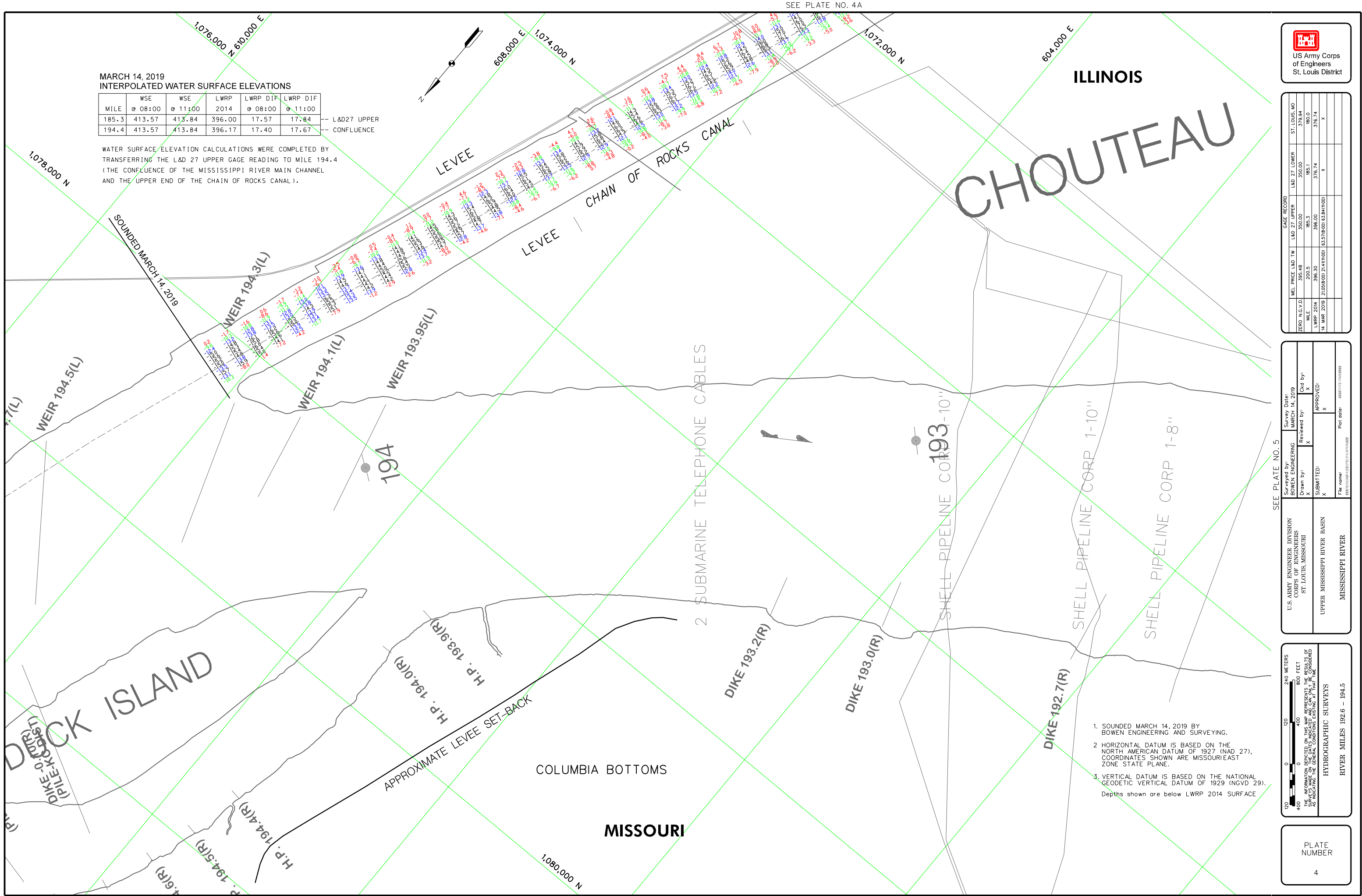
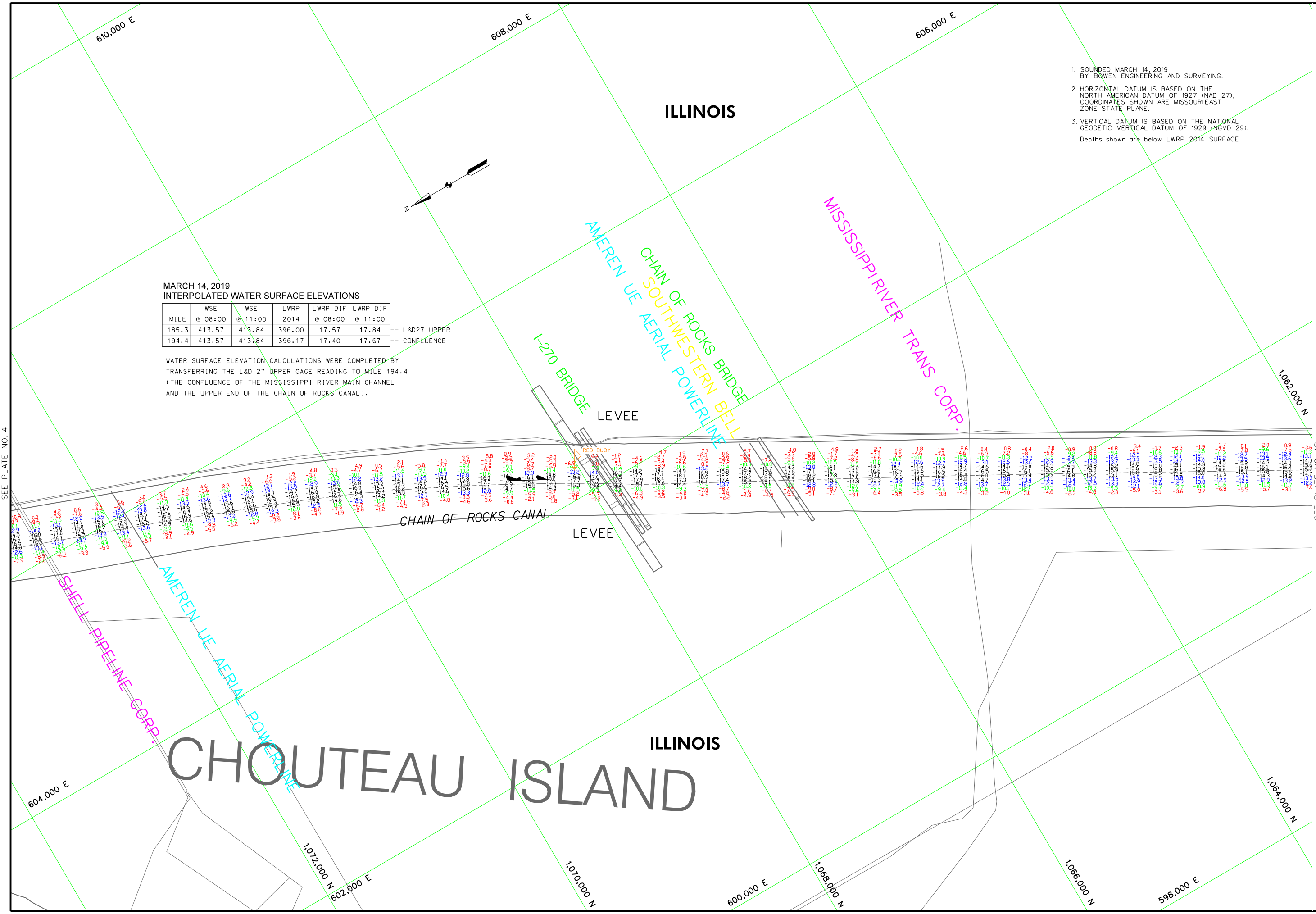


SEE PLATE NO. 3





MARCH 14, 2019
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 11:00	LWRP 2014	LWRP DIF @ 08:00	LWRP DIF @ 11:00
185.3	413.57	413.84	396.00	17.57	17.84
194.4	413.57	413.84	396.17	17.40	17.67

WATER SURFACE ELEVATION CALCULATIONS WERE COMPLETED BY TRANSFERRING THE L&D 27 UPPER GAGE READING TO MILE 194.4 (THE CONFLUENCE OF THE MISSISSIPPI RIVER MAIN CHANNEL AND THE UPPER END OF THE CHAIN OF ROCKS CANAL).

SEE PLATE NO. 4



US Army Corps
of Engineers
St. Louis District

GAGE RECORD	
MEL PRICE L&D TW	L&D 27 UPPER
395.48	350.00
390.5	350.00
396.30	350.00
2.05(8/00) 2.4(11/00)	63.37(8/00) 63.84(11/00)
14 MAR 2019	14 MAR 2019

1. SOUNDED MARCH 14, 2019
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).

Depths shown are below LWRP 2014 SURFACE

ST. LOUIS NO	379.84
L&D 27 LOWER	350.00
L&D 27 UPPER	350.00
MEL PRICE L&D TW	395.48
390.5	350.00
396.30	350.00
2.05(8/00) 2.4(11/00)	63.37(8/00) 63.84(11/00)
14 MAR 2019	14 MAR 2019

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHAIN OF ROCKS CANAL

Survey Date: MARCH 14, 2019

Drawn by: X
Reviewed by: X
Submitted: X
Approved: X

File Name: BOWEN ENGINEERING
Plot Date: 8/8/2019

120 0 120 240 METERS

400 0 400 800 FEET

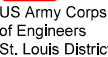
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF
SURVEYS MADE BY THE DATES INDICATED AND SHOULD BE CONSIDERED
AS INDICATED BY THE DATES INDICATED AND SHOULD BE CONSIDERED
AS INDICATED BY THE DATES INDICATED

HYDROGRAPHIC SURVEYS

RIVER MILES 184.5 - 185.1

PLATE
NUMBER

4A



US Army Corps
of Engineers
St. Louis District

		GAGE RECORD				
	MEL PRICE	L&D TW	L&D 27 UPPER	L&D 27 LOWER	ST. LOUIS, MO	
ZERO	NGVD	393.48	350.00	350.00	375.94	
1	1945	200.5	35.0	35.0	186.0	
2	1945	200.5	35.0	35.0	186.0	
3	1945	200.5	35.0	35.0	186.0	
4	1945	200.5	35.0	35.0	186.0	
5	1945	200.5	35.0	35.0	186.0	
6	1945	200.5	35.0	35.0	186.0	
7	1945	200.5	35.0	35.0	186.0	
8	1945	200.5	35.0	35.0	186.0	
9	1945	200.5	35.0	35.0	186.0	
10	1945	200.5	35.0	35.0	186.0	
11	1945	200.5	35.0	35.0	186.0	
12	1945	200.5	35.0	35.0	186.0	
13	1945	200.5	35.0	35.0	186.0	
14	1945	200.5	35.0	35.0	186.0	
15	1945	200.5	35.0	35.0	186.0	
16	1945	200.5	35.0	35.0	186.0	
17	1945	200.5	35.0	35.0	186.0	
18	1945	200.5	35.0	35.0	186.0	
19	1945	200.5	35.0	35.0	186.0	
20	1945	200.5	35.0	35.0	186.0	
21	1945	200.5	35.0	35.0	186.0	
22	1945	200.5	35.0	35.0	186.0	
23	1945	200.5	35.0	35.0	186.0	
24	1945	200.5	35.0	35.0	186.0	
25	1945	200.5	35.0	35.0	186.0	
26	1945	200.5	35.0	35.0	186.0	
27	1945	200.5	35.0	35.0	186.0	
28	1945	200.5	35.0	35.0	186.0	
29	1945	200.5	35.0	35.0	186.0	
30	1945	200.5	35.0	35.0	186.0	
31	1945	200.5	35.0	35.0	186.0	
32	1945	200.5	35.0	35.0	186.0	
33	1945	200.5	35.0	35.0	186.0	
34	1945	200.5	35.0	35.0	186.0	
35	1945	200.5	35.0	35.0	186.0	
36	1945	200.5	35.0	35.0	186.0	
37	1945	200.5	35.0	35.0	186.0	
38	1945	200.5	35.0	35.0	186.0	
39	1945	200.5	35.0	35.0	186.0	
40	1945	200.5	35.0	35.0	186.0	
41	1945	200.5	35.0	35.0	186.0	
42	1945	200.5	35.0	35.0	186.0	
43	1945	200.5	35.0	35.0	186.0	
44	1945	200.5	35.0	35.0	186.0	
45	1945	200.5	35.0	35.0	186.0	
46	1945	200.5	35.0	35.0	186.0	
47	1945	200.5	35.0	35.0	186.0	
48	1945	200.5	35.0	35.0	186.0	
49	1945	200.5	35.0	35.0	186.0	
50	1945	200.5	35.0	35.0	186.0	
51	1945	200.5	35.0	35.0	186.0	
52	1945	200.5	35.0	35.0	186.0	
53	1945	200.5	35.0	35.0	186.0	
54	1945	200.5	35.0	35.0	186.0	
55	1945	200.5	35.0	35.0	186.0	
56	1945	200.5	35.0	35.0	186.0	
57	1945	200.5	35.0	35.0	186.0	
58	1945	200.5	35.0	35.0	186.0	
59	1945	200.5	35.0	35.0	186.0	
60	1945	200.5	35.0	35.0	186.0	
61	1945	200.5	35.0	35.0	186.0	
62	1945	200.5	35.0	35.0	186.0	
63	1945	200.5	35.0	35.0	186.0	
64	1945	200.5	35.0	35.0	186.0	
65	1945	200.5	35.0	35.0	186.0	
66	1945	200.5	35.0	35.0	186.0	
67	1945	200.5	35.0	35.0	186.0	
68	1945	200.5	35.0	35.0	186.0	
69	1945	200.5	35.0	35.0	186.0	
70	1945	200.5	35.0	35.0	186.0	
71	1945	200.5	35.0	35.0	186.0	
72	1945	200.5	35.0	35.0	186.0	
73	1945	200.5	35.0	35.0	186.0	
74	1945	200.5	35.0	35.0	186.0	
75	1945	200.5	35.0	35.0	186.0	
76	1945	200.5	35.0	35.0	186.0	
77	1945	200.5	35.0	35.0	186.0	
78	1945	200.5	35.0	35.0	186.0	
79	1945	200.5	35.0	35.0	186.0	
80	1945	200.5	35.0	35.0	186.0	
81	1945	200.5	35.0	35.0	186.0	
82	1945	200.5	35.0	35.0	186.0	
83	1945	200.5	35.0	35.0	186.0	
84	1945	200.5	35.0	35.0	186.0	
85	1945	200.5	35.0	35.0	186.0	
86	1945	200.5	35.0	35.0	186.0	
87	1945	200.5	35.0	35.0	186.0	
88	1945	200.5	35.0	35.0	186.0	
89	1945	200.5	35.0	35.0	186.0	
90	1945	200.5	35.0	35.0	186.0	
91	1945	200.5	35.0	35.0	186.0	
92	1945	200.5	35.0	35.0	186.0	
93	1945	200.5	35.0	35.0	186.0	
94	1945	200.5	35.0	35.0	186.0	
95	1945	200.5	35.0	35.0	186.0	
96	1945	200.5	35.0	35.0	186.0	
97	1945	200.5	35.0	35.0	186.0	
98	1945	200.5	35.0	35.0	186.0	
99	1945	200.5	35.0	35.0	186.0	
100	1945	200.5	35.0	35.0	186.0	

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Surveyed by:	BOWEN ENGINEERING	Survey Date:	MARCH 14, 2019
	Drawn by:	X	Reviewed by:	X
			Ckd by:	X
	SUBMITTED:		APPROVED:	
		X		X
			File name:	ADDITIVE-TRN-080800
UPPER MISSISSIPPI RIVER BASIN				Pict date
MISSISSIPPI RIVER				
CHAIN OF ROCKS CANAL				
				WATERWAY PROJECT CATCH#000

120 0 120 240 METERS
400 0 400 800 FEET

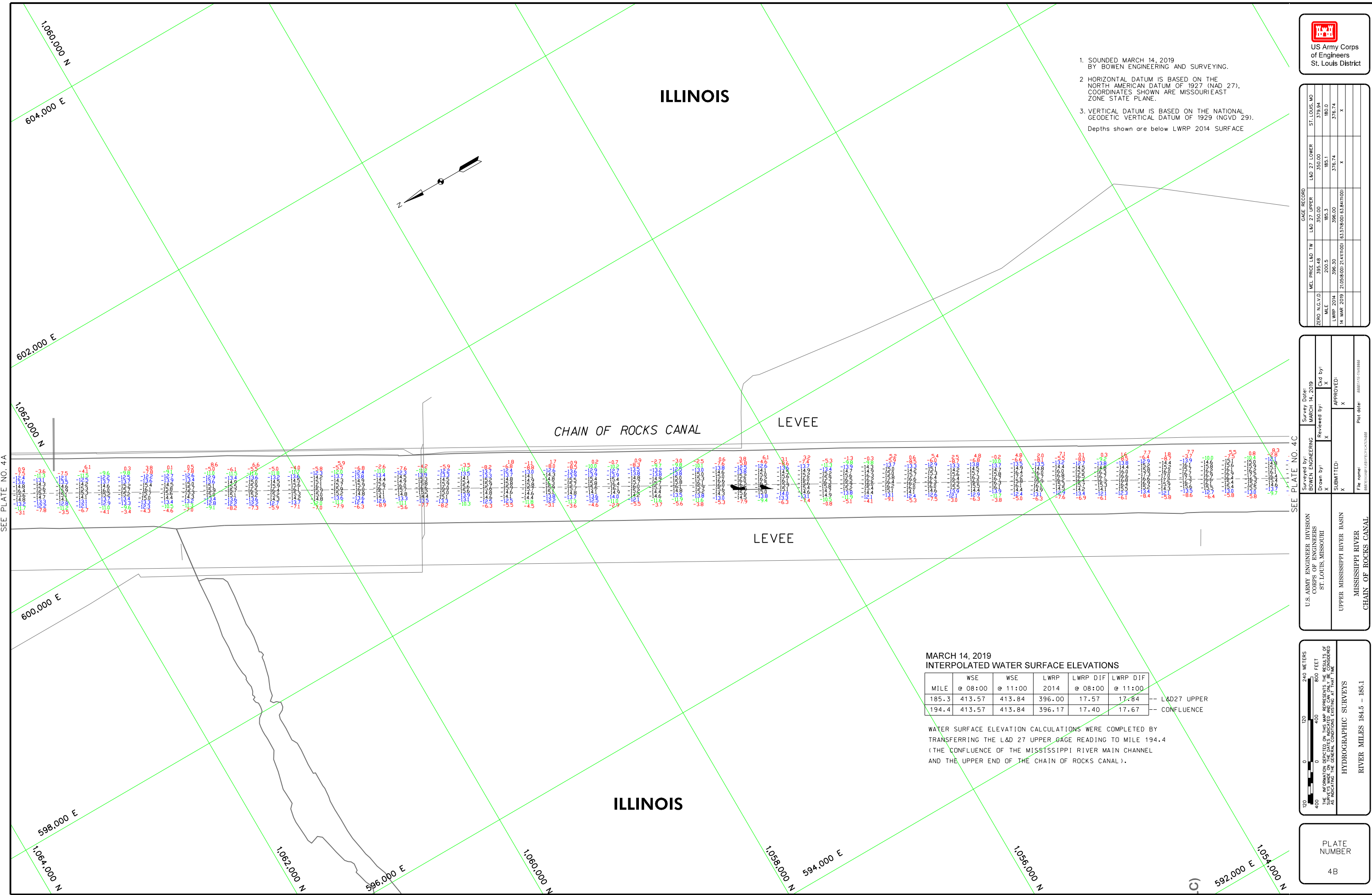
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A HYDROGRAPHIC SURVEY CONDUCTED IN 1951. IT IS NOT TO BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT A PARTICULAR DATE.

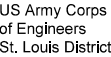
HYDROGRAPHIC SURVEYS

RIVER MILES 184.5 - 185.1

PLATE
NUMBER

4B





		GAGE RECORD				
		MEL PRICE	L&D TW	L&D 27 UPPER	L&D 27 LOWER	ST. LOUIS MO.
ZERO	N.C.V.D.	395.48		350.00		379.94
ONE	"	200.8		185.5	185.0	185.0
TWO	"	398.0		398.00		398.00
THREE	"					398.00
FOUR	"					398.00
FIVE	"					398.00
SIX	"					398.00
SEVEN	"					398.00
EIGHT	"					398.00
NINE	"					398.00
TEN	"					398.00
ELEVEN	"					398.00
TWELVE	"					398.00
THIRTEEN	"					398.00
FOURTEEN	"					398.00
FIFTEEN	"					398.00
SIXTEEN	"					398.00
SEVENTEEN	"					398.00
EIGHTEEN	"					398.00
NINETEEN	"					398.00
TWENTY	"					398.00
ONE AND ONE EIGHTH	"					398.00
TWO AND ONE EIGHTH	"					398.00
THREE AND ONE EIGHTH	"					398.00
FOUR AND ONE EIGHTH	"					398.00
FIVE AND ONE EIGHTH	"					398.00
SIX AND ONE EIGHTH	"					398.00
SEVEN AND ONE EIGHTH	"					398.00
EIGHT AND ONE EIGHTH	"					398.00
NINE AND ONE EIGHTH	"					398.00
TEN AND ONE EIGHTH	"					398.00
ONE AND ONE QUARTER	"					398.00
TWO AND ONE QUARTER	"					398.00
THREE AND ONE QUARTER	"					398.00
FOUR AND ONE QUARTER	"					398.00
FIVE AND ONE QUARTER	"					398.00
SIX AND ONE QUARTER	"					398.00
SEVEN AND ONE QUARTER	"					398.00
EIGHT AND ONE QUARTER	"					398.00
NINE AND ONE QUARTER	"					398.00
TEN AND ONE QUARTER	"					398.00
ONE AND ONE HALF	"					398.00
TWO AND ONE HALF	"					398.00
THREE AND ONE HALF	"					398.00
FOUR AND ONE HALF	"					398.00
FIVE AND ONE HALF	"					398.00
SIX AND ONE HALF	"					398.00
SEVEN AND ONE HALF	"					398.00
EIGHT AND ONE HALF	"					398.00
NINE AND ONE HALF	"					398.00
TEN AND ONE HALF	"					398.00
ONE AND TWO EIGHTH	"					398.00
TWO AND TWO EIGHTH	"					398.00
THREE AND TWO EIGHTH	"					398.00
FOUR AND TWO EIGHTH	"					398.00
FIVE AND TWO EIGHTH	"					398.00
SIX AND TWO EIGHTH	"					398.00
SEVEN AND TWO EIGHTH	"					398.00
EIGHT AND TWO EIGHTH	"					398.00
NINE AND TWO EIGHTH	"					398.00
TEN AND TWO EIGHTH	"					398.00
ONE AND ONE SIXTH	"					398.00
TWO AND ONE SIXTH	"					398.00
THREE AND ONE SIXTH	"					398.00
FOUR AND ONE SIXTH	"					398.00
FIVE AND ONE SIXTH	"					398.00
SIX AND ONE SIXTH	"					398.00
SEVEN AND ONE SIXTH	"					398.00
EIGHT AND ONE SIXTH	"					398.00
NINE AND ONE SIXTH	"					398.00
TEN AND ONE SIXTH	"					398.00

Surveyed by: BOWEN ENGINEERING 9901 MCINTOSH BLVD, SUITE 100 FARMINGTON, CT 06030	Survey Date: MARCH 12, 13 & 14, 2019	
	Drawn by: X	Reviewed by: X
SUBMITTED: X	Ok'd by: X	
	APPROVED: X	
File name: 9901MCINTOSHBLVD.F120190314.dwg		Plot date: 03/14/2019 10:46 AM

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHAIN OF ROCKS CANAL

[illegible]

PLATE
NUMBER

4C

MARCH 14, 2019
INTERPOLATED WATER SURFACE ELEVATIONS

	WSE	WSE	LWRP	LWRP DIF	LWRP DIF
MILE	@ 08:00	@ 11:00	2014	@ 08:00	@ 11:00
185.3	413.57	413.84	396.00	17.57	17.84
194.4	413.57	413.84	396.17	17.40	17.67

WATER SURFACE ELEVATION CALCULATIONS WERE COMPLETED BY TRANSFERRING THE L&D 27 UPPER GAGE READING TO MILE 194.4 (THE CONFLUENCE OF THE MISSISSIPPI RIVER MAIN CHANNEL AND THE UPPER END OF THE CHAIN OF ROCKS CANAL).

MARCH 12, 2019
INTERPOLATED WATER SURFACE ELEVATIONS

	WSE	WSE	LWRP	LWRP DIF	LWRP DIF
MILE	@ 09:00	@ 15:00	2014	@ 09:00	@ 15:00
182	403.17	403.93	376.74	26.43	27.19
183	403.66	404.42	376.74	26.92	27.68
184	404.15	404.91	376.74	27.41	28.17
185.1	404.15	404.91	376.74	27.41	28.17

WATER SURFACE ELEVATION CALCULATIONS WERE COMPLETED BY
TRANSFERRING THE L&D 27 LOWER GAGE READING TO MILE 184.0.
(THE WATER LEVEL WAS ABOVE THE TOP OF THE L-DIKE)

1. SOUNDED MARCH 12, 13 & 14, 2019
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).
- Depths shown are below LWRP 2014 SURFACE

MARCH 13, 2019
INTERPOLATED WATER SURFACE ELEVATIONS - OLD CHANNEL

	WSE @ 08:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 08:00	LWRP DIF @ 15:00
185	407.38	407.99	377.86	29.52	30.13
186	407.90	408.50	379.10	28.80	29.40
187	408.41	409.00	380.43	27.98	28.57
188	408.93	409.51	381.94	26.99	27.57
189	409.44	410.02	383.26	26.18	26.76
189.5	409.70	410.27	383.97	25.73	26.30
190	409.96	410.53	388.45	21.51	22.08
190.2	410.06	410.63	392.50	17.56	18.13

WATER SURFACE ELEVATION CALCULATIONS WERE COMPLETED BY
TRANSFERRING THE L&D 27 LOWER GAGE READING TO MILE 184.0.
(THE WATER LEVEL WAS ABOVE THE TOP OF THE L-DIKE)

THE WATER SURFACE ELEVATIONS AT MILE 190.2 OLD CHANNEL
WERE ESTIMATED FROM GAGE READINGS AND GPS OBSERVATIONS.

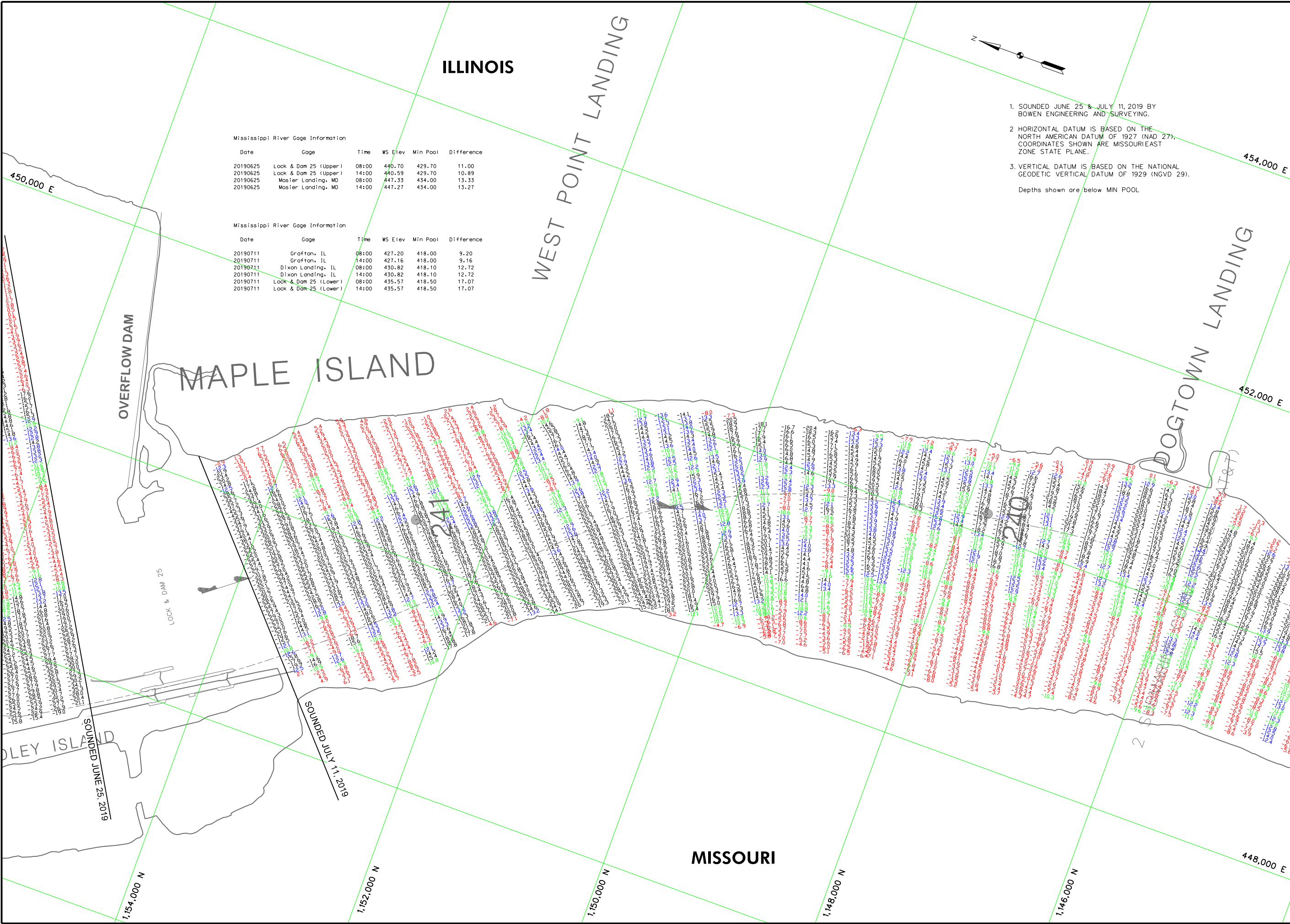
MARCH 12, 2019
INTERPOLATED WATER SURFACE ELEVATIONS - OLD CHANNEL

	WSE	WSE	LWRP	LWRP DIF	LWRP DIF
MILE	@ 09:00	@ 15:00	2014	@ 09:00	@ 15:00
184	404.15	404.91	376.74	27.41	28.17
185	404.68	405.44	377.86	26.82	27.58

WATER SURFACE ELEVATION CALCULATIONS WERE COMPLETED BY
TRANSFERRING THE L&D 27 LOWER GAGE READING TO MILE 184.0.
(THE WATER LEVEL WAS ABOVE THE TOP OF THE L-DIKE)

THE WATER SURFACE ELEVATIONS AT MILE 185.0 OLD CHANNEL
WERE ESTIMATED FROM GAGE READINGS AND GPS OBSERVATIONS.





Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190625	Lock & Dam 25 (Upper)	08:00	440.70	429.70	11.00
20190625	Lock & Dam 25 (Upper)	14:00	440.59	429.70	10.89
20190625	Mosier Landing, MD	08:00	447.33	434.00	13.33
20190625	Mosier Landing, MD	14:00	447.27	434.00	13.27

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190711	Grafton, IL	08:00	427.20	418.00	9.20
20190711	Grafton, IL	14:00	427.16	418.00	9.16
20190711	Dixon Landing, IL	08:00	430.82	418.10	12.72
20190711	Dixon Landing, IL	14:00	430.82	418.10	12.72
20190711	Lock & Dam 25 (Lower)	08:00	435.57	418.50	17.07
20190711	Lock & Dam 25 (Lower)	14:00	435.57	418.50	17.07

1. SOUNDED JUNE 25 & JULY 11, 2019 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).
- Depths shown are below MIN POOL

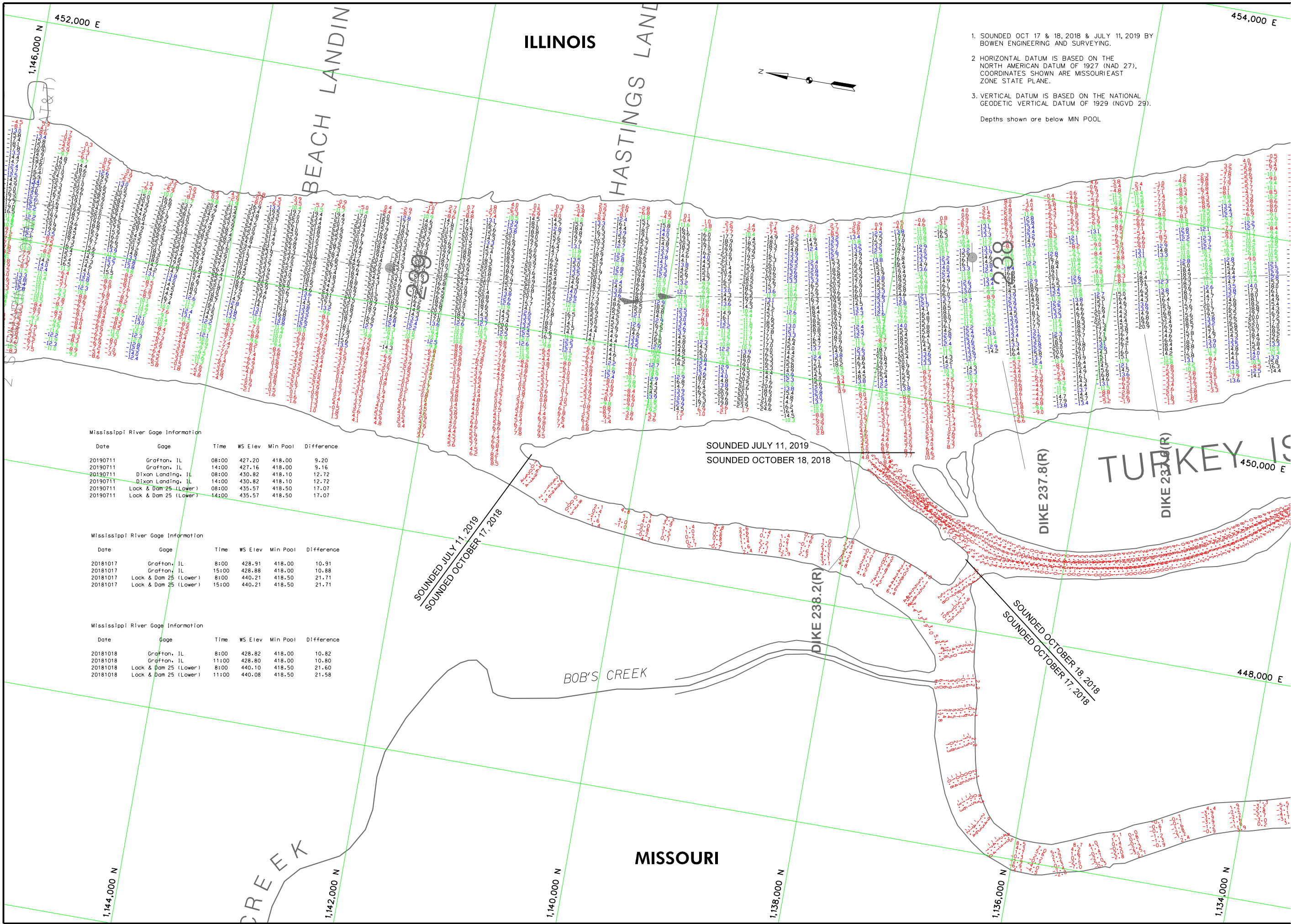


GAGE RECORD		L&D 25, UPPER	L&D 25, LOWER	DIXON LANDING, IL
ZERO N.G.V.D.		407.0	407.00	410.62
M.S.L.		260.3	241.2	228.3
MIN. POOL		434.0	429.7	418.1
25 JUN 2019	47.318(00) 47.214(-00)	53.708(00) 53.594(00)		
11 JUL 2019		X	X	20.214(-00)

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		Survey Date: JUNE 25 & JULY 11, 2019
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER	Drawn by: X	Reviewed by: X
	SUBMITTED: X	APPROVED: X
	File Name: 888071671000	Plot Date: 888071671000

HYDROGRAPHIC SURVEYS	
MILE: 239.6 - 241.6	

PLATE NUMBER
30



- 1. SOUNDED OCT. 17 & 18, 2018 & JULY 11, 2019 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).
- Depths shown are below MIN POOL

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190711	Grafton, IL	08:00	427.20	418.00	9.20
20190711	Grafton, IL	14:00	427.16	418.00	9.16
20190711	Dixon Landing, IL	08:00	430.82	418.10	12.72
20190711	Dixon Landing, IL	14:00	430.82	418.10	12.72
20190711	Lock & Dam 25 (Lower)	08:00	435.57	418.50	17.07
20190711	Lock & Dam 25 (Lower)	14:00	435.57	418.50	17.07

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181017	Grafton, IL	8:00	428.91	418.00	10.91
20181017	Grafton, IL	15:00	428.88	418.00	10.88
20181017	Lock & Dam 25 (Lower)	8:00	440.21	418.50	21.71
20181017	Lock & Dam 25 (Lower)	15:00	440.21	418.50	21.71

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181018	Grafton, IL	8:00	428.82	418.00	10.82
20181018	Grafton, IL	11:00	428.80	418.00	10.80
20181018	Lock & Dam 25 (Lower)	8:00	440.10	418.50	21.60
20181018	Lock & Dam 25 (Lower)	11:00	440.08	418.50	21.58

US Army Corps of Engineers
St. Louis District

ALTON, IL 420.00 203.0 414.0

DIXON LANDING, IL 403.79 218.6 418.0

MIN. POOL 241.2 418.5

25.10.2018 33.21.45.00 25.10.2018 33.21.45.00

25.10.2018 33.21.45.00 25.10.2018 33.21.45.00

25.10.2018 33.21.45.00 25.10.2018 33.21.45.00

Survey Date: OCTOBER 17 & 18, 2018

Drawn by: X

Reviewed by: X

Submitted: X

Approved: X

Plot Date: 8/8/2018

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS

0 120 240

800 FEET

0 400 800

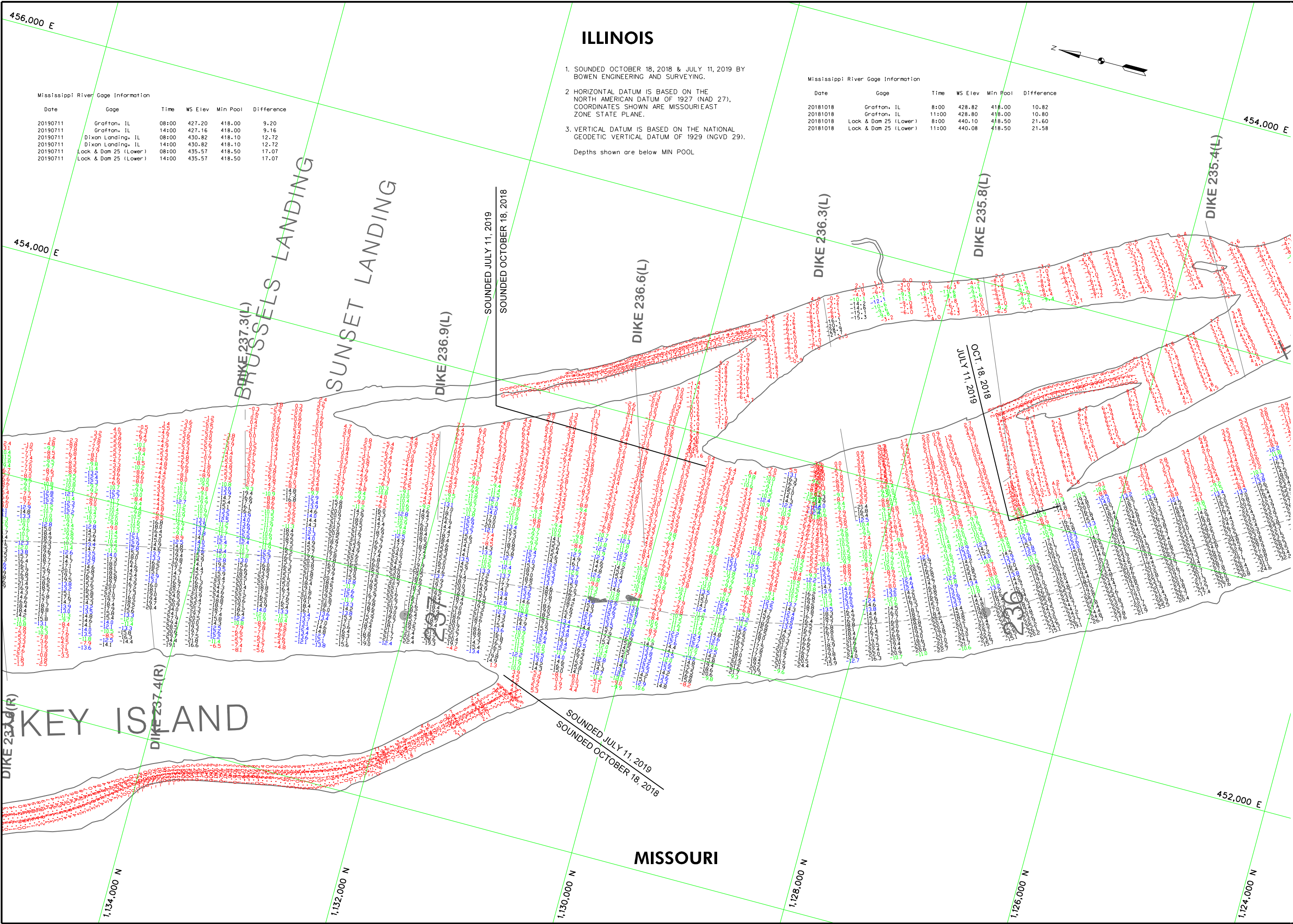
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE DISTRICT AND FIELD OFFICES OF THE CORPS OF ENGINEERS, U.S. ARMY.

HYDROGRAPHIC SURVEYS

FILE NAME: 237.6 - 239.6

PLATE NUMBER

31



Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190711	Grafton, IL	08:00	427.20	418.00	9.20
20190711	Grafton, IL	14:00	427.16	418.00	9.16
20190711	Dixon Landing, IL	08:00	430.82	418.10	12.72
20190711	Dixon Landing, IL	14:00	430.82	418.10	12.72
20190711	Lock & Dam 25 (Lower)	08:00	435.57	418.50	17.07
20190711	Lock & Dam 25 (Lower)	14:00	435.57	418.50	17.07

ILLINOIS

1. SOUNDED OCTOBER 18, 2018 & JULY 11, 2019 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).

Depths shown are below MIN POOL

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181018	Grafton, IL	8:00	428.82	418.00	10.82
20181018	Grafton, IL	11:00	428.80	418.00	10.80
20181018	Lock & Dam 25 (Lower)	8:00	440.10	418.50	21.60
20181018	Lock & Dam 25 (Lower)	11:00	440.08	418.50	21.58

US Army Corps of Engineers
St. Louis District

GAGE RECORD	
L & D 25 (LOWER)	DIXON LANDING, IL
ZERO NGVD	420.00
MIN POOL	241.2
18 OCT 2018	33.00(0.00)
11 JUL 2019	28.57(0.00)

Surveyed by	BOWEN ENGINEERING	Survey Date	OCT 18, 2018 & JULY 11, 2019
Drawn by	X	Reviewed by	X
Submitted by	X	Approved by	X
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		UPPER MISSISSIPPI RIVER BASIN	
MISSISSIPPI RIVER		MISSISSIPPI RIVER	
FILE NAME: 237.6		PLOT DATE: 8/8/2019	

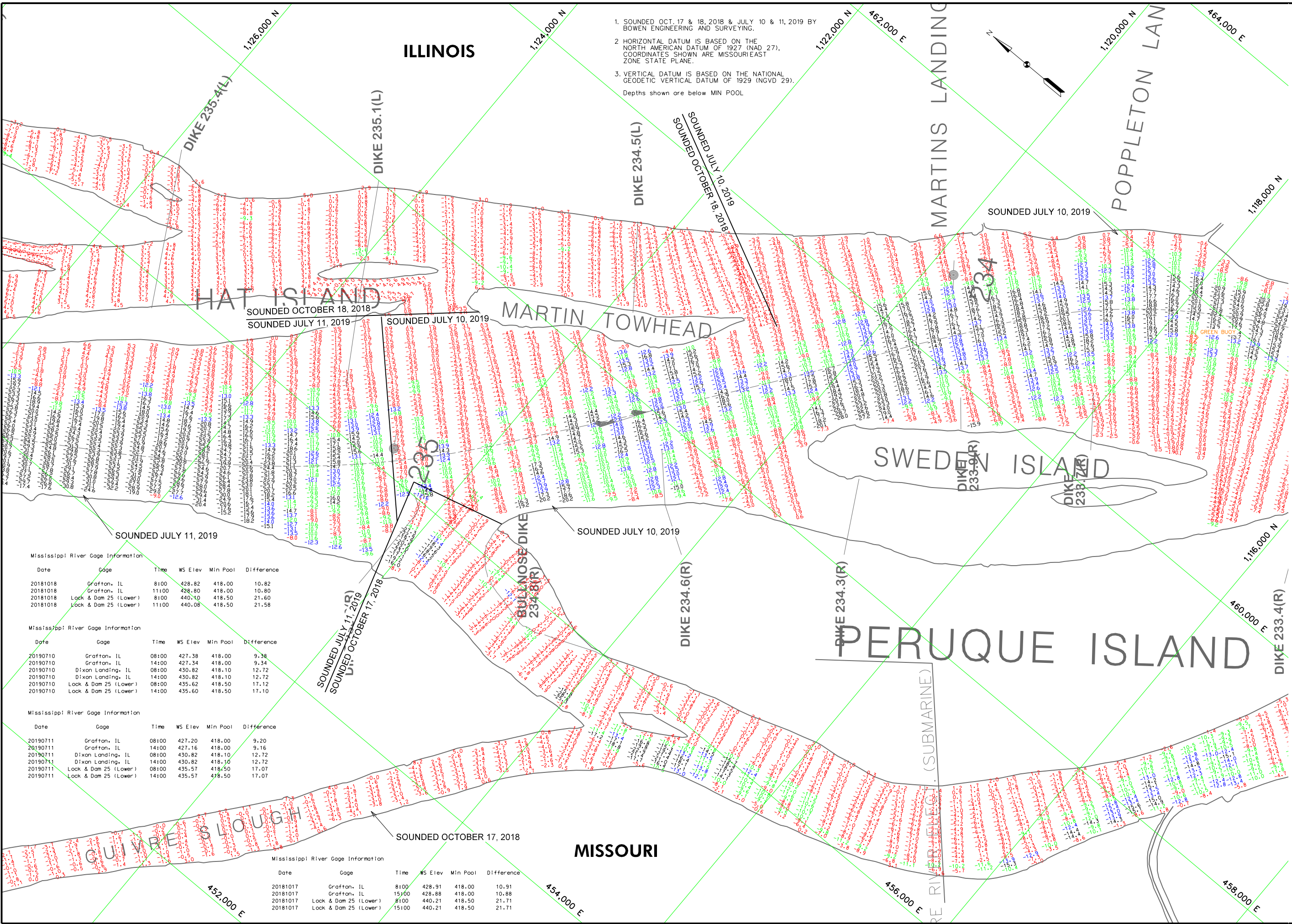
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE DISTRICT ENGINEER AND HIS STAFF. IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.

HYDROGRAPHIC SURVEYS

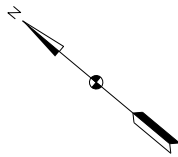
SCALE: 235.6 - 237.6

PLATE NUMBER

32



- 1. SOUNDED OCT. 17 & 18, 2018 & JULY 10 & 11, 2019 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).
- Depths shown are below MIN POOL



GAGE RECORD					
L & D 25 (LOWER)	DIXON LANDING, IL	GRAFTON, IL	ALTON, IL		
ZERO NGVD	430.62	430.79	430.00		
MILE	278.3	278.6	283.0		
MIN POOL	418.5	418.1	418.0		
17 OCT 2018	33.218(400)	33.215(500)	25.126(400)	25.08(500)	X
18 OCT 2018	33.108(400)	33.081(500)	25.038(400)	25.038(500)	X
10 JUL 2019	28.085(400)	28.074(500)	20.211(400)	20.211(500)	X
11 JUL 2019	28.076(400)	28.074(500)	20.214(500)	20.214(500)	X

Surveyed by: BOWEN ENGINEERING	Survey Date: OCT 17, 2018 - JULY 11, 2019
Drawn by: X	Reviewed by: X
Submitted: X	Approved: X
File Name: PERUQUE_HYDROGRAPHIC	Plot Date: 8/8/2019

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

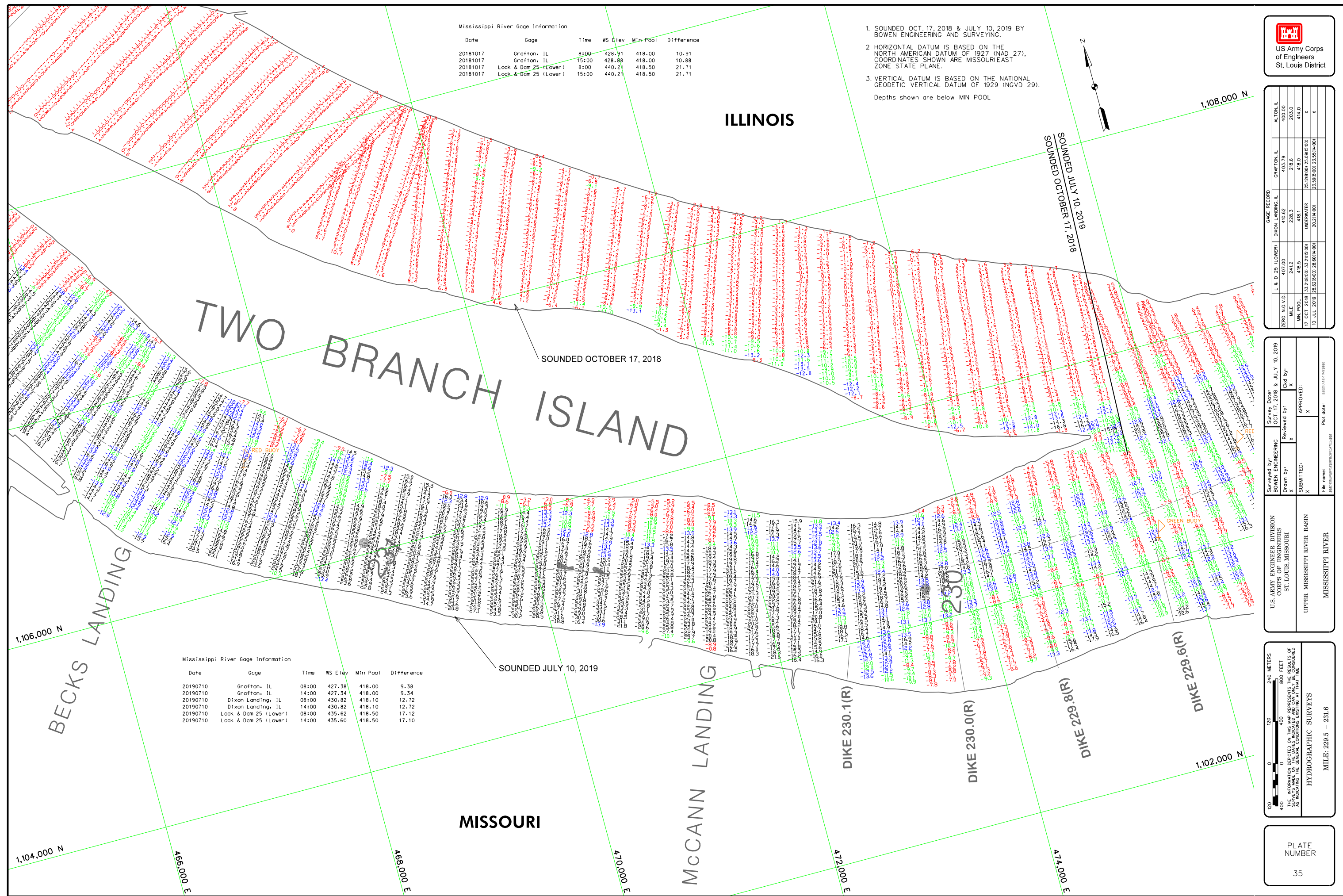
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

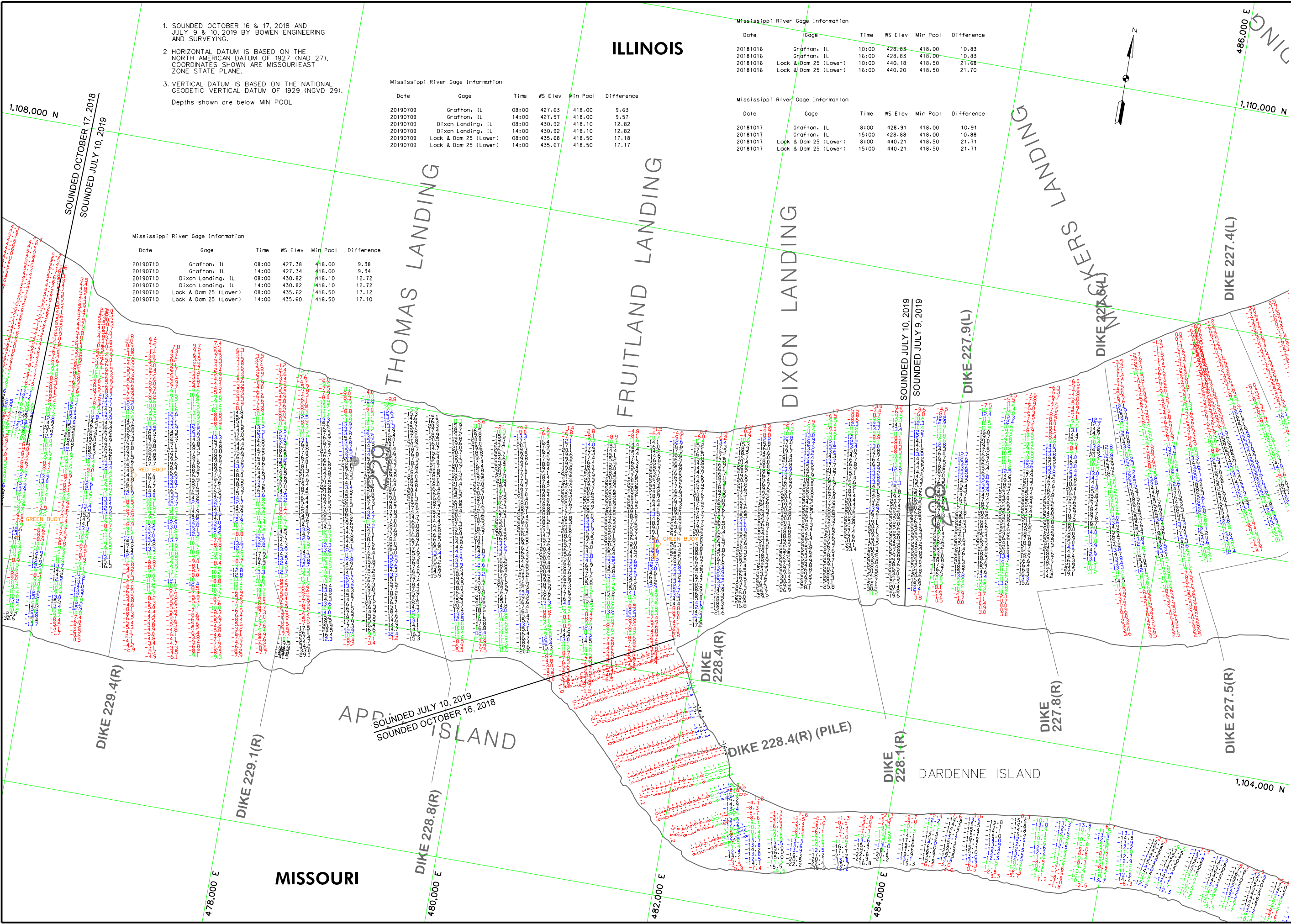
1"=240 METERS
0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND SHOULD BE CONSIDERED AS A GUIDE ONLY.

HYDROGRAPHIC SURVEYS

MILE: 235.6 - 235.6





1. SOUNDED OCTOBER 16 & 17, 2018 AND JULY 9 & 10, 2019 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). Depths shown are below MIN POOL

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190710	Grafton, IL	08:00	427.38	418.00	9.38
20190710	Grafton, IL	14:00	427.34	418.00	9.34
20190710	Dixon Landing, IL	08:00	430.82	418.10	12.72
20190710	Dixon Landing, IL	14:00	430.82	418.10	12.72
20190710	Lock & Dam 25 (Lower)	08:00	435.62	418.50	17.12
20190710	Lock & Dam 25 (Lower)	14:00	435.60	418.50	17.10

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190709	Grafton, IL	08:00	427.63	418.00	9.63
20190709	Grafton, IL	14:00	427.57	418.00	9.57
20190709	Dixon Landing, IL	08:00	430.92	418.10	12.82
20190709	Dixon Landing, IL	14:00	430.92	418.10	12.82
20190709	Lock & Dam 25 (Lower)	08:00	435.68	418.50	17.18
20190709	Lock & Dam 25 (Lower)	14:00	435.67	418.50	17.17

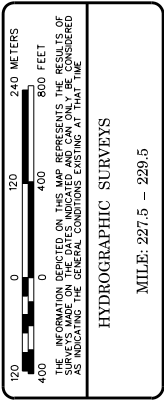
Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181016	Grafton, IL	10:00	428.83	418.00	10.83
20181016	Grafton, IL	16:00	428.83	418.00	10.83
20181016	Lock & Dam 25 (Lower)	10:00	440.18	418.50	21.68
20181016	Lock & Dam 25 (Lower)	16:00	440.20	418.50	21.70

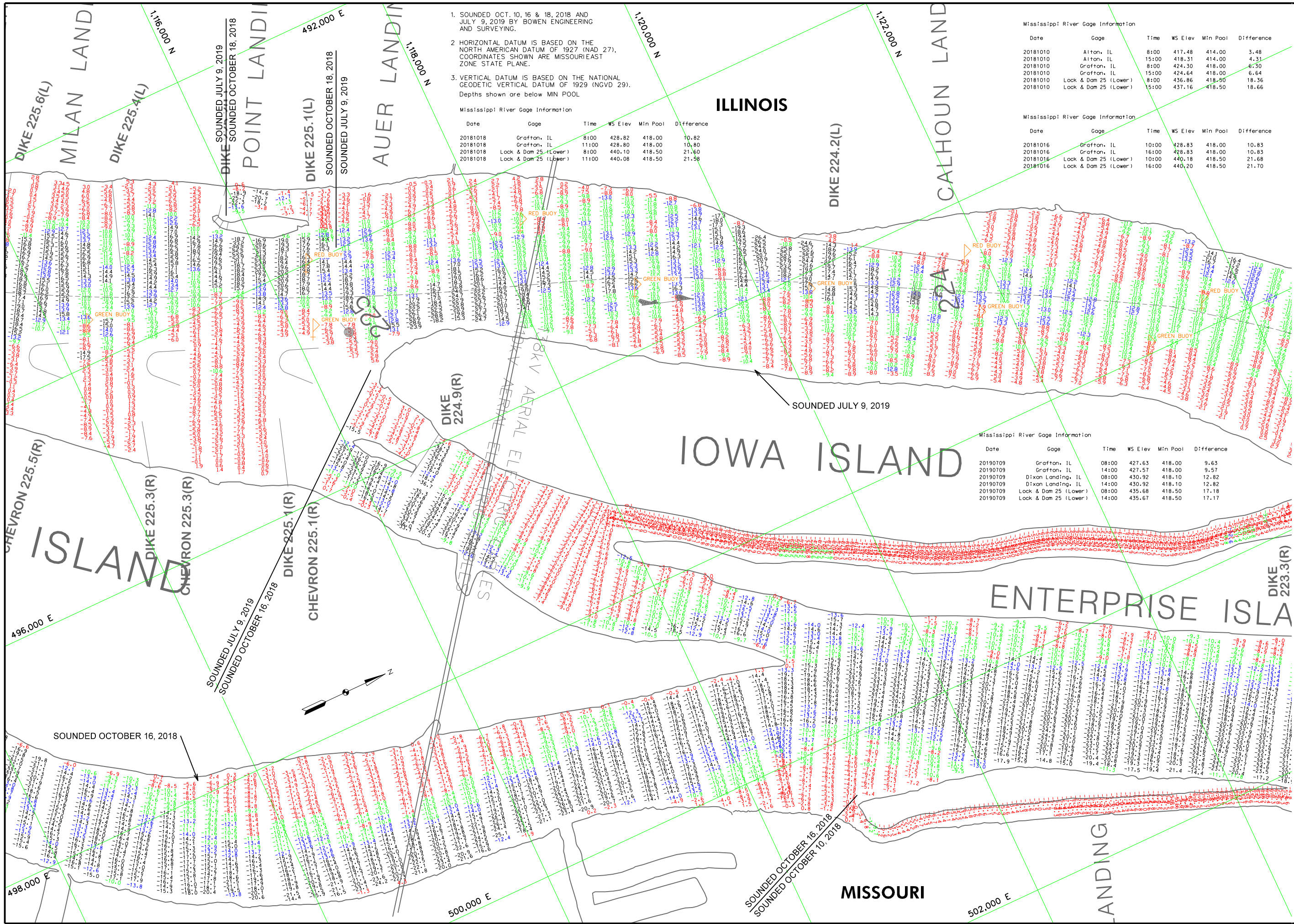
Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181017	Grafton, IL	8:00	428.91	418.00	10.91
20181017	Grafton, IL	15:00	428.88	418.00	10.88
20181017	Lock & Dam 25 (Lower)	8:00	440.21	418.50	21.71
20181017	Lock & Dam 25 (Lower)	15:00	440.21	418.50	21.71



GAGE RECORD					
L & D 25 (LOWER)	DIXON LANDING, IL	GRAFTON, IL	ALTON, IL		
ZERO NGVD	410.62	403.79	420.00		
M.E.	241.2	218.6	203.0		
MIN POOL	418.5	418.0	414.0		
16 OCT 2018	33.810000	33.201500	25.041000	25.041000	25.041000
17 OCT 2018	33.271500	33.271500	25.041000	25.041000	25.041000
09 JUL 2019	28.684500	28.671400	20.311400	20.311400	20.311400
10 JUL 2019	28.624500	28.601400	20.214500	20.214500	20.214500

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	SURVEY DATA BOWEN ENGINEERING OCT 16, 2018 - JULY 10, 2019	Drawn by: X	Reviewed by: X	Cad by: X
UPPER MISSISSIPPI RIVER BASIN	MISSISSIPPI RIVER	SUBMITTED: X	APPROVED: X	Plot date: 8/8/2019
File name: UPPERMISSISSIPPIRIVERBASIN				





1. SOUNDED OCT. 10, 16 & 18, 2018 AND JULY 9, 2019 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). Depths shown are below MIN POOL

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181018	Grafton, IL	8:00	428.82	418.00	10.82
20181018	Grafton, IL	11:00	428.80	418.00	10.80
20181018	Lock & Dam 25 (Lower)	8:00	440.10	418.50	21.60
20181018	Lock & Dam 25 (Lower)	11:00	440.08	418.50	21.58

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Alton, IL	8:00	417.48	414.00	3.48
20181010	Alton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181016	Grafton, IL	10:00	428.83	418.00	10.83
20181016	Grafton, IL	16:00	428.83	418.00	10.83
20181016	Lock & Dam 25 (Lower)	10:00	440.18	418.50	21.68
20181016	Lock & Dam 25 (Lower)	16:00	440.20	418.50	21.70

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190709	Grafton, IL	08:00	427.63	418.00	9.63
20190709	Grafton, IL	14:00	427.57	418.00	9.57
20190709	Dixon Landing, IL	08:00	430.92	418.10	12.82
20190709	Dixon Landing, IL	14:00	430.92	418.10	12.82
20190709	Lock & Dam 25 (Lower)	08:00	435.68	418.50	17.18
20190709	Lock & Dam 25 (Lower)	14:00	435.67	418.50	17.17

US Army Corps of Engineers
St. Louis District

Survey Date: JULY 9, 2019

Drawn by: [Signature] Reviewed by: [Signature] Cad by: [Signature]

Submitted: [Signature] Approved: [Signature]

Plot Date: [Signature]

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

170 400 800 1200 METERS

0 400 800 FEET

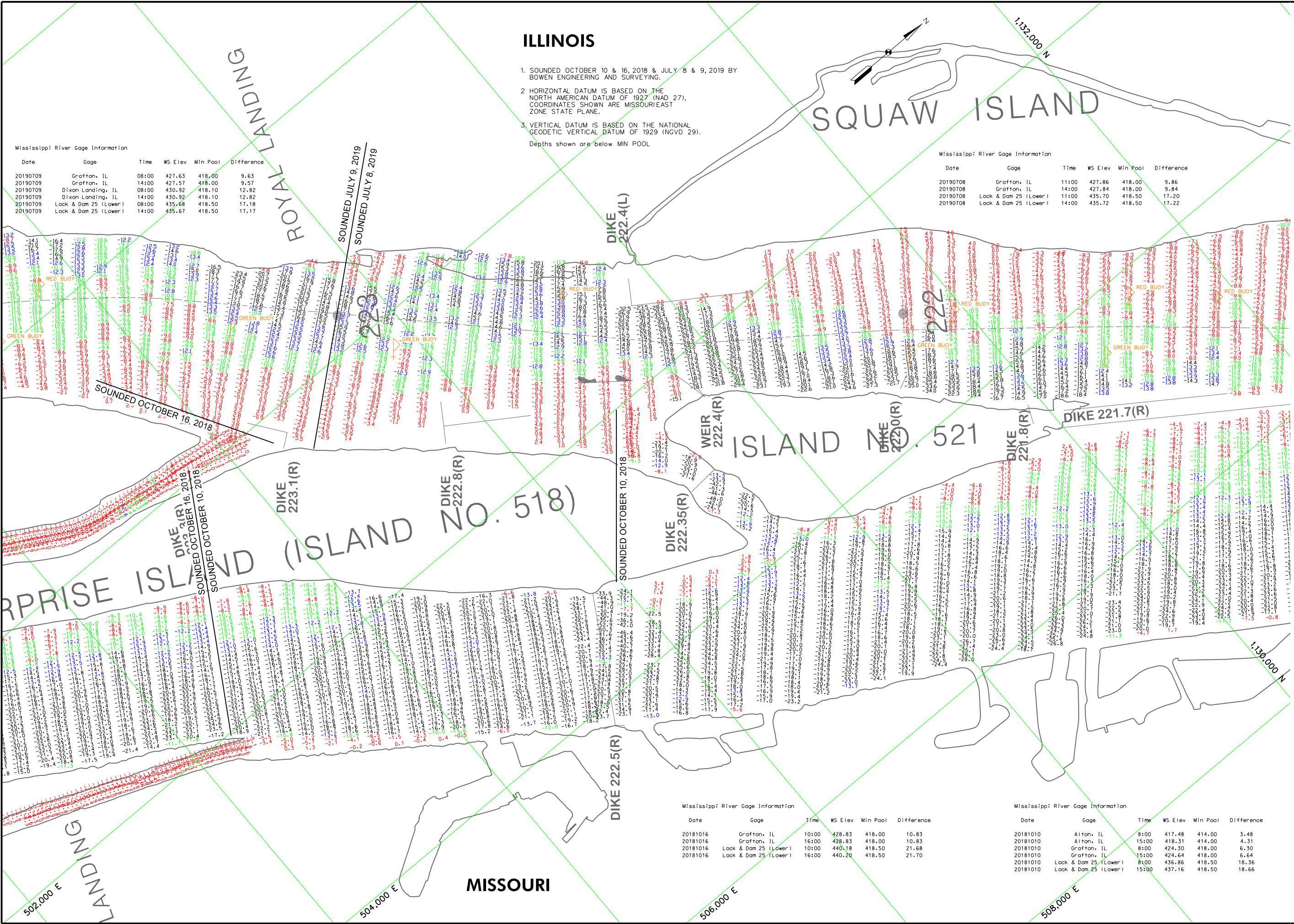
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED ACCURATE FOR THE DATES INDICATED AND NOT FOR OTHER DATES.

HYDROGRAPHIC SURVEYS

MILE: 225.5 - 225.5

PLATE NUMBER

38



ILLINOIS

- 1. SOUNDED OCTOBER 10 & 16, 2018 & JULY 8 & 9, 2019 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).
- Depths shown are below MIN POOL

SQUAW ISLAND

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
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Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
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Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
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Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
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20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
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20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22



GAGE RECORD	
DATE	WATER ELEVATION
10 OCT 2018	20.868(00) 30.1(500)
16 OCT 2018	20.868(00) 30.1(500)
05 JUL 2019	20.868(00) 30.1(500)
09 JUL 2019	20.868(00) 30.1(500)

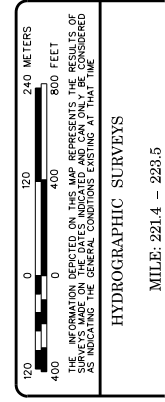
U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Survey Date: OCT 10, 2018 - JULY 9, 2019

Drawn by: X
Reviewed by: X
Submitted: X
Approved: X

Plot Date: 11/11/2019



ILLINOIS

MISSOURI

PERRY ISLAND

MASON ISLAND NO. 525

POINT

ISLAND NO. 525

DIKE 221.3(L)

DIKE 220.7(L)

DIKE 220.4(L)

DIKE 220.2(L)

DIKE 219.8(L)

DIKE 219.5(L)

DIKE 219.3(L)

DIKE 220.6(R)

DIKE 220.4(R)

DIKE 220.1(R)

DIKE 220.0(R)

DIKE 221.0(R)

SOUNDED OCTOBER 10, 2018

SOUNDED JULY 8, 2019

SOUNDED OCTOBER 10, 2018

SOUNDED JULY 8, 2019

SOUNDED MARCH 21, 2019

SOUNDED OCTOBER 10, 2018

SOUNDED MARCH 21, 2019

MISSISSIPPI RIVER GAGE INFORMATION

Date	Gage	Time	WS Elev	Min Pool	Difference
20190321	Alton, IL	8:00	423.26	414.00	9.26
20190321	Alton, IL	14:00	423.37	414.00	9.37
20190321	Grafton, IL	8:00	428.14	418.00	10.14
20190321	Grafton, IL	14:00	428.33	418.00	10.33
20190321	Lock & Dam 25 (Lower)	8:00	438.42	418.50	19.92
20190321	Lock & Dam 25 (Lower)	14:00	438.55	418.50	20.05

MISSISSIPPI RIVER GAGE INFORMATION

Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Alton, IL	8:00	417.48	414.00	3.48
20181010	Alton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66

MISSISSIPPI RIVER GAGE INFORMATION

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
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20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

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Date	Gage	Time	WS Elev	Min Pool	Difference
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MISSISSIPPI RIVER GAGE INFORMATION

Date	Gage	Time	WS Elev	Min Pool	Difference
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MISSISSIPPI RIVER GAGE INFORMATION

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
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MISSISSIPPI RIVER GAGE INFORMATION

Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.	

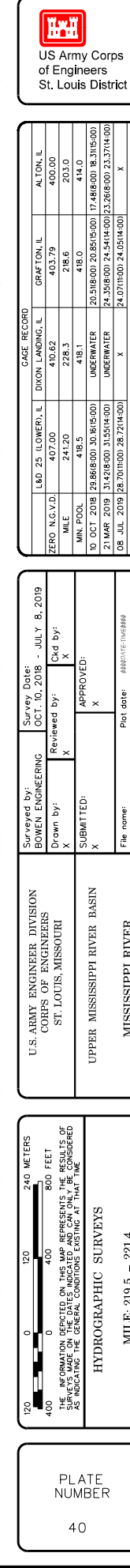
Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190321	Ailton, IL	8:00	423.26	414.00	9.26
20190321	Ailton, IL	14:00	423.37	414.00	9.37
20190321	Grafton, IL	8:00	428.14	418.00	10.14
20190321	Grafton, IL	14:00	428.33	418.00	10.33
20190321	Lock & Dam 25 (Lower)	8:00	438.42	418.50	19.92
20190321	Lock & Dam 25 (Lower)	14:00	438.55	418.50	20.05

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Aiton, IL	8:00	417.48	414.00	3.48
20181010	Aiton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190708	Grafton, IL	11:00	427.86	418.00	9.86
20190708	Grafton, IL	14:00	427.84	418.00	9.84
20190708	Lock & Dam 25 (Lower)	11:00	435.70	418.50	17.20
20190708	Lock & Dam 25 (Lower)	14:00	435.72	418.50	17.22

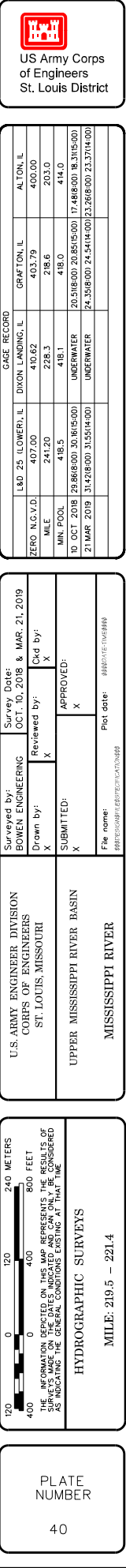
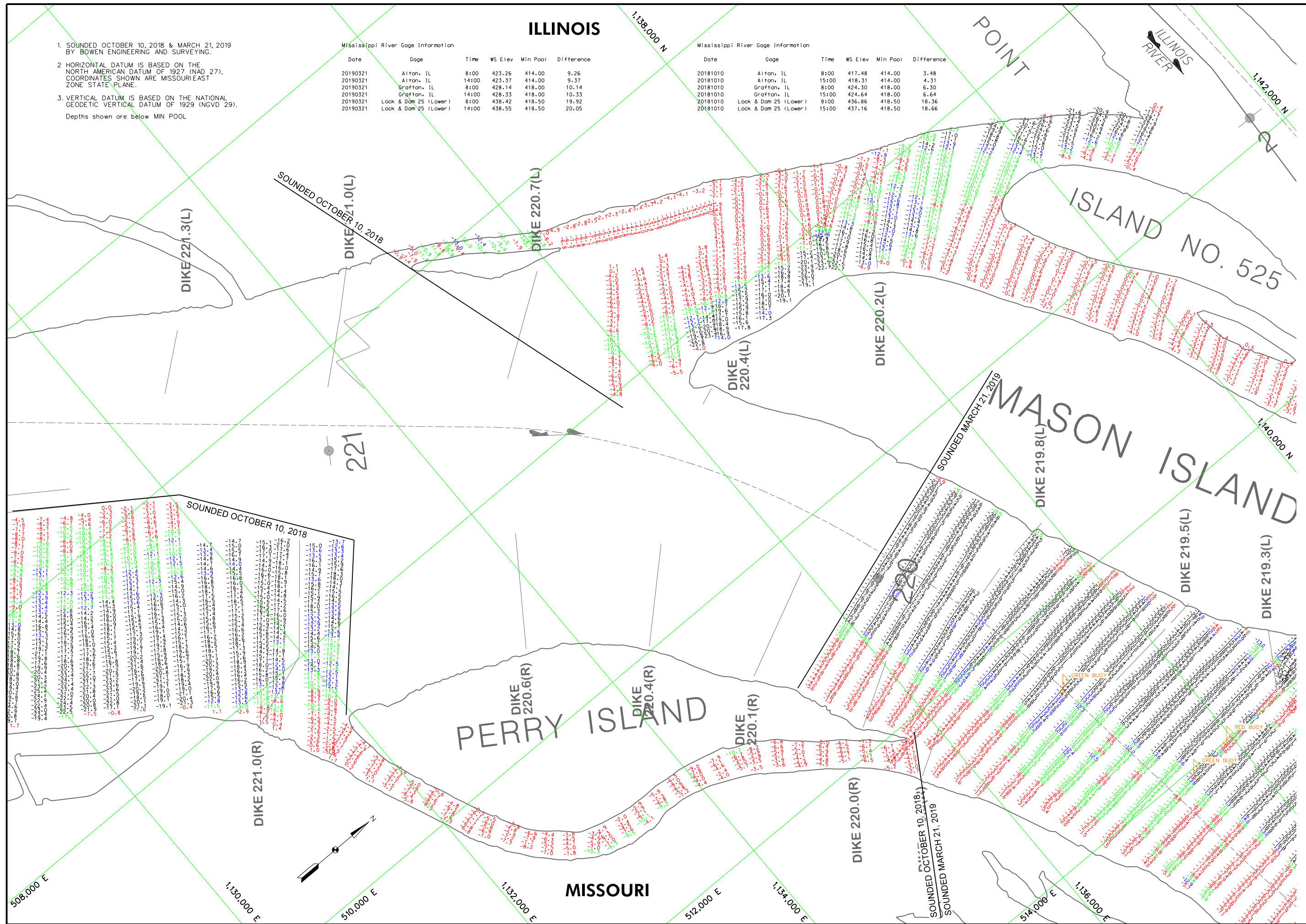
Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190321	Ailton, IL	8:00	423.26	414.00	9.26
20190321	Ailton, IL	14:00	423.37	414.00	9.37
20190321	Grafton, IL	8:00	428.14	418.00	10.14
20190321	Grafton, IL	14:00	428.33	418.00	10.33
20190321	Lock & Dam 25 (Lower)	8:00	438.42	418.50	19.92
20190321	Lock & Dam 25 (Lower)	14:00	438.55	418.50	20.05

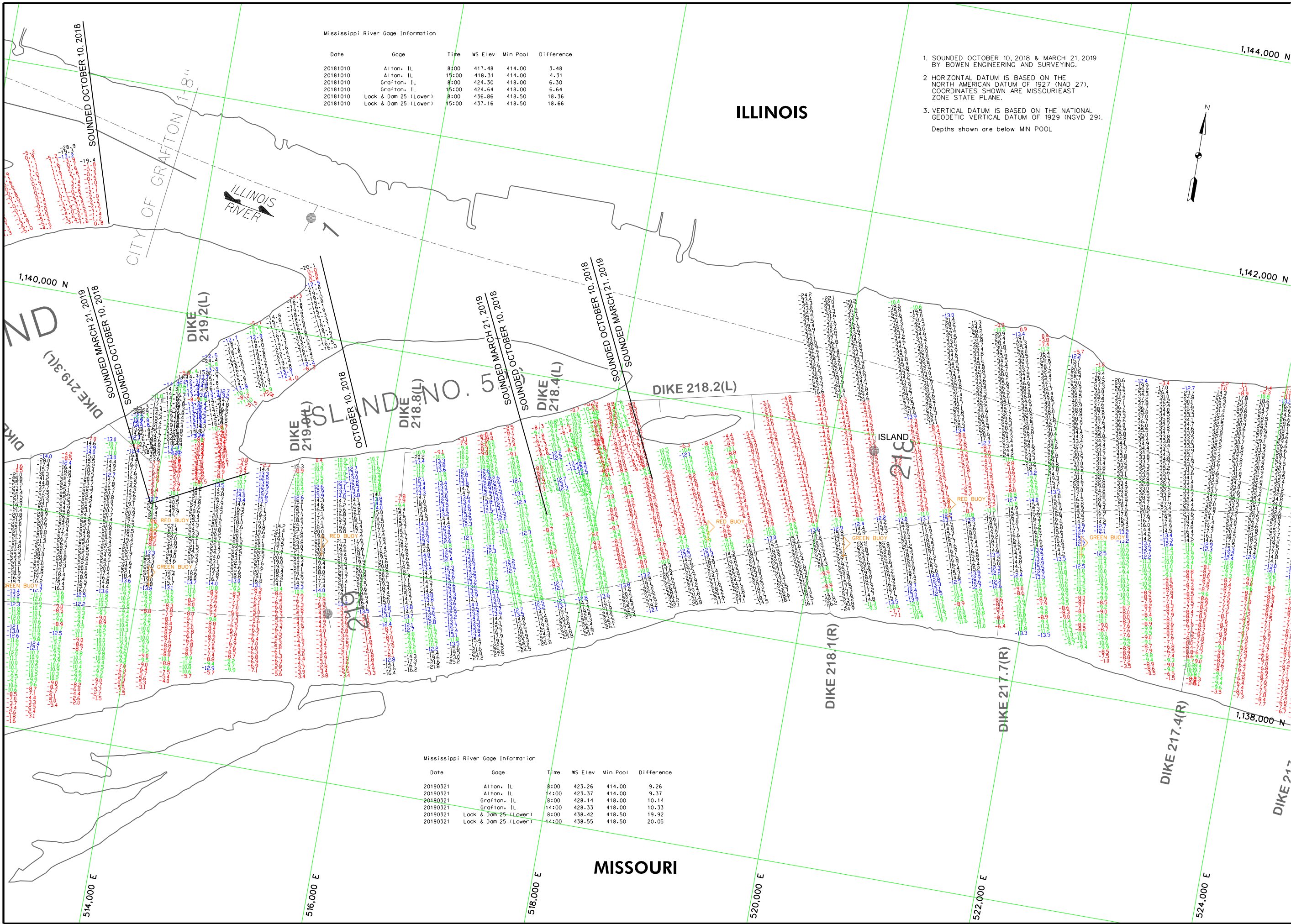
Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Aiton, IL	8:00	417.48	414.00	3.48
20181010	Aiton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66



Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190321	Alton, IL	8:00	423.26	414.00	9.26
20190321	Alton, IL	14:00	423.37	414.00	9.37
20190321	Grafton, IL	8:00	428.14	418.00	10.14
20190321	Grafton, IL	14:00	428.33	418.00	10.33
20190321	Lock & Dam 25 (Lower)	8:00	438.42	418.50	19.92
20190321	Lock & Dam 25 (Lower)	14:00	438.55	418.50	20.05

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Alton, IL	8:00	417.48	414.00	3.48
20181010	Alton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66





Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Alton, IL	8:00	417.48	414.00	3.48
20181010	Alton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66

Mississippi River Gage Information

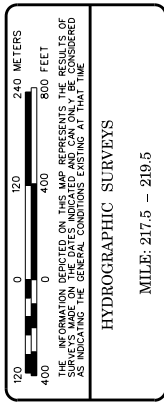
Date	Gage	Time	WS Elev	Min Pool	Difference
20190321	Alton, IL	8:00	423.26	414.00	9.26
20190321	Alton, IL	14:00	423.37	414.00	9.37
20190321	Grafton, IL	8:00	428.14	418.00	10.14
20190321	Grafton, IL	14:00	428.33	418.00	10.33
20190321	Lock & Dam 25 (Lower)	8:00	438.42	418.50	19.92
20190321	Lock & Dam 25 (Lower)	14:00	438.55	418.50	20.05

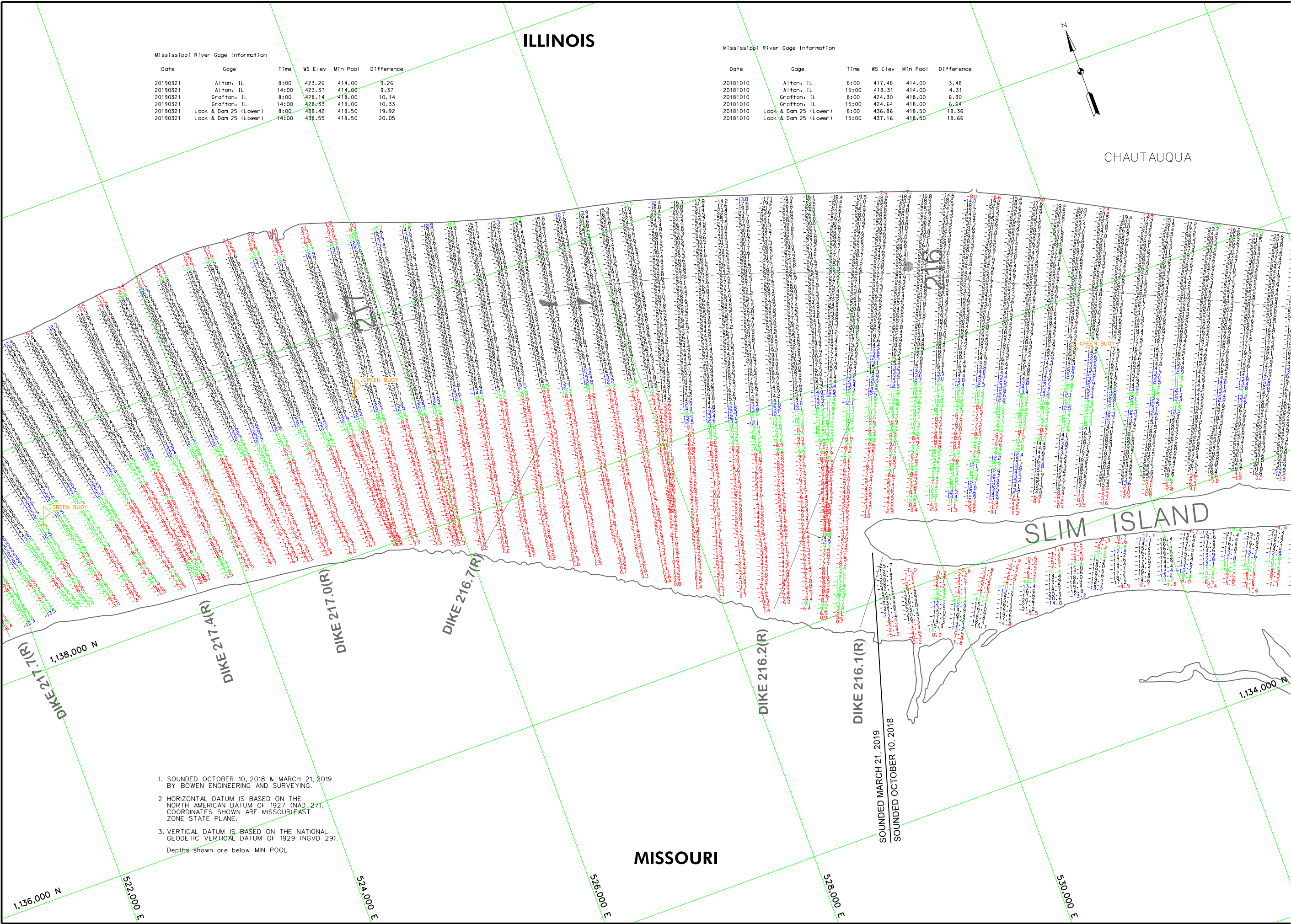
1. SOUNDED OCTOBER 10, 2018 & MARCH 21, 2019 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27). COORDINATES SHOWN ARE MISSOURIEAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29). Depths shown are below MIN POOL



GAGE RECORD		ALTON, IL	GRAFTON, IL	DIXON, ILLINOIS	ALTON, IL
ZERO NGVD		420.00	403.79	218.6	203.0
MILE		241.20	278.3	418.0	414.0
MIN POOL		418.5	418.1	20.518(00)	17.468(00)
TO OCT 2018		20.868(00)	20.815(00)	UNDEWATER	UNDEWATER
21 MAR 2019		31.425(00)	31.514(00)	UNDEWATER	UNDEWATER

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Surveyed by: BOWEN ENGINEERING	Survey Date: OCT 10, 2018 & MAR 21, 2019
UPPER MISSISSIPPI RIVER BASIN	Drawn by: X	Reviewed by: X
MISSISSIPPI RIVER	SUBMITTED: X	APPROVED: X
	File Name: PROJECT/DATE/LOCATION	Plot Date: 8/8/2019





Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190321	Alton, IL	8:00	423.26	414.00	9.26
20190321	Alton, IL	14:00	423.37	414.00	9.37
20190321	Grafton, IL	8:00	428.14	418.00	10.14
20190321	Grafton, IL	14:00	428.33	418.00	10.33
20190321	Lock & Dam 25 (Lower)	8:00	436.42	418.50	19.92
20190321	Lock & Dam 25 (Lower)	14:00	436.55	418.50	20.05

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Alton, IL	8:00	417.48	414.00	3.48
20181010	Alton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66

1. SOUNDED OCTOBER 10, 2018 & MARCH 21, 2019 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). Depths shown are below MIN POOL



US Army Corps
of Engineers
St. Louis District

GAGE RECORD		ALTON, IL	GRAFTON, IL	DIXON, ILLINOIS	LOCK & DAM 25, ILLINOIS
ZERO	NGVD	420.00	403.79	420.00	420.00
MIN	ELEV	241.20	218.6	218.3	218.3
MIN	POOL	418.5	418.0	418.1	418.1
TO OCT 2018	20.868(00)	20.868(00)	17.468(00)	17.468(00)	17.468(00)
21 MAR 2019	31.425(00)	31.425(00)	24.356(00)	24.356(00)	24.356(00)

Surveyed by: BOWEN ENGINEERING	Survey Date: OCT 10, 2018 & MAR 21, 2019
Drawn by: X	Reviewed by: X
Submitted: X	Approved: X
File Name: PROJECT/ESTIMATE/DATE	
Plot Date: 8/8/2019	

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 CAN BE CONSIDERED UNRELIABLE FOR OTHER PURPOSES WITHOUT FURTHER SURVEYING.

HYDROGRAPHIC SURVEYS

MILE: 215.4 - 217.5

PLATE
NUMBER
42

ILLINOIS

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190321	Alton, IL	8:00	423.26	414.00	9.26
20190321	Alton, IL	14:00	423.37	414.00	9.37
20190321	Grafton, IL	8:00	428.14	418.00	10.14
20190321	Grafton, IL	14:00	428.33	418.00	10.33
20190321	Lock & Dam 25 (Lower)	8:00	438.42	418.50	19.92
20190321	Lock & Dam 25 (Lower)	14:00	438.55	418.50	20.05

SOUNDED MARCH 21, 2019
SOUNDED MARCH 20, 2019

SOUNDED MARCH 20, 2019

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190320	Alton, IL	8:00	422.51	414.00	8.51
20190320	Alton, IL	14:00	422.74	414.00	8.74
20190320	Grafton, IL	8:00	427.32	418.00	9.32
20190320	Grafton, IL	14:00	427.56	418.00	9.56

ELSAH

1. SOUNDED OCTOBER 10, 2018 & MARCH 20 & 21, 2019 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).
- Depths shown are below MIN POOL

Depths shown are below MIN POOL

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Alton, IL	8:00	417.48	414.00	3.48
20181010	Alton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.33	418.00	6.33
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66

SOUNDED OCTOBER 10, 2018

~~SOUNDED OUT~~

DIKE 214.7(R)

~~LUESSE LAKE~~

MISSOURI

SOUNDED MARCH 20, 2019
SOUNDED OCTOBER 10, 2018

SOUNDED OCTOBER 10, 2018

~~WANSCH VANDING~~

WEBER
LAKE

1,134,000 N

US Army Corps
of Engineers
St. Louis District

CAGE RECORD				
	1 & D 25 (LOW) IL	DIXON LANDING, IL	GRAFTON, IL	ALTON, IL
ZERO N.G.V.D.	407.00	410.62	403.79	400.00
M.E.	241.20	228.3	218.6	203.0
MIN. POOL	418.5	418.1	418.0	414.0
10 OCT 2018	29.86 (E-00) 30.16 (E-00)	UNDERWATER	20.51 (E-00) 20.55 (E-00)	17.4 (E-00) 18.3 (E-00)
20 MAR 2019	x	x	23.53 (E-00) 23.71 (E-00)	22.51 (E-00) 22.74 (E-00)
21 MAR 2019	31.55 (E-00)	UNDERWATER	24.34 (E-00) 23.68 (E-00)	23.73 (E-00)
21 MAR 2019	31.42 (E-00)			

Surveyed by: BOWEN ENGINEERING	Survey Date: OCT. 10, 2018 - MAR. 21, 2019	
Drawn by: X	Reviewed by: X	Chk by: X
SUBMITTED: X	APPROVED: X	
File name:	Plot date: 00000000000000000000	

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 CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

MILE: 213.4 - 215.4

PLATE
NUMBER

4

1. SOUNDED OCTOBER 10, 2018 & MARCH 20, 2019
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).
Depths shown are below MIN POOL

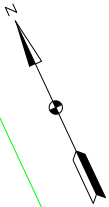
ILLINOIS

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181010	Alton, IL	8:00	417.48	414.00	3.48
20181010	Alton, IL	15:00	418.31	414.00	4.31
20181010	Grafton, IL	8:00	424.30	418.00	6.30
20181010	Grafton, IL	15:00	424.64	418.00	6.64
20181010	Lock & Dam 25 (Lower)	8:00	436.86	418.50	18.36
20181010	Lock & Dam 25 (Lower)	15:00	437.16	418.50	18.66

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190320	Alton, IL	8:00	422.51	414.00	8.51
20190320	Alton, IL	14:00	422.74	414.00	8.74
20190320	Grafton, IL	8:00	427.32	418.00	9.32
20190320	Grafton, IL	14:00	427.56	418.00	9.56



US Army Corps
of Engineers
St. Louis District

1" = 240 METERS
0 120 240 METERS
0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF
SURVEYS MADE ON THE DATES INDICATED AND CAN BE CONSIDERED
ACCURATE FOR GENERAL INFORMATION ONLY.

HYDROGRAPHIC SURVEYS

MILE: 211.4 - 213.4

PLATE
NUMBER

44

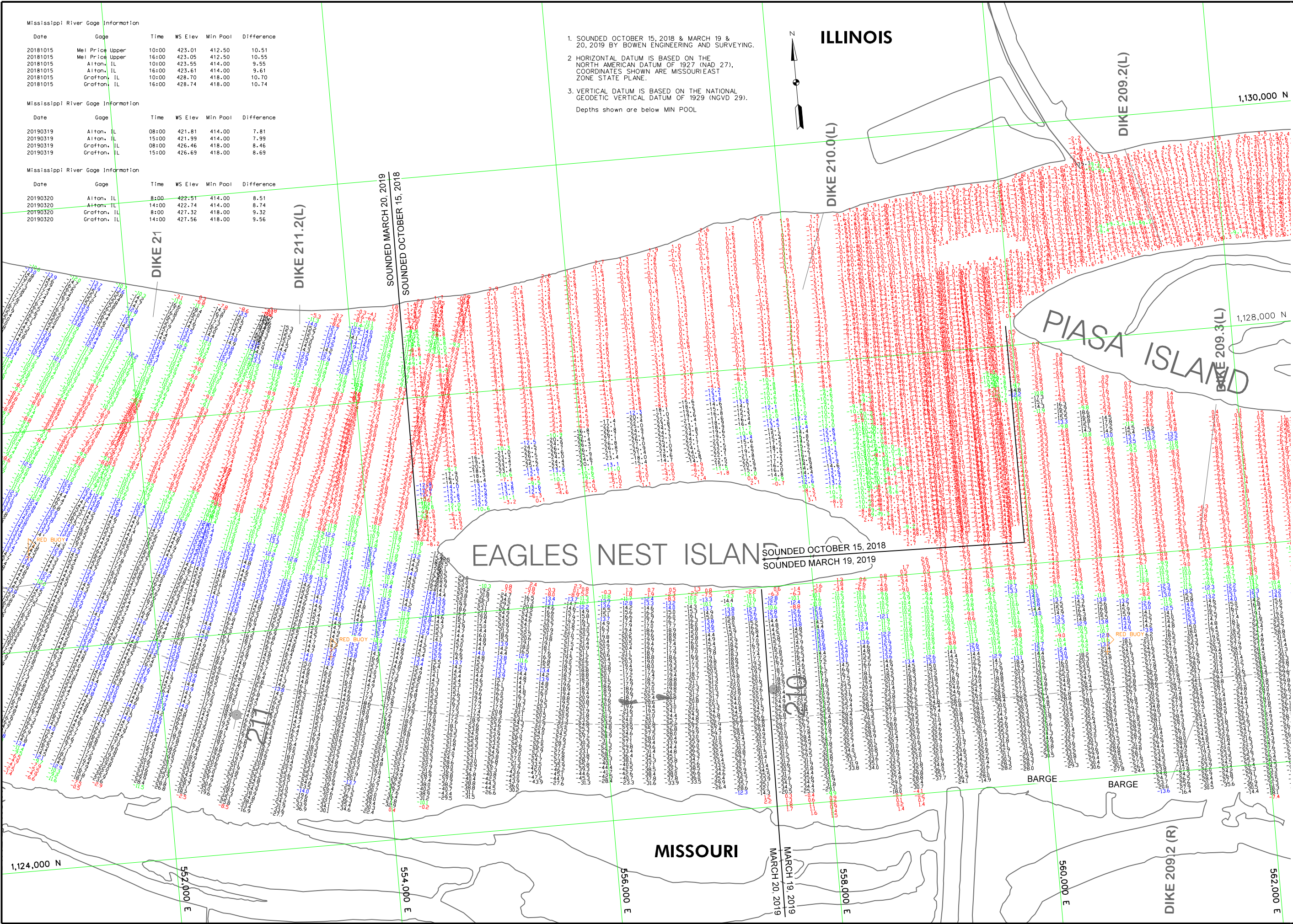
Surveyed by:	Survey Date:	Drawn by:	Reviewed by:	Checked by:
BOWEN ENGINEERING	OCT 10, 2018 & MAR 20, 2019	X	X	X

Submitted:	Approved:	Plot Date:
X	X	8/8/2019

File Name: PROJECT/211.4-213.4

U.S. ARMY ENGINEER DIVISION	ST. LOUIS, MISSOURI
UPPER MISSISSIPPI RIVER BASIN	MISSISSIPPI RIVER

L & D 25 (LOWER)	DIXON LANDING, IL	ALTON, IL
410.62	407.00	420.00
218.3	214.2	203.0
418.1	418.0	414.0
20.518(00) 20.815(00) 17.448(00) 18.315(00)	20.518(00) 20.815(00) 17.448(00) 18.315(00)	20.518(00) 20.815(00) 17.448(00) 18.315(00)
20 MAR 2019	X	X



Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181015	Mel Price Upper	10:00	423.01	412.50	10.51
20181015	Mel Price Upper	16:00	423.05	412.50	10.55
20181015	Alton, IL	10:00	423.55	414.00	9.55
20181015	Alton, IL	16:00	423.61	414.00	9.61
20181015	Grafton, IL	10:00	428.70	418.00	10.70
20181015	Grafton, IL	16:00	428.74	418.00	10.74

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190319	Alton, IL	08:00	421.81	414.00	7.81
20190319	Alton, IL	15:00	421.99	414.00	7.99
20190319	Grafton, IL	08:00	426.46	418.00	8.46
20190319	Grafton, IL	15:00	426.69	418.00	8.69

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190320	Alton, IL	8:00	422.51	414.00	8.51
20190320	Alton, IL	14:00	422.74	414.00	8.74
20190320	Grafton, IL	8:00	427.32	418.00	9.32
20190320	Grafton, IL	14:00	427.56	418.00	9.56

1. SOUNDED OCTOBER 15, 2018 & MARCH 19 & 20, 2019 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).
- Depths shown are below MIN POOL



GAGE RECORD					
DIVISION	LANDING	IL	GRAFTON, IL	ALTON, IL	MEL PRICE UPPER
ZERO	NGVD	420.62	403.79	400.00	395.48
	MILE	228.3	218.6	203.0	201.1
	MIN POOL	418.0	418.0	414.0	412.5
15 OCT 2018		X	24.910/007 24.981/001	23.581/000 23.816/001	21.531/000 21.516/001
19 MAR 2019		X	22.618/007 22.981/001	21.816/000 21.991/001	X
20 MAR 2019		X	23.538/007 23.714/001	22.516/000 22.714/001	X

U.S. ARMY ENGINEER DIVISION		SURVEY DATA		APPROVED	
CORPS OF ENGINEERS		BOWEN ENGINEERING		ST. LOUIS, MISSOURI	
UPPER MISSISSIPPI RIVER BASIN		DRAWN BY		REVIEWED BY	
MISSISSIPPI RIVER		SUBMITTED		X	
		FILE NAME		PLOT DATE	
		BOWEN ENGINEERING		BOWEN ENGINEERING	

HYDROGRAPHIC SURVEYS	
MILE: 209.2 - 211.4	

PLATE NUMBER
45

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20181015	Mel Price Upper	10:00	423.01	412.50	10.51
20181015	Mel Price Upper	16:00	423.05	412.50	10.55
20181015	Alton, IL	10:00	423.55	414.00	9.55
20181015	Alton, IL	16:00	423.61	414.00	9.61
20181015	Grafton, IL	10:00	428.70	418.00	10.70
20181015	Grafton, IL	16:00	428.74	418.00	10.74

1. SOUNDED OCTOBER 15, 2018 & MARCH 19, 2019 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).
- Depths shown are below MIN POOL

ILLINOIS

SOUNDED OCTOBER 15, 2018
SOUNDED MARCH 19, 2019

MOTOR BOX

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190319	Alton, IL	08:00	421.81	414.00	7.81
20190319	Alton, IL	15:00	421.99	414.00	7.99
20190319	Grafton, IL	08:00	426.46	418.00	8.46
20190319	Grafton, IL	15:00	426.69	418.00	8.69



GAGE RECORD	
DIXON LANDING, IL	GRAFTON, IL
ZERO NGVD	420.62
MILE	228.3
MIN POOL	418.0
15 OCT 2018	X
19 MAR 2019	X

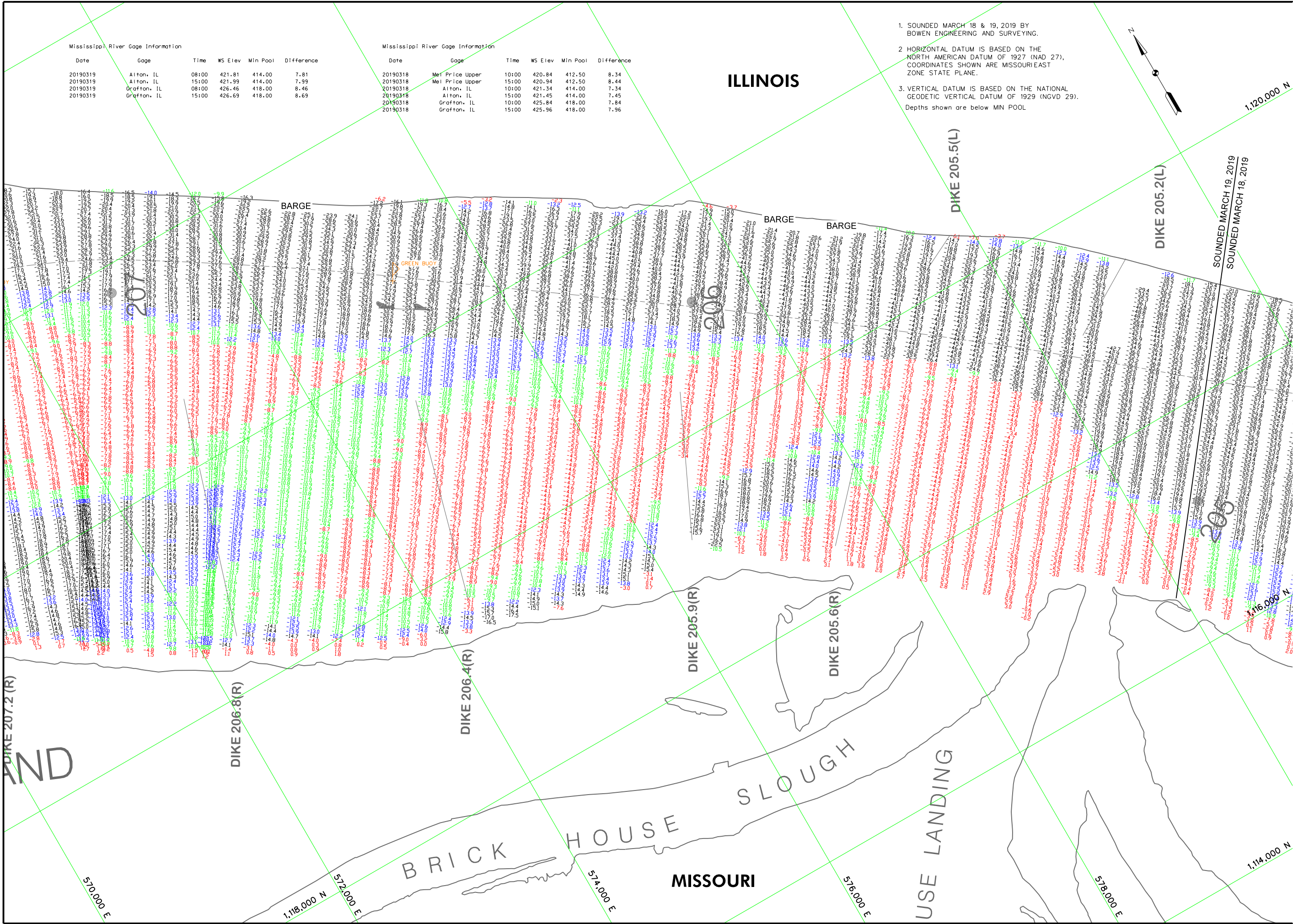
Surveyed by	Survey Date	Reviewed by	Checked by
BOWEN ENGINEERING	OCT 15, 2018 & MAR 19, 2019	X	X
Drawn by			
SUBMITTED:			
APPROVED:			
File Name:	PROJECT/STATE/DATE	Plot Date:	REVISION/DATE

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

120 400 800 1200 2400 METERS
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES NOTICED AND CAN BE CONSIDERED UNRELIABLE FOR GENERAL PURPOSES AND NOT FOR NAVIGATION.
HYDROGRAPHIC SURVEYS
MILE: 207.1 - 209.2

PLATE NUMBER
46





Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190319	Alton, IL	08:00	421.81	414.00	7.81
20190319	Alton, IL	15:00	421.99	414.00	7.99
20190319	Grafton, IL	08:00	426.46	418.00	8.46
20190319	Grafton, IL	15:00	426.69	418.00	8.69

Mississippi River Gage Information

Date	Gage	Time	WS Elev	Min Pool	Difference
20190318	Mel Price Upper	10:00	420.84	412.50	8.34
20190318	Mel Price Upper	15:00	420.94	412.50	8.44
20190318	Alton, IL	10:00	421.34	414.00	7.34
20190318	Alton, IL	15:00	421.45	414.00	7.45
20190318	Grafton, IL	10:00	425.84	418.00	7.84
20190318	Grafton, IL	15:00	425.96	418.00	7.96

1. SOUNDED MARCH 18 & 19, 2019 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). Depths shown are below MIN POOL

US Army Corps of Engineers
St. Louis District

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

170 400 800 1200 METERS

0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES NOTICED AND CAN BE CONSIDERED ACCURATE FOR GENERAL PURPOSES ONLY.

HYDROGRAPHIC SURVEYS

MILE: 205.0 - 207.1

Survey Date: MARCH 18 & 19, 2019

Drawn by: X

Reviewed by: X

Submitted: X

Approved: X

Plot Date: 03/19/2019

File Name: 205.0-207.1.dwg

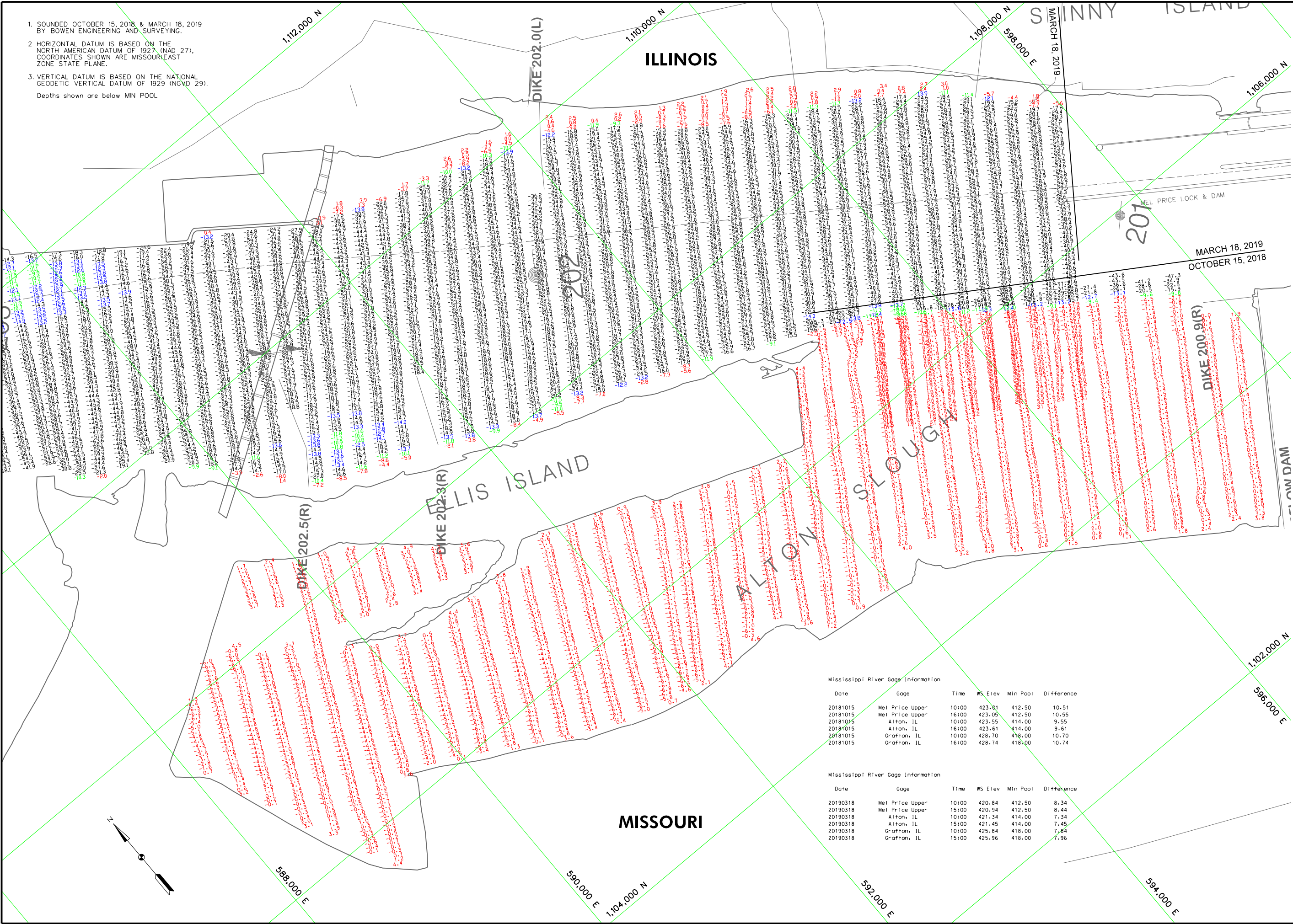
DATE RECORD

DIVISION	LANDING	IL	GRAFTON	IL	ALTON	IL	MEL PRICE	UPPER
ZERO	N.G.V.D.	420.62	420.79	218.6	203.0	201.1	395.48	
MILE		228.3	218.6	418.0	414.0	412.5		
MIN POOL		418.1	418.0	418.0	414.0	412.5		
18 MAR 2019		X	22,051,000	22,115,000	21,341,000	21,445,000	25,361,000	23,461,000
19 MAR 2019		X	22,051,000	22,115,000	21,341,000	21,445,000	25,361,000	23,461,000

PLATE NUMBER

47

1. SOUNDED OCTOBER 15, 2018 & MARCH 18, 2019
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).
- Depths shown are below MIN POOL



Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20181015	Mel Price Upper	10:00	423.01	412.50	10.51
20181015	Mel Price Upper	16:00	423.05	412.50	10.55
20181015	Alton, IL	10:00	423.55	414.00	9.55
20181015	Alton, IL	16:00	423.61	414.00	9.61
20181015	Grafton, IL	10:00	428.70	418.00	10.70
20181015	Grafton, IL	16:00	428.74	418.00	10.74

Mississippi River Gage Information					
Date	Gage	Time	WS Elev	Min Pool	Difference
20190318	Mel Price Upper	10:00	420.84	412.50	8.34
20190318	Mel Price Upper	15:00	420.94	412.50	8.44
20190318	Alton, IL	10:00	421.34	414.00	7.34
20190318	Alton, IL	15:00	421.45	414.00	7.45
20190318	Grafton, IL	10:00	425.84	418.00	7.84
20190318	Grafton, IL	15:00	425.96	418.00	7.96



GAGE RECORD							
	DIXON LANDING, IL	GRAFTON, IL	ALTON, IL	MEL PRICE (UPPER)			
ZERO N.G.V.D.	420.62	403.79	400.00	395.48			
MILE	228.3	218.6	203.0	201.1			
MIN. POOL	418.1	418.0	414.0	412.5			
15 OCT 2018	X						
18 MAR 2019	X						

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: OCT 15, 2018 & MAR 18, 2019
Drawn by: X	Reviewed by: X
Submitted: X	Approved: X
UPPER MISSISSIPPI RIVER BASIN	MISSISSIPPI RIVER
File Name: PROJECT/ESTIMATE/DATE	Plot Date: 8/8/2019

