

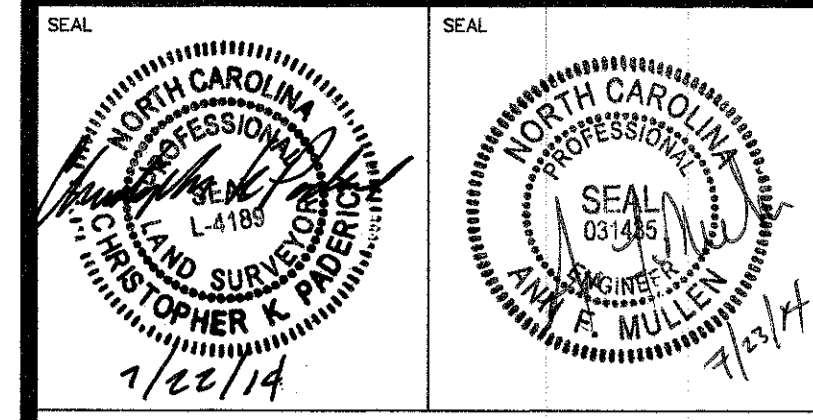
# **Appendix D**

## *As-Built Survey*

### Construction Bulletin Drawing



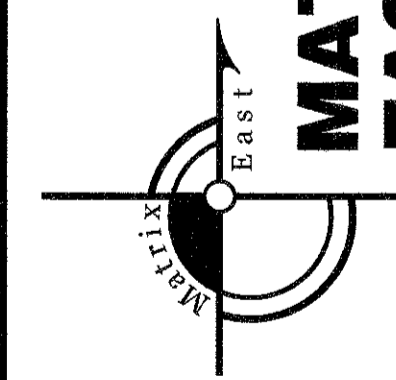
NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



- LEGEND
- C/L =CENTERLINE
  - R/W =RIGHT OF WAY
  - CMP =CORRUGATED METAL PIPE
  - HDPE =HIGH DENSITY POLYETHYLENE PIPE
  - XS =CROSS SECTION
  - VP =VEGETATION PLOT
  - =RAIN GAUGE
  - RG =RAIN GAUGE
  - ⊙ =CREST GAUGE
  - CG =CREST GAUGE
  - =AUTO-CREST GAUGE
  - ACG =AUTO-CREST GAUGE
  - ⊗ =WOODY DEBRIS BUNDLE
  - ▬ =LOG GRADE CONTROL
  - ▬▬ =LOG STRUCTURE
  - ▬▬▬ =LOG TOE PROTECTION
  - ▬▬▬▬ =BEDDED LOG STRUCTURE
  - ▬▬▬▬▬ =DIFFUSE FLOW STRUCTURE
  - - - - =CONSERVATION EASEMENT LINE
  - — — — =BOUNDARY LINE
  - — — — =BOUNDARY/CONSERVATION EASEMENT LINE
  - ~~~~~ =WOODLINE

Legend

**MUDDY RUN  
 MITIGATION PROJECT  
 DUPLIN COUNTY, N.C.**

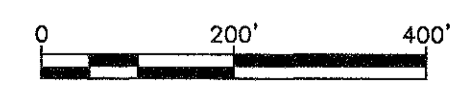
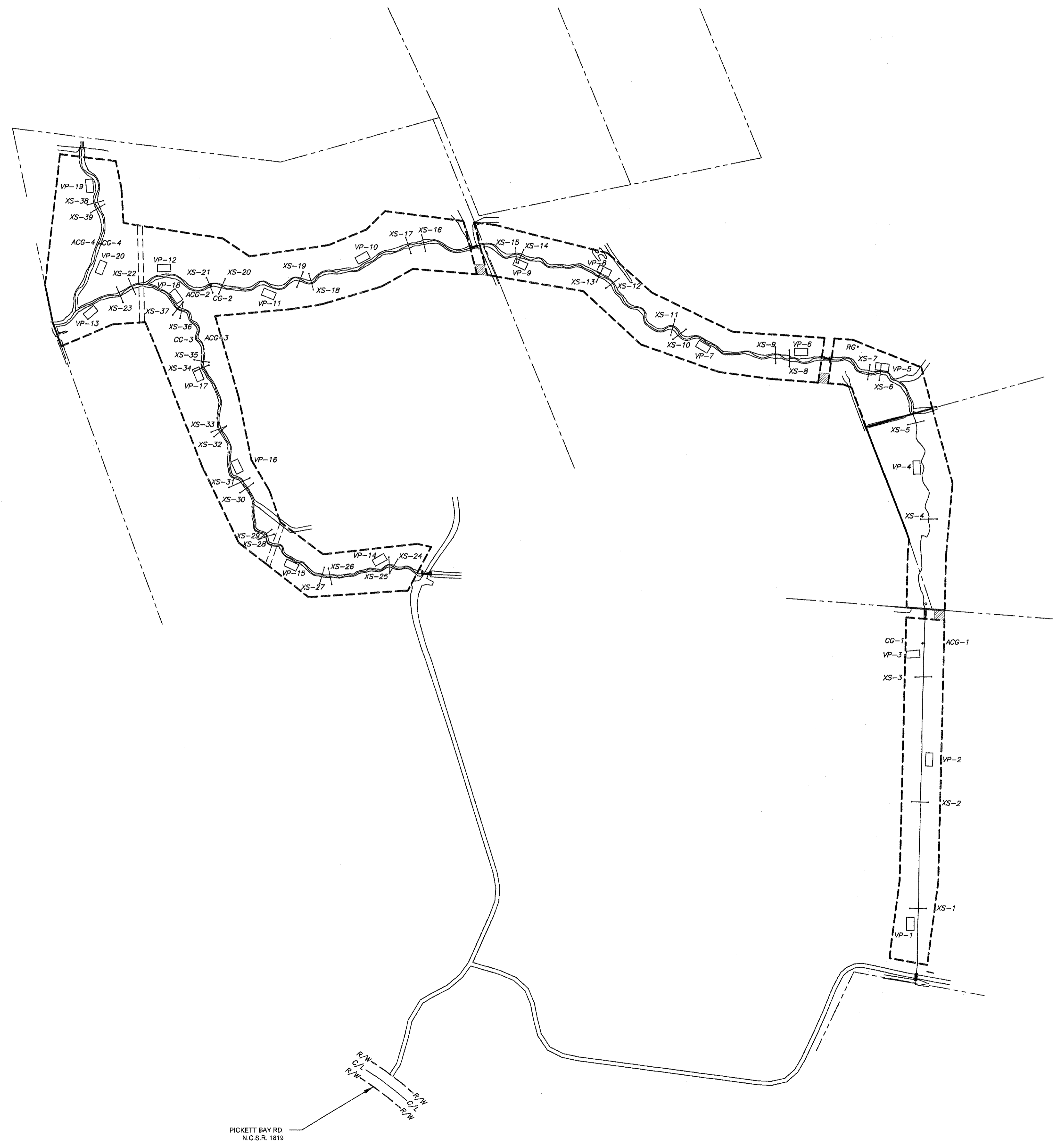


**MATRIX  
 EAST, PLLC**

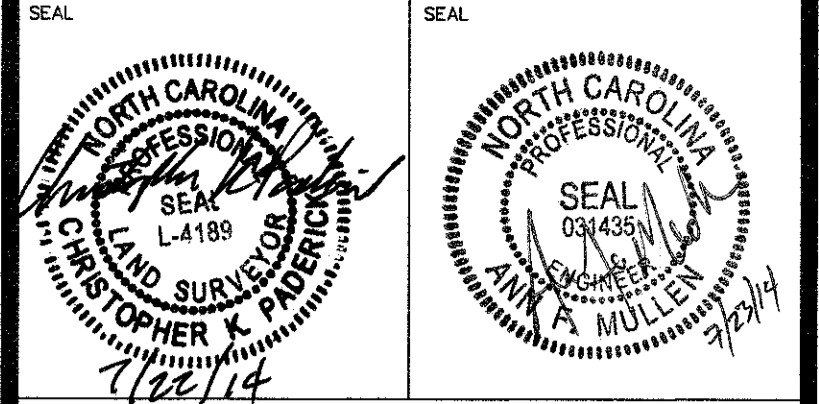
906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|   |                         |                      |
|---|-------------------------|----------------------|
| SCALE                                   |                         | DEPARTMENT           |
| DRAWN BY<br>CKP                         | DATE STARTED<br>4-28-14 | SHEET No.<br>2 OF 20 |
| APPROVED<br>CKP                         |                         | DRAWING NO.          |
| DRAWING NAME<br>MR1-Asbuilt-Revised.dwg |                         | <b>S-2</b>           |
| PROJECT NO.<br>20110047                 |                         |                      |

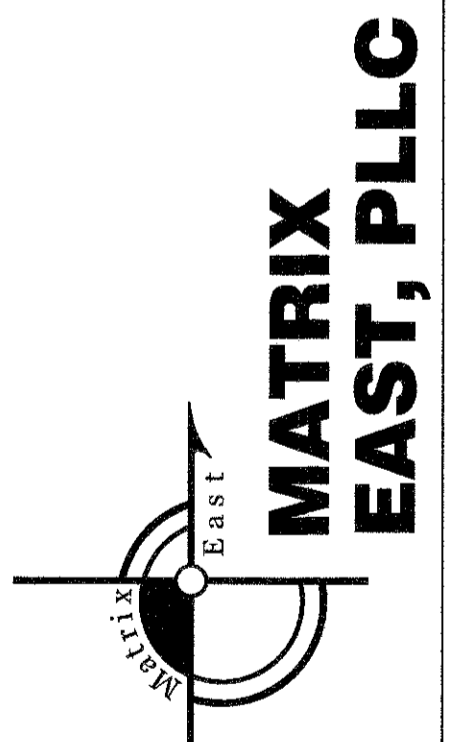


NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM MONITORING OVERVIEW**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.



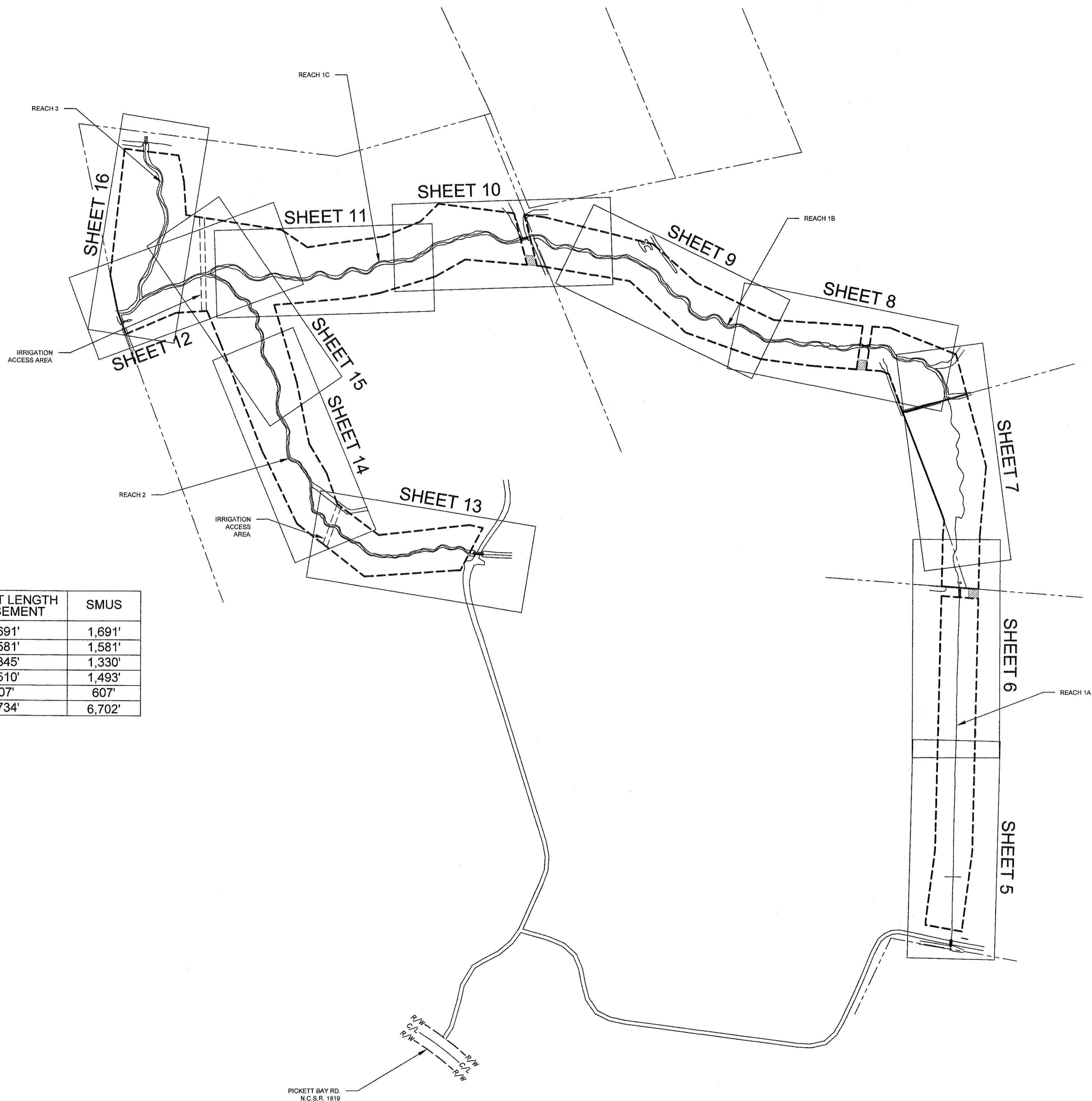
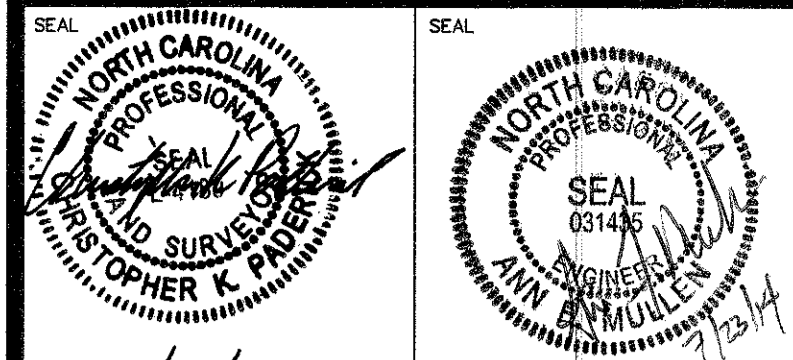
**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matriceast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

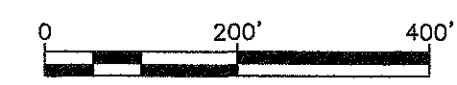
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|---|-------------------------|----------------------|
| SCALE<br>1" = 200'                      |                         | DEPARTMENT           |
| DRAWN BY<br>CKP                         | DATE STARTED<br>4-28-14 | SHEET No.<br>3 OF 20 |
| APPROVED<br>CKP                         | DRAWING NO.             |                      |
| DRAWING NAME<br>MR1-Asbuilt-Revised.dwg |                         | <b>S-3</b>           |
| PROJECT NO.<br>20110047                 |                         |                      |

NOTE:  
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 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



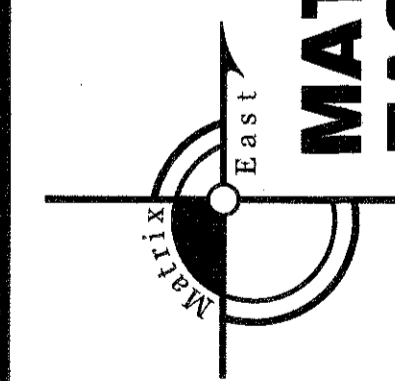
| REACH | MITIGATION TYPE | AS-BUILT LENGTH IN EASEMENT | SMUS   |
|-------|-----------------|-----------------------------|--------|
| 1A    | HWV RESTORATION | 1,691'                      | 1,691' |
| 1B    | P1 RESTORATION  | 1,581'                      | 1,581' |
| 1C    | P1 RESTORATION  | 1,345'                      | 1,330' |
| 2     | P1 RESTORATION  | 1,510'                      | 1,493' |
| 3     | P1 RESTORATION  | 607'                        | 607'   |
| TOTAL |                 | 6,734'                      | 6,702' |

PICKETT BAY RD.  
 N.C.S.R. 1819



STREAM BASELINE OVERVIEW

**MUDDY RUN  
 MITIGATION PROJECT  
 DUPLIN COUNTY, N.C.**



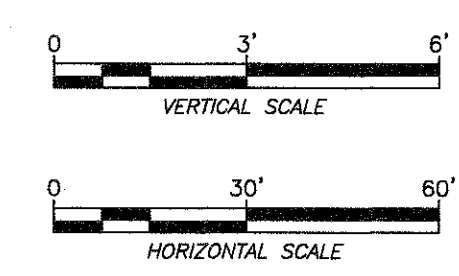
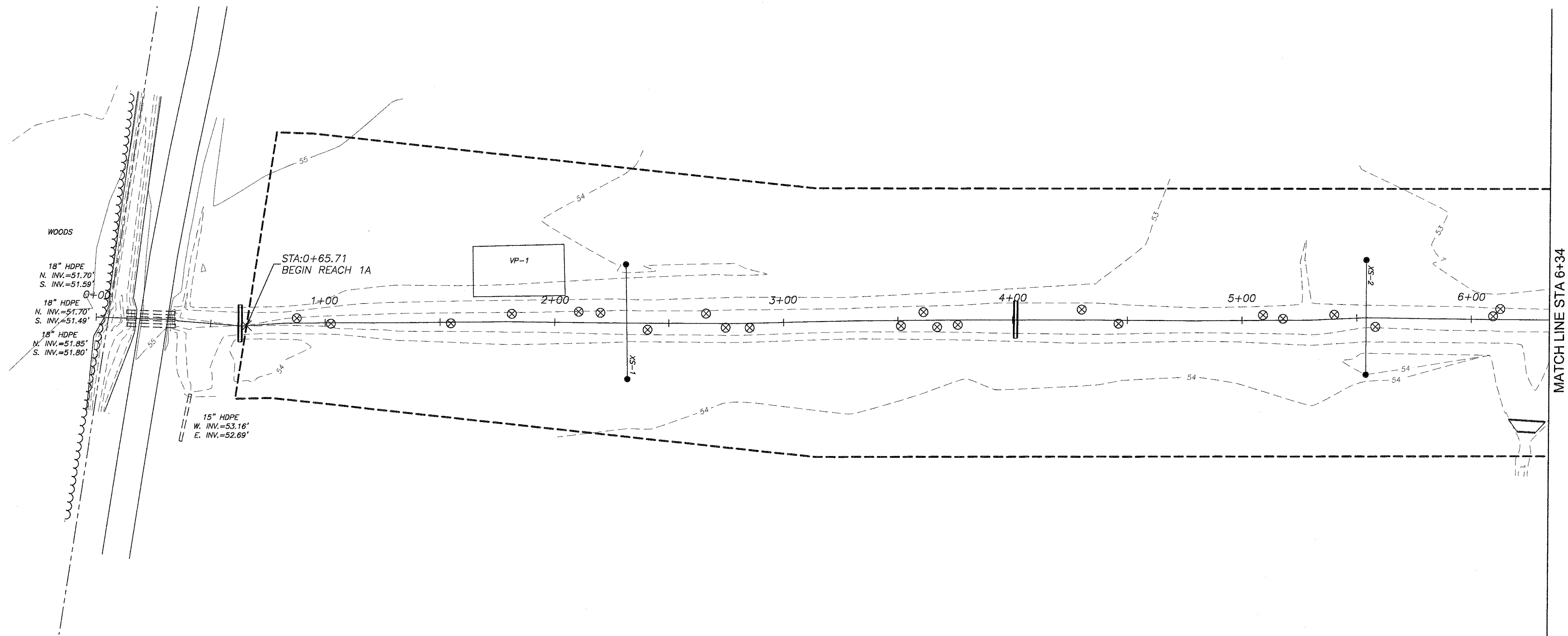
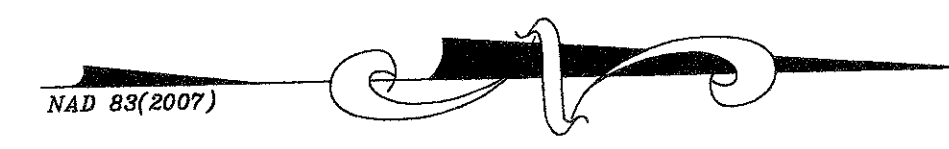
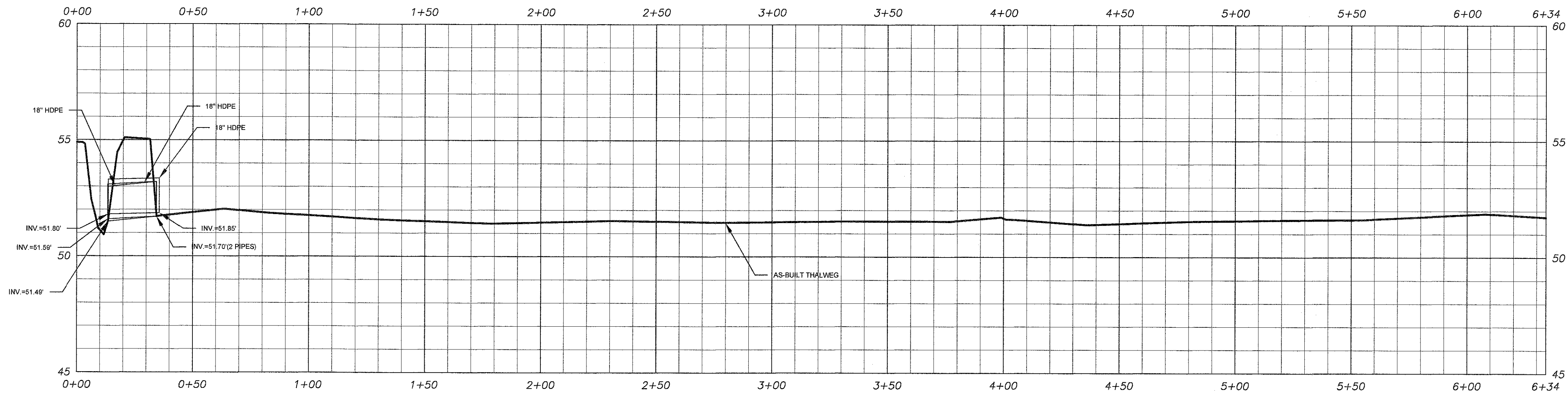
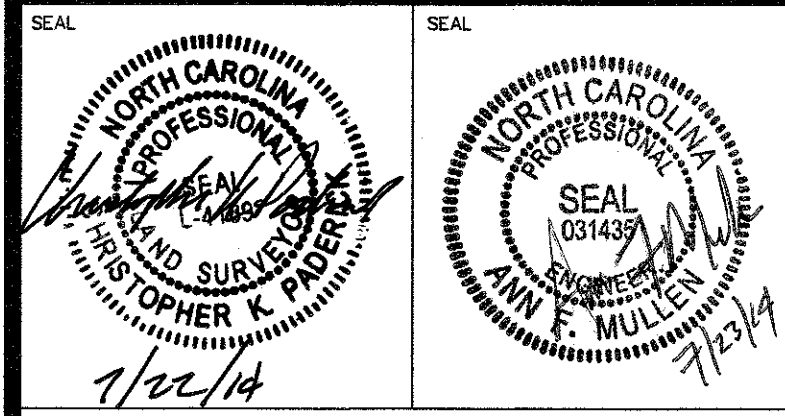
**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matriceast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

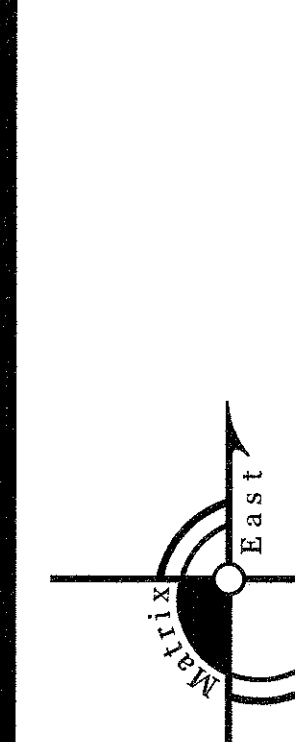
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| DRAWN BY<br>CKP                         | DATE STARTED<br>4-28-14 | SHEET No.<br>4 OF 20 |
| APPROVED<br>CKP                         | DRAWING NO.             |                      |
| DRAWING NAME<br>MR1-Asbuilt-Revised.dwg |                         | <b>S-4</b>           |
| PROJECT NO.<br>20110047                 |                         |                      |

NOTE:  
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 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 0+00 - 6+34)

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.



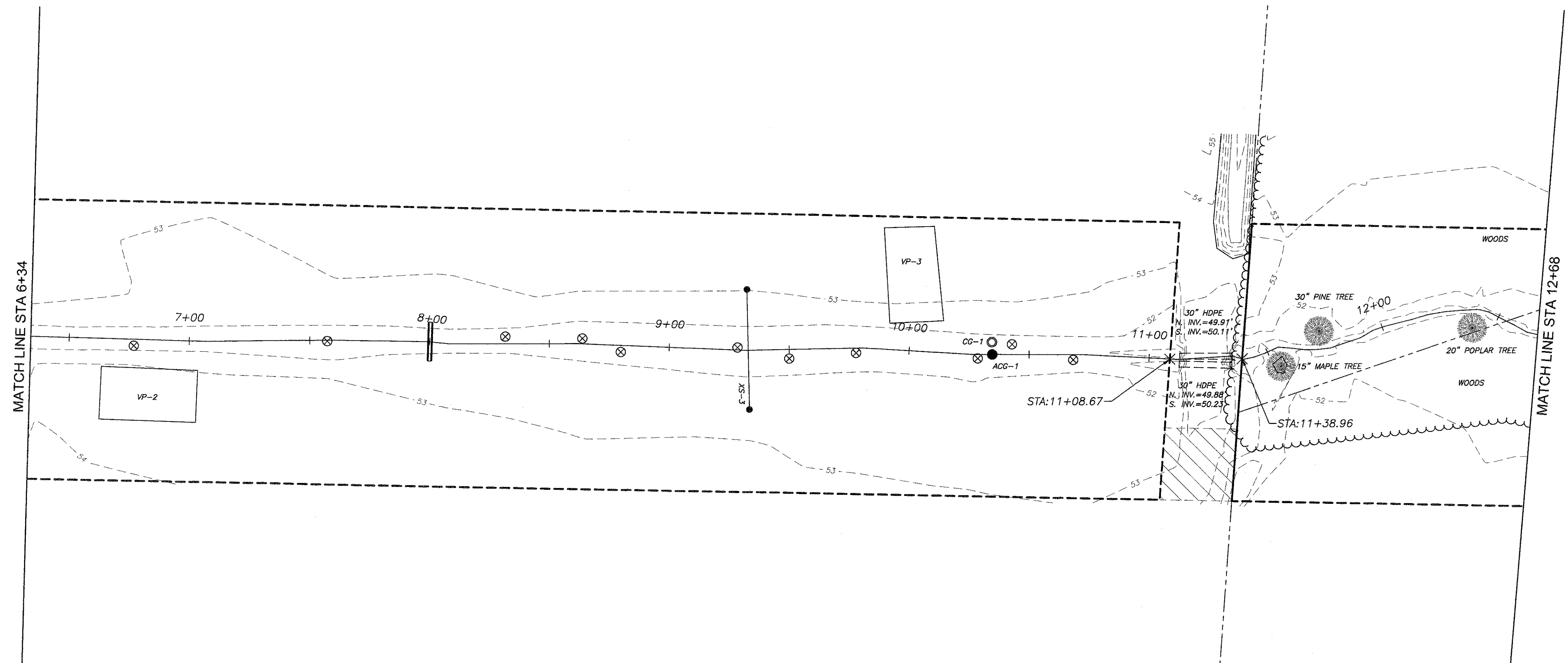
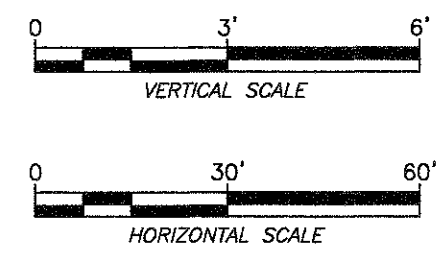
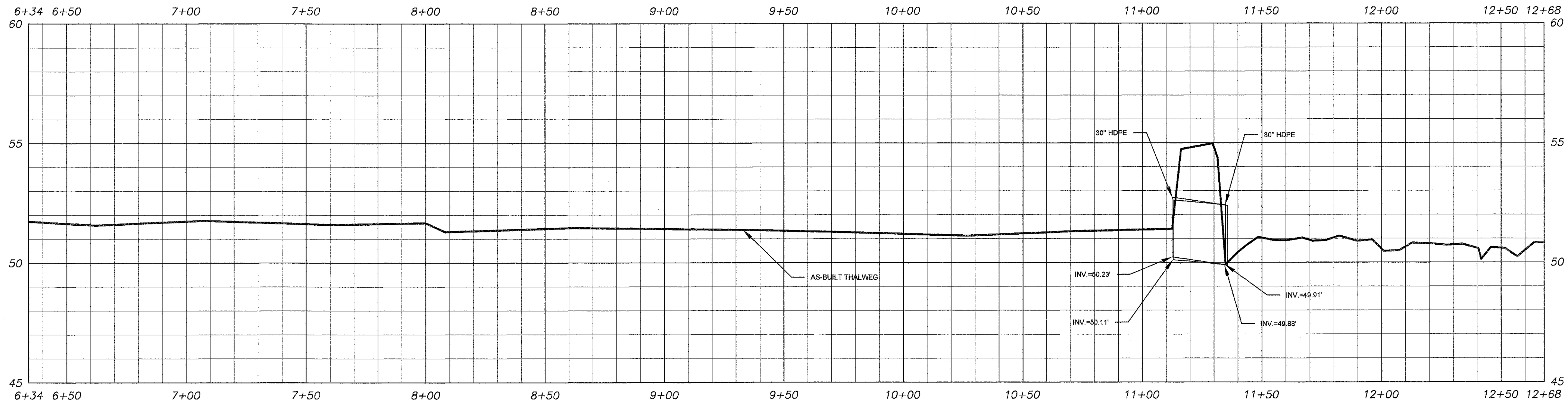
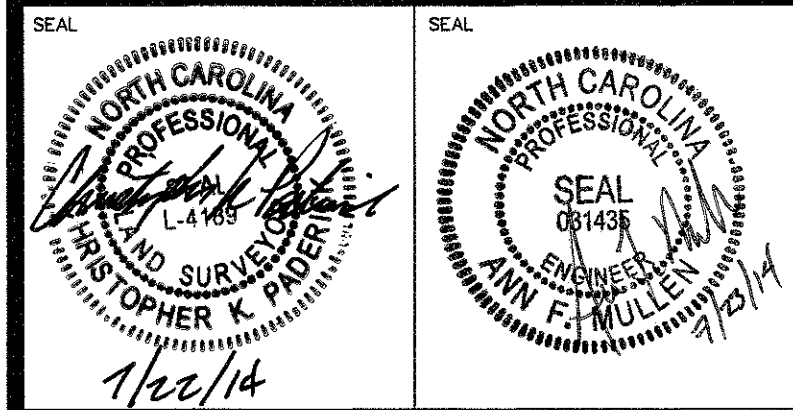
**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

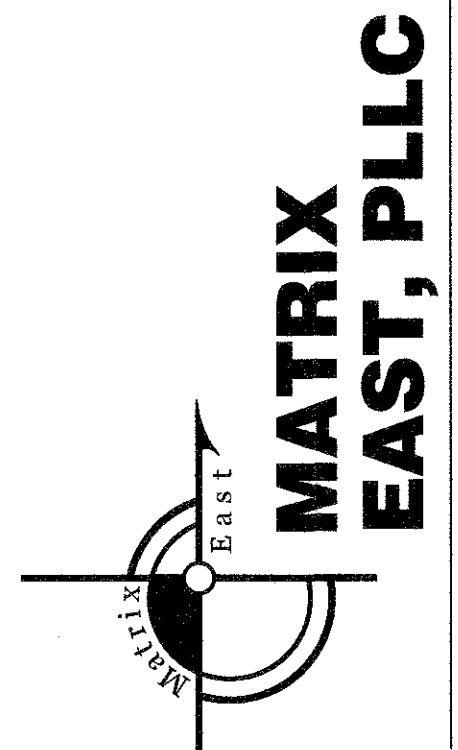
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| APPROVED<br>CKP                         | DRAWING NO.             |                      |
| DRAWING NAME<br>MR1-Asbuilt-Revised.dwg |                         | <b>S-5</b>           |
| PROJECT NO.<br>20110047                 |                         |                      |

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 6+34 - 12+68)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

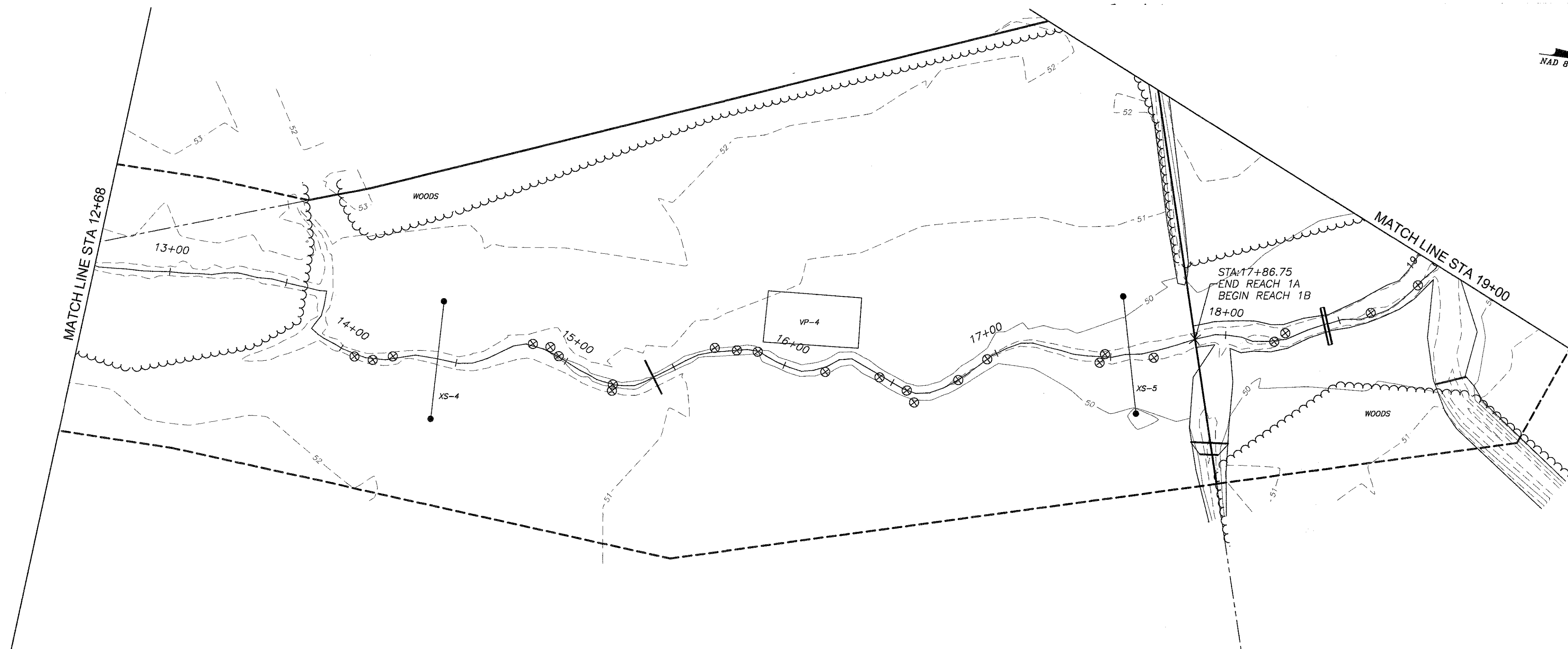
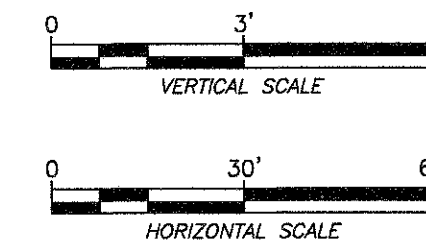
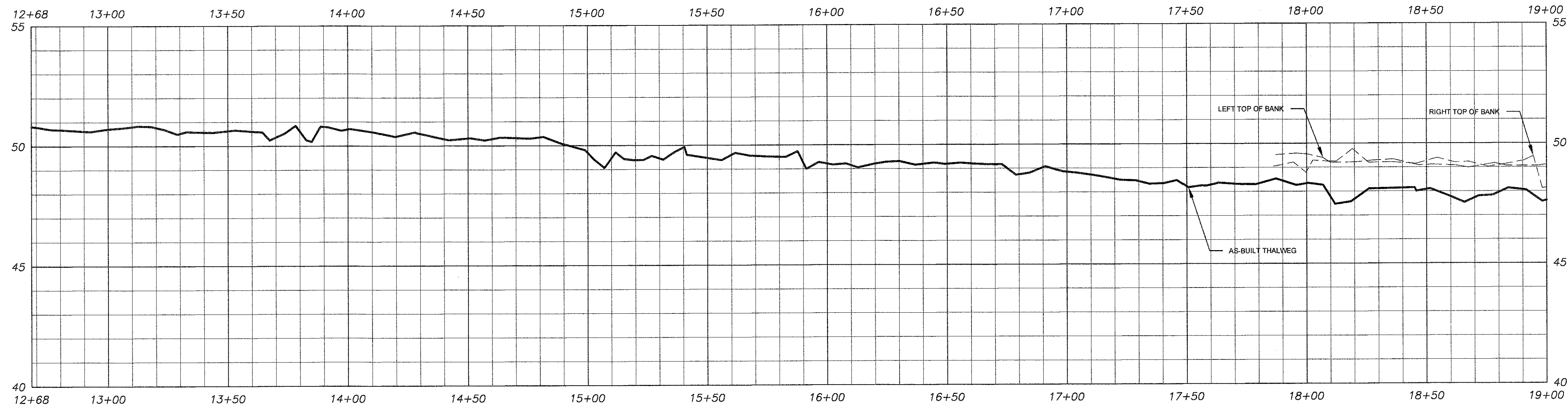
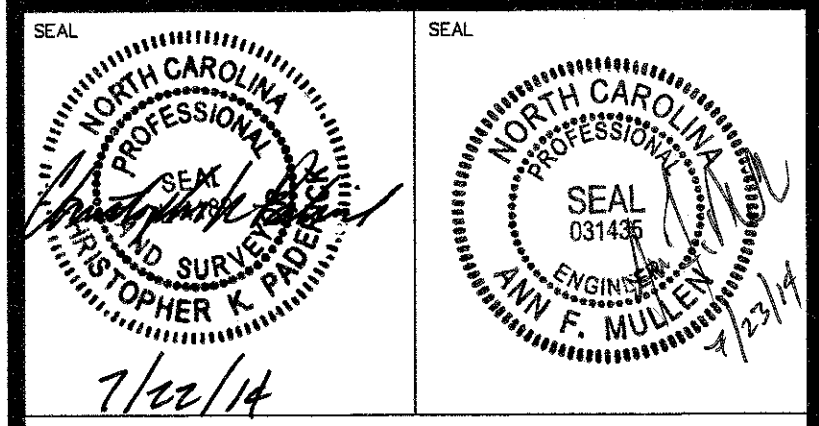


**MATRIX  
 EAST, PLLC**  
 906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|              |                         |              |            |
|--------------|-------------------------|--------------|------------|
| SCALE        | 1" = 30'                | DEPARTMENT   |            |
| DRAWN BY     | CKP                     | DATE STARTED | 4-28-14    |
| APPROVED     | CKP                     | SHEET No.    | 6 OF 20    |
| DRAWING NAME | NR1-Asbuilt-Revised.dwg | DRAWING NO.  |            |
| PROJECT NO.  | 20110047                |              |            |
|              |                         |              | <b>S-6</b> |

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 12+68 - 19+00)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

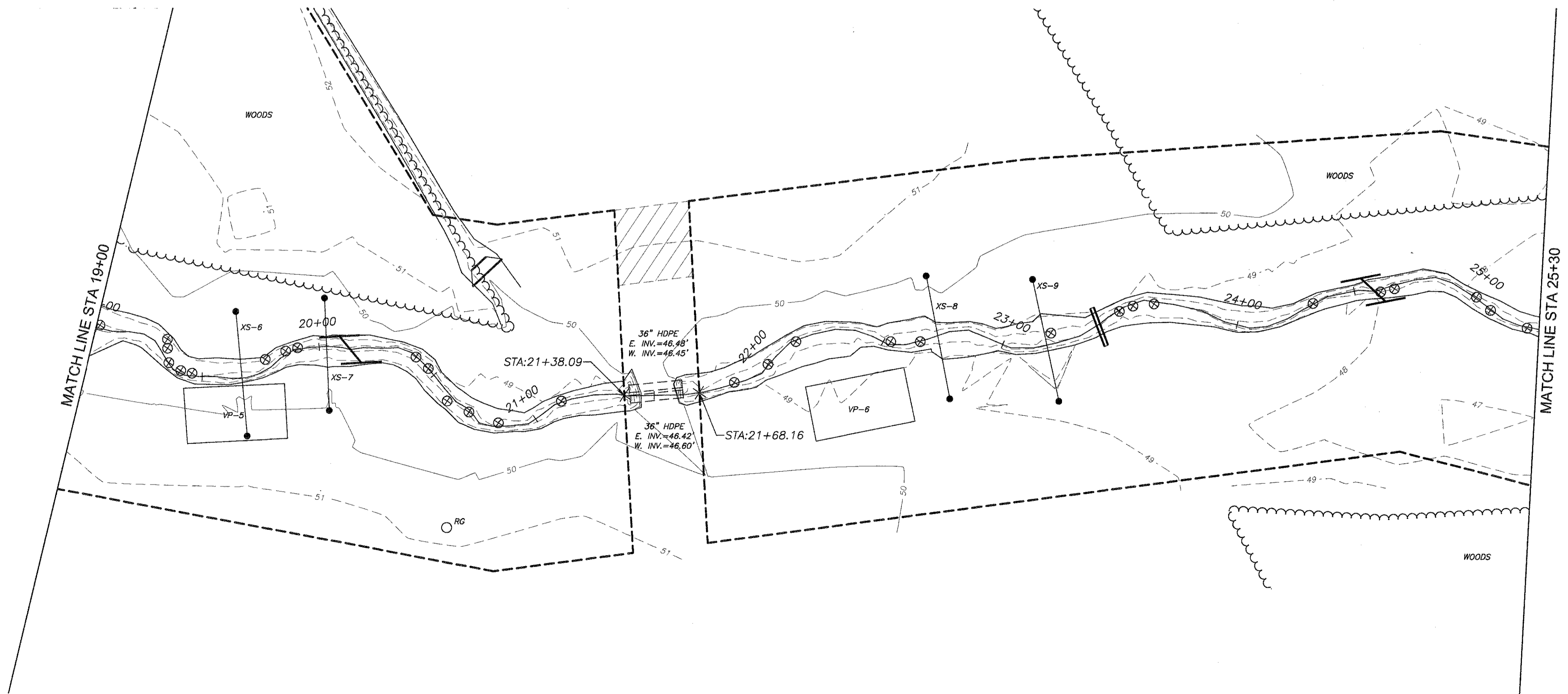
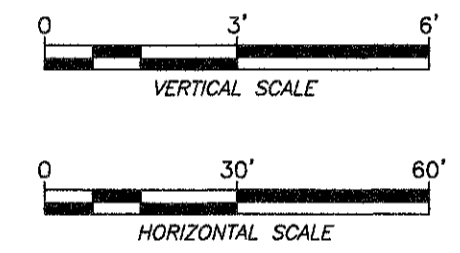
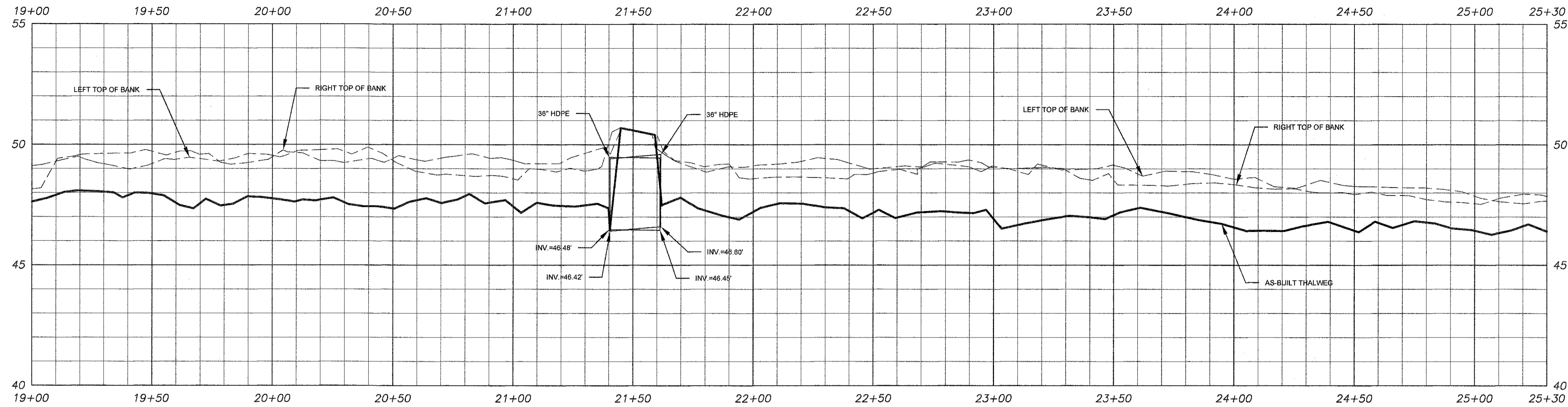
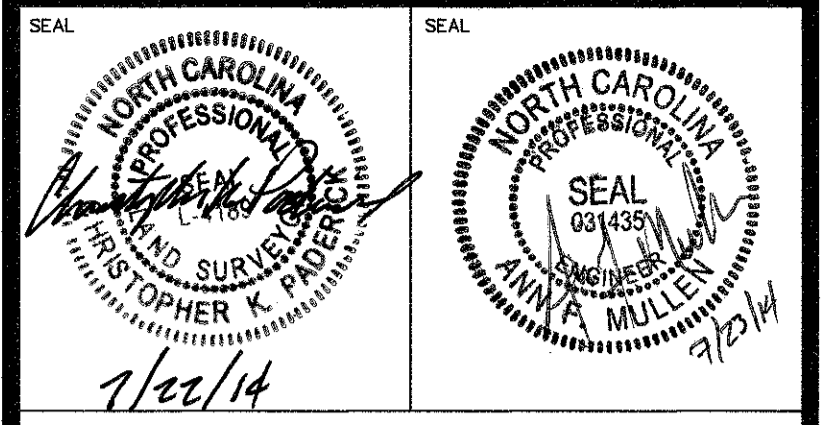
**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|                         |              |             |  |
|-------------------------|--------------|-------------|--|
| SCALE                   | 1" = 30'     | DEPARTMENT  |  |
| DRAWN BY                | DATE STARTED | SHEET No.   |  |
| CKP                     | 4-28-14      | 7 OF 20     |  |
| APPROVED                |              | DRAWING NO. |  |
| CKP                     |              |             |  |
| DRAWING NAME            |              |             |  |
| MR1-Asbuilt-Revised.dwg |              |             |  |
| PROJECT NO.             |              |             |  |
| 20110047                |              |             |  |

**S-7**



NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 19+00 - 25+30)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

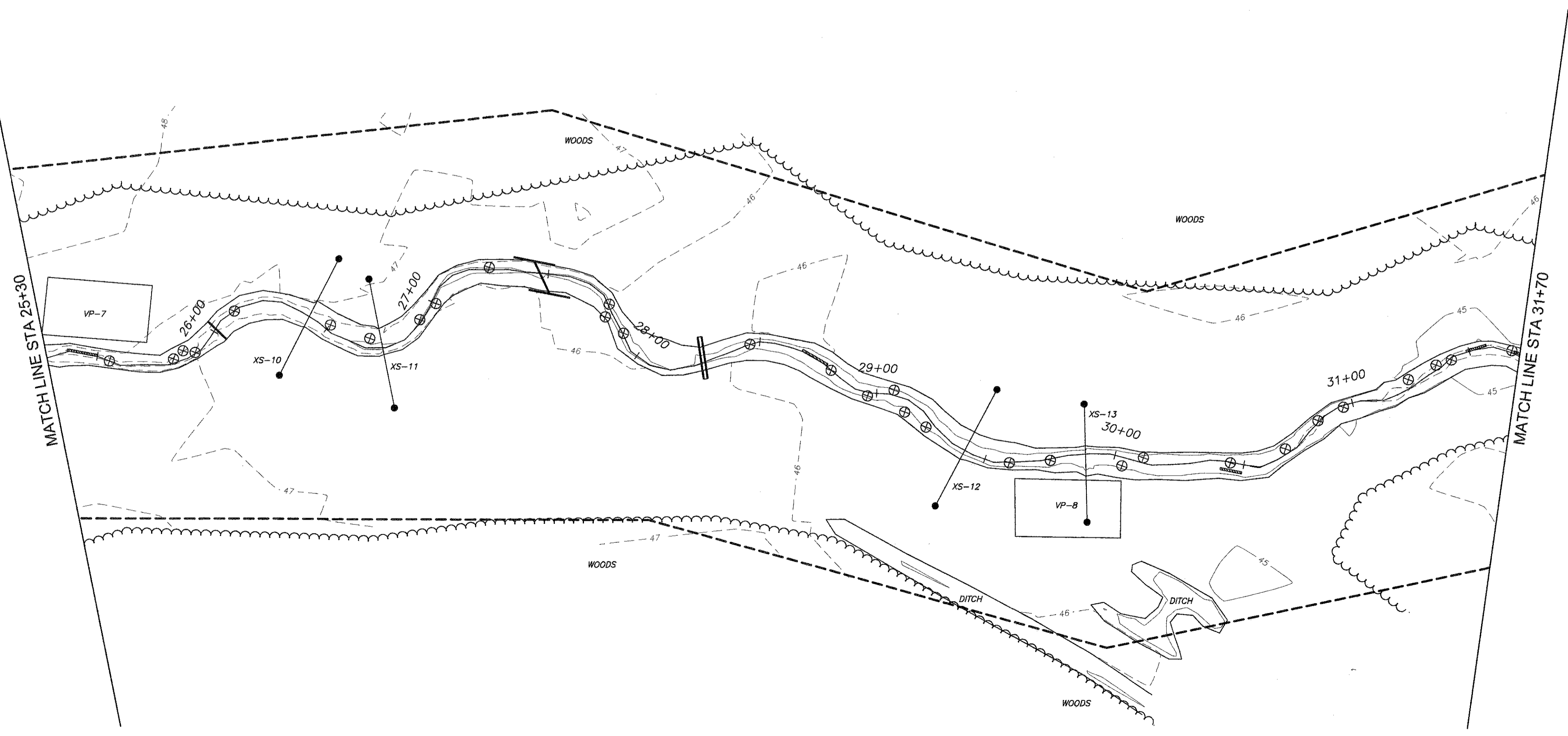
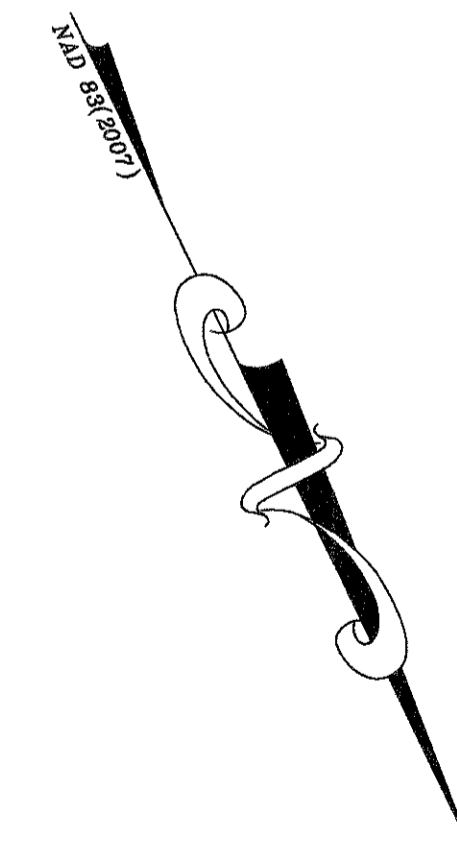
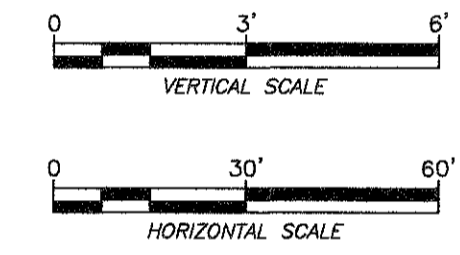
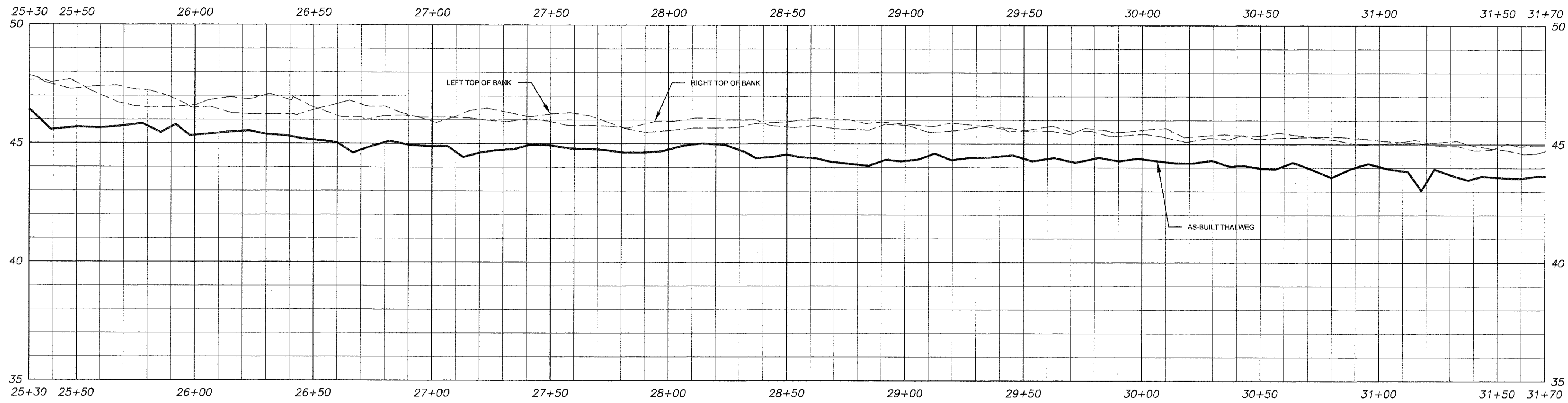
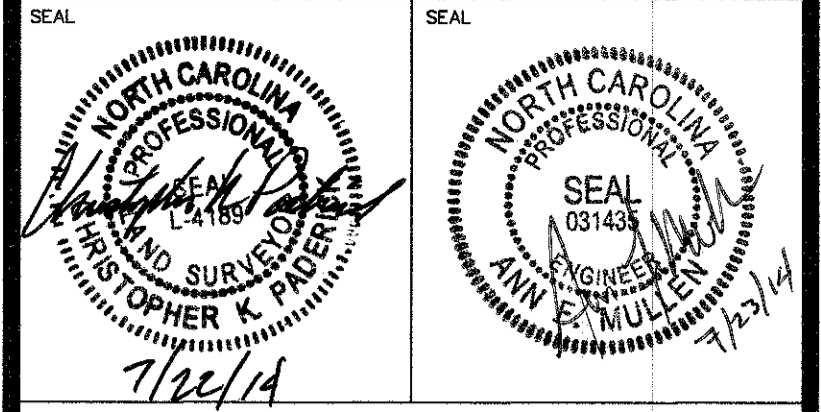
**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|                         |              |             |            |
|-------------------------|--------------|-------------|------------|
| SCALE                   | 1" = 30'     | DEPARTMENT  |            |
| DRAWN BY                | DATE STARTED | SHEET No.   |            |
| CKP                     | 4-28-14      | 8 OF 20     |            |
| APPROVED                |              | DRAWING NO. |            |
| CKP                     |              |             |            |
| DRAWING NAME            |              |             | <b>S-8</b> |
| MR1-Asbuilt-Revised.dwg |              |             |            |
| PROJECT NO.             |              |             |            |
| 20110047                |              |             |            |

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 25+30 - 31+70)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

**MATRIX  
 EAST, PLLC**

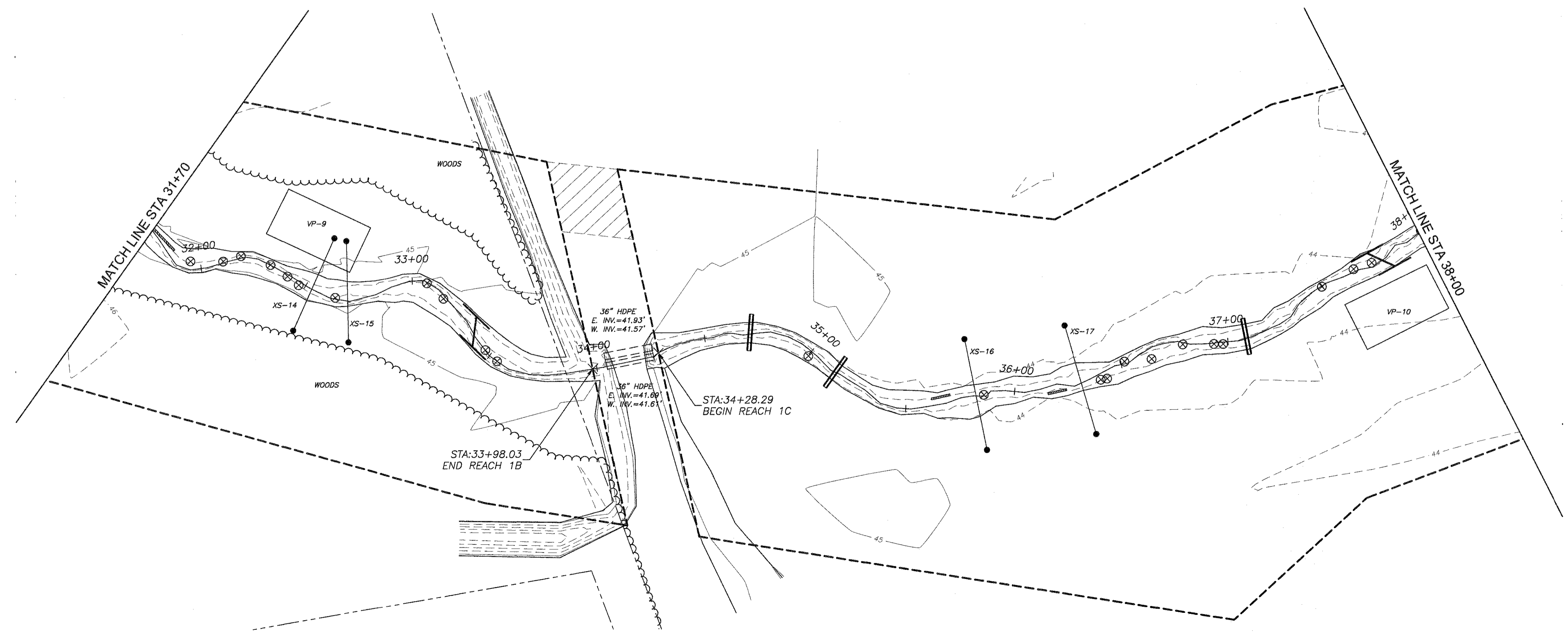
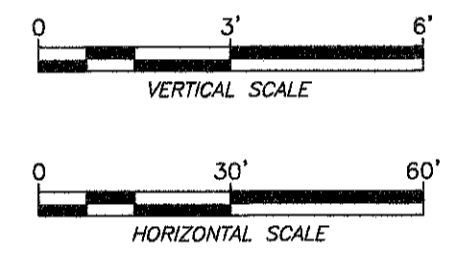
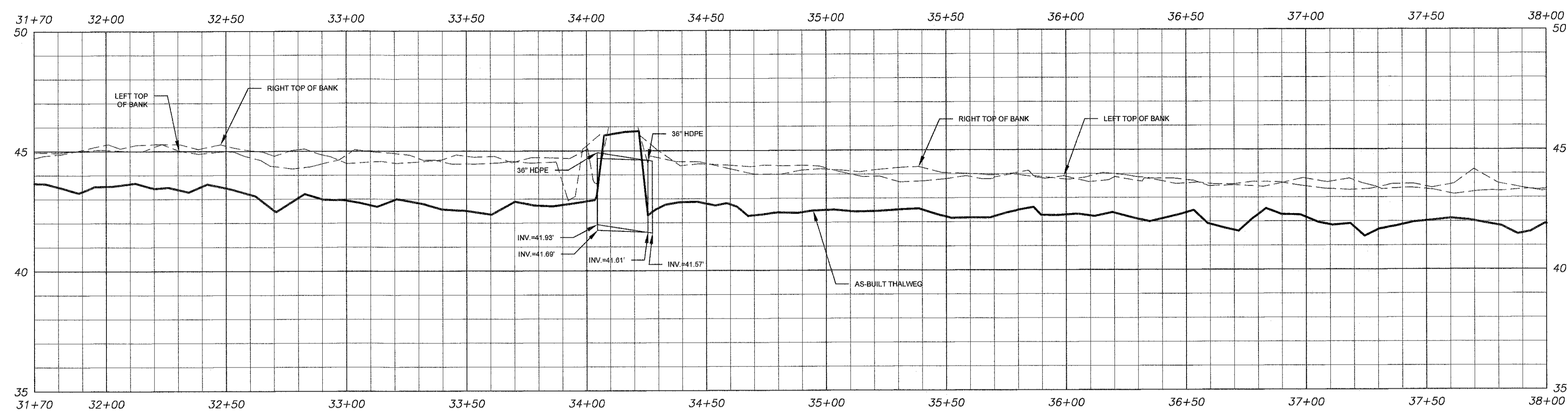
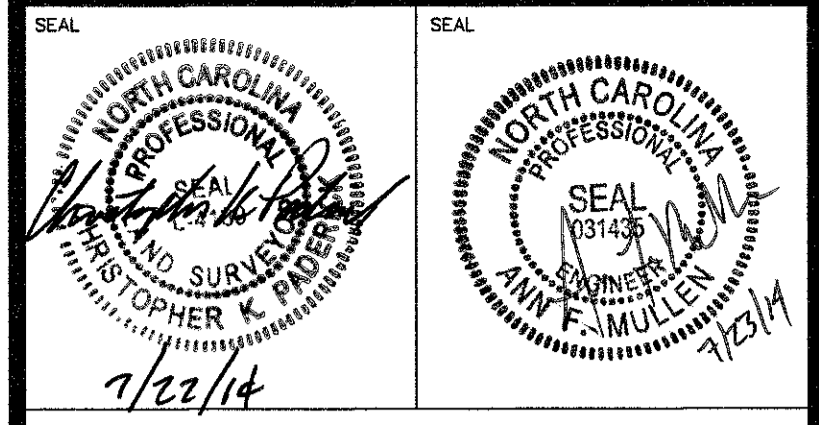
906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|              |                         |              |         |
|--------------|-------------------------|--------------|---------|
| SCALE        | 1" = 30'                | DEPARTMENT   |         |
| DRAWN BY     | CKP                     | DATE STARTED | 4-28-14 |
| APPROVED     | CKP                     | SHEET No.    | 9 OF 20 |
| DRAWING NAME | MR1-Asbuilt-Revised.dwg | DRAWING NO.  |         |
| PROJECT NO.  | 20110047                |              |         |

**S-9**

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 31+70 - 38+00)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

**MATRIX  
 EAST, PLLC**

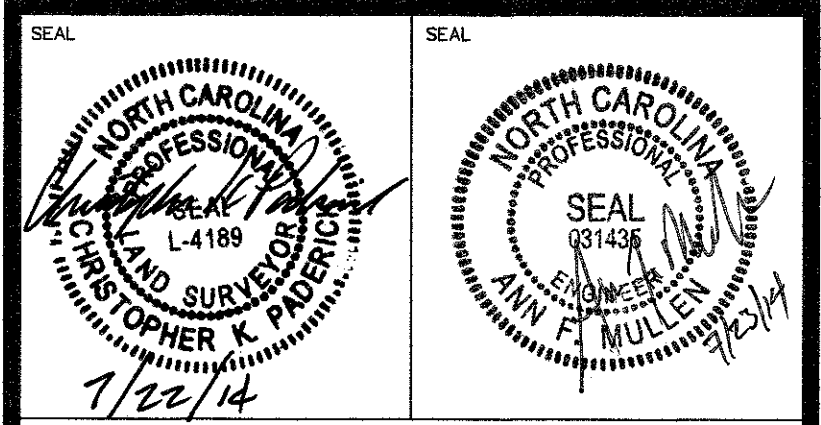
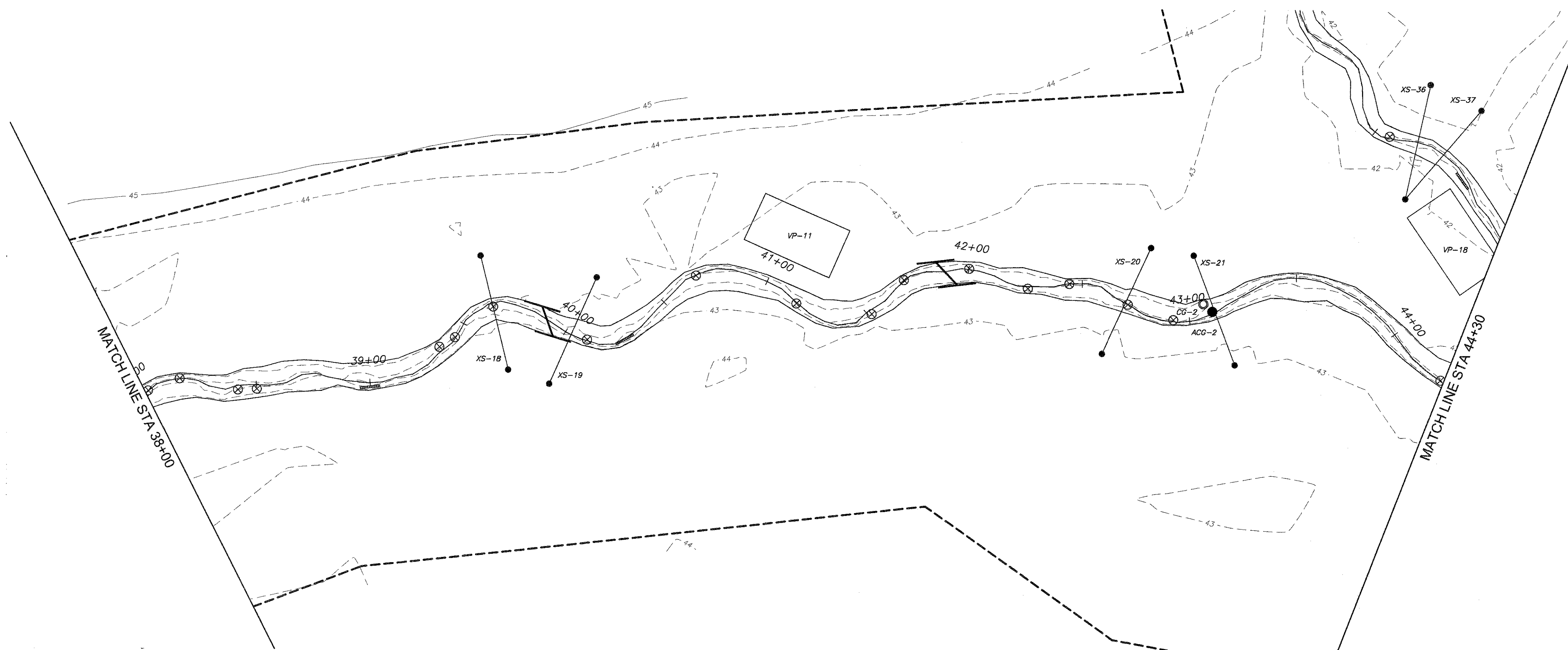
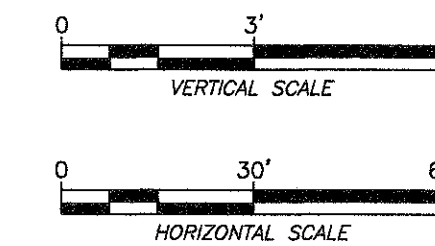
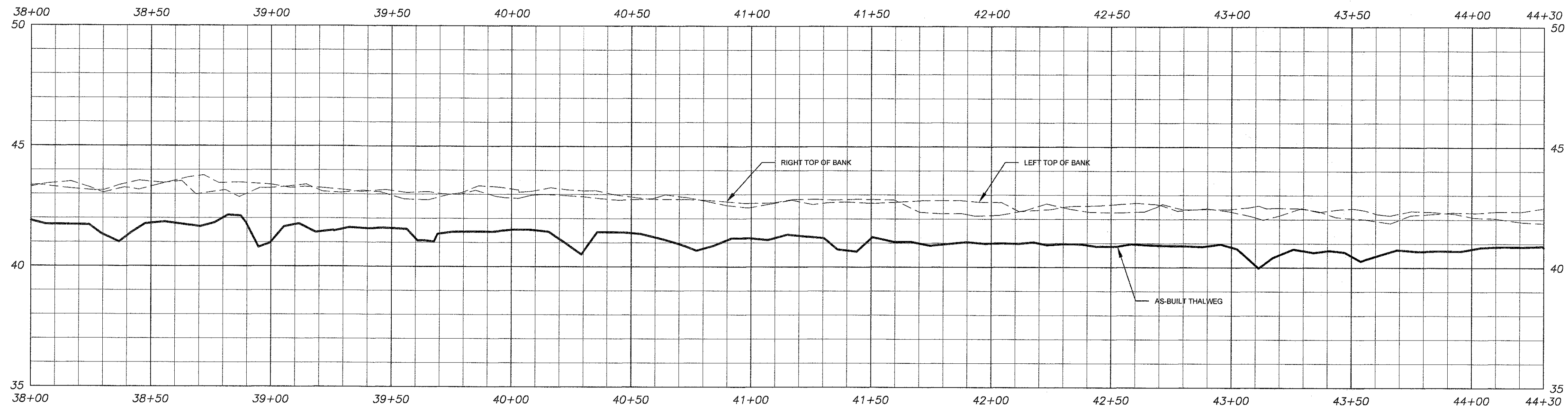
906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|                         |              |             |  |
|-------------------------|--------------|-------------|--|
| SCALE                   | 1" = 30'     | DEPARTMENT  |  |
| DRAWN BY                | DATE STARTED | SHEET No.   |  |
| CKP                     | 4-28-14      | 10 OF 20    |  |
| APPROVED                |              | DRAWING NO. |  |
| CKP                     |              |             |  |
| DRAWING NAME            |              |             |  |
| MR1-Asbuilt-Revised.dwg |              |             |  |
| PROJECT NO.             |              |             |  |
| 20110047                |              |             |  |

**S-10**

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 38+00 - 44+30)**

**MUDDY RUN  
 MITIGATION PROJECT  
 DUPLIN COUNTY, N.C.**

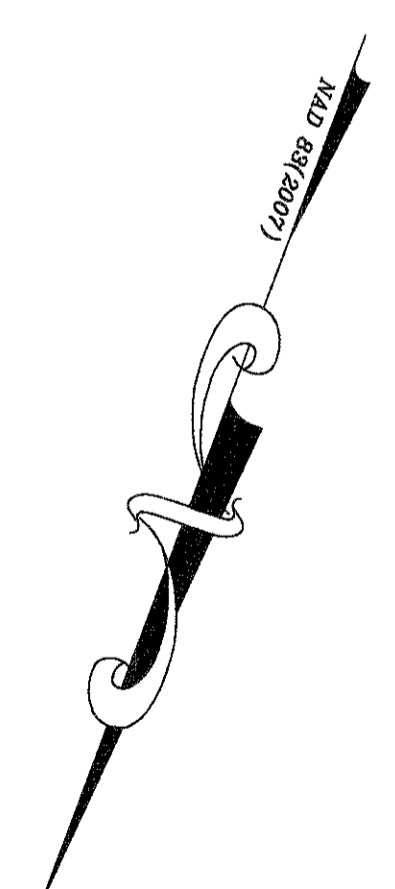
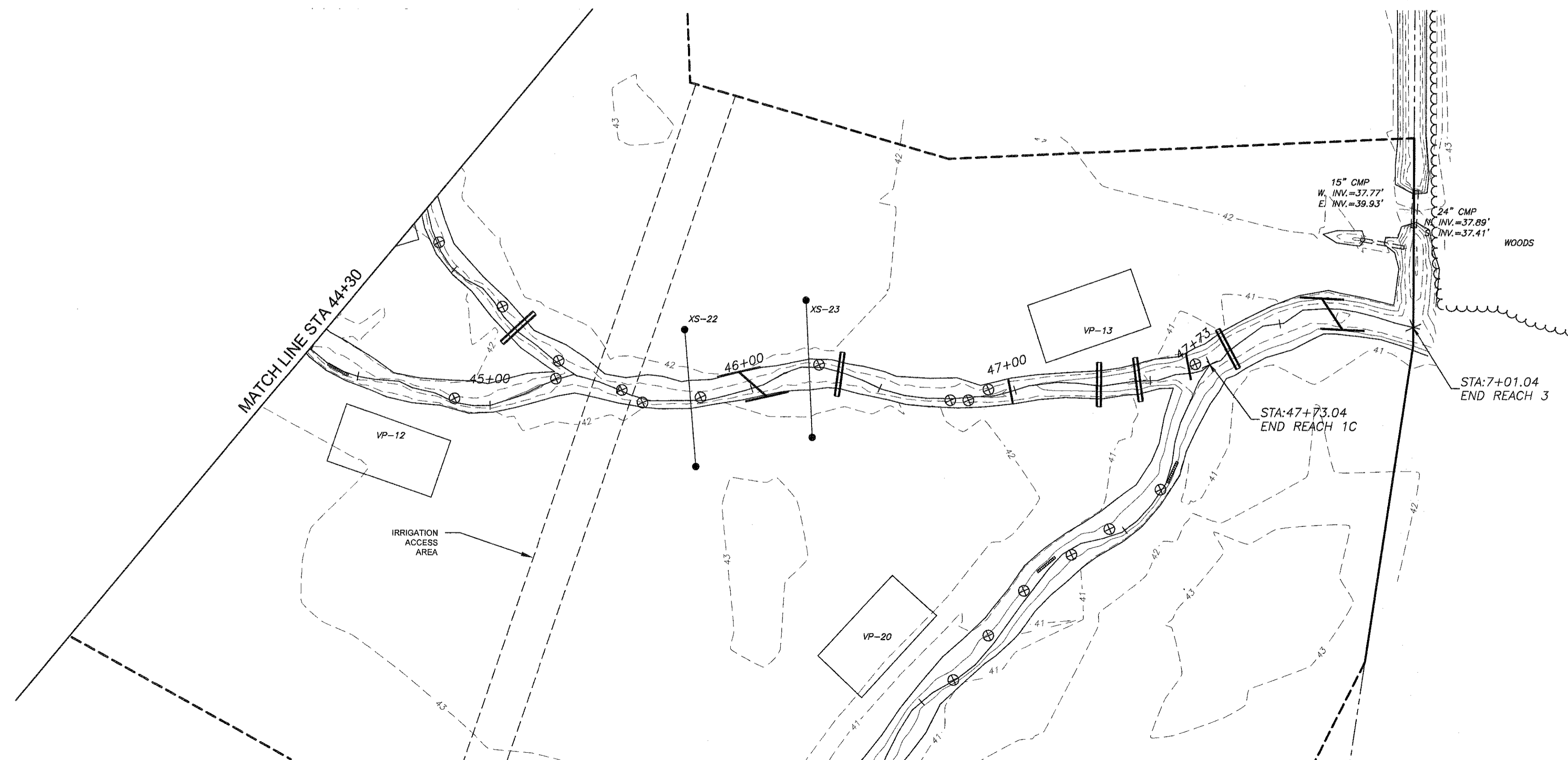
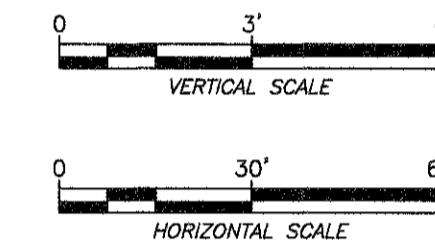
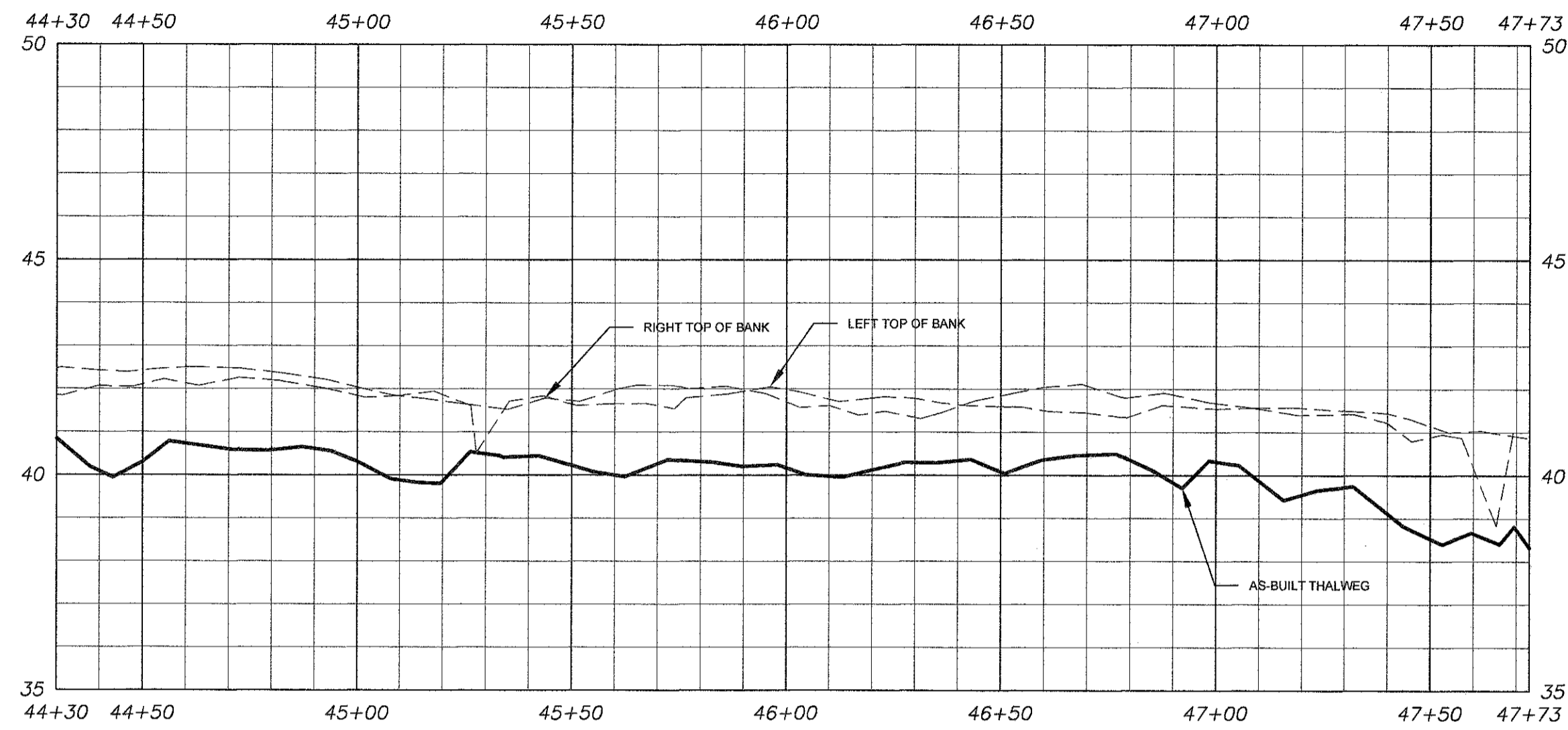
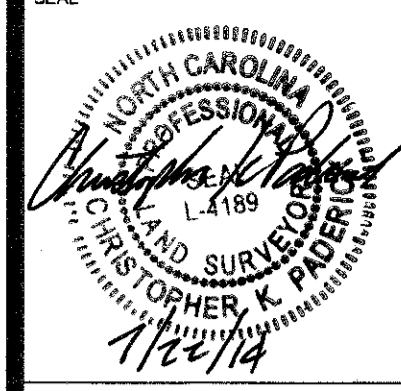
**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|                      |                                      |                    |
|----------------------|--------------------------------------|--------------------|
| SCALE 1" = 30'       |                                      | DEPARTMENT         |
| DRAWN BY CKP         | DATE STARTED 4-28-14                 | SHEET No. 11 OF 20 |
| APPROVED CKP         | DRAWING NAME MR1-Asbuilt-Revised.dwg | DRAWING NO.        |
| PROJECT NO. 20110047 | <b>S-11</b>                          |                    |

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



STREAM BASELINE AS-BUILT  
 REACH 1 PLAN & PROFILE (STA 44+30 - 47+73)

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.



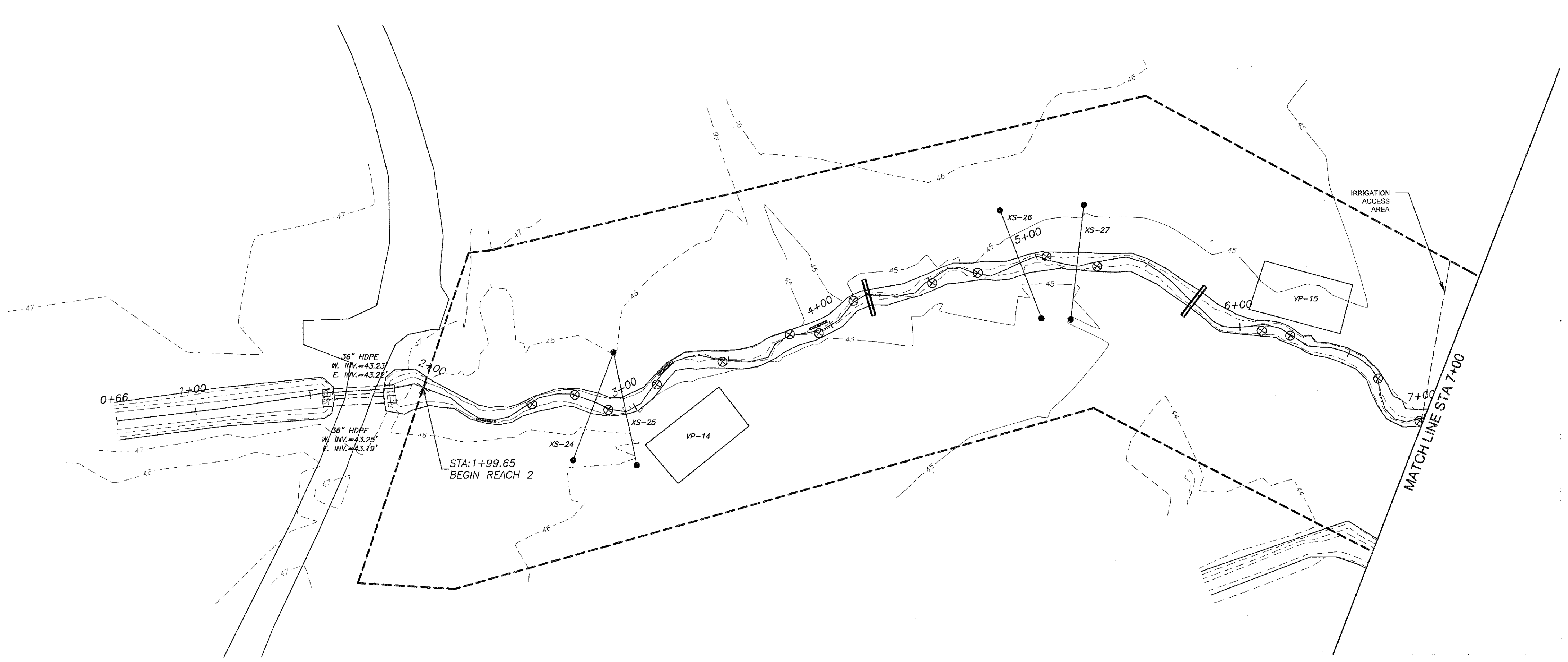
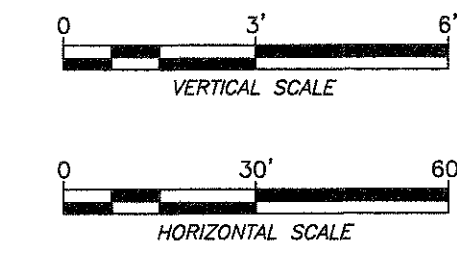
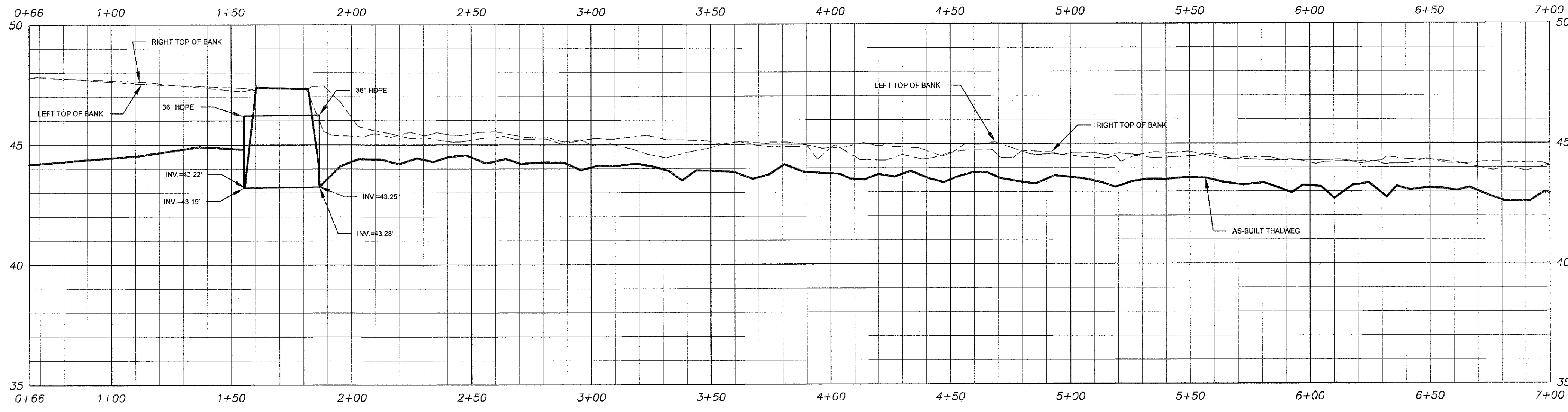
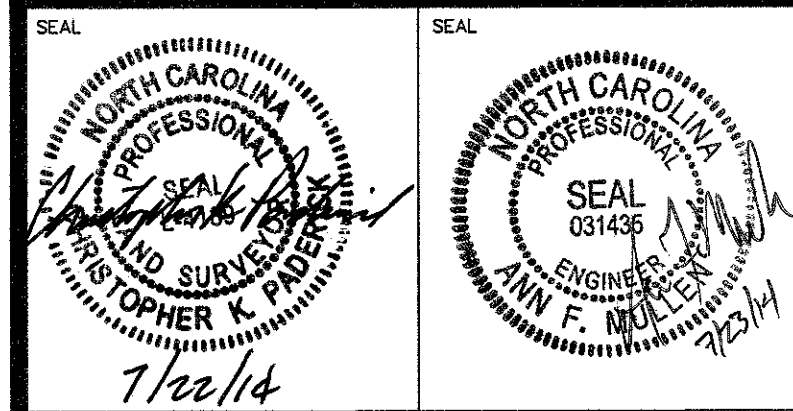
**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matriceast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

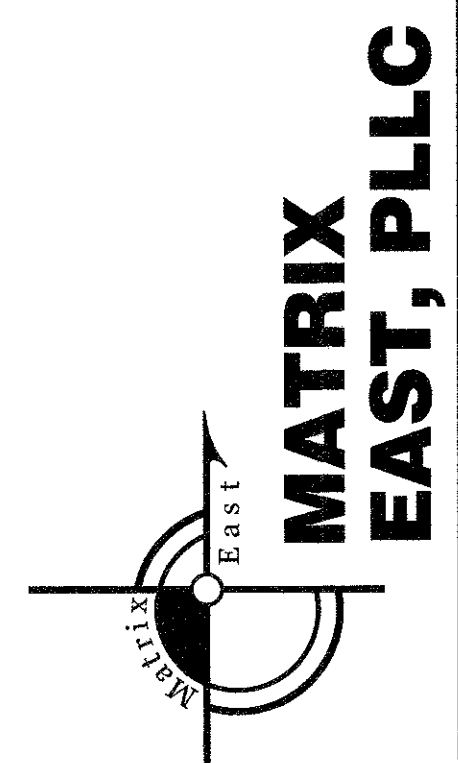
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|---|-------------------------|-----------------------|
| SCALE 1" = 30'                          |                         | DEPARTMENT            |
| DRAWN BY<br>CKP                         | DATE STARTED<br>4-28-14 | SHEET No.<br>12 OF 20 |
| APPROVED<br>CKP                         | DRAWING NO.             |                       |
| DRAWING NAME<br>MR1-Asbuilt-Revised.dwg |                         | <b>S-12</b>           |
| PROJECT NO.<br>20110047                 |                         |                       |

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 2 PLAN & PROFILE (STA 0+66 - 7+00)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

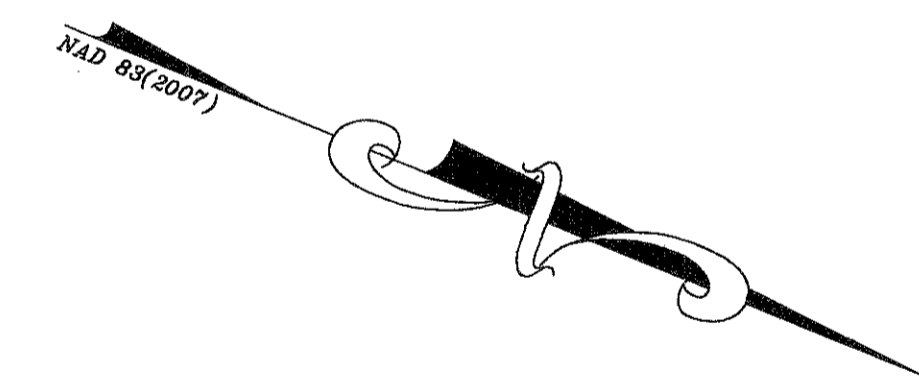
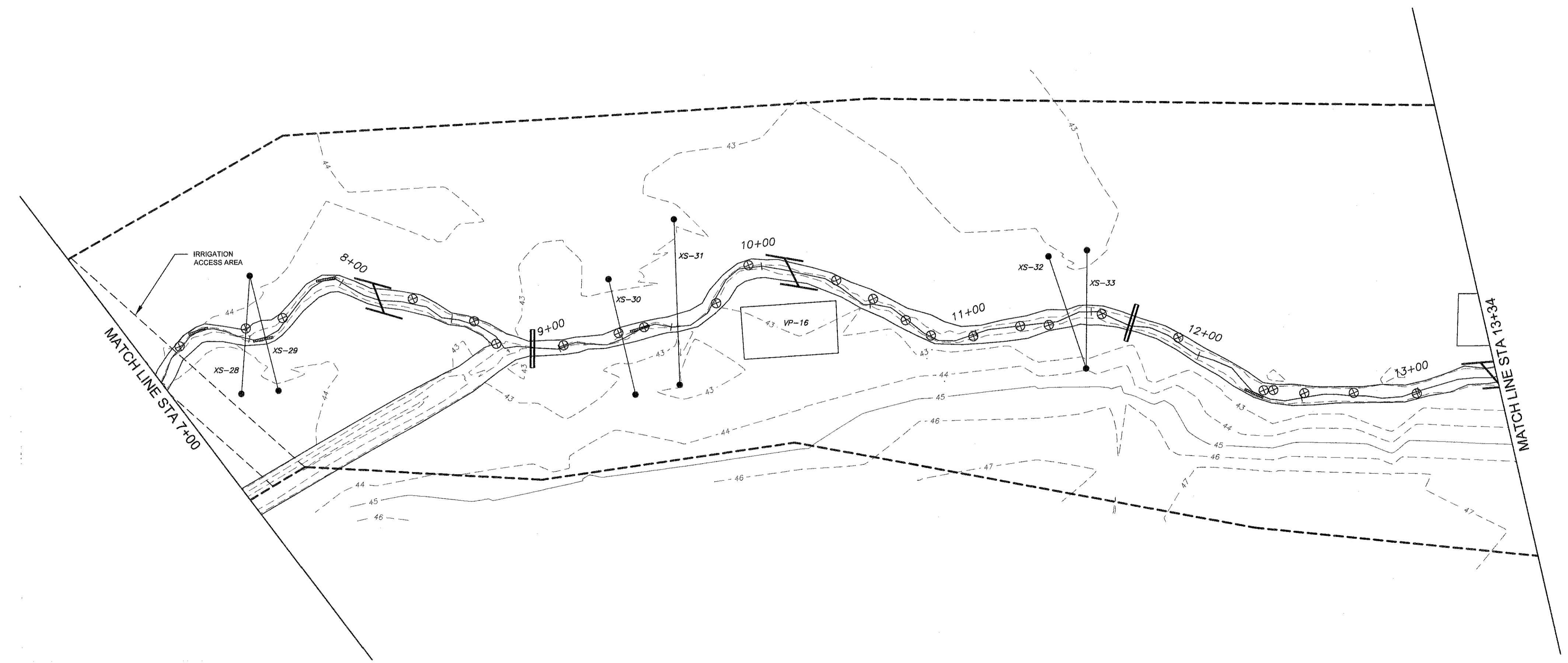
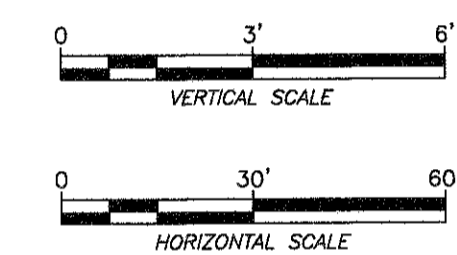
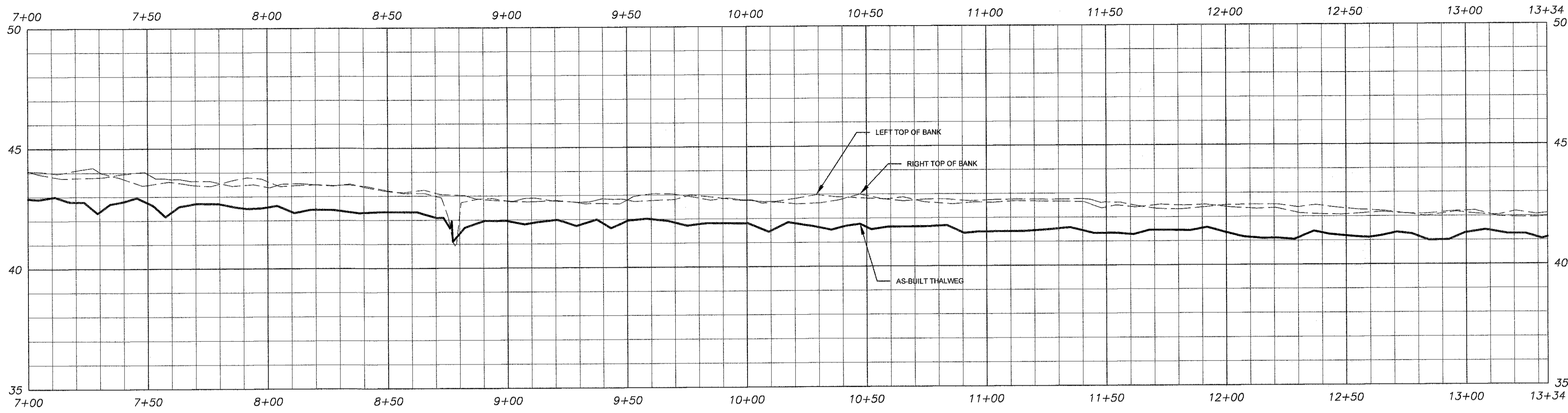
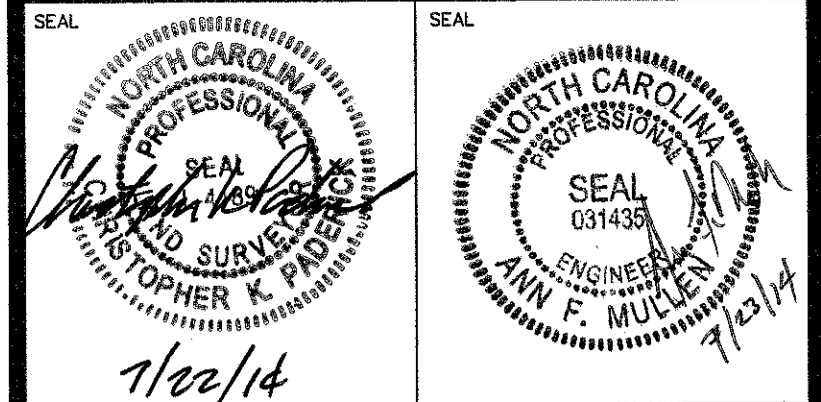


**MATRIX  
 EAST, PLLC**  
 906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|              |                         |              |             |
|--------------|-------------------------|--------------|-------------|
| SCALE        | 1" = 30'                | DEPARTMENT   |             |
| DRAWN BY     | CKP                     | DATE STARTED | 4-28-14     |
| APPROVED     | CKP                     | SHEET No.    | 13 OF 20    |
| DRAWING NAME | MR1-Asbuilt-Revised.dwg | DRAWING NO.  |             |
| PROJECT NO.  | 20110047                |              |             |
|              |                         |              | <b>S-13</b> |

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



STREAM BASELINE AS-BUILT  
 REACH 2 PLAN & PROFILE (STA 7+00 - 13+34)

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.



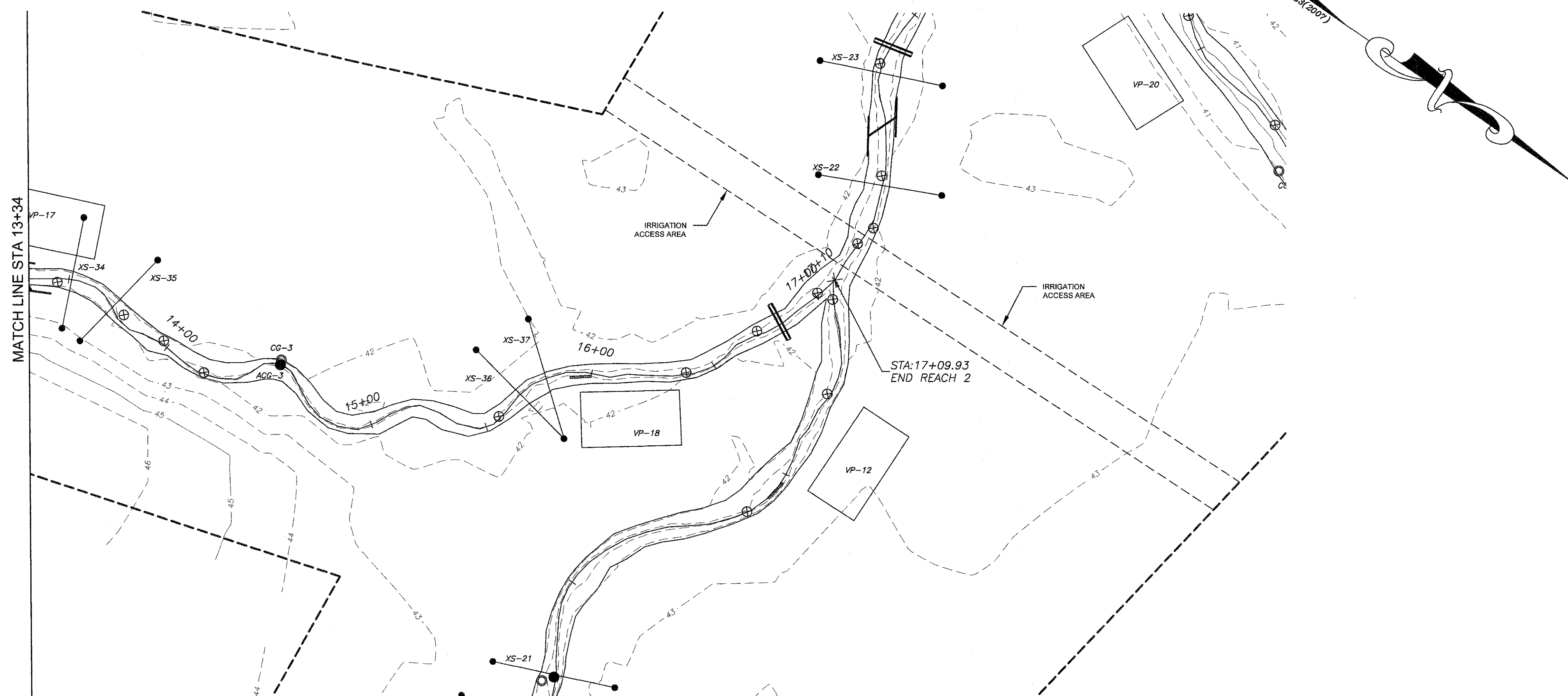
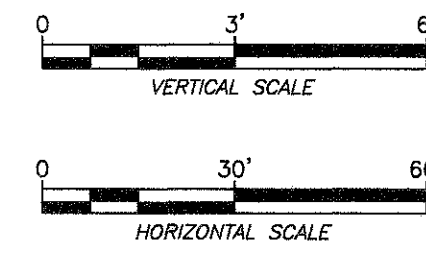
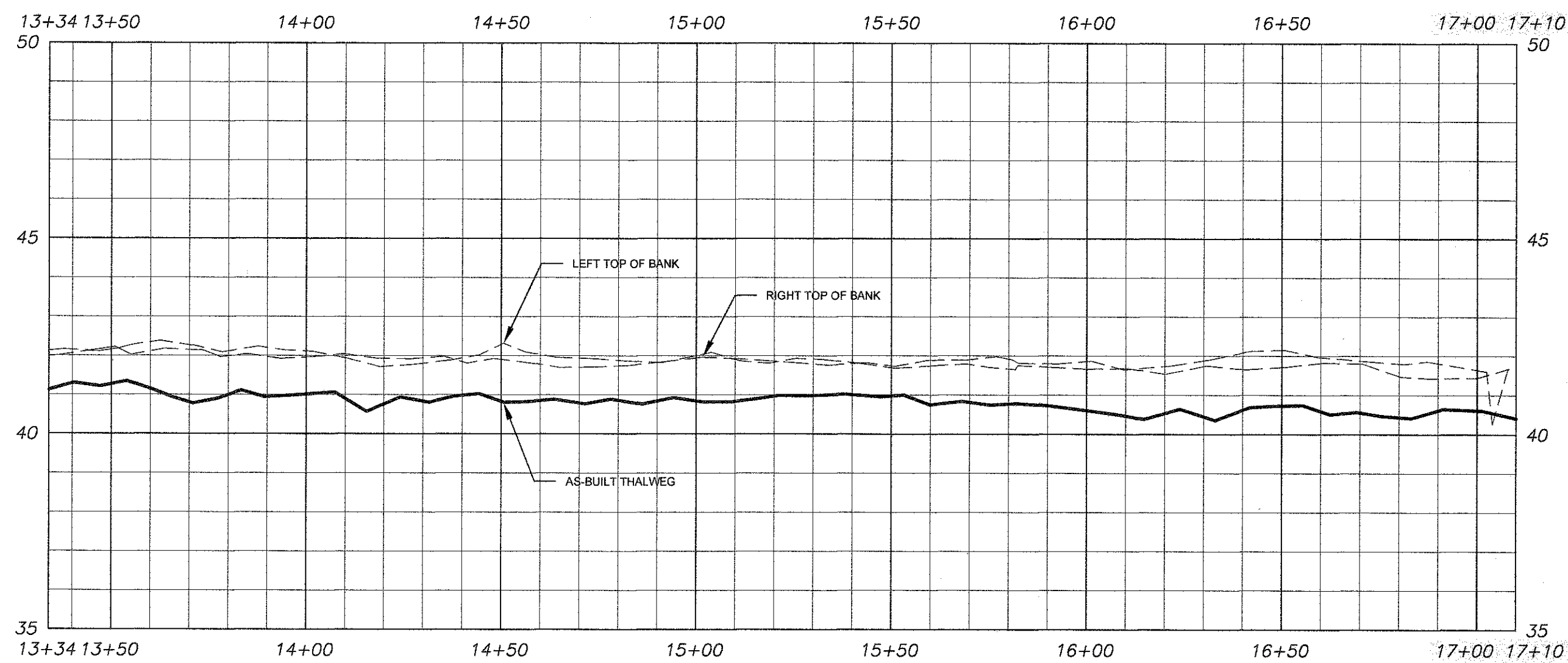
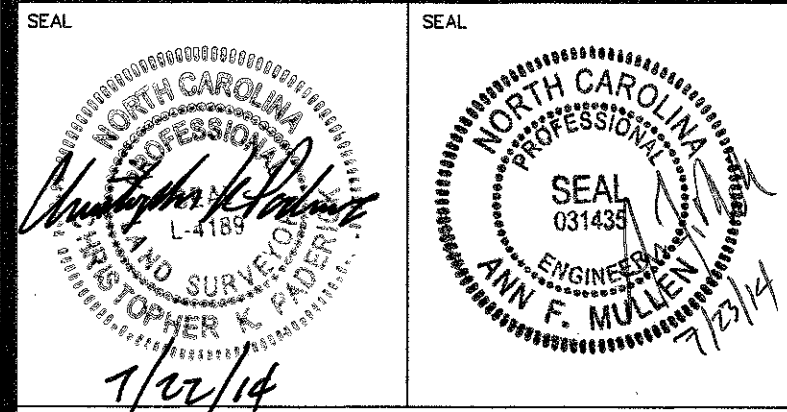
**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM L.C. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|   |                         |                       |
|---|-------------------------|-----------------------|
| SCALE 1" = 30'                          |                         | DEPARTMENT            |
| DRAWN BY<br>CKP                         | DATE STARTED<br>4-28-14 | SHEET No.<br>14 OF 20 |
| APPROVED<br>CKP                         | DRAWING NO.             |                       |
| DRAWING NAME<br>MR1-Asbuilt-Revised.dwg |                         | <b>S-14</b>           |
| PROJECT NO.<br>20110047                 |                         |                       |

NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM BASELINE AS-BUILT  
 REACH 2 PLAN & PROFILE (STA 13+34 - 17+10)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

**MATRIX  
 EAST, PLLC**

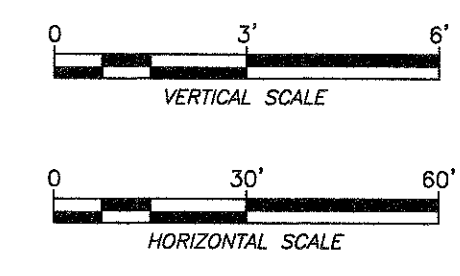
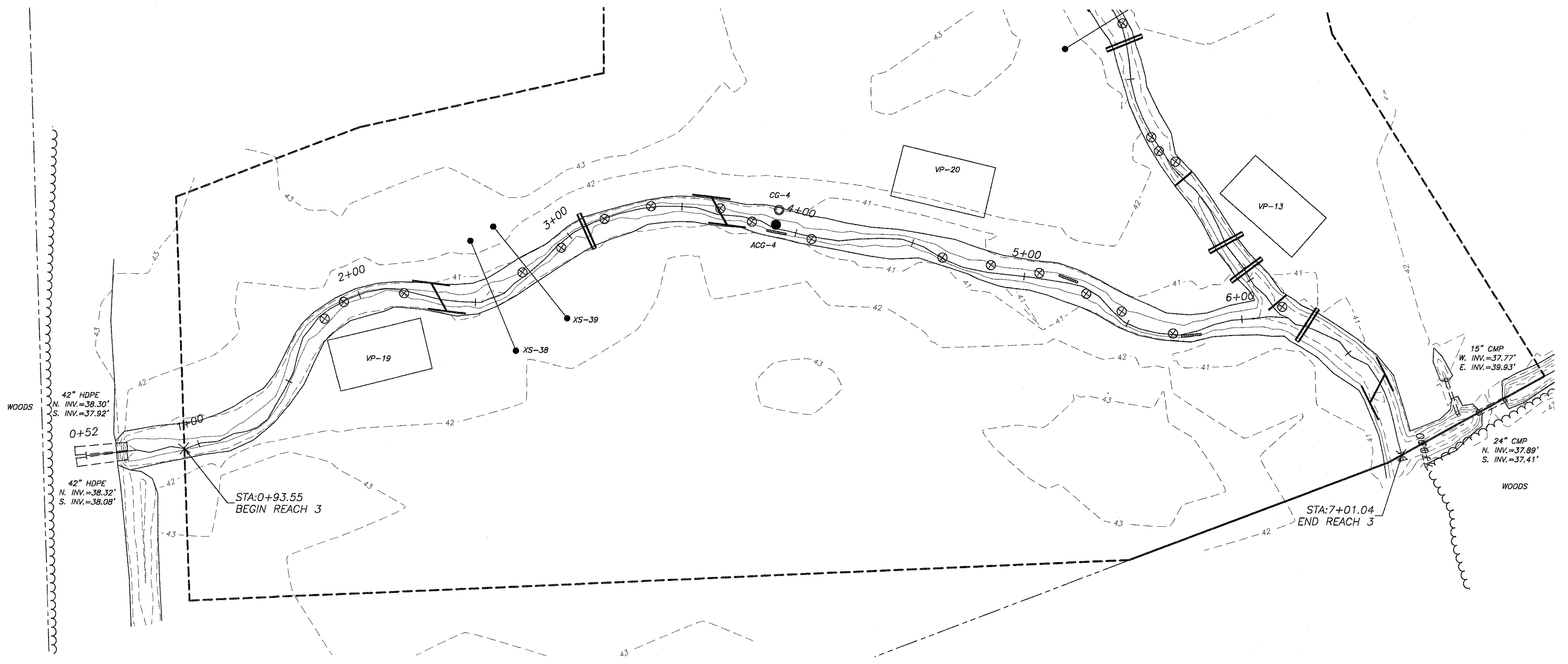
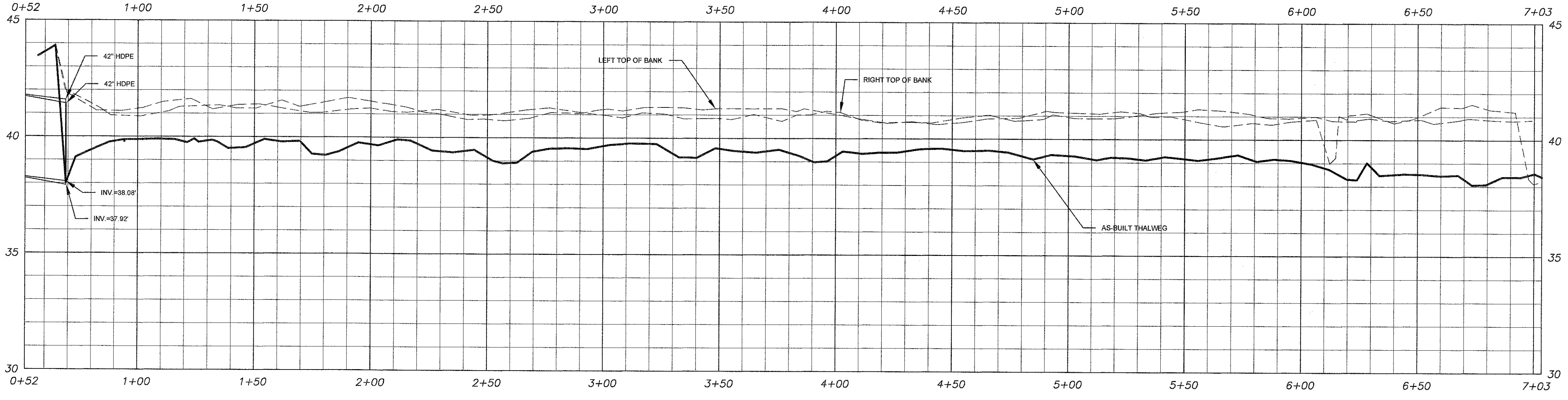
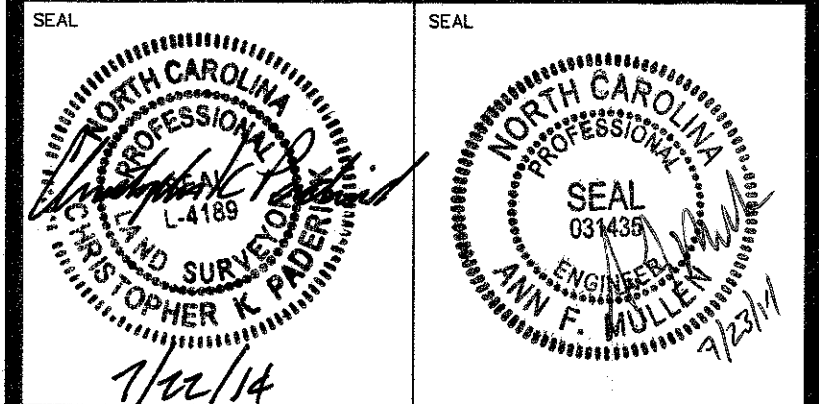
906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|   |                         |                       |
|---|-------------------------|-----------------------|
| SCALE 1" = 30'                          |                         | DEPARTMENT            |
| DRAWN BY<br>CKP                         | DATE STARTED<br>4-28-14 | SHEET No.<br>15 OF 20 |
| APPROVED<br>CKP                         | DRAWING NO.             |                       |
| DRAWING NAME<br>MR1-Asbuilt-Revised.dwg |                         | <b>S-15</b>           |
| PROJECT NO.<br>20110047                 |                         |                       |

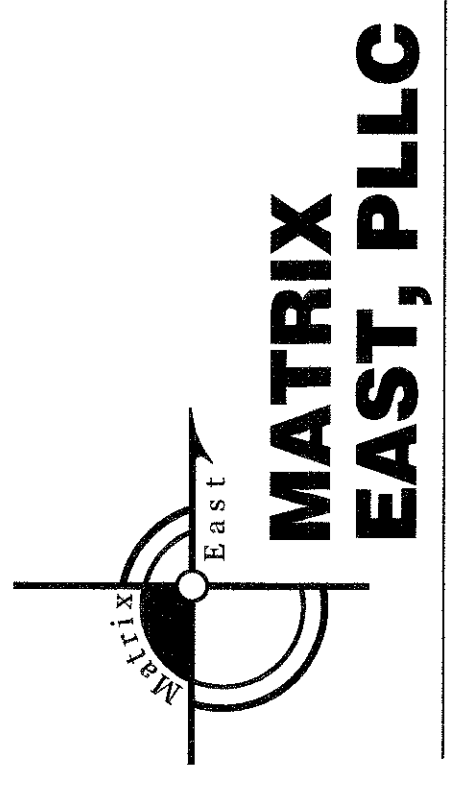


NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



STREAM BASELINE AS-BUILT  
 REACH 3 PLAN & PROFILE (STA 0+52 - 7+03)

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

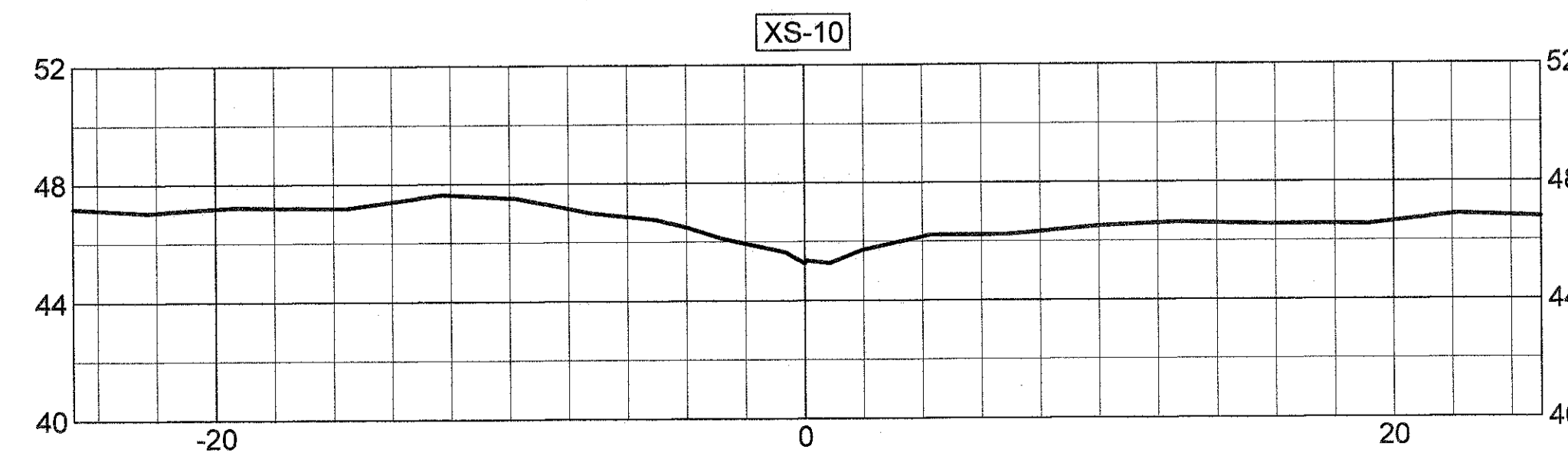
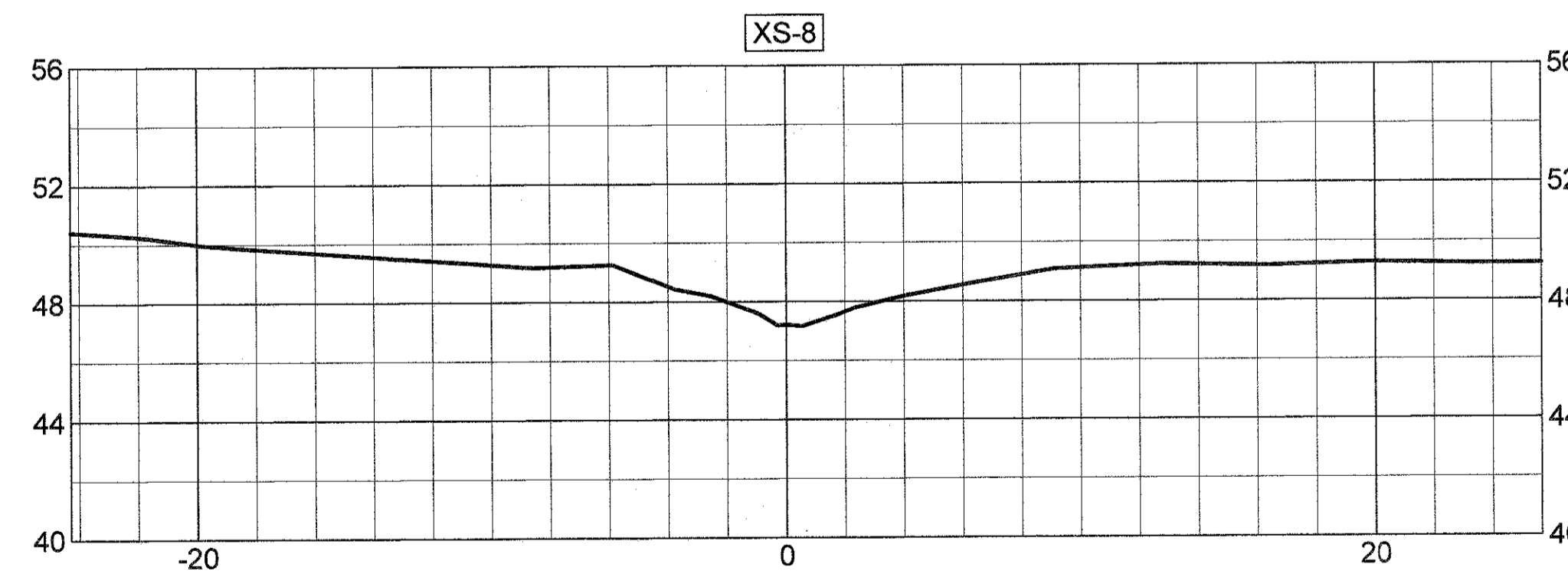
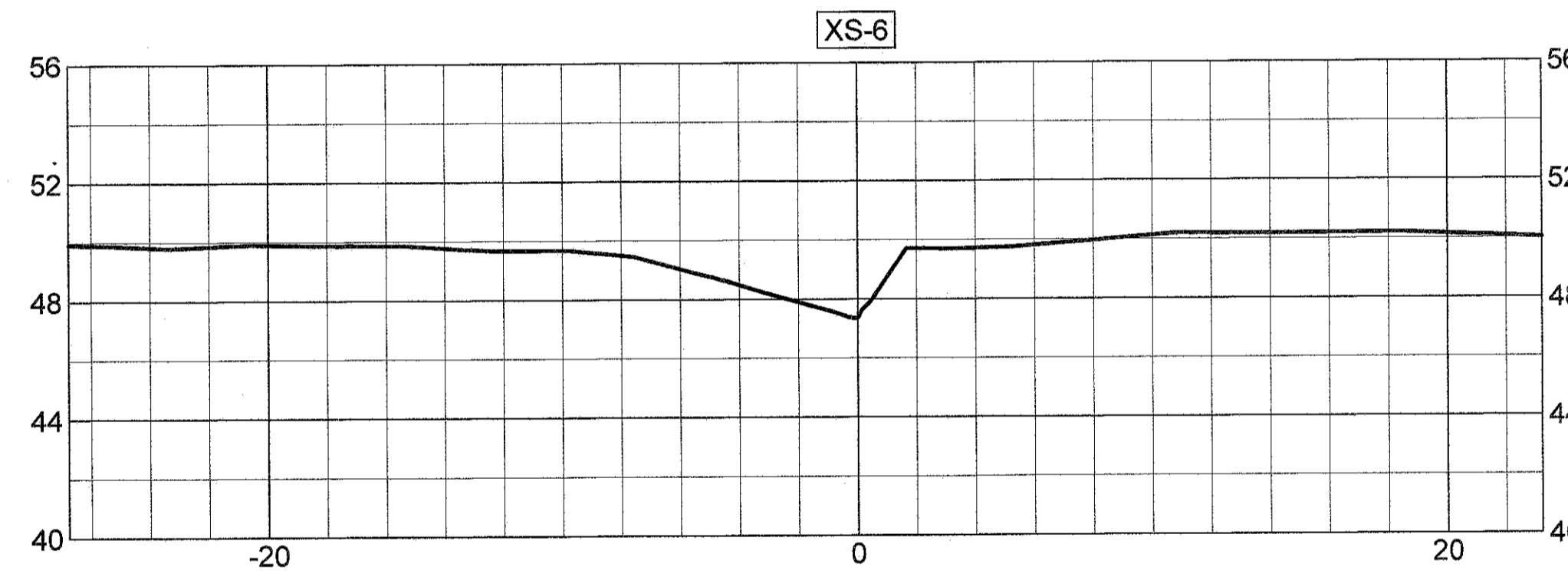
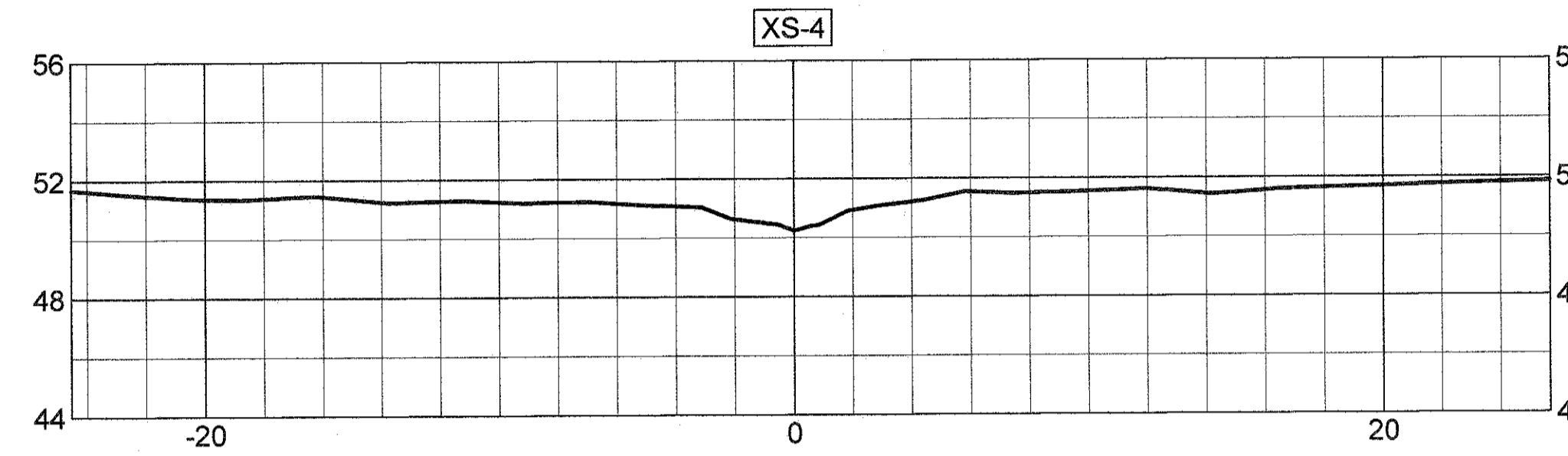
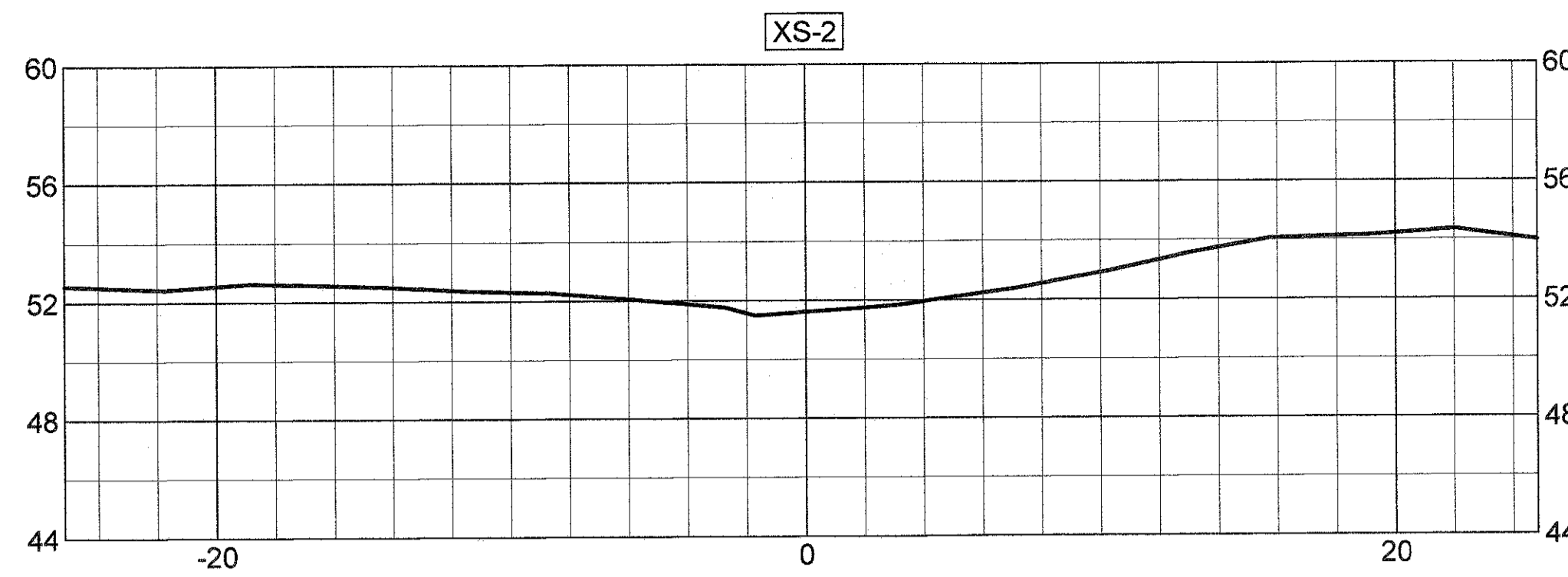
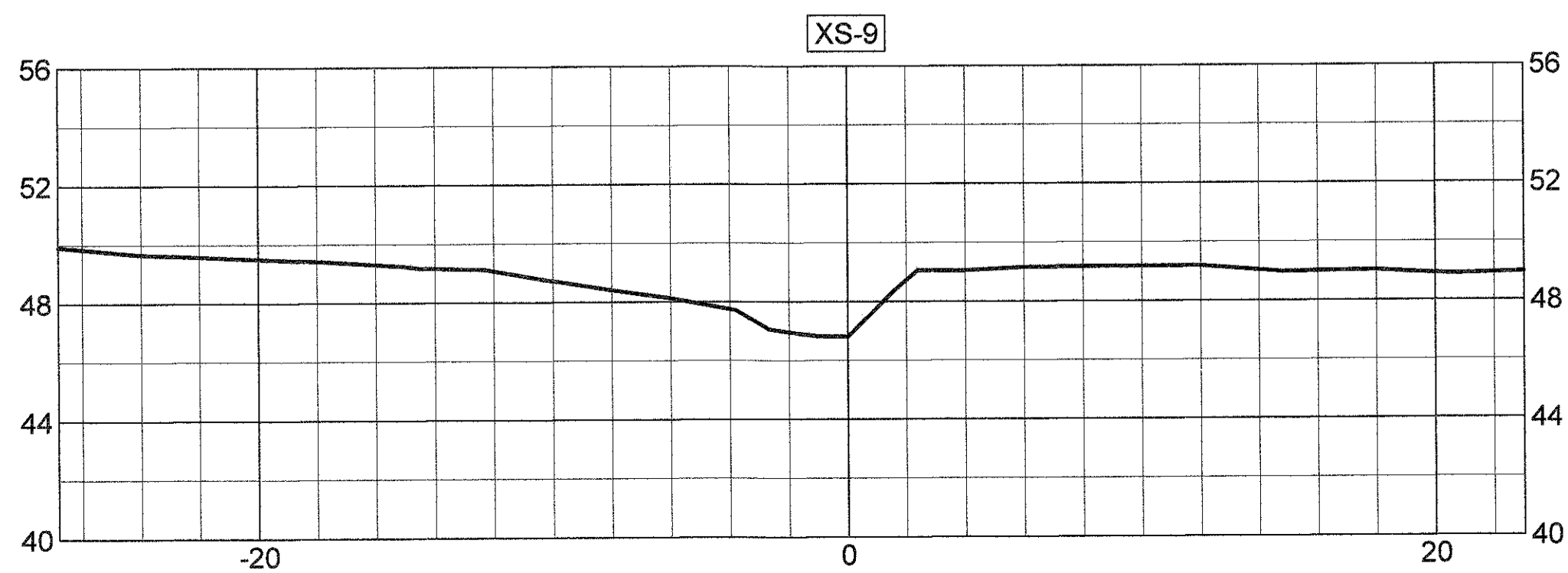
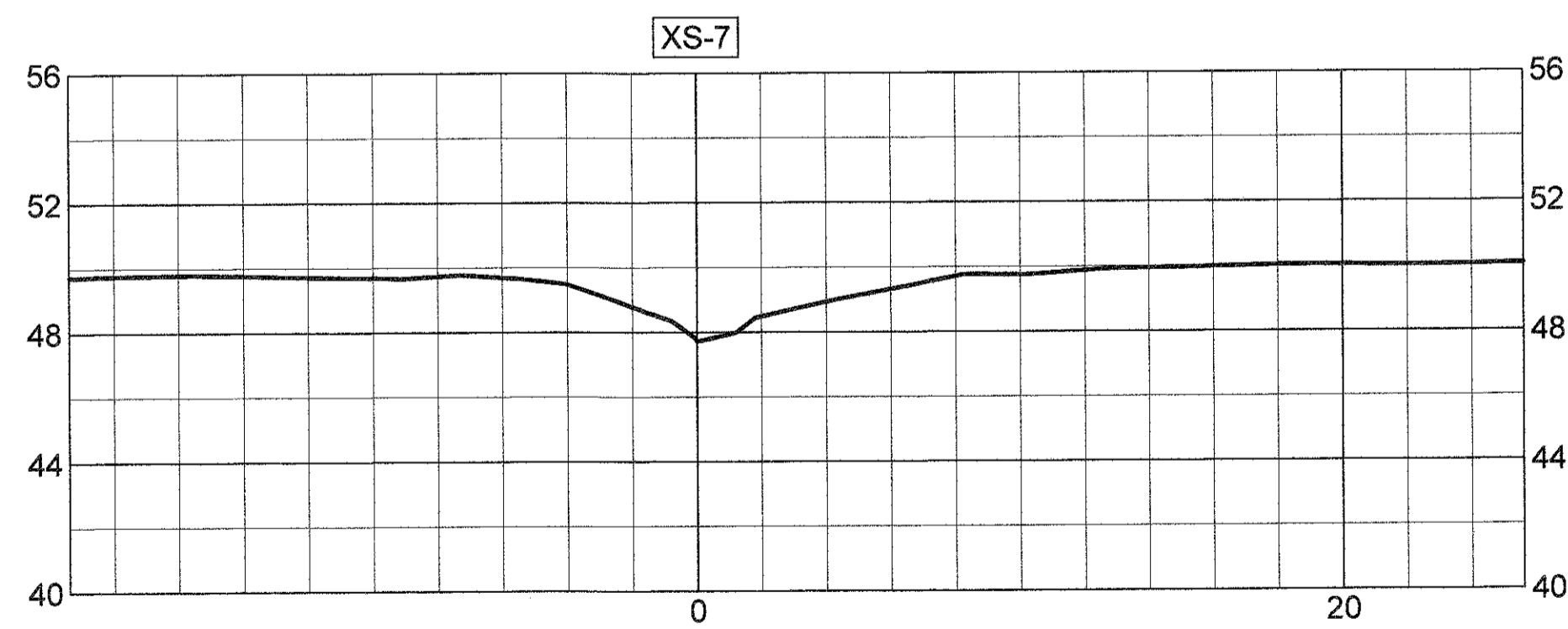
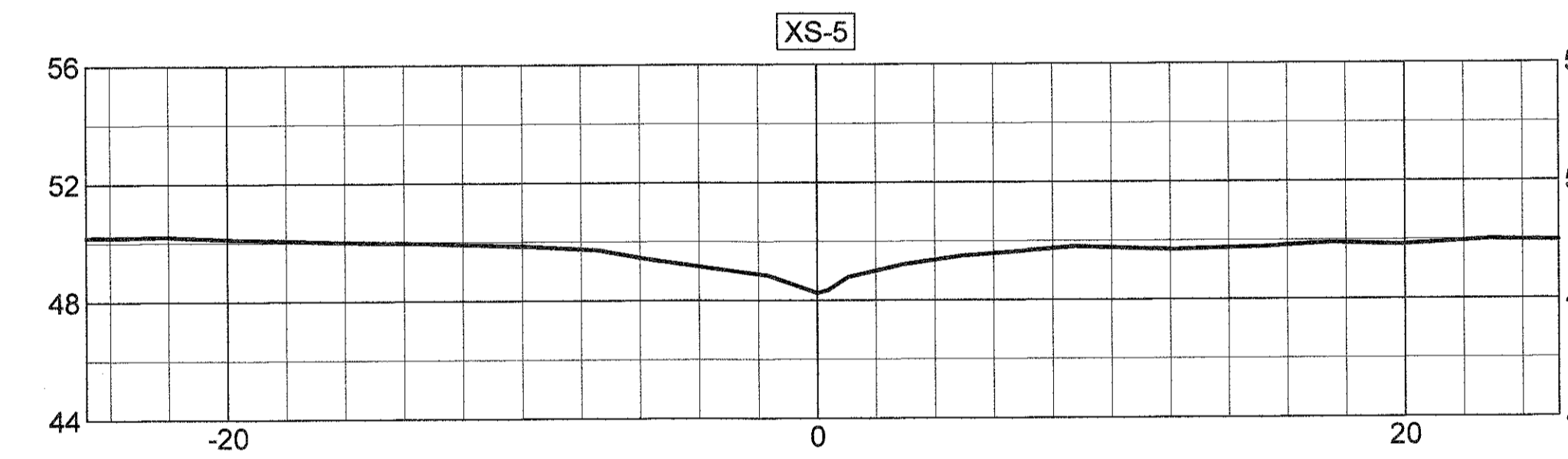
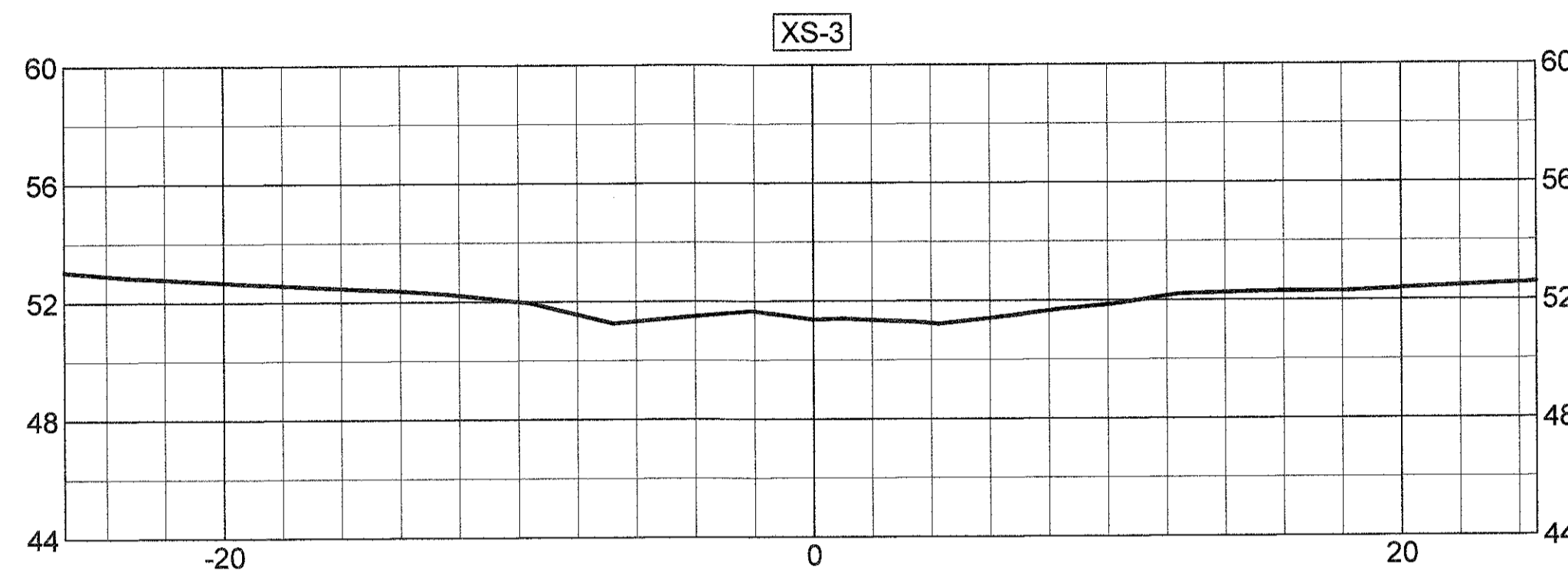
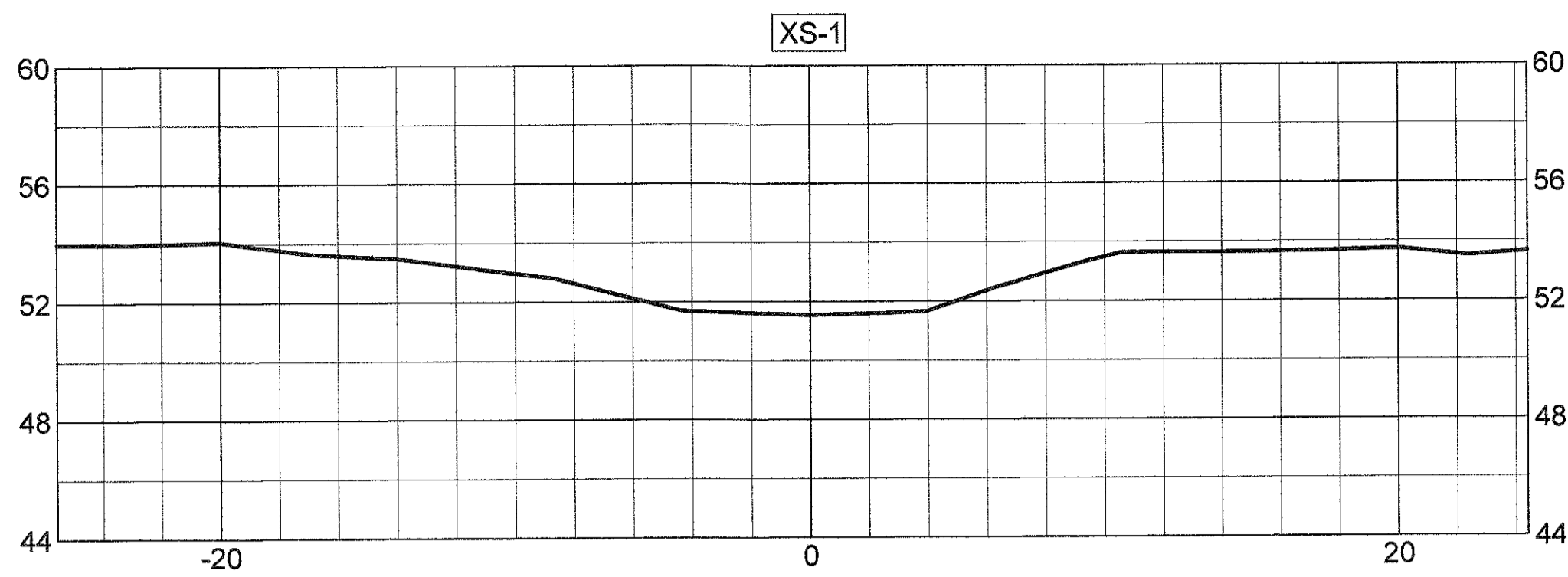


**MATRIX EAST, PLLC**  
 906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

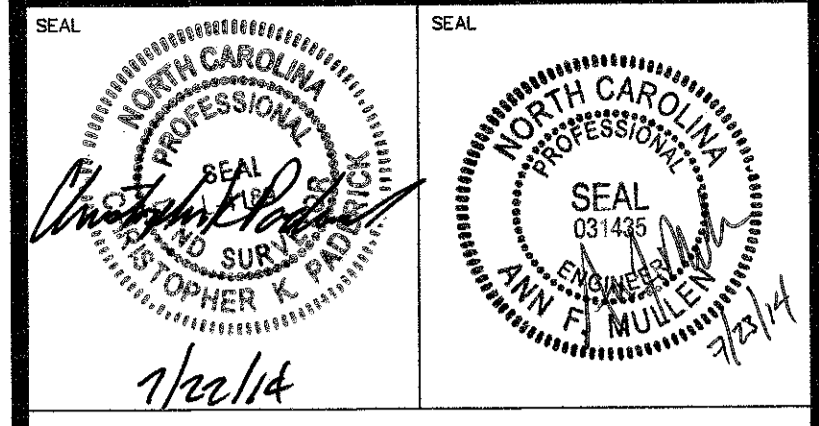
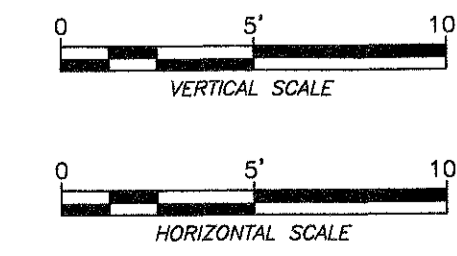
**ENVIRONMENTAL BANC & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|              |                         |              |          |
|--------------|-------------------------|--------------|----------|
| SCALE        | 1" = 30'                | DEPARTMENT   |          |
| DRAWN BY     | CKP                     | DATE STARTED | 4-28-14  |
| APPROVED     | CKP                     | SHEET NO.    | 16 OF 20 |
| DRAWING NAME | MR1-Asbuilt-Revised.dwg | DRAWING NO.  |          |
| PROJECT NO.  | 20110047                |              |          |

**S-16**



NOTE:  
THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
& 3 WAS PERFORMED BY W.K. DICKSON  
AND CO., INC. ALL OTHER SURVEYING WAS  
PERFORMED BY MATRIX EAST, PLLC.



STREAM CROSS-SECTIONS (XS-1 - XS-10)

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

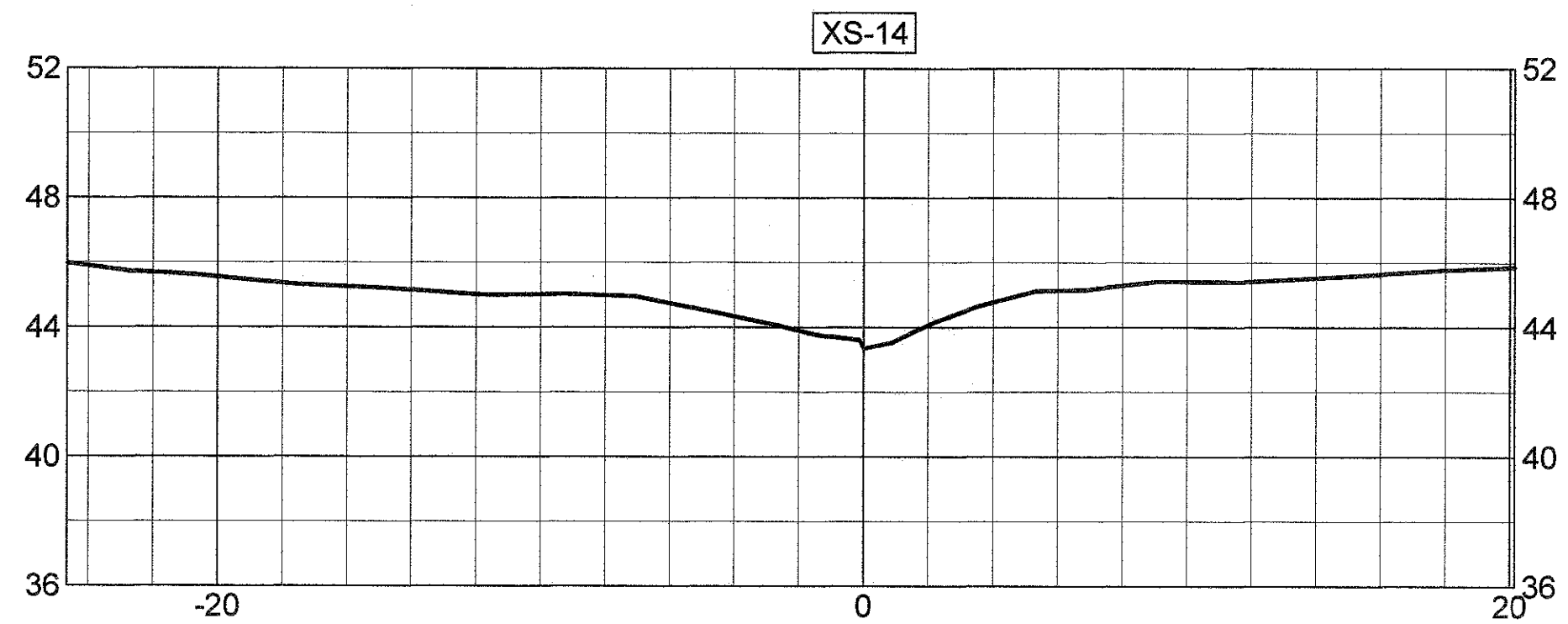
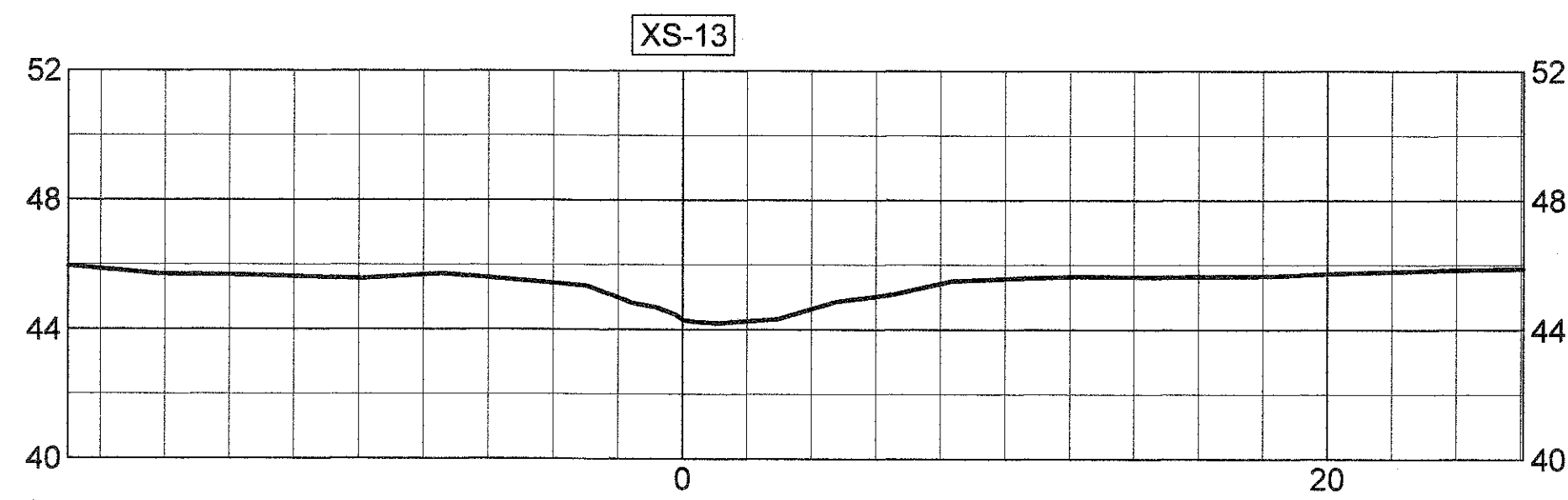
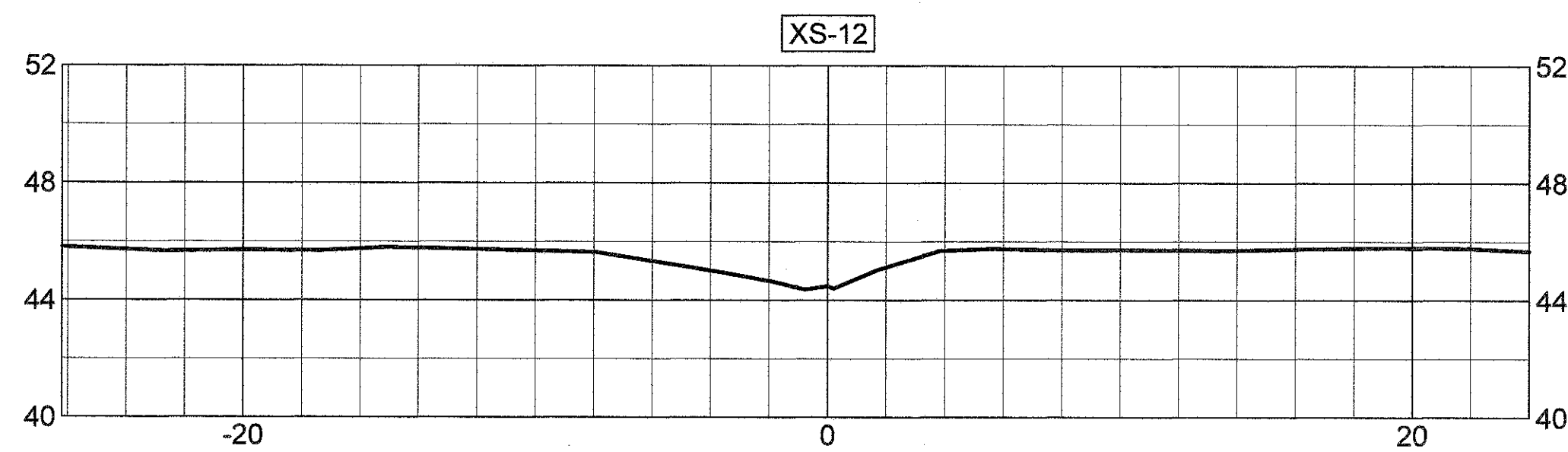
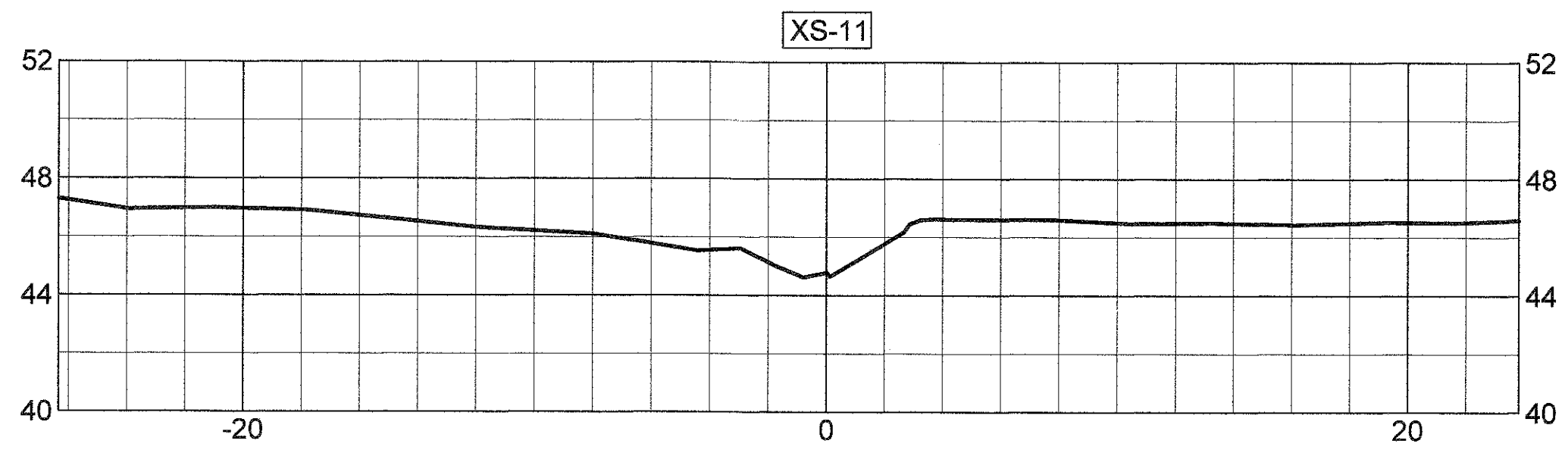


**MATRIX  
EAST, PLLC**  
906 N. QUEEN ST., SUITE A  
KINSTON, NC 28501  
TEL: 252-522-2500 FAX: 252-522-4747  
FIRM LIC. # P-0221  
EMAIL: surveyor@matrixeast.net

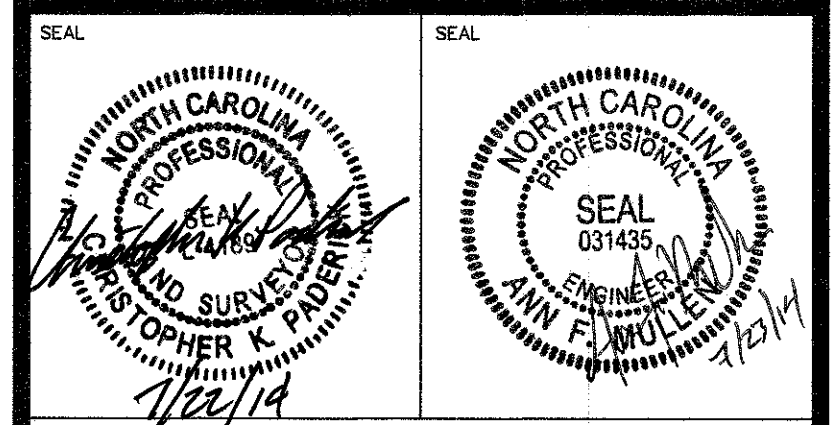
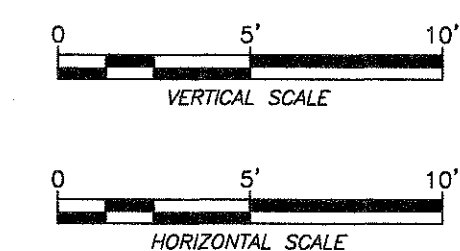
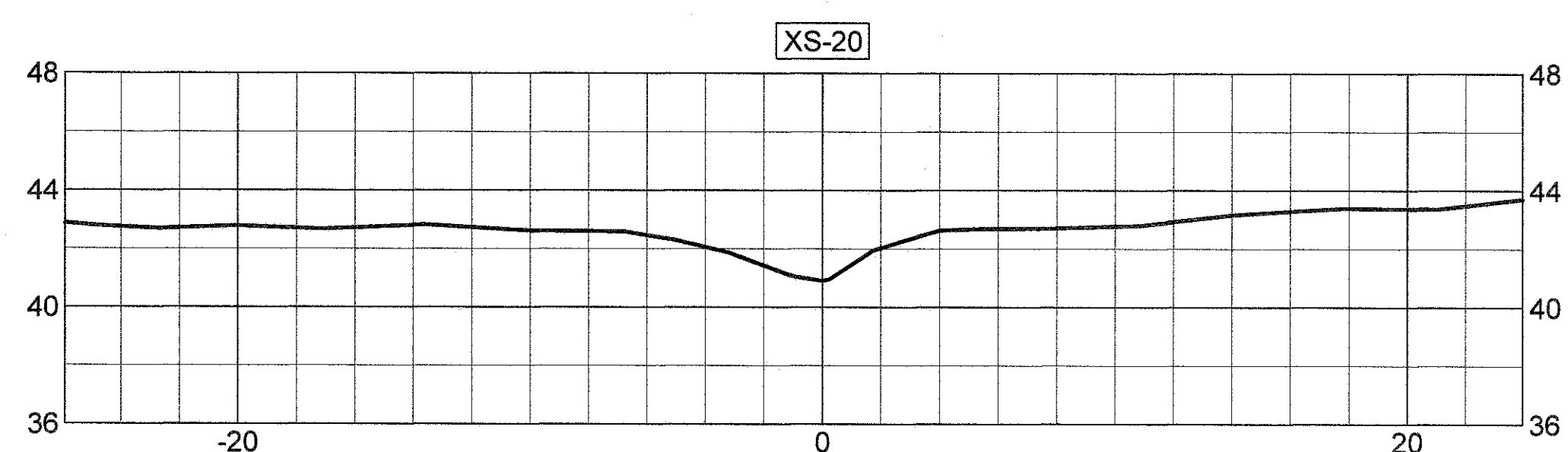
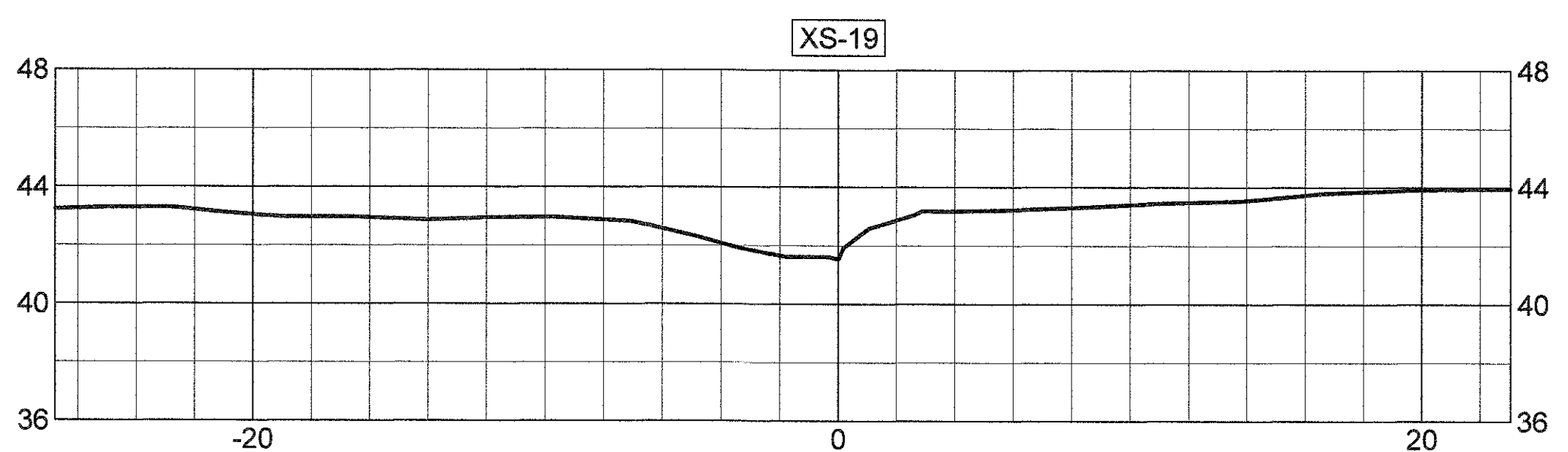
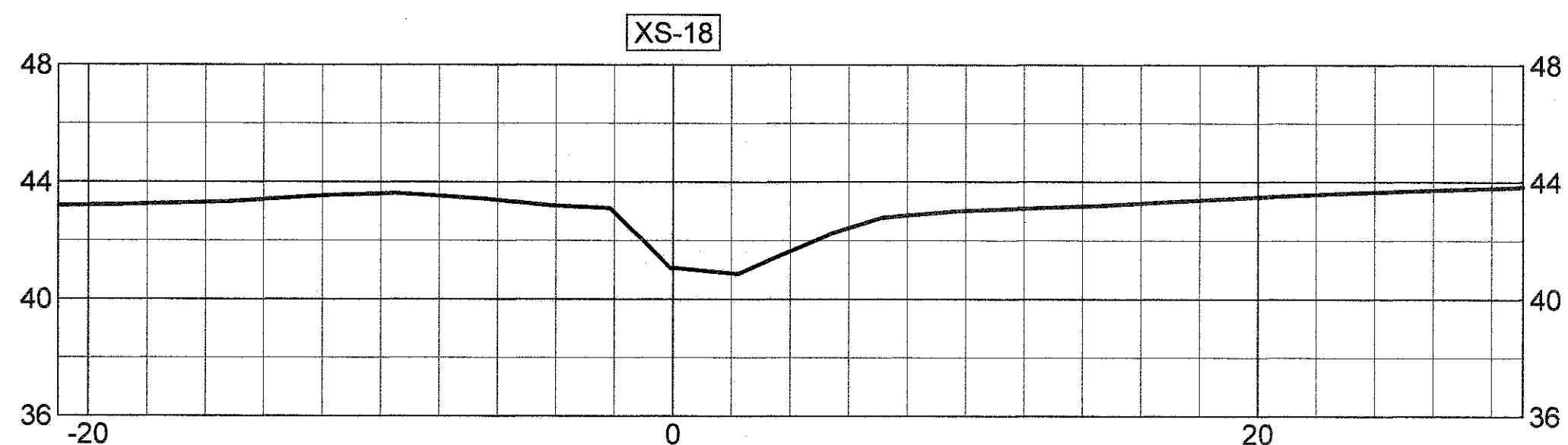
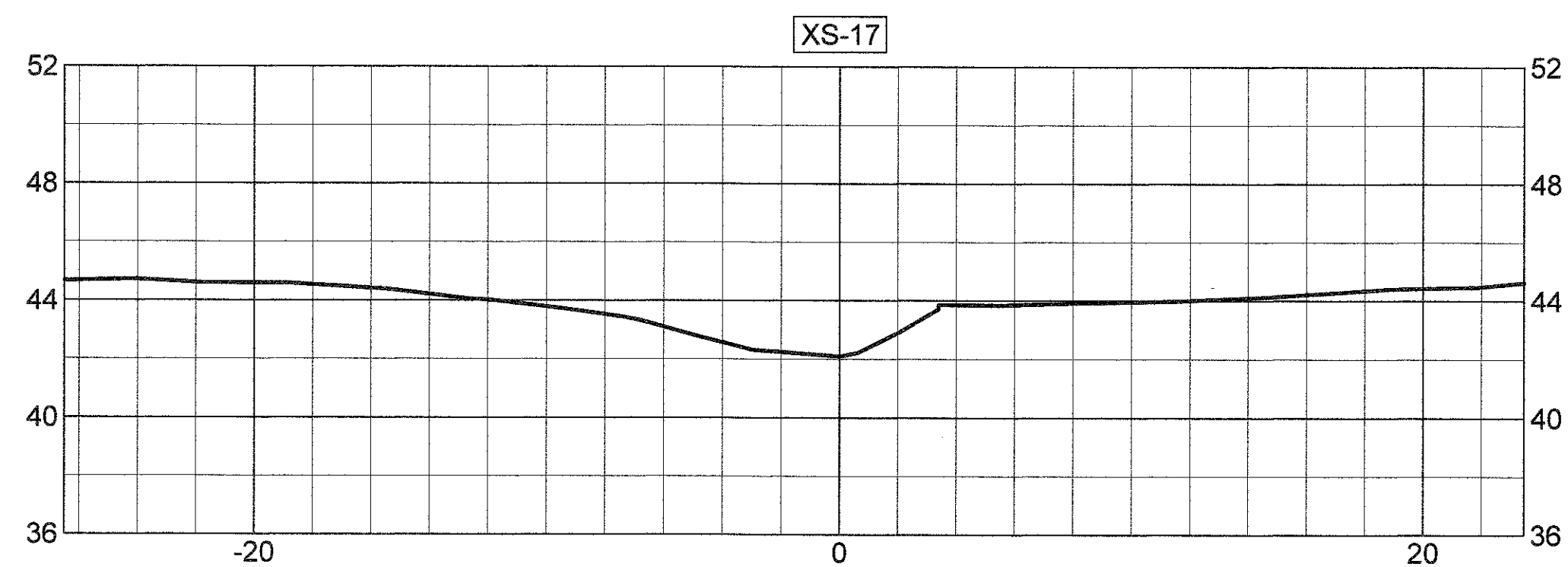
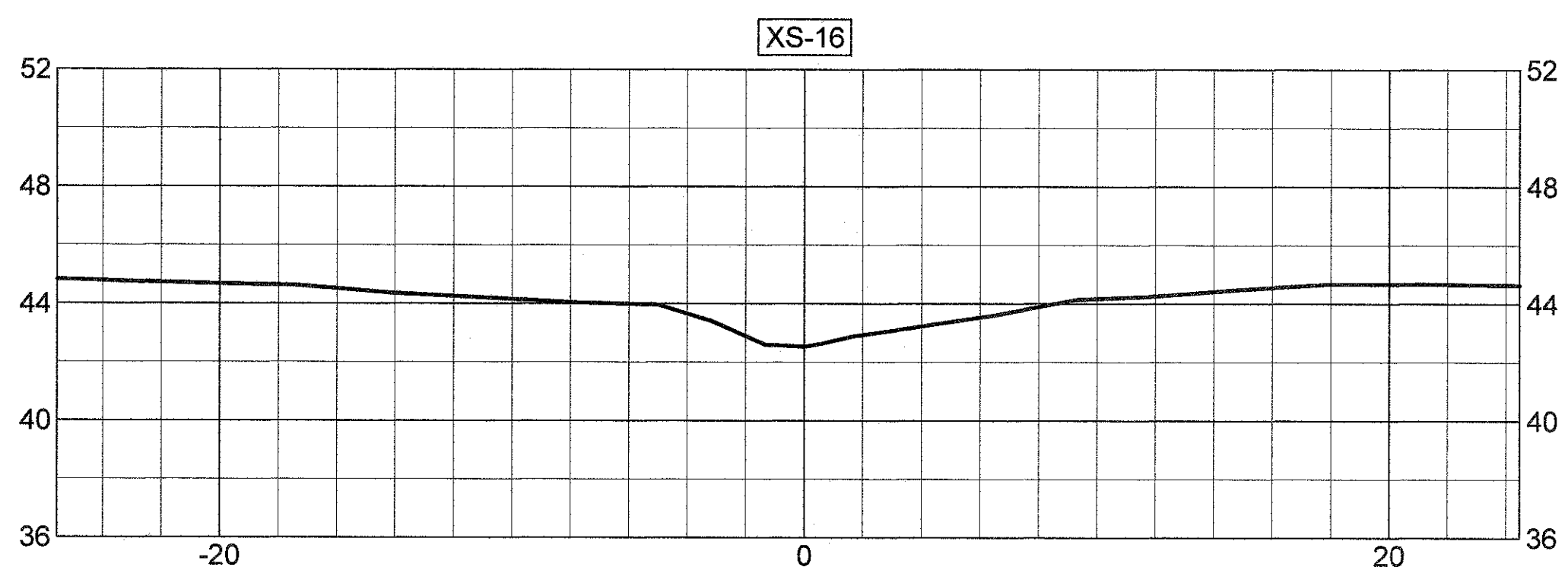
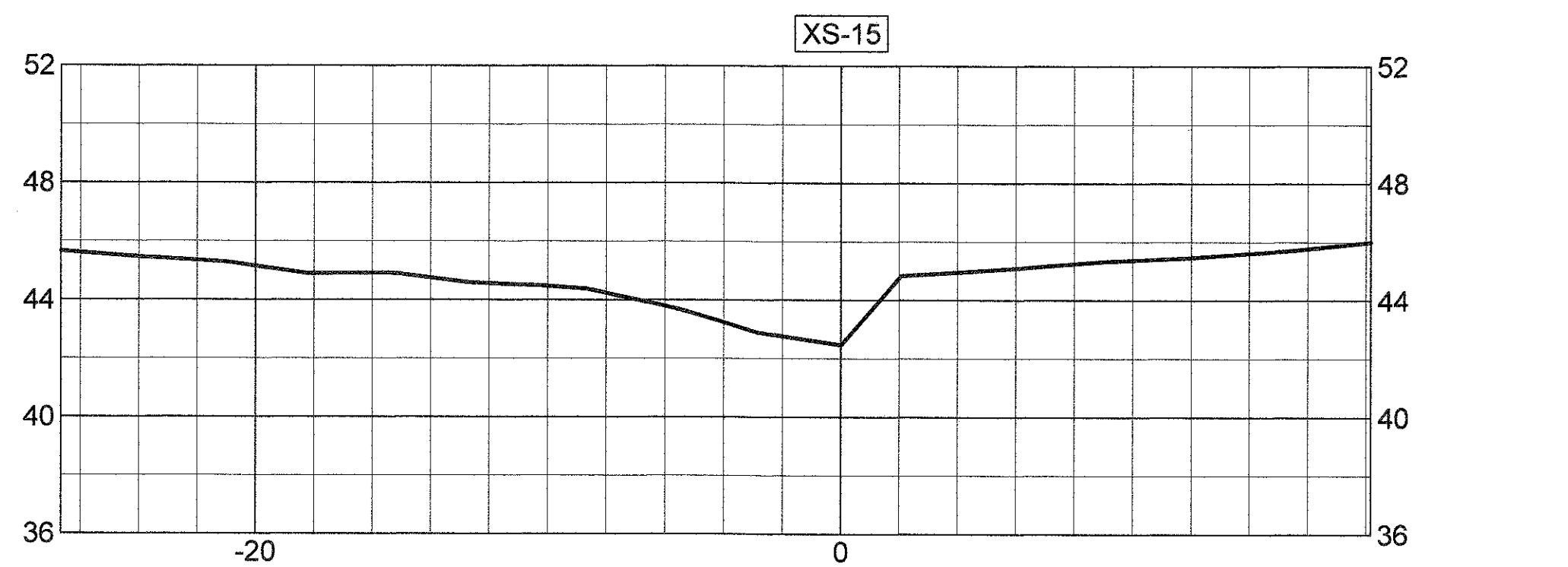
**ENVIRONMENTAL BANC  
& EXCHANGE, LLC**  
909 CAPABILITY DRIVE  
SUITE 3100  
RALEIGH, N.C. 27606

|              |                 |              |          |
|--------------|-----------------|--------------|----------|
| SCALE        | 1" = 5'         | DEPARTMENT   |          |
| DRAWN BY     | CKP             | DATE STARTED | 4-28-14  |
| APPROVED     | CKP             | SHEET No.    | 17 OF 20 |
| DRAWING NAME | MR1-Asbuilt.dwg | DRAWING NO.  |          |
| PROJECT NO.  | 20110047        |              |          |

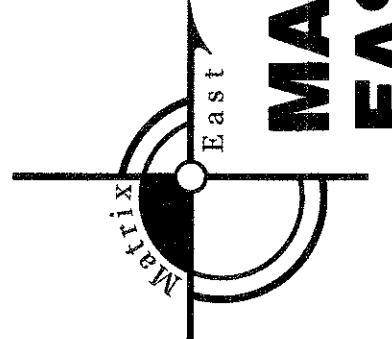
**S-17**



NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



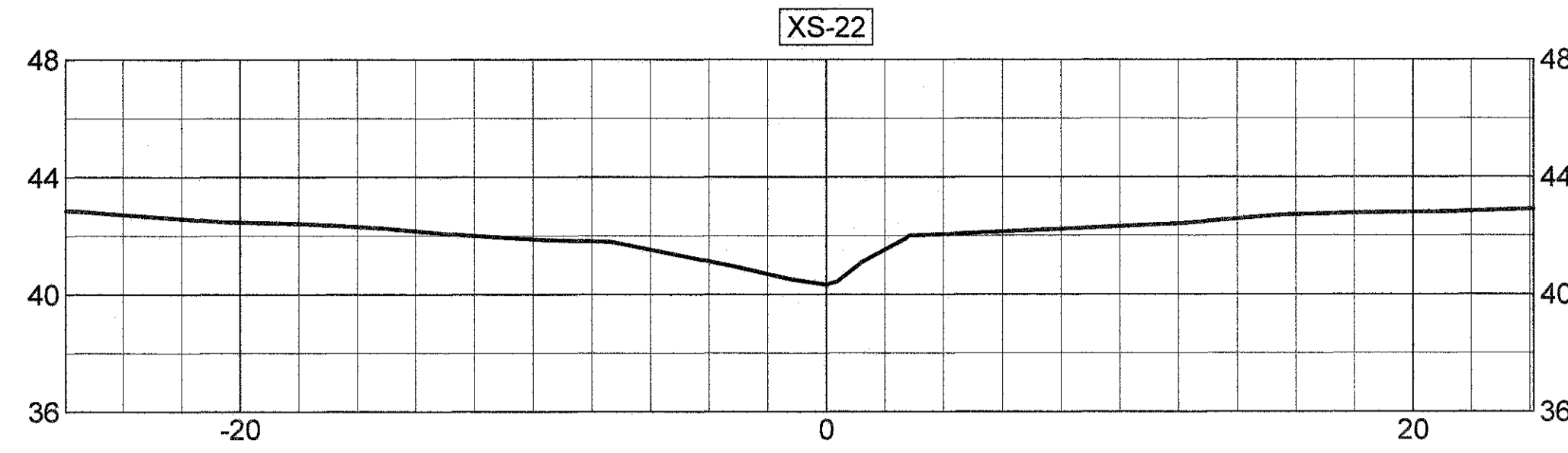
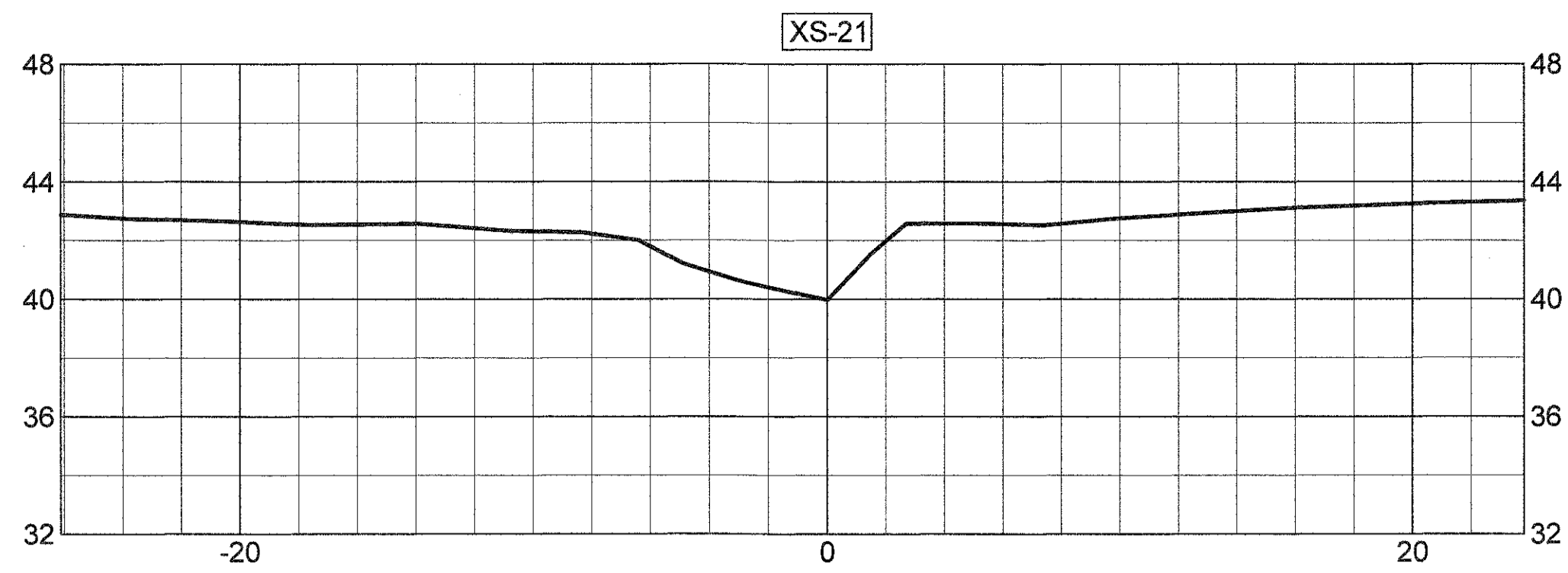
**STREAM CROSS-SECTIONS (XS-11 - XS-20)**  
**MUDDY RUN**  
**MITIGATION PROJECT**  
**DUPLIN COUNTY, N.C.**



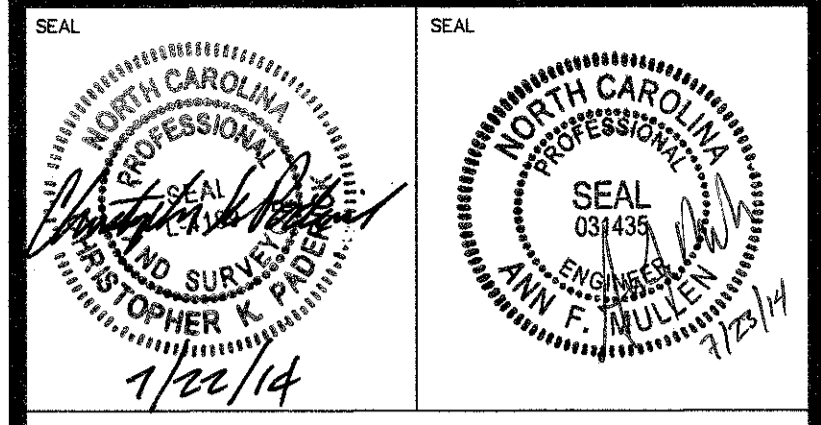
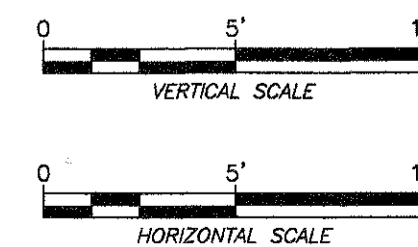
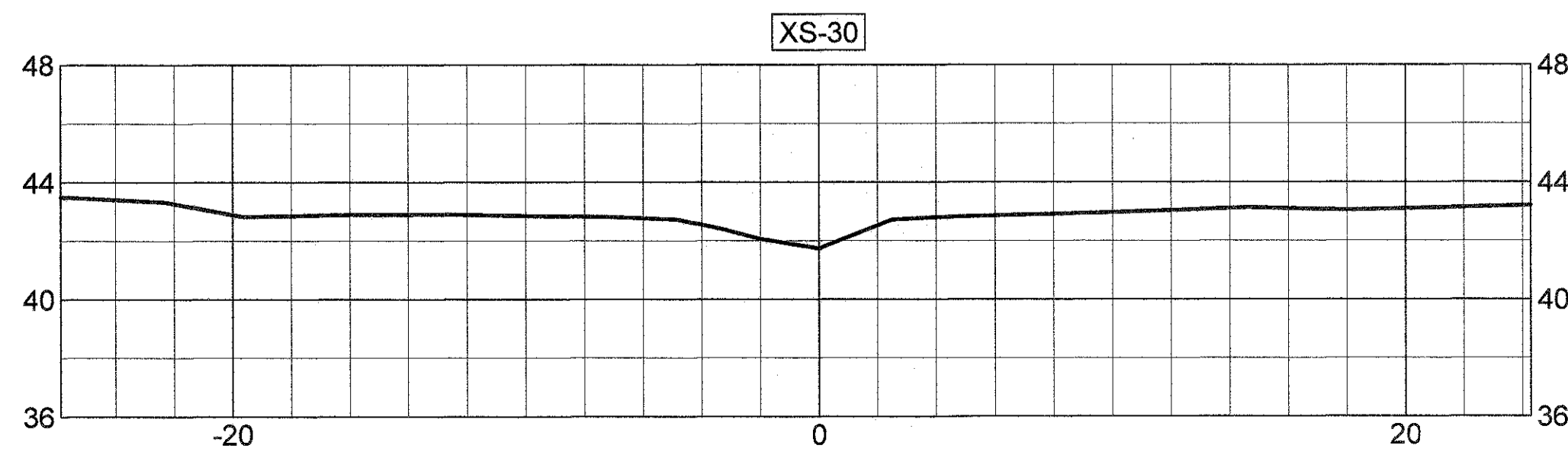
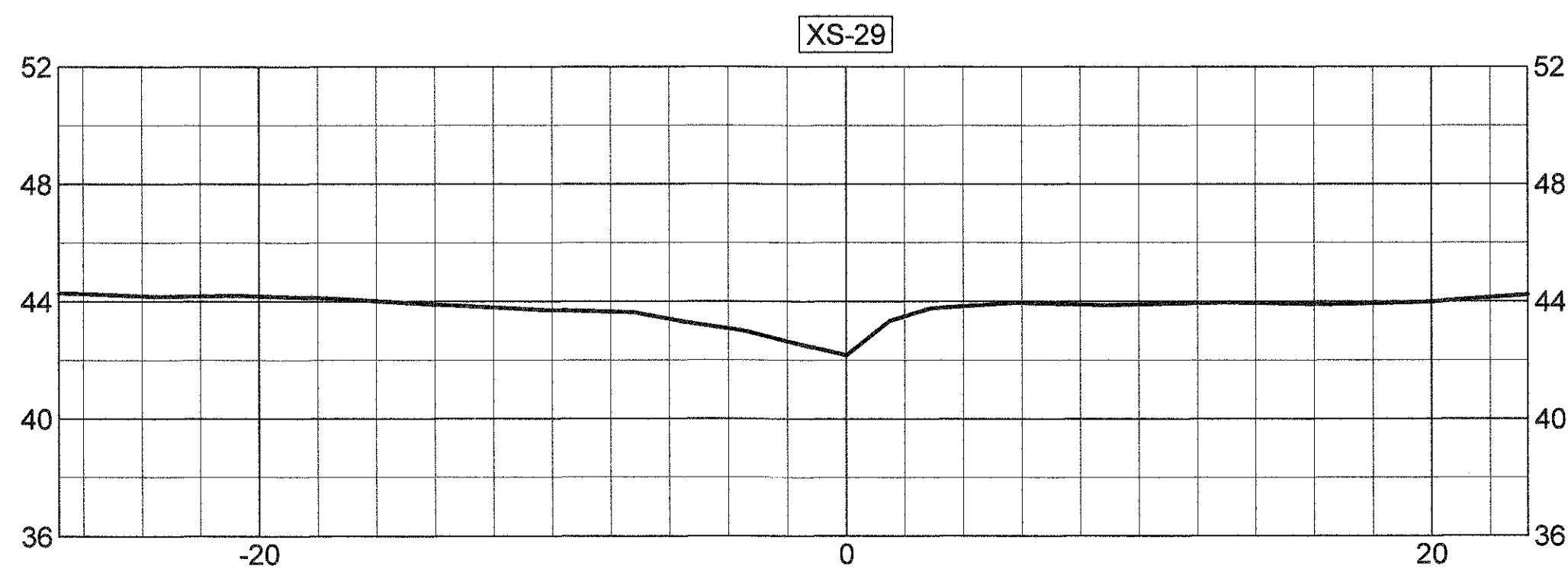
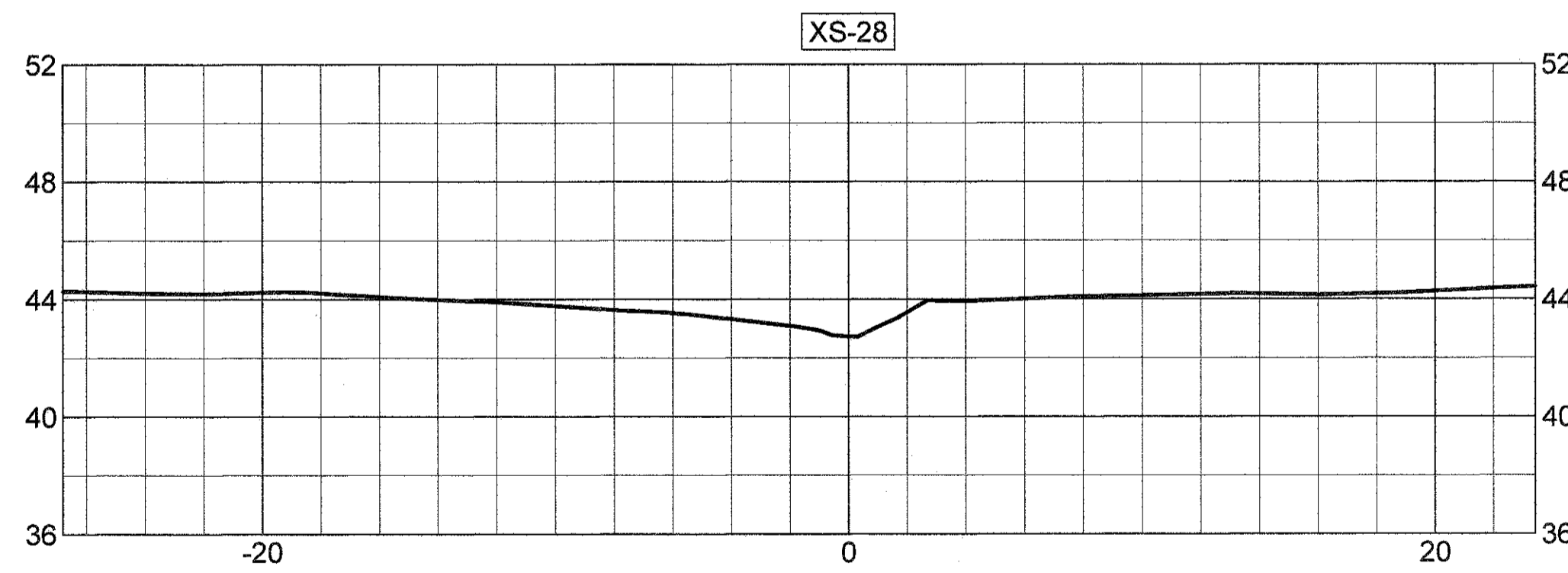
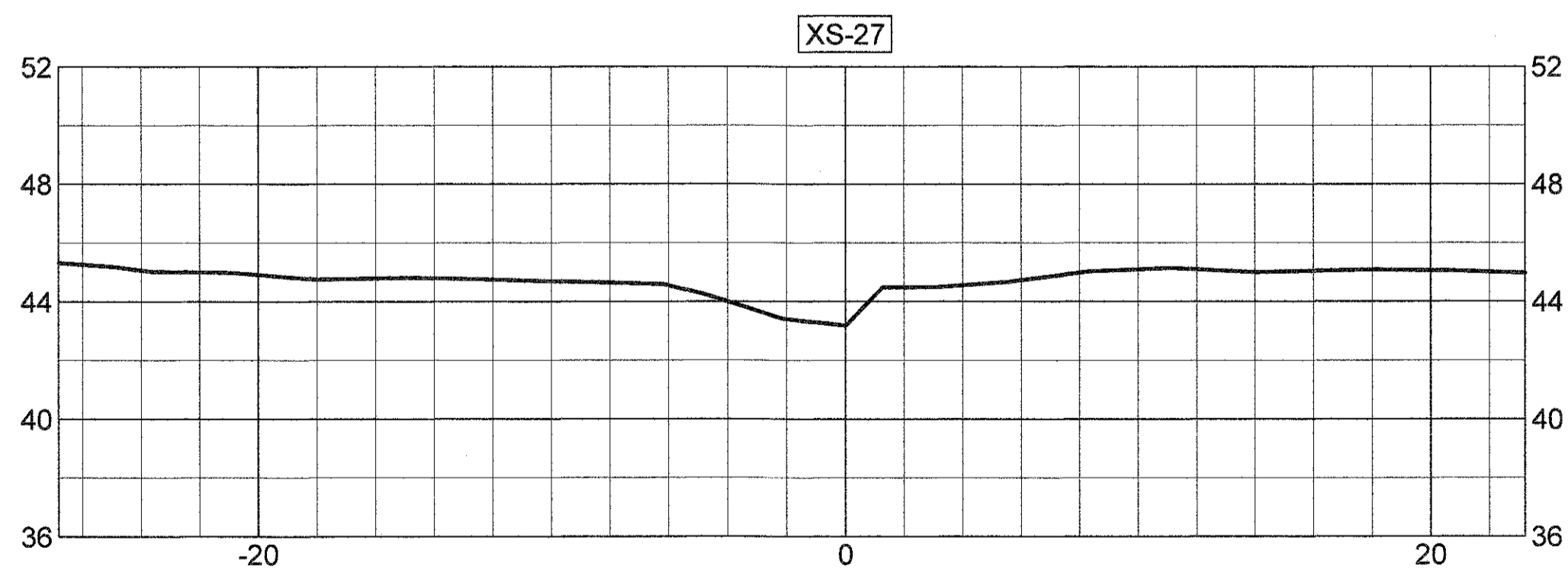
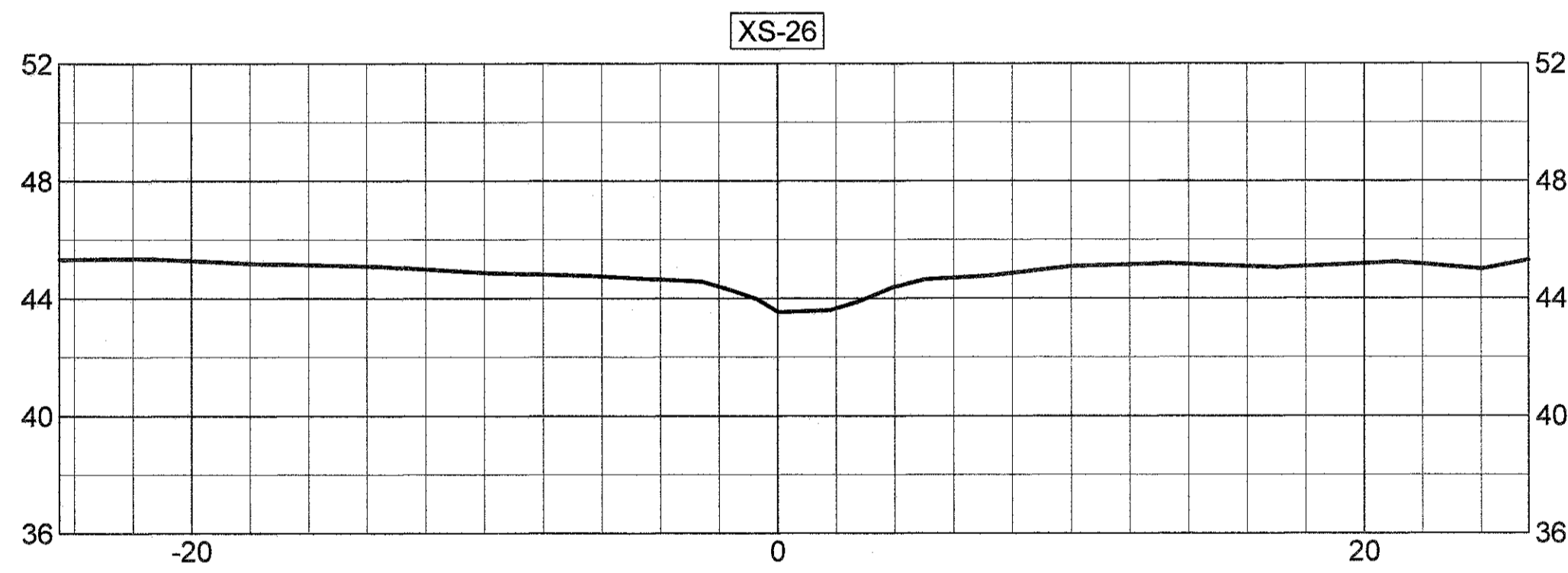
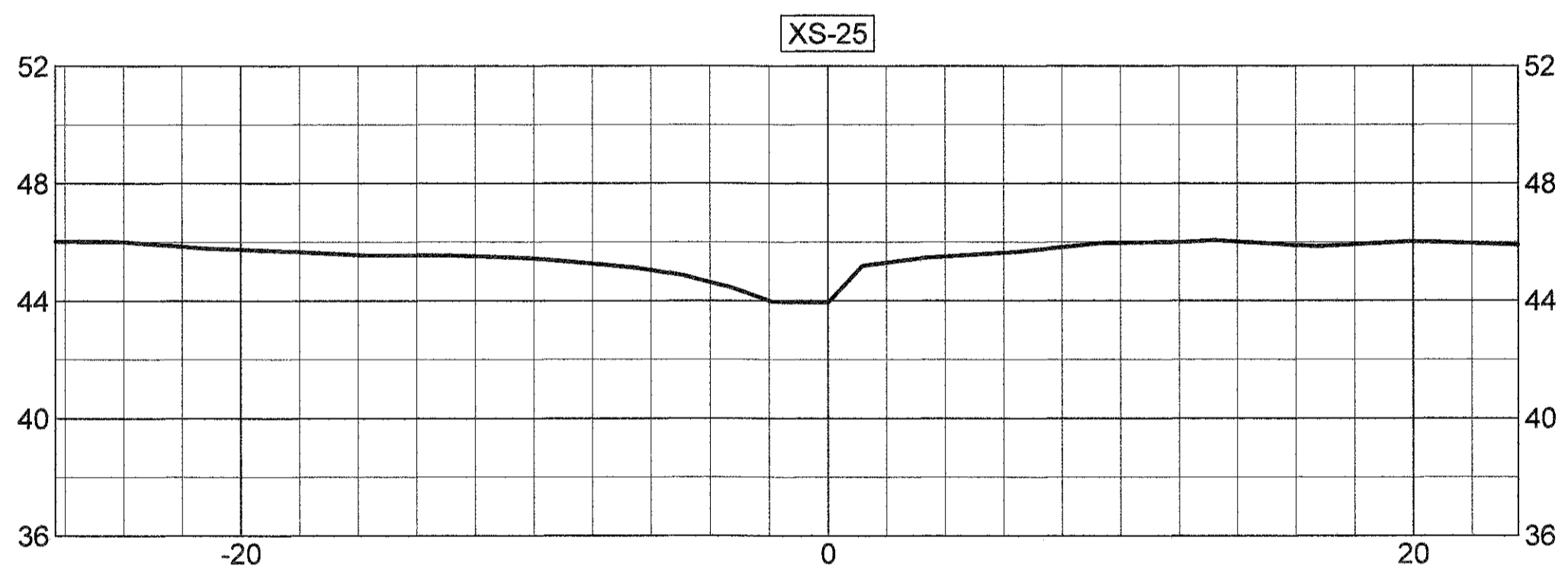
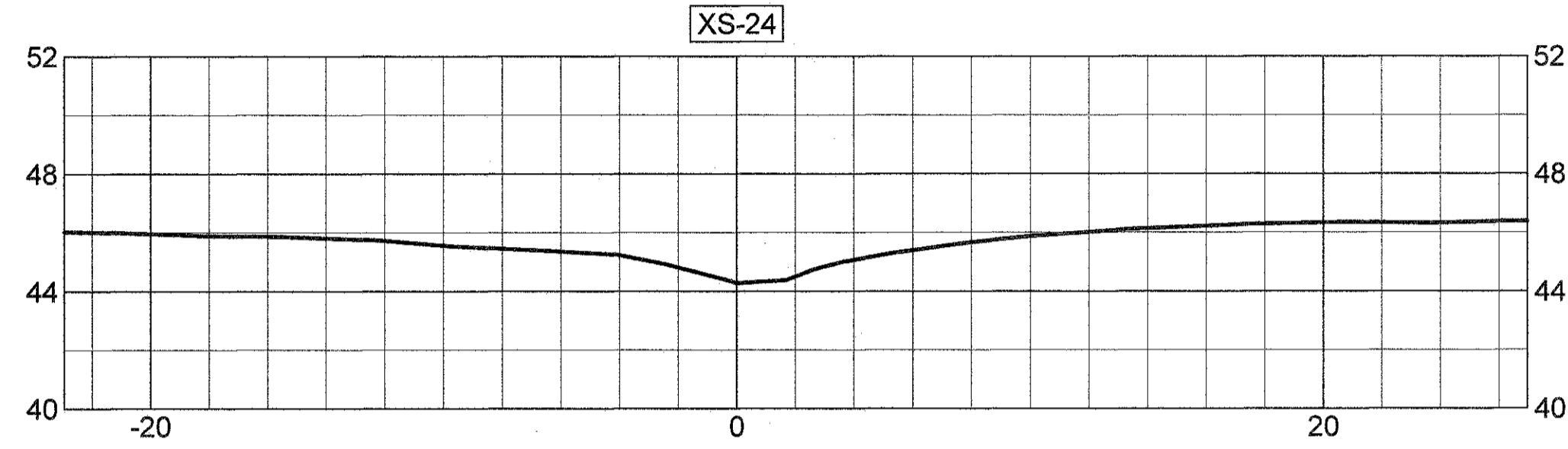
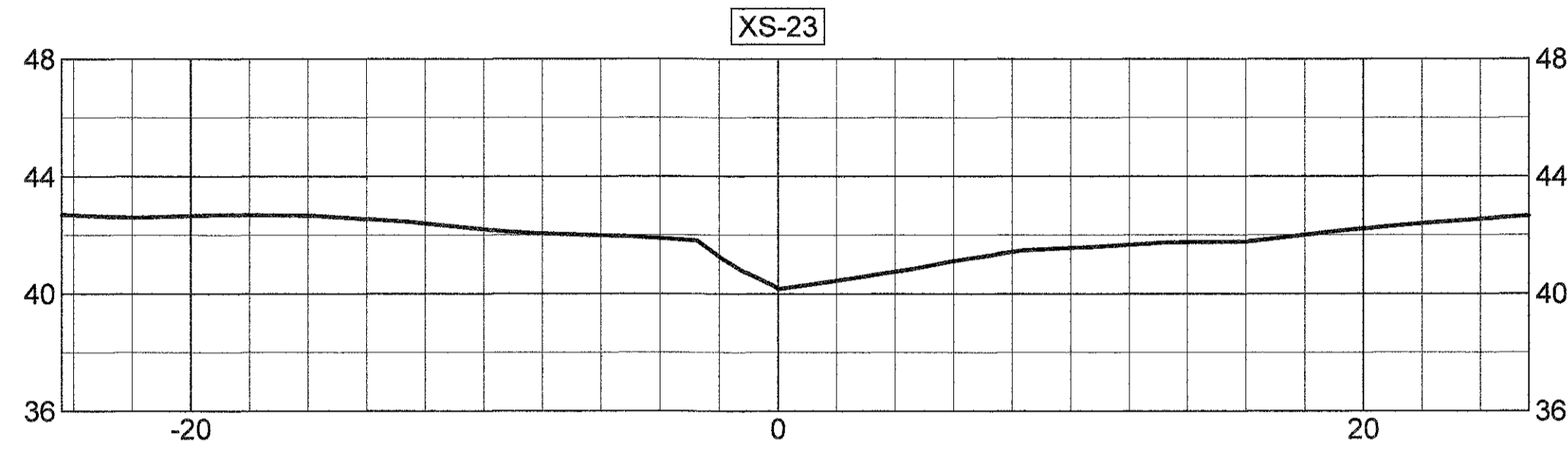
**MATRIX EAST, PLLC**  
 906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matriceast.net

**ENVIRONMENTAL BANC & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|                                 |                         |                       |
|---------------------------------|-------------------------|-----------------------|
| SCALE 1" = 5'                   |                         | DEPARTMENT            |
| DRAWN BY<br>CKP                 | DATE STARTED<br>4-28-14 | SHEET No.<br>18 OF 20 |
| APPROVED<br>CKP                 | DRAWING NO.             |                       |
| DRAWING NAME<br>MR1-Asbuilt.dwg |                         | <b>S-18</b>           |
| PROJECT NO.<br>20110047         |                         |                       |

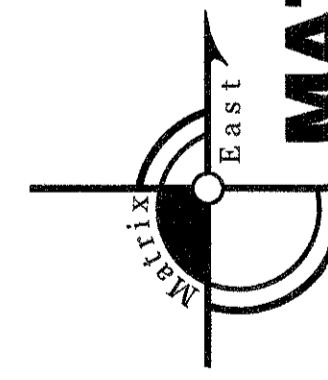


NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



**STREAM CROSS-SECTIONS (XS-21 - XS-30)**

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.

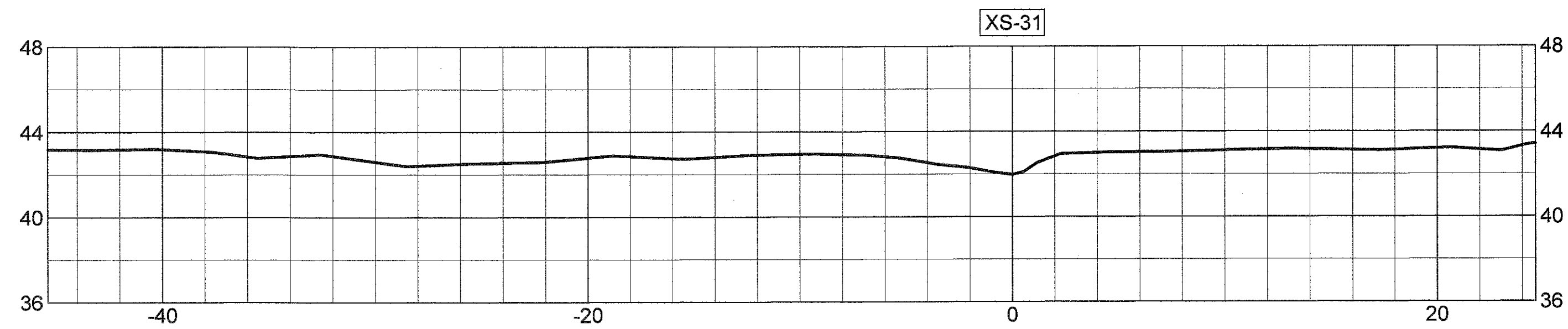


**MATRIX  
 EAST, PLLC**

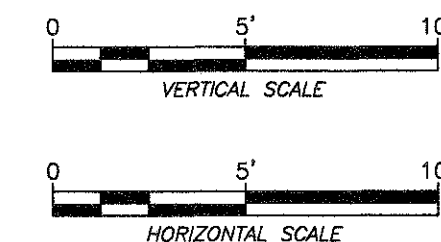
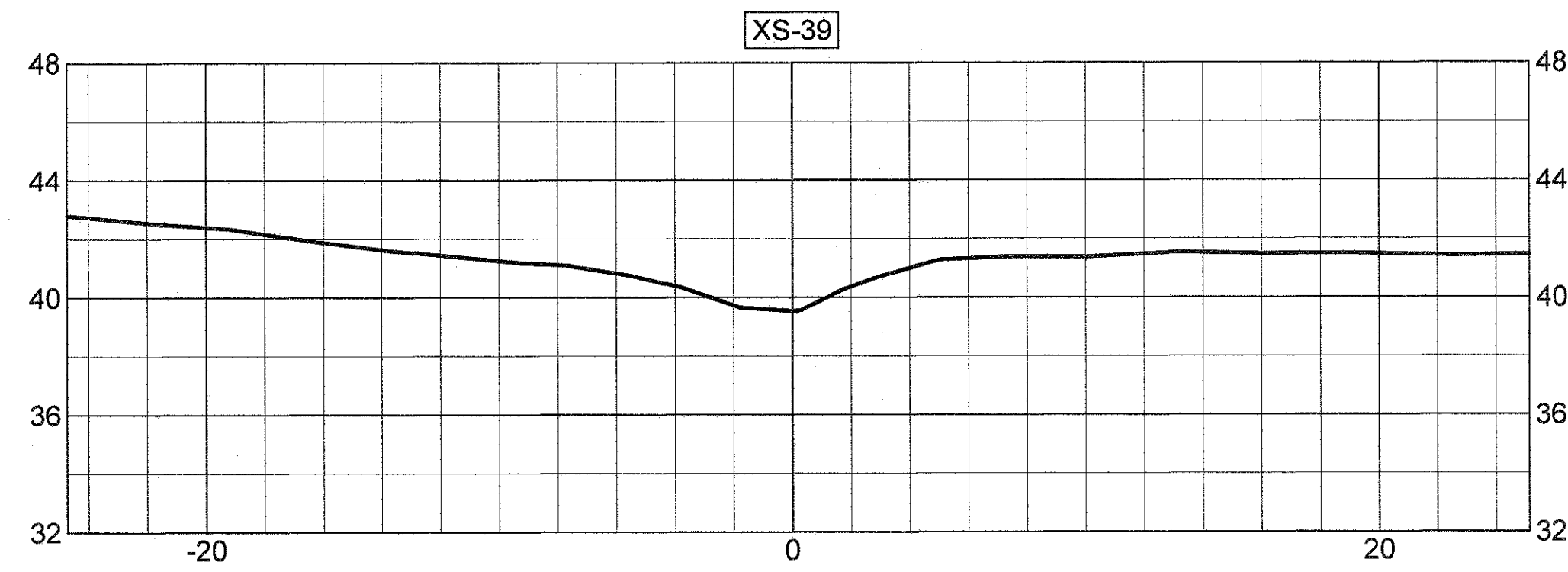
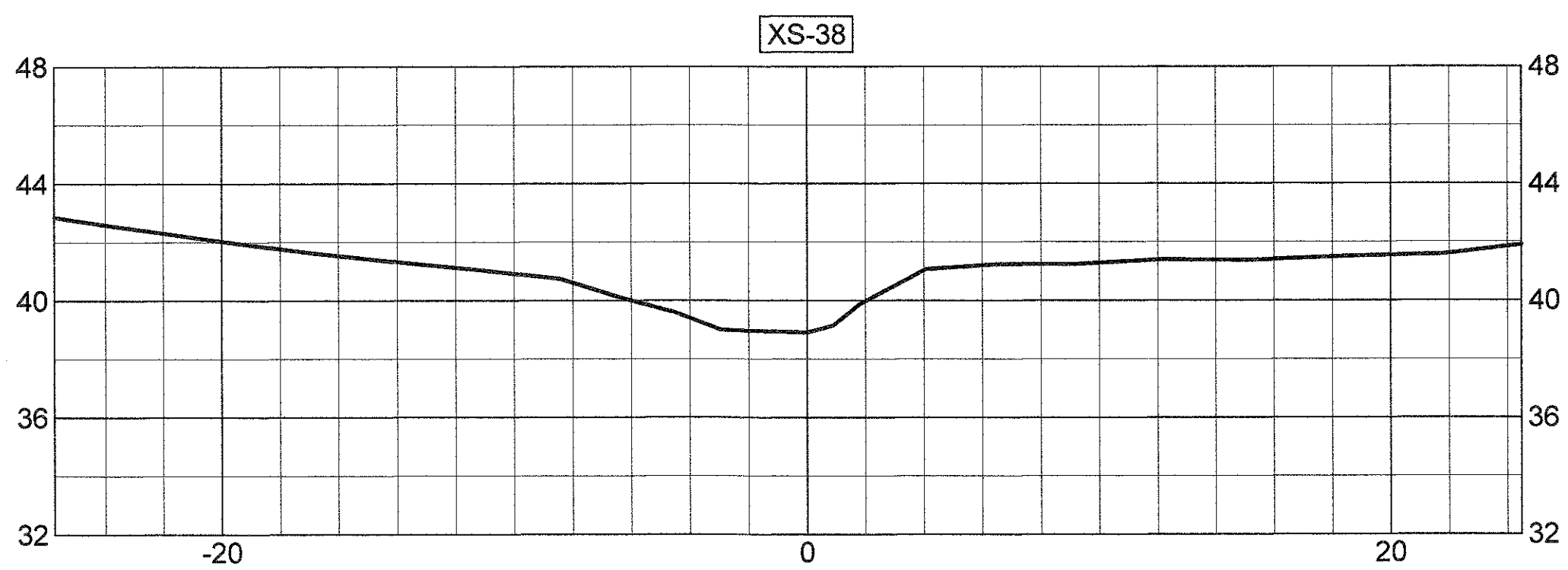
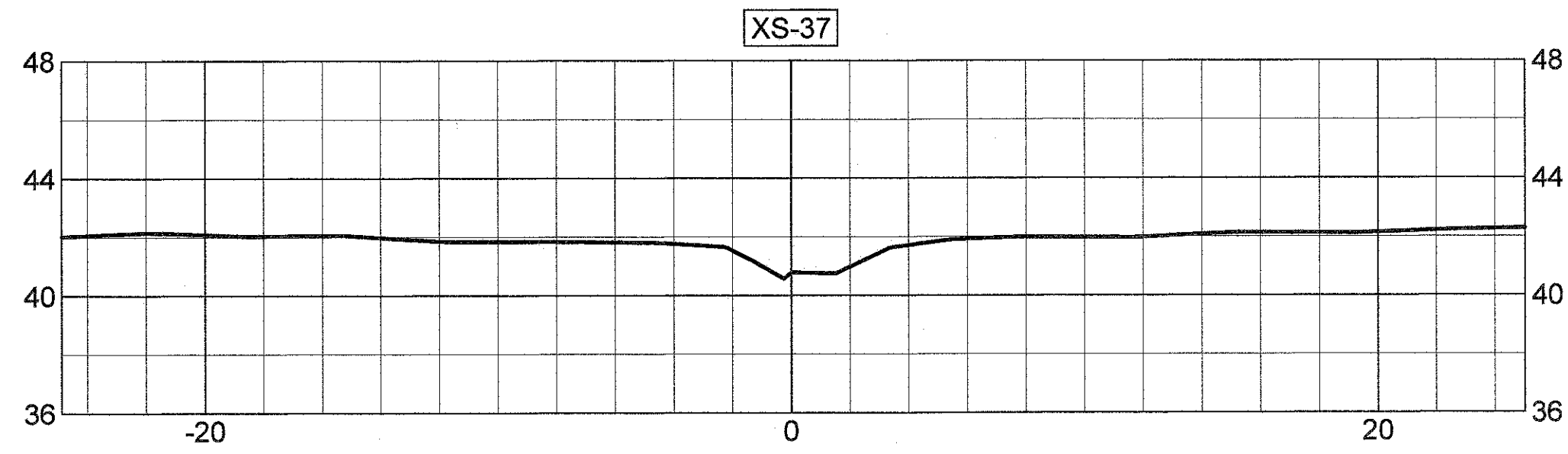
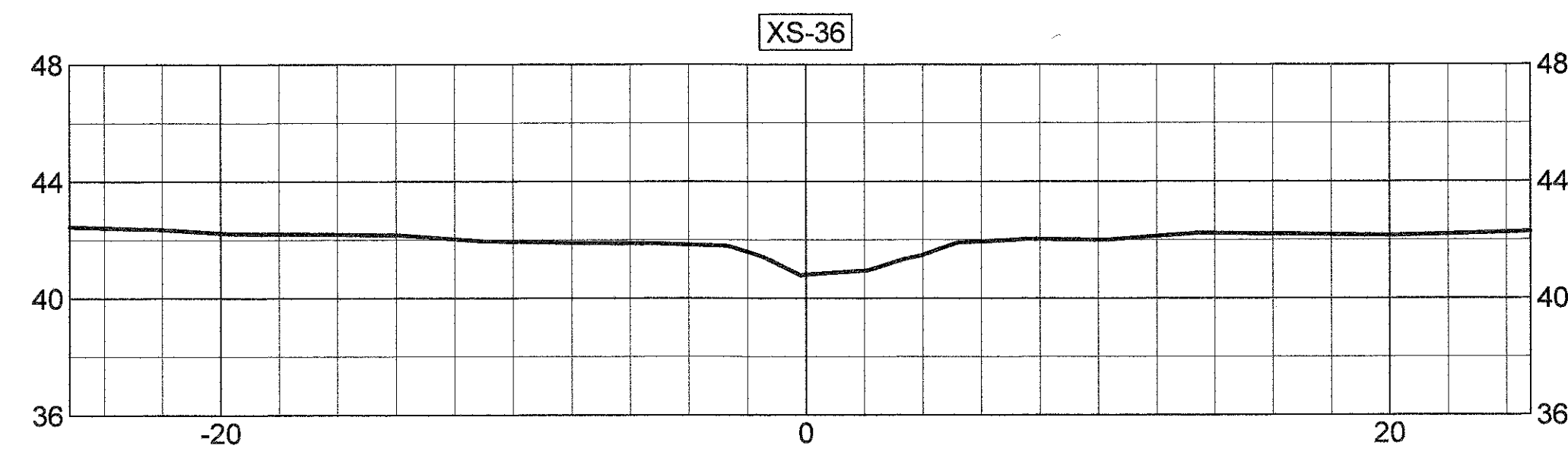
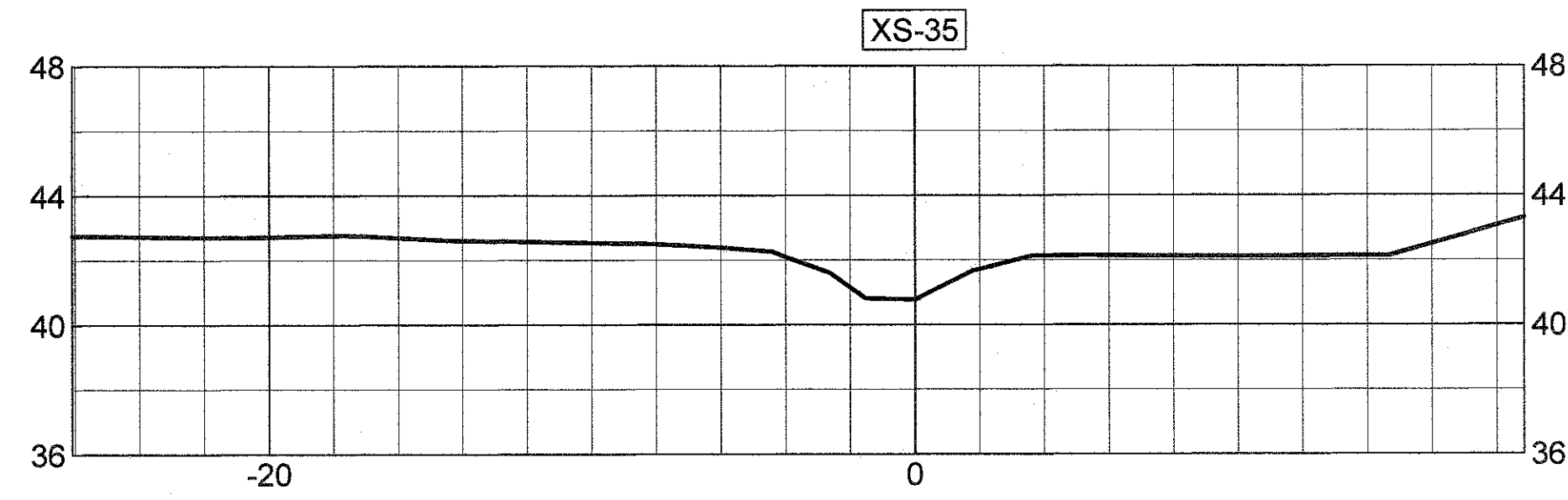
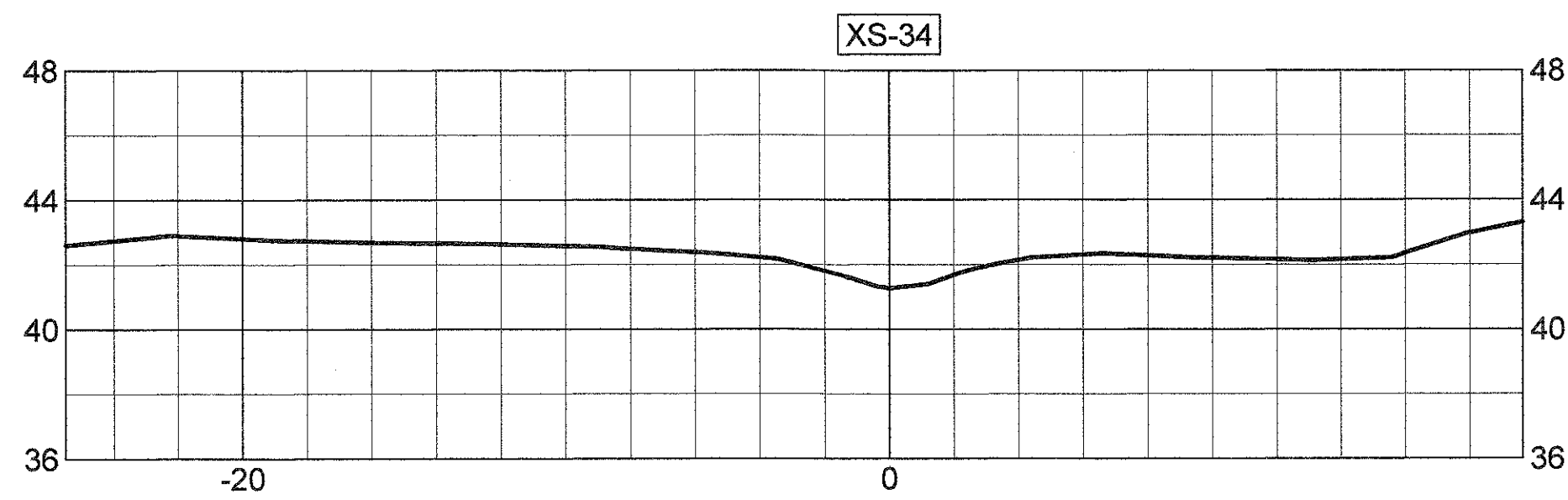
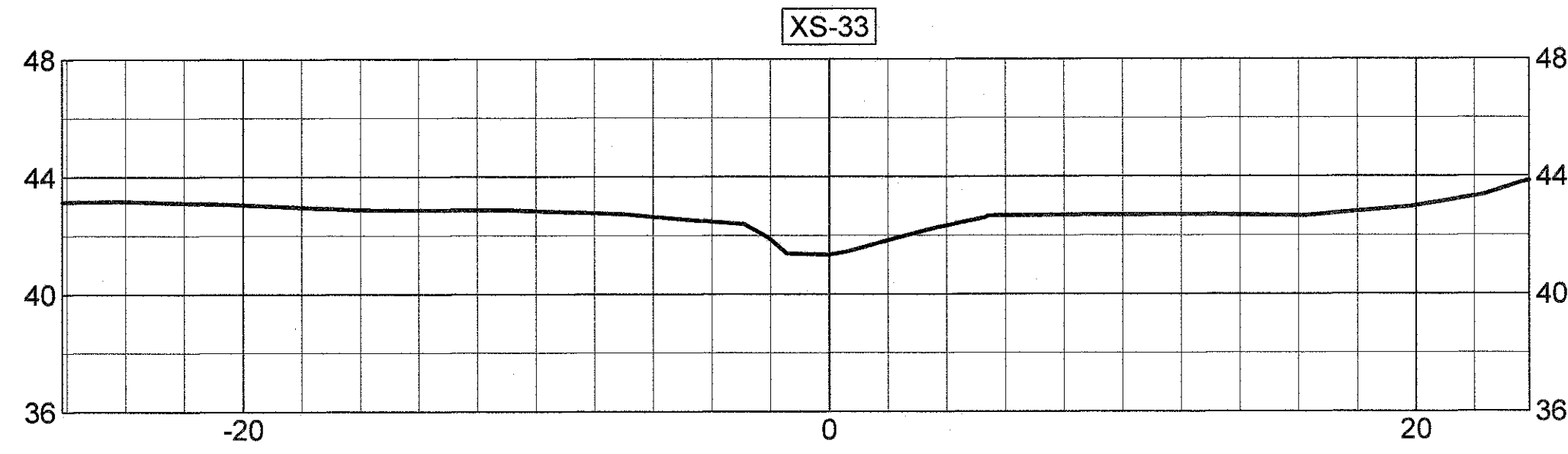
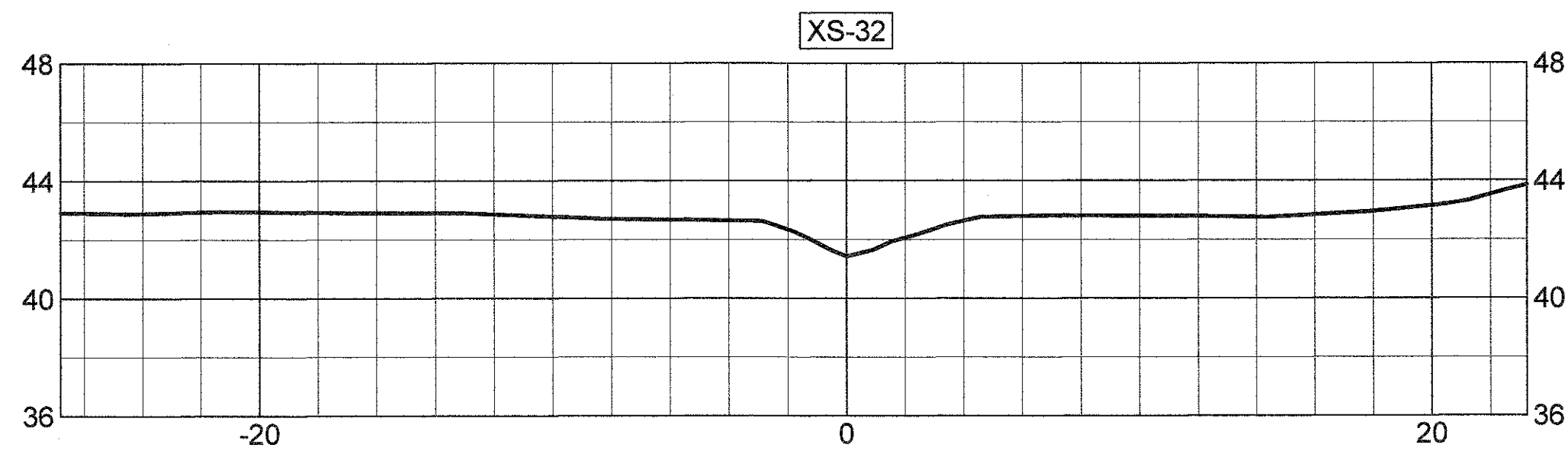
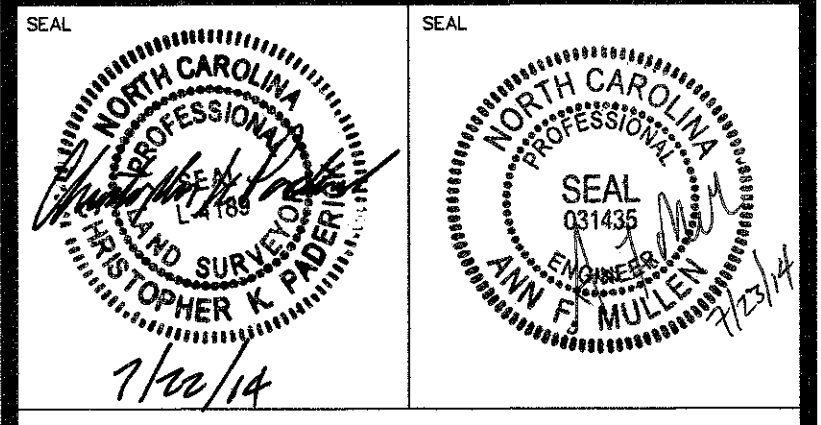
906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|              |                 |              |          |
|--------------|-----------------|--------------|----------|
| SCALE        | 1" = 5'         | DEPARTMENT   |          |
| DRAWN BY     | CKP             | DATE STARTED | 4-28-14  |
| APPROVED     | CKP             | SHEET No.    | 19 OF 20 |
| DRAWING NAME | MR1-Asbuilt.dwg | DRAWING NO.  |          |
| PROJECT NO.  | 20110047        |              |          |

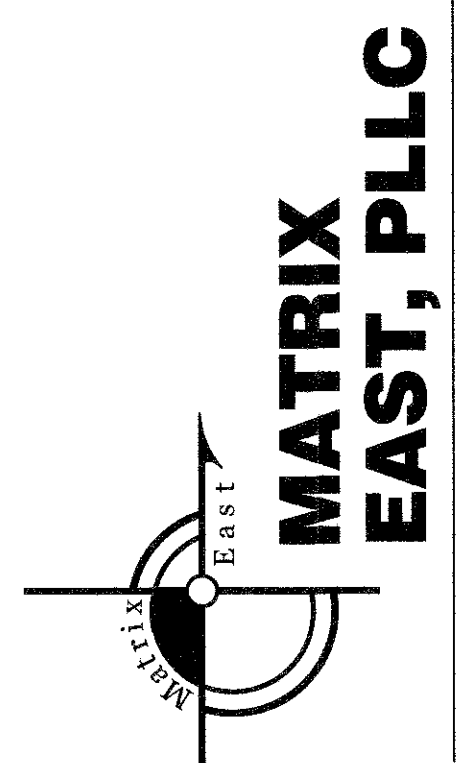


NOTE:  
 THALWEG SURVEY FOR REACHES 1B, 1C, 2,  
 & 3 WAS PERFORMED BY W.K. DICKSON  
 AND CO., INC. ALL OTHER SURVEYING WAS  
 PERFORMED BY MATRIX EAST, PLLC.



STREAM CROSS-SECTIONS (XS-31 - XS-39)

# MUDDY RUN MITIGATION PROJECT DUPLIN COUNTY, N.C.



**MATRIX  
 EAST, PLLC**

906 N. QUEEN ST., SUITE A  
 KINSTON, NC 28501  
 TEL: 252-522-2500 FAX: 252-522-4747  
 FIRM LIC. # P-0221  
 EMAIL: surveyor@matrixeast.net

**ENVIRONMENTAL BANC  
 & EXCHANGE, LLC**  
 909 CAPABILITY DRIVE  
 SUITE 3100  
 RALEIGH, N.C. 27606

|              |                 |              |          |
|--------------|-----------------|--------------|----------|
| SCALE        | 1" = 5'         | DEPARTMENT   |          |
| DRAWN BY     | CKP             | DATE STARTED | 4-28-14  |
| APPROVED     | CKP             | SHEET No.    | 20 OF 20 |
| DRAWING NAME | MR1-Asbuilt.dwg | DRAWING NO.  |          |
| PROJECT NO.  | 20110047        |              |          |

**S-20**



community infrastructure consultants  
 Transportation + Water Resources  
 Urban Development + Geomatics

720 Corporate Drive  
 Raleigh, NC 27607  
 (v) 919.782.0495  
 (f) 919.782.9672  
 www.wkdickson.com  
 NC. LICENSE NO. F-0374

PROJ. DATE: DEC 2011  
 PRINCIPAL:  
 PROJ. MGR.: DPI  
 CAD TECH: FM  
 Q.C.: DPI  
 Q.C. DATE: 9/26/2013

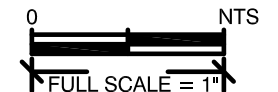
PLOT DATE: 9/26/2013

PROJECT NAME:  
 MUDDY RUN STREAM  
 MITIGATION PROJECT

OWNER OR CLIENT:  
 ENVIRONMENTAL BANC &  
 EXCHANGE, LLC

DRAWING TITLE:  
 SUBSURFACE FLOW  
 STRUCTURE

FULL SCALE: NTS

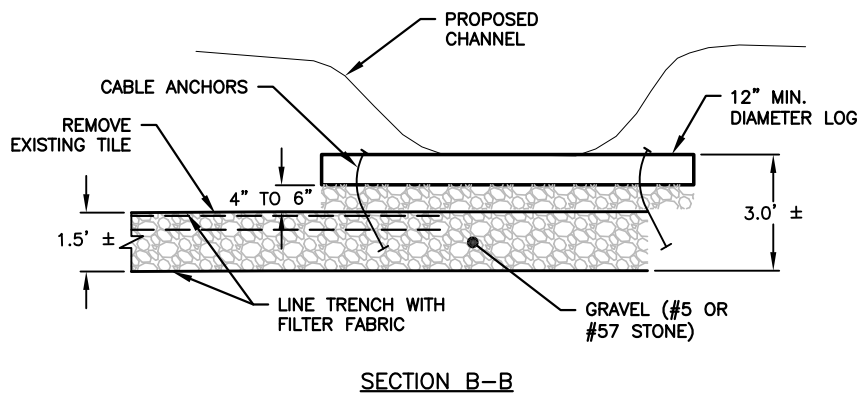
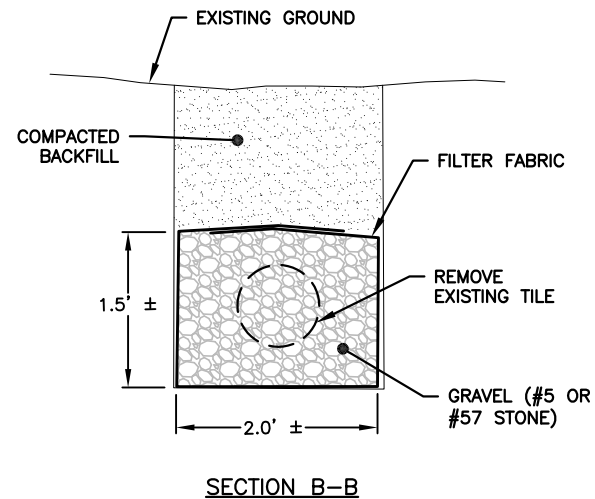
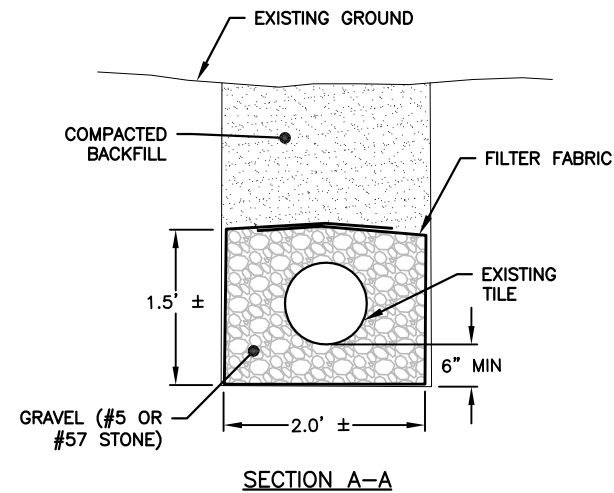
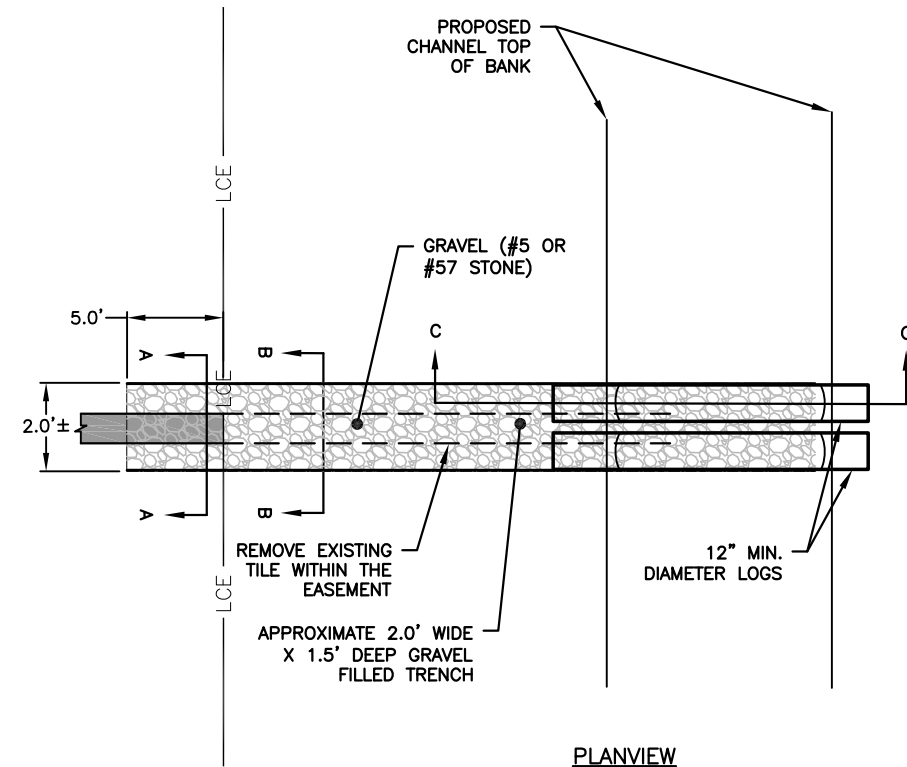


DRAWING NUMBER:

BULLETIN DRAWING #1

WKD PROJ. NO.:

2011017600RA



NOTES:

- LOGS SHOULD BE AT LEAST 12 INCHES IN DIAMETER, HARDWOOD SPECIES, A MINIMUM OF 10 TO 20 FEET IN LENGTH (UNLESS OTHERWISE NOTED), AND RELATIVELY STRAIGHT.
- START TRENCH APPROXIMATELY 5.0' OUTSIDE OF EASEMENT AND LINE TRENCH WITH FILTER FABRIC.
- FILTER FABRIC USED SHALL BE NCDOT TYPE 2 ENGINEERING FABRIC OR EQUIVALENT.