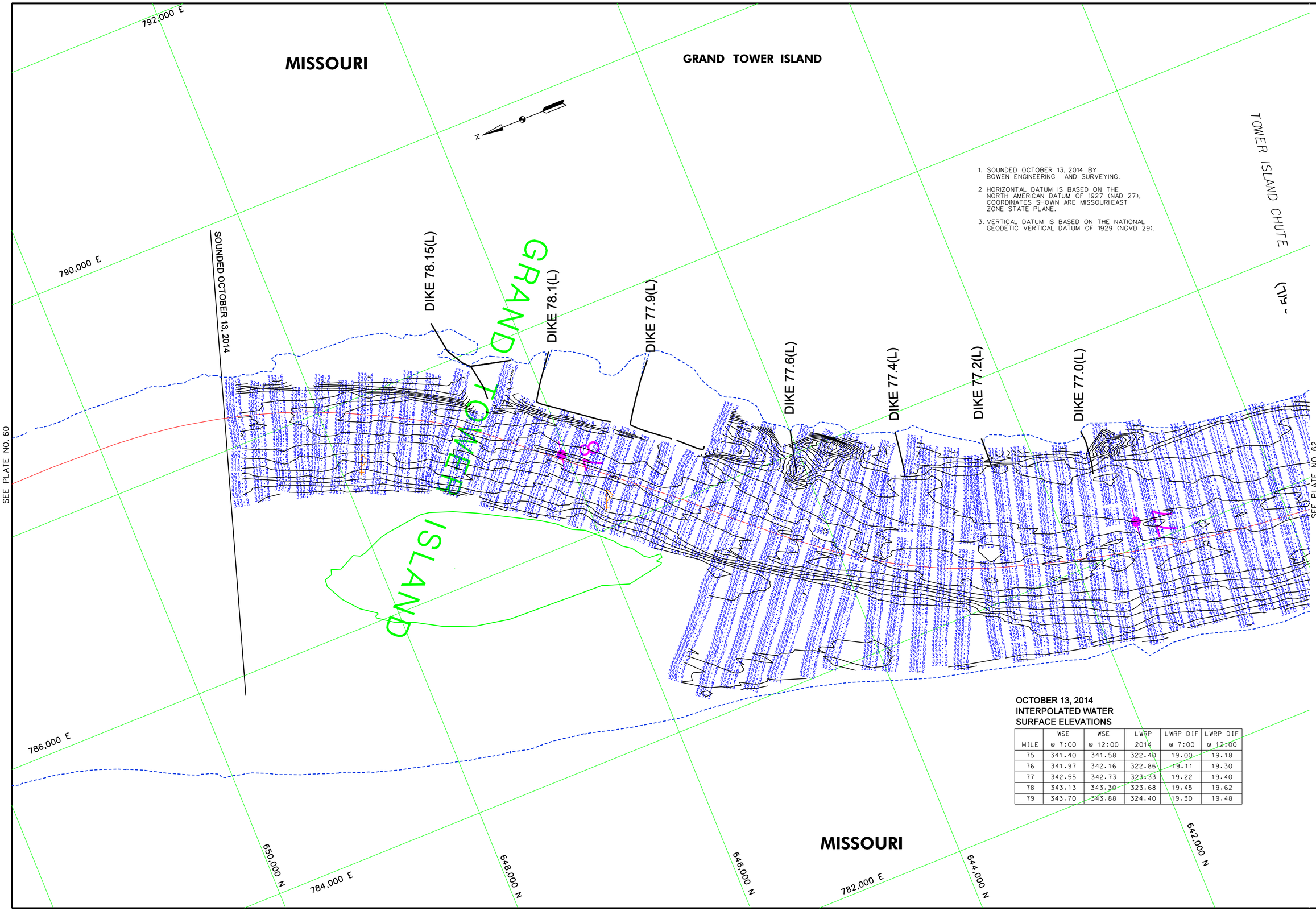


1. SOUNDED OCTOBER 13, 2014 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

OCTOBER 13, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 7:00	WSE @ 12:00	LWRP 2014	LWRP DIF @ 7:00	LWRP DIF @ 12:00
75	341.40	341.58	322.40	19.00	19.18
76	341.97	342.16	322.86	19.11	19.30
77	342.55	342.73	323.33	19.22	19.40
78	343.13	343.30	323.68	19.45	19.62
79	343.70	343.88	324.40	19.30	19.48

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
13 OCT 2014	x	22.50(7:00) 22.70(12:00)	23.44(7:00) 23.61(12:00)	x

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 13, 2014
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: ####DATE-TIME####
File name: ####DESIGNFILESPECIFICATION####

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

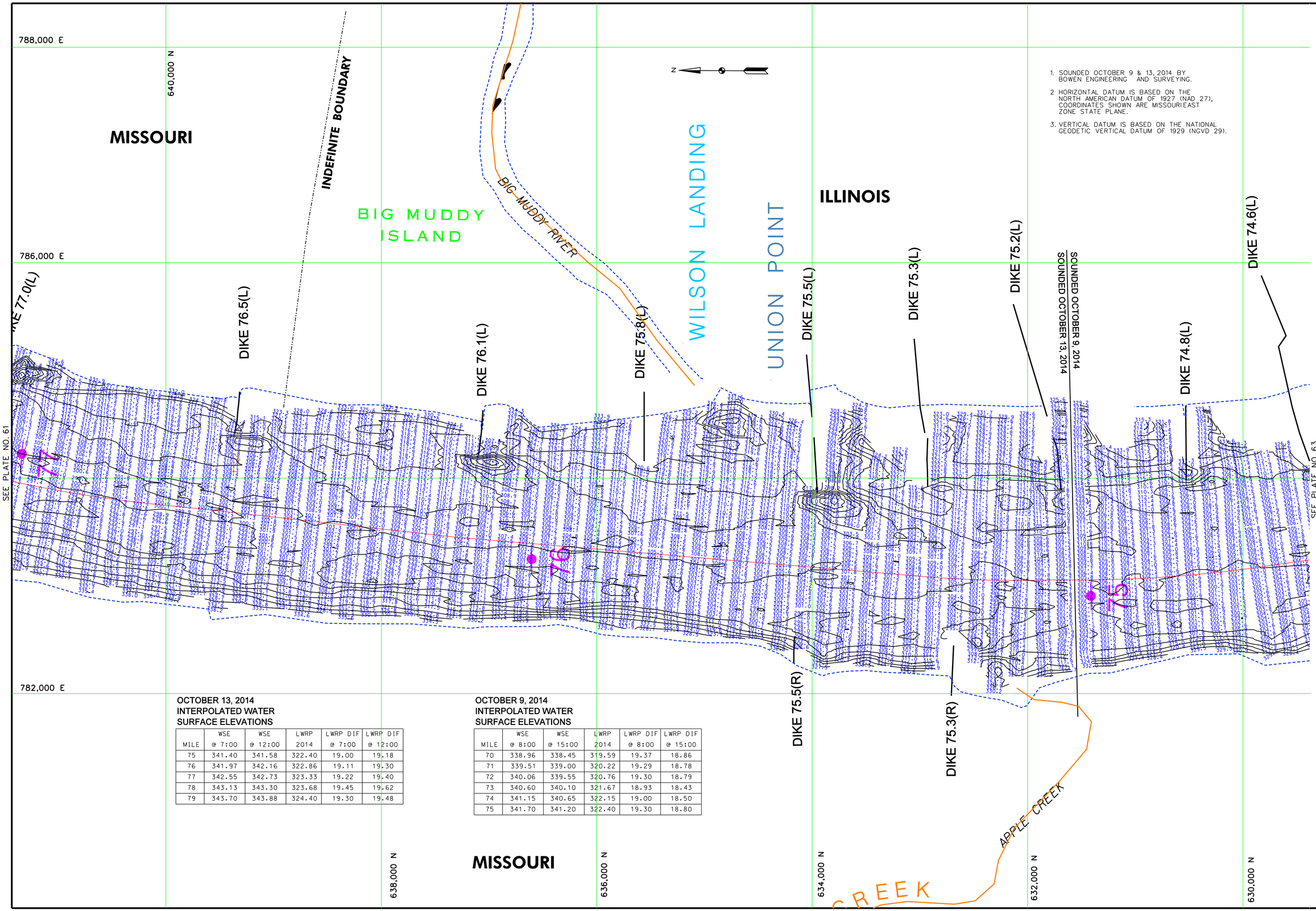
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
RIVER MILES 76.8 – 78.6

240 METERS
120 0 120
400 0 400
800 FEET

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 76.8 – 78.6

PLATE NUMBER
61



1. SOUNDED OCTOBER 9 & 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).

OCTOBER 13, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 7:00	WSE @ 12:00	LWRP 2014	LWRP DIF @ 7:00	LWRP DIF @ 12:00
75	341.40	341.58	322.40	19.00	19.18
76	341.97	342.16	322.86	19.11	19.30
77	342.55	342.73	323.33	19.22	19.40
78	343.13	343.30	323.68	19.45	19.62
79	343.70	343.88	324.40	19.30	19.48

OCTOBER 9, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
70	338.96	338.45	319.59	19.37	18.86
71	339.51	339.00	320.22	19.29	18.78
72	340.06	339.55	320.76	19.30	18.79
73	340.60	340.10	321.67	18.93	18.43
74	341.15	340.65	322.15	19.00	18.50
75	341.70	341.20	322.40	19.30	18.80

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
09 OCT 2014	x	23.05(8:00) 22.53(15:00)	23.54(8:00) 23.06(15:00)	x
13 OCT 2014	x	22.50(7:00) 22.70(12:00)	23.44(7:00) 23.61(12:00)	x

Survey Date: OCTOBER 9 & 13, 2014
Surveyed by: BOWEN ENGINEERING
Reviewed by: X
Drawn by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEEXTENSION####

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

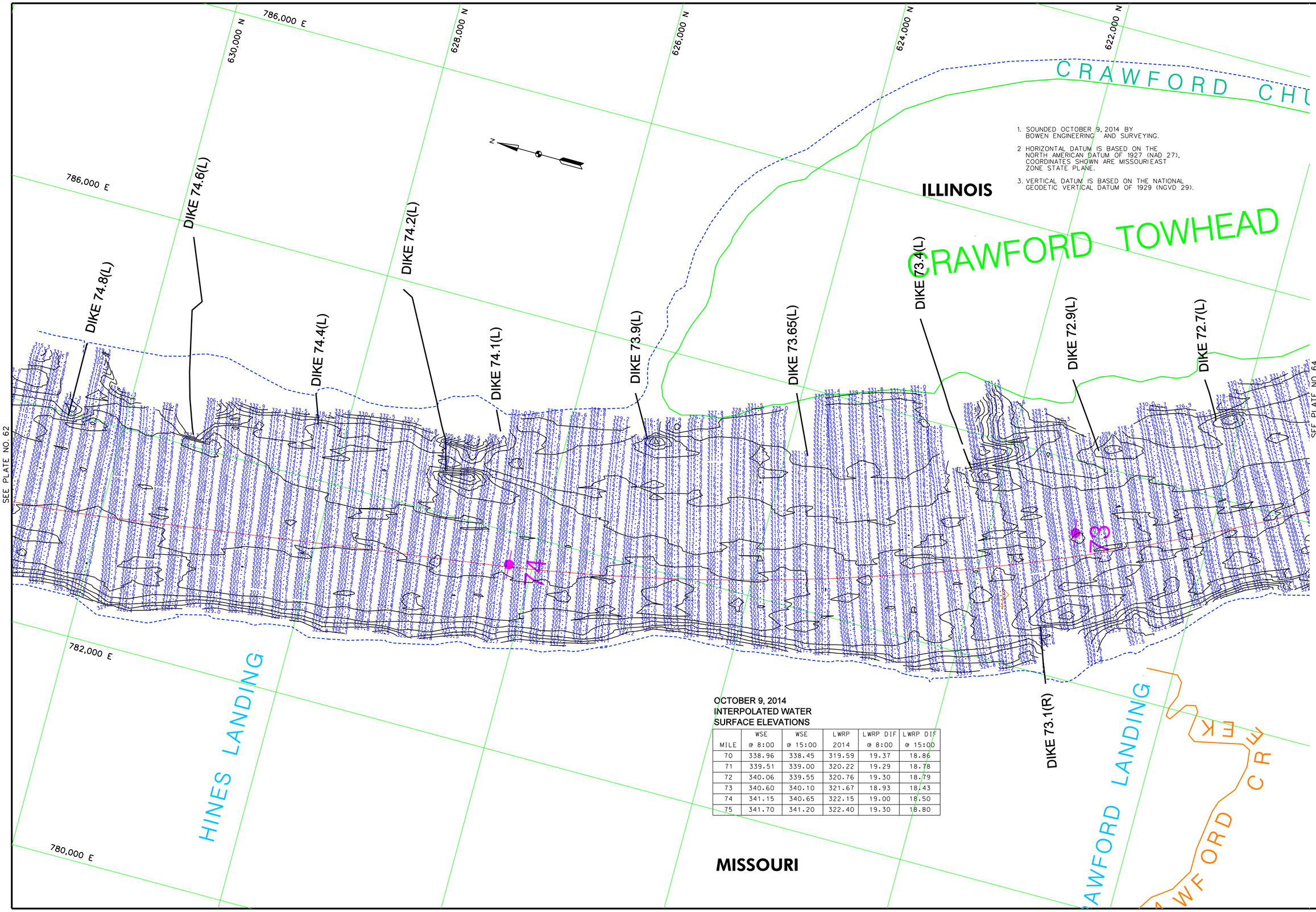
240 METERS 120 0 120
800 FEET 400 0 400

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

HYDROGRAPHIC SURVEYS

RIVER MILES 74.7 – 76.8

PLATE NUMBER
62



1. SOUNDED OCTOBER 9, 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).

OCTOBER 9, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
70	338.96	338.45	319.59	19.37	18.86
71	339.51	339.00	320.22	19.29	18.78
72	340.06	339.55	320.76	19.30	18.79
73	340.60	340.10	321.67	18.93	18.43
74	341.15	340.65	322.15	19.00	18.50
75	341.70	341.20	322.40	19.30	18.80

US Army Corps of Engineers
St. Louis District

GAGE RECORD				
ZERO N.G.V.D.	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
MILE	304.65	313.89	321.93	328.92
LWRP 2014	52.1	66.3	81.9	94.1
09 OCT 2014	310.01	317.54	325.69	331.05
	x	23.05/8:00/ 22.53/15:00	23.54/8:00/ 23.06/15:00	x

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 9, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE:TIME####
File name: ####DESIGNFILE\DESIGCATION####

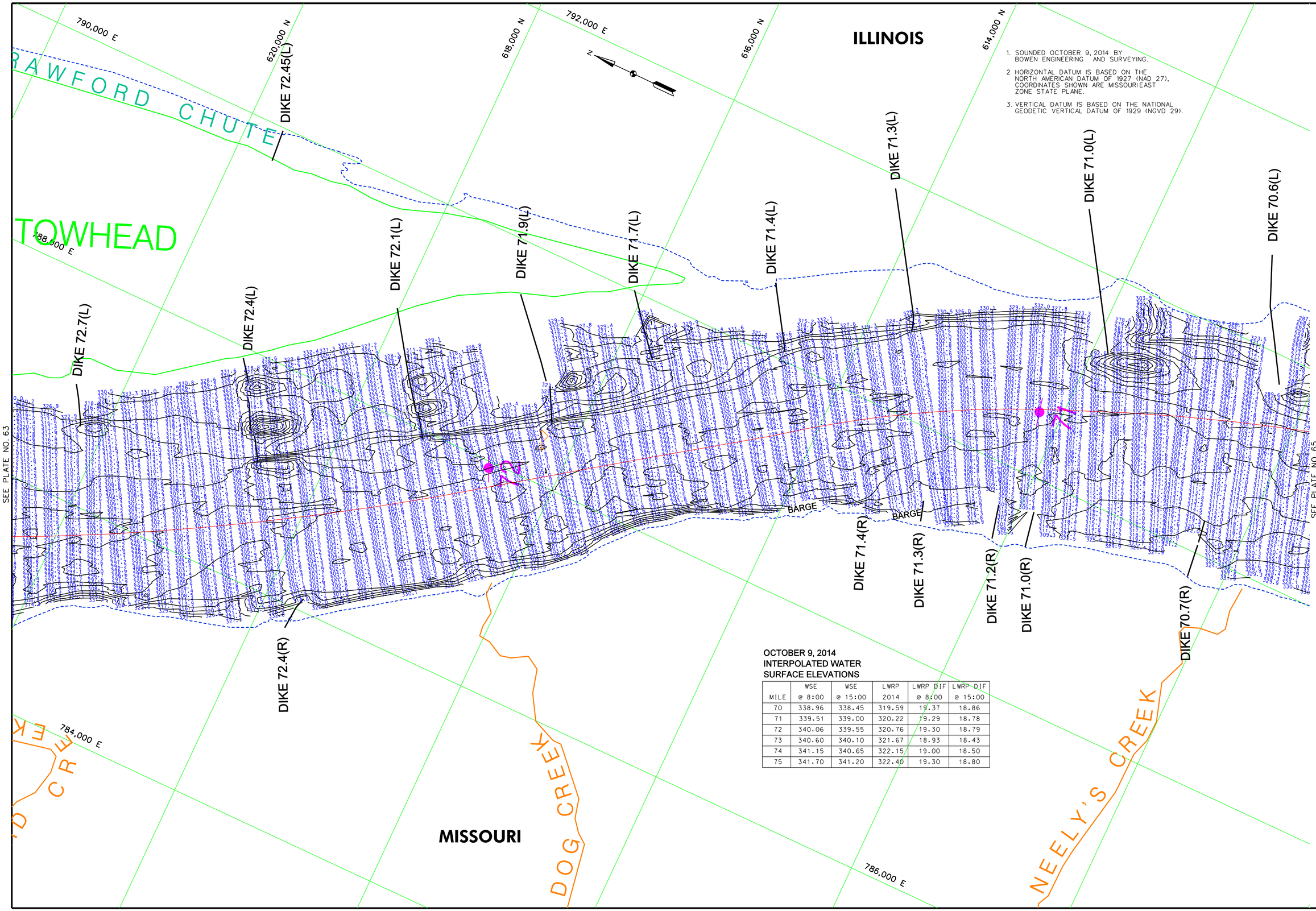
120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE(S) SHOWN. THE SURVEYS WERE MADE AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 72.7 – 74.7

PLATE NUMBER
63



1. SOUNDED OCTOBER 9, 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).

OCTOBER 9, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
70	338.96	338.45	319.59	19.37	18.86
71	339.51	339.00	320.22	19.29	18.78
72	340.06	339.55	320.76	19.30	18.79
73	340.60	340.10	321.67	18.93	18.43
74	341.15	340.65	322.15	19.00	18.50
75	341.70	341.20	322.40	19.30	18.80

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
D9 OCT 2014	x	23.05(8:00) 22.53(15:00)	23.54(8:00) 23.06(15:00)	x

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

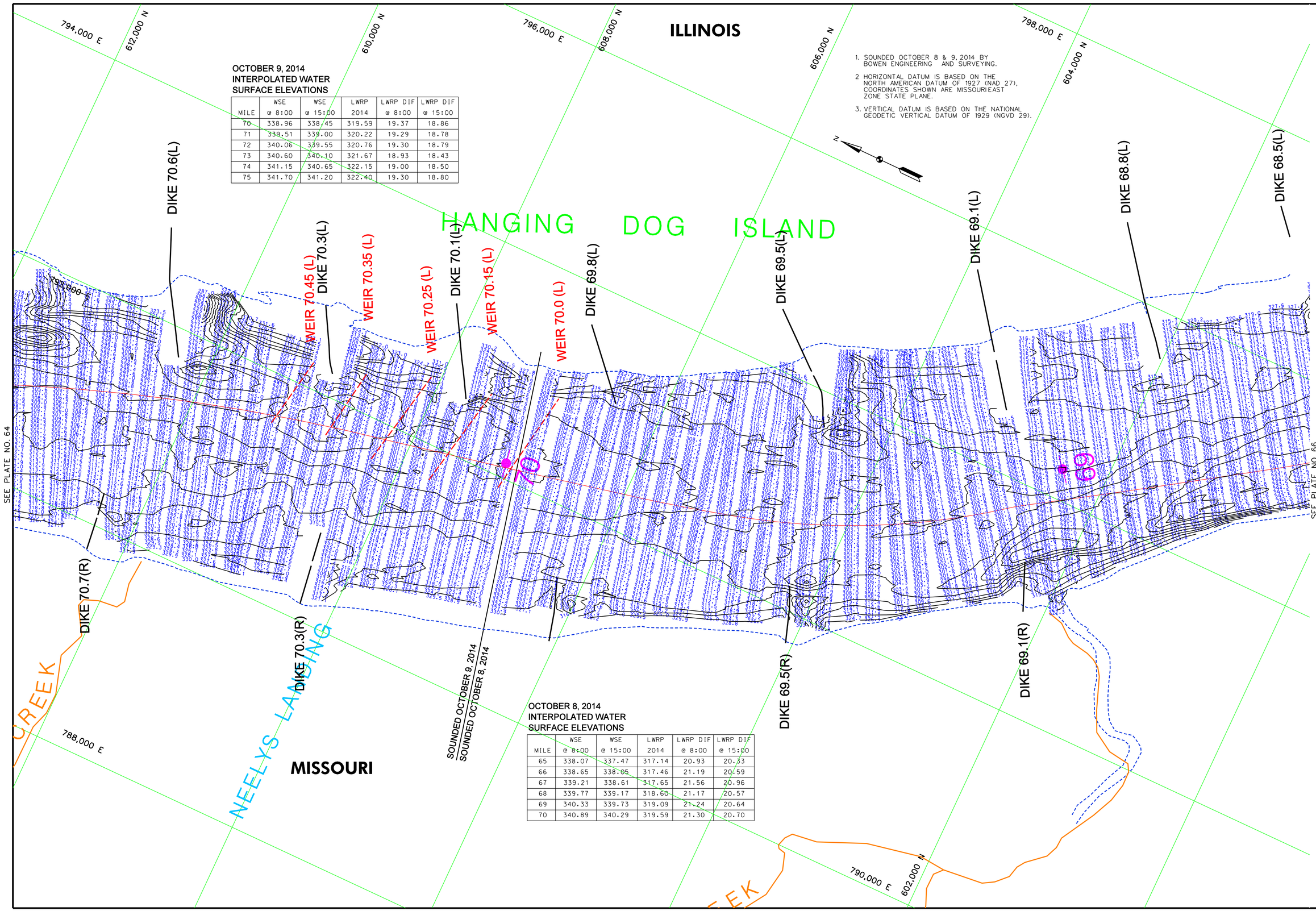
Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 9, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ##########
File name: ##########

240 METERS
800 FEET
120 0 120 400
0 400

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

HYDROGRAPHIC SURVEYS
RIVER MILES 70.7 – 72.7

PLATE NUMBER
64



1. SOUNDED OCTOBER 8 & 9, 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).

OCTOBER 9, 2014 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
70	338.96	338.45	319.59	19.37	18.86
71	339.51	339.00	320.22	19.29	18.78
72	340.06	339.55	320.76	19.30	18.79
73	340.60	340.10	321.67	18.93	18.43
74	341.15	340.65	322.15	19.00	18.50
75	341.70	341.20	322.40	19.30	18.80

OCTOBER 8, 2014 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
65	338.07	337.47	317.14	20.93	20.33
66	338.65	338.05	317.46	21.19	20.59
67	339.21	338.61	317.65	21.56	20.96
68	339.77	339.17	318.60	21.17	20.57
69	340.33	339.73	319.09	21.24	20.64
70	340.89	340.29	319.59	21.30	20.70

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
08 OCT 2014	25.93ft@00:25.41ft@00:00	24.33ft@00:24.13ft@00:00	25.61ft@00:25.00ft@15:00	x
09 OCT 2014	x	23.05ft@00:22.53ft@15:00	23.54ft@00:23.06ft@15:00	x

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 8 & 9, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ##########
File name: ##########

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

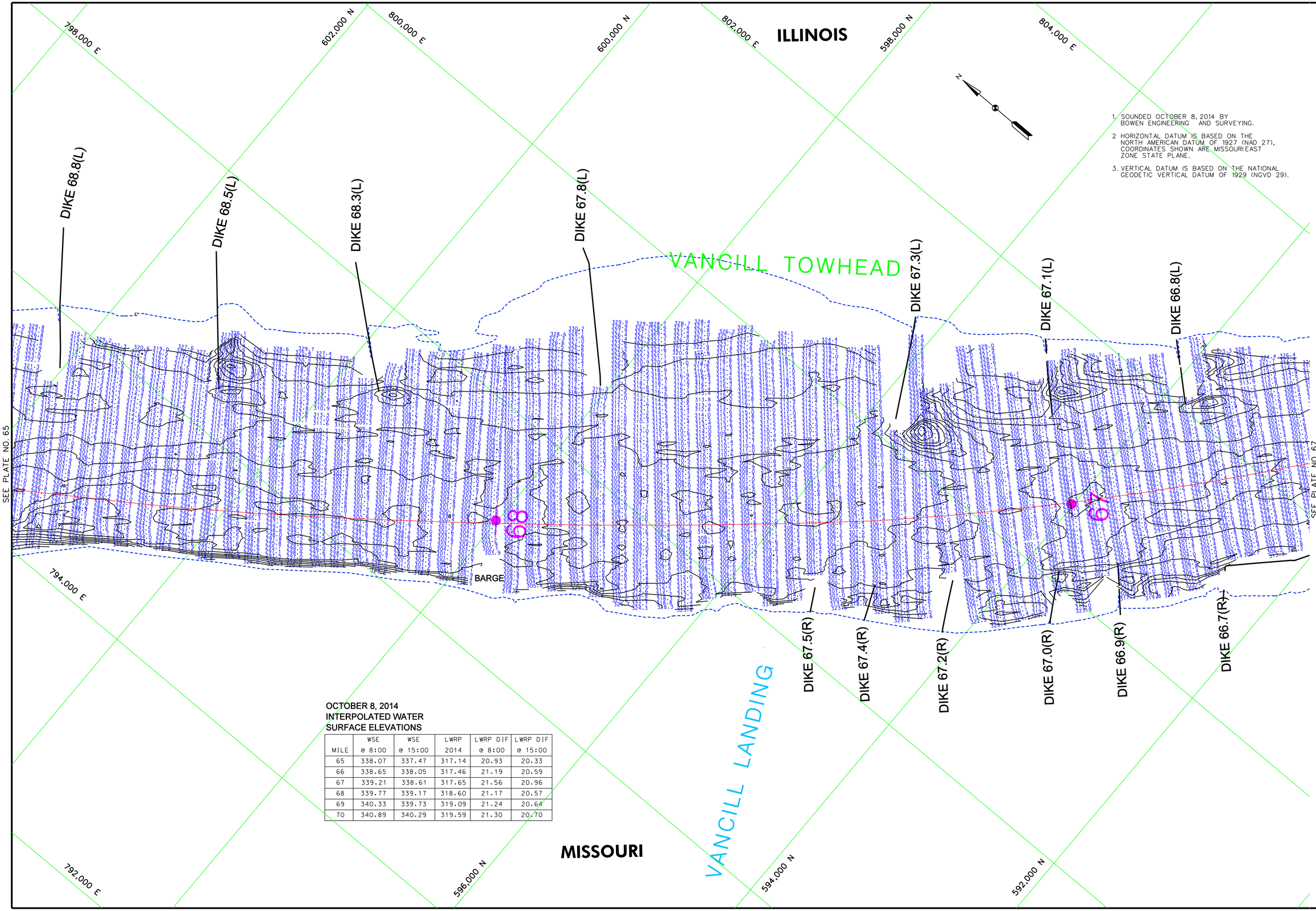
120 0 120 240 METERS
400 0 400 800 FEET

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

HYDROGRAPHIC SURVEYS

RIVER MILES 68.7 – 70.7

PLATE NUMBER
65



1. SOUNDED OCTOBER 8, 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).

OCTOBER 8, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
65	338.07	337.47	317.14	20.93	20.33
66	338.65	338.05	317.46	21.19	20.59
67	339.21	338.61	317.65	21.56	20.96
68	339.77	339.17	318.60	21.17	20.57
69	340.33	339.73	319.09	21.24	20.64
70	340.89	340.29	319.59	21.30	20.70

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
DB OCT 2014	25.9318(00)	25.4115(00)	24.3318(00)	24.3115(00)
			25.6118(00)	25.0015(00)
				X

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

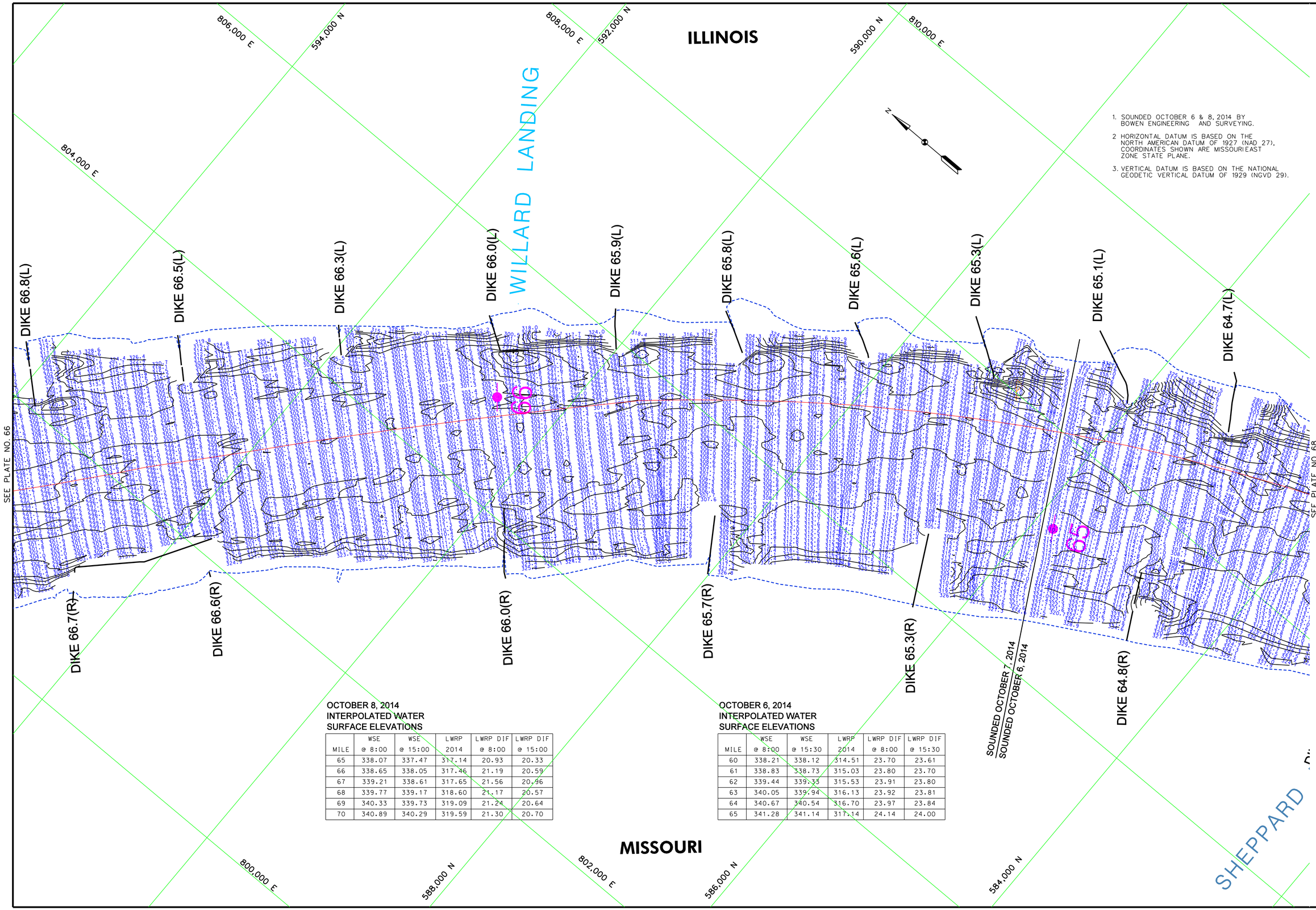
Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 8, 2014
Drawn by: X
Cked by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE/TIME####
File name: ####DESIGNFILE\PROCNOTAME####

120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYING AND MAPPING ACCOMPLISHED AT THE TIME SHOWN AND AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS
RIVER MILES 66.7 – 68.7

PLATE NUMBER
66



1. SOUNDED OCTOBER 6 & 8, 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).

OCTOBER 8, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
65	338.07	337.47	317.14	20.93	20.33
66	338.65	338.05	317.46	21.19	20.59
67	339.21	338.61	317.65	21.56	20.96
68	339.77	339.17	318.60	21.17	20.57
69	340.33	339.73	319.09	21.24	20.64
70	340.89	340.29	319.59	21.30	20.70

OCTOBER 6, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
60	338.21	338.12	314.51	23.70	23.61
61	338.83	338.73	315.03	23.80	23.70
62	339.44	339.33	315.53	23.91	23.80
63	340.05	339.94	316.13	23.92	23.81
64	340.67	340.54	316.70	23.97	23.84
65	341.28	341.14	317.14	24.14	24.00

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
06 OCT 2014	28.79(6:00) 28.70(15:30)	28.19(6:00) 28.04(15:30)	X	X
08 OCT 2014	25.93(8:00) 25.41(15:00)	24.93(8:00) 24.33(15:00)	25.61(8:00) 25.00(15:00)	X

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Surveyed by: BOWEN ENGINEERING
Drawn by: X
SUBMITTED: X
Ckd by: X
APPROVED: X
Reviewed by: X
Survey Date: OCTOBER 6 & 8, 2014
Plot date: ##########
File name: ##########

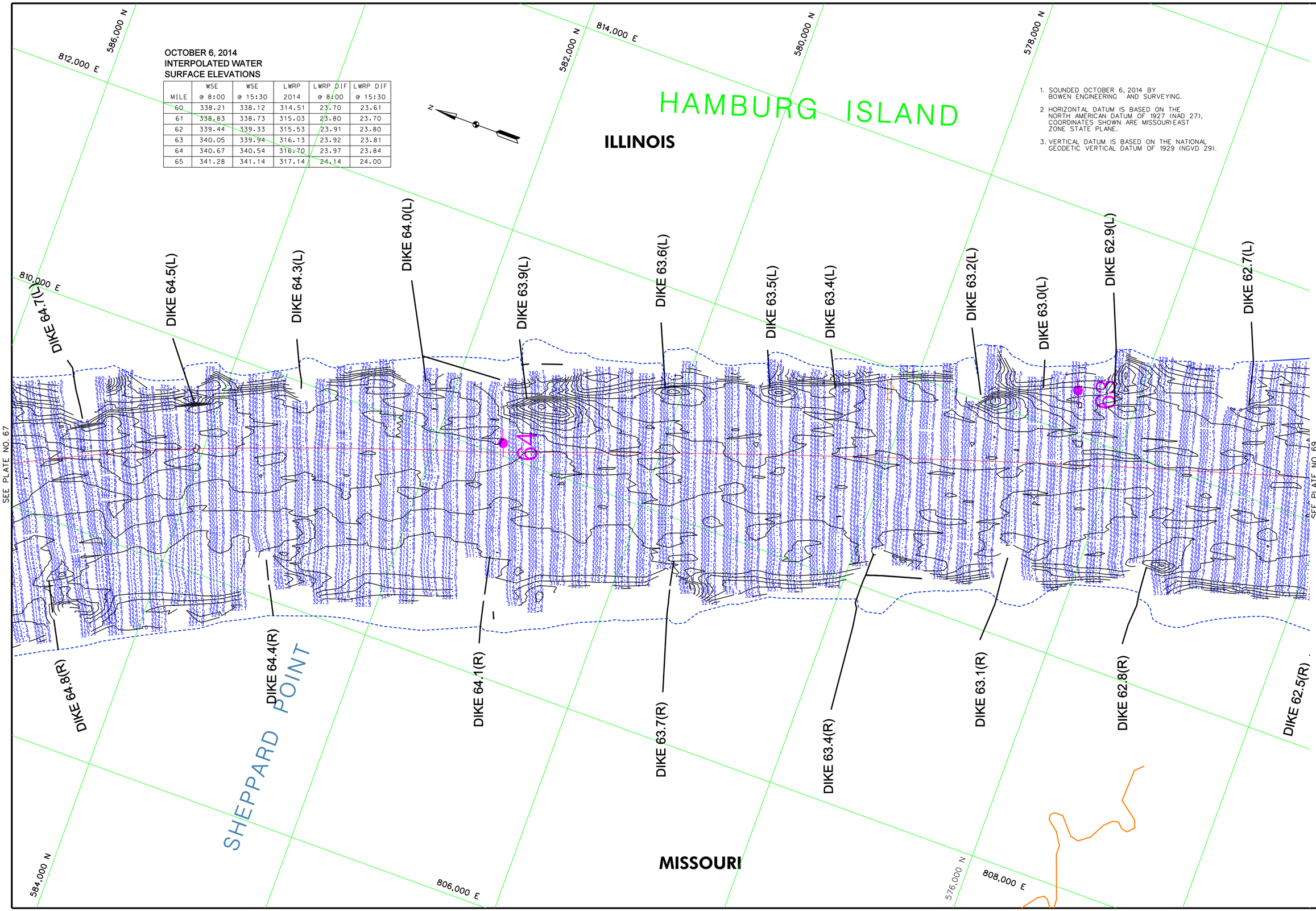
120 400 0 0 120 240 METERS
400 800 FEET

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

HYDROGRAPHIC SURVEYS

RIVER MILES 64.7 – 66.7

PLATE NUMBER
67



OCTOBER 6, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
60	338.21	338.12	314.51	23.70	23.61
61	338.83	338.73	315.03	23.80	23.70
62	339.44	339.33	315.53	23.91	23.80
63	340.05	339.94	316.13	23.92	23.81
64	340.67	340.54	316.70	23.97	23.84
65	341.28	341.14	317.14	24.14	24.00

1. SOUNDED OCTOBER 6, 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

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
06 OCT 2014	28.79(8:00) 28.70(15:30)	28.39(8:00) 28.04(15:30)	X	X

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 6, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEBRIEFDESCRIPTION####

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

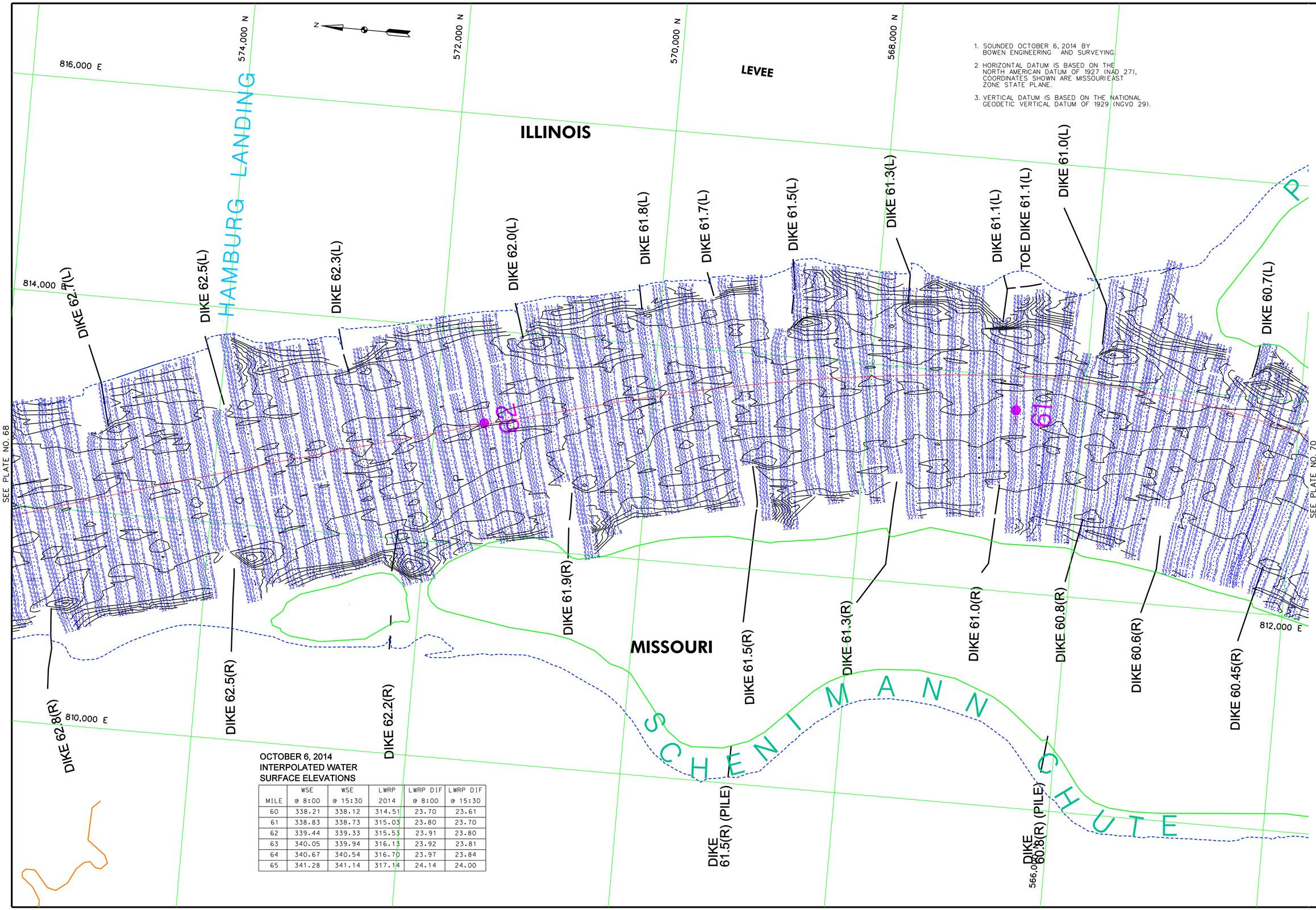
HYDROGRAPHIC SURVEYS
RIVER MILES 62.7 – 64.7

120 400 0 0 120 240 METERS
400 800 FEET

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

PLATE NUMBER
68

1. SOUNDED OCTOBER 6, 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).



OCTOBER 6, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
60	338.21	338.12	314.51	23.70	23.61
61	338.83	338.73	315.03	23.80	23.70
62	339.44	339.33	315.53	23.91	23.80
63	340.05	339.94	316.13	23.92	23.81
64	340.67	340.54	316.70	23.97	23.84
65	341.28	341.14	317.14	24.14	24.00

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
06 OCT 2014	28.79(8:00) 28.70(15:30)	28.39(8:00) 28.04(15:30)	x	x

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 6, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEBRTCFICATION####

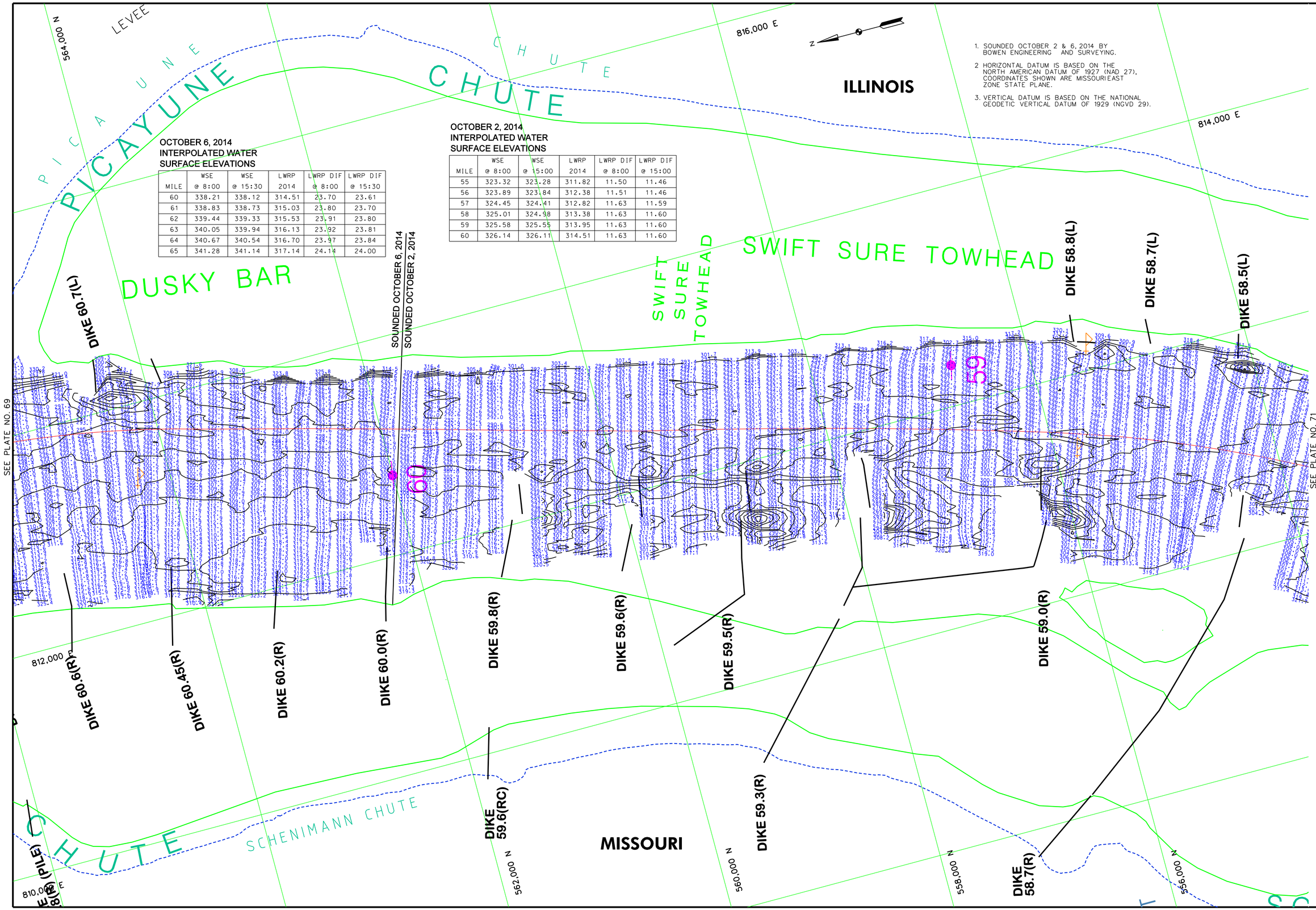
240 METERS 120 0 120 400
800 FEET 400 0 400 800

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF THE SURVEY MADE ON THE INDICATED DATE AND SHOULD BE INTERPRETED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

HYDROGRAPHIC SURVEYS

RIVER MILES 60.6 – 62.7

PLATE NUMBER
69



OCTOBER 6, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
60	338.21	338.12	314.51	23.70	23.61
61	338.83	338.73	315.03	23.80	23.70
62	339.44	339.33	315.53	23.91	23.80
63	340.05	339.94	316.13	23.92	23.81
64	340.67	340.54	316.70	23.97	23.84
65	341.28	341.14	317.14	24.14	24.00

OCTOBER 2, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
55	323.32	323.28	311.82	11.50	11.46
56	323.89	323.84	312.38	11.51	11.46
57	324.45	324.41	312.82	11.63	11.59
58	325.01	324.98	313.38	11.63	11.60
59	325.58	325.55	313.95	11.63	11.60
60	326.14	326.11	314.51	11.63	11.60

1. SOUNDED OCTOBER 2 & 6, 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

	CAPE GIRARDEAU, MO	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO
ZERO N.G.V.D.	304.65	313.89	321.93	328.92
MILE	52.1	66.3	81.9	94.1
LWRP 2014	310.01	317.54	325.69	331.05
02 OCT 2014	17.04(8:00) 16.98(15:00)	15.80(8:00) 15.80(15:00)	x	x
06 OCT 2014	28.79(8:00) 28.70(15:30)	28.19(8:00) 28.04(15:30)	x	x

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Surveyed by: BOWEN ENGINEERING
Drawn by: X
SUBMITTED: X
Checked by: X
Reviewed by: X
APPROVED: X
Survey Date: OCTOBER 2 & 6, 2014
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEBEFORCATION####

120 400 0 0 120 240 METERS
400 800 FEET

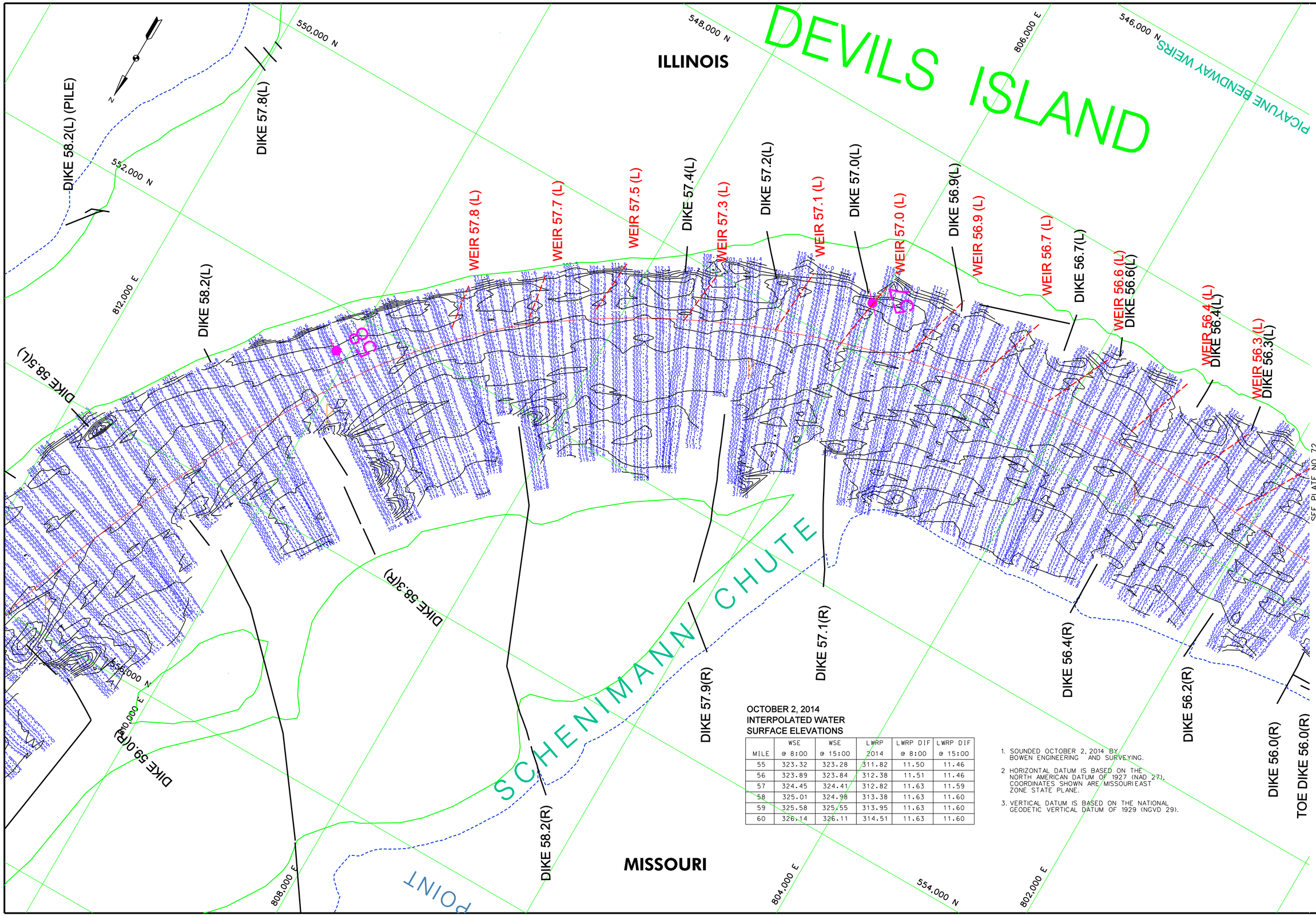
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ST. LOUIS DISTRICT, CORPS OF ENGINEERS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 58.5 – 60.6

PLATE NUMBER

70



OCTOBER 2, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
55	323.32	323.28	311.82	11.50	11.46
56	323.89	323.84	312.38	11.51	11.46
57	324.45	324.41	312.82	11.63	11.59
58	325.01	324.98	313.38	11.63	11.60
59	325.58	325.55	313.95	11.63	11.60
60	326.14	326.11	314.51	11.63	11.60

1. SOUNDED OCTOBER 2, 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

	THEBES, IL	GRAYS POINT, MO	CAPE GIRARDEAU, MO	WOODSON SPRINGS, MO
ZERO N.G.V.D.	300.00	301.18	304.65	313.89
MILE	43.7	46.3	52.1	66.3
LWRP 2014	304.90	306.20	310.01	317.54
02 OCT 2014	x	x	17.04(8:00) 16.98(15:00)	15.80(8:00) 15.80(15:00)

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 2, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILEREFERENCE####

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

240 METERS 120 0 120
800 FEET 400 0 400

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

HYDROGRAPHIC SURVEYS

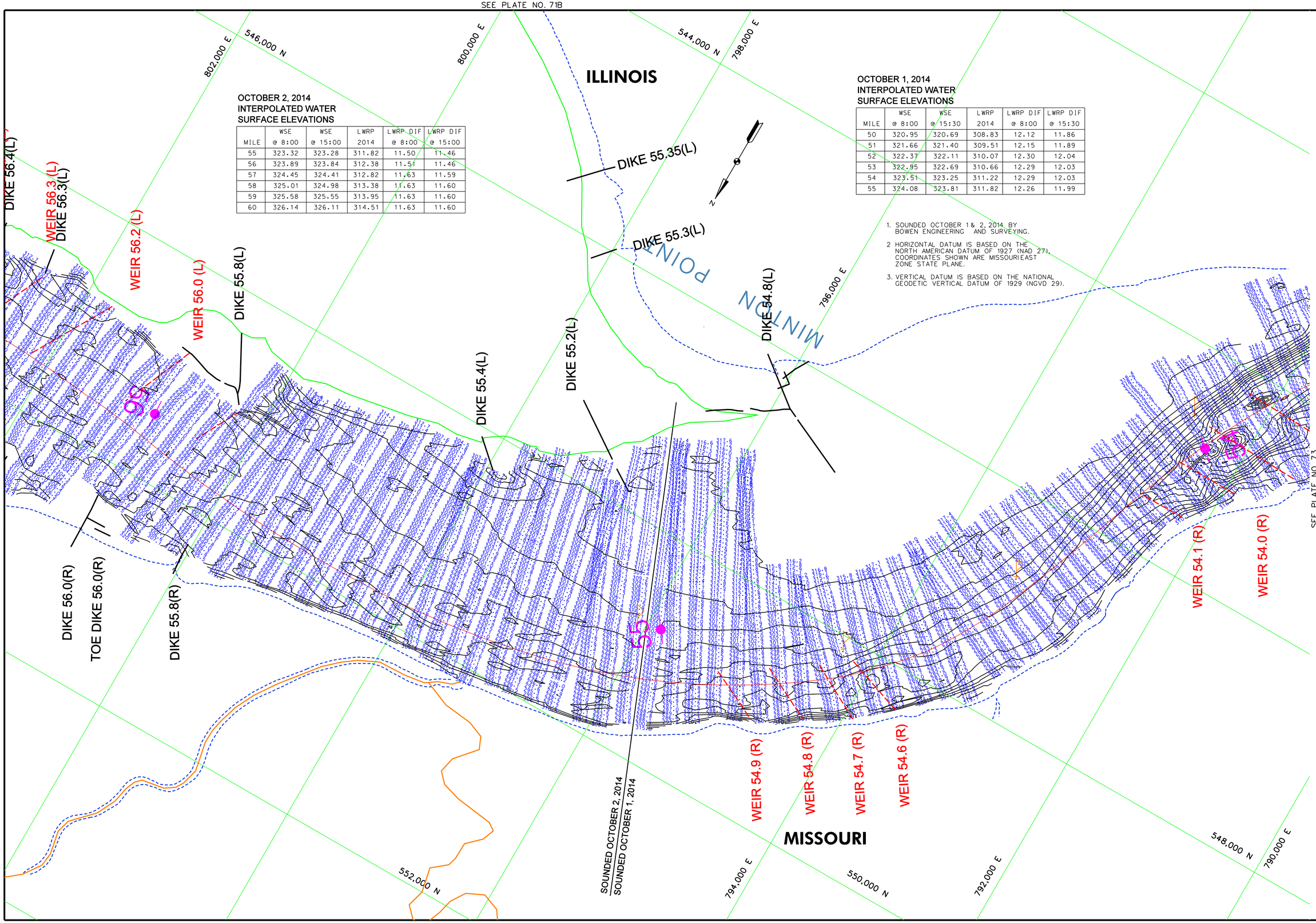
RIVER MILES 56.1 – 58.5

PLATE NUMBER
71

SEE PLATE NO. 71B

SEE PLATE NO. 71

SEE PLATE NO. 73



OCTOBER 2, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:00	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:00
55	323.32	323.28	311.82	11.50	11.46
56	323.89	323.84	312.38	11.51	11.46
57	324.45	324.41	312.82	11.63	11.59
58	325.01	324.98	313.38	11.63	11.60
59	325.58	325.55	313.95	11.63	11.60
60	326.14	326.11	314.51	11.63	11.60

OCTOBER 1, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
50	320.95	320.69	308.83	12.12	11.86
51	321.66	321.40	309.51	12.15	11.89
52	322.37	322.11	310.07	12.30	12.04
53	322.95	322.69	310.66	12.29	12.03
54	323.51	323.25	311.22	12.29	12.03
55	324.08	323.81	311.82	12.26	11.99

1. SOUNDED OCTOBER 1 & 2, 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

	THEBES, IL	GRAYS POINT, MO	CAPE GIRARDEAU, MO	WOODSON SPRINGS, MO
ZERO N.G.V.D.	300.00	301.18	304.65	313.89
MILE	43.7	46.3	52.1	66.3
LWRP 2014	304.90	306.20	310.01	317.54
01 OCT 2014	x	(7.14/8:00) (6.88/15:30)	(7.79/8:00) (7.53/15:30)	(6.56/8:00) (6.26/15:30)
02 OCT 2014	x	x	(7.04/8:00) (6.98/15:00)	(5.80/8:00) (5.80/15:00)

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 1 & 2, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE-TIME####
File name: ####DESIGNFILE\BATHOTOPO\TOPO####

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

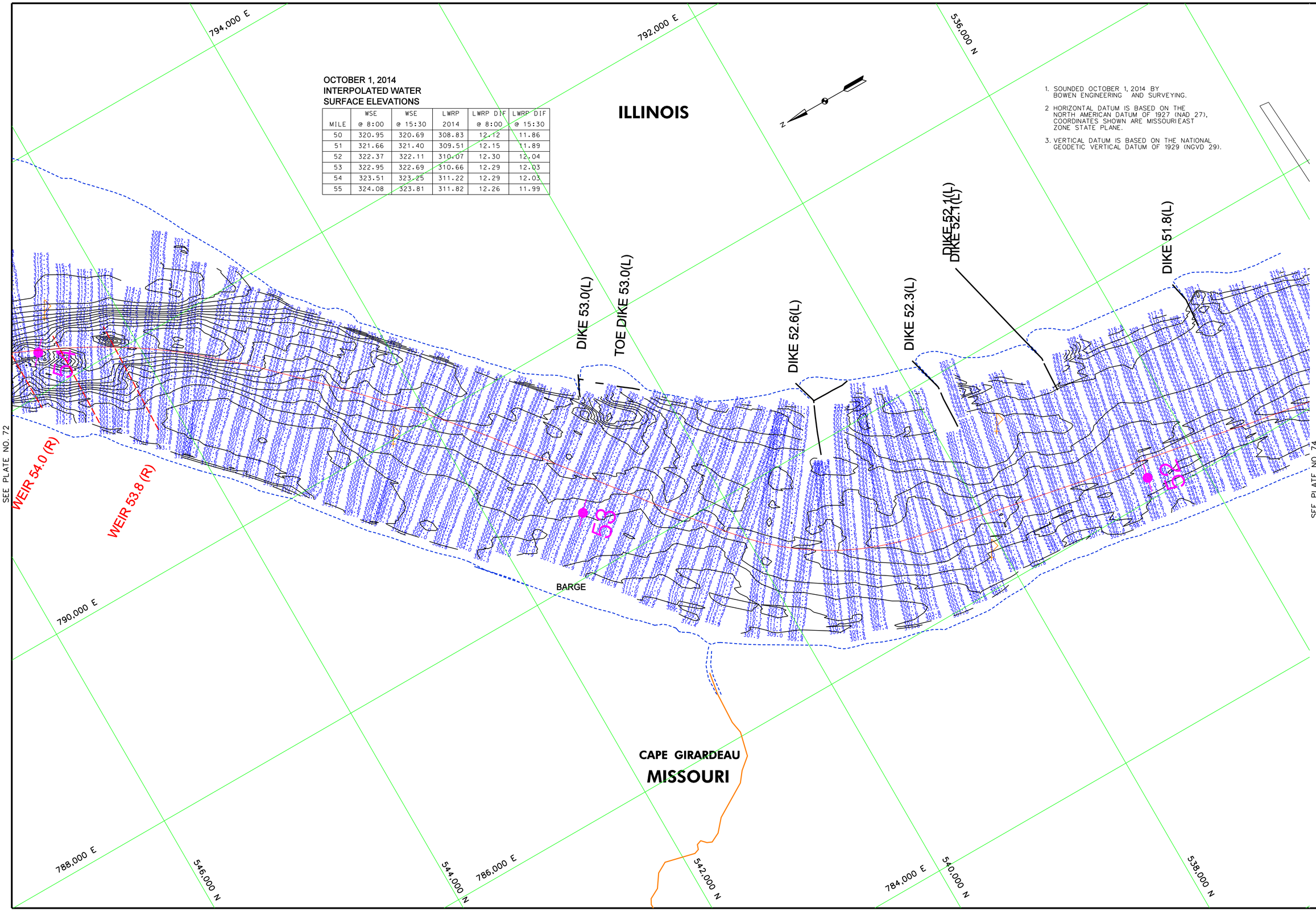
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS
RIVER MILES 53.9 – 56.1

120 0 120 240 METERS
400 0 400 800 FEET

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

PLATE NUMBER
72



OCTOBER 1, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
50	320.95	320.69	308.83	12.12	11.86
51	321.66	321.40	309.51	12.15	11.89
52	322.37	322.11	310.07	12.30	12.04
53	322.95	322.69	310.66	12.29	12.03
54	323.51	323.25	311.22	12.29	12.03
55	324.08	323.81	311.82	12.26	11.99

1. SOUNDED OCTOBER 1, 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

	THEBES, IL	GRAYS POINT, MO	CAPE GIRARDEAU, MO	WOODSON SPRINGS, MO
ZERO N.G.V.D.	300.00	301.18	304.65	313.89
MILE	43.7	46.3	52.1	66.3
LWRP 2014	304.90	306.20	310.01	317.54
01 OCT 2014	x	(7.1418.001 16.8810-30)	(7.7918.001 17.5315-30)	(6.5618.001 16.2610-30)

Surveyed by: BOWEN ENGINEERING
Survey Date: OCTOBER 1, 2014
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ##########
File name: ##########

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

120 400 0 0 240 METERS 800 FEET

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

HYDROGRAPHIC SURVEYS

RIVER MILES 51.8 – 53.9

PLATE NUMBER
73

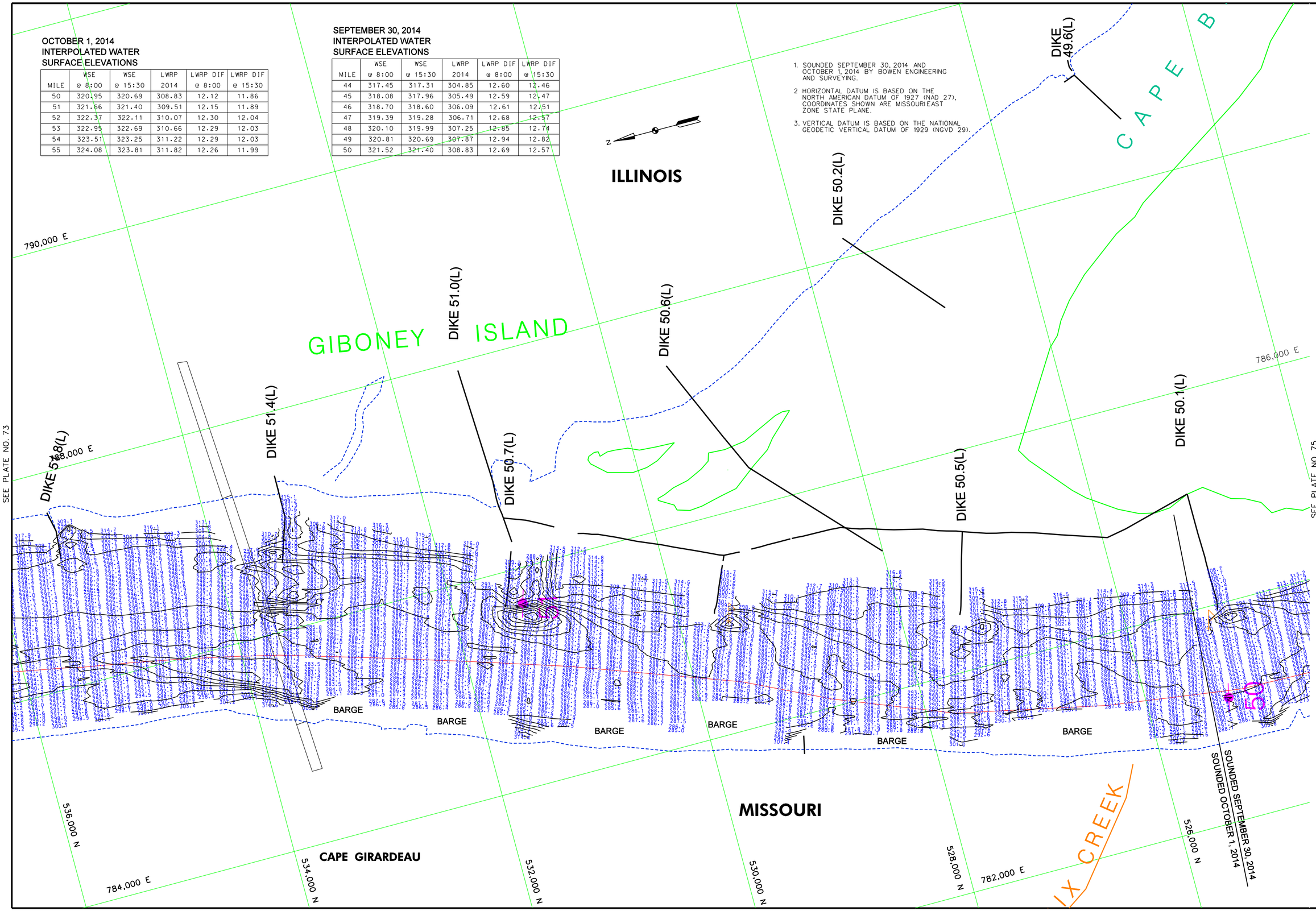
OCTOBER 1, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
50	320.95	320.69	308.83	12.12	11.86
51	321.66	321.40	309.51	12.15	11.89
52	322.37	322.11	310.07	12.30	12.04
53	322.95	322.69	310.66	12.29	12.03
54	323.51	323.25	311.22	12.29	12.03
55	324.08	323.81	311.82	12.26	11.99

SEPTEMBER 30, 2014
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 8:00	WSE @ 15:30	LWRP 2014	LWRP DIF @ 8:00	LWRP DIF @ 15:30
44	317.45	317.31	304.85	12.60	12.46
45	318.08	317.96	305.49	12.59	12.47
46	318.70	318.60	306.09	12.61	12.51
47	319.39	319.28	306.71	12.68	12.57
48	320.10	319.99	307.25	12.85	12.74
49	320.81	320.69	307.87	12.94	12.82
50	321.52	321.40	308.83	12.69	12.57

1. SOUNDED SEPTEMBER 30, 2014 AND OCTOBER 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

GAGE RECORD

	THEBES, IL	GRAYS POINT, MO	CAPE GIRARDEAU, MO	WOODSON SPRINGS, MO
ZERO N.G.V.D.	300.00	301.18	304.65	313.89
MILE	43.7	46.3	52.1	66.3
LWRP 2014	304.90	306.20	310.01	317.54
30 SEP 2014	17.26(8:00) 17.12(15:30)	17.71(8:00) 17.61(15:30)	18.36(8:00) 18.23(15:30)	x
01 OCT 2014	x	17.14(8:00) 16.88(15:30)	17.79(8:00) 17.53(15:30)	16.56(8:00) 16.26(15:30)

Survey Date: SEPT. 30 & OCTOBER 1, 2014
Surveyed by: BOWEN ENGINEERING
Drawn by: X
Ckd by: X
Reviewed by: X
SUBMITTED: X
APPROVED: X
Plot date: ####DATE:TIME####
File name: ####DESIGNAME:LEEDPECATION####

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
400 0 400 1200

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

HYDROGRAPHIC SURVEYS
RIVER MILES 50.0 – 51.8

PLATE NUMBER
74