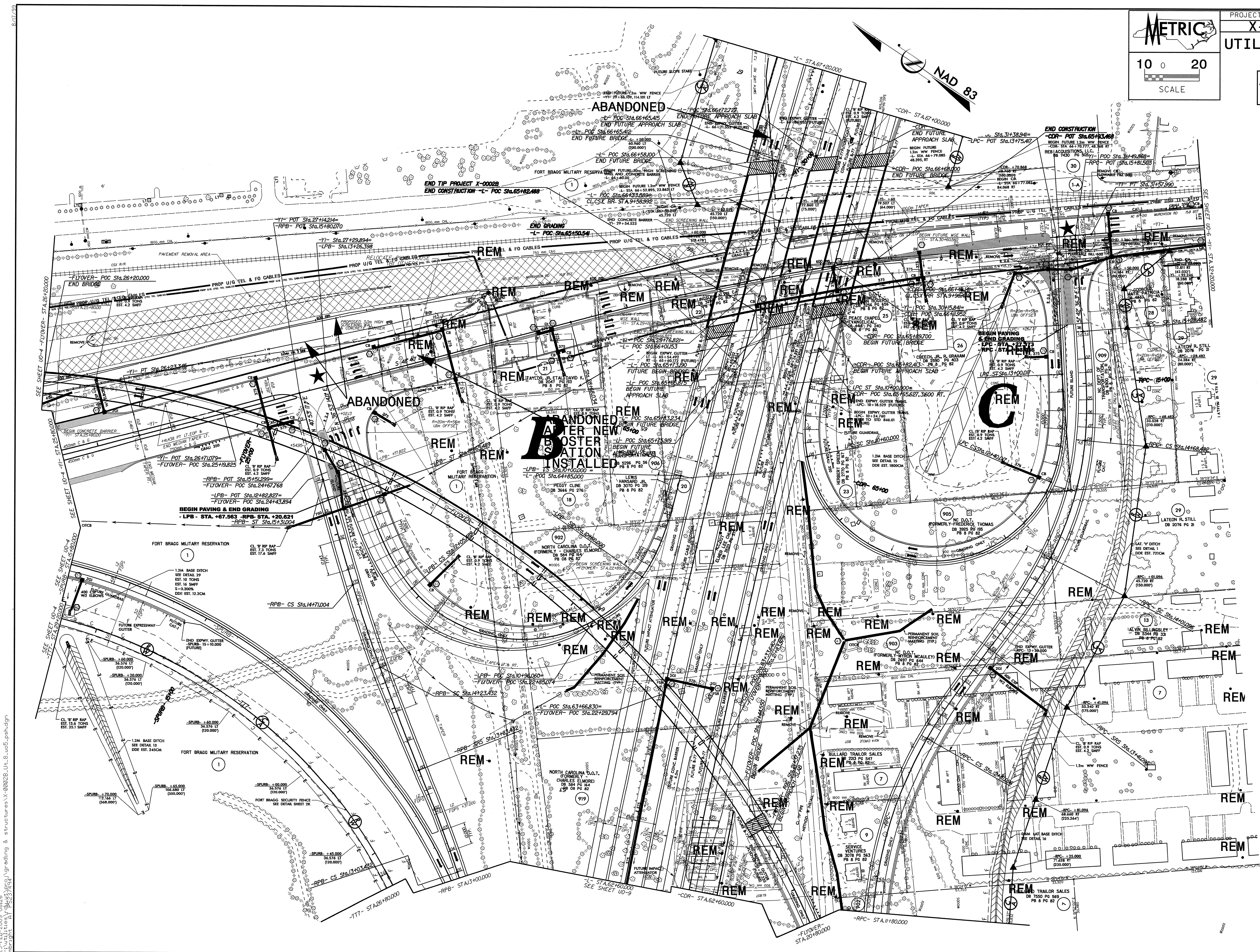
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SEE SHEET U0-5 -SPURB- STA.15+80.000

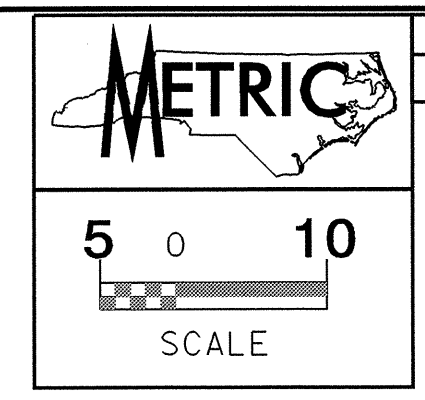
SEE SHEET U0-5 -FLYOVER- STA.26+20.000



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

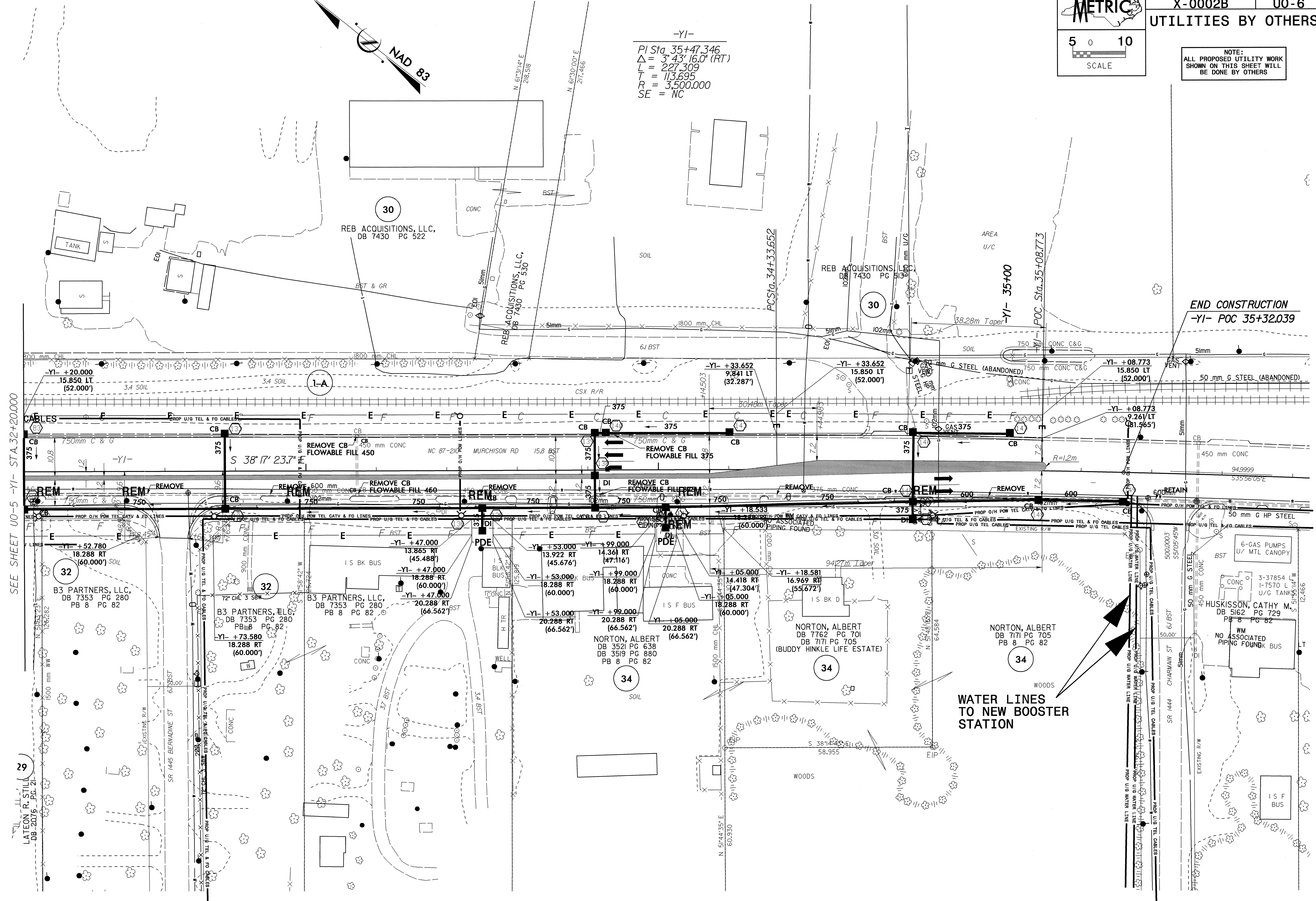


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NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS

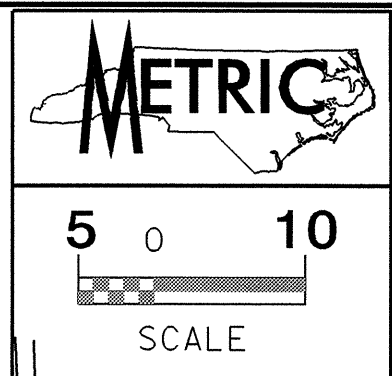
-Y1-
PI Sta. 35+47.346
 $\Delta = 3^\circ 43' 16.0''$ (RT)
L = 227.309
T = 113.695
R = 3,500.000
SE = NC



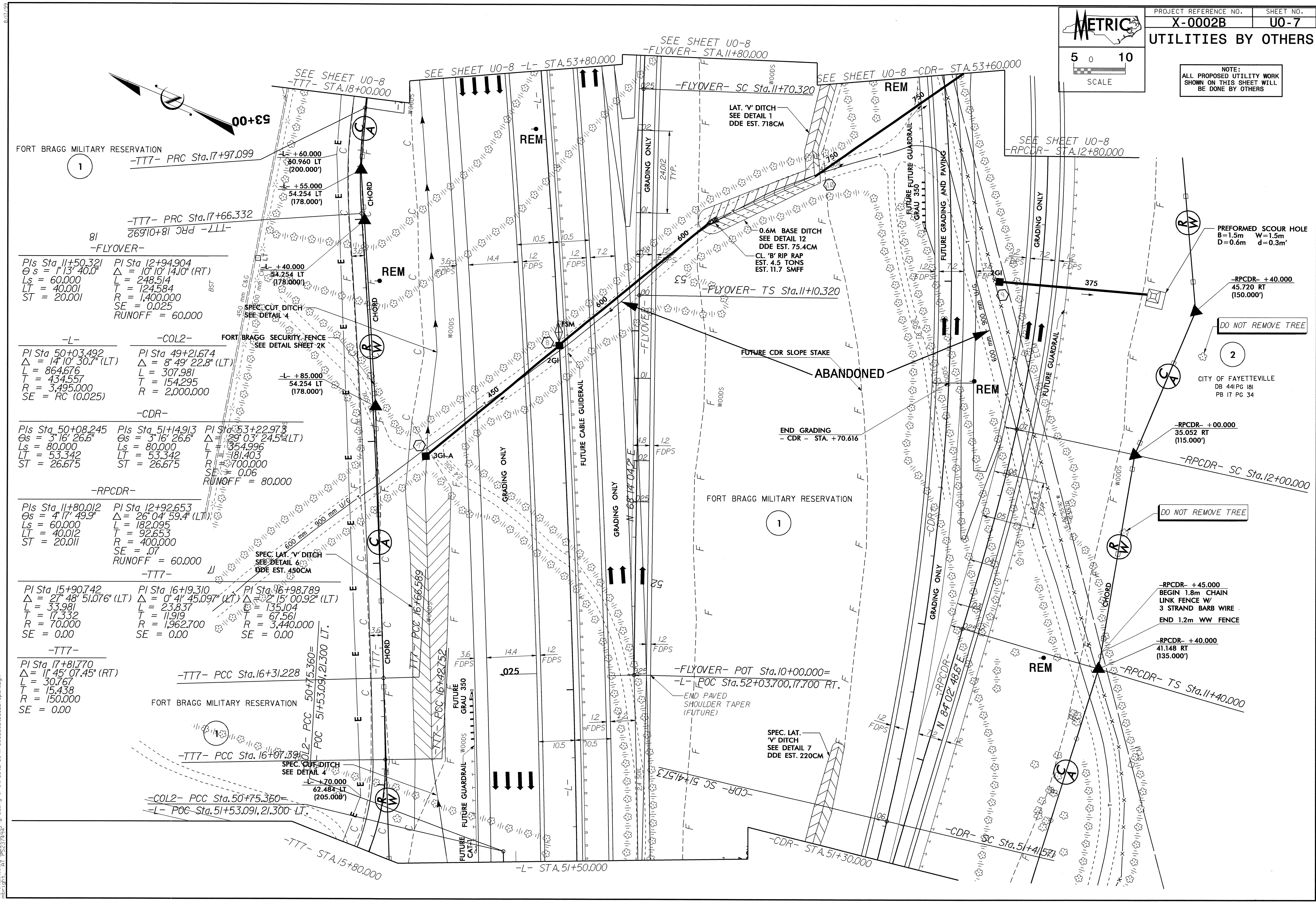
SEE SHEET UO-5 -Y1- STA.32+20.000

23-FEB-2009 09:27
\\structures\l\0002b-ut\l\uo6.psh.dgn
mbrt

8/17/09



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



SEE SHEET U0-8 -TT7- STA. 18+00.000
 SEE SHEET U0-8 -L- STA. 53+80.000
 SEE SHEET U0-8 -CDR- STA. 53+60.000
 SEE SHEET U0-8 -RPCDR- STA. 12+80.000

00+89
 FORT BRAGG MILITARY RESERVATION
 -TT7- PRC Sta. 17+97.099
 -TT7- PRC Sta. 17+66.332
 -TT7- PRC 18+01.692
 -FLYOVER-
 PIs Sta. 11+50.321
 $\theta_s = 1^{\circ} 13' 40.0''$
 $L_s = 60.000$
 $LT = 40.001$
 $ST = 20.001$
 PIs Sta. 12+94.904
 $\Delta = 10^{\circ} 10' 14.10''$ (RT)
 $L = 248.514$
 $T = 124.584$
 $R = 1,400.000$
 $SE = 0.025$
 $RUNOFF = 60.000$

-L-
 PIs Sta. 50+03.492
 $\Delta = 14^{\circ} 10' 30.7''$ (LT)
 $L = 864.676$
 $T = 434.557$
 $R = 3,495.000$
 $SE = RC$ (0.025)

-COL2-
 PIs Sta. 49+21.674
 $\Delta = 8^{\circ} 49' 22.8''$ (LT)
 $L = 307.981$
 $T = 154.295$
 $R = 2,000.000$

-CDR-
 PIs Sta. 50+08.245
 $\theta_s = 3^{\circ} 16' 26.6''$
 $L_s = 80.000$
 $LT = 53.342$
 $ST = 26.675$
 PIs Sta. 51+14.913
 $\theta_s = 3^{\circ} 16' 26.6''$
 $L_s = 80.000$
 $LT = 53.342$
 $ST = 26.675$
 PIs Sta. 53+22.973
 $\Delta = 29^{\circ} 03' 24.5''$ (LT)
 $L = 354.996$
 $T = 181.403$
 $R = 700.000$
 $SE = 0.06$
 $RUNOFF = 80.000$

-RPCDR-
 PIs Sta. 11+80.012
 $\theta_s = 4^{\circ} 17' 49.9''$
 $L_s = 60.000$
 $LT = 40.012$
 $ST = 20.011$
 PIs Sta. 12+92.653
 $\Delta = 26^{\circ} 04' 59.4''$ (LT)
 $L = 182.095$
 $T = 92.653$
 $R = 400.000$
 $SE = .07$
 $RUNOFF = 60.000$

-TT7-
 PIs Sta. 15+90.742
 $\Delta = 27^{\circ} 48' 51.076''$ (LT)
 $L = 33.981$
 $T = 17.332$
 $R = 70.000$
 $SE = 0.00$
 PIs Sta. 16+19.310
 $\Delta = 0^{\circ} 41' 45.097''$ (LT)
 $L = 23.837$
 $T = 11.919$
 $R = 1,962.700$
 $SE = 0.00$
 PIs Sta. 16+98.789
 $\Delta = 2^{\circ} 15' 00.92''$ (LT)
 $L = 135.104$
 $T = 67.561$
 $R = 3,440.000$
 $SE = 0.00$

-TT7-
 PIs Sta. 17+81.770
 $\Delta = 11^{\circ} 45' 07.45''$ (RT)
 $L = 30.767$
 $T = 15.438$
 $R = 150.000$
 $SE = 0.00$

-TT7- PCC Sta. 16+31.228
 -TT7- PCC Sta. 16+07.390
 -COL2- PCC Sta. 50+75.360
 -L- POC Sta. 51+53.091, 21,300 LT.
 -TT7- STA. 15+80.000
 -L- STA. 51+50.000

PREFORMED SCOUR HOLE
 $B = 1.5m$ $W = 1.5m$
 $D = 0.6m$ $d = 0.3m'$

-RPCDR- +40.000
 45.720 RT
 (150,000')

DO NOT REMOVE TREE

2
 CITY OF FAYETTEVILLE
 DB 441 PG 181
 PB 17 PG 34

-RPCDR- +00.000
 35.052 RT
 (115,000')

-RPCDR- SC Sta. 12+00.000

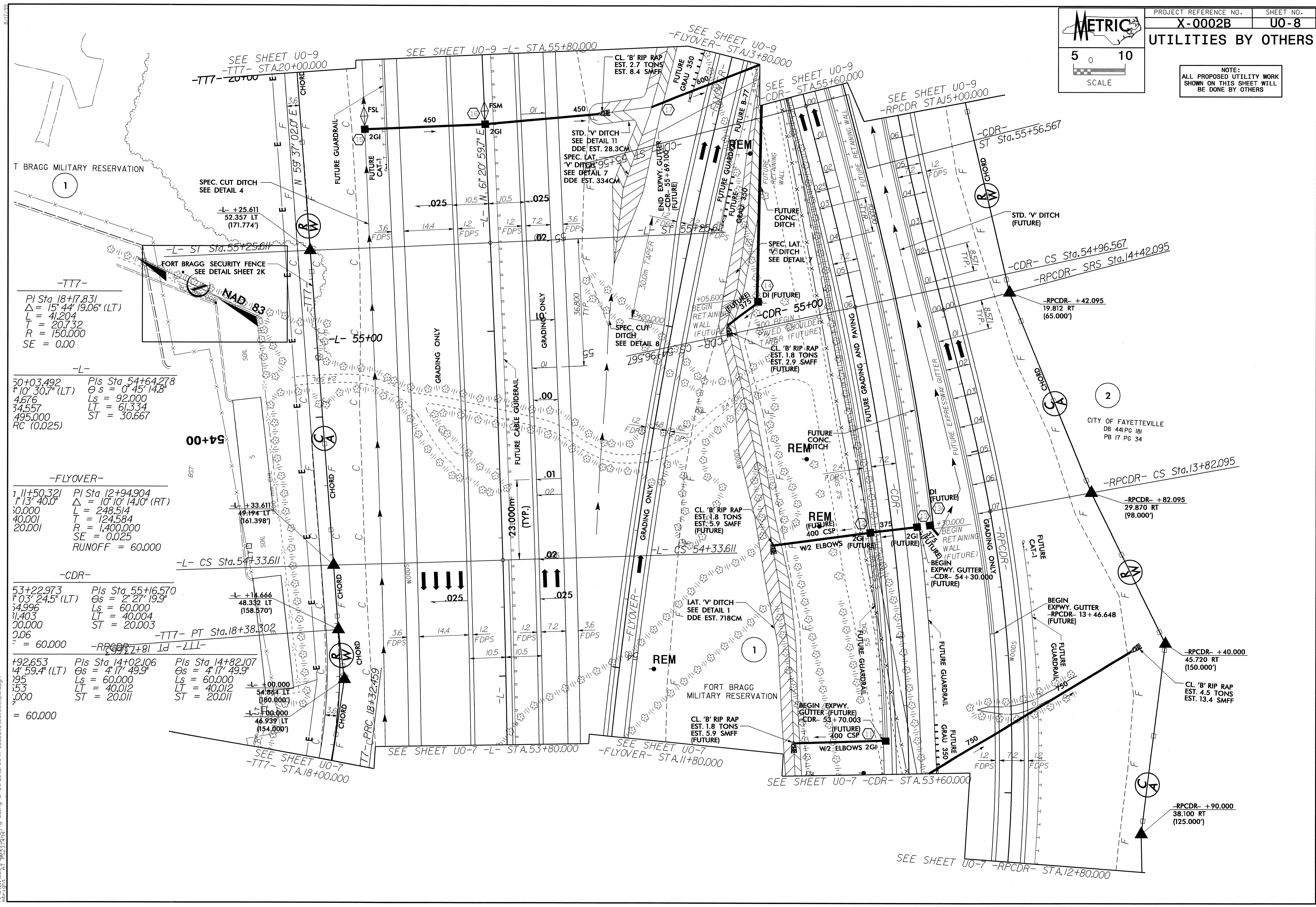
DO NOT REMOVE TREE

-RPCDR- +45.000
 BEGIN 1.8m CHAIN
 LINK FENCE W/
 3 STRAND BARB WIRE
 END 1.2m WW FENCE

-RPCDR- +40.000
 41.148 RT
 (135,000')

-RPCDR- TS Sta. 11+40.000

25-FEB-2009 09:20
 r:\utilities\0002b\grading & structures\0002b-ut-5.u07.psh.dgn
 5/17/09



-TT7-
 PI Sta. 18+7.831
 $\Delta = 15^\circ 44' 19.06''$ (LT)
 $L = 41.204$
 $T = 20.732$
 $R = 150.000$
 $SE = 0.00$

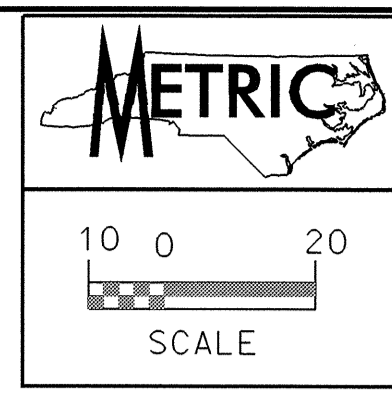
-L-
 50+03.492 Pls Sta. 54+64.278
 $r = 10' 30.7''$ (LT) $\theta_s = 0^\circ 45' 14.8''$
 $L_s = 92.000$
 4676 LT = 61.334
 34.557 ST = 30.667
 495.000
 $RC (0.025)$

-FLYOVER-
 11+50.321 PI Sta. 12+94.904
 $r = 13' 40.0''$ $\Delta = 10^\circ 10' 14.10''$ (RT)
 $L = 30.000$
 40.001 T = 124.584
 20.001 R = 1,400.000
 $SE = 0.025$
 RUNOFF = 60.000

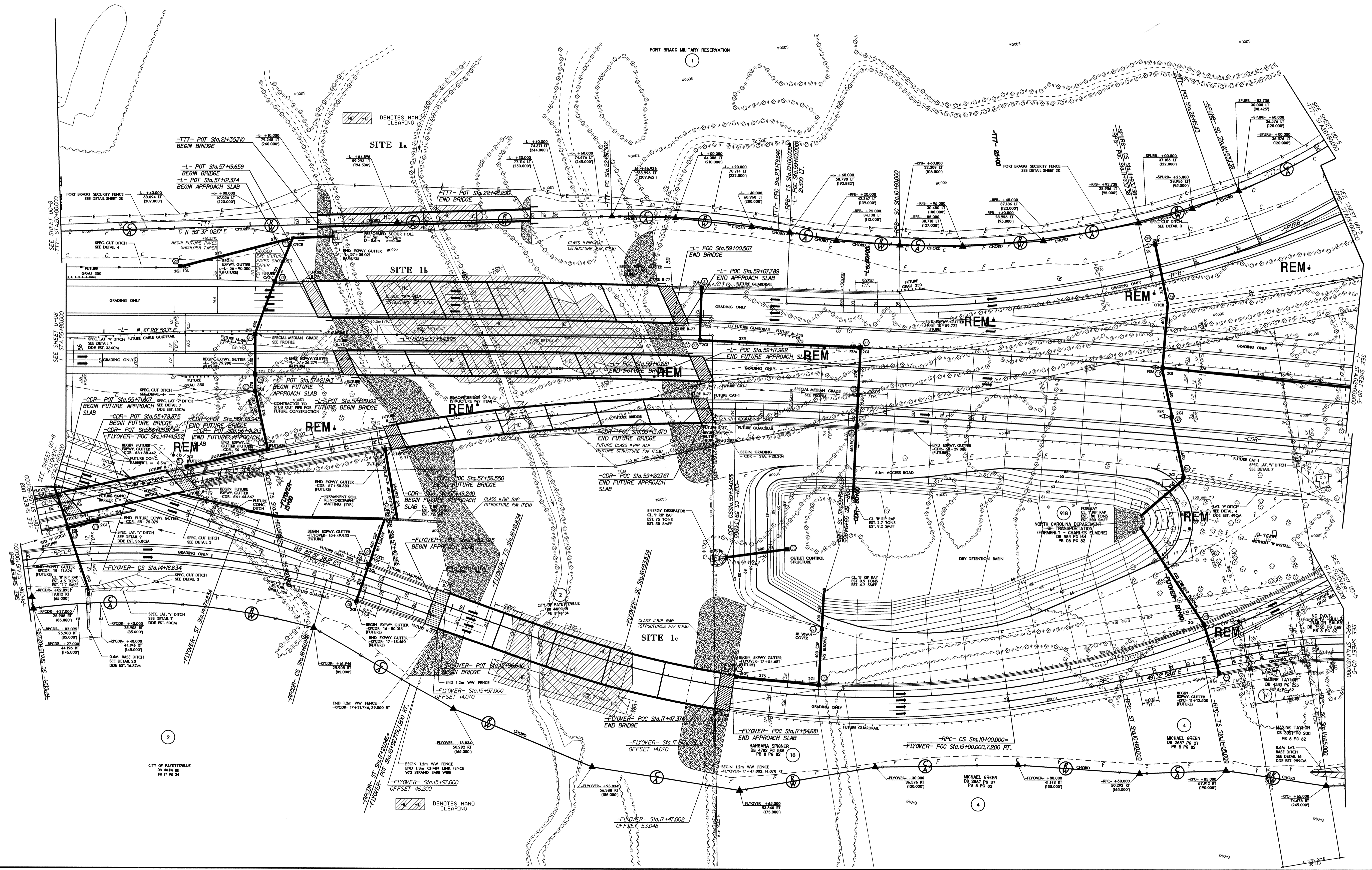
-CDR-
 53+22.973 Pls Sta. 55+16.570
 $r = 03' 24.5''$ (LT) $\theta_s = 2^\circ 27' 19.9''$
 $L_s = 54.996$
 31.403 LT = 40.004
 20.000 ST = 20.003
 2.06
 = 60.000

-TT7- PT Sta. 18+38.302
 +92.653 Pls Sta. 14+02.106 Pls Sta. 14+82.107
 $r = 14' 59.4''$ (LT) $\theta_s = 4^\circ 17' 49.9''$ $\theta_s = 4^\circ 17' 49.9''$
 $L_s = 195$ LT = 60.000 $L_s = 195$ LT = 60.000
 353 ST = 40.012 46.939 LT = 40.012
 3.000 ST = 20.011 54.864 LT = 180.000
 46.939 LT = 154.000
 = 60.000

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 utilities\pshodgn\structures\X-0002B\U0-8\U08_pshodgn
 8/17/09



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



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psh