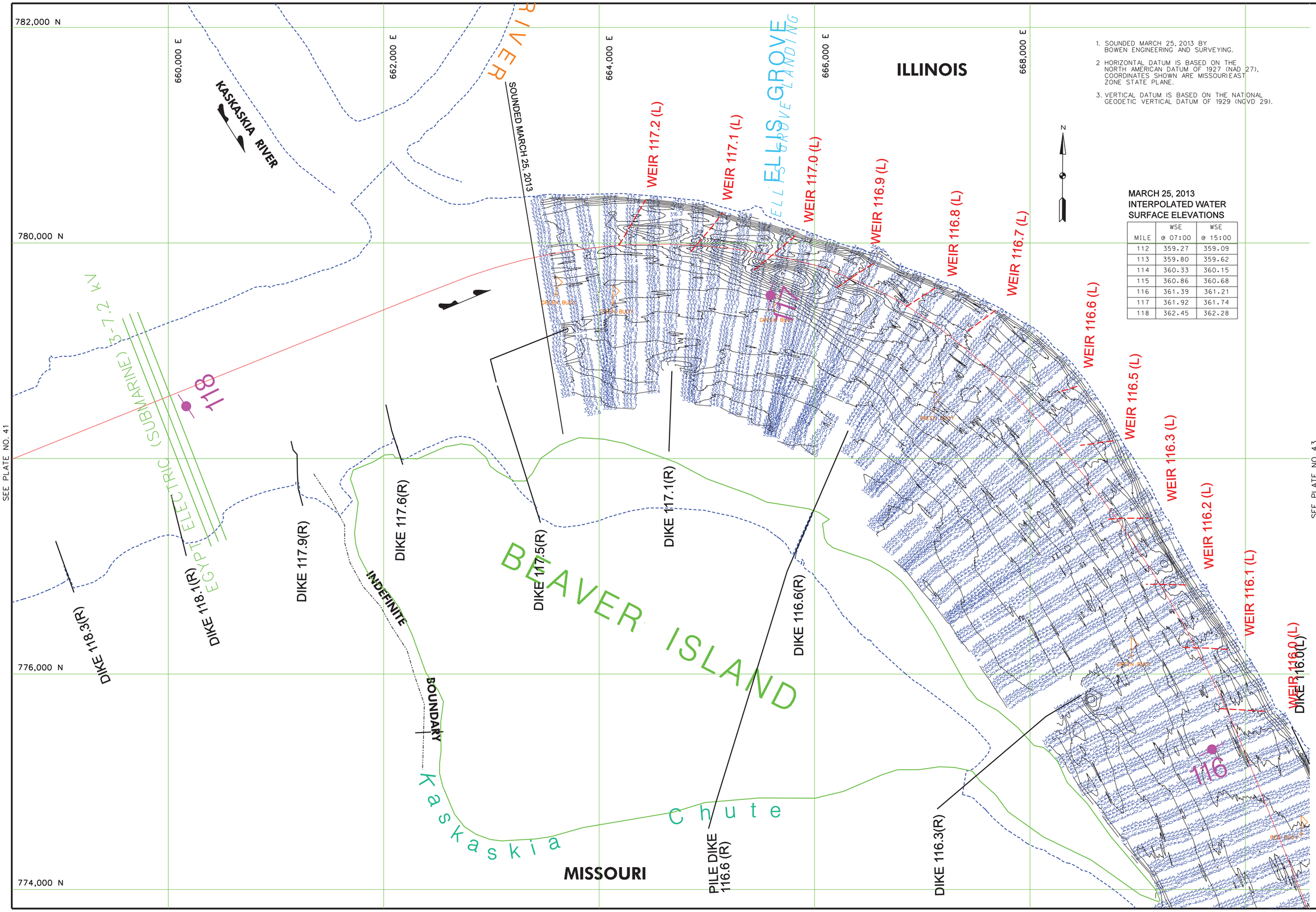



1. SOUNDED MARCH 25, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

**MARCH 25, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 07:00 | WSE @ 15:00 |
|---|---|---|
| 112 | 359.27 | 359.09 |
| 113 | 359.80 | 359.62 |
| 114 | 360.33 | 360.15 |
| 115 | 360.86 | 360.68 |
| 116 | 361.39 | 361.21 |
| 117 | 361.92 | 361.74 |
| 118 | 362.45 | 362.28 |

US Army Corps of Engineers
St. Louis District

GAGE RECORD

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 25 MAR 2013 | X | X | 17.50(7:00) 16.93(15:00) | 14.23(7:00) 14.04(15:00) |

ELEVATIONS ARE REFERENCED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. G:\#RP\154-000 C.F.S.\

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

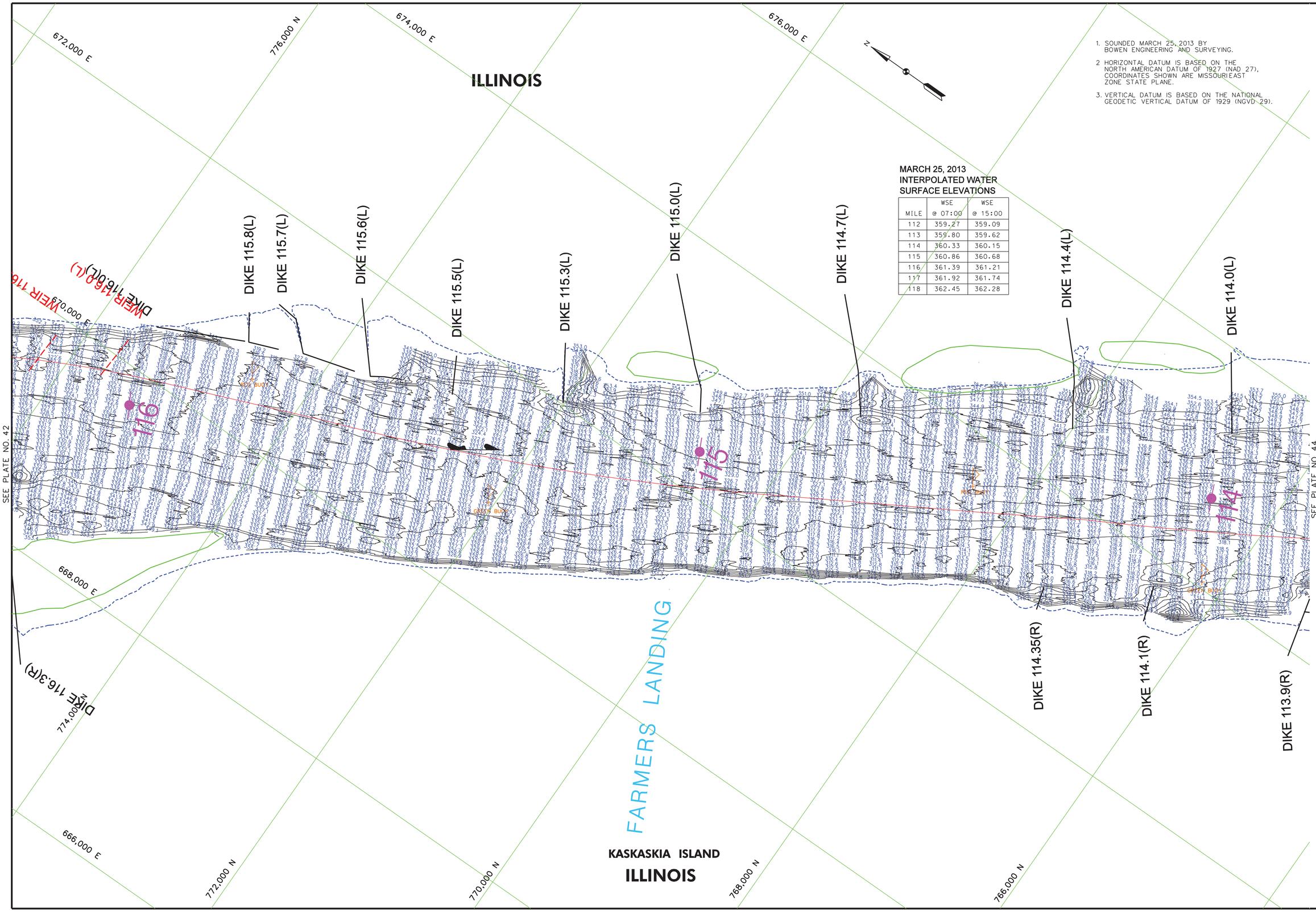
Surveyed by: BOWEN ENGINEERING
Survey Date: March 25, 2013
Drawn by: X
Chkd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEBRIFICATION####

120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED. IT IS PRESENTED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS
RIVER MILES 116.0 – 118.2

PLATE NUMBER
42




1. SOUNDED MARCH 25, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

**MARCH 25, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 07:00 | WSE @ 15:00 |
|---|---|---|
| 112 | 359.27 | 359.09 |
| 113 | 359.80 | 359.62 |
| 114 | 360.33 | 360.15 |
| 115 | 360.86 | 360.68 |
| 116 | 361.39 | 361.21 |
| 117 | 361.92 | 361.74 |
| 118 | 362.45 | 362.28 |

US Army Corps of Engineers
St. Louis District

**GAGE RECORD**

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 25 MAR 2013 | X | X | 17.50(07:00) 16.93(15:00) | 14.23(07:00) 14.04(15:00) |

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (54,000 C.F.S.)

Survey Date: March 25, 2013
Drawn by: X
Chkd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Surveyed by: BOWEN ENGINEERING
Plot date: ####DATE:TIME####
File name: ####DESIGNFILEBERTCFCATION####

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

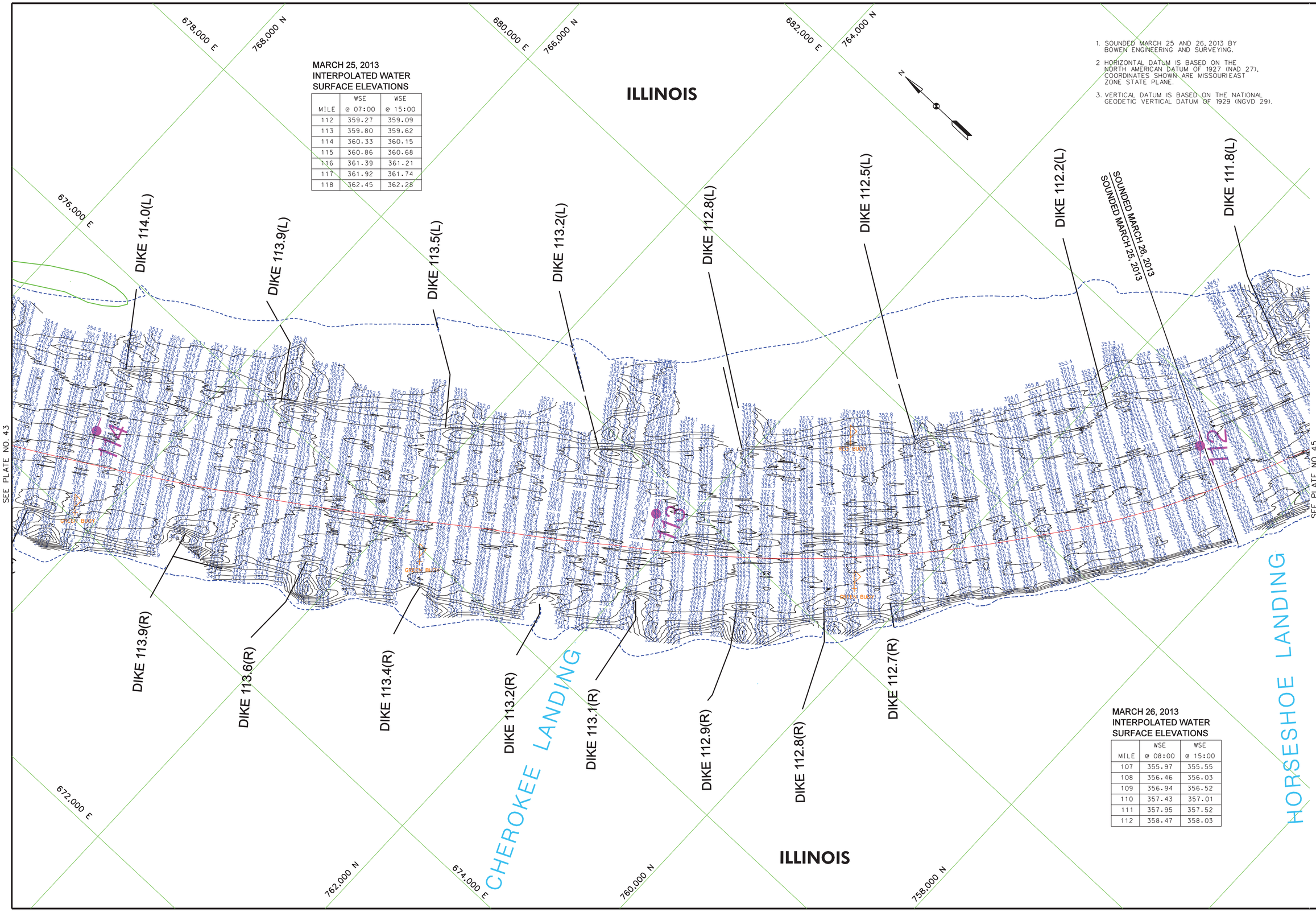
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS
RIVER MILES 114.0 – 116.0

120 400 0 0 120 240 METERS 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ST. LOUIS DISTRICT, CORPS OF ENGINEERS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

PLATE NUMBER
43




MARCH 25, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 07:00 | WSE @ 15:00 |
|---|---|---|
| 112 | 359.27 | 359.09 |
| 113 | 359.80 | 359.62 |
| 114 | 360.33 | 360.15 |
| 115 | 360.86 | 360.68 |
| 116 | 361.39 | 361.21 |
| 117 | 361.92 | 361.74 |
| 118 | 362.45 | 362.28 |

MARCH 26, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 08:00 | WSE @ 15:00 |
|---|---|---|
| 107 | 355.97 | 355.55 |
| 108 | 356.46 | 356.03 |
| 109 | 356.94 | 356.52 |
| 110 | 357.43 | 357.01 |
| 111 | 357.95 | 357.52 |
| 112 | 358.47 | 358.03 |

1. SOUNDED MARCH 25 AND 26, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 25 MAR 2013 | X | X | 17.10(07:00) 16.93(15:00) | 14.23(07:00) 14.04(15:00) |
| 26 MAR 2013 | 20.77(18:00) 20.34(15:00) | X | 16.33(18:00) 15.91(15:00) | 13.13(18:00) 12.46(15:00) |

ELEVATIONS ARE REFERENCED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. G:\W.R.P.\54.000 C.F.S.\

Surveyed by: BOWEN ENGINEERING
Survey Date: March 25 and 26, 2013
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ##########
File name: ##########

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

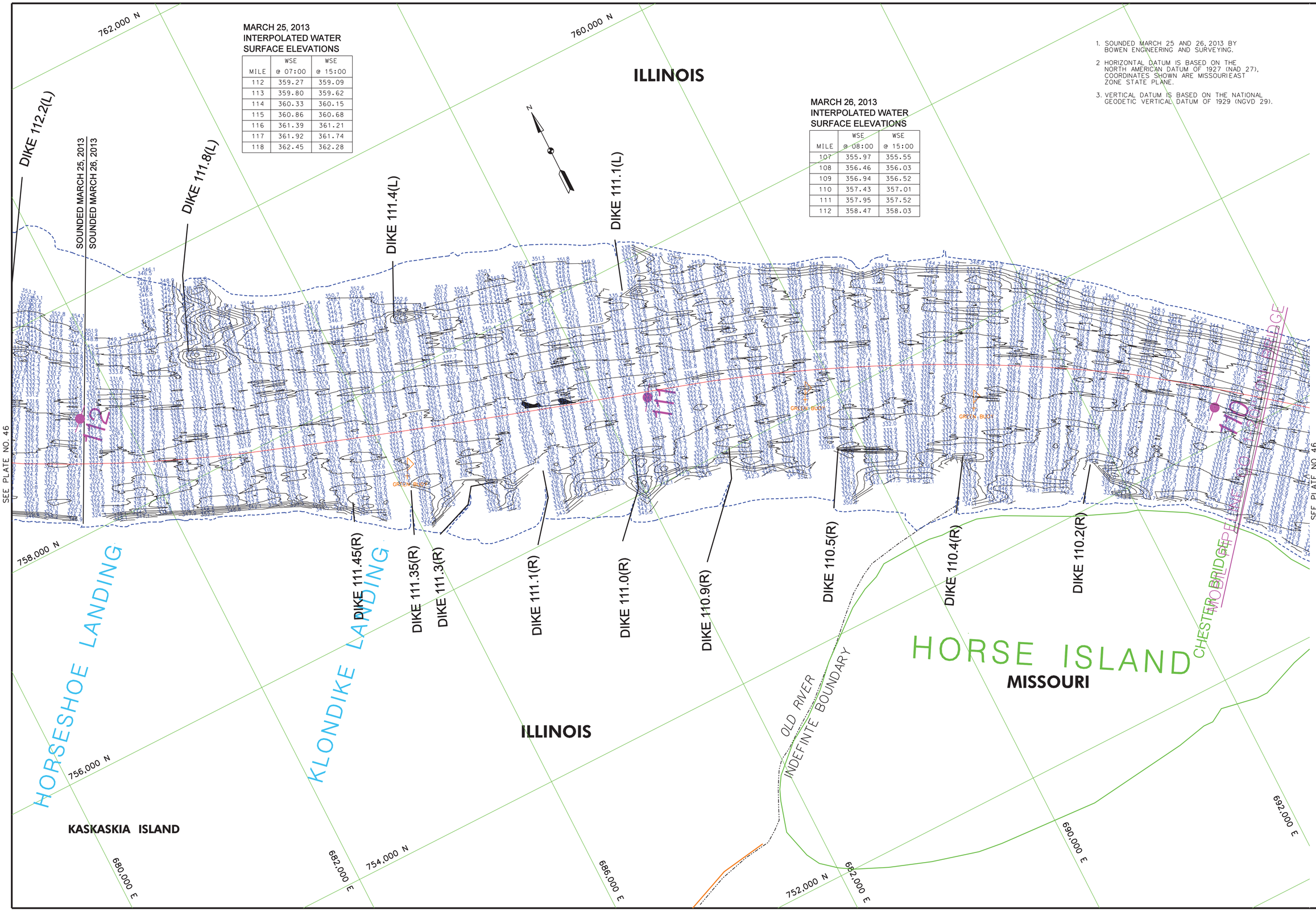
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS
RIVER MILES 112.0 – 114.0

120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED. THE CONDITIONS AS INDICATED MAY NOT REPRESENT THE GENERAL CONDITIONS EXISTING AT THAT TIME.

PLATE NUMBER
44




**MARCH 25, 2013**
**INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 07:00 | WSE @ 15:00 |
|---|---|---|
| 112 | 359.27 | 359.09 |
| 113 | 359.80 | 359.62 |
| 114 | 360.33 | 360.15 |
| 115 | 360.86 | 360.68 |
| 116 | 361.39 | 361.21 |
| 117 | 361.92 | 361.74 |
| 118 | 362.45 | 362.28 |

**MARCH 26, 2013**
**INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 08:00 | WSE @ 15:00 |
|---|---|---|
| 107 | 355.97 | 355.55 |
| 108 | 356.46 | 356.03 |
| 109 | 356.94 | 356.52 |
| 110 | 357.43 | 357.01 |
| 111 | 357.95 | 357.52 |
| 112 | 358.47 | 358.03 |

1. SOUNDED MARCH 25 AND 26, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

**GAGE RECORD**

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 25 MAR 2013 | x | x | 17.50(7:00) 16.93(15:00) | 14.23(07:00) 14.04(15:00) |
| 26 MAR 2013 | 20.77(8:00) 20.34(15:00) | x | 16.33(8:00) 15.91(15:00) | 13.13(8:00) 12.46(15:00) |

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. G:\#\#\P:\154.000 C.F.S.\

Surveyed by: BOWEN ENGINEERING
Survey Date: March 25 and 26, 2013
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ######DATE-TIME######
File name: ######DESIGNFILEBRIFIDENTIFICATION###

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

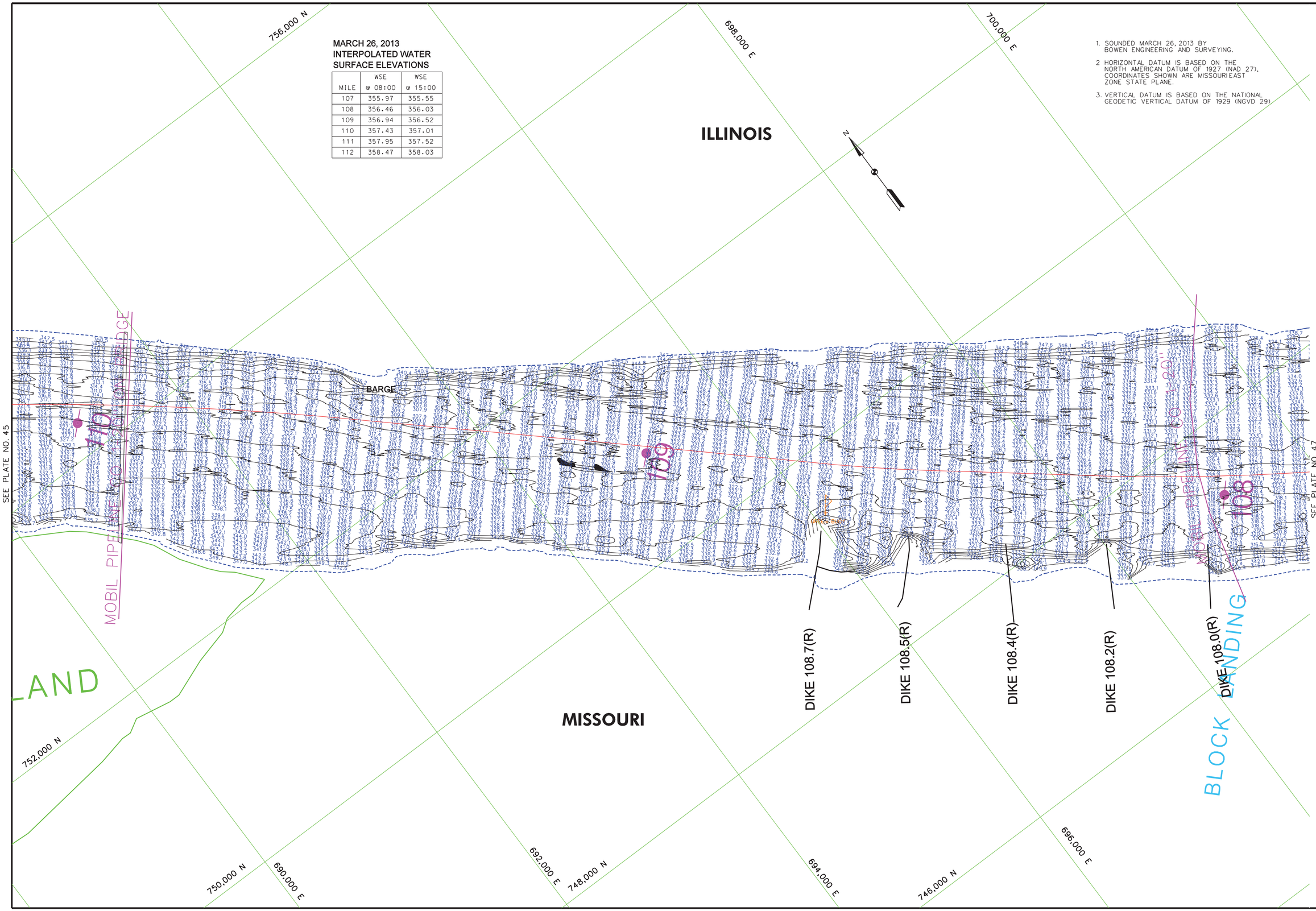
120 400 0 0 120 240 METERS 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY BOWEN ENGINEERING AND SURVEYING AND IS INTERPRETED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 110.0 – 112.0

PLATE NUMBER
45




MARCH 26, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 08:00 | WSE @ 15:00 |
|---|---|---|
| 107 | 355.97 | 355.55 |
| 108 | 356.46 | 356.03 |
| 109 | 356.94 | 356.52 |
| 110 | 357.43 | 357.01 |
| 111 | 357.95 | 357.52 |
| 112 | 358.47 | 358.03 |

1. SOUNDED MARCH 26, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 26 MAR 2013 | 20.77(8:00) 20.34(15:00) | X | 16.33(8:00) 15.91(15:00) | 13.13(8:00) 12.46(15:00) |

ELEVATIONS ARE REFERENCED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (54,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: March 26, 2013
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE:TIME####
File name: ####DESIGNFILEREFERENCE#####

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

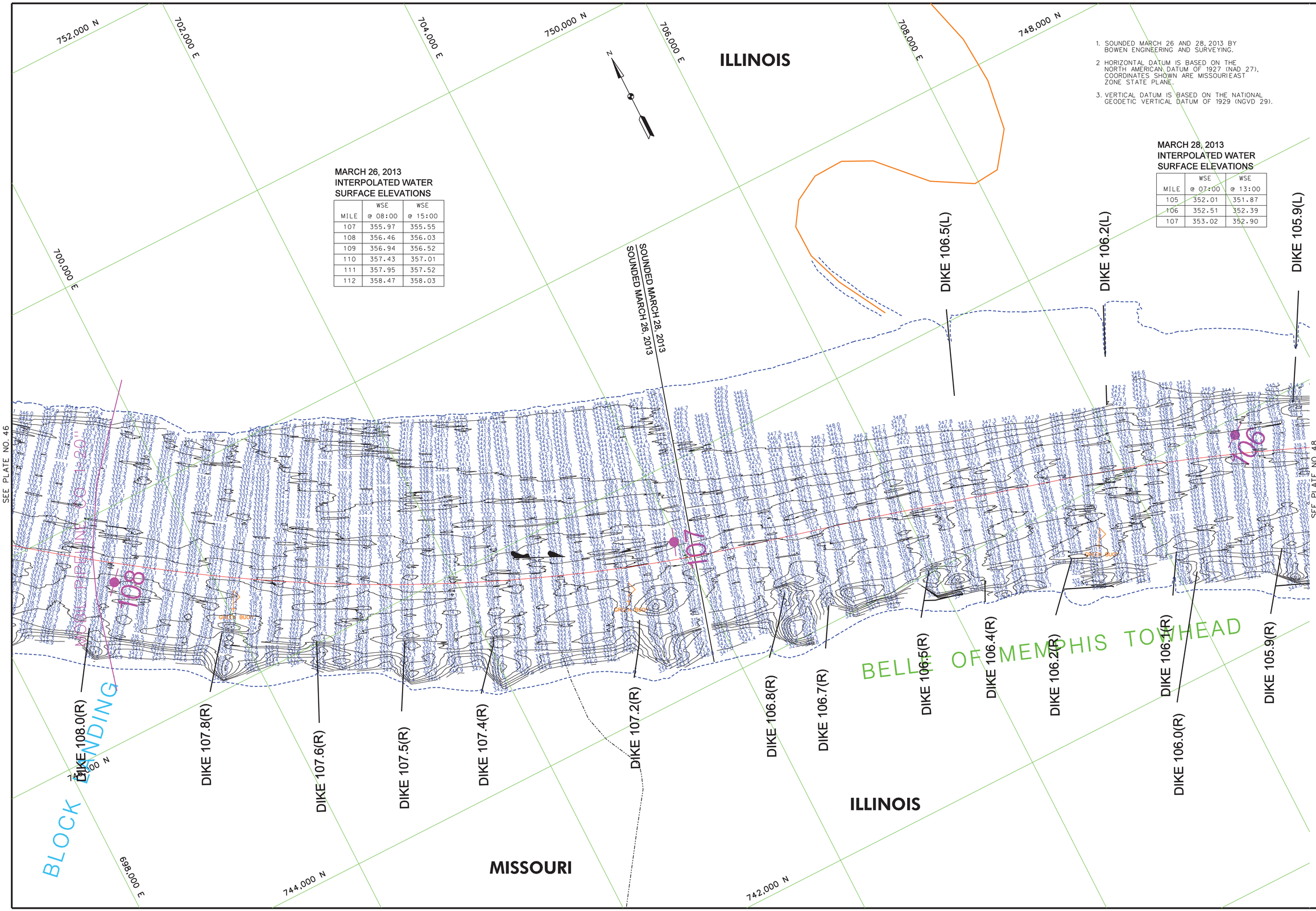
120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND MAY NOT BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

RIVER MILES 108.0 – 110.0

PLATE NUMBER
46




MARCH 26, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 08:00 | WSE @ 15:00 |
|---|---|---|
| 107 | 355.97 | 355.55 |
| 108 | 356.46 | 356.03 |
| 109 | 356.94 | 356.52 |
| 110 | 357.43 | 357.01 |
| 111 | 357.95 | 357.52 |
| 112 | 358.47 | 358.03 |

MARCH 28, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 07:00 | WSE @ 13:00 |
|---|---|---|
| 105 | 352.01 | 351.87 |
| 106 | 352.51 | 352.39 |
| 107 | 353.02 | 352.90 |

1. SOUNDED MARCH 26 AND 28, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 26 MAR 2013 | 20.77(8:00) | 20.34(15:00) | 16.33(8:00) | 15.91(15:00) 13.13(8:00) 12.46(15:00) |
| 28 MAR 2013 | 17.58(7:00) | 17.36(13:00) | X | X 13.43(7:00) 13.34(13:00) X |

ELEVATIONS ARE REFERENCED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. (L.W.R.P.) (54,000 C.F.S.)

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Surveyed by: BOWEN ENGINEERING
Survey Date: March 26 and 28, 2013
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILE\SPECIFICATION####

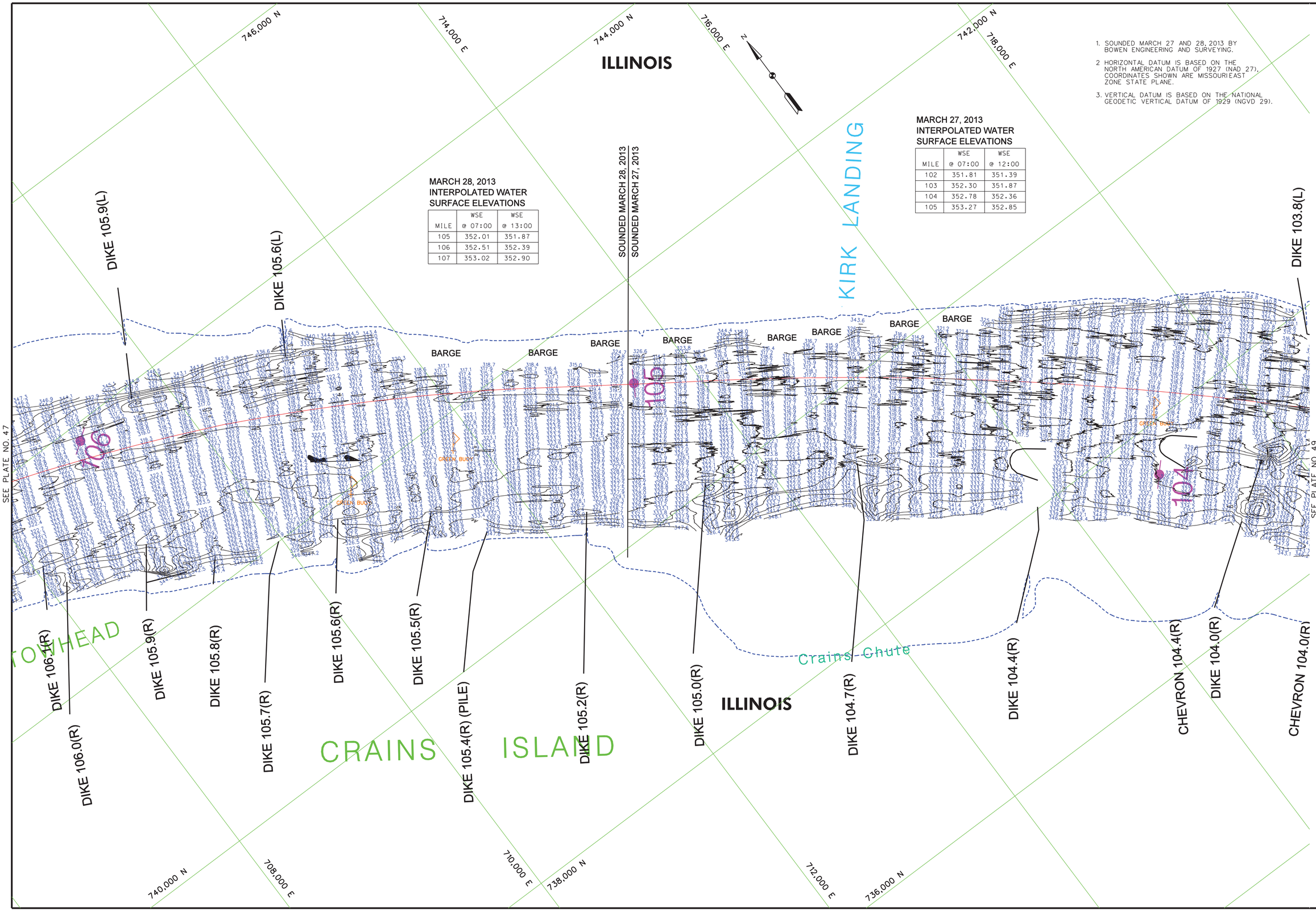
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS
RIVER MILES 106.0 – 108.0

120 0 240 METERS
400 0 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF DIVERSE SURVEYS MADE AT VARIOUS TIMES AND IS PRESENTED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

PLATE NUMBER
47




MARCH 28, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 07:00 | WSE @ 13:00 |
|---|---|---|
| 105 | 352.01 | 351.87 |
| 106 | 352.51 | 352.39 |
| 107 | 353.02 | 352.90 |

MARCH 27, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 07:00 | WSE @ 12:00 |
|---|---|---|
| 102 | 351.81 | 351.39 |
| 103 | 352.30 | 351.87 |
| 104 | 352.78 | 352.36 |
| 105 | 353.27 | 352.85 |

1. SOUNDED MARCH 27 AND 28, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27). COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 27 MAR 2013 | 19.05(7:00) 18.60(12:00) | X | 14.60(7:00) 14.20(12:00) | X |
| 28 MAR 2013 | 17.58(7:00) 17.36(13:00) | X | 13.43(7:00) 13.34(13:00) | X |

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (54,000 C.F.S.)

Survey Date: March 27 and 28, 2013
Surveyed by: BOWEN ENGINEERING
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE:TIME####
File name: ####DESIGNFILE\DESCRIPTION####

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

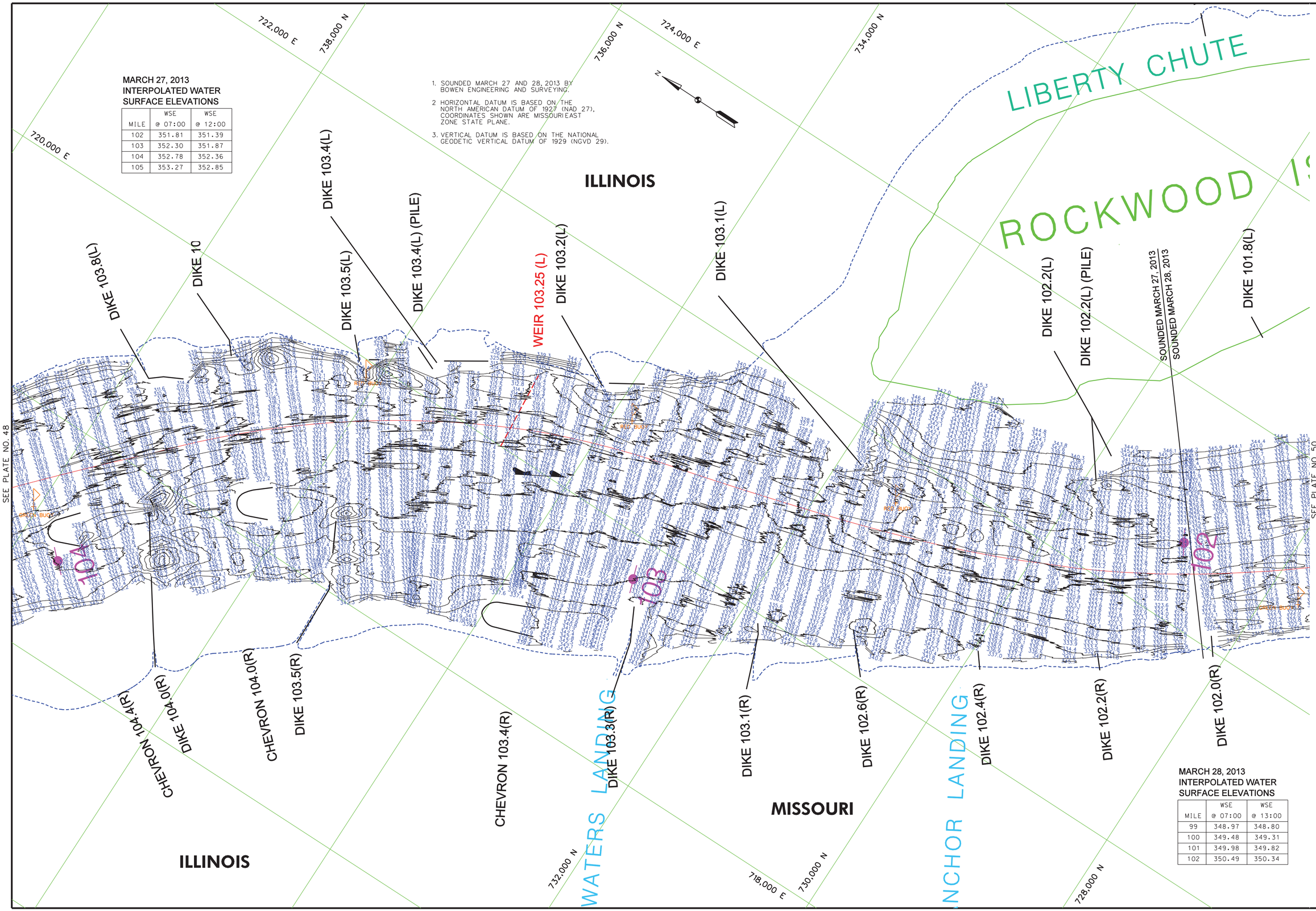
0 120 240 METERS
0 400 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED. THEY ARE NOT NECESSARILY AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

RIVER MILES 103.9 – 106.0

PLATE NUMBER
48




MARCH 27, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 07:00 | WSE @ 12:00 |
|---|---|---|
| 102 | 351.81 | 351.39 |
| 103 | 352.30 | 351.87 |
| 104 | 352.78 | 352.36 |
| 105 | 353.27 | 352.85 |

1. SOUNDED MARCH 27 AND 28, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27). COORDINATES SHOWN ARE MISSOURIEAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

MARCH 28, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

| MILE | WSE @ 07:00 | WSE @ 13:00 |
|---|---|---|
| 99 | 348.97 | 348.80 |
| 100 | 349.48 | 349.31 |
| 101 | 349.98 | 349.82 |
| 102 | 350.49 | 350.34 |

US Army Corps of Engineers
St. Louis District

GAGE RECORD

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BROCKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 27 MAR 2013 | 19.05/7:00 18.60/12:00 | X | 14.60/7:00 14.20/12:00 | X |
| 28 MAR 2013 | 17.58/7:00 17.36/13:00 | X | 13.437:00 13.34/13:00 | X |

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. G.:\#\P:\154.000 C.F.S.)

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Surveyed by: BOWEN ENGINEERING
Survey Date: March 27 and 28, 2013
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILESPECIFICATION####

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

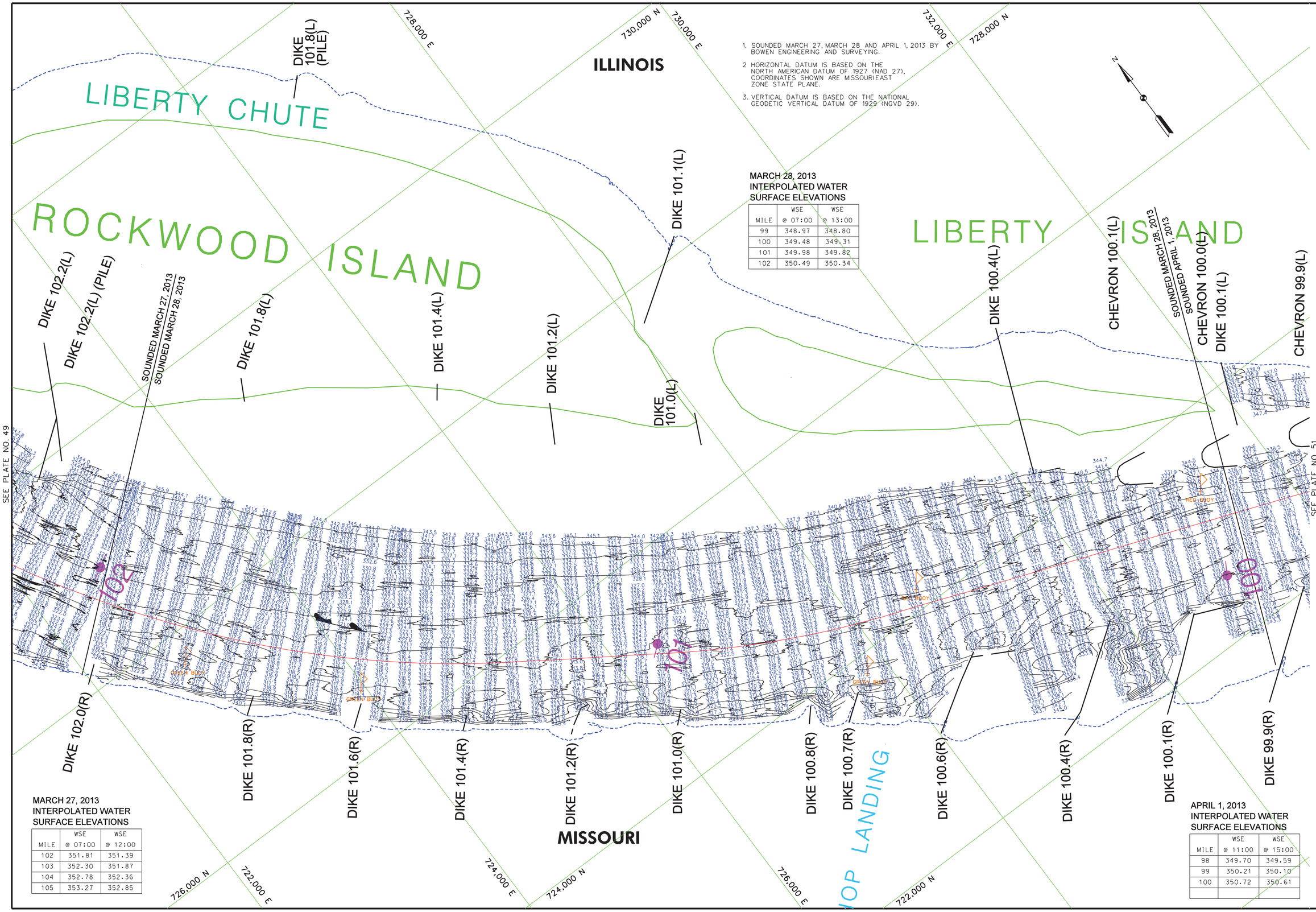
HYDROGRAPHIC SURVEYS

RIVER MILES 102.0 – 103.9

240 METERS 120 0 120 400
800 FEET 400 0 400

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE AT THE INDICATED TIME AND CONDITIONS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

PLATE NUMBER
49




1. SOUNDED MARCH 27, MARCH 28 AND APRIL 1, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

**MARCH 28, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 07:00 | WSE @ 13:00 |
|---|---|---|
| 99 | 348.97 | 348.80 |
| 100 | 349.48 | 349.31 |
| 101 | 349.98 | 349.82 |
| 102 | 350.49 | 350.34 |

**MARCH 27, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 07:00 | WSE @ 12:00 |
|---|---|---|
| 102 | 351.81 | 351.39 |
| 103 | 352.30 | 351.87 |
| 104 | 352.78 | 352.36 |
| 105 | 353.27 | 352.85 |

**APRIL 1, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 11:00 | WSE @ 15:00 |
|---|---|---|
| 98 | 349.70 | 349.59 |
| 99 | 350.21 | 350.10 |
| 100 | 350.72 | 350.61 |
| | | |

US Army Corps of Engineers
St. Louis District

**GAGE RECORD**

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 27 MAR 2013 | 19.05(7.00) 18.60(12.00) | X | 14.607.00) 14.20(12.00) | X |
| 28 MAR 2013 | 17.58(7.00) 17.36(13.00) | X | 13.437.00) 13.34(13.00) | X |
| 01 APR 2013 | 18.80(11.00) 18.67(15.00) | X | 14.711(11.00) 14.64(15.00) | X |

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (54,000 C.F.S.)

Survey Date: March 27, 28 and April 1, 2013

Surveyed by: BOWEN ENGINEERING
Drawn by: X
Chkd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X

Plot date: ####DATE:TIME####
File name: ####DESIGNFILEDESCRIPTION####

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS
RIVER MILES 100.0 – 102.0

120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES SHOWN AND IS INTERPRETED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

PLATE NUMBER
50

1. SOUNDED MARCH 28, APRIL 1 AND APRIL 2, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27). COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

**MARCH 28, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

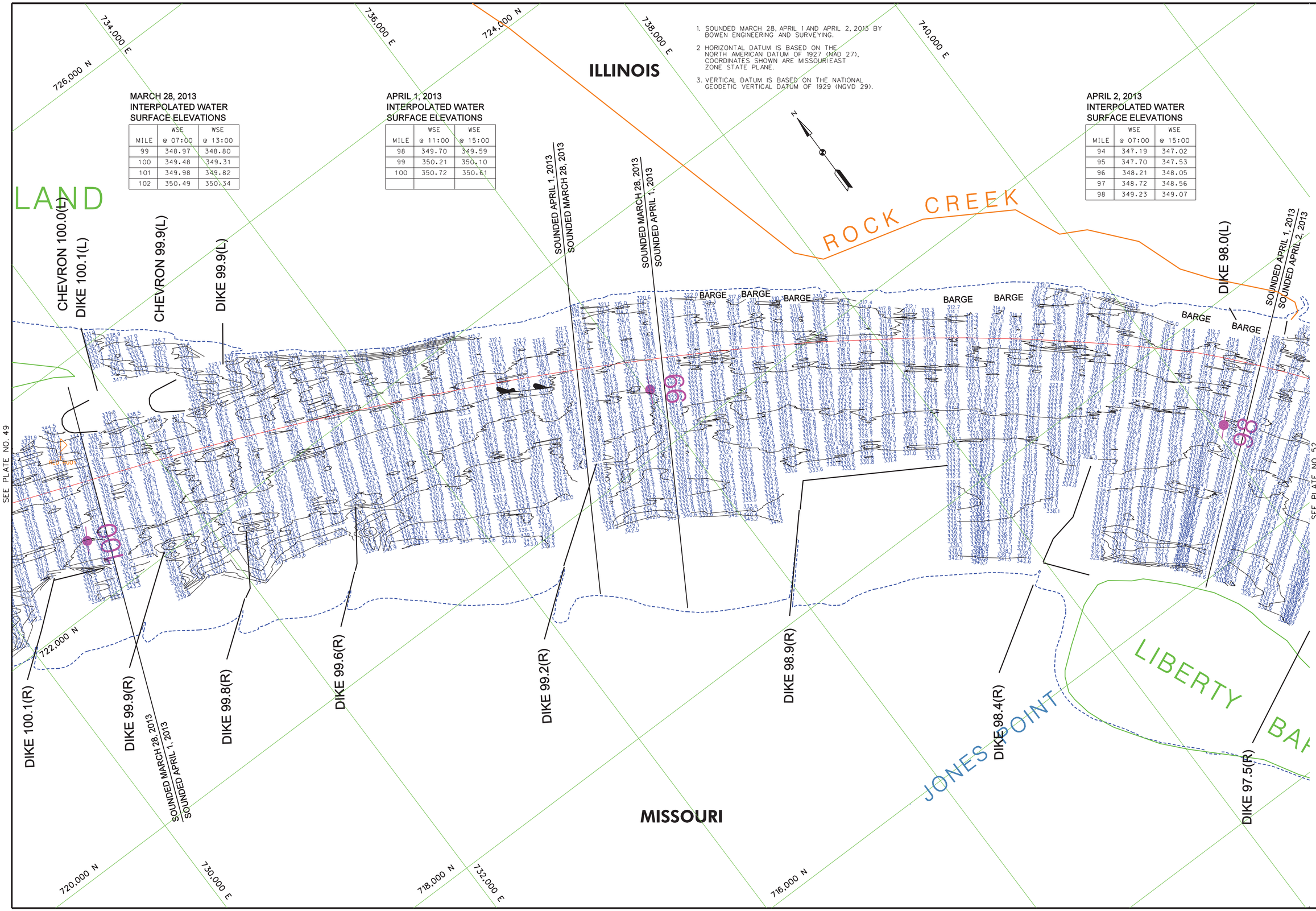
| MILE | WSE @ 07:00 | WSE @ 13:00 |
|---|---|---|
| 99 | 348.97 | 348.80 |
| 100 | 349.48 | 349.31 |
| 101 | 349.98 | 349.82 |
| 102 | 350.49 | 350.34 |

**APRIL 1, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 11:00 | WSE @ 15:00 |
|---|---|---|
| 98 | 349.70 | 349.59 |
| 99 | 350.21 | 350.10 |
| 100 | 350.72 | 350.61 |
| | | |

**APRIL 2, 2013 INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 07:00 | WSE @ 15:00 |
|---|---|---|
| 94 | 347.19 | 347.02 |
| 95 | 347.70 | 347.53 |
| 96 | 348.21 | 348.05 |
| 97 | 348.72 | 348.56 |
| 98 | 349.23 | 349.07 |




**GAGE RECORD**

| | RED ROCK LANDING, MO | BISHOPS LANDING, MO | CHESTER, IL | BRICKEYS LANDING, MO |
|---|---|---|---|---|
| ZERO N.G.V.D. | 328.92 | 334.11 | 341.05 | 357.78 |
| MILE | 94.1 | 100.8 | 109.9 | 136.0 |
| L. W. R. P. | 330.7 | 335.4 | 340.4 | 356.2 |
| 28 MAR 2013 | 17.58/7.00/17.36(13.00) | X | 13.43/7.00/13.34(13.00) | X |
| 01 APR 2013 | 18.80/11.00/18.67(15.00) | X | 14.71/11.00/14.64(15.00) | X |
| 02 APR 2013 | 18.32/7.00/18.15(15.00) | X | 14.27/7.00/14.14(15.00) | X |

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. (L.W.R.P.) (54,000 C.F.S.)

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
RIVER MILES 98.0 – 100.0

Surveyed by: BOWEN ENGINEERING
Survey Date: March 28 and April 1 & 2, 2013
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ##########
File name: ##########

120 0 240 METERS
400 0 800 FEET
THE INFORMATION REPRESENTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES SHOWN AND IS ACCURATE AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS
RIVER MILES 98.0 – 100.0

PLATE NUMBER
51