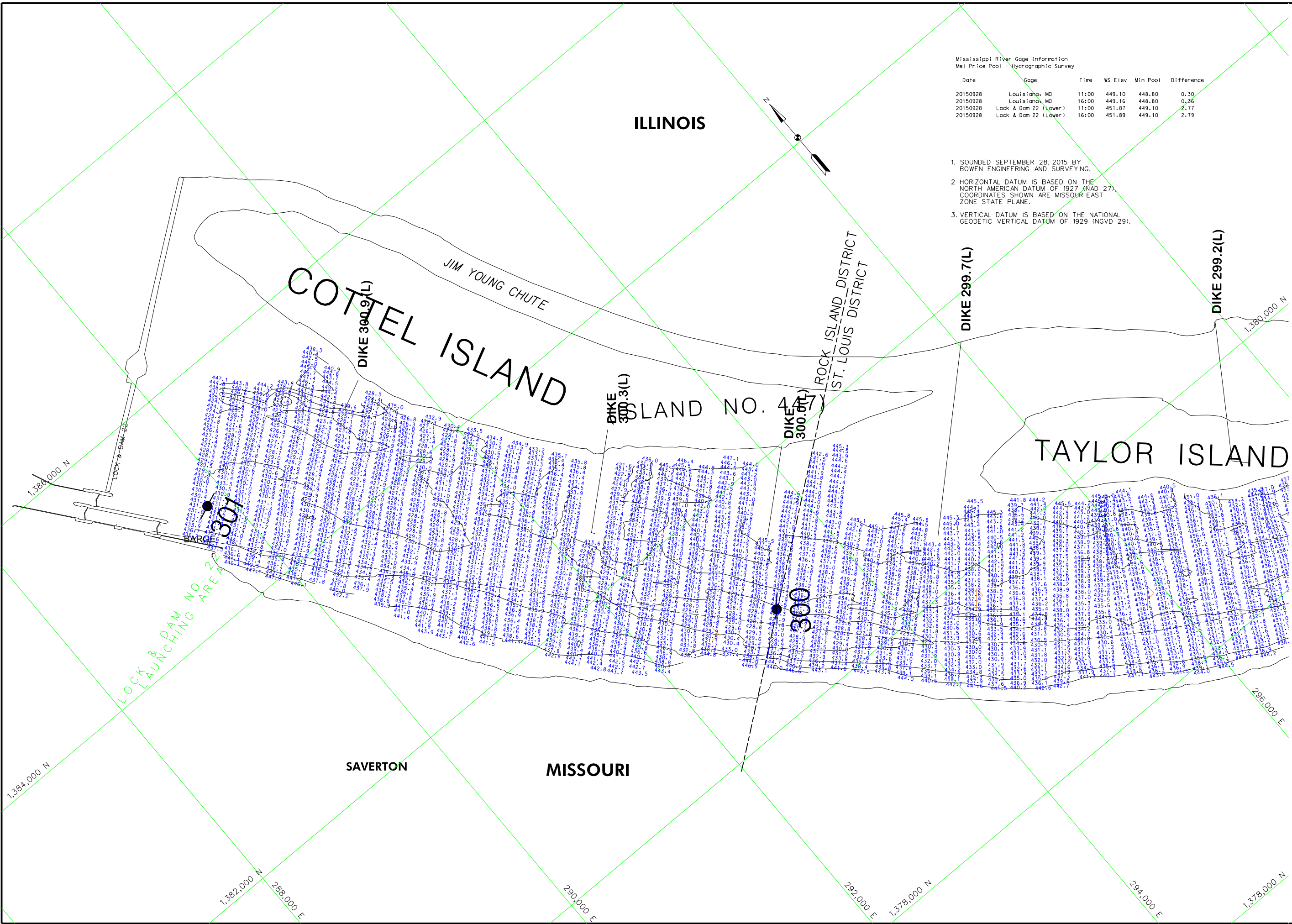




Mississippi River Gage Information
Met Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150928	Louisiana, MO	11:00	449.10	448.80	0.30
20150928	Louisiana, MO	16:00	449.16	448.80	0.36
20150928	Lock & Dam 22 (Lower)	11:00	451.87	449.10	2.77
20150928	Lock & Dam 22 (Lower)	16:00	451.89	449.10	2.79

1. SOUNDED SEPTEMBER 28, 2015 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).



GAGE RECORD

L & D 22 (LOWER)	LOUISIANA, MO	L & D 24 UPPER
446.10	437.33	431.81
301.1	282.0	273.5
449.1	448.8	445.3
5.77(1000.52)(600)	X	
28 SEP 2015		

ELEVATIONS ARE REFERRED TO M.S.L. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (LWRP) (15-000 G.S.)

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

Survey Date: SEPTEMBER 28, 2015

Drawn by: X

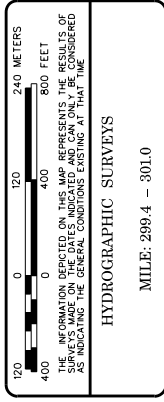
Reviewed by: X

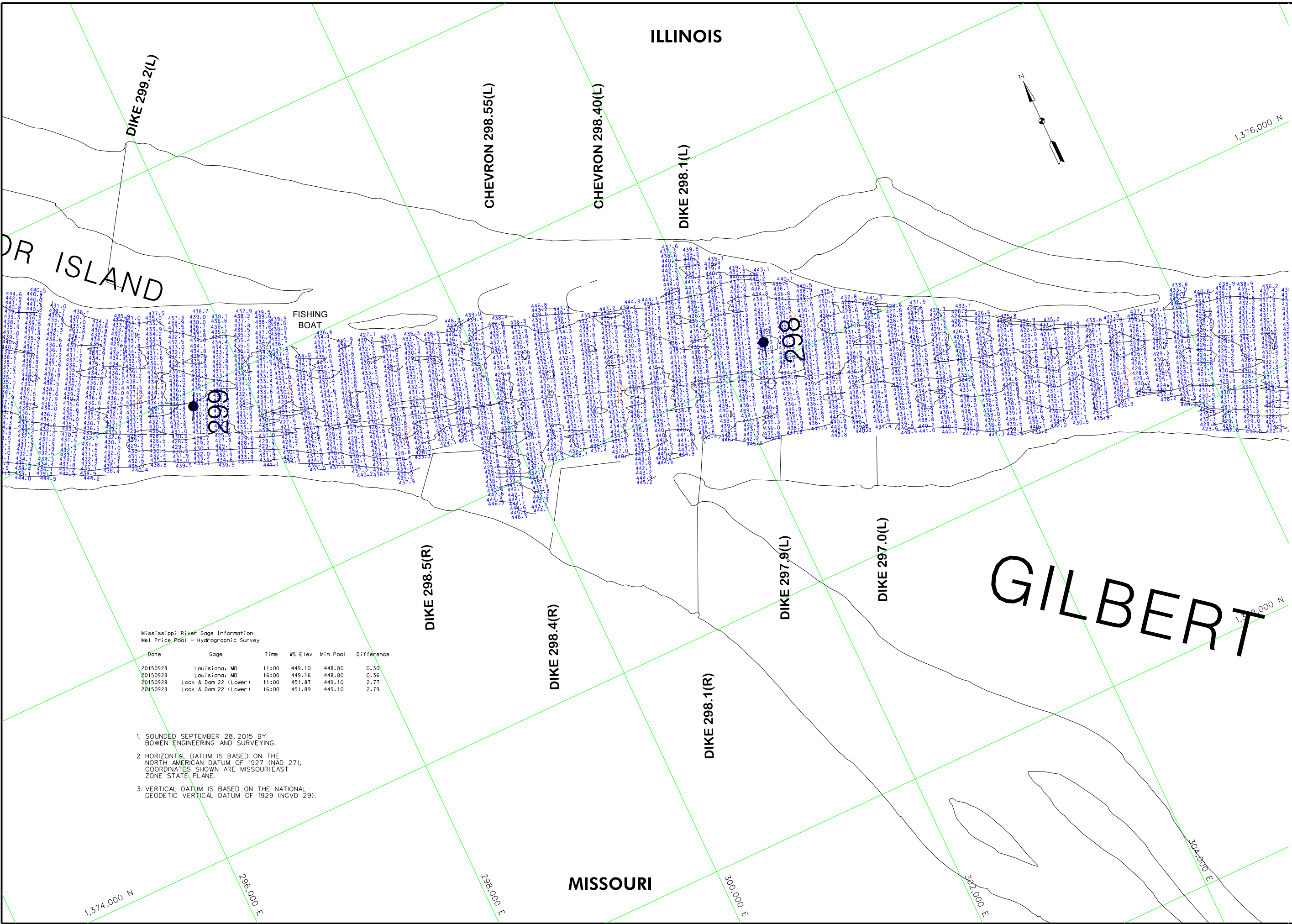
Submitted: X

Approved: X

Plot Date: 8/20/2016

File Name: 8/20/2016





Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150928	Louisiana, MO	11:00	449.10	448.80	0.30
20150928	Louisiana, MO	16:00	449.16	448.80	0.36
20150928	Lock & Dam 22 (Lower)	11:00	451.87	449.10	2.77
20150928	Lock & Dam 22 (Lower)	16:00	451.89	449.10	2.79

1. SOUNDED SEPTEMBER 28, 2015 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	
L & D 22 (LOWER)	LOUISIANA, MO
L & D 24 (UPPER)	LOUISIANA, MO
ZERO NGVD	441.85
446.10	441.85
301.1	282.0
449.1	448.8
5.77(1000.52)(600)	X
28 SEP 2015	5.77(1000.52)(600)
ELEVATIONS ARE REFERRED TO NGVD - CONTOURS ARE BELOW 1996-57 LOW WATER REFERENCE PLANE (LWRP) (15-000 G.S.)	

Surveyed by: BOWEN ENGINEERING	Survey Date: SEPTEMBER 28, 2015
Drawn by: X	Reviewed by: X
Submitted: X	Approved: X
File Name: BOWEN-ENGINEERING-2015-09-28	Plot Date: SEPTEMBER 28, 2015

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

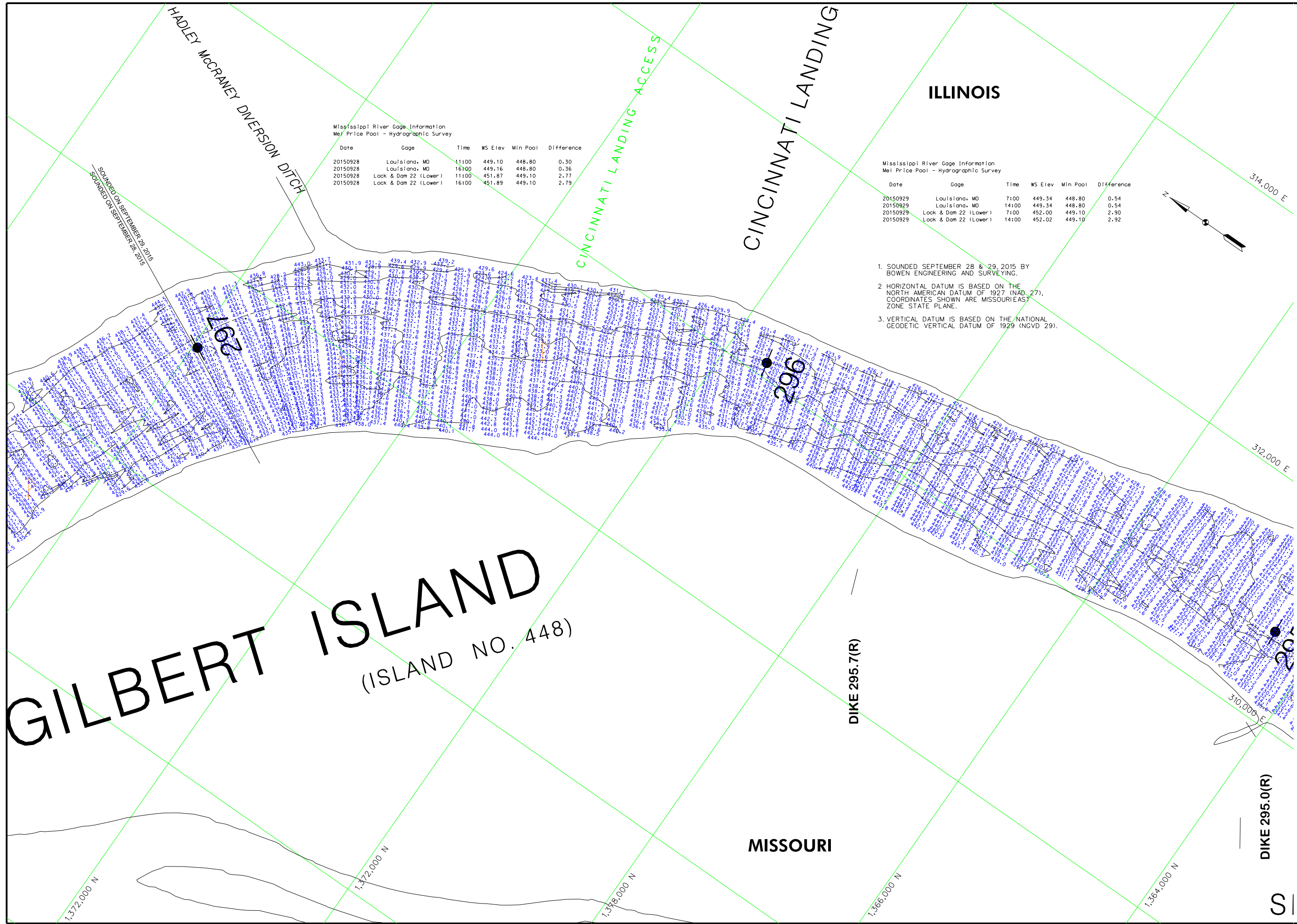
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE U.S. ARMY CORPS OF ENGINEERS AND IS NOT TO BE USED FOR ANY OTHER PURPOSE.

HYDROGRAPHIC SURVEYS

MILE: 297.1 - 299.4

PLATE NUMBER

2



Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150928	Louisiana, MO	11:00	449.10	448.80	0.30
20150928	Louisiana, MO	16:00	449.16	448.80	0.36
20150928	Lock & Dam 22 (Lower)	11:00	451.87	449.10	2.77
20150928	Lock & Dam 22 (Lower)	16:00	451.89	449.10	2.79

Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150929	Louisiana, MO	7:00	449.34	448.80	0.54
20150929	Louisiana, MO	14:00	449.34	448.80	0.54
20150929	Lock & Dam 22 (Lower)	7:00	452.00	449.10	2.90
20150929	Lock & Dam 22 (Lower)	14:00	452.02	449.10	2.92

1. SOUNDED SEPTEMBER 28 & 29, 2015 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).



GAGE RECORD

L & D 22 (LOWER)	MANDY'S LANDING	LOUISIANA, MO	L & D 24 UPPER
446.10	441.85	437.33	431.81
301.1	293.0	282.0	273.5
449.1	449.0	448.8	445.3
5.00/300.00/4.00	X	5.00/300.00/4.00	X
5.77/100.00/5.77	X	5.77/100.00/5.77	X

ELEVATIONS ARE REFERRED TO NGVD. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (LWRP) (15.000 G.T.S.)

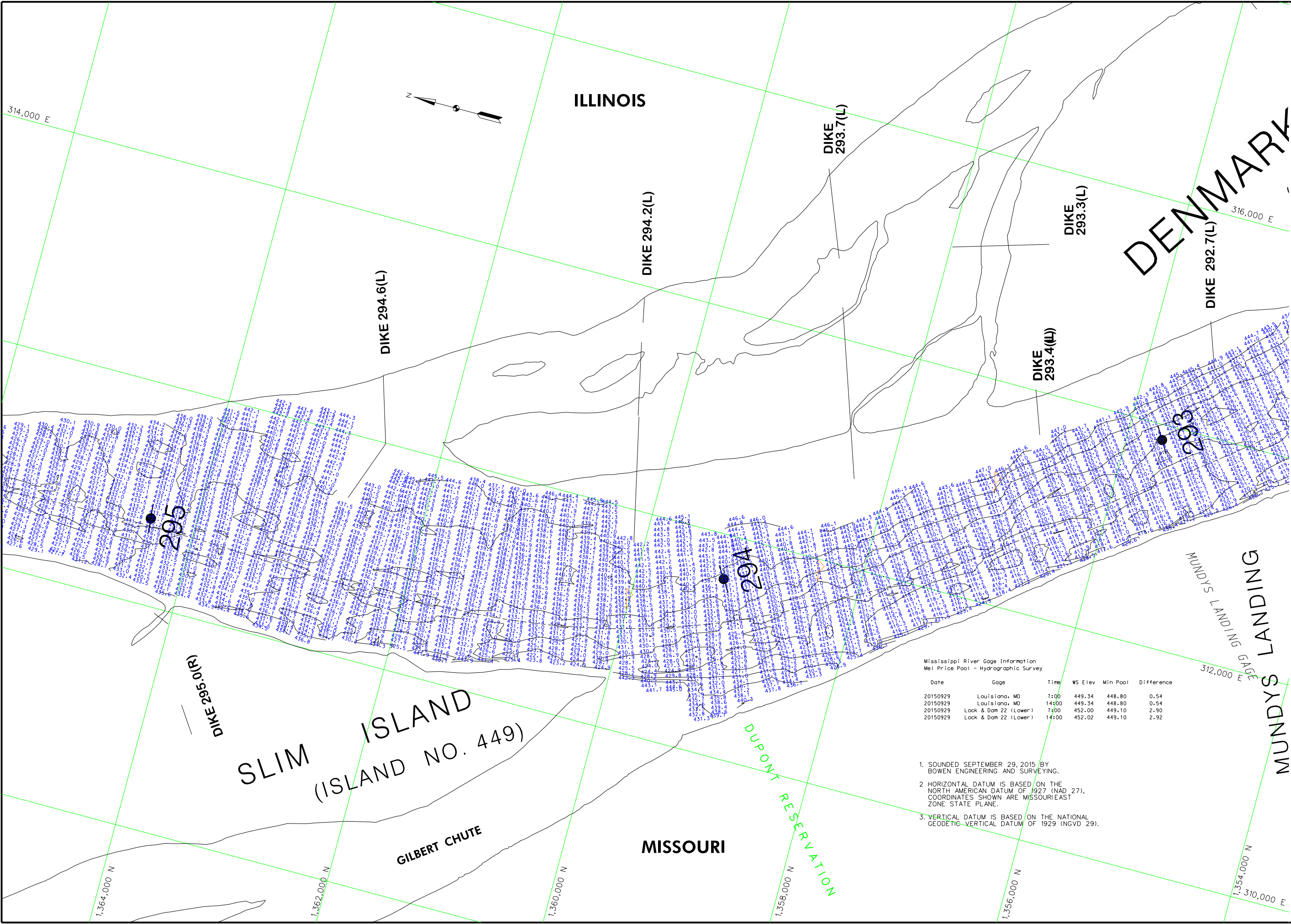
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: SEPTEMBER 28 & 29, 2015	Cdd by: X
	Drawn by: X	
UPPER MISSISSIPPI RIVER BASIN	SUBMITTED: X	APPROVED: X
	File Name: 888888888888	Plot Date: 888888888888

240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE DATES INDICATED AND SHOULD BE CONSIDERED AS A GUIDE ONLY. THE DATES INDICATED ARE NOT A GUARANTEE OF THE ACCURACY OF THE INFORMATION DEPICTED ON THIS MAP.

HYDROGRAPHIC SURVEYS

MILE: 295.0 - 297.1



Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150929	Louisiana, MO	7:00	449.34	448.80	0.54
20150929	Louisiana, MO	14:00	449.34	448.80	0.54
20150929	Lock & Dam 22 (Lower)	7:00	452.00	449.10	2.90
20150929	Lock & Dam 22 (Lower)	14:00	452.02	449.10	2.92

1. SOUNDED SEPTEMBER 29, 2015 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).



L & D 22 (LOWER)	GAUGE RECORD	L & D 24 (UPPER)
446.10	MUNDY'S LANDING	431.81
301.1	LOUISIANA, MO	437.33
440.1	MIKE	282.0
301.700 (301.400)	L.W.R.B.	445.8
301.700 (301.400)	29 SEP 2015	445.3
		X

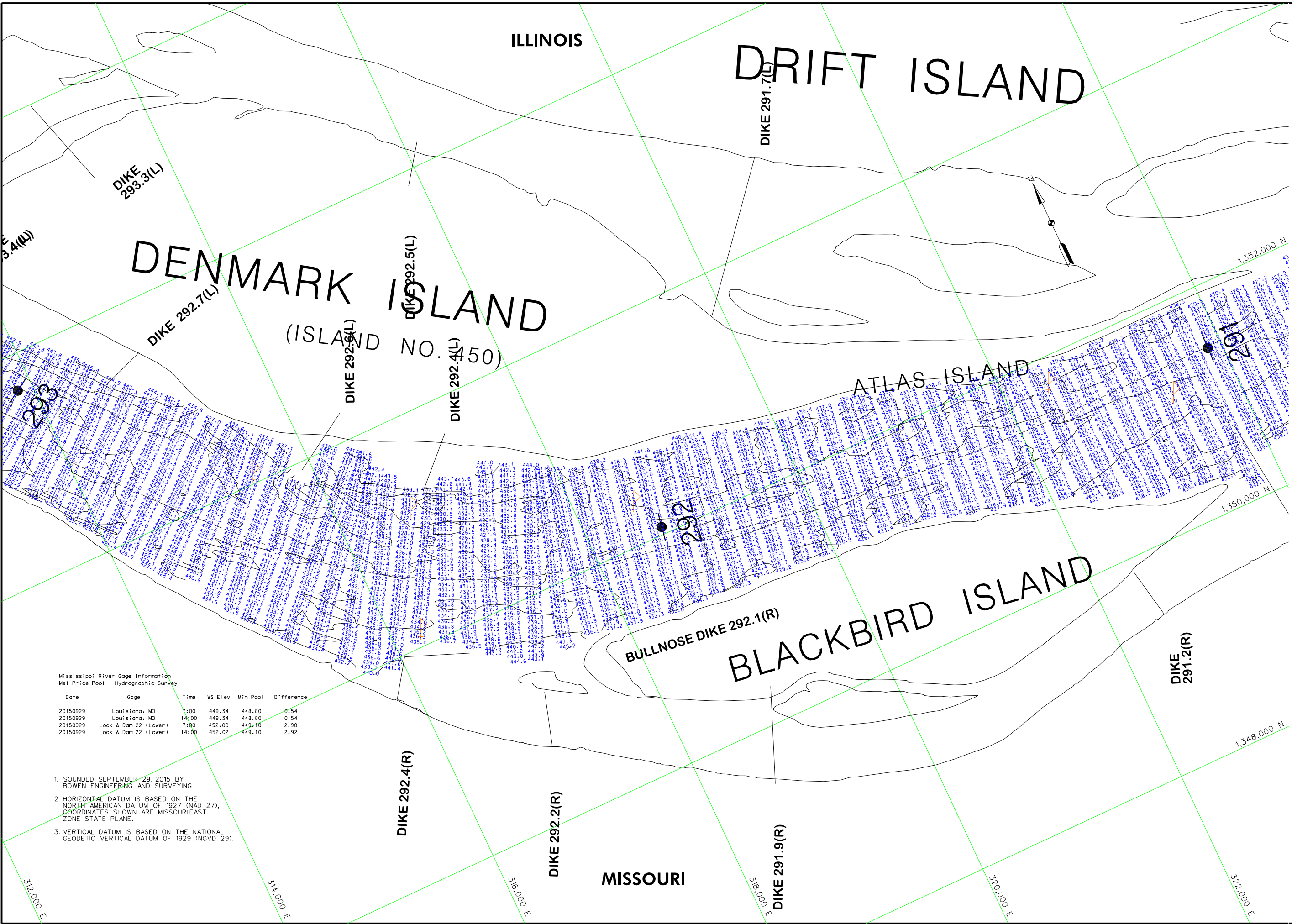
ELEVATIONS ARE REFERRED TO M.S.L.D. - CONTOURS ARE BELOW 1956-27 LOW WATER REFERENCE PLANE (LWRP) (15-000 G.T.S.)

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: SEPTEMBER 29, 2015
Drawn by: X	Reviewed by: X
Submitted: X	Approved: X
File Name: PROJECT/ENGINEERING	Plot Date: 08/01/2016

240 METERS
0 120 240
800 FEET
0 400 800
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE U.S. ARMY CORPS OF ENGINEERS. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF THE U.S. ARMY CORPS OF ENGINEERS.

HYDROGRAPHIC SURVEYS

MIKE: 292.8 - 295.0



GAGE RECORD			
L & D 22 (LOWER)	MANDY'S LANDING	LOUISIANA MO	L & D 24 UPPER
ZERO NGVD	446.10	437.33	431.81
MILE	30.1	282.0	273.5
L.W.R.P.	449.1	448.8	445.3
29 SEP 2015	5,807,000 (2014-00)	X	5,017,000 (2014-00)
			X

ELEVATIONS ARE REFERRED TO NGVD - CONTOURS ARE BELOW 1956-27 LOW WATER REFERENCE PLANE (LWRP) (15-000 G.T.S.)

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		Survey Date: SEPTEMBER 29, 2015	
UPPER MISSISSIPPI RIVER BASIN	Drawn by:	Reviewed by:	Ckd by:
	X	X	X
	SUBMITTED:	APPROVED:	
	X	X	
File Name: HYDROGRAPHIC SURVEYS		Plot Date: 8/20/2016	

120
0
120
240 METERS

400
0
400
800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE DISTRICT'S HYDROGRAPHIC SURVEYS DIVISION. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN AUTHORIZATION OF THE DISTRICT ENGINEER.

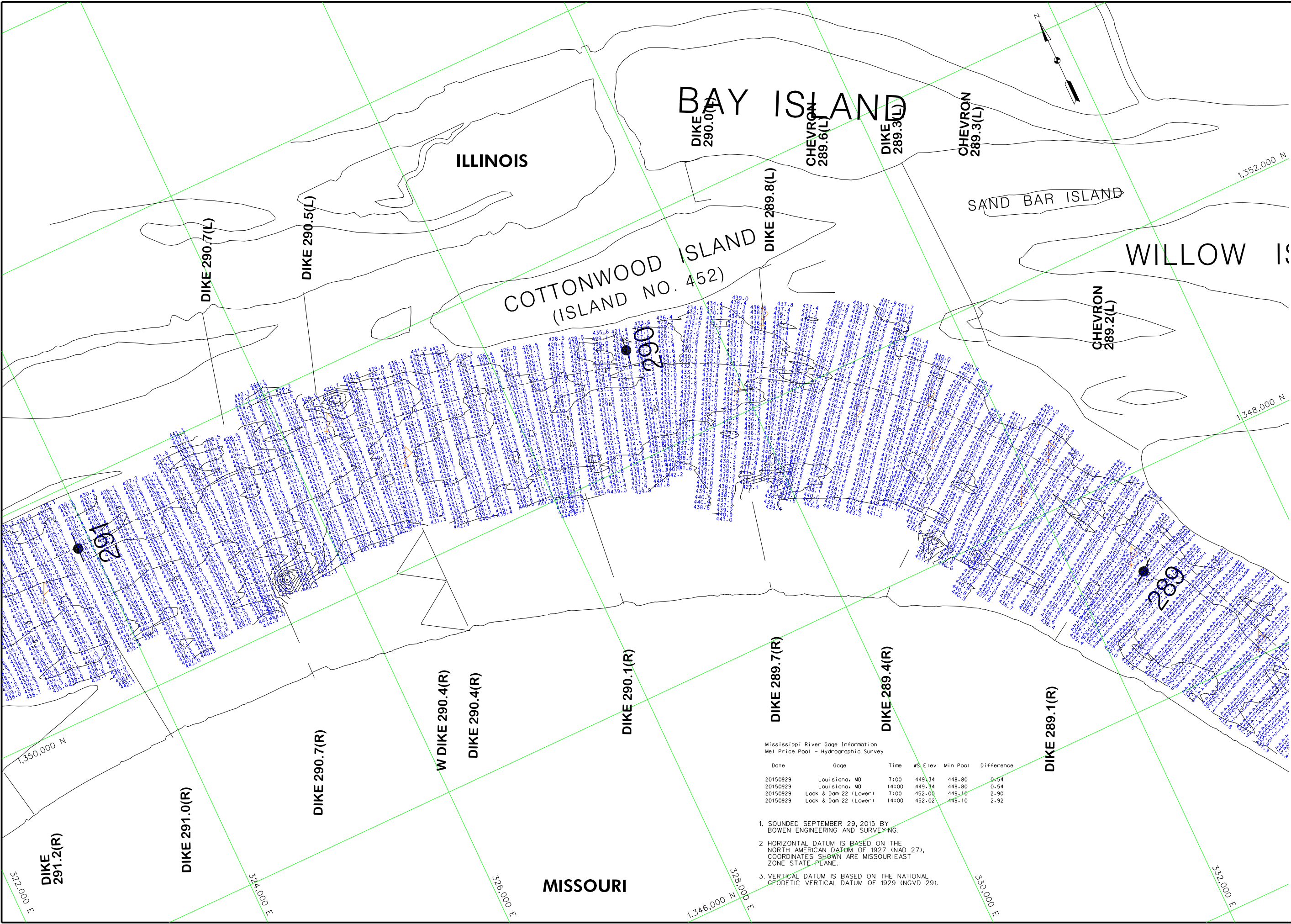
HYDROGRAPHIC SURVEYS

MILE: 291.0 - 292.8

Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150929	Louisiana, MO	7:00	449.34	448.80	0.54
20150929	Louisiana, MO	14:00	449.34	448.80	0.54
20150929	Lock & Dam 22 (Lower)	7:00	452.00	449.10	2.90
20150929	Lock & Dam 22 (Lower)	14:00	452.02	449.10	2.92

1. SOUNDED SEPTEMBER 29, 2015 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).



Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150929	Louisiana, MO	7:00	449.34	448.80	0.54
20150929	Louisiana, MO	14:00	449.34	448.80	0.54
20150929	Lock & Dam 22 (Lower)	7:00	452.00	449.10	2.90
20150929	Lock & Dam 22 (Lower)	14:00	452.02	449.10	2.92

1. SOUNDED SEPTEMBER 29, 2015 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).



L & D 22 (LOWER)	MANDY'S LANDING	LOUISIANA, MO	L & D 24, UPPER
446.10	441.85	437.33	431.81
301.1	293.0	282.0	273.5
440.1	449.0	448.8	449.5
5.007500 (5014.00)	X	5.017500 (5014.00)	X
29 SEP 2015			

ELEVATIONS ARE REFERRED TO M.S.L.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (LWRP) (15.000 G.T.S.)

Surveyed by:	Survey Date:	Reviewed by:	Checked by:
BOWEN ENGINEERING	SEPTEMBER 29, 2015	X	X
Drawn by:			
X			
SUBMITTED:		APPROVED:	
X		X	
File Name:	Plot Date:		
PROJECT/COMP/DATE/TITLE	SEPTEMBER 29, 2015		

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

UPPER MISSISSIPPI RIVER BASIN

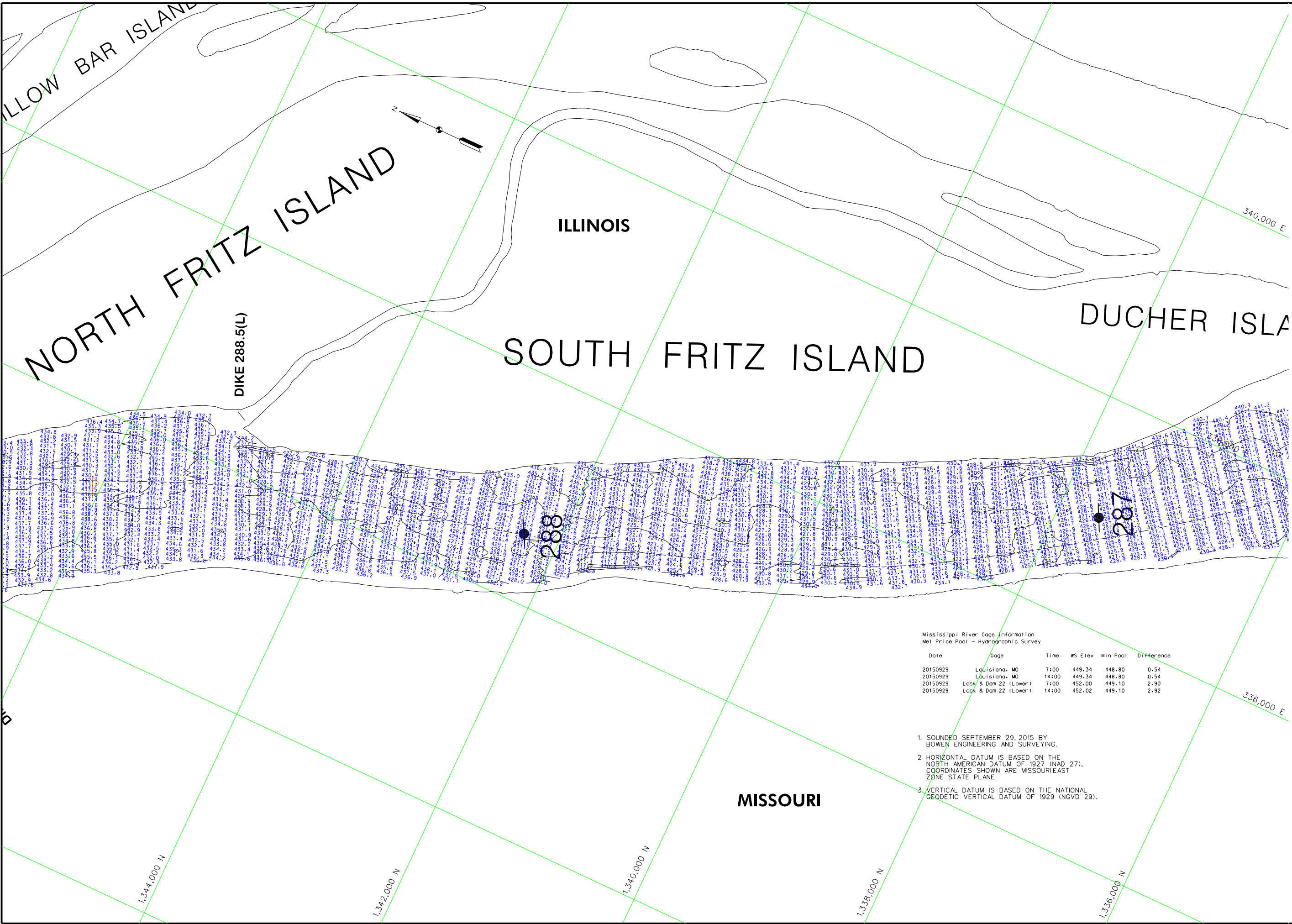
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS
MILE: 288.8 - 291.0

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 AND SHOULD BE CONSIDERED AS A GUIDE ONLY. THE USER SHOULD CONSULT THE ORIGINAL DATA FOR THE MOST CURRENT INFORMATION.

PLATE NUMBER
6



Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150929	Louisiana, MO	7:00	449.34	448.80	0.54
20150929	Louisiana, MO	14:00	449.34	448.80	0.54
20150929	Lock & Dam 22 (Lower)	7:00	452.00	449.10	2.90
20150929	Lock & Dam 22 (Lower)	14:00	452.02	449.10	2.92

1. SOUNDED SEPTEMBER 29, 2015 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		LOUISIANA, MO	L & D 24, UPPER
ZERO NGVD	MANDY'S LANDING	437.33	431.81
MILE		233.0	273.5
L.W.R.P.		449.1	445.8
29 SEP 2015	5,807,000 (5,814,400)	X	X

ELEVATIONS ARE REFERRED TO NGVD - CONTOURS ARE BELOW 1996-27 LOW WATER REFERENCE PLANE (LWRP) (14,000 C.F.S.)

Surveyed by:	Survey Date:	Reviewed by:	Checked by:
BOWEN ENGINEERING	SEPTEMBER 29, 2015	X	X

Submitted:	Approved:
X	X

File Name: 888888888888
Plot Date: 888888888888

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

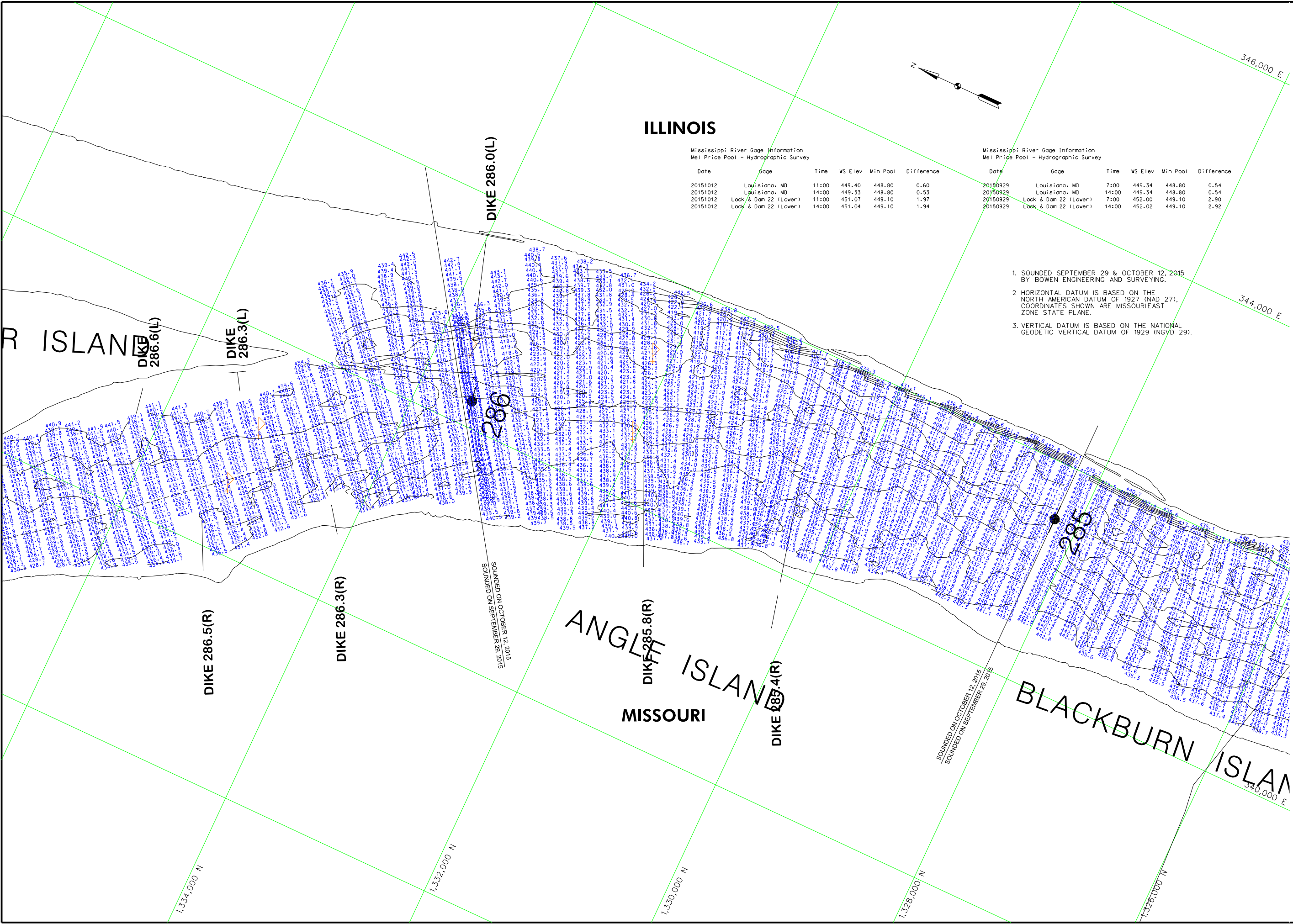
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE DISTRICT ENGINEER AND HIS STAFF. IT IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE DISTRICT ENGINEER'S PERMISSION.

HYDROGRAPHIC SURVEYS

MILE: 286.8 - 288.8

PLATE NUMBER

7



ILLINOIS

Mississippi River Gage Information
Mei Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20151012	Louisiana, MO	11:00	449.40	448.80	0.60
20151012	Louisiana, MO	14:00	449.33	448.80	0.53
20151012	Lock & Dam 22 (Lower)	11:00	451.07	449.10	1.97
20151012	Lock & Dam 22 (Lower)	14:00	451.04	449.10	1.94

Mississippi River Gage Information
Mei Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150929	Louisiana, MO	7:00	449.34	448.80	0.54
20150929	Louisiana, MO	14:00	449.34	448.80	0.54
20150929	Lock & Dam 22 (Lower)	7:00	452.00	449.10	2.90
20150929	Lock & Dam 22 (Lower)	14:00	452.02	449.10	2.92

1. SOUNDED SEPTEMBER 29 & OCTOBER 12, 2015
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).

US Army Corps
of Engineers
St. Louis District

GAGE RECORD		LOUISIANA, MO		L & D 24 UPPER	
L & D 22 (LOWER)	MANDY'S LANDING	446.10	441.85	437.33	431.81
L & D 20	3011	293.0	282.0	282.0	273.5
L & D 19	449.1	449.0	448.8	448.8	445.3
12 OCT 2015	4301000 1.001400	X	X	12001000 1.001400	X
29 SEP 2015	5307000 5.001400	X	X	5207000 5.001400	X

ELEVATIONS ARE REFERRED TO NGVD. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (LWRP) 154,000 G.T.S.

Surveyed by: BOWEN ENGINEERING	Survey Date: SEPT. 29 & OCTOBER 12, 2015	Drawn by: X	Reviewed by: X	Ckd by: X
SUBMITTED: X				APPROVED: X
File Name: HYDROGRAPHIC SURVEYS				Plot Date: 8/8/2015 10:00 AM

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

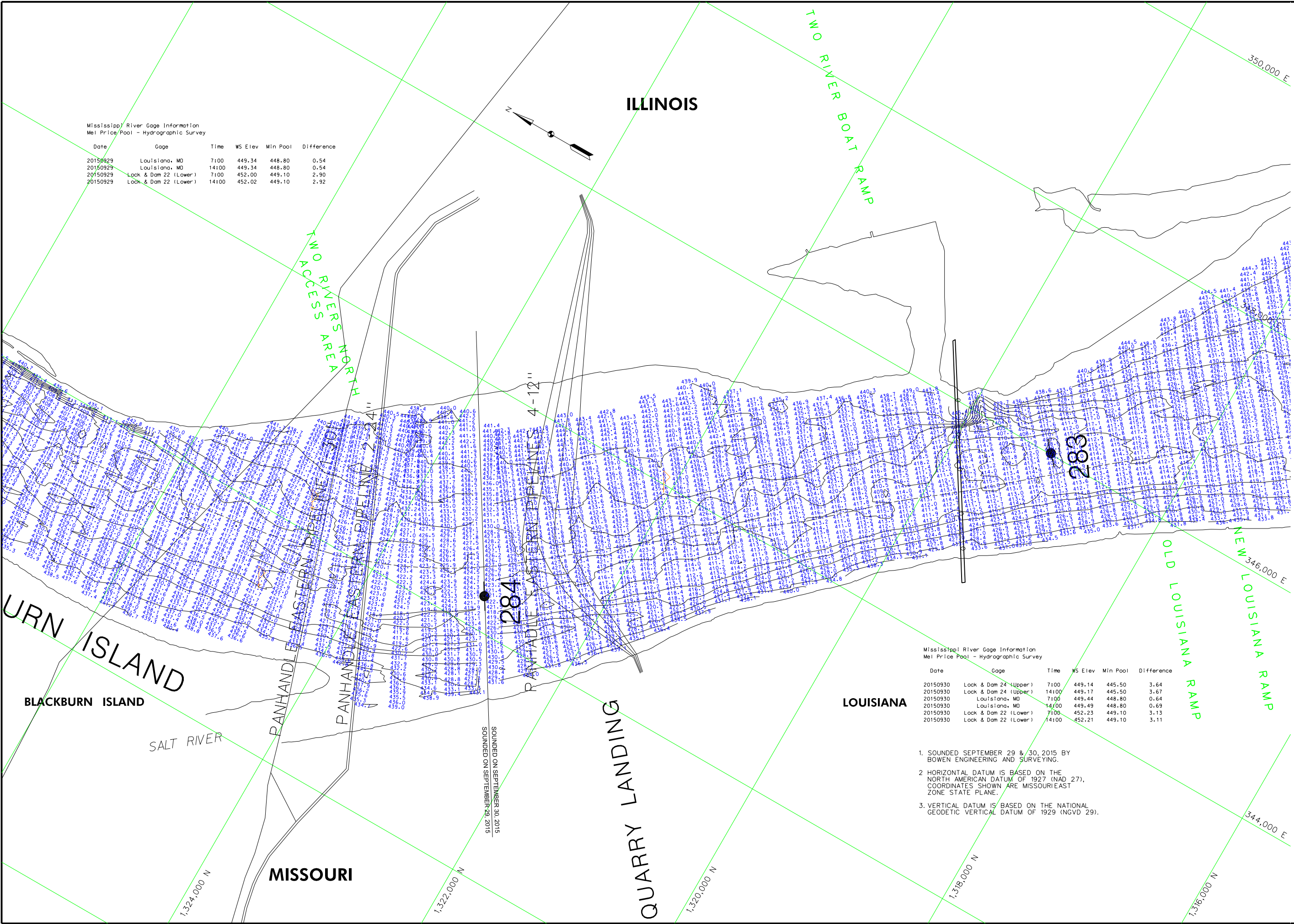
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF
SURVEYS MADE BY THE DISTRICT ENGINEER AND HIS STAFF. IT IS NOT
GUARANTEED TO BE ACCURATE AND IS NOT A CONTRACT.

HYDROGRAPHIC SURVEYS

MILE: 284.8 - 286.8

PLATE
NUMBER

8



Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150929	Louisiana, MO	7:00	449.34	448.80	0.54
20150929	Louisiana, MO	14:00	449.34	448.80	0.54
20150929	Lock & Dam 22 (Lower)	7:00	452.00	449.10	2.90
20150929	Lock & Dam 22 (Lower)	14:00	452.02	449.10	2.92

Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150930	Lock & Dam 24 (Upper)	7:00	449.14	445.50	3.64
20150930	Lock & Dam 24 (Upper)	14:00	449.17	445.50	3.67
20150930	Louisiana, MO	7:00	449.44	448.80	0.64
20150930	Louisiana, MO	14:00	449.49	448.80	0.69
20150930	Lock & Dam 22 (Lower)	7:00	452.23	449.10	3.13
20150930	Lock & Dam 22 (Lower)	14:00	452.21	449.10	3.11

1. SOUNDED SEPTEMBER 29 & 30, 2015 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	
L & D 22 (LOWER)	L & D 24 (UPPER)
LOUISIANA, MO	LOUISIANA, MO
446.10	447.33
441.85	441.81
233.0	233.0
449.0	448.8
449.1	449.5
6.137/000 6.134/000	27.337/000 27.344/000
X	X
5.807/000 5.804/000	X
X	X

ELEVATIONS ARE REFERRED TO NGVD - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (LWRP) 154,000 G.T.S.

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	
Drawn by: X	Reviewed by: X
Submitted: X	Approved: X

Survey Date: SEPTEMBER 29 & 30, 2015
Cdd by:
X

File Name:
PROJECT IDENTIFICATION

Plot Date:
DATE

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 DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND IS NOT TO BE CONSIDERED A GUARANTEE OF THE DATA. COORDINATES SHOWN ARE MISSOURI/EAST ZONE STATE PLANE.

HYDROGRAPHIC SURVEYS

MILE: 282.7 - 284.7

PLATE
NUMBER

9

Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20150930	Lock & Dam 24 (Upper)	7:00	449.14	445.50	3.64
20150930	Lock & Dam 24 (Upper)	14:00	449.17	445.50	3.67
20150930	Louisiana, MO	7:00	449.44	448.80	0.64
20150930	Louisiana, MO	14:00	449.49	448.80	0.69
20150930	Lock & Dam 22 (Lower)	7:00	452.23	449.10	3.13
20150930	Lock & Dam 22 (Lower)	14:00	452.21	449.10	3.11

1. SOUNDED SEPTEMBER 30, 2015 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).

ILLINOIS

LOUISIANA RAILROAD BRIDGE

GATEWAY BRIDGE

ILLINOIS CENTRAL RR

MISSOURI

DIKE 281.7(L)

DIKE 281.4(L)

DIKE 280.9(L)

BUFFALO ISLAND

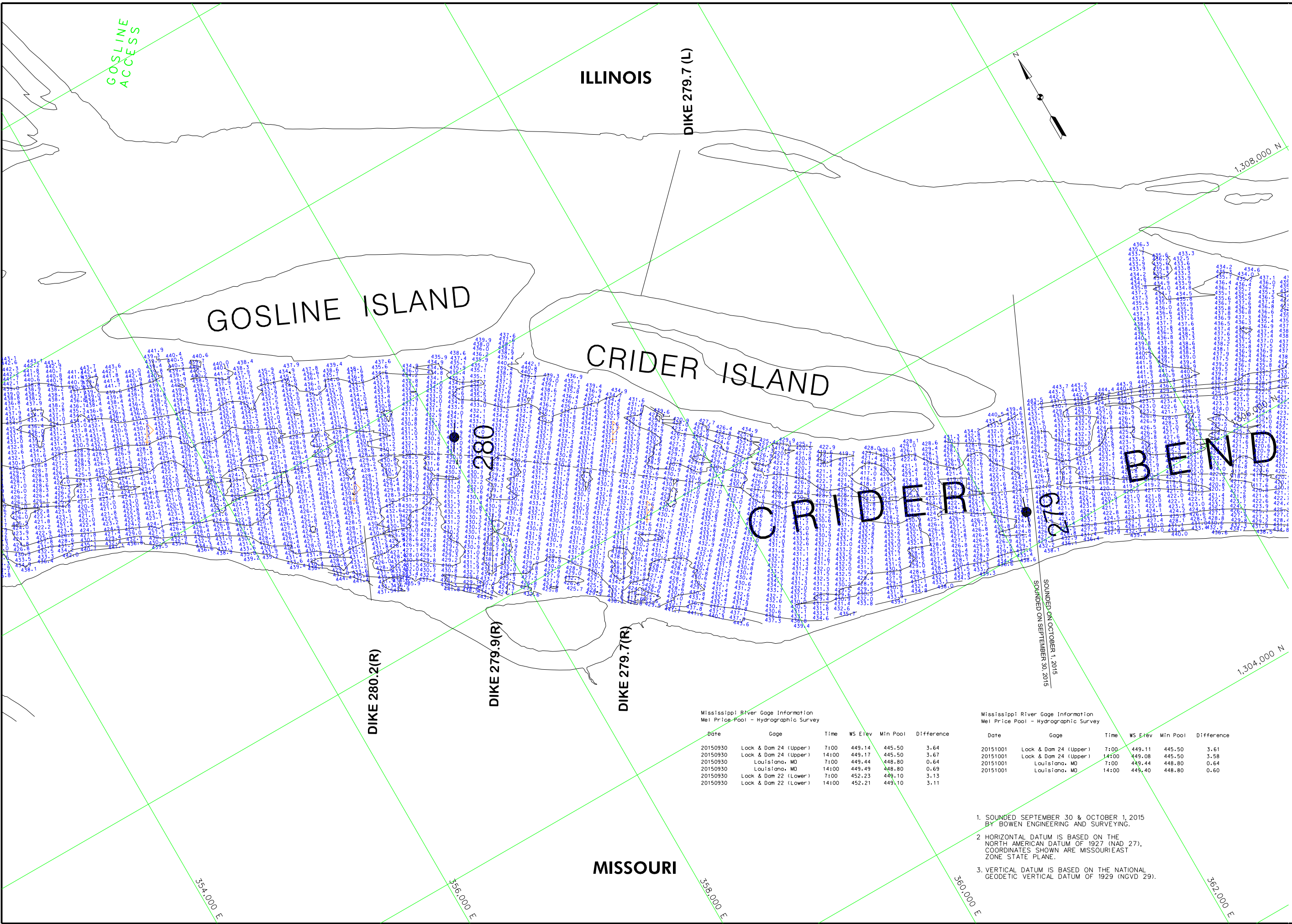


L & D 22 (LOWER)	L & D 24 (UPPER)	LOUISIANA, MO	LOUISIANA, MO
446.10	441.85	437.33	431.81
3011	2930	282.0	273.5
449.1	449.1	448.8	445.5
6.17/000 E (NAD 27)	X	52.17/000 E (NAD 27)	27.33/000 E (NAD 27)
ELEVATIONS ARE REFERRED TO NGVD 29. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (LWRP) (15-000 G.C.S.)			

Surveyed by	Survey Date	Reviewed by	Checked by
BOWEN ENGINEERING	SEPTEMBER 30, 2015	X	X
Drawn by	Submitted	Approved	Plot Date
X	X	X	SEPTEMBER 19, 2015
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER			

120 400 800 1200 1600 2000 2400 2800 3200 3600 4000 4400 4800 5200 5600 6000 6400 6800 7200 7600 8000 8400 8800 9200 9600 10000 10400 10800 11200 11600 12000 12400 12800 13200 13600 14000 14400 14800 15200 15600 16000 16400 16800 17200 17600 18000 18400 18800 19200 19600 20000 20400 20800 21200 21600 22000 22400 22800 23200 23600 24000 24400 24800 25200 25600 26000 26400 26800 27200 27600 28000 28400 28800 29200 29600 30000 30400 30800 31200 31600 32000 32400 32800 33200 33600 34000 34400 34800 35200 35600 36000 36400 36800 37200 37600 38000 38400 38800 39200 39600 40000 40400 40800 41200 41600 42000 42400 42800 43200 43600 44000 44400 44800 45200 45600 46000 46400 46800 47200 47600 48000 48400 48800 49200 49600 50000 50400 50800 51200 51600 52000 52400 52800 53200 53600 54000 54400 54800 55200 55600 56000 56400 56800 57200 57600 58000 58400 58800 59200 59600 60000 60400 60800 61200 61600 62000 62400 62800 63200 63600 64000 64400 64800 65200 65600 66000 66400 66800 67200 67600 68000 68400 68800 69200 69600 70000 70400 70800 71200 71600 72000 72400 72800 73200 73600 74000 74400 74800 75200 75600 76000 76400 76800 77200 77600 78000 78400 78800 79200 79600 80000 80400 80800 81200 81600 82000 82400 82800 83200 83600 84000 84400 84800 85200 85600 86000 86400 86800 87200 87600 88000 88400 88800 89200 89600 90000 90400 90800 91200 91600 92000 92400 92800 93200 93600 94000 94400 94800 95200 95600 96000 96400 96800 97200 97600 98000 98400 98800 99200 99600 100000	THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE U.S. ARMY CORPS OF ENGINEERS. IT IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE U.S. ARMY CORPS OF ENGINEERS.
--	---

PLATE NUMBER
10



GAGE RECORD		L & D 22 (LOWER)		L & D 24 (UPPER)	
L & D 22 (LOWER)	MANDY'S LANDING	LOUISIANA, MO	LOUISIANA, MO	L & D 24 (UPPER)	LOUISIANA, MO
0	446.30	441.85	437.33	431.81	431.81
1	446.30	441.85	437.33	431.81	431.81
2	446.30	441.85	437.33	431.81	431.81
3	446.30	441.85	437.33	431.81	431.81
4	446.30	441.85	437.33	431.81	431.81
5	446.30	441.85	437.33	431.81	431.81
6	446.30	441.85	437.33	431.81	431.81
7	446.30	441.85	437.33	431.81	431.81
8	446.30	441.85	437.33	431.81	431.81
9	446.30	441.85	437.33	431.81	431.81
10	446.30	441.85	437.33	431.81	431.81
11	446.30	441.85	437.33	431.81	431.81
12	446.30	441.85	437.33	431.81	431.81
13	446.30	441.85	437.33	431.81	431.81
14	446.30	441.85	437.33	431.81	431.81
15	446.30	441.85	437.33	431.81	431.81
16	446.30	441.85	437.33	431.81	431.81
17	446.30	441.85	437.33	431.81	431.81
18	446.30	441.85	437.33	431.81	431.81
19	446.30	441.85	437.33	431.81	431.81
20	446.30	441.85	437.33	431.81	431.81
21	446.30	441.85	437.33	431.81	431.81
22	446.30	441.85	437.33	431.81	431.81
23	446.30	441.85	437.33	431.81	431.81
24	446.30	441.85	437.33	431.81	431.81
25	446.30	441.85	437.33	431.81	431.81
26	446.30	441.85	437.33	431.81	431.81
27	446.30	441.85	437.33	431.81	431.81
28	446.30	441.85	437.33	431.81	431.81
29	446.30	441.85	437.33	431.81	431.81
30	446.30	441.85	437.33	431.81	431.81

U.S. ARMY ENGINEER DIVISION		CORPS OF ENGINEERS		ST. LOUIS, MISSOURI	
Drawn by:	Reviewed by:	Checked by:	Approved:	Submitted:	Plot Date:
X	X	X	X	X	X
UPPER MISSISSIPPI RIVER BASIN		MISSISSIPPI RIVER		MISSISSIPPI RIVER	

A horizontal graphic scale bar. The top scale is in meters, with markings at 0, 60, and 120. The bottom scale is in feet, with markings at 0, 200, and 400. The bar is divided into alternating black and white segments.

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY CONDUCTED UNDER THE BEST AVAILABLE CONDITIONS AND DOES NOT INDICATE THE GENERAL CONDITIONS EXISTING AT THAT LOCATION.

HYDROGRAPHIC SURVEYS

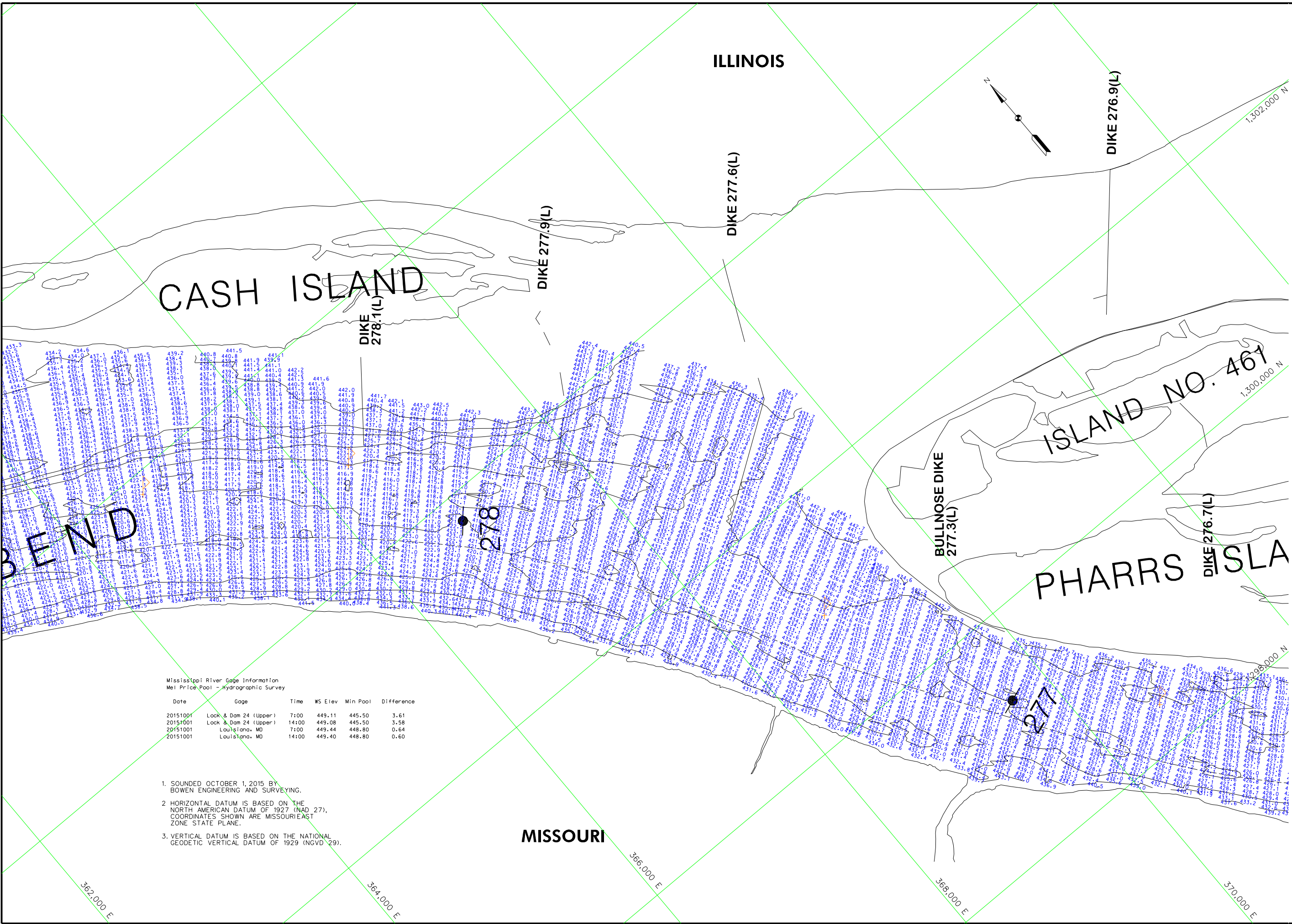
MILE: 278.7 - 280.7

PLATE
NUMBER

11

1. SOUNDED SEPTEMBER 30 & OCTOBER 1, 2015 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).

PLATE NUMBER



Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20151001	Lock & Dam 24 (Upper)	7:00	449.11	445.50	3.61
20151001	Lock & Dam 24 (Upper)	14:00	449.08	445.50	3.58
20151001	Louisiana, MO	7:00	449.44	448.80	0.64
20151001	Louisiana, MO	14:00	449.40	448.80	0.60

1. SOUNDED OCTOBER 1, 2015 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).



L & D	22 (LOWER)	24 (UPPER)	L & D	24 (UPPER)
ZERO NGVD	446.10	441.85	437.33	431.81
MILE	30.1	28.0	27.5	27.5
L.W.R.P.	449.1	449.0	448.8	445.5
DIST	2015	X	X	27.30700 27.21400

ELEVATIONS ARE REFERRED TO NGVD - CONTOURS ARE BELOW 1956-27 LOW WATER REFERENCE PLANE (LWRP) (15-000 G.T.S.)

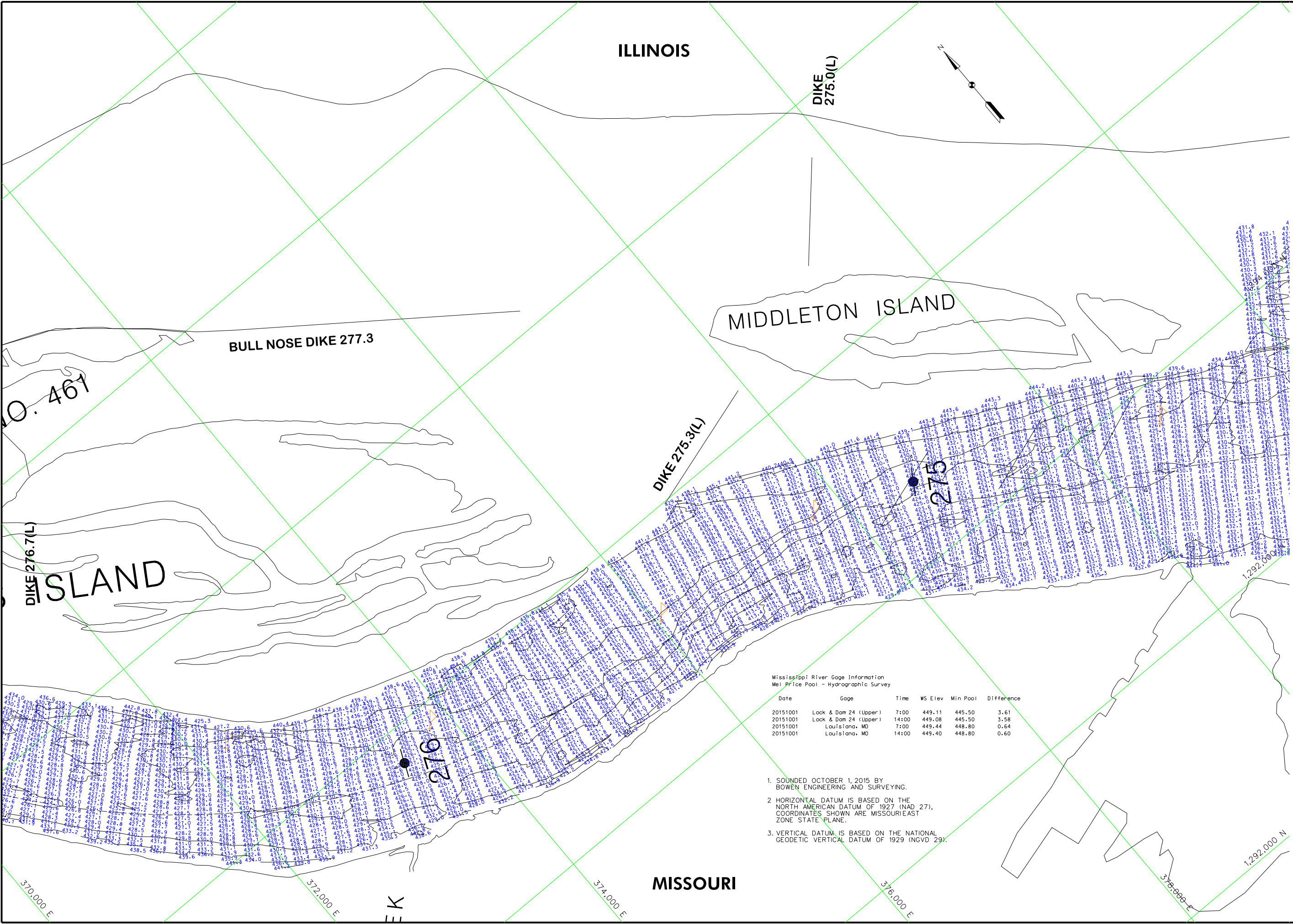
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: OCTOBER 1, 2015	Drawn by: X	Reviewed by: X	Checked by: X
UPPER MISSISSIPPI RIVER BASIN		SUBMITTED: X	APPROVED: X	
MISSISSIPPI RIVER		File Name: BOWEN20151001.DWG	Plot Date: BOWEN20151001.DWG	

120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ST. LOUIS DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INFORMATION IS NOT TO BE USED FOR ANY OTHER PURPOSE.

HYDROGRAPHIC SURVEYS

MILE: 276.8 - 278.7



US Army Corps
of Engineers
St. Louis District

GAGE RECORD		LOUISIANA, MO		L & D 24 UPPER	
L & D 22 (LOWER)	MANDY'S LANDING	L & D 22 (LOWER)	MANDY'S LANDING	L & D 24 UPPER	L & D 24 UPPER
446.10	441.85	446.10	441.85	437.33	431.81
30.11	283.0	30.11	283.0	282.0	273.5
449.1	449.0	449.1	449.0	448.8	445.5
X	X	X	X	27,307,000	27,307,000
ELEVATIONS ARE REFERRED TO M.S.L. - CONTOURS ARE BELOW 1986-27 LOW WATER REFERENCE PLANE (LWRP) (14-000 G.T.S.)					

Survey Date: OCTOBER 1, 2015	
Drawn by:	Reviewed by:
X	X
APPROVED:	
X	
File Name:	Plot Date:
MISSISSIPPI RIVER	MISSISSIPPI RIVER

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 DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND IS NOT TO BE CONSIDERED A GUARANTEE OF THE DATA OR THE ACCURACY OF THE DATA.

HYDROGRAPHIC SURVEYS

MILE: 274.5 - 276.8

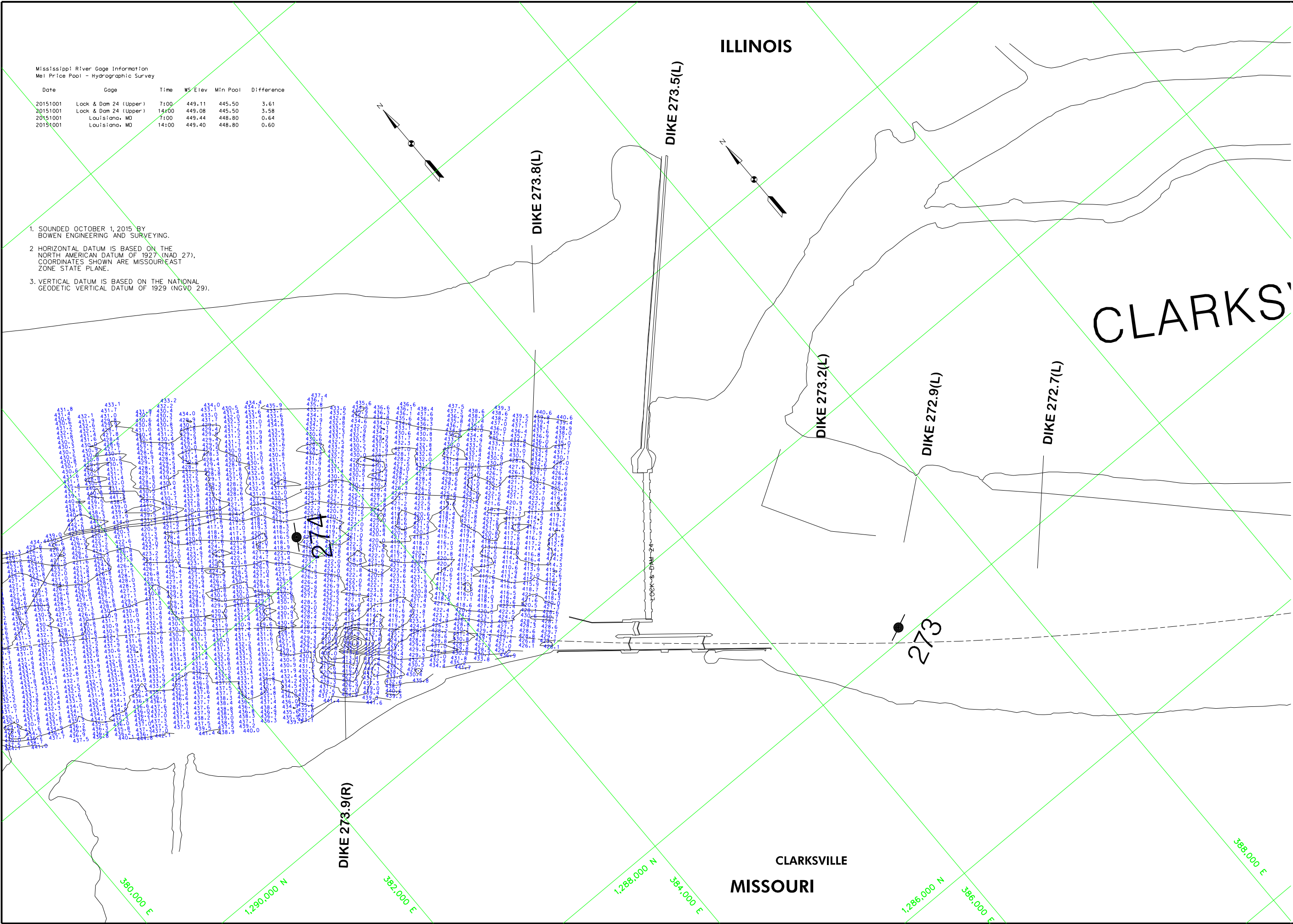
PLATE NUMBER

13

Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20151001	Lock & Dam 24 (Upper)	7:00	449.11	445.50	3.61
20151001	Lock & Dam 24 (Upper)	14:00	449.08	445.50	3.58
20151001	Louisiana, MO	7:00	449.44	448.80	0.64
20151001	Louisiana, MO	14:00	449.40	448.80	0.60

1. SOUNDED OCTOBER 1, 2015 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).



Mississippi River Gage Information
Mel Price Pool - Hydrographic Survey

Date	Gage	Time	WS Elev	Min Pool	Difference
20151001	Lock & Dam 24 (Upper)	7:00	449.11	445.50	3.61
20151001	Lock & Dam 24 (Upper)	14:00	449.08	445.50	3.58
20151001	Louisiana, MO	7:00	449.44	448.80	0.64
20151001	Louisiana, MO	14:00	449.40	448.80	0.60

1. SOUNDED OCTOBER 1, 2015 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	
L & D	24
LOUISIANA, MO	24
ZERO N.G.V.D.	437.33
M.E.	282.9
L.W.R.P.	448.8
DICTIONARY	27,307,900 27,214,000
DICTIONARY	27,307,900 27,214,000

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1996-57 LOW WATER REFERENCE PLANE (LWRP) 1940-00 07.5

Surveyed by:	Survey Date:	Reviewed by:	Checked by:
BOWEN ENGINEERING	OCTOBER 1, 2015	X	X

Drawn by: X
Submitted: X
Approved: X
Plot Date: 8/20/2015

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 DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE DISTRICT ENGINEER AND HIS STAFF. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE DISTRICT ENGINEER'S APPROVAL.

HYDROGRAPHIC SURVEYS

MILE: 272.6 - 274.5

PLATE NUMBER

14