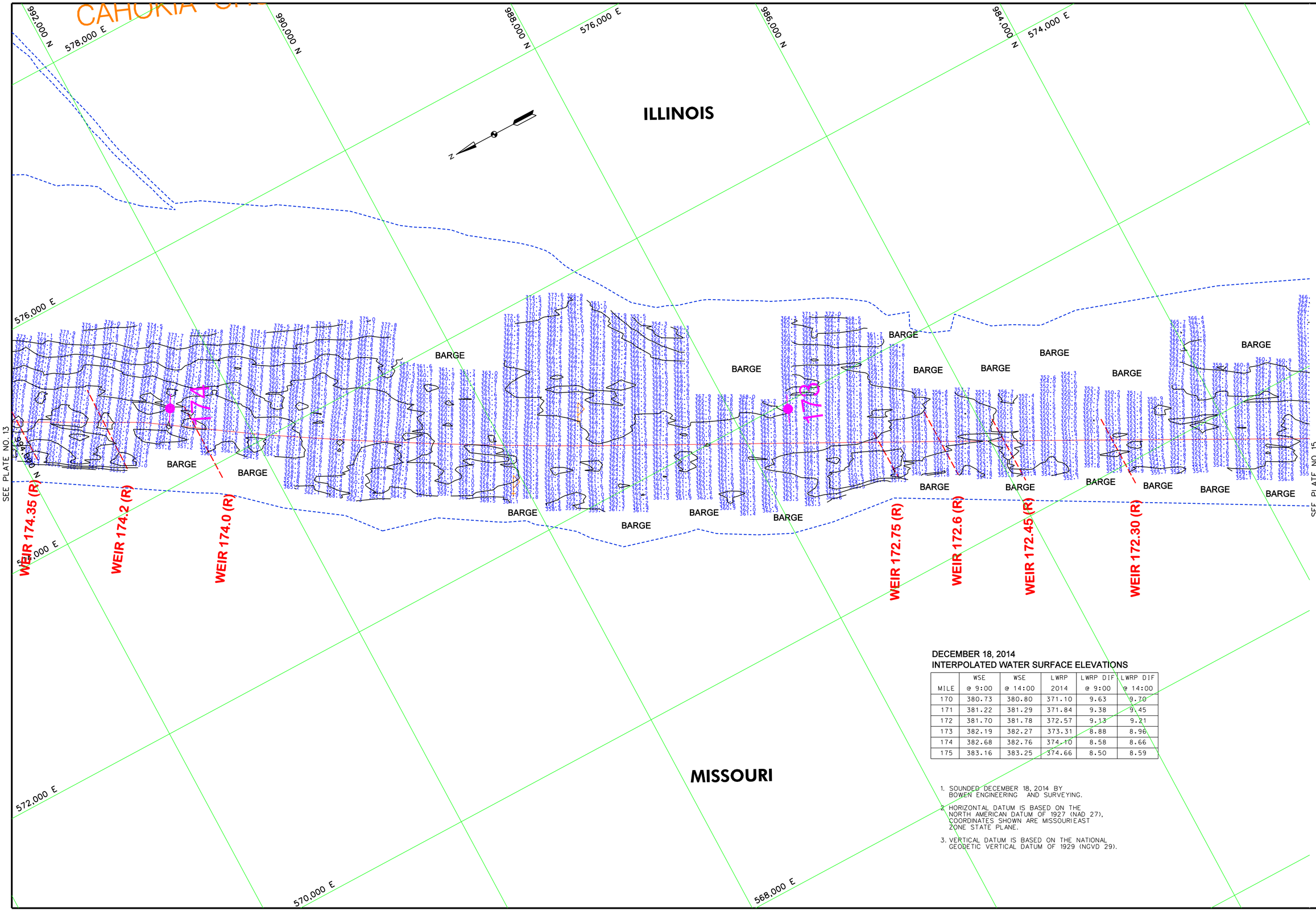


DECEMBER 18, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
170	380.73	380.80	371.10	9.63	9.70
171	381.22	381.29	371.84	9.38	9.45
172	381.70	381.78	372.57	9.13	9.21
173	382.19	382.27	373.31	8.88	8.96
174	382.68	382.76	374.10	8.58	8.66
175	383.16	383.25	374.66	8.50	8.59

1. SOUNDED DECEMBER 18, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
18 DEC 2014	x	x	6.449(00) 6.32(14:00)	5.65(9:00) 5.78(14:00)

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 18, 2014
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ####DESIGN\#FILEDESCRIPTION####
Plot date: ####DATE\TIME####

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS
800 FEET
120 0 120 400
0 400

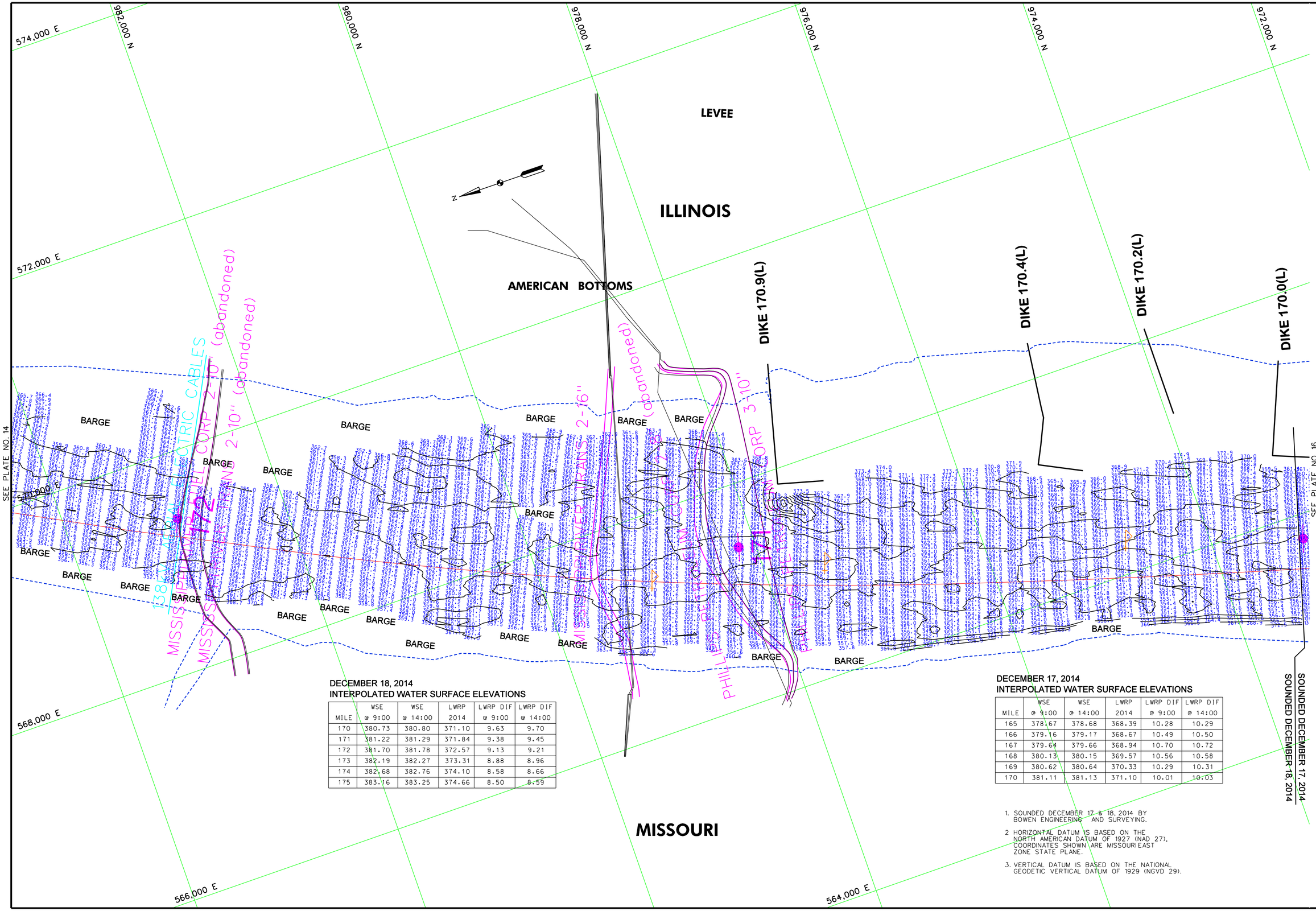
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE AT THE TIMES AND DATES SHOWN AND IS INTENDED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 172.2 – 174.1

PLATE NUMBER

14



DECEMBER 18, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
170	380.73	380.80	371.10	9.63	9.70
171	381.22	381.29	371.84	9.38	9.45
172	381.70	381.78	372.57	9.13	9.21
173	382.19	382.27	373.31	8.88	8.96
174	382.68	382.76	374.10	8.58	8.66
175	383.16	383.25	374.66	8.50	8.59

DECEMBER 17, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
165	378.67	378.68	368.39	10.28	10.29
166	379.16	379.17	368.67	10.49	10.50
167	379.64	379.66	368.94	10.70	10.72
168	380.13	380.15	369.57	10.56	10.58
169	380.62	380.64	370.33	10.29	10.31
170	381.11	381.13	371.10	10.01	10.03

1. SOUNDED DECEMBER 17 & 18, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
17 DEC 2014	x	x	6.75(9:00) 6.67(14:00)	6.04(9:00) 6.10(14:00)
18 DEC 2014	x	x	6.44(9:00) 6.32(14:00)	5.65(9:00) 5.76(14:00)

Survey Date: DECEMBER 17 & 18, 2014
Surveyed by: BOWEN ENGINEERING
Reviewed by: X
Ckd by: X
Drawn by: X
APPROVED: X
SUBMITTED: X
File name: ##REGIONAL##\##DESIGN##\##FILENAME##
Plot date: ##MM/DD/YR##

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 120 0 120 240
800 FEET 400 0 400 800

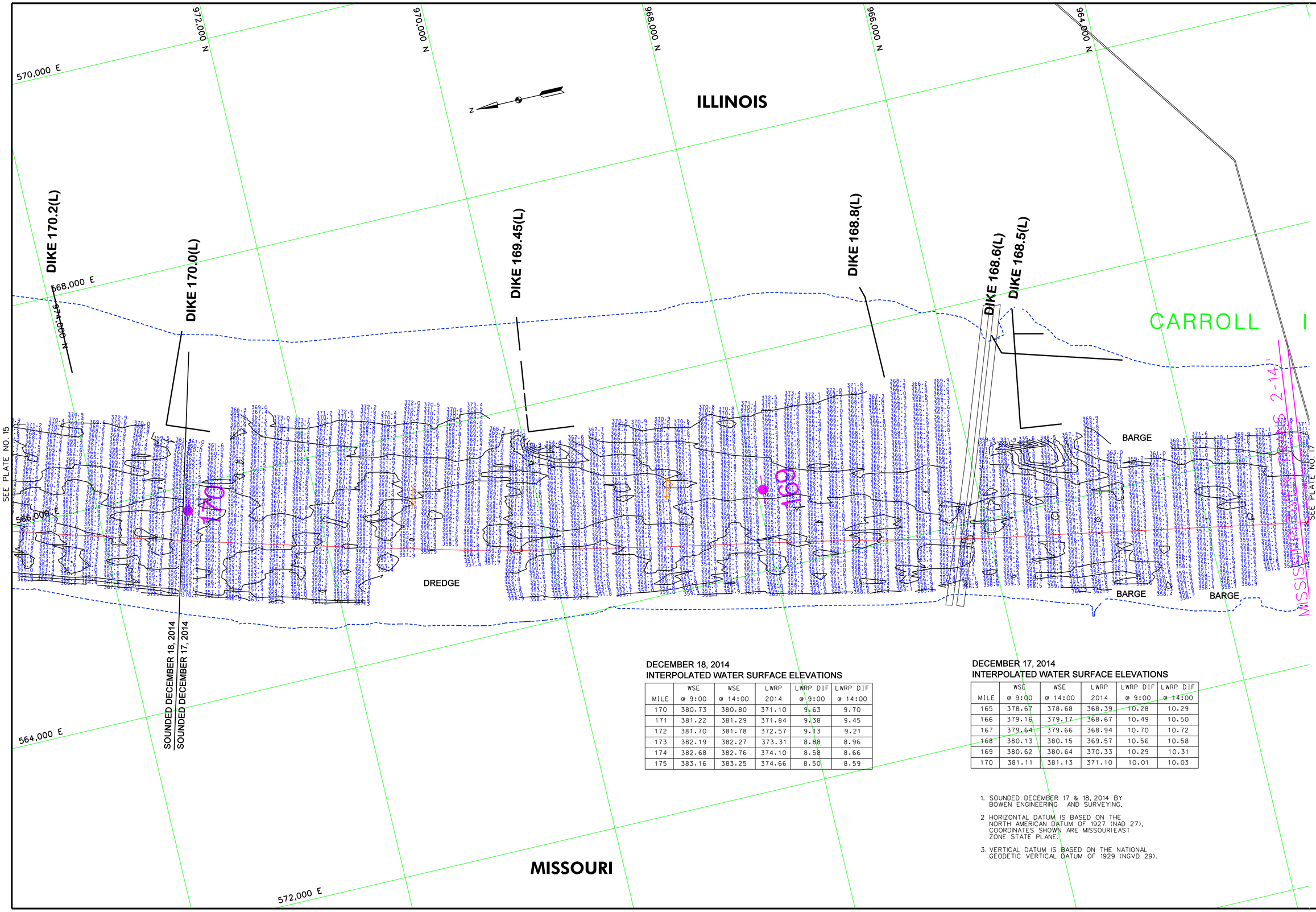
THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE AT THE TIME AND PLACE INDICATED AND IS REPORTED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 170.1 – 172.2

PLATE NUMBER

15



DECEMBER 18, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
170	380.73	380.80	371.10	9.63	9.70
171	381.22	381.29	371.84	9.38	9.45
172	381.70	381.78	372.57	9.13	9.21
173	382.19	382.27	373.31	8.88	8.96
174	382.68	382.76	374.10	8.58	8.66
175	383.16	383.25	374.66	8.50	8.59

DECEMBER 17, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
165	378.67	378.68	368.39	10.28	10.29
166	379.16	379.17	368.67	10.49	10.50
167	379.64	379.66	368.94	10.70	10.72
168	380.13	380.15	369.57	10.56	10.58
169	380.62	380.64	370.33	10.29	10.31
170	381.11	381.13	371.10	10.01	10.03

1. SOUNDED DECEMBER 17 & 18, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
17 DEC 2014	x	x	6.75(9:00) 6.67(14:00)	6.04(9:00) 6.10(14:00)
18 DEC 2014	x	x	6.44(9:00) 6.32(14:00)	5.65(9:00) 5.76(14:00)

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

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 17 & 18, 2014
Drawn by: X
Checked by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ########
File name: ##########

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

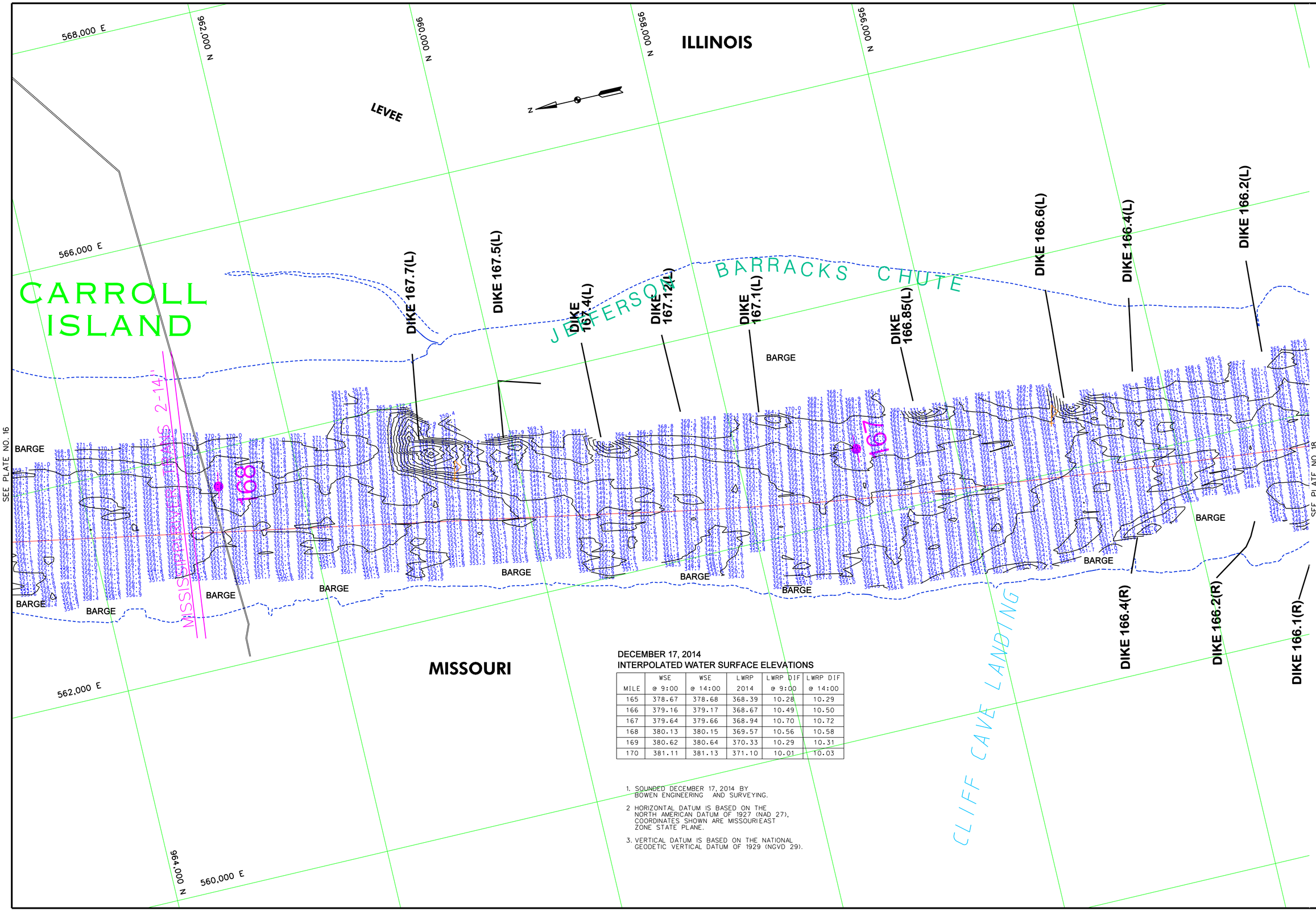
240 METERS
120 0 120
400 0 400
800 FEET

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

HYDROGRAPHIC SURVEYS

RIVER MILES 168.2 – 170.1

PLATE NUMBER
16



DECEMBER 17, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
165	378.67	378.68	368.39	10.28	10.29
166	379.16	379.17	368.67	10.49	10.50
167	379.64	379.66	368.94	10.70	10.72
168	380.13	380.15	369.57	10.56	10.58
169	380.62	380.64	370.33	10.29	10.31
170	381.11	381.13	371.10	10.01	10.03

1. SOUNDED DECEMBER 17, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
17 DEC 2014	x	x	6.75/9:00 6.67/14:00	6.04/9:00 6.10/14:00

Survey Date: DECEMBER 17, 2014
Ckd by: X
Reviewed by: X
APPROVED: X
Plot date: ####DDMMYYHHMM####
File name: ####DESIGN\FILES\PFDESIGN\X100###

Surveyed by: BOWEN ENGINEERING
Drawn by: X
SUBMITTED: X

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

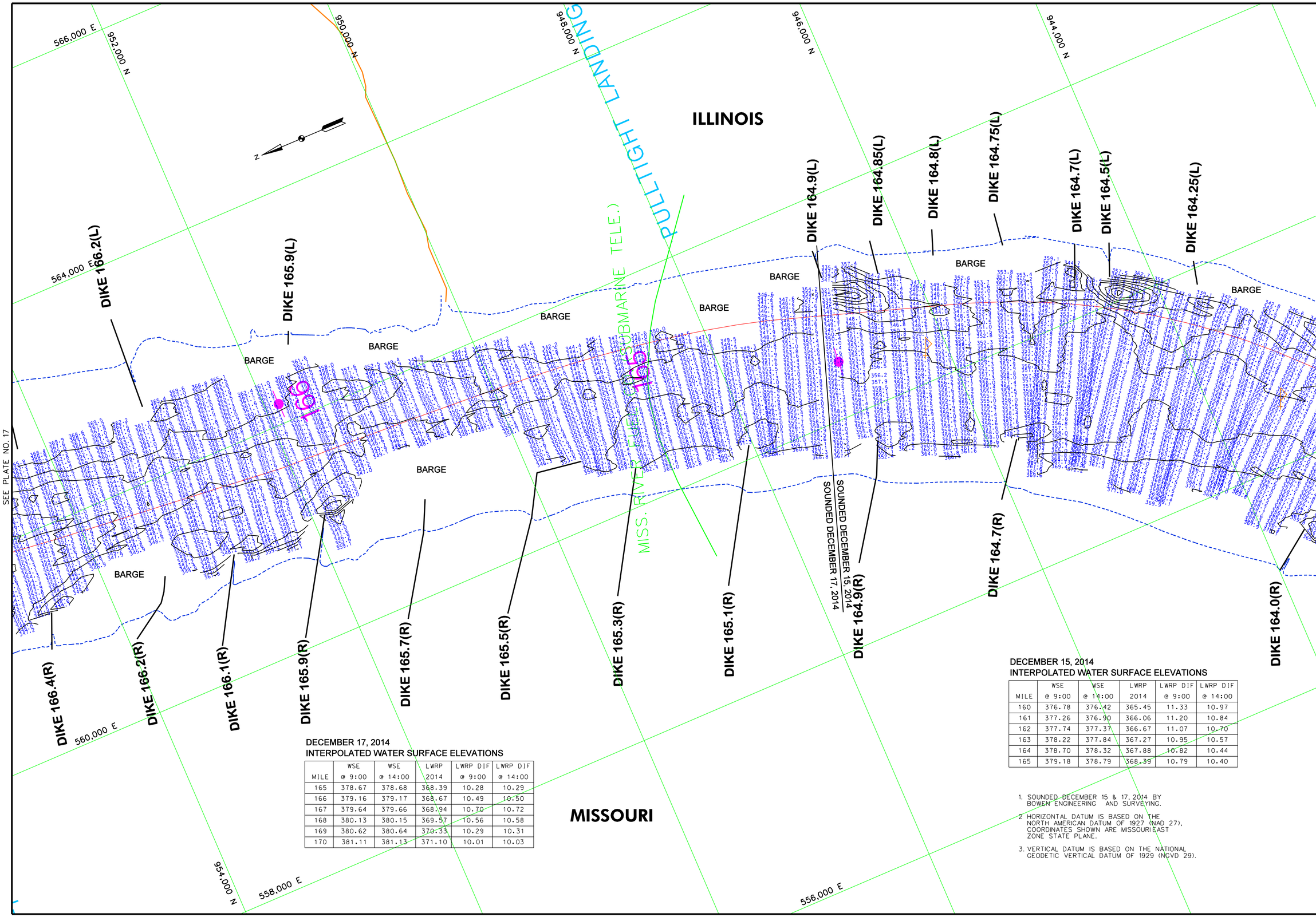
120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYING AND SOUNDING OPERATIONS AT THE TIME AND SHOULD BE USED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

RIVER MILES 166.3 – 168.2

PLATE NUMBER
17



DECEMBER 17, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
165	378.67	378.68	368.39	10.28	10.29
166	379.16	379.17	368.67	10.49	10.50
167	379.64	379.66	368.94	10.70	10.72
168	380.13	380.15	369.57	10.56	10.58
169	380.62	380.64	370.33	10.29	10.31
170	381.11	381.13	371.10	10.01	10.03

DECEMBER 15, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
160	376.78	376.42	365.45	11.33	10.97
161	377.26	376.90	366.06	11.20	10.84
162	377.74	377.37	366.67	11.07	10.70
163	378.22	377.84	367.27	10.95	10.57
164	378.70	378.32	367.88	10.82	10.44
165	379.18	378.79	368.39	10.79	10.40

1. SOUNDED DECEMBER 15 & 17, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
15 DEC 2014	x	x	7.46(9:00) 7.28(14:00)	6.45(9:00) 5.95(14:00)
17 DEC 2014	x	x	6.75(9:00) 6.67(14:00)	6.04(9:00) 6.10(14:00)

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 15 & 17, 2014
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ####DESIGN\FILE\DESCRIPTION####
Plot date: ####DATE\TIME####

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

UPPER MISSISSIPPI RIVER BASIN

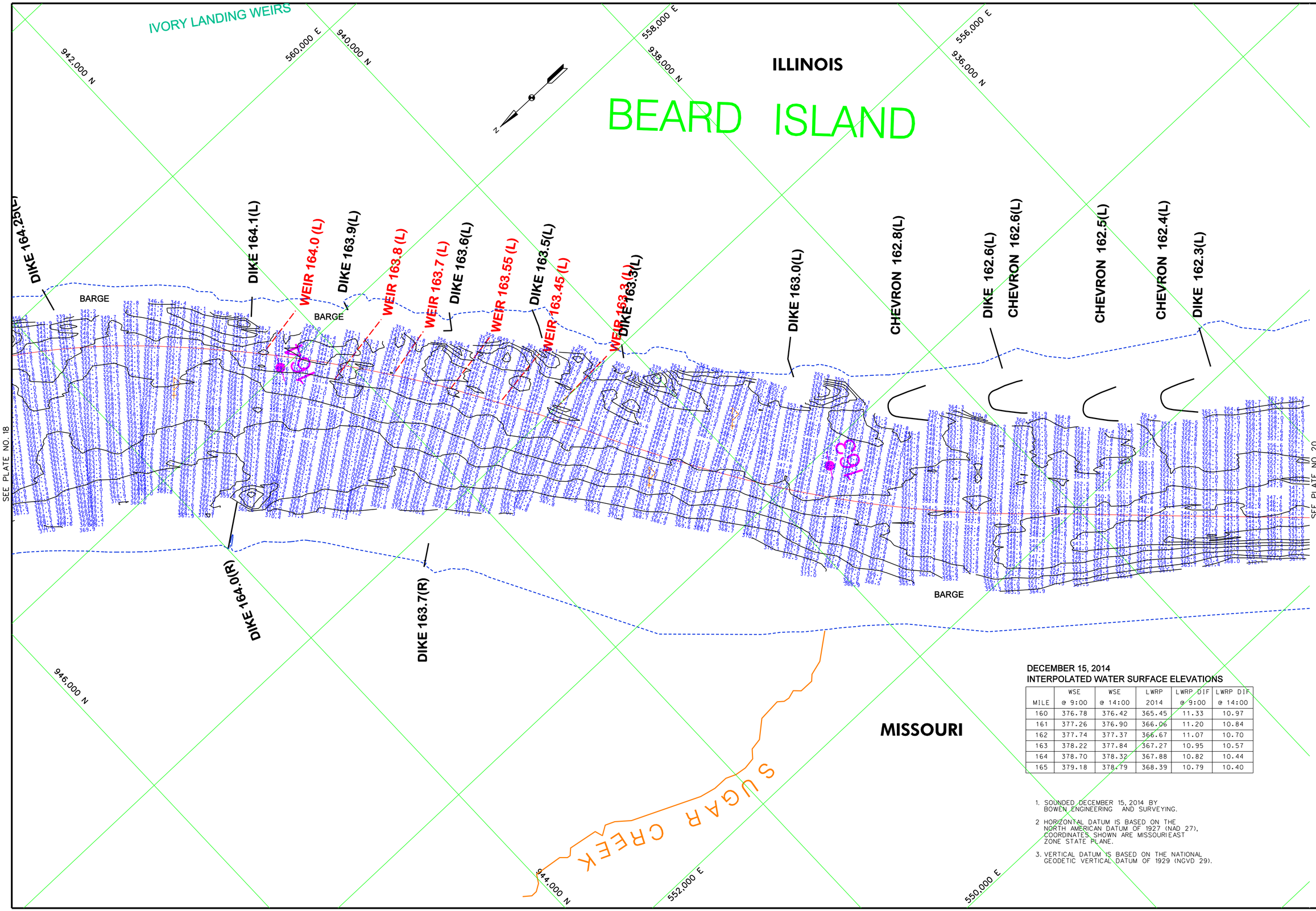
MISSISSIPPI RIVER

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

HYDROGRAPHIC SURVEYS

RIVER MILES 164.3 – 166.3

PLATE NUMBER
18



DECEMBER 15, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
160	376.78	376.42	365.45	11.33	10.97
161	377.26	376.90	366.06	11.20	10.84
162	377.74	377.37	366.67	11.07	10.70
163	378.22	377.84	367.27	10.95	10.57
164	378.70	378.32	367.88	10.82	10.44
165	379.18	378.79	368.39	10.79	10.40

1. SOUNDED DECEMBER 15, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
15 DEC 2014	x	x	7.46(9:00) 7.28(14:00)	6.45(9:00) 5.95(14:00)

Survey Date: DECEMBER 15, 2014
Surveyed by: BOWEN ENGINEERING
Reviewed by: X
Ckd by: X
Drawn by: X
APPROVED: X
SUBMITTED: X
Plot date: ####DDMMYYTIME####
File name: ##########FILENAME##########

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS
120 0 120
800 FEET
400 0 400

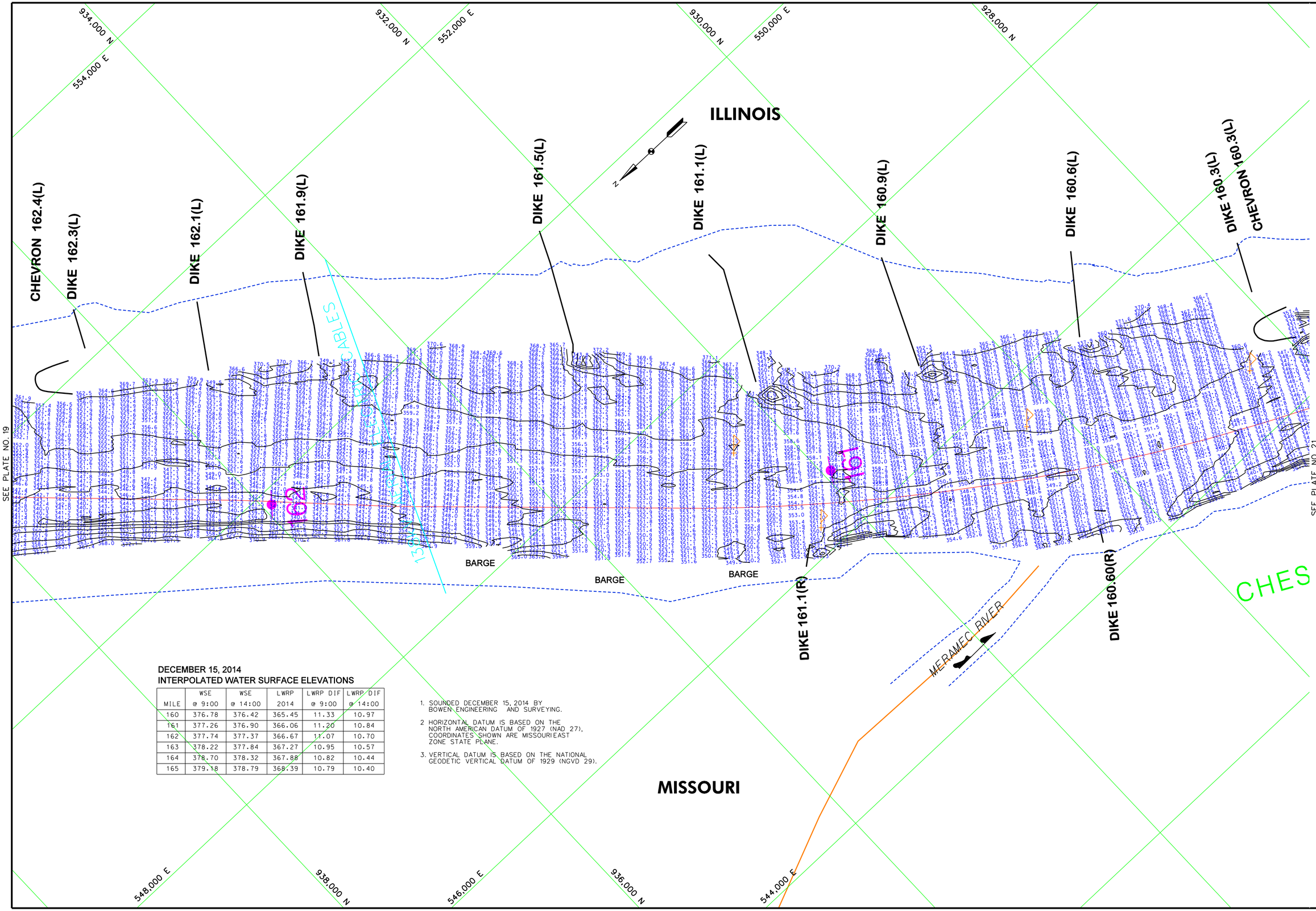
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE AT THE TIME INDICATED AND MAY NOT BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

RIVER MILES 162.3 – 164.3

PLATE NUMBER

19



DECEMBER 15, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
160	376.78	376.42	365.45	11.33	10.97
161	377.26	376.90	366.06	11.20	10.84
162	377.74	377.37	366.67	11.07	10.70
163	378.22	377.84	367.27	10.95	10.57
164	378.70	378.32	367.88	10.82	10.44
165	379.18	378.79	368.39	10.79	10.40

1. SOUNDED DECEMBER 15, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
15 DEC 2014	x	x	x	6.459(00) 5.95(14.00)

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 15, 2014
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ###SIGNATURE###
Plot date: ###SIGNATURE###

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE SHOWN AND IS INTENDED ONLY AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

RIVER MILES 160.3 – 162.3

PLATE NUMBER

20

ILLINOIS

LEVEE

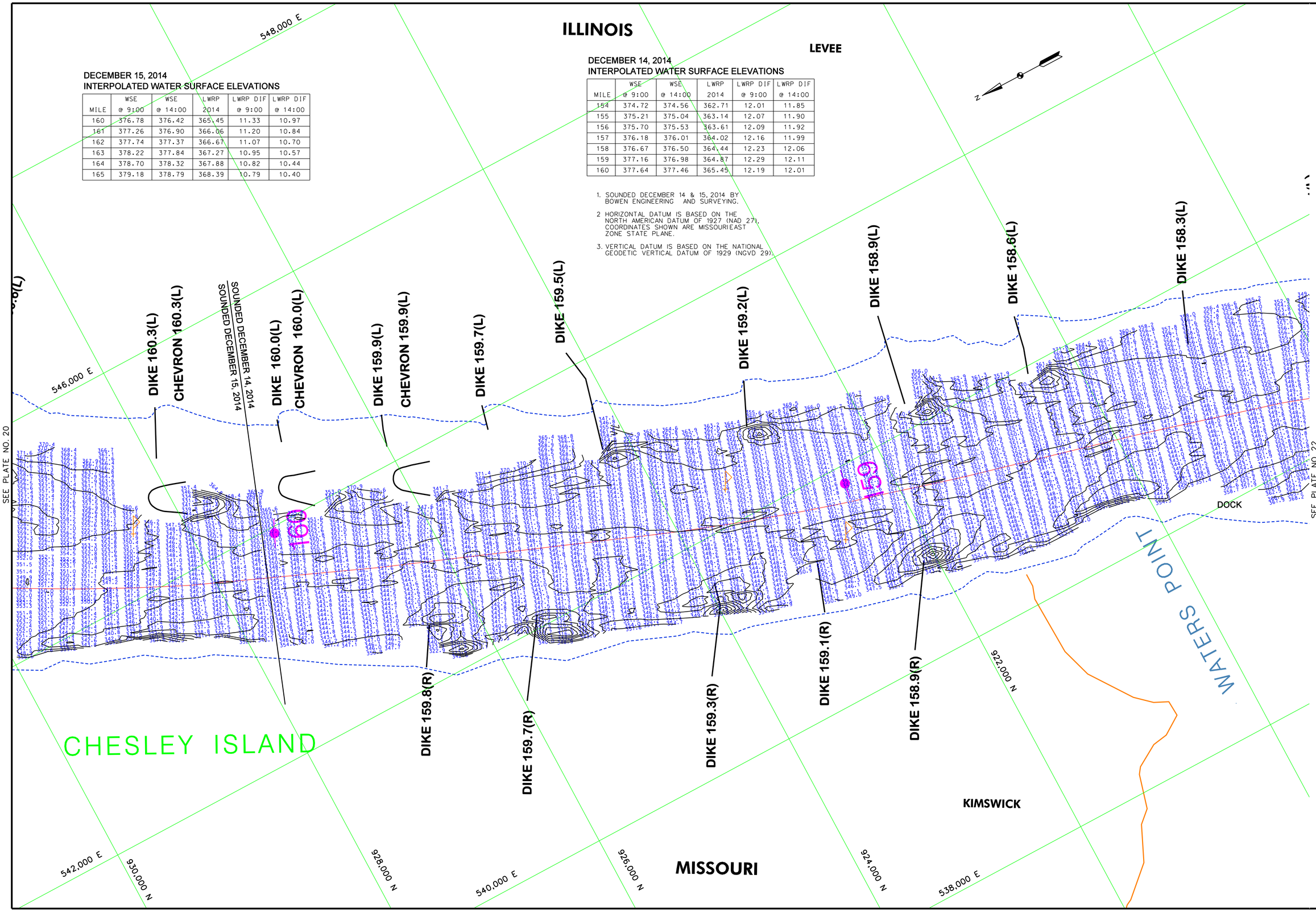
DECEMBER 15, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
160	376.78	376.42	365.45	11.33	10.97
161	377.26	376.90	366.06	11.20	10.84
162	377.74	377.37	366.67	11.07	10.70
163	378.22	377.84	367.27	10.95	10.57
164	378.70	378.32	367.88	10.82	10.44
165	379.18	378.79	368.39	10.79	10.40

DECEMBER 14, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
154	374.72	374.56	362.71	12.01	11.85
155	375.21	375.04	363.14	12.07	11.90
156	375.70	375.53	363.61	12.09	11.92
157	376.18	376.01	364.02	12.16	11.99
158	376.67	376.50	364.44	12.23	12.06
159	377.16	376.98	364.87	12.29	12.11
160	377.64	377.46	365.45	12.19	12.01

1. SOUNDED DECEMBER 14 & 15, 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

GAGE RECORD			
	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
14 DEC 2014	x	x	8.88/9:00 8.07/14:00	7.44/9:00 7.20/14:00
15 DEC 2014	x	x	7.46/9:00 7.28/14:00	6.45/9:00 5.95/14:00

Survey Date: DECEMBER 14 & 15, 2014
Surveyed by: BOWEN ENGINEERING
Reviewed by: X
Ckd by: X
Drawn by: X
SUBMITTED: X
APPROVED: X
File name: MISSISSIPPIRIVERSURVEYS2014.DGN
Plot date: ####/##/YR/TIME/####

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

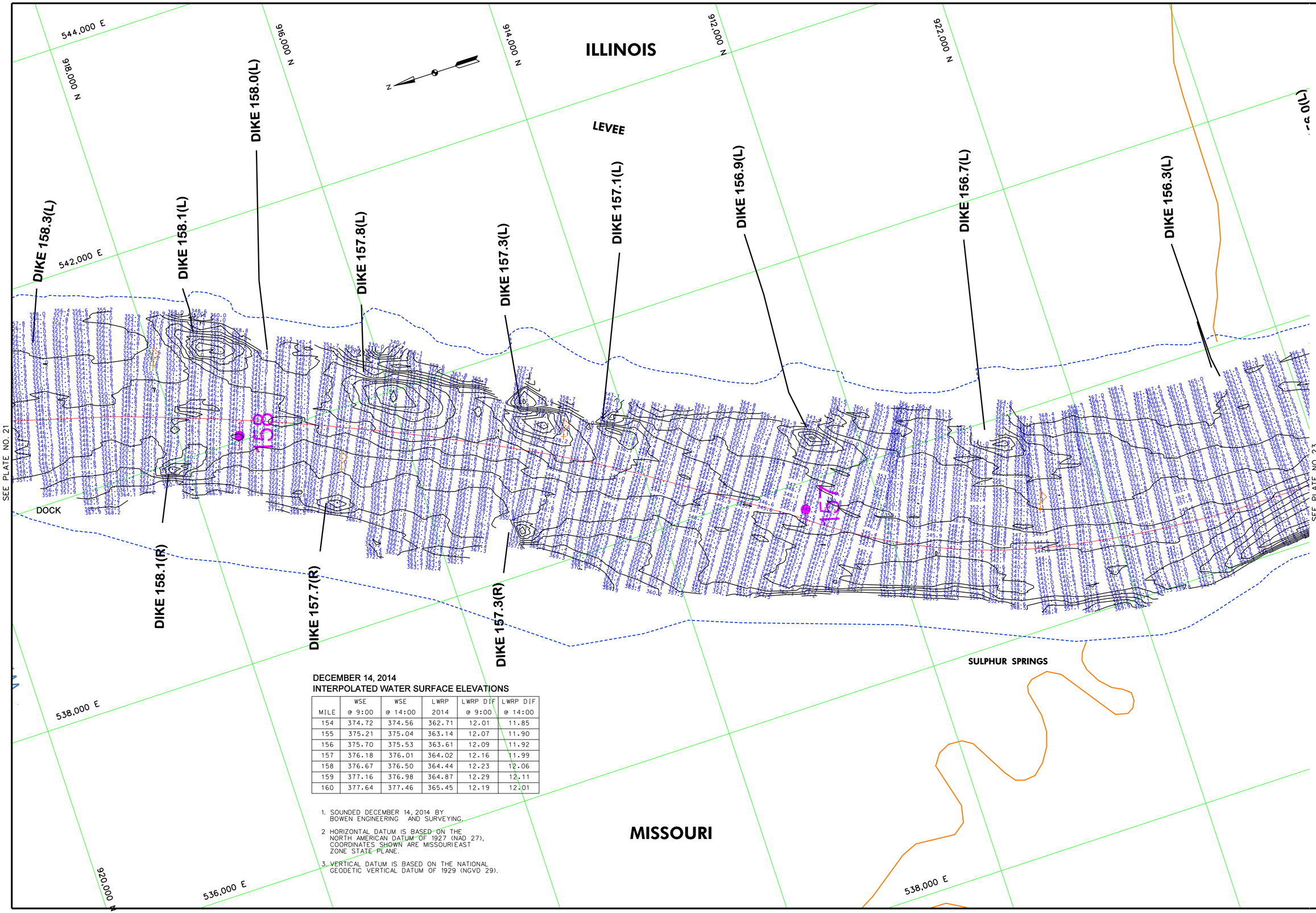
HYDROGRAPHIC SURVEYS

RIVER MILES 158.3 – 160.3

120 0 120 240 METERS
400 0 400 800 FEET

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

PLATE NUMBER
21



DECEMBER 14, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
154	374.72	374.56	362.71	12.01	11.85
155	375.21	375.04	363.14	12.07	11.90
156	375.70	375.53	363.61	12.09	11.92
157	376.18	376.01	364.02	12.16	11.99
158	376.67	376.50	364.44	12.23	12.06
159	377.16	376.98	364.87	12.29	12.11
160	377.64	377.46	365.45	12.19	12.01

1. SOUNDED DECEMBER 14, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
14 DEC 2014	x	x	8.88(9:00) 8.07(14:00)	7.44(9:00) 7.20(14:00)

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 14, 2014
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ##########
Plot date: ########

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

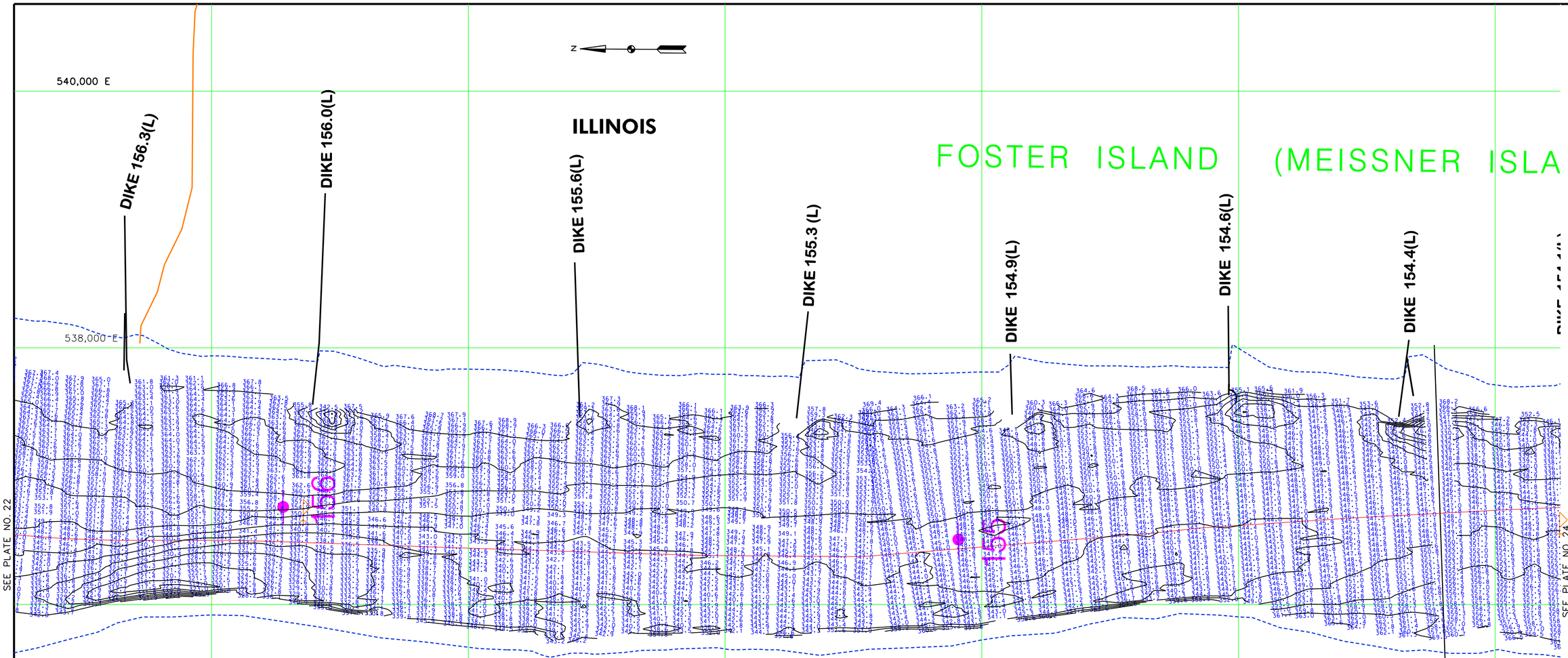
120 0 120 240 METERS
400 0 400 800 FEET

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

HYDROGRAPHIC SURVEYS

MILES 156.2 – 158.3

PLATE NUMBER
22



DECEMBER 14, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
154	374.72	374.56	362.71	12.01	11.85
155	375.21	375.04	363.14	12.07	11.90
156	375.70	375.53	363.61	12.09	11.92
157	376.18	376.01	364.02	12.16	11.99
158	376.67	376.50	364.44	12.23	12.06
159	377.16	376.98	364.87	12.29	12.11
160	377.64	377.46	365.45	12.19	12.01

DECEMBER 13, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
150	373.12	373.14	361.02	12.10	12.12
151	373.61	373.63	361.44	12.17	12.19
152	374.10	374.12	361.86	12.24	12.26
153	374.59	374.61	362.29	12.30	12.32
154	375.08	375.10	362.71	12.37	12.39
155	375.57	375.59	363.14	12.43	12.45

1. SOUNDED DECEMBER 13 & 14, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
13 DEC 2014	x	x	8.51(9:00) 8.54(13:00)	7.83(9:00) 7.88(13:00)
14 DEC 2014	x	x	8.18(9:00) 8.07(14:00)	7.44(9:00) 7.20(14:00)

Surveyed by: BOWEN ENGINEERING
Drawn by: X
Reviewed by: X
Survey Date: DECEMBER 13 & 14, 2014
Ckd by: X
SUBMITTED: X
APPROVED: X
Plot date: ########
File name: ########

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 0 120 120 400 0 400 800 FEET

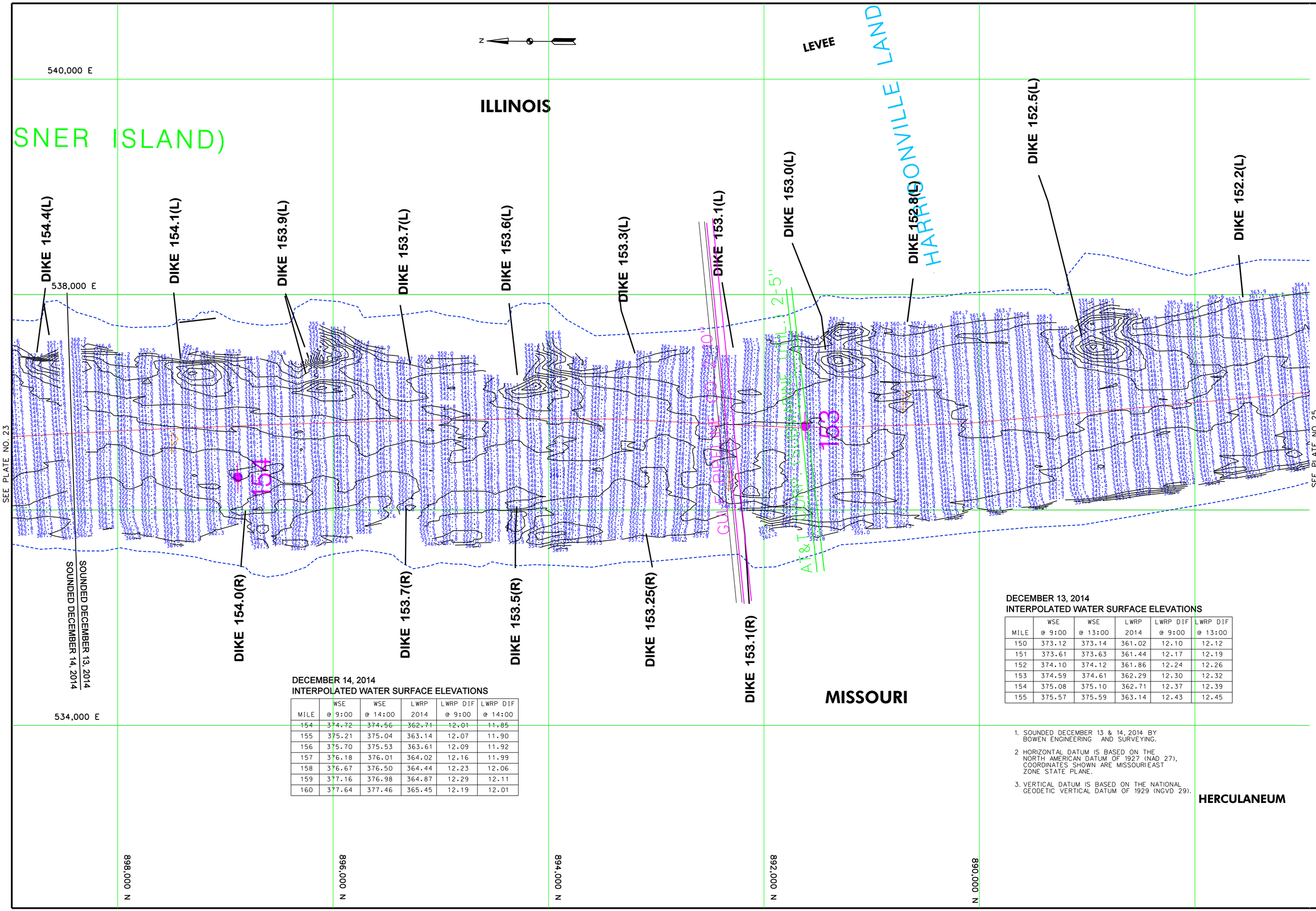
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE AT THE TIME AND DATE INDICATED AND MAY NOT BE AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

MILES 154.3 – 156.2

PLATE NUMBER

23



DECEMBER 14, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
~~154~~	~~374.72~~	~~374.56~~	~~362.71~~	~~12.01~~	~~11.85~~
155	375.21	375.04	363.14	12.07	11.90
156	375.70	375.53	363.61	12.09	11.92
157	376.18	376.01	364.02	12.16	11.99
158	376.67	376.50	364.44	12.23	12.06
159	377.16	376.98	364.87	12.29	12.11
160	377.64	377.46	365.45	12.19	12.01

DECEMBER 13, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
150	373.12	373.14	361.02	12.10	12.12
151	373.61	373.63	361.44	12.17	12.19
152	374.10	374.12	361.86	12.24	12.26
153	374.59	374.61	362.29	12.30	12.32
154	375.08	375.10	362.71	12.37	12.39
155	375.57	375.59	363.14	12.43	12.45

1. SOUNDED DECEMBER 13 & 14, 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

GAGE RECORD

ZERO N.G.V.D.	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
MILE	100.8	109.9	136.0	179.6
LWRP 2014	335.56	340.65	354.19	376.74
13 DEC 2014	x	x	8.51(9:00) 8.51(13:00)	7.83(9:00) 7.88(13:00)
14 DEC 2014	x	x	8.18(9:00) 8.07(14:00)	7.44(9:00) 7.20(14:00)

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

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 13 & 14, 2014
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ##########
Plot date: ##########

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 120 0 120 400
800 FEET 400 0 400

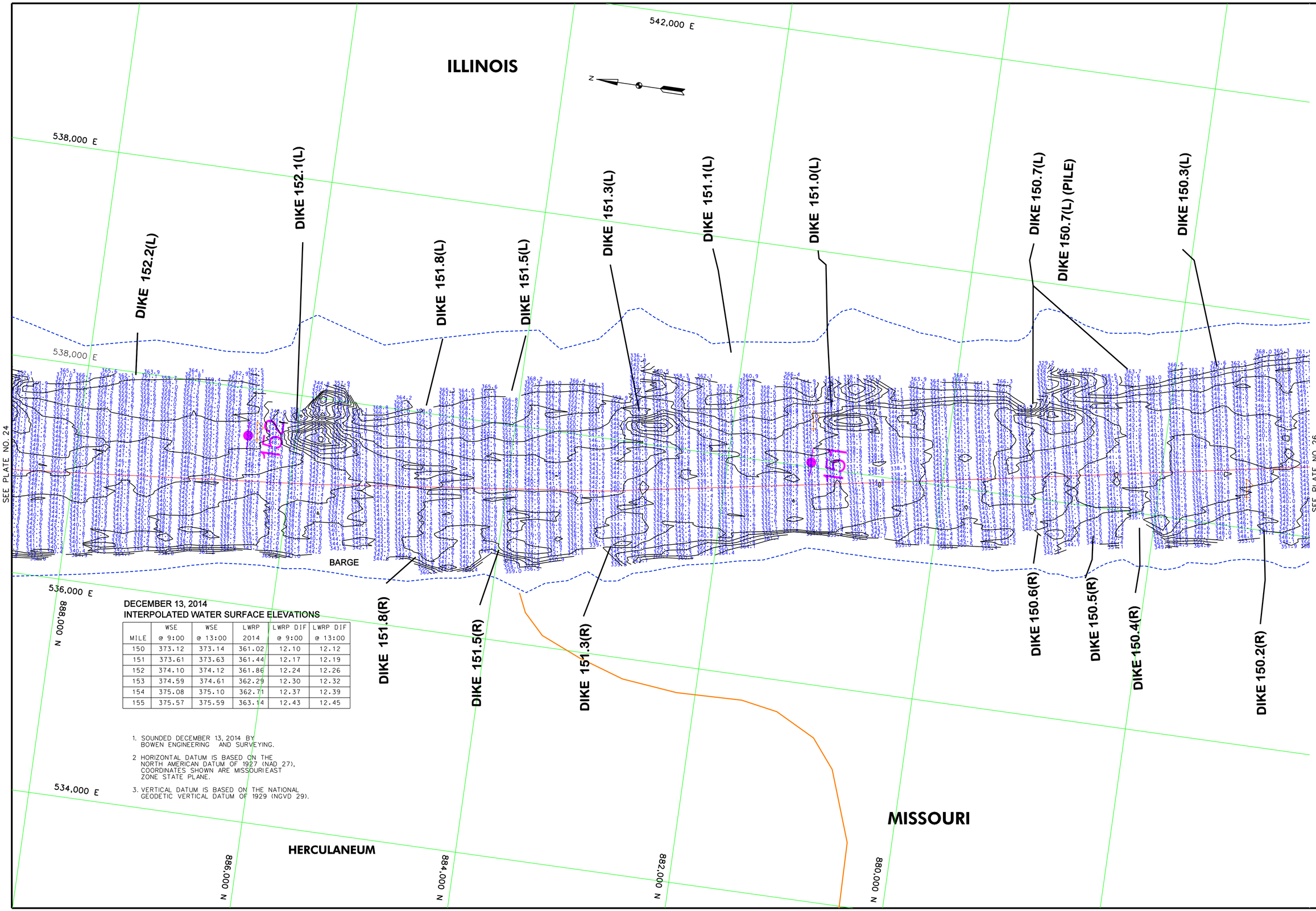
THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND MAY NOT BE ACCURATE AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 152.2 – 154.4

PLATE NUMBER

24



DECEMBER 13, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
150	373.12	373.14	361.02	12.10	12.12
151	373.61	373.63	361.44	12.17	12.19
152	374.10	374.12	361.86	12.24	12.26
153	374.59	374.61	362.29	12.30	12.32
154	375.08	375.10	362.71	12.37	12.39
155	375.57	375.59	363.14	12.43	12.45

1. SOUNDED DECEMBER 13, 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

GAGE RECORD	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
13 DEC 2014	x	x	8.5(19:00) 8.5(13:00)	7.8(19:00) 7.88(13:00)

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 13, 2014
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ##MISSISSIPPIFLUBBERSPECIFICATIONS##
Plot date: ##MISSISSIPPIFLUBBERSPECIFICATIONS##

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

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

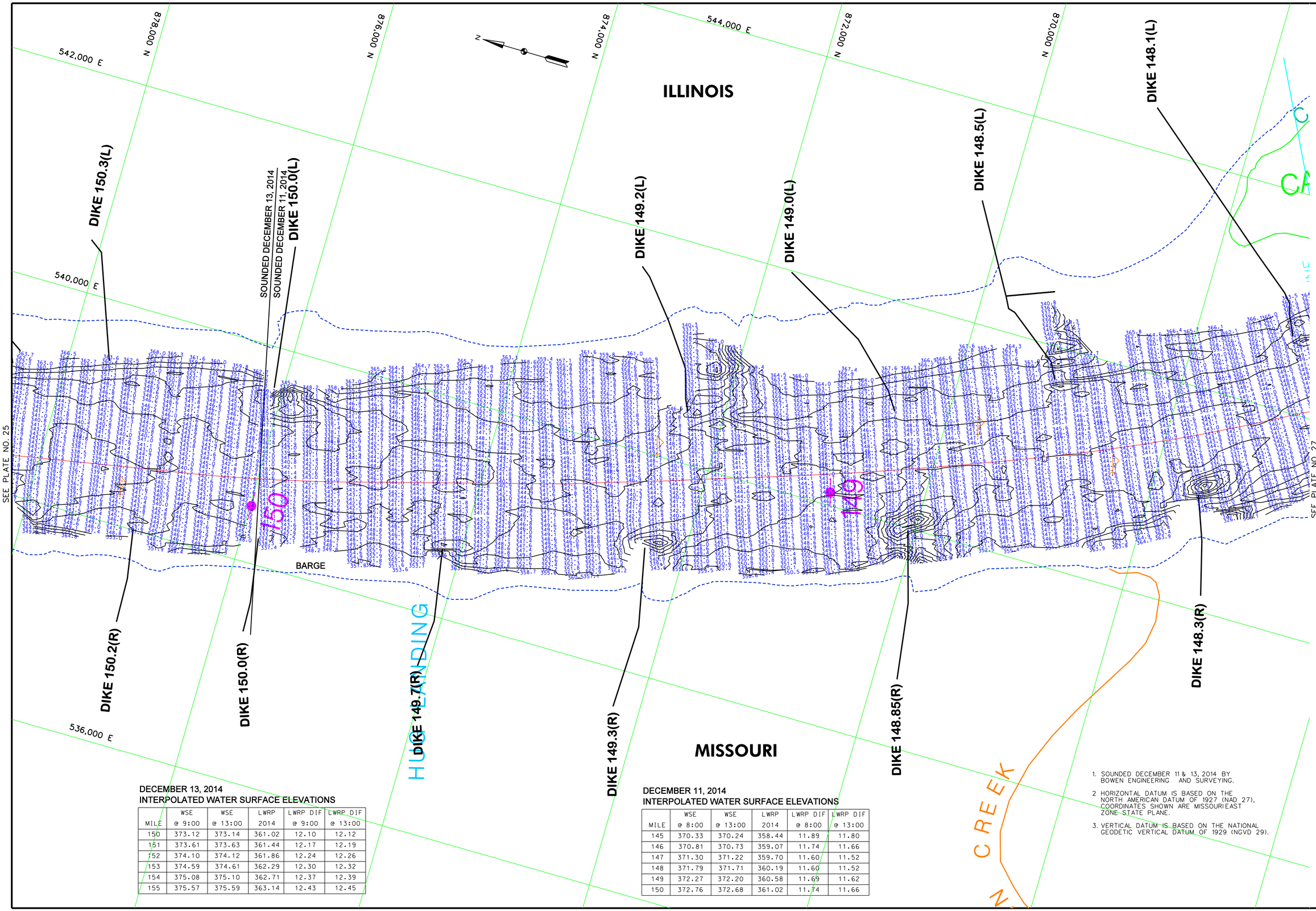
HYDROGRAPHIC SURVEYS

RIVER MILES 150.2 – 152.2

120 400 0 0 120 240 METERS
400 800 FEET

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

PLATE NUMBER
25



DECEMBER 13, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
150	373.12	373.14	361.02	12.10	12.12
151	373.61	373.63	361.44	12.17	12.19
152	374.10	374.12	361.86	12.24	12.26
153	374.59	374.61	362.29	12.30	12.32
154	375.08	375.10	362.71	12.37	12.39
155	375.57	375.59	363.14	12.43	12.45

DECEMBER 11, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 13:00
145	370.33	370.24	358.44	11.89	11.80
146	370.81	370.73	359.07	11.74	11.66
147	371.30	371.22	359.70	11.60	11.52
148	371.79	371.71	360.19	11.60	11.52
149	372.27	372.20	360.58	11.69	11.62
150	372.76	372.68	361.02	11.74	11.66

1. SOUNDED DECEMBER 11 & 13, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
11 DEC 2014	x	x	8.17(8:00) 8.06(13:00)	7.41(8:00) 7.41(13:00)
13 DEC 2014	x	x	8.51(9:00) 8.5(13:00)	7.83(9:00) 7.88(13:00)

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

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

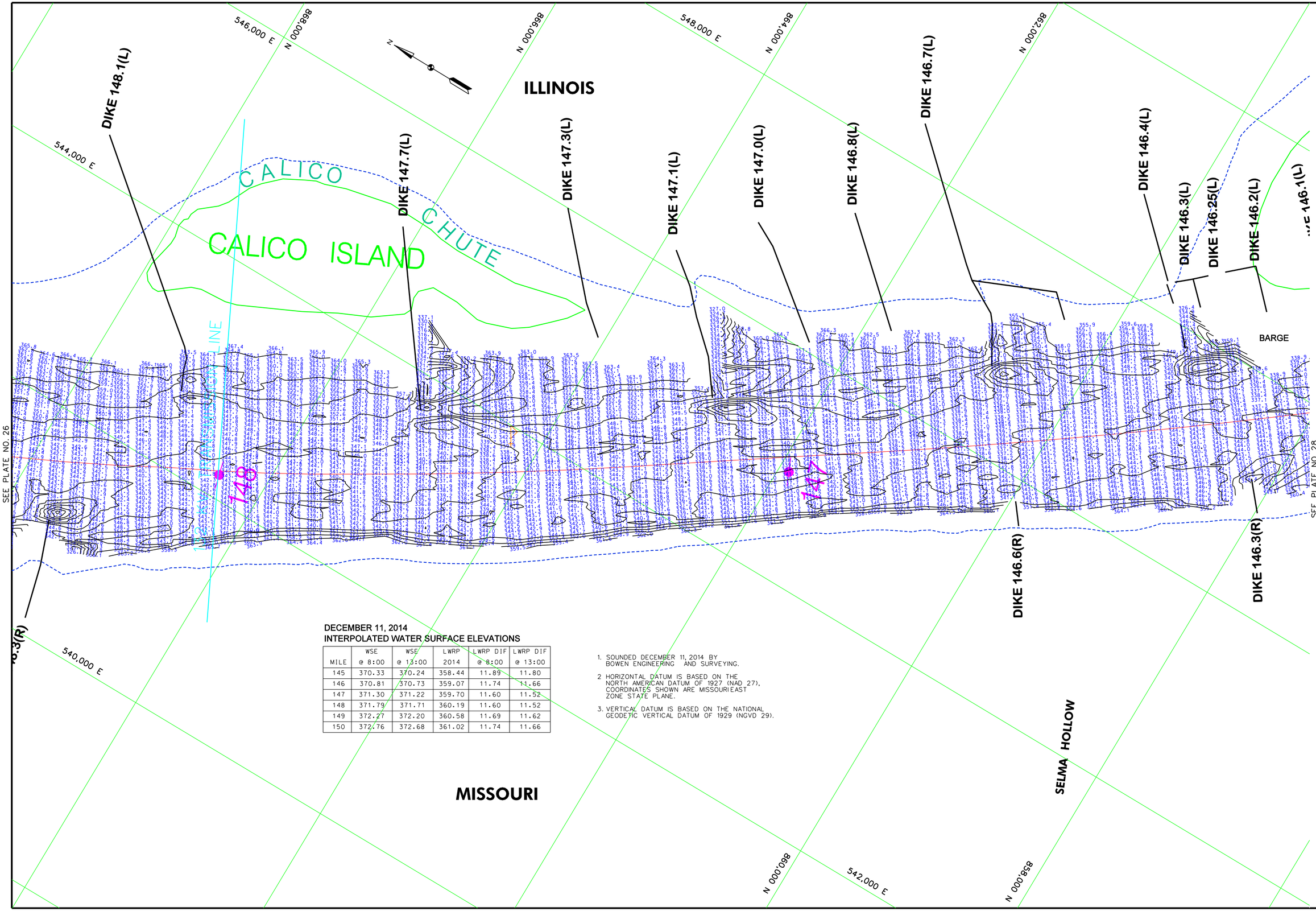
Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 11 & 13, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEPRTCFICATION####

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS
RIVER MILES 148.3 - 150.3

240 METERS
800 FEET
THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND SHOULD BE REGARDED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

PLATE NUMBER
26



DECEMBER 11, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 13:00
145	370.33	370.24	358.44	11.89	11.80
146	370.81	370.73	359.07	11.74	11.66
147	371.30	371.22	359.70	11.60	11.52
148	371.79	371.71	360.19	11.60	11.52
149	372.27	372.20	360.58	11.69	11.62
150	372.76	372.68	361.02	11.74	11.66

1. SOUNDED DECEMBER 11, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
11 DEC 2014	x	x	8.17(8:00) 8.06(13:00)	7.41(8:00) 7.41(13:00)

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

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 11, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEEXPERIFICATION####

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

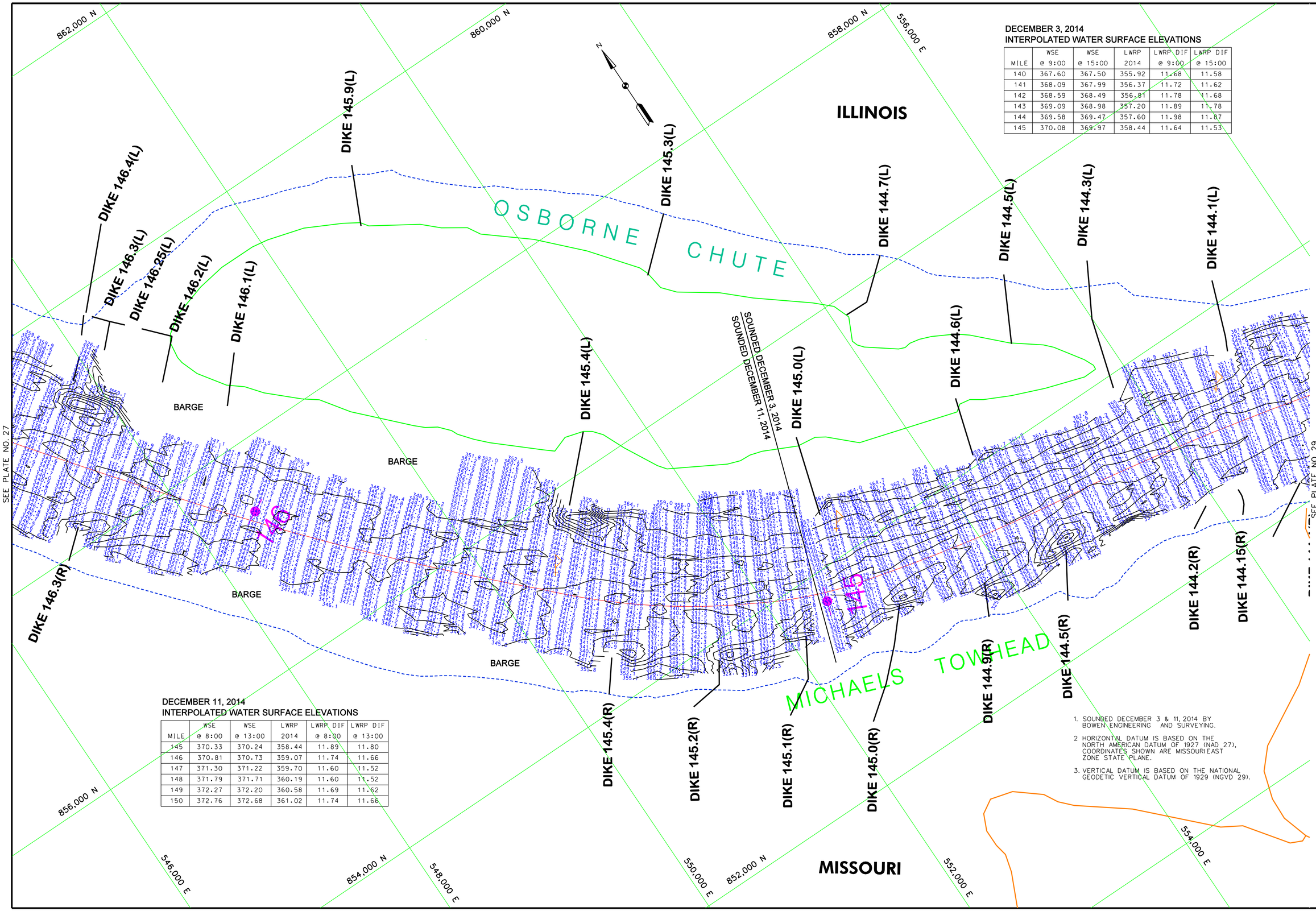
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

240 METERS 120 0
800 FEET 400 0
THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE INDICATED AND MAY NOT BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

RIVER MILES 146.2 – 148.3

PLATE NUMBER
27



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

DECEMBER 11, 2014
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 13:00
145	370.33	370.24	358.44	11.89	11.80
146	370.81	370.73	359.07	11.74	11.66
147	371.30	371.22	359.70	11.60	11.52
148	371.79	371.71	360.19	11.60	11.52
149	372.27	372.20	360.58	11.69	11.62
150	372.76	372.68	361.02	11.74	11.66

1. SOUNDED DECEMBER 3 & 11, 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

GAGE RECORD

	BISHOPS LANDING, MO	CHESTER, IL	BRICKEYS LANDING, MO	ST. LOUIS, MO
ZERO N.G.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
03 DEC 2014	x	10.16(9:00) 10.10(15:00)	7.83(9:00) 7.74(15:00)	7.52(9:00) 7.33(15:00)
11 DEC 2014	x	x	8.17(8:00) 8.06(13:00)	7.41(8:00) 7.41(13:00)

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

Surveyed by: BOWEN ENGINEERING
Survey Date: DECEMBER 3 & 11, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE:TIME####
File name: ####DESIGN#FILE#PROPERLOCATION####

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

240 METERS 120 0 120 400
800 FEET 400 0 400

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

HYDROGRAPHIC SURVEYS
RIVER MILES 144.2 – 146.2

PLATE NUMBER
28