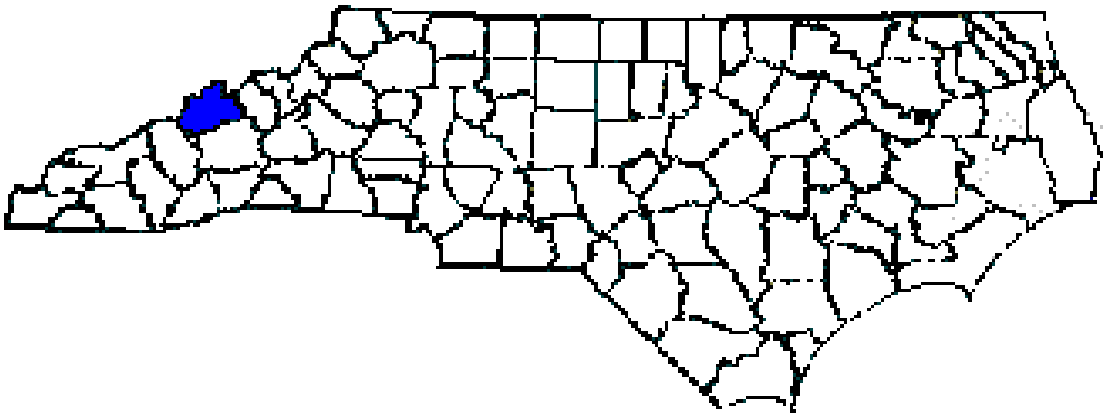
ANNUAL REPORT FOR 2014



Preservation Sites E, G, H, K, L, O, P, Q, and R
Madison County
TIP No. R-2518A
COE Action ID: SAW-2007-2197-357/300
DWQ #: 20071134

Prepared By:
Natural Environment Section & Roadside Environmental Unit
North Carolina Department of Transportation
September 2014

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SUMMARY

The following report summarizes the stream monitoring activities that have occurred during the Year 2014 at the Preservation Sites E, G, H, K, L, O, P, Q, and R in Madison County. This report provides the monitoring results for the third formal year of monitoring (Year 2014). The Year 2014 monitoring period was the third of five scheduled years of monitoring on the Preservation Sites (See Success Criteria Section 2.1).

Based on the overall conclusions of monitoring at the Preservation Sites, these sites have met the required monitoring protocols for the third formal year of monitoring. NCDOT will continue the visual inspection of the Preservation Sites for 2015.

1.0 INTRODUCTION

1.1 Project Description

The following report summarizes the stream monitoring activities that have occurred during the Year 2014 at the Preservation Sites E, G, H, K, L, O, P Q, and R, hereafter known as the "Preservation Sites." The Preservation Sites provide mitigation for stream impacts associated with Transportation Improvement Program (TIP) number R-2518A in Madison County.

The Preservation Sites E, G, H, K, L, O, P, Q, and R provided approximately 13,481 linear feet of stream preservation. The Preservation Sites for A and N provided approximately 627 linear feet of preservation. Preservation photos for mitigation sites A and N will be included in their individual monitoring reports. Stream preservation involved acquiring and fencing the sites within NCDOT right-of-way.

1.2 Purpose

In order for the mitigation sites to be considered successful, the sites must meet the success criteria. This report details the monitoring in 2014 at the Preservation Sites. Hydrologic monitoring was not required for these sites.

1.3 Project History

August 2012	Visual Monitoring
August 2013	Visual Monitoring
July 2014	Visual Monitoring

1.4 Debit Ledger

The entire stream mitigation sites were used for the R-2518A project to compensate for unavoidable stream impacts.

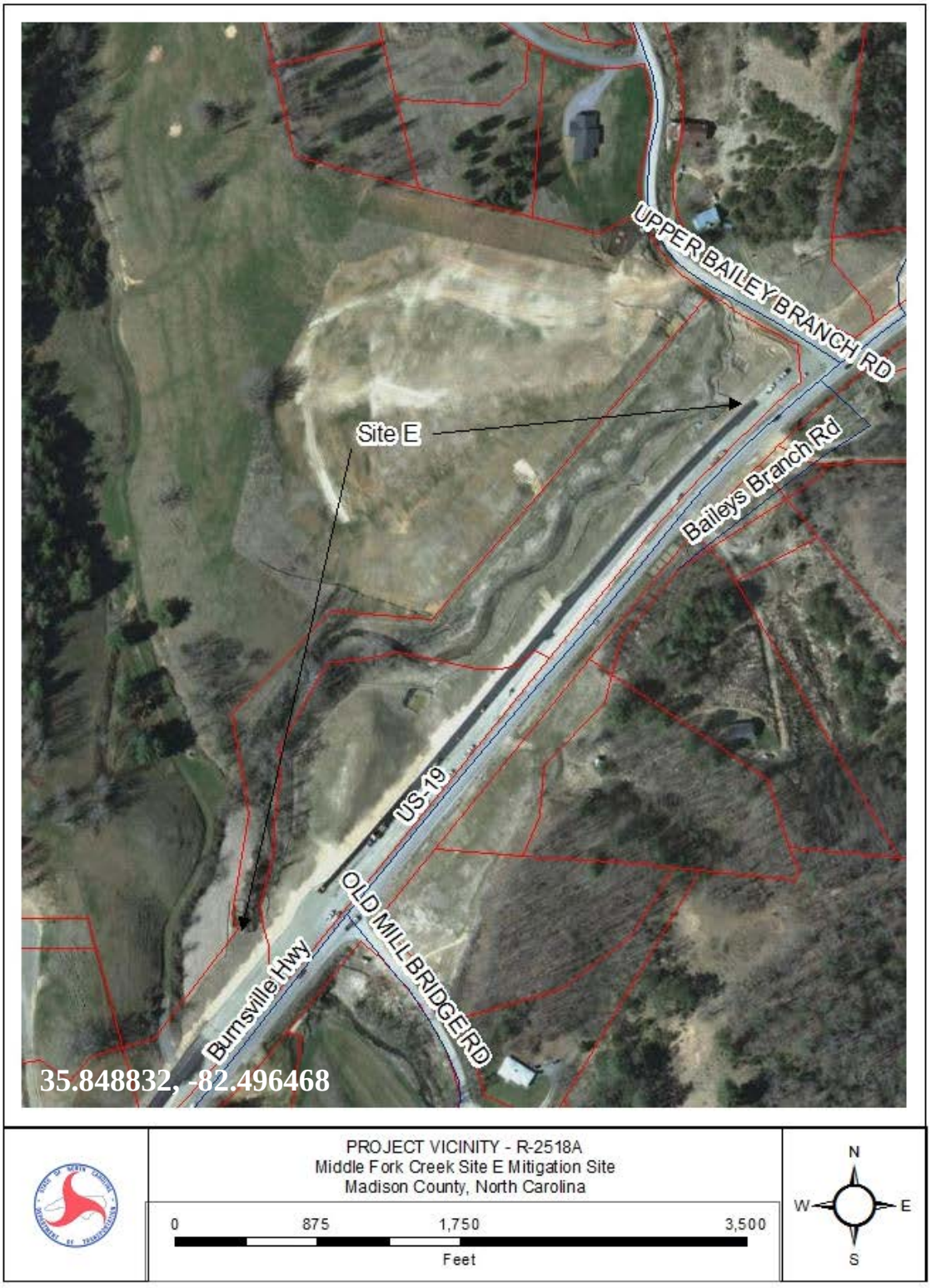


Figure 1. Vicinity Map

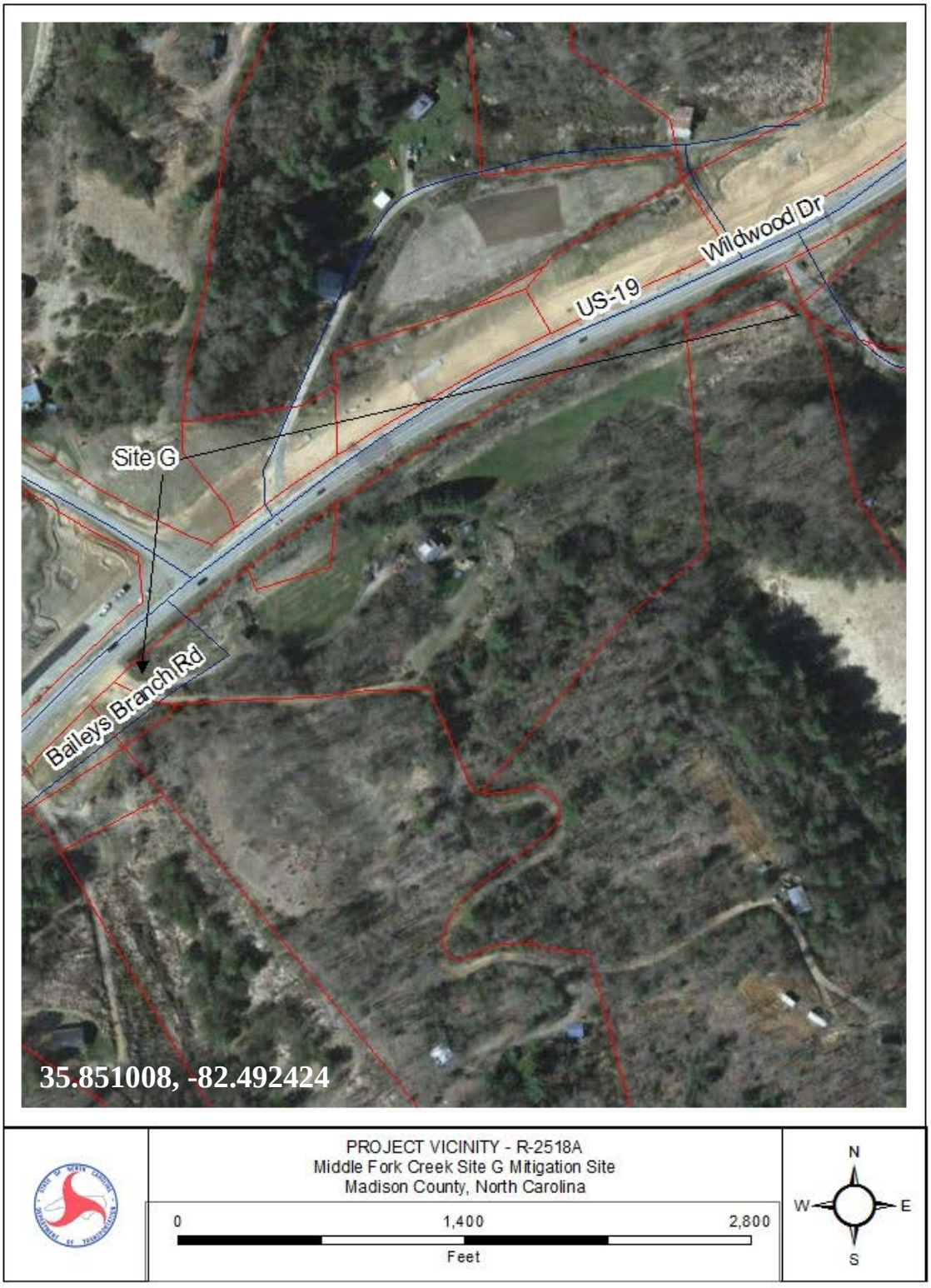


Figure 2. Vicinity Map

Figure 3. Vicinity Map

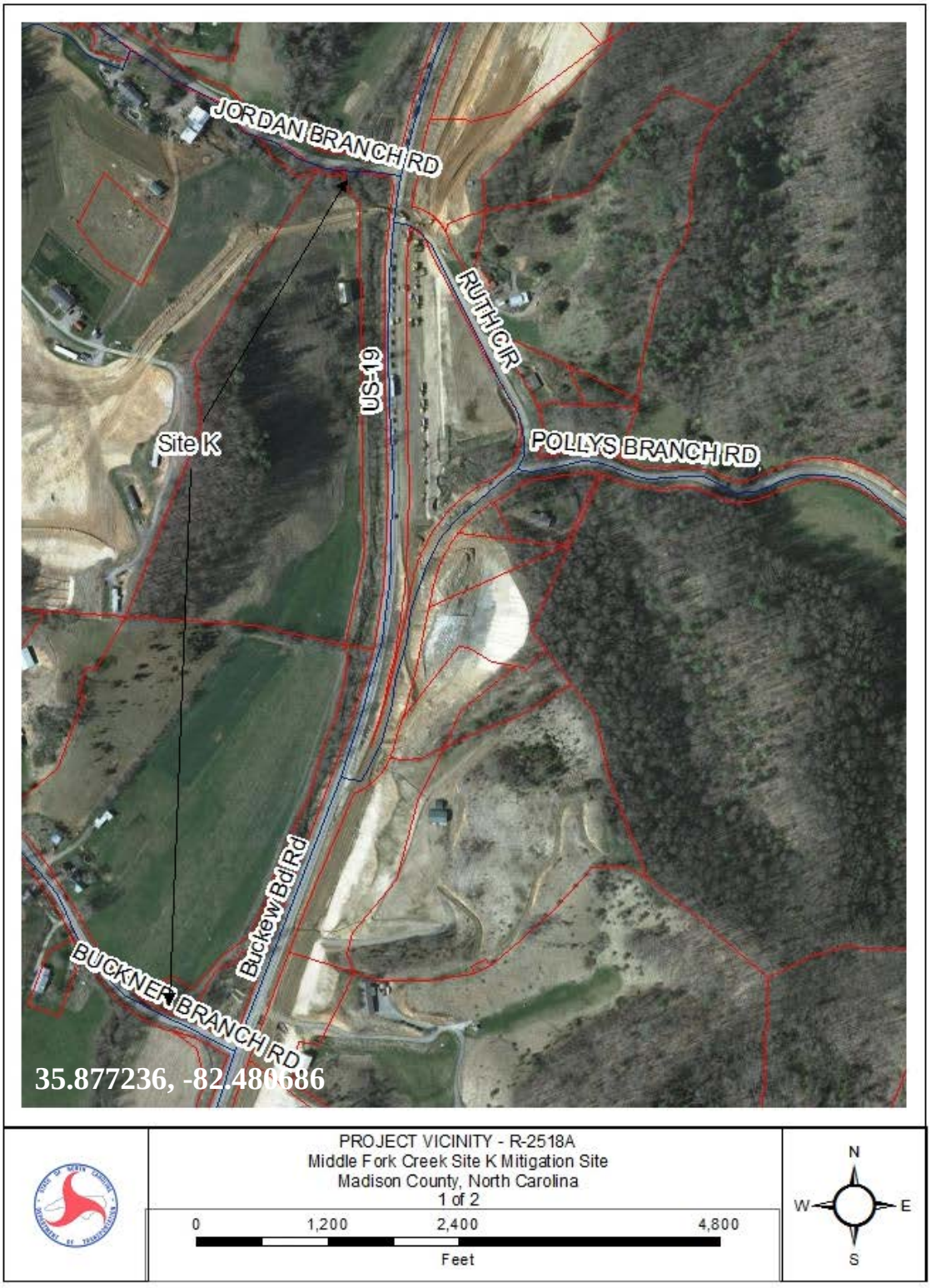


Figure 4. Vicinity Map

Figure 5. Vicinity Map

Figure 6. Vicinity Map

Figure 7. Vicinity Map

Figure 8. Vicinity Map

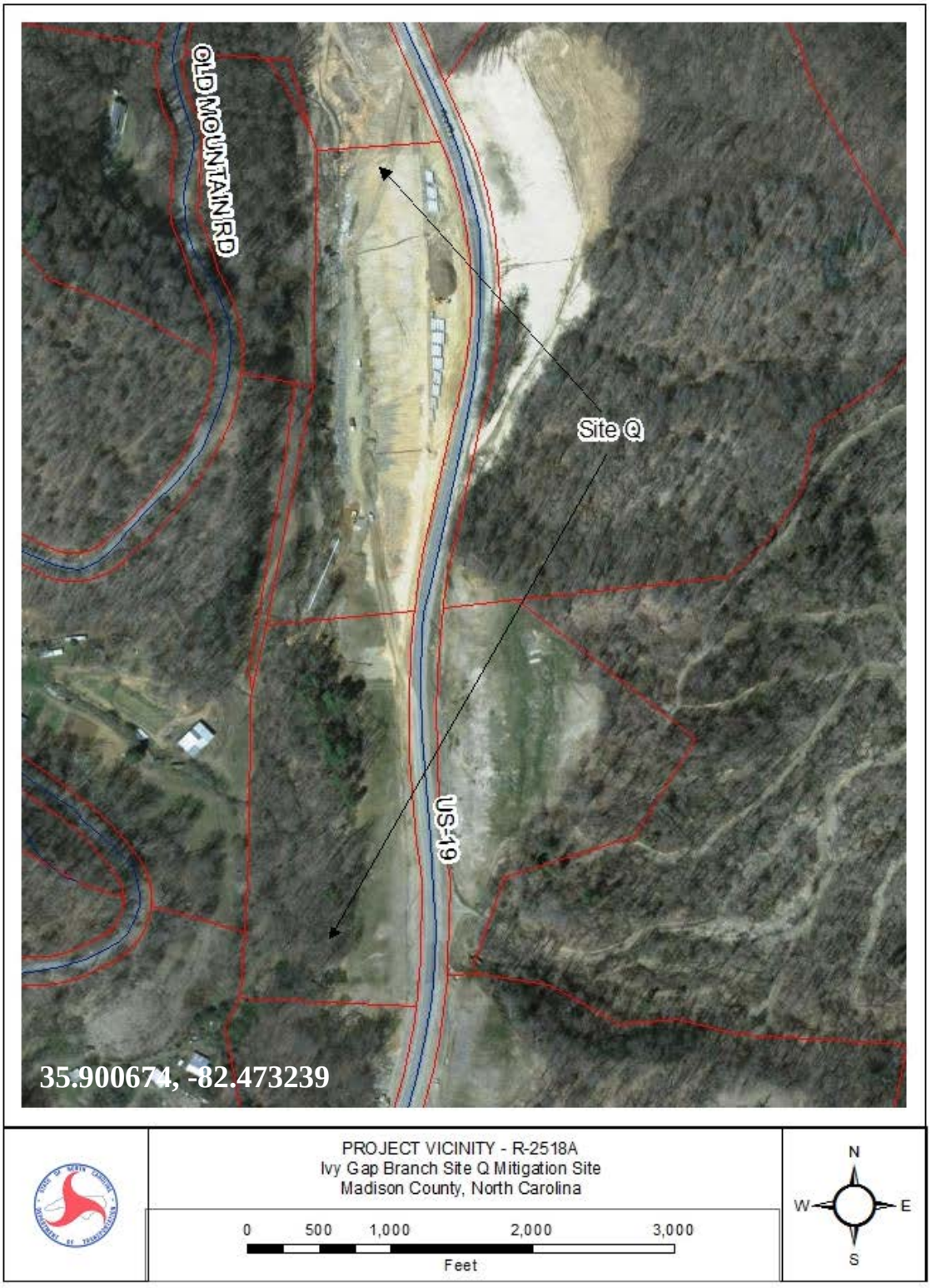


Figure 9. Vicinity Map

Figure 10. Vicinity Map

2.0 STREAM ASSESSMENT

2.1 Success Criteria

Per NCDWQ condition #4, the permittee shall monitor the preservation sites by visual inspection. Photos will be taken and comments noted on plant survival. The monitoring shall be conducted annually for a minimum of five (5) years. The monitoring results shall be submitted to DWQ in a final report within sixty (60) days after completing monitoring. After 5 years the NCDOT shall contact the DWQ to schedule a site visit to "close out" the mitigation site.

2.2 Stream Description

2.2.1 Post-Construction Conditions

The preservation of sites E, G, H, K, L, O, P, Q, and R will involve acquiring and fencing the sites within NCDOT right of way.

2.2.2 Monitoring Conditions

The objective of Preservation Sites E, G, H, K, L, O, P, Q, and R is to preserve the stream and riparian areas.

2.3 Results of the Stream Assessment

2.3.1 Site Data

The assessment included visual inspection of the Preservation Sites. The Preservation Sites were photographed from permanent photo point locations. The sites are being preserved within NCDOT's right-of-way. Except for an herbicide application to a power line easement within the buffer at Site K and R (see photos 8 and 22), there were no encroachments noted during the 2014 monitoring evaluation.

3.0 OVERALL CONCLUSIONS/RECOMMENDATIONS

The Preservation Sites have met the required monitoring protocols for the third formal year of monitoring. NCDOT will continue monitoring the Preservation Sites in 2015.

4.0 REFERENCES

Stream Mitigation Plan, US Highway 19, R-2518A On-Site Mitigation Madison County, North Carolina, August 2006.

Design Plans for R-2518A, US 19 from I-26 to 0.8 KM east of the Yancey Co. Line, Stream Mitigation (Preservation, Enhancement, and Restoration), HSMM.

North Carolina Department of Transportation (NCDOT), April 29, 2008. 404 and 401 Individual Permits for R-2518A and R-2518B (ACOE Permit No. 2007-2197-357/300 and DWQ Project No. 20071134, Individual Certification No. 3706).

APPENDIX A

SITE PHOTOGRAPHS

Preservation Sites

Photo 1 (Site E)

Photo 2 (Site G)

Photo 3 (Site G)

Photo 4 (Site H)

Photo 5 (Site H)

Photo 6 (Site K)

July 2014

Preservation Sites

Photo 7 (Site K)

Photo 8 (Site K)

Photo 9 (Site K)

Photo 10 (Site K)

Photo 11 (Site K)

Photo 12 (Site K)

July 2014

Preservation Sites

Photo 13 (Site L)

Photo 14 (Site O)

Photo 15 (Site O)

Photo 16 (Site O)

Photo 17 (Site O)

Photo 18 (Site P)

July 2014

Preservation Sites

Photo 19 (Site Q)

Photo 20 (Site Q)

Photo 21 (Site Q)

Photo 22 (Site R)

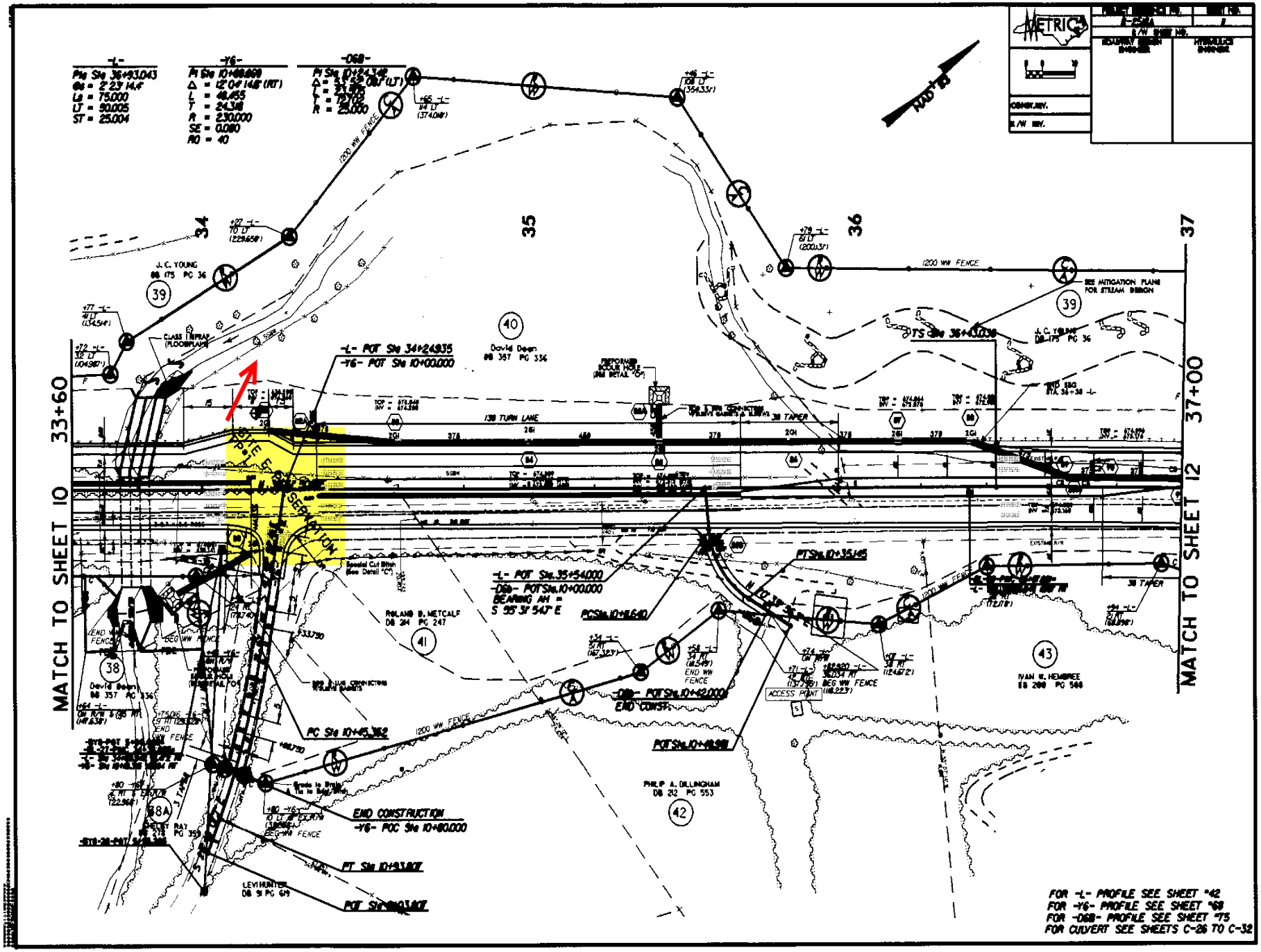
Photo 23 (Site R)

Photo 24 (Site R)

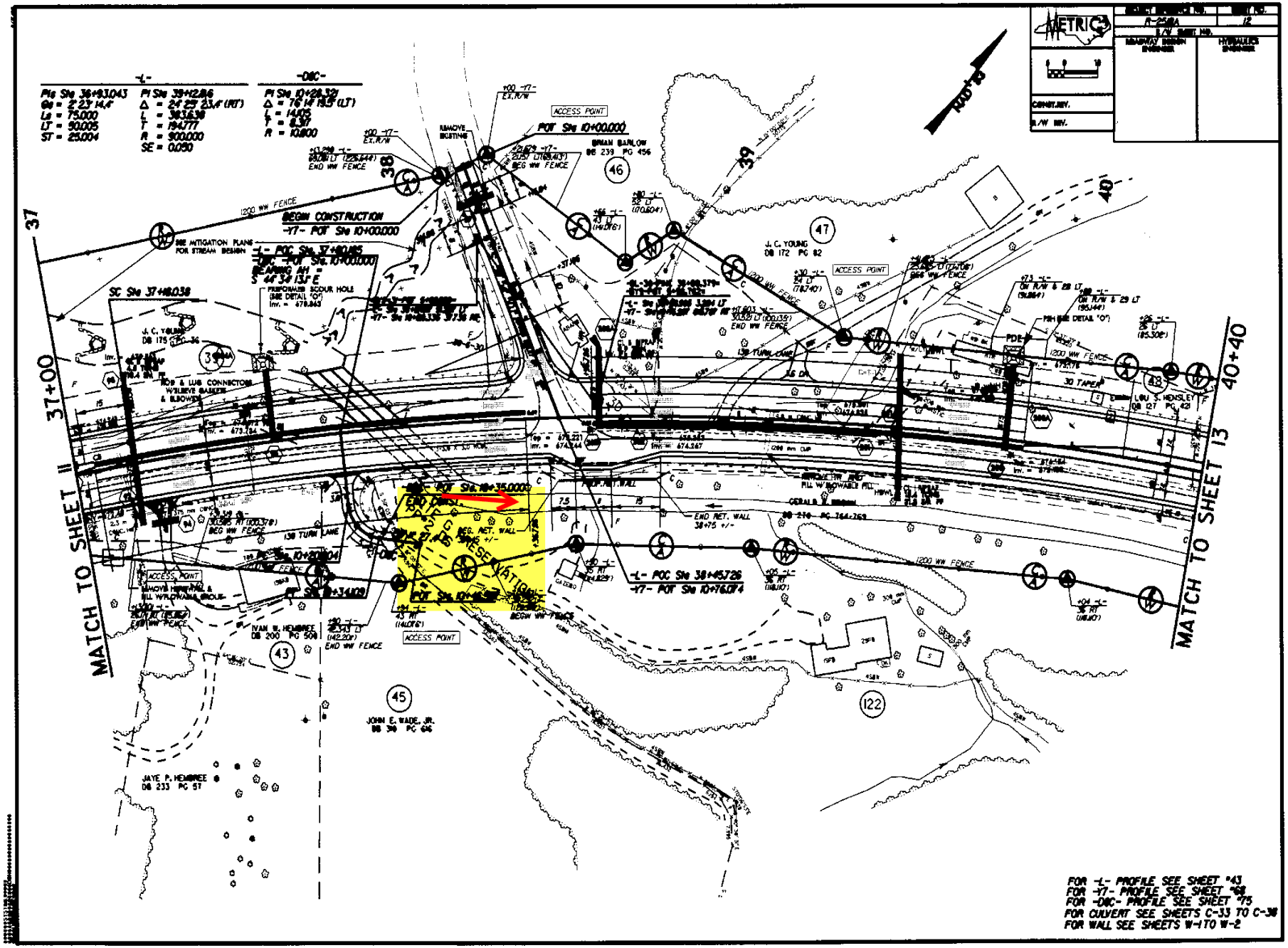
July 2014

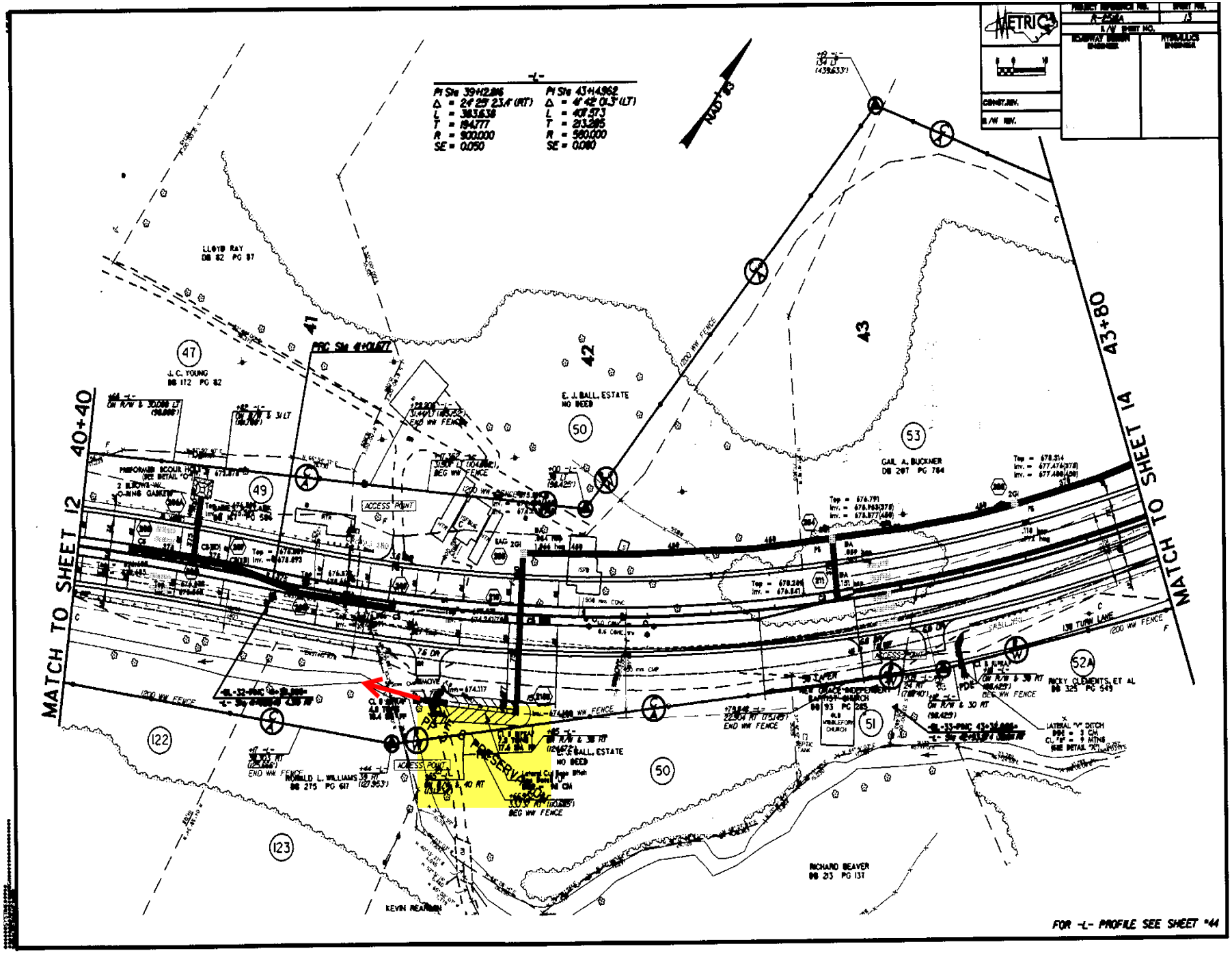
APPENDIX B

PHOTO POINT LOCATIONS

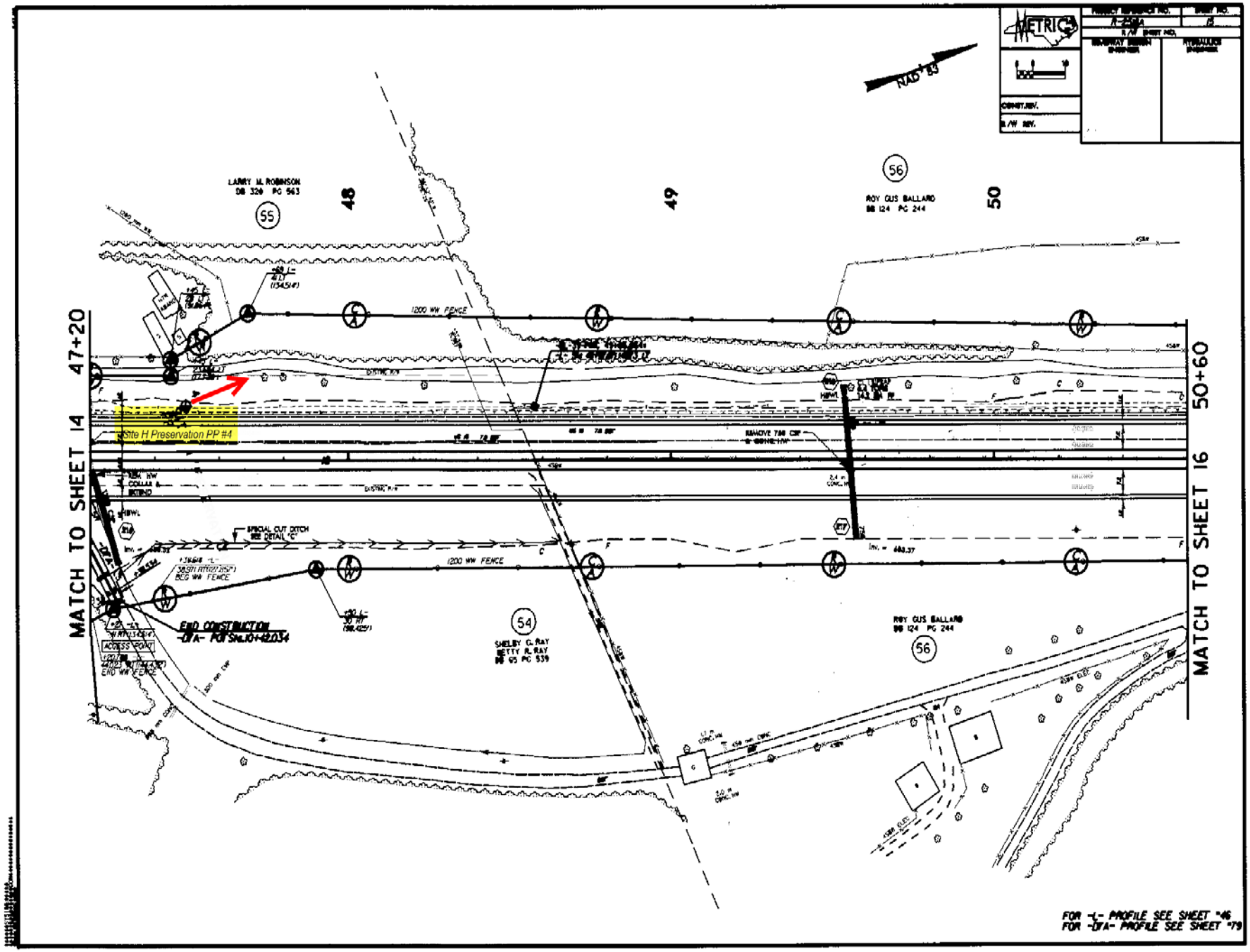


METRIC
-L-
Pte Sta 36+93.043
Gs = 2°23'14.4"
Ls = 75.000
LT = 90.005
ST = 25.004
-Y6-
Pt Sta 10+88.869
Δ = 12°04'14.8" (RT)
L = 48.455
T = 24.318
R = 230.000
SE = 0.080
RO = 40
-D6B-
Pt Sta 10+24.342
R = 25.000
NAD 83
MATCH TO SHEET 10
33+60
MATCH TO SHEET 12
37+00
34
35
36
37
39
40
41
42
43
38
38A
J. C. YOUNG
DB 175 PG 36
David Dean
DB 357 PG 336
ROLAND B. METCALF
DB 214 PG 247
PHILIP A. DILLINGHAM
DB 212 PG 553
IVAN W. HEMBREE
DB 200 PG 588
LEVI HUNTER
DB 91 PG 619
SITE E-PRESERVATION
-L- POT Sta 34+24.935
-Y6- POT Sta 10+00.000
-L- POT Sta 35+54.000
-D6B- POT Sta 10+00.000
BEARING AH = S 55°31'54.7" E
PC Sta 10+45.362
END CONSTRUCTION
-Y6- POC Sta 10+80.000
PT Sta 10+93.807
POT Sta 10+93.807
PT Sta 10+35.145
PC Sta 10+11.640
-D6B- POT Sta 10+42.000
END CONST.
POT Sta 10+48.981
TS Sta 36+43.038
1200 WW FENCE
138 TURN LANE
38 TAPER
CLASS I RIPRAP (FLOODPLAIN)
SEE MITIGATION PLANS FOR STREAM DESIGN
ACCESS POINT
END WW FENCE
BEG WW FENCE
FOR -L- PROFILE SEE SHEET #42
FOR -Y6- PROFILE SEE SHEET #68
FOR -D6B- PROFILE SEE SHEET #75
FOR CULVERT SEE SHEETS C-26 TO C-32

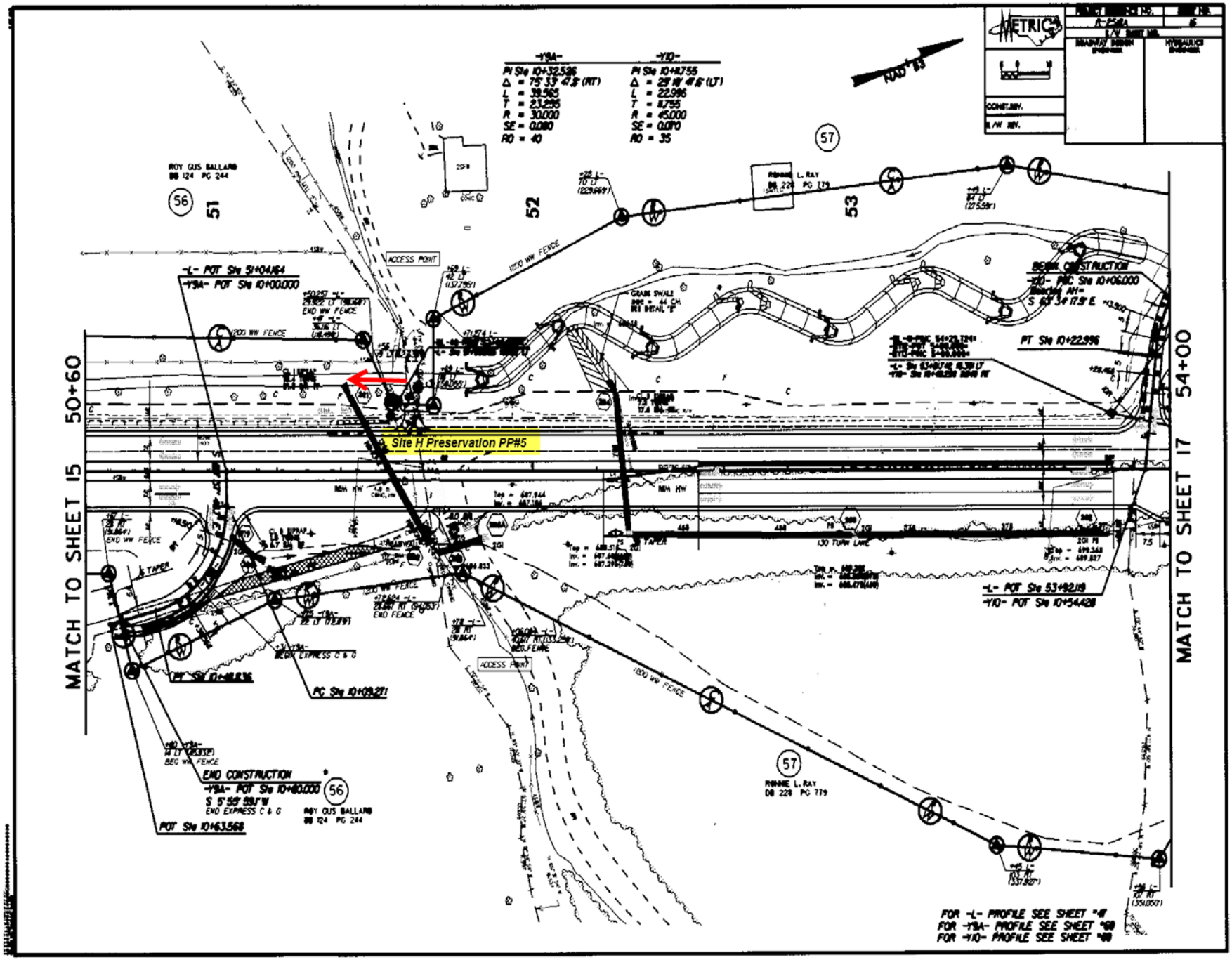

METRIC
R-2518A
12
R/W SHEET NO.
HIGHWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
CONST. REV.
R/W REV.
-L-
PI Sta 36+93.043
Gs = 2°23'14.4"
Ls = 75.000
LT = 90.005
ST = 25.004
PI Sta 39+12.86
Δ = 24°25'23.4" (RT)
L = 383.638
T = 194.777
R = 900.000
SE = 0.050
-DBC-
PI Sta 10+28.321
Δ = 76°14'19.5" (LT)
L = 14.105
T = 8.317
R = 10.800
BEGIN CONSTRUCTION
-Y7- POT Sta 10+00.000
POT Sta 10+00.000
ACCESS POINT
BRIAN BARLOW
DB 239 PG 456
J. C. YOUNG
DB 172 PG 82
J. C. YOUNG
DB 175 PG 36
SC Sta 37+18.038
1200 WW FENCE
SEE MITIGATION PLANS FOR STREAM DESIGN
PREFORMED SCOUR HOLE (SEE DETAIL "O")
ROD & LUG CONNECTORS W/SLEEVE GASKETS & ELBOWS
MATCH TO SHEET 11
MATCH TO SHEET 13
37+00
40+40
-L- POC Sta 38+45.726
-Y7- POT Sta 10+76.074
END RET. WALL
38+75 +/-
BEG. RET. WALL
IVAN W. HEMBREE
DB 200 PG 508
JOHN E. WADE, JR.
DB 310 PG 616
JAYE P. HEMBREE
DB 233 PG 57
LOU S. HENSLEY
DB 127 PG 421
30 TAPER
FOR -L- PROFILE SEE SHEET #43
FOR -Y7- PROFILE SEE SHEET #68
FOR -DBC- PROFILE SEE SHEET #75
FOR CULVERT SEE SHEETS C-33 TO C-38
FOR WALL SEE SHEETS W-1 TO W-2

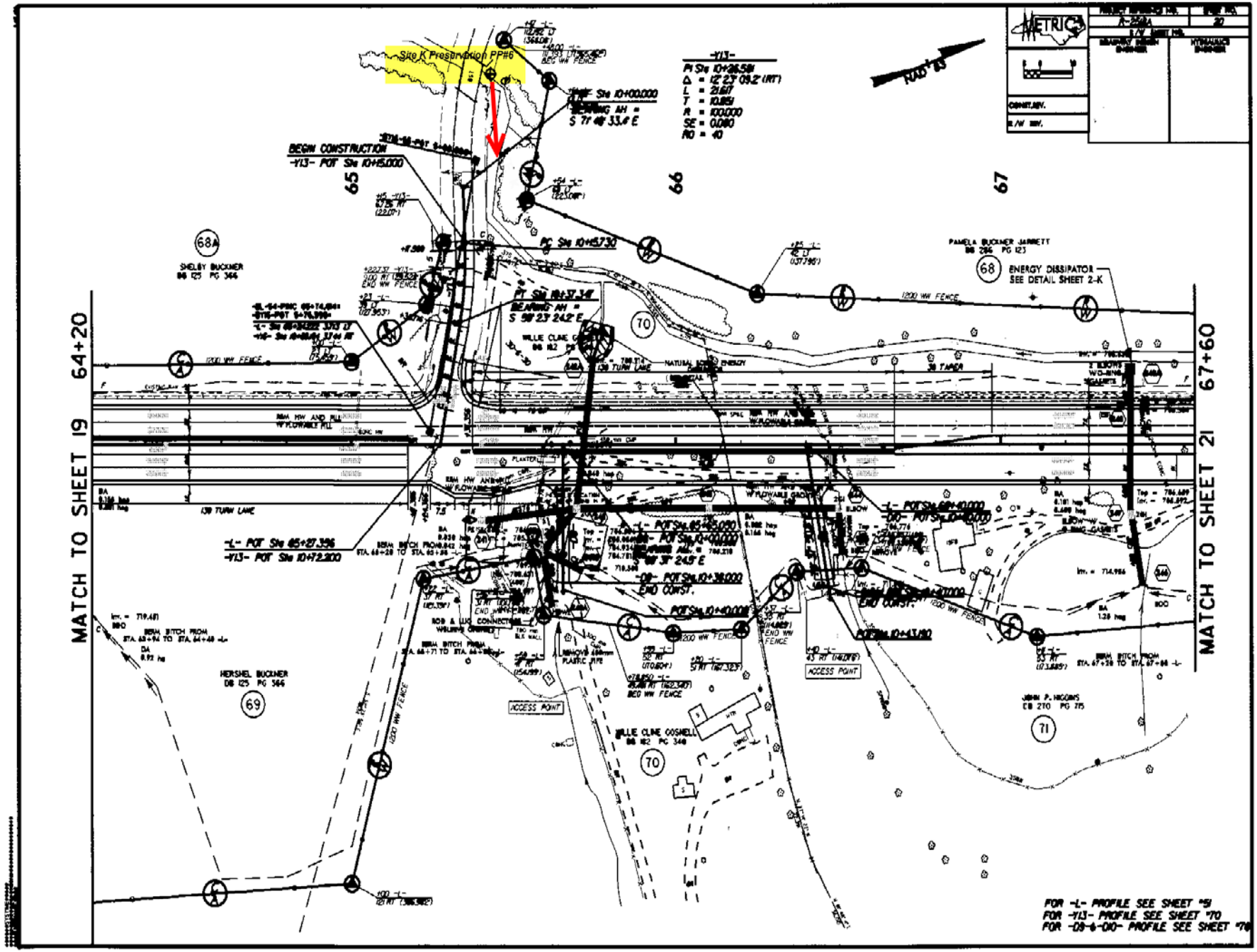


METRIC
PROJECT REFERENCE NO.
SHEET NO.
R-2514A
13
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
CONST. REV.
R/W REV.
-L-
PI Sta 39+12.816
Δ = 24° 25' 23.4" (RT)
L = 383.638
T = 194.777
R = 900.000
SE = 0.050
PI Sta 43+14.962
Δ = 4° 42' 01.3" (LT)
L = 407.573
T = 213.285
R = 580.000
SE = 0.080
NAD 83
MATCH TO SHEET 12
40+40
MATCH TO SHEET 14
43+80
LLOYD RAY
DB 82 PG 87
J. C. YOUNG
DB 112 PG 82
E. J. BALL, ESTATE
NO DEED
GAIL A. BUCKNER
DB 207 PG 784
RICKY CLEMENTS, ET AL
DB 325 PG 549
RICHARD BEAVER
DB 213 PG 137
KEVIN REARDON
ACCESS POINT
1200 WW FENCE
PRC Sta 41+01.677
PRESERVATION
FOR -L- PROFILE SEE SHEET #44

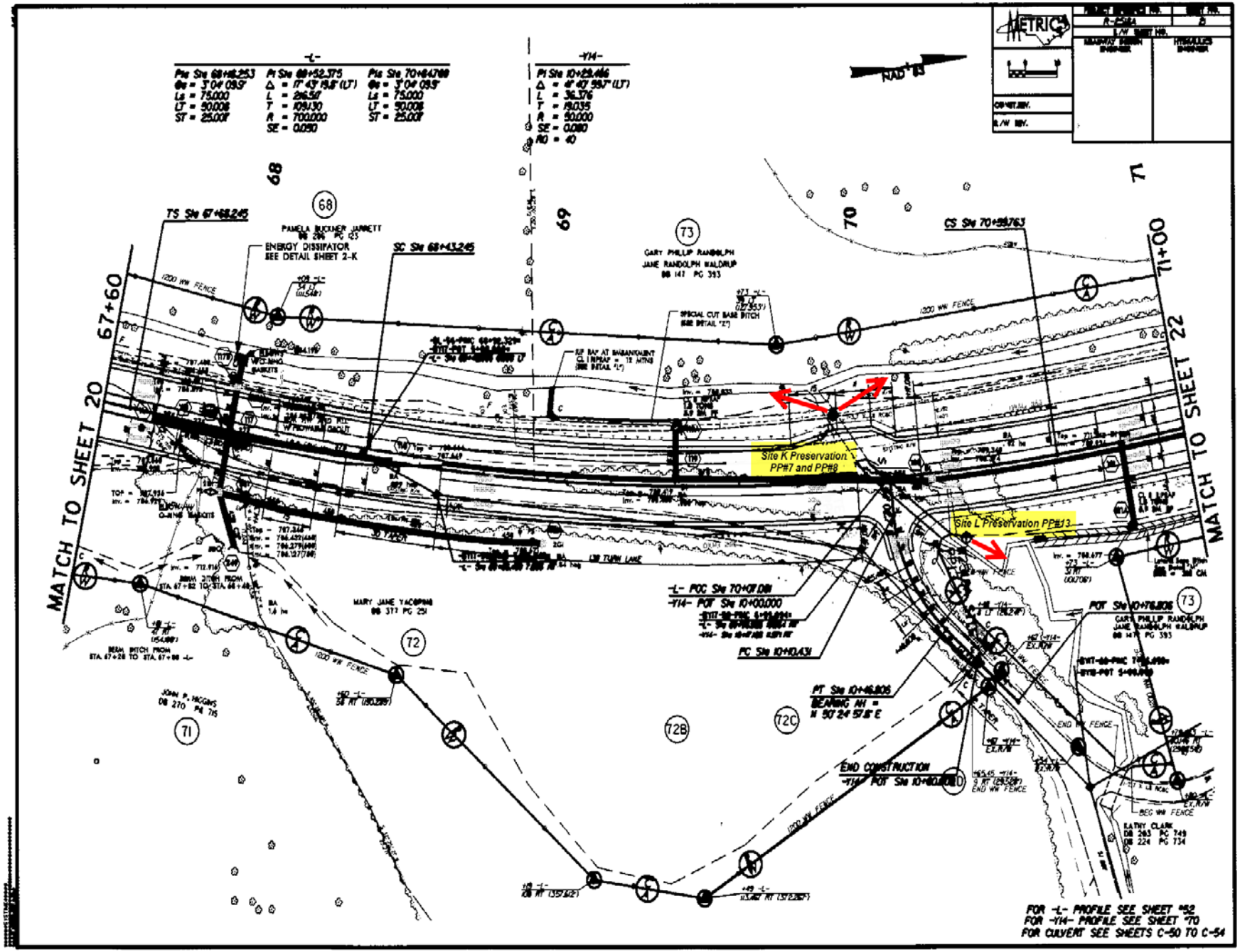


METRIC
NAD 83
LARRY M. ROBINSON
DB 320 PG 563
55
48
49
50
56
ROY GUS BALLARD
DB 124 PG 244
1200 WW FENCE
Site H Preservation PP #4
MATCH TO SHEET 14
47+20
MATCH TO SHEET 16
50+60
SPECIAL CUT DITCH
SEE DETAIL "C"
END CONSTRUCTION
-DTA- POT Sta.10+42.034
ACCESS POINT
END WW FENCE
54
SHELBY G. RAY
BETTY R. RAY
DB 65 PG 539
ROY GUS BALLARD
DB 124 PG 244
56
FOR -L- PROFILE SEE SHEET #46
FOR -DTA- PROFILE SEE SHEET #79

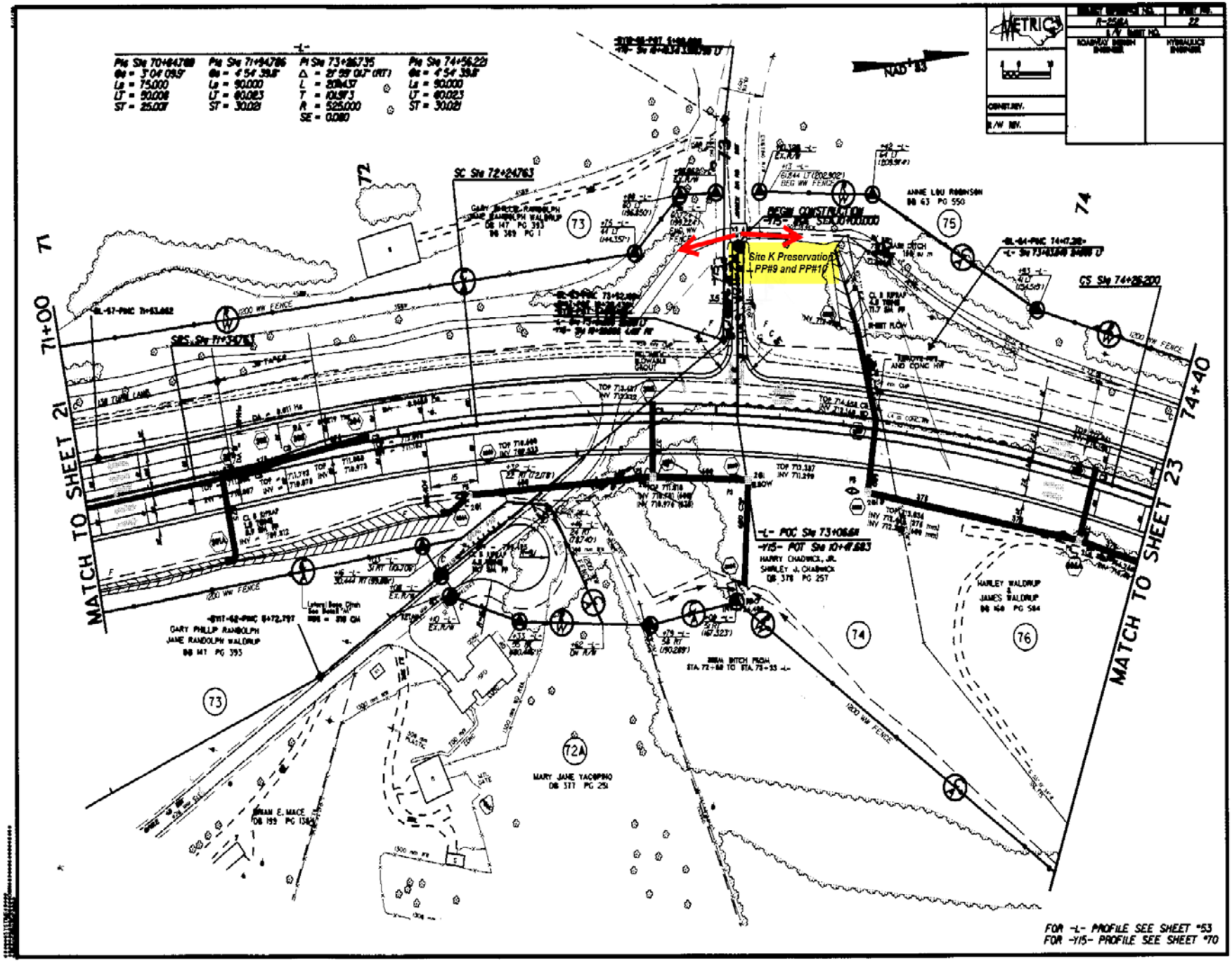

Site H Preservation PP#5
MATCH TO SHEET 15
50+60
MATCH TO SHEET 17
54+00
ACCESS POINT
END CONSTRUCTION
BEGIN CONSTRUCTION
130 TURN LANE
TAPER
FOR -L- PROFILE SEE SHEET "4"
FOR -Y9A- PROFILE SEE SHEET "9"
FOR -Y10- PROFILE SEE SHEET "9"

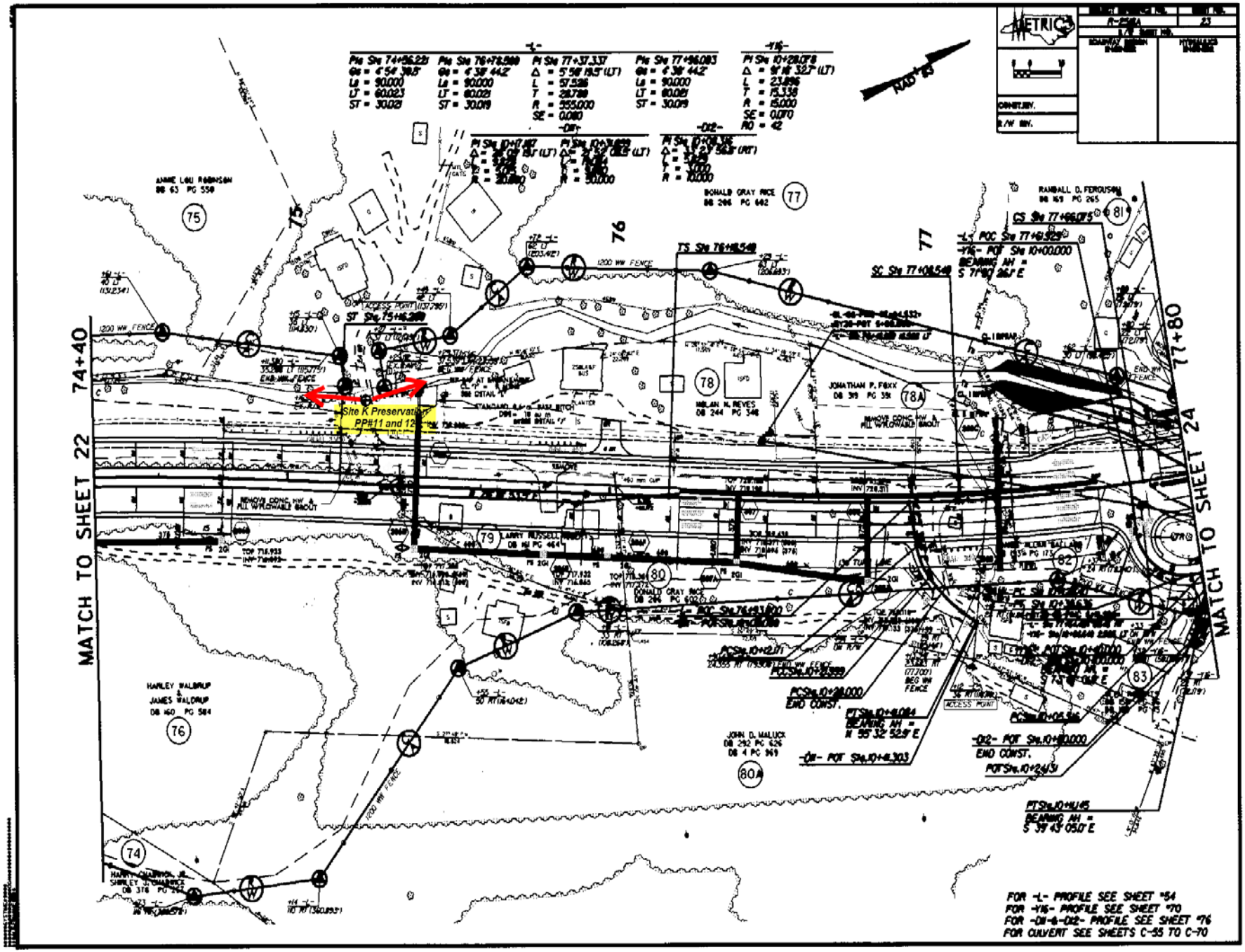


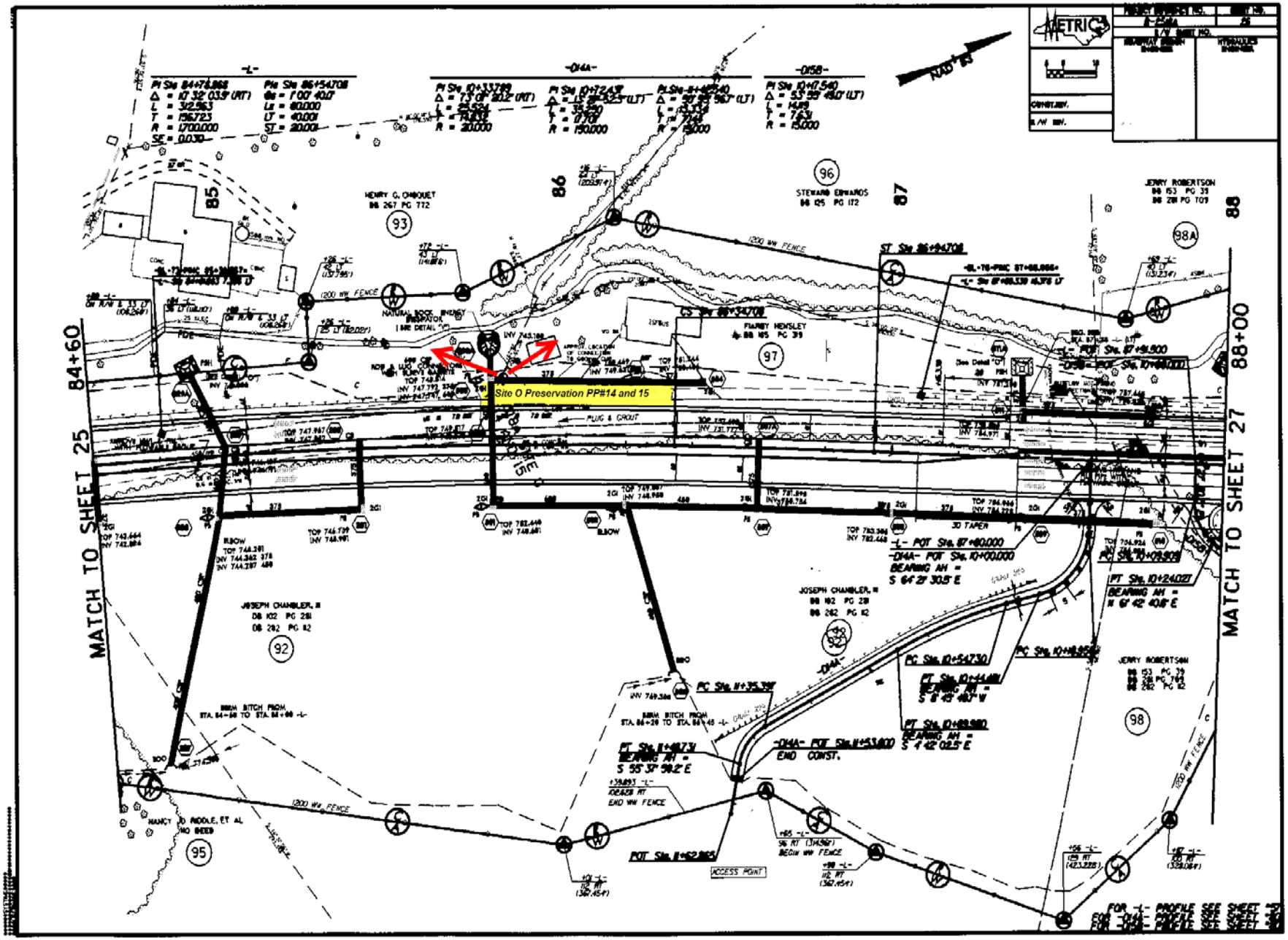
Site K Preservation PP#6
BEGIN CONSTRUCTION
-Y13- POT Sta 10+15.000
PC Sta 10+15.730
PT Sta 10+37.347
BEARING AH =
S 58° 23' 24.2" E
-Y13-
PI Sta 10+26.581
Δ = 12° 23' 09.2" (RT)
L = 21.617
T = 10.851
R = 100.000
SE = 0.080
RO = 40
NAD '83
METRIC
SHELBY BUCKNER
DB 125 PG 366
PAMELA BUCKNER JARRETT
DB 286 PG 123
ENERGY DISSIPATOR
SEE DETAIL SHEET 2-K
WILLIE CLINE GOSNELL
DB 182 PG 340
HERSHEL BUCKNER
DB 125 PG 366
JOHN P. HIGGINS
DB 270 PG 715
1200 WW FENCE
138 TURN LANE
ACCESS POINT
MATCH TO SHEET 19
64+20
MATCH TO SHEET 21
67+60
65
66
67
FOR -L- PROFILE SEE SHEET #51
FOR -Y13- PROFILE SEE SHEET #70
FOR -D9-&-D10- PROFILE SEE SHEET #70



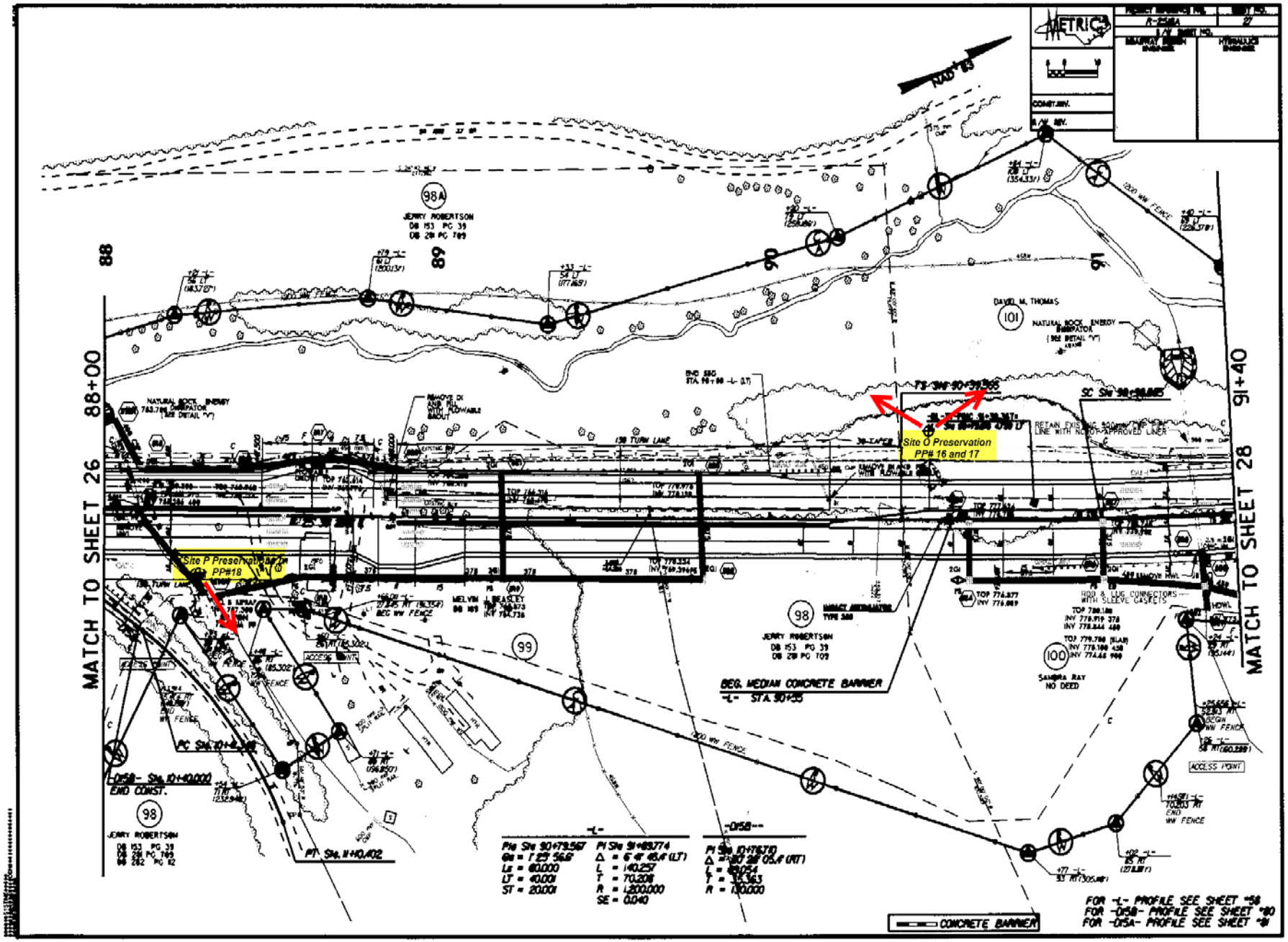
-L-
Pls Sta 68+18.253
Ls = 75.000
LT = 50.008
ST = 25.007
Pl Sta 68+52.375
Δ = 17° 43' 19.8" (LT)
L = 216.517
T = 109.130
R = 700.000
SE = 0.050
Pls Sta 70+84.768
Ls = 75.000
LT = 50.008
ST = 25.007
-Y14-
Pl Sta 10+29.466
Δ = 41° 40' 59.7" (LT)
L = 36.376
T = 19.035
R = 50.000
SE = 0.080
RO = 40
NAD 83
METRIC
TS Sta 67+68.245
SC Sta 68+43.245
CS Sta 70+59.763
PAMELA BUCKNER JARRETT
ENERGY DISSIPATOR
SEE DETAIL SHEET 2-K
GARY PHILLIP RANDOLPH
JANE RANDOLPH WALDRUP
MARY JANE YACOPINI
JOHN P. HIGGINS
KATHY CLARK
MATCH TO SHEET 20
MATCH TO SHEET 22
67+60
71+00
Site K Preservation
PP#7 and PP#8
Site L Preservation PP#13
-L- POC Sta 70+07.081
-Y14- POT Sta 10+00.000
PC Sta 10+10.431
PT Sta 10+46.805
BEARING AH =
N 50° 24' 57.8" E
POT Sta 10+76.806
END CONSTRUCTION
-Y14- POT Sta 10+80.000
1200 WW FENCE
END WW FENCE
BEG WW FENCE
FOR -L- PROFILE SEE SHEET #52
FOR -Y14- PROFILE SEE SHEET #70
FOR CULVERT SEE SHEETS C-50 TO C-54


Site K Preservation
PP#9 and PP#10
MATCH TO SHEET 21
MATCH TO SHEET 23
71+00
74+40
SC Sta 72+24.763
CS Sta 74+26.200
-L- POC Sta 73+06.64
-Y15- POT Sta 10+47.683
NAD '83
FOR -L- PROFILE SEE SHEET #53
FOR -Y15- PROFILE SEE SHEET #70

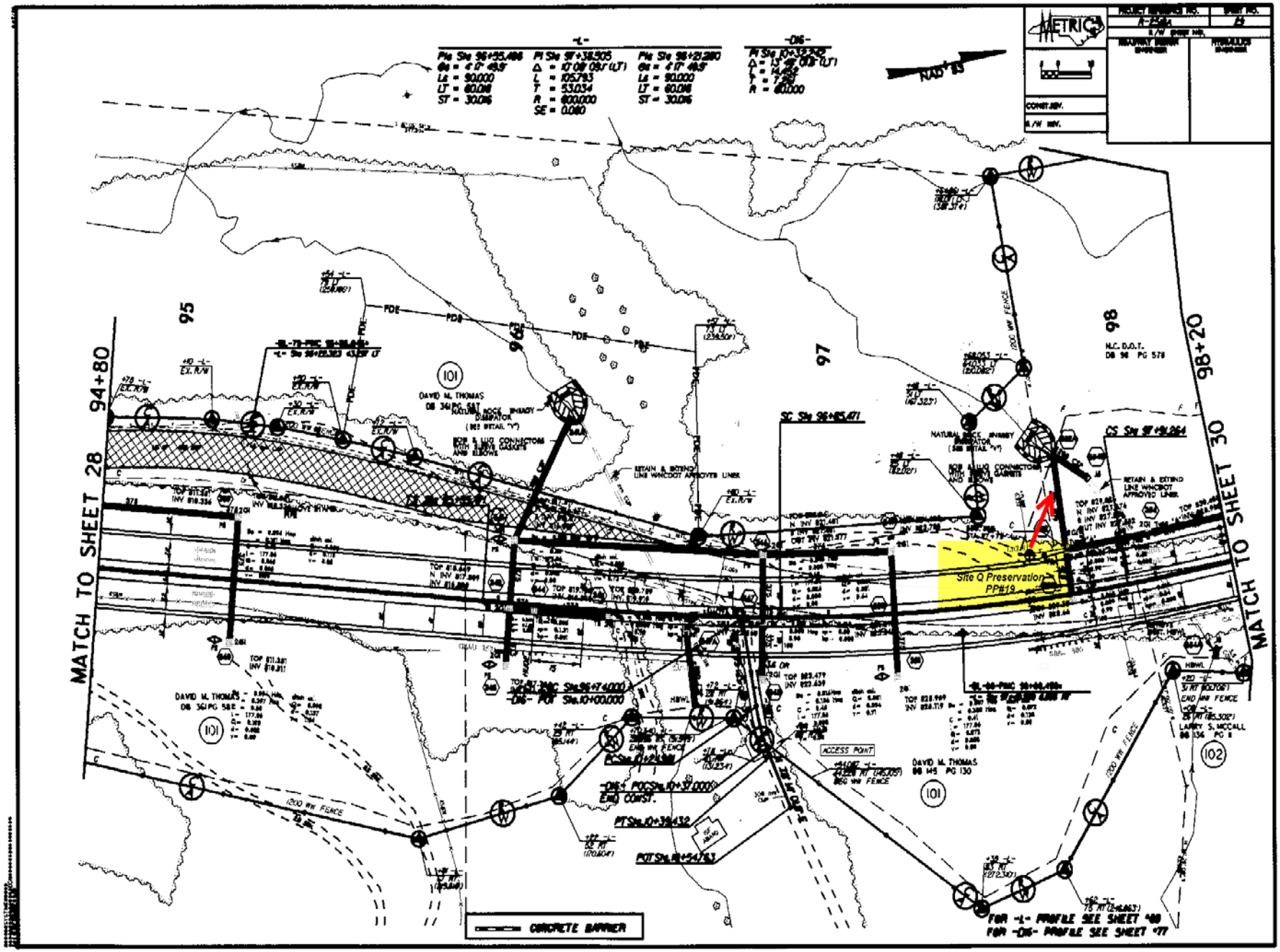

METRIC
NAD 83
MATCH TO SHEET 22
74+40
MATCH TO SHEET 24
77+80
Site K Preservation
PP#11 and 12
ANNIE LOU ROBINSON
DB 63 PG 550
DONALD GRAY RICE
DB 206 PG 602
RANDALL D. FERGUSON
DB 169 PG 265
JONATHAN P. FOXX
DB 319 PG 391
MILAN N. REVES
DB 244 PG 348
LARRY RUSSELL
DB 161 PG 464
HARLEY WALDRUP
&
JAMES WALDRUP
DB 160 PG 584
JOHN D. MALUCK
DB 292 PG 626
DB 4 PG 369
HARRY CHADWICK JR.
SHIRLEY J. CHADWICK
DB 376 PG 267
1200 WW FENCE
ACCESS POINT
END WW FENCE
FOR -L- PROFILE SEE SHEET #54
FOR -Y16- PROFILE SEE SHEET #70
FOR -D11-&-D12- PROFILE SEE SHEET #76
FOR CULVERT SEE SHEETS C-55 TO C-70



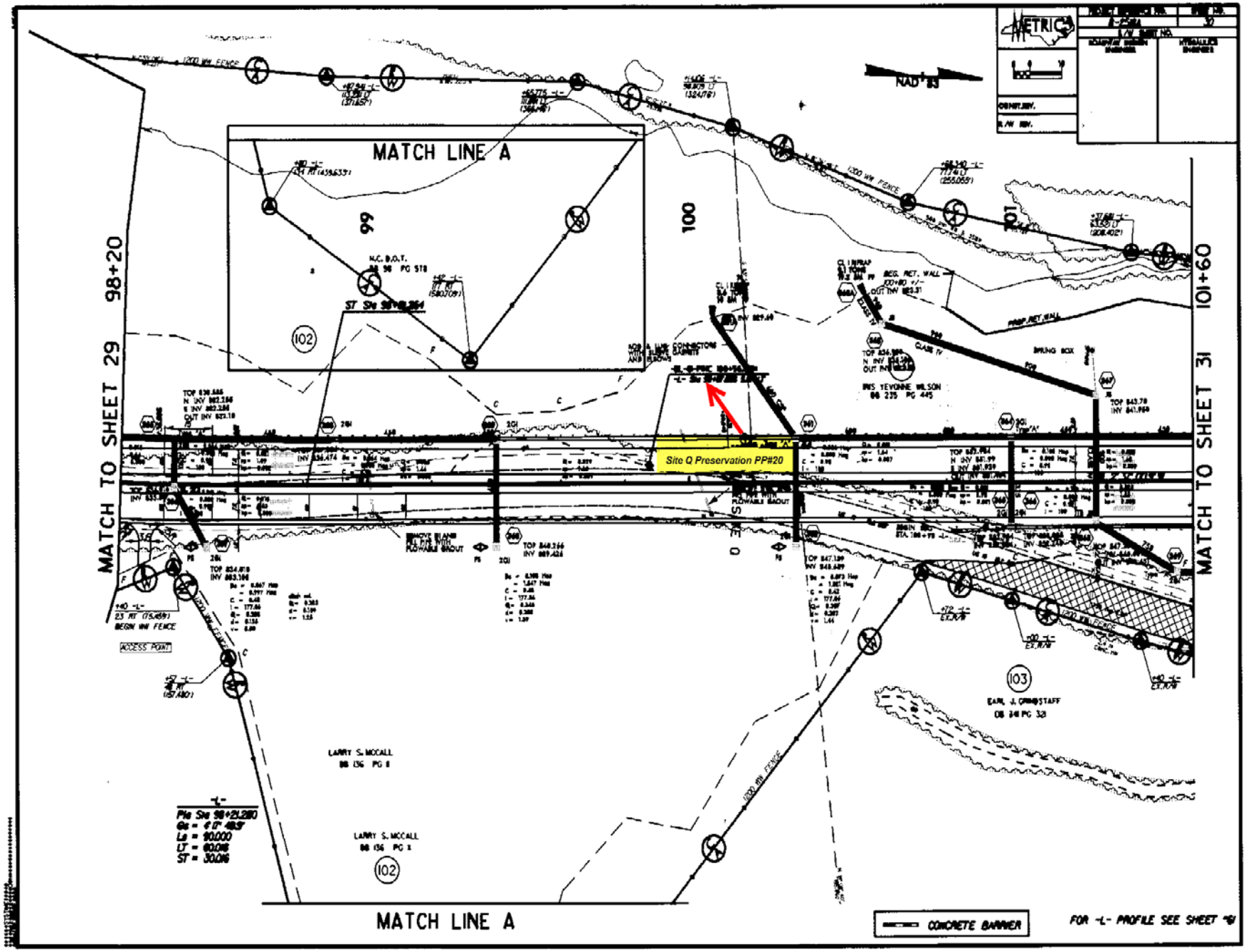
Site O Preservation PP#14 and 15
MATCH TO SHEET 25
MATCH TO SHEET 27
84+60
88+00
85
86
87
88
-L-
-D14A-
-D15B-
HENRY G. CHOQUET
DB 267 PG 772
STEWARD EDWARDS
DB 125 PG 172
JERRY ROBERTSON
DB 153 PG 39
DB 281 PG 709
FIARBY HENSLEY
DB 165 PG 319
JOSEPH CHANDLER, III
DB 102 PG 281
DB 282 PG 112
NANCY D. RIDDLE, ET AL
NO DEED
1200 WW FENCE
ACCESS POINT
END CONST.
END WW FENCE
BEGIN WW FENCE
30 TAPER
ST Sta 86+94.708
CS Sta 86+34.708
PC Sta. 11+35.397
PT Sta. 11+48.731
BEARING AH =
S 55° 37' 58.2" E
PT Sta. 10+24.027
BEARING AH =
N 61° 42' 40.8" E
PC Sta. 10+54.730
PT Sta. 10+44.481
BEARING AH =
S 8° 45' 48.7" W
PT Sta. 10+69.980
BEARING AH =
S 4° 42' 02.5" E
-L- POT Sta. 87+80.000
-D14A- POT Sta. 10+00.000
BEARING AH =
S 64° 21' 30.5" E
-D14A- POT Sta. 11+53.800
POT Sta. 11+62.865
FOR -L- PROFILE SEE SHEET



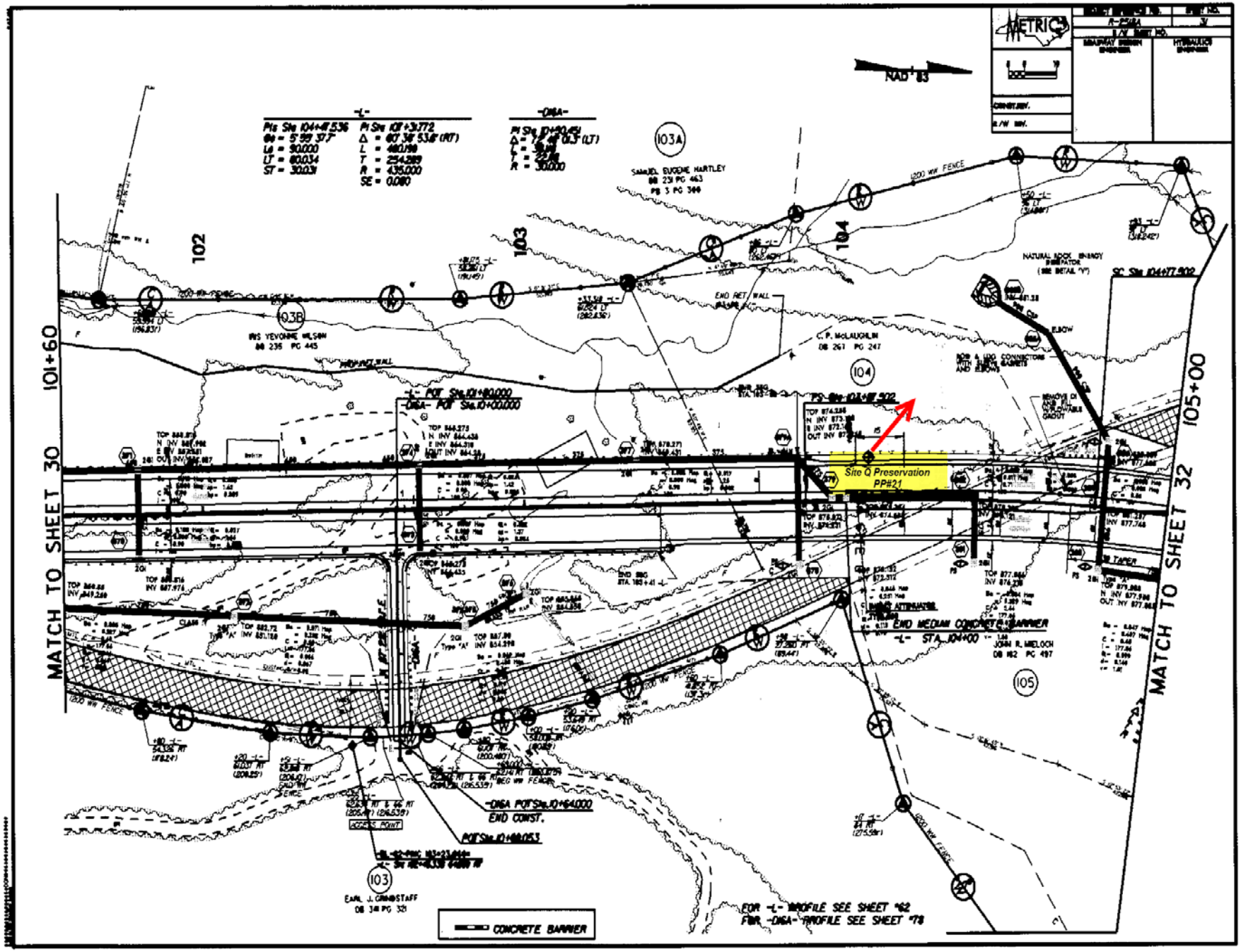
METRIC
NAD '83
MATCH TO SHEET 26
88+00
MATCH TO SHEET 28
91+40
Site O Preservation
PP# 16 and 17
Site P Preservation
PP#18
JERRY ROBERTSON
DB 153 PG 39
DB 281 PG 709
DAVID M. THOMAS
NATURAL ROCK ENERGY DISSIPATOR
SAMBRA RAY
NO DEED
BEG. MEDIAN CONCRETE BARRIER
-L- STA. 90+55
-D15B- Sta. 10+40.000
END CONST.
PT Sta. 11+10.402
ACCESS POINT
CONCRETE BARRIER
FOR -L- PROFILE SEE SHEET #58
FOR -D15B- PROFILE SEE SHEET #80
FOR -D15A- PROFILE SEE SHEET #81



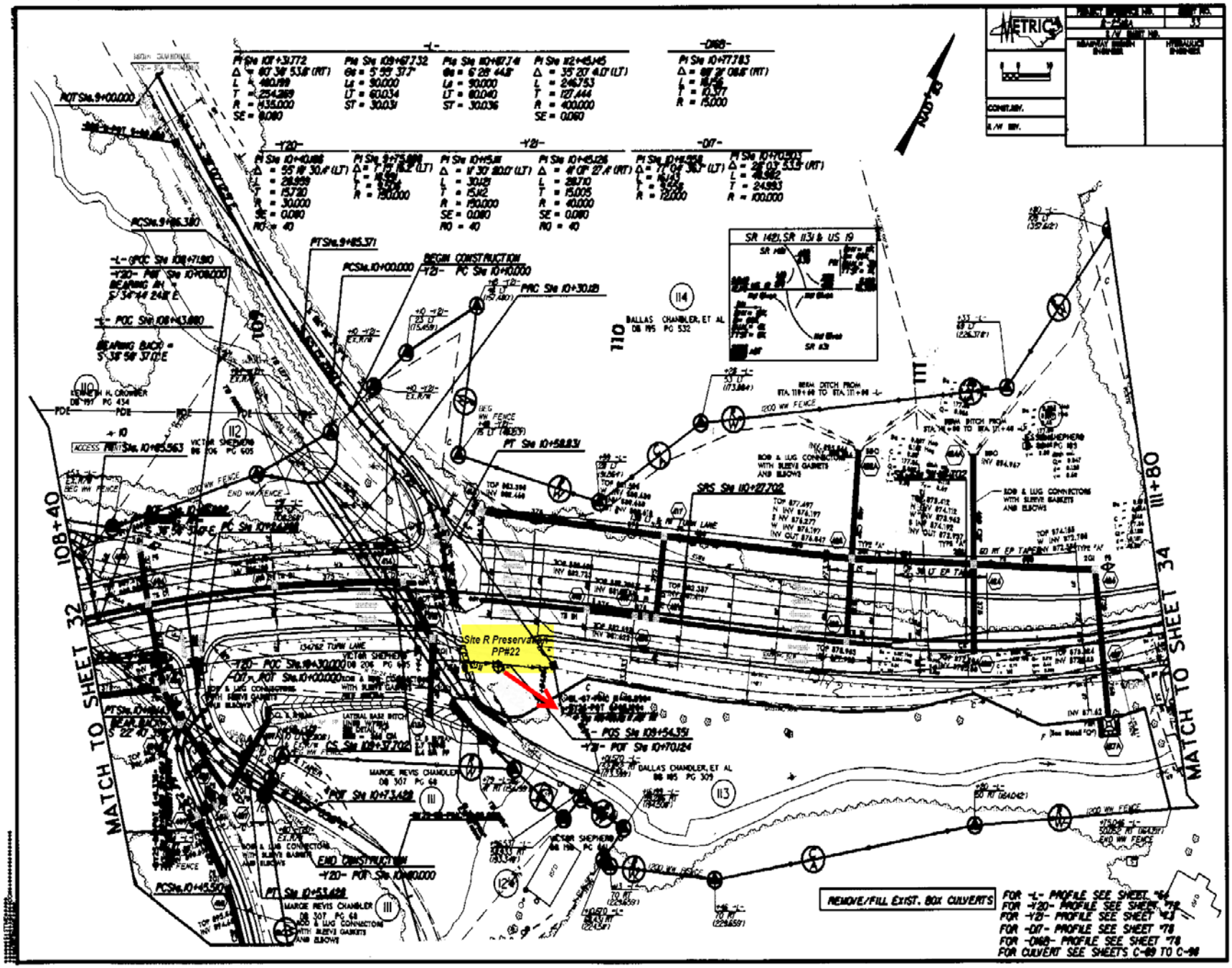
METRIC
NAD 83
MATCH TO SHEET 28
94+80
95
96
97
98
98+20
MATCH TO SHEET 30
DAVID M. THOMAS
DB 361 PG 581
DAVID M. THOMAS
DB 145 PG 130
N.C. D.O.T.
DB 98 PG 578
SC Sta 96+85.471
CS Sta 97+91.264
Site Q Preservation
PP#19
ACCESS POINT
1200 WW FENCE
CONCRETE BARRIER
FOR -L- PROFILE SEE SHEET #80
FOR -DI6- PROFILE SEE SHEET #77

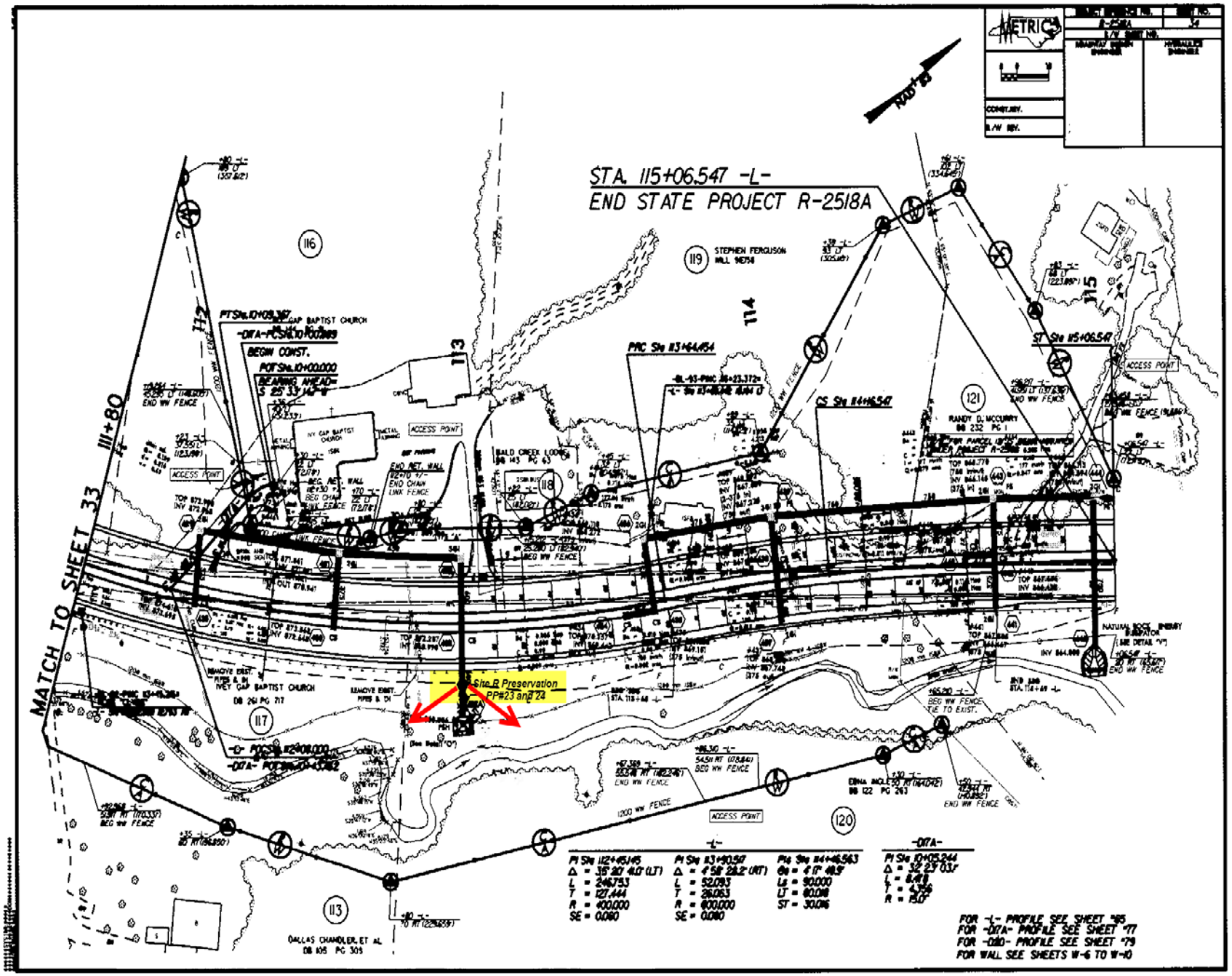


MATCH LINE A
MATCH TO SHEET 29
98+20
MATCH TO SHEET 31
101+60
Site Q Preservation PP#20
NAD 83
METRIC
LARRY S. MCCALL
EARL J. GRIMSTAFF
CONCRETE BARRIER
FOR -L- PROFILE SEE SHEET 61



METRIC
NAD 83
-L-
Pls Sta 104+47.536
Pi Sta 107+31.772
Δ = 60° 38' 53.8" (RT)
L = 480.198
T = 254.289
R = 435.000
SE = 0.080
-DIGA-
Pi Sta 10+90.451
Δ = 72° 48' 03.3" (LT)
R = 30.000
103A
SAMUEL EUGENE HARTLEY
DB 231 PG 463
PB 3 PG 366
102
103
104
103B
IRIS YEVONNE WILSON
DB 235 PG 445
C. P. McLAUGHLIN
DB 267 PG 247
NATURAL ROCK ENERGY DISSIPATOR
SC Sta 104+77.502
END RET. WALL
PROP. RET. WALL
-L- POT Sta.101+80.000
-DIGA- POT Sta.10+00.000
PS Sta 103+87.502
Site Q Preservation
PP#21
END MEDIAN CONCRETE BARRIER
-L- STA. 104+00
JOHN R. MIELOCH
DB 162 PG 497
105
MATCH TO SHEET 30
101+60
MATCH TO SHEET 32
105+00
-DIGA POT Sta.10+64.000
END CONST.
POT Sta.10+88.053
ACCESS POINT
EARL J. GRINDSTAFF
DB 341 PG 321
CONCRETE BARRIER
FOR -L- PROFILE SEE SHEET #62
FOR -DIGA- PROFILE SEE SHEET #78


Site R Preservation
PP#22
MATCH TO SHEET 32
MATCH TO SHEET 34
108+40
111+80
SR 142), SR 113) & US 19
REMOVE/FILL EXIST. BOX CULVERTS
FOR -L- PROFILE SEE SHEET "6"
FOR -Y20- PROFILE SEE SHEET "7"
FOR -Y2- PROFILE SEE SHEET "7"
FOR -D7- PROFILE SEE SHEET "7"
FOR -D68- PROFILE SEE SHEET "7"
FOR CULVERT SEE SHEETS C-89 TO C-98



STA. 115+06.547 -L-
END STATE PROJECT R-2518A
MATCH TO SHEET 33
111+80
Site R Preservation
PP#23 and 24
STEPHEN FERGUSON
RANDY D. MCCURRY
DALLAS CHANDLER, ET AL
ACCESS POINT
BEGIN CONST.
PRC Sta 113+64.454
CS Sta 114+16.547
ST Sta 115+06.547
-L-
PI Sta 112+45.145
Δ = 35° 20' 41.0" (LT)
L = 246.753
T = 127.444
R = 400.000
SE = 0.080
PI Sta 113+90.517
Δ = 4° 58' 28.2" (RT)
L = 52.093
T = 26.063
R = 600.000
SE = 0.080
PI Sta 114+46.563
Ls = 90.000
LT = 80.018
ST = 30.016
-D17A-
PI Sta 10+05.244
Δ = 32° 23' 03.1"
L = 8.478
T = 4.356
R = 15.0'
FOR -L- PROFILE SEE SHEET #65
FOR -D17A- PROFILE SEE SHEET #77
FOR -D20- PROFILE SEE SHEET #79
FOR WALL SEE SHEETS W-6 TO W-10