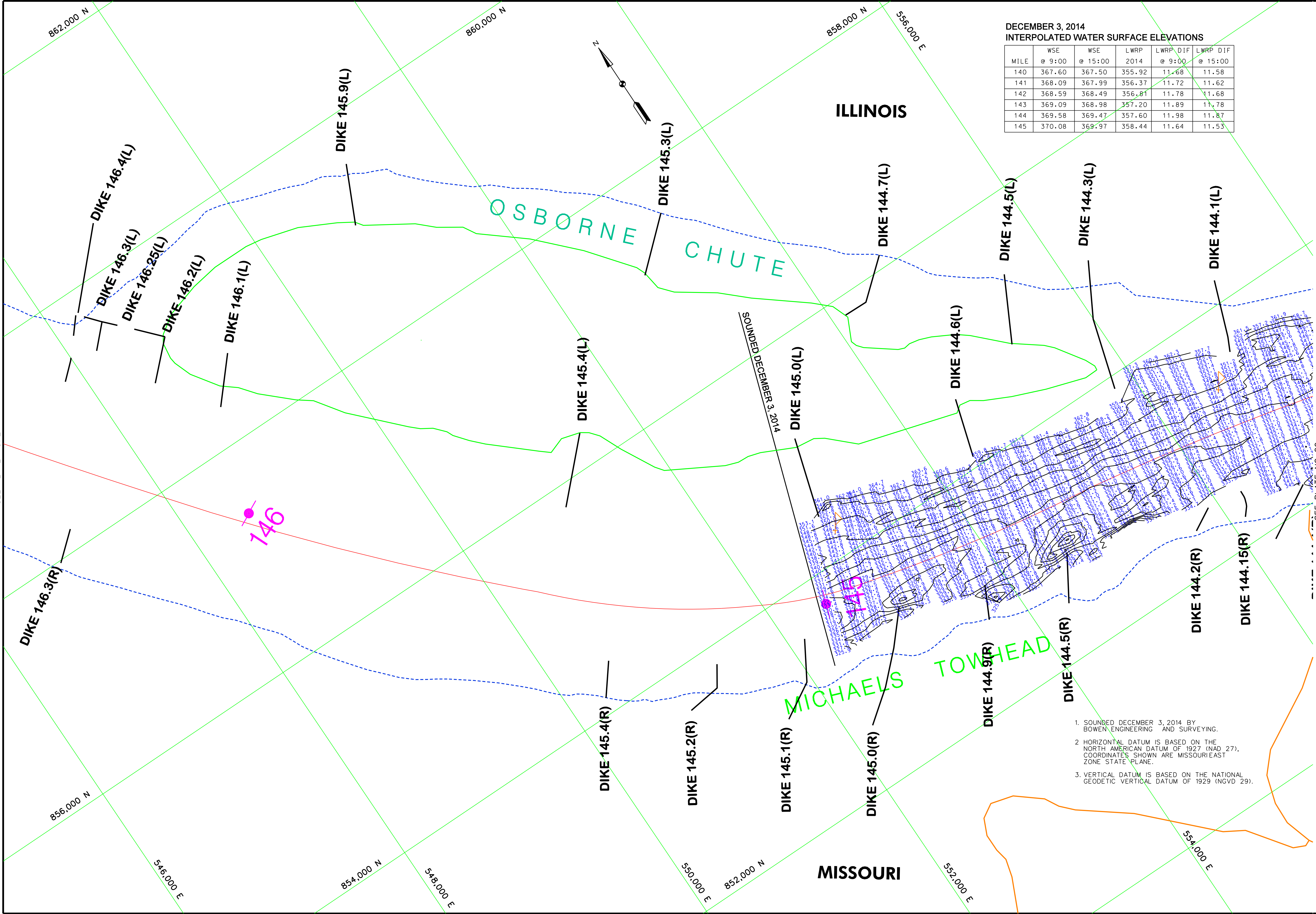




DECEMBER 3, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 15:00
140	367.60	367.50	355.92	11.68	11.58
141	368.09	367.99	356.37	11.72	11.62
142	368.59	368.49	356.81	11.78	11.68
143	369.09	368.98	357.20	11.89	11.78
144	369.58	369.47	357.60	11.98	11.87
145	370.08	369.97	358.44	11.64	11.53

US Army Corps
of Engineers
St. Louis District

CAGE RECORD		ST. LOUIS MO	
BISHOPS LANDING, MO	CHESTER IL	BRICKY'S LANDING, MO	ST. LOUIS MO
334.11	334.05	337.78	379.84
300.8	309.9	335.0	379.6
335.36	340.85	334.19	378.74
X	10.16/9400 10.10/1500	7.83/9400 7.74/1500	7.52/9400 7.33/1500
03 DEC 2014			

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		Survey Data DECEMBER 3, 2014	
Drawn by:	Ckd by:	Reviewed by:	
X	X	X	
SUBMITTED:		APPROVED:	
X	X	X	
Plot date:		File name:	
		##ROUTE##	
		##PROJECT##	

120 400 800 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 AS VALIDATING THE GENERAL CONDITIONS EXISTING ON THAT DATE.

HYDROGRAPHIC SURVEYS

RIVER MILES 144.2 - 146.2

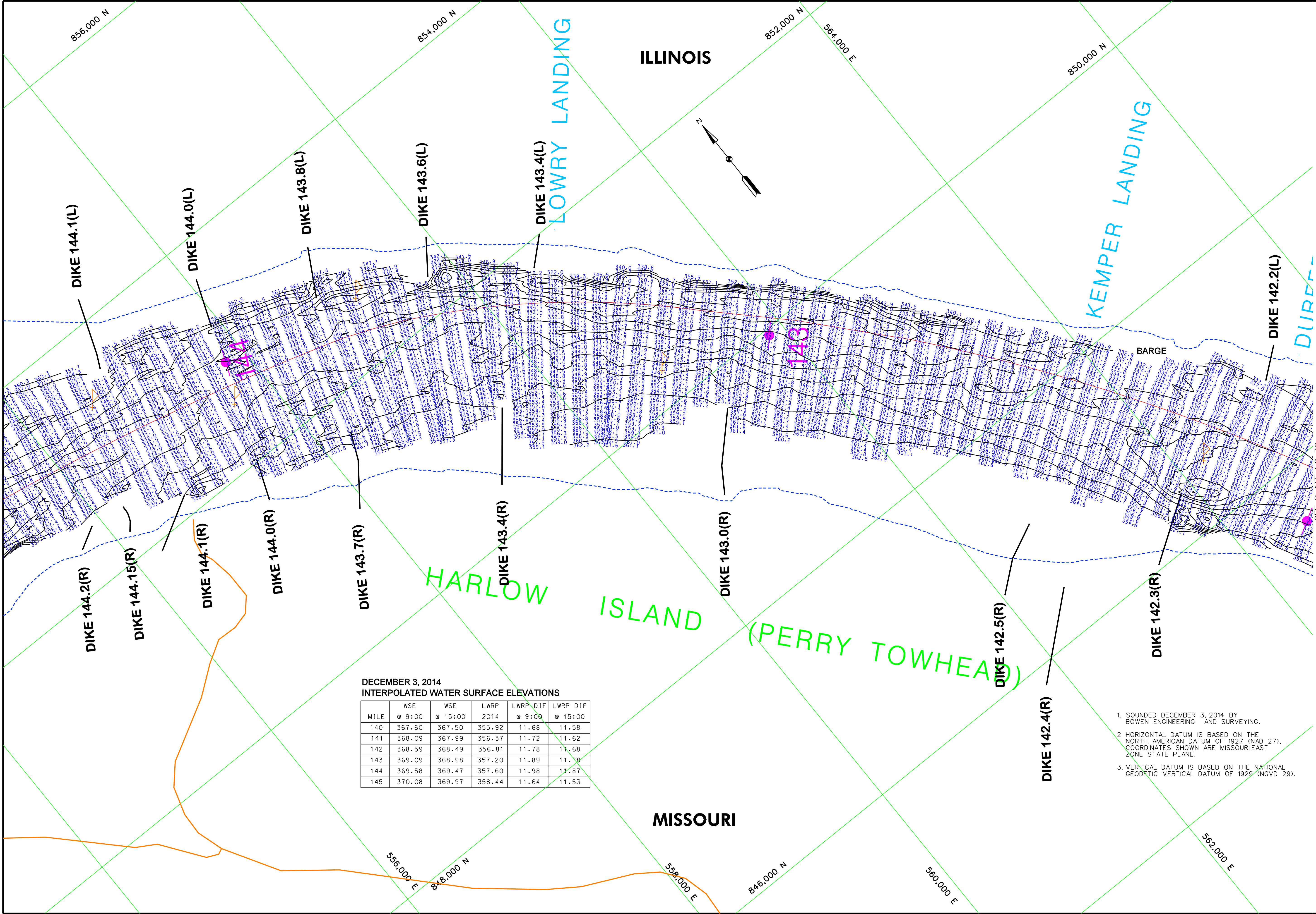
PLATE
NUMBER

28

1. SOUNDED DECEMBER 3, 2014, 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).



DECEMBER 3, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 15:00
140	367.60	367.50	355.92	11.68	11.58
141	368.09	367.99	356.37	11.72	11.62
142	368.59	368.49	356.81	11.78	11.68
143	369.09	368.98	357.20	11.89	11.78
144	369.58	369.47	357.60	11.98	11.87
145	370.08	369.97	358.44	11.64	11.53

1. SOUNDED DECEMBER 3, 2014 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

BISHOPS LANDING, MO	CHESTER, IL	BRICKLEY'S LANDING, MO	ST. LOUIS, MO
334.31	341.05	357.78	379.84
MILE	300.8	300.0	370.6
LWRP 2014	335.56	340.85	376.74
03 DEC 2014	X	10.16(9.00) 10.10(15.00)	7.83(9.00) 7.41(15.00)
7.32(9.00) 7.35(15.00)			

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: DECEMBER 3, 2014	Reviewed by: X
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER	Drawn by: X	Approved: X
SUBMITTED: X		
Plot Date: File Name:		

HYDROGRAPHIC SURVEYS

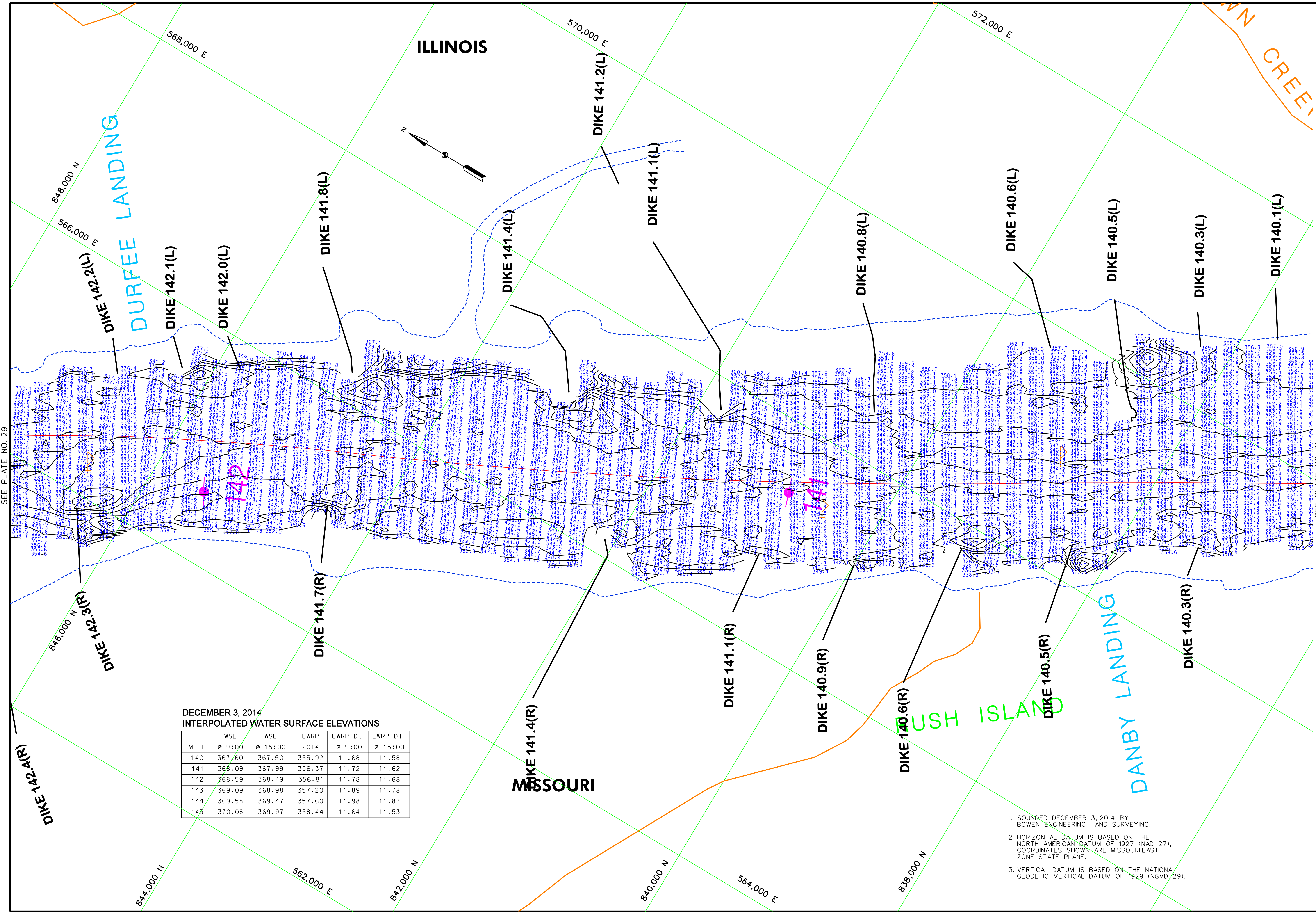
RIVER MILES 142.2 - 144.2

PLATE
NUMBER

29

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 VALIDATING THE GENERAL CONTOUR RESULTS OF A HYDRAULIC SURVEY.



DECEMBER 3, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 15:00
140	367.60	367.50	355.92	11.68	11.58
141	368.09	367.99	356.37	11.72	11.62
142	368.59	368.49	356.81	11.78	11.68
143	369.09	368.98	357.20	11.89	11.78
144	369.58	369.47	357.60	11.98	11.87
145	370.08	369.97	358.44	11.64	11.53

1. SOUNDED DECEMBER 3, 2014 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

BRIDGES LANDING, MO	CHESTER IL	BRIDGES LANDING, MO	ST. LOUIS MO
334.31	341.05	337.78	379.84
300.8	309.0	335.0	379.6
335.56	340.85	334.99	378.74
X	10.16/9.00/10.15/5.00	7.83/9.00/7.41/5.00	7.52/9.00/7.35/5.00

Surveyed by: Bowen Engineering	Survey Date: December 3, 2014	Reviewed by: X
Drawn by: X	Cad by: X	APPROVED: X
SUBMITTED: X		File name: ##PROJECT##

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

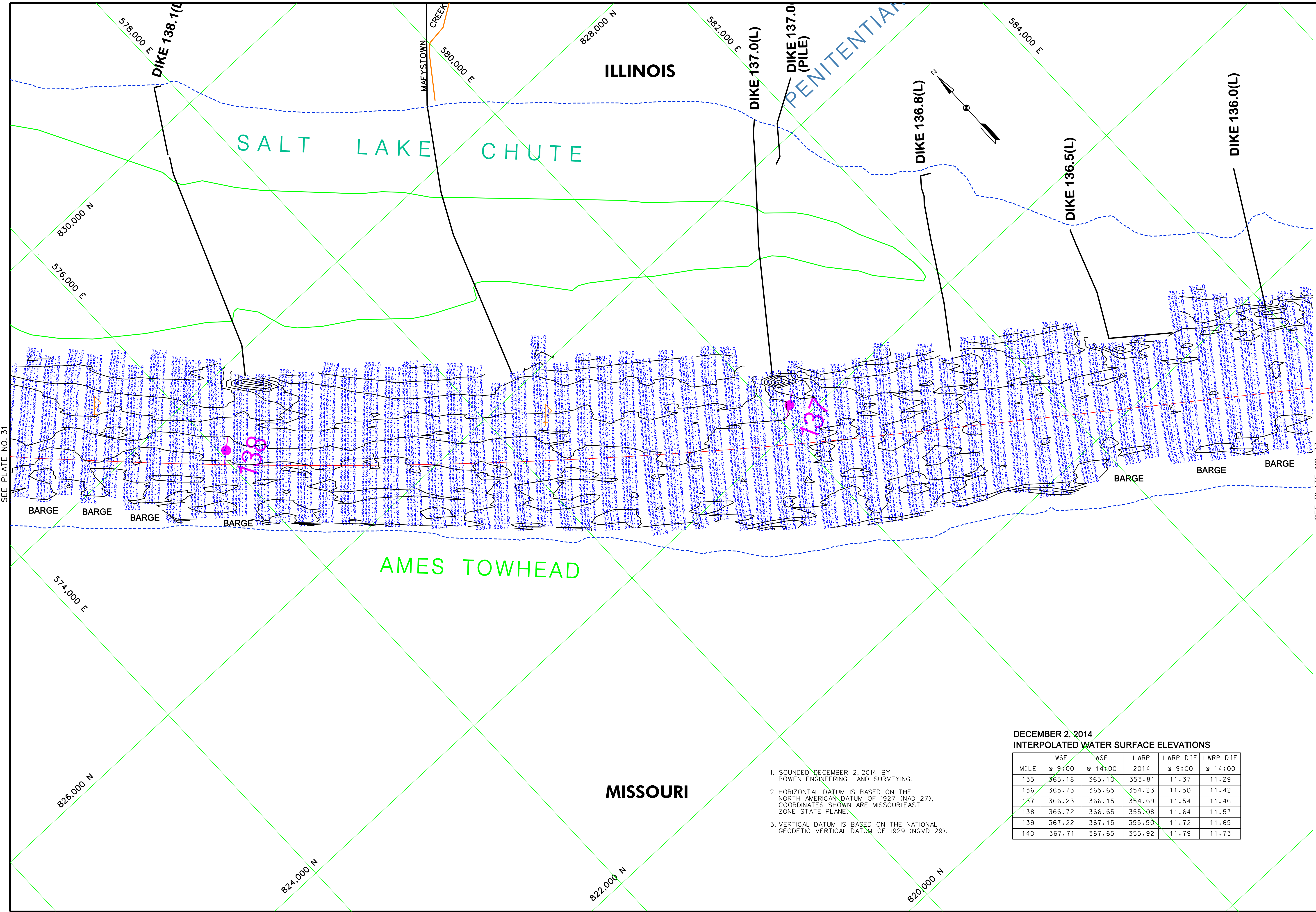
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS

RIVER MILES 140.2 - 142.2

PLATE
NUMBER

30



BISBOPS LANDING, MO	CHESTER IL	BRICKY'S LANDING, MO	ST. LOUIS, MO
334.31	341.05	357.78	379.84
300.8	309.9	336.0	370.6
335.56	340.85	354.19	376.74
X	10,271,900 17,211,140 0	7,961,900 1,811,140 0	7,601,900 1,681,140 0
02 DEC 2014			

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

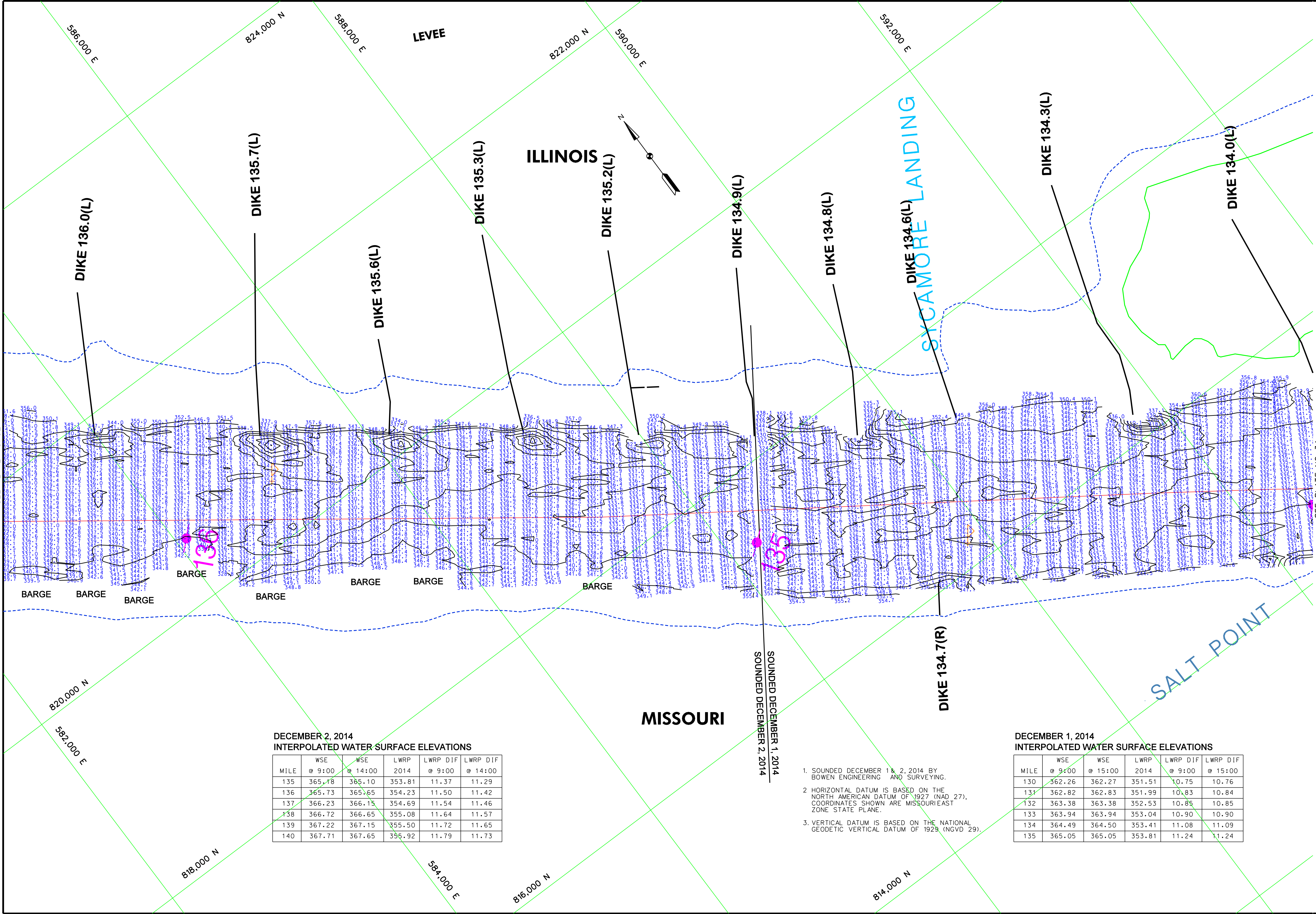
Survey Date: DECEMBER 2, 2014

Drawn by: X
Reviewed by: X

Submitted: X
Approved: X

Plot Date: File Name: ##PROJECT##

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CAGE RECORD		CHESTER, IL	BRECKENRIDGE, MO	ST. LOUIS, MO
BISHOPS LANDING, MO	334.11	334.11	334.11	334.11
ZERO N.G.V.D.	334.11	334.11	334.11	334.11
DATE	01 DEC 2014	01 DEC 2014	01 DEC 2014	01 DEC 2014
DATE	02 DEC 2014	02 DEC 2014	02 DEC 2014	02 DEC 2014

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: 1 & 2, 2014
Drawn by: [Signature]	Reviewed by: [Signature]
Submitted: [Signature]	Approved: [Signature]
Plot Date: [Signature]	File Name: [Signature]

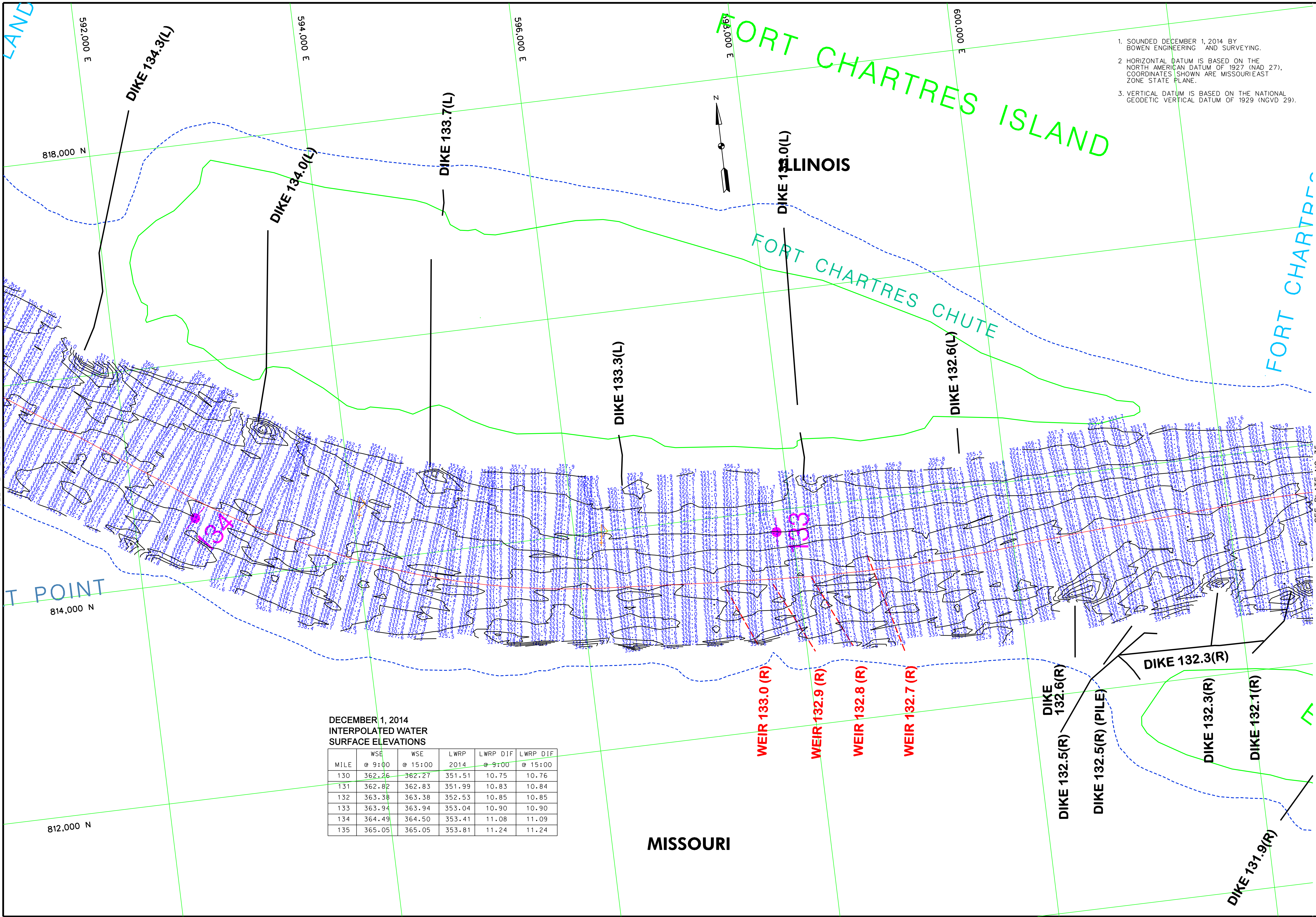
120 0 120 240 METERS

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 VALID FOR THE GENERAL PURPOSES OF NAVIGATION.

HYDROGRAPHIC SURVEYS

RIVER MILES 134.2 - 136.2



DECEMBER 1, 2014 INTERPOLATED WATER SURFACE ELEVATIONS					
MILE	WSE @ 9:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 15:00
130	362.26	362.27	351.51	10.75	10.76
131	362.82	362.83	351.99	10.83	10.84
132	363.38	363.38	352.53	10.85	10.85
133	363.94	363.94	353.04	10.90	10.90
134	364.49	364.50	353.41	11.08	11.09
135	365.05	365.05	353.81	11.24	11.24

1. SOUNDED DECEMBER 1, 2014 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).

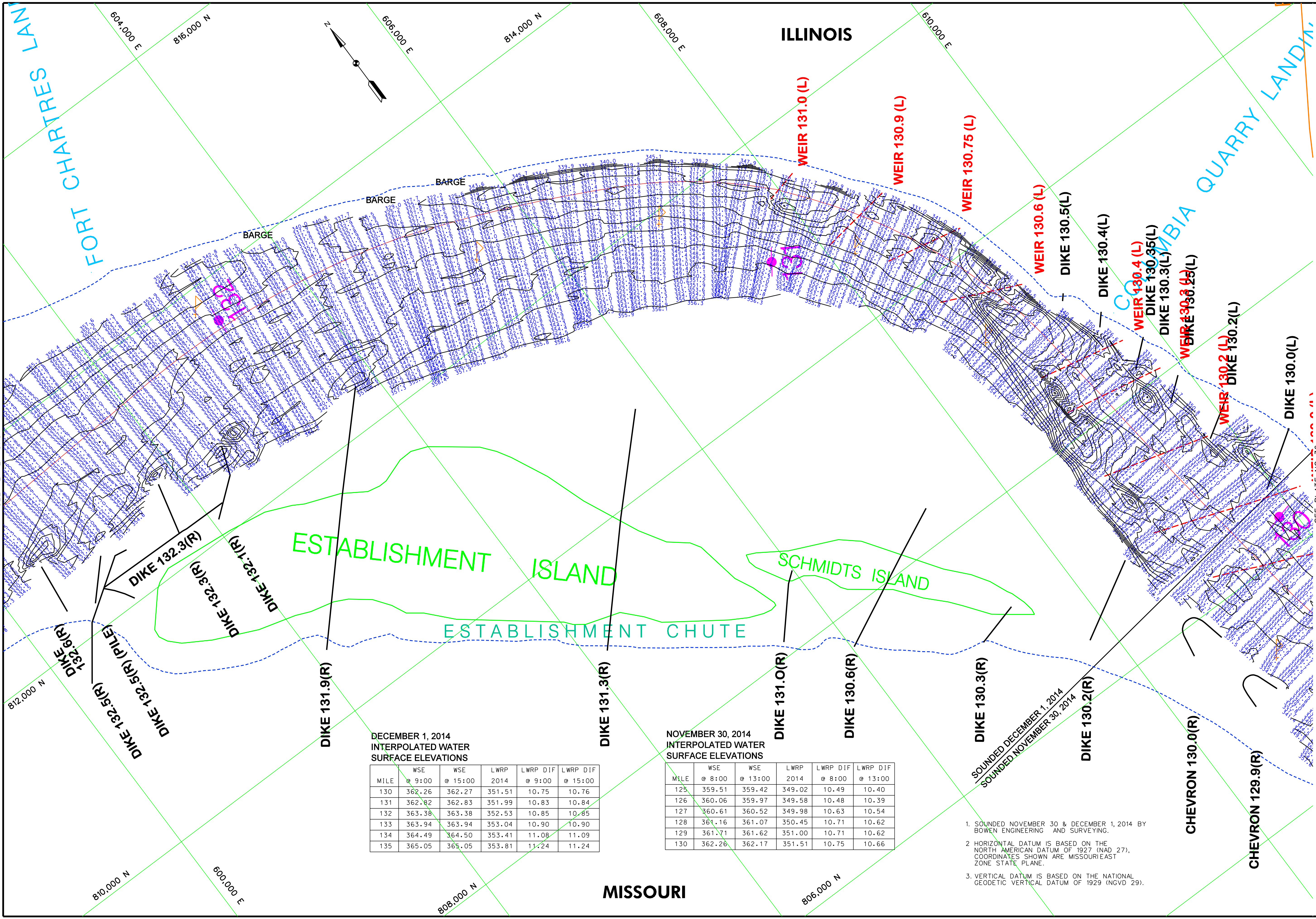


GAGE RECORD		BISHOPS LANDING, MO	CHESTER IL	BRICKLEY'S LANDING, MO	ST. LOUIS, MO
ZERO NGVD		334.31	341.05	357.78	379.84
MILE		300.8	300.9	336.0	370.6
LWRP 2014		335.56	340.85	354.19	376.74
DATE		UNRECORDED	10.00.9.00.10.03.15.00	7.83.9.00.7.83.15.00	X

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		Survey Date DECEMBER 1, 2014	
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER	Drawn by:	Checked by:	Reviewed by:
	X	X	X
	SUBMITTED:	APPROVED:	
	X	X	
Plot Date:		File Name:	
##PROJECT##		##PROJECT##	

HYDROGRAPHIC SURVEYS	
RIVER MILES 132.2 - 134.2	

PLATE NUMBER
34



SEE PLATE NO. 34

SEE PLATE NO. 36

DECEMBER 1, 2014 INTERPOLATED WATER SURFACE ELEVATIONS					
MILE	WSE @ 9:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 15:00
130	362.26	362.27	351.51	10.75	10.76
131	362.82	362.83	351.99	10.83	10.84
132	363.38	363.38	352.53	10.85	10.85
133	363.94	363.94	353.04	10.90	10.90
134	364.49	364.50	353.41	11.08	11.09
135	365.05	365.05	353.81	11.24	11.24

NOVEMBER 30, 2014 INTERPOLATED WATER SURFACE ELEVATIONS					
MILE	WSE @ 8:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 13:00
125	359.51	359.42	349.02	10.49	10.40
126	360.06	359.97	349.58	10.48	10.39
127	360.61	360.52	349.98	10.63	10.54
128	361.16	361.07	350.45	10.71	10.62
129	361.71	361.62	351.00	10.71	10.62
130	362.26	362.17	351.51	10.75	10.66

1. SOUNDED NOVEMBER 30 & DECEMBER 1, 2014 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

CAGE RECORD		CHESTER, IL	BRICKY'S LANDING, MO	ST. LOUIS, MO
ZERO N.G.V.D.	334.11	341.05	357.78	379.84
MILES	300.8	309.9	336.0	379.6
LWRP 2014	335.56	340.85	354.19	376.74
30 NOV 2014	UNRECOVERABLE	10.865/100 13.071/13.000	7.784/100 7.881/13.000	X
01 DEC 2014	UNRECOVERABLE	10.009/100 13.071/13.000	7.331/100 7.331/13.000	X

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: NOV 30 & DEC 1, 2014	
Drawn by: X	Checked by: X	Reviewed by: X
SUBMITTED: X	APPROVED: X	
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER	Plot Date: File Name:	

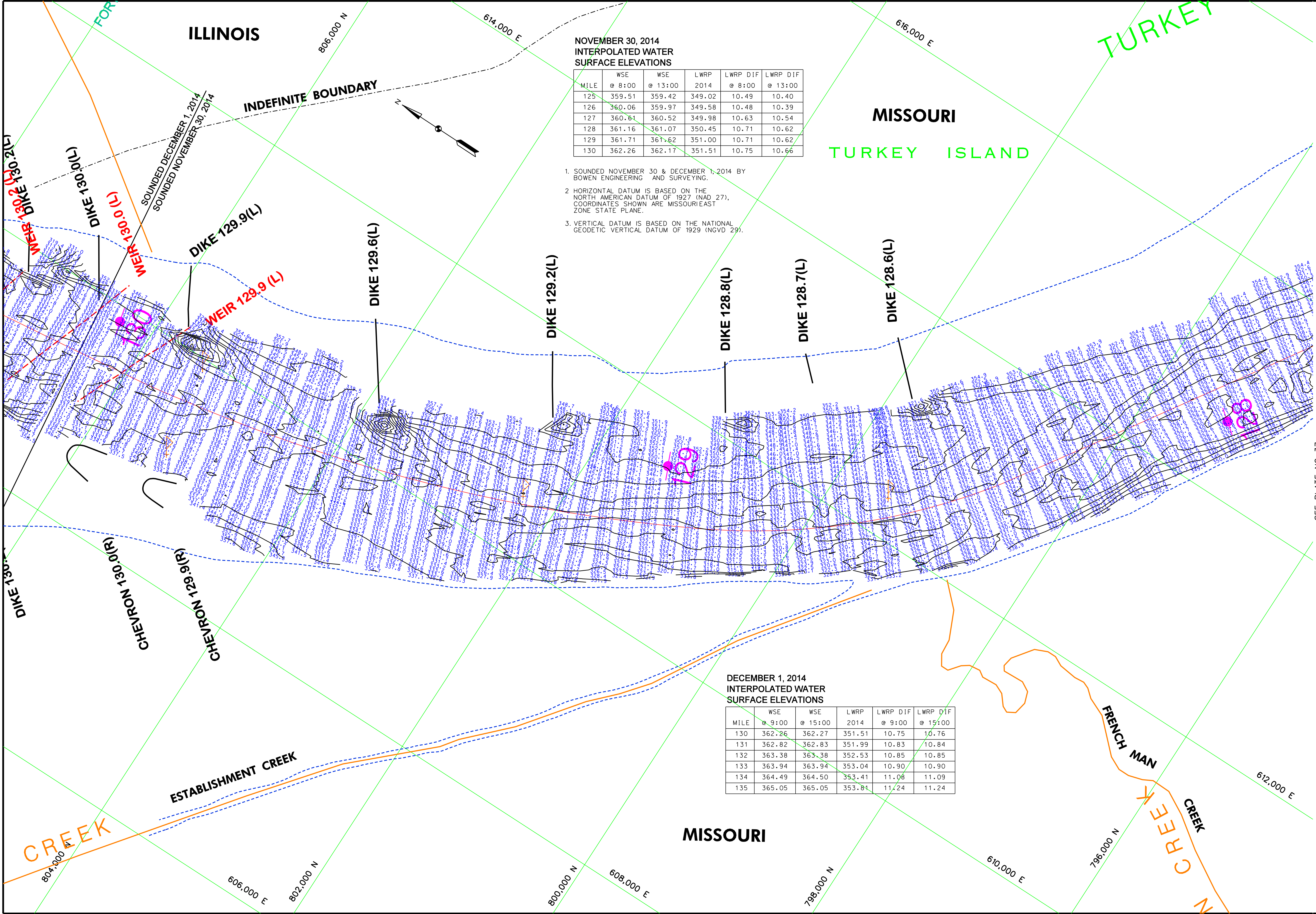
120 0 120 240 METERS
400 0 400 800 FEET

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 LOCATIONS OF FEATURES OF INTEREST.

HYDROGRAPHIC SURVEYS
RIVER MILES 130.0 - 132.2

PLATE
NUMBER

35



NOVEMBER 30, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 13:00
125	359.51	359.42	349.02	10.49	10.40
126	360.06	359.97	349.58	10.48	10.39
127	360.61	360.52	349.98	10.63	10.54
128	361.16	361.07	350.45	10.71	10.62
129	361.71	361.62	351.00	10.71	10.62
130	362.26	362.17	351.51	10.75	10.66

1. SOUNDED NOVEMBER 30 & DECEMBER 1, 2014 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).

DECEMBER 1, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 15:00
130	362.26	362.27	351.51	10.75	10.76
131	362.82	362.83	351.99	10.83	10.84
132	363.38	363.38	352.53	10.85	10.85
133	363.94	363.94	353.04	10.90	10.90
134	364.49	364.50	353.41	11.08	11.09
135	365.05	365.05	353.81	11.24	11.24

US Army Corps
of Engineers
St. Louis District

CAGE RECORD	CHESTER, IL	BRICKLEY'S LANDING, MO	ST. LOUIS, MO
BISHOPS' LANDING, MO	334.11	337.78	379.84
MILE 2014	300.8	309.9	379.6
LWRP 2014	335.56	340.85	376.74
30 NOV 2014	UNRECOVERABLE	10.865/100 12.071/1300	7.784/100 7.881/1500
01 DEC 2014	UNRECOVERABLE	10.009/100 12.037/1500	7.831/100 7.831/1500

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Survey Date: NOV 30 & DEC 1, 2014

Reviewed by: X

Drawn by: X

Submitted: X

Approved: X

Plot Date: ##REV/DATE/NAME##

File Name: ##REV/DATE/NAME/PROJECT/NAME##

HYDROGRAPHIC SURVEYS

RIVER MILES 128.0 - 130.0

PLATE NUMBER

36



GAGE RECORD					
	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO	
ZERO N.C.V.D.	334.11	341.05	357.78	379.94	
MILE	100.8	109.9	136.0	179.6	
LWRP 2014	335.56	340.65	354.19	376.74	
UNRECOVERABLE	10.86(200)	10.37(150)	7.78(600)	7.69(13.00)	X
30 NOV 2014					

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Surveyed by: BOWEN ENGINEERING		Survey Date: NOVEMBER 30, 2014	
	Drawn by: X	Ckd by: X	Reviewed by: X	
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER	SUBMITTED: X		APPROVED: X	
	Plot date: File name: #000000METUE0000# #000000METUE0000#			

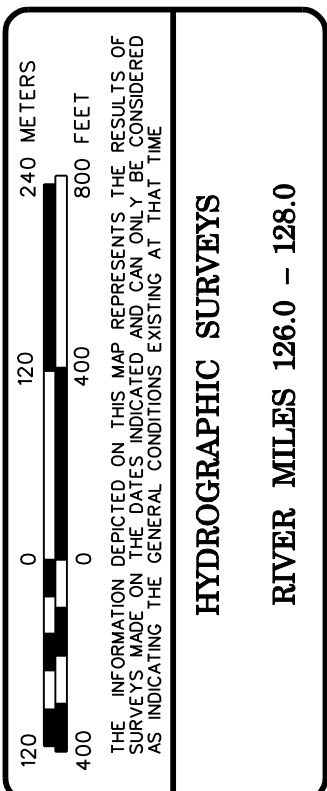
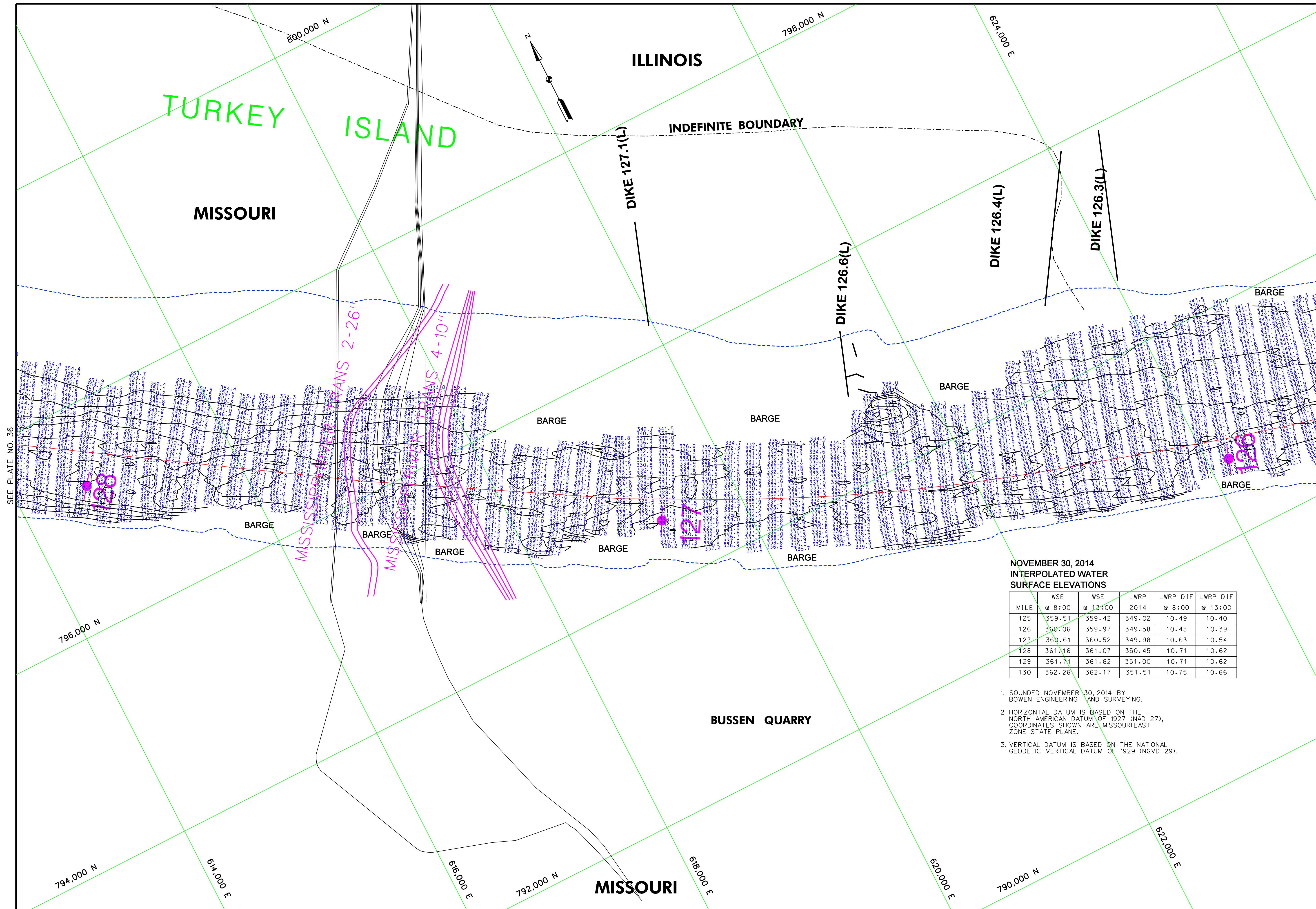


PLATE
NUMBER

37



NOVEMBER 30, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 13:00
125	359.51	359.42	349.02	10.49	10.40
126	360.06	359.97	349.58	10.48	10.39
127	360.61	360.52	349.98	10.63	10.54
128	361.16	361.07	350.45	10.71	10.62
129	361.71	361.62	351.00	10.71	10.62
130	362.26	362.17	351.51	10.75	10.66

NOVEMBER 28, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 14:00
120	357.18	357.21	346.08	11.10	11.13
121	357.74	357.77	346.85	10.89	10.92
122	358.30	358.33	347.53	10.77	10.80
123	358.86	358.89	348.04	10.82	10.85
124	359.42	359.45	348.53	10.89	10.92
125	359.98	360.00	349.02	10.96	10.98

1. SOUNDED NOVEMBER 28 & 30, 2014 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).



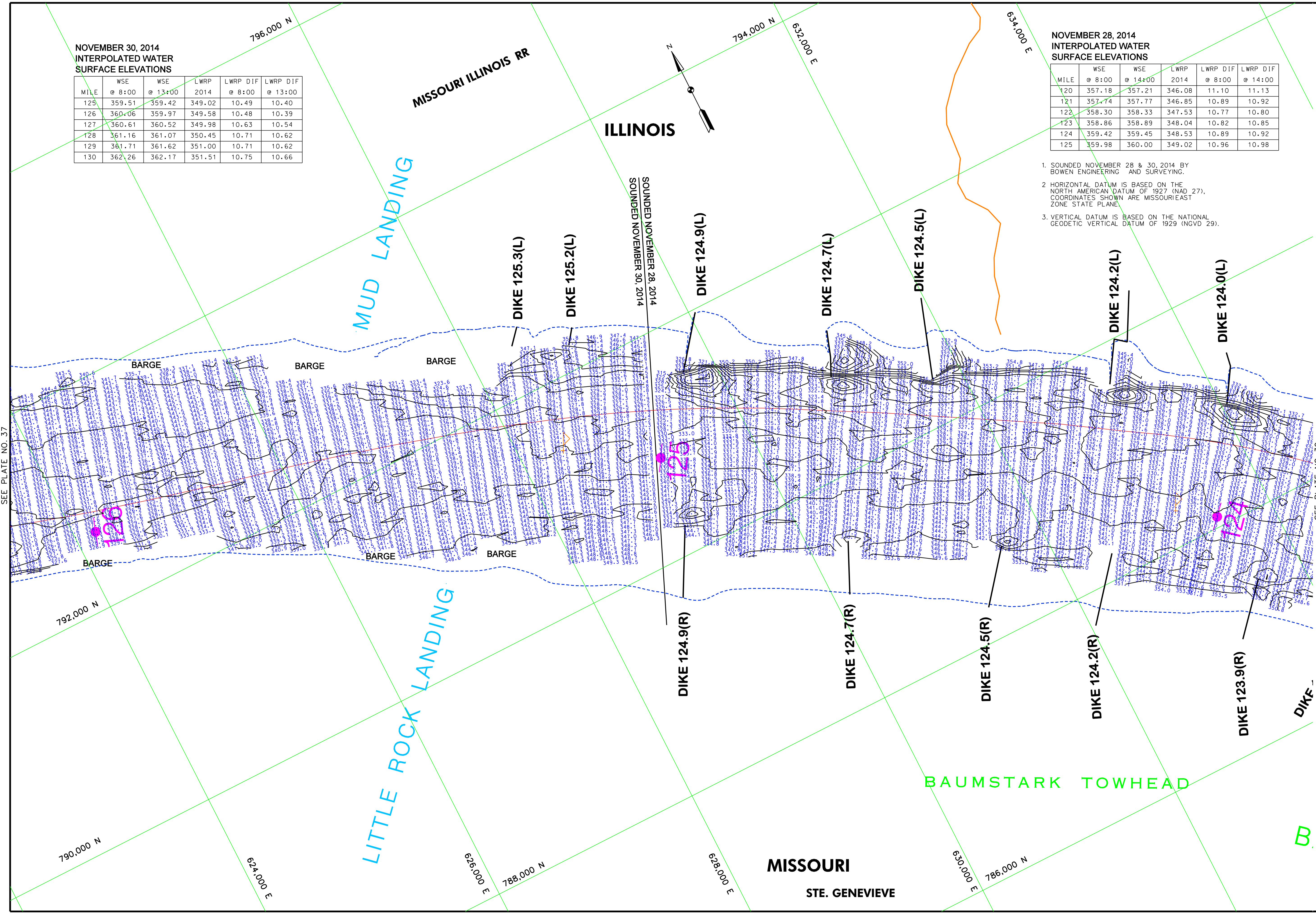
CAGE RECORD	RED ROCK LANDING, MO	BISHOPS LANDING, MO	CHESTER, IL	BRICKY'S LANDING, MO
ZERO NGVD	338.92	334.31	341.05	357.78
MILE	340.8	300.8	300.9	326.0
LWRP 2014	331.05	335.56	340.85	324.19
28 NOV 2014	X	X	X	8.36(4.00)
30 NOV 2014	X	X	X	10.86(5.00) 10.73(5.00) 7.78(5.00) 7.68(5.00)

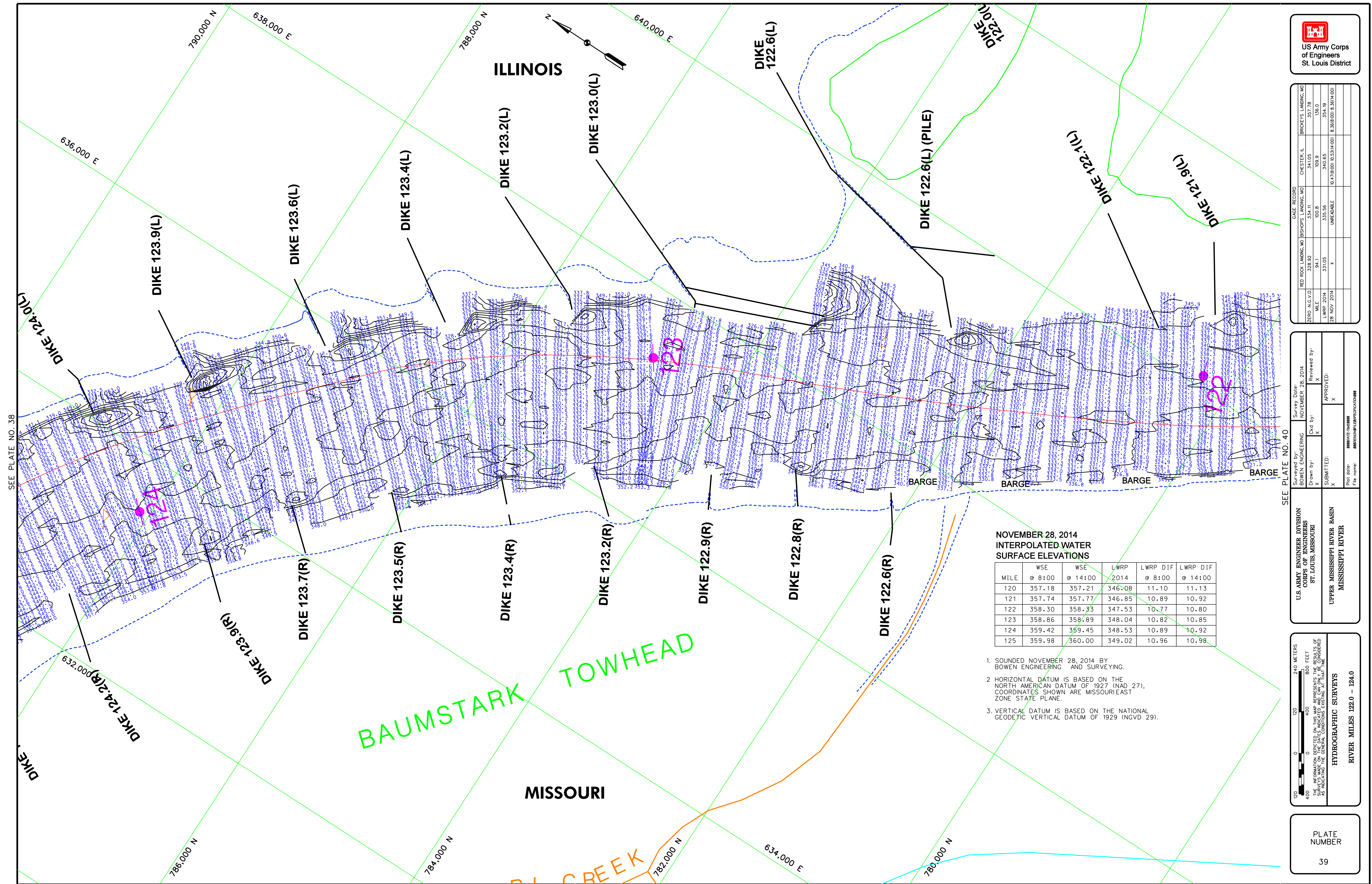
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		Survey Date: NOVEMBER 28 & 30, 2014	
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER			
Drawn by: X	X	Ckd by: X	Reviewed by: X
SUBMITTED: X		APPROVED: X	
Plot date: #####			
File name: #####			

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI	Survey Date: NOVEMBER 28 & 30, 2014	Drawn by: X	Checked by: X	Reviewed by: X
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER		SUBMITTED: X	APPROVED: X	
Plot Date: File Name:	##REVDATE###	##REVDATE###	##REVDATE###	##REVDATE###

HYDROGRAPHIC SURVEYS RIVER MILES 124.0 - 126.0

PLATE NUMBER 38





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		
LWRP 2014	331.05	335.56	340.65	354.45		
28 NOV 2014	x	UNR-40/8LE	10.4718(00) 10.5314(00)	8.3668(00) 8.3614(00)		

U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI		Survey Date: NOVEMBER 28, 2014	
Drawn by: X	Old by: X	Reviewed by: X	
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER		SUBMITTED: X	APPROVED: X
Plot date: 06/06/2016		06/06/2016	

HYDROGRAPHIC SURVEYS

RIVER MILES 122.0 - 124.0

120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF
HYDROGRAPHIC SURVEYS CONDUCTED BY THE U.S. ARMY CORPS OF ENGINEERS
AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

PLATE
NUMBER
39