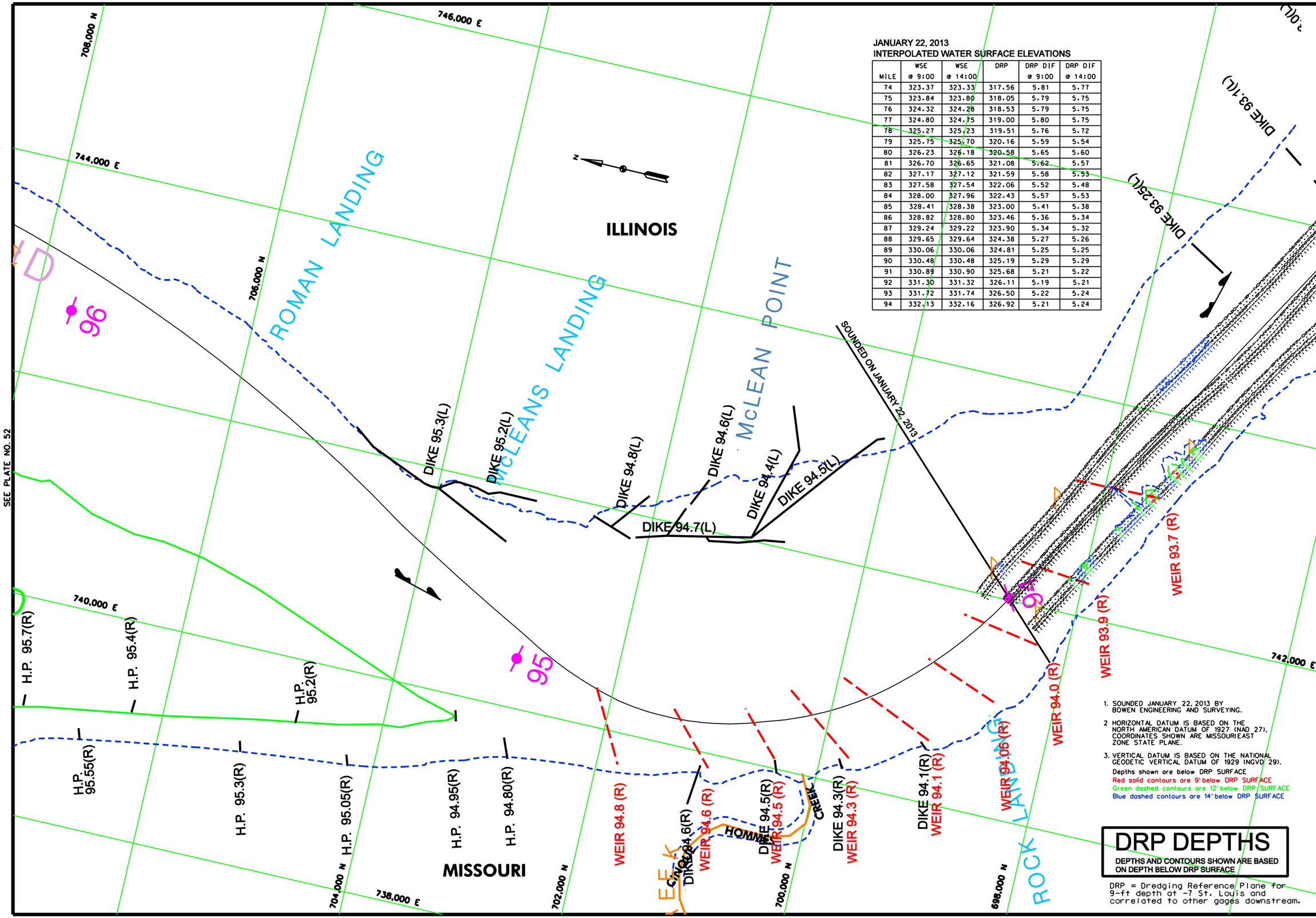


JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO	BISHOPS LANDING, MO
ZERO N.G.V.D.	313.89	321.93	328.92	334.11
MILE	66.3	81.9	94.1	100.8
L. W. R. P.	317.8	325.3	330.7	335.4
22 JAN 2013	5.81109(00) 5.78114(00)	5.20109(00) 5.15114(00)	3.25109(00) 3.28114(00)	x

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. ELIMINATION CFS.

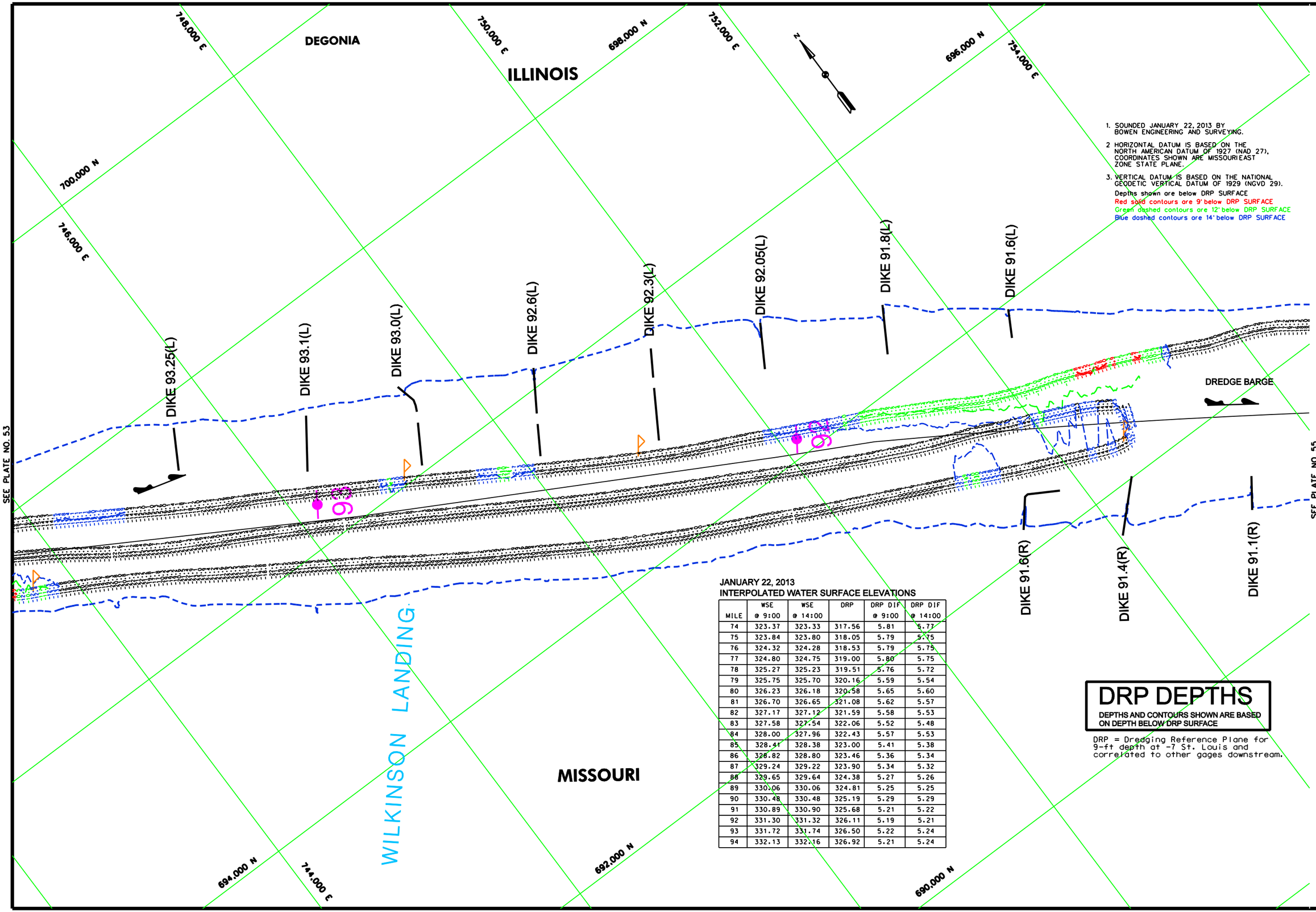
Survey Date: JANUARY 22, 2013
Surveyed by: BOWEN ENGINEERING
Reviewed by: x
Drawn by: x
Ckd by: x
SUBMITTED: x
APPROVED: x
Plot date: ######/#/#####
File name: ##########\##########\##########

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

CHANNEL PATROL
RIVER MILES 93.5 – 96.8

PLATE NUMBER
53



1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

US Army Corps of Engineers
St. Louis District

CAGE RECORD

	MOCCASIN SPRINGS, MO	GRAND TOWER, IL	RED ROCK LANDING, MO	BISHOPS LANDING, MO
ZERO N.G.V.D.	313.89	321.93	328.92	334.11
MILE	66.3	81.9	94.1	100.8
L. W. R. P.	317.8	325.3	330.7	335.4
22 JAN 2013	5.8109:00	5.7814:00	5.2009:00	5.2814:00

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. ILWRP:1:54,000 C.F.S.

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chd 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

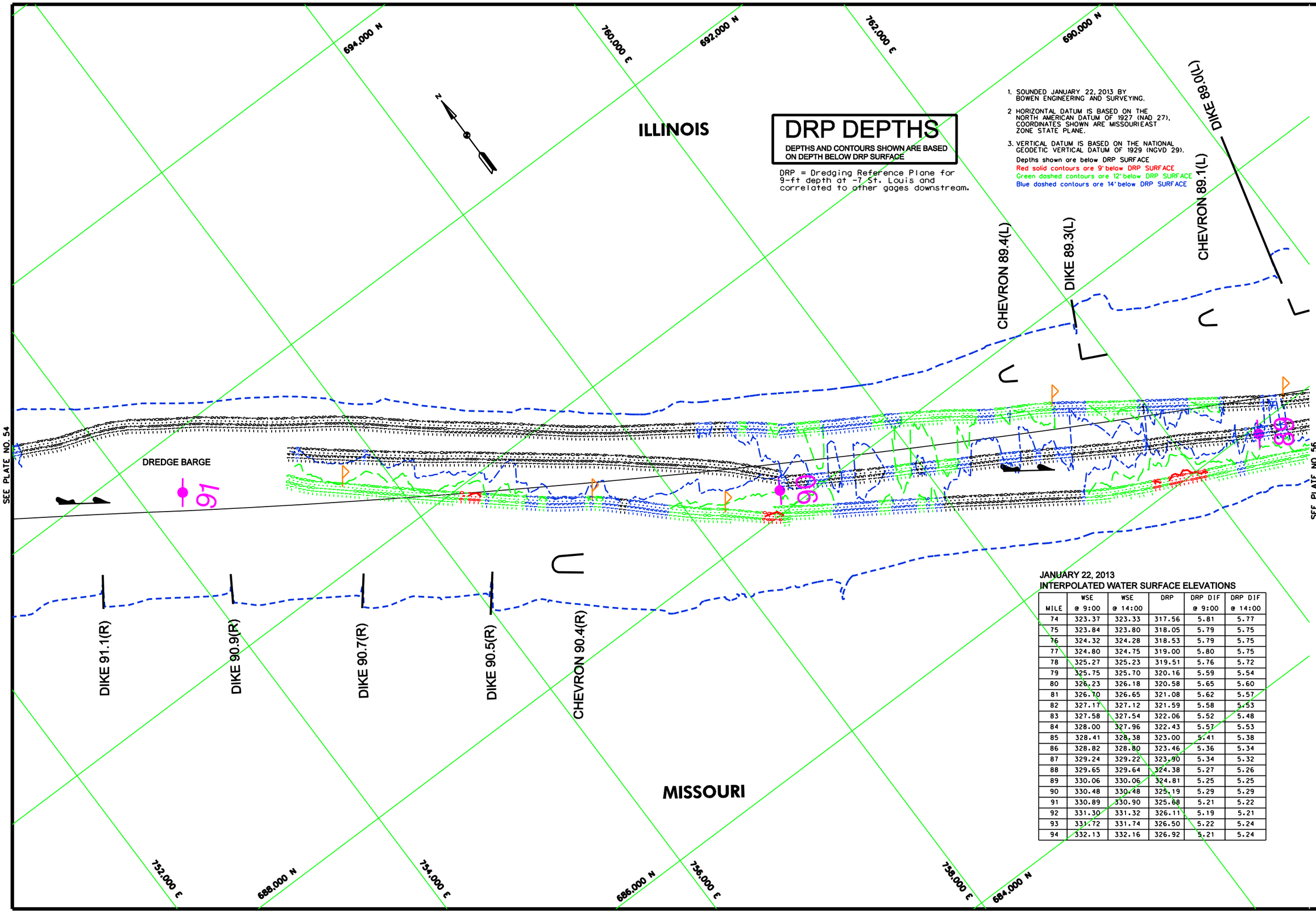
120 0 120 240 METERS
400 0 400 800 FEET

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

CHANNEL PATROL

RIVER MILES 91.2 – 98.5

PLATE NUMBER
54



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	9.90109/001 9.9914/001	5.81109/001 5.7814/001	5.20109/001 5.5014/001	3.25109/001 3.2814/001

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (14.000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: MMMDDYYYY
File name: MISSISSIPPIRIVERPLATES

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

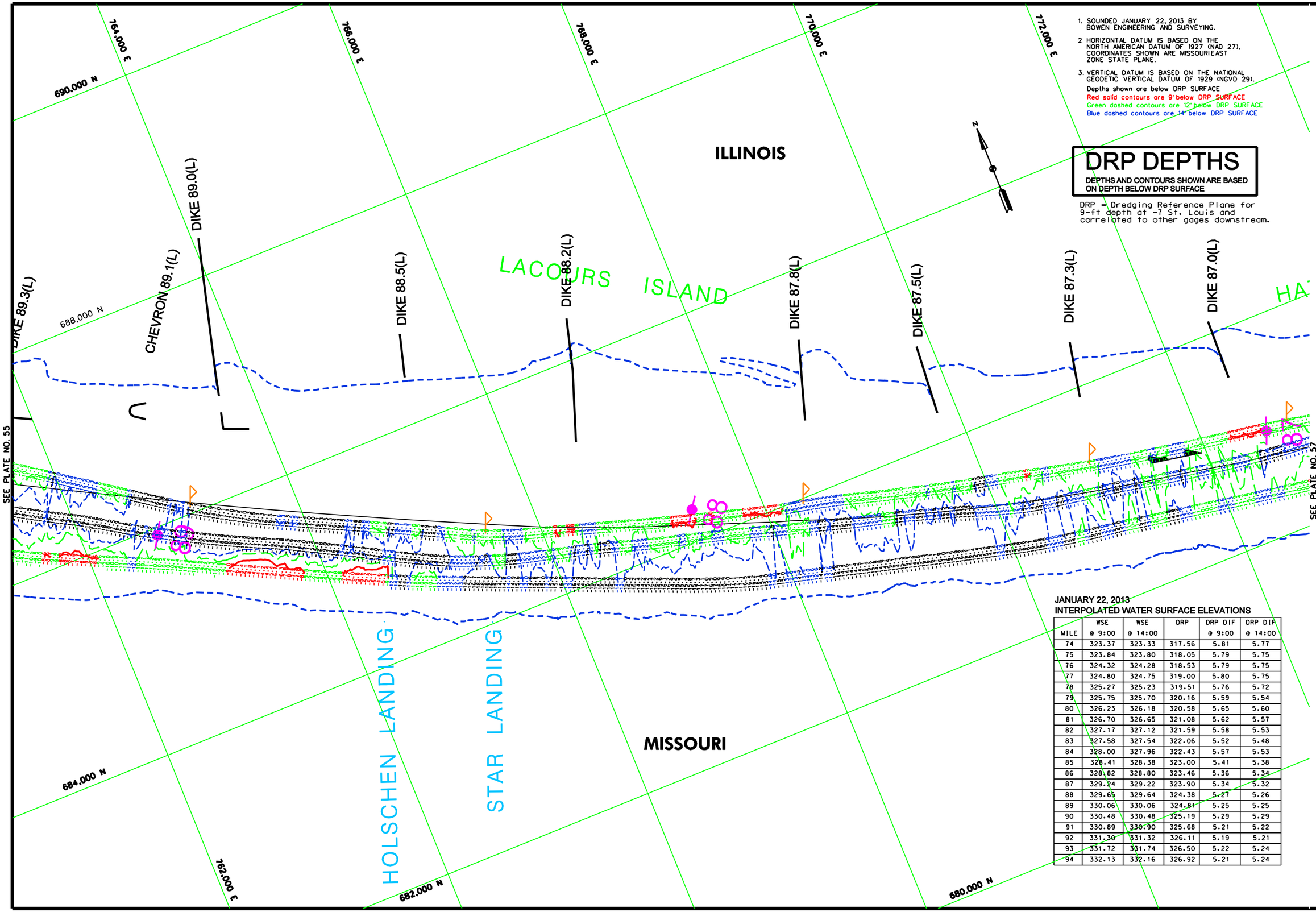
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

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 INDICATED. THE DATA IS PRESENTED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

CHANNEL PATROL
RIVER MILES 89.1 – 91.2

PLATE NUMBER
55



1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	9.9009:00	9.9114:00	5.8109:00	5.7814:00	5.2009:00	5.5014:00	3.2509:00	3.2814:00

ELEVATIONS ARE REFERENCED TO N.G.V.D. - CONTOURS ARE BELOW 1954-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (U.S.ARC C.F.S.)

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

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Ckd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: 8/8/2013 7:16:28 AM
File name: M:\MISSISSIPPI\LEMPER\CFS\CHANNEL

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

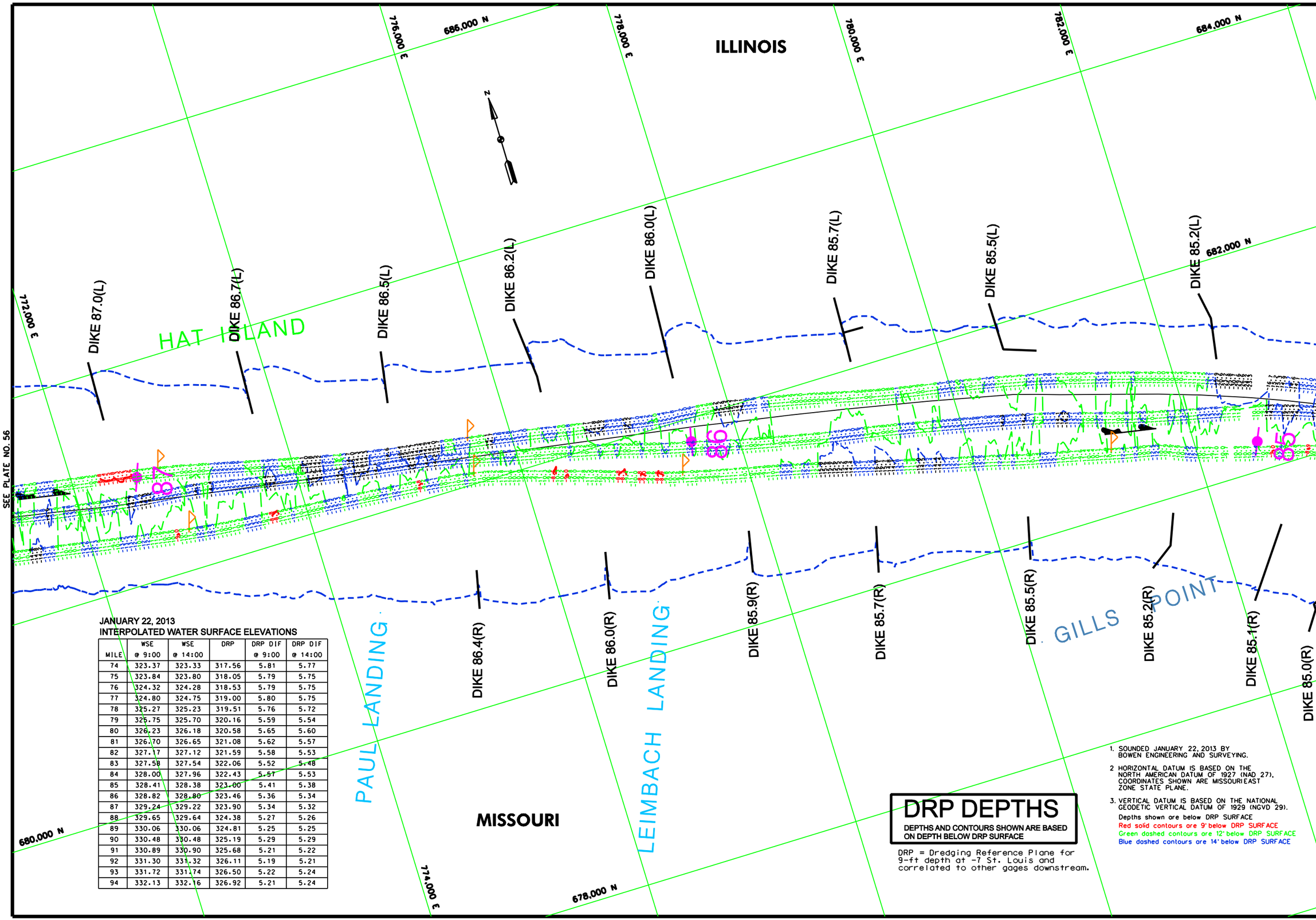
240 METERS 120 0 120 400
800 FEET 400 0 400

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE DATE INDICATED AND IS BELIEVED TO BE ACCURATE AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

CHANNEL PATROL

RIVER MILES 87.1 - 89.1

PLATE NUMBER
56



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.90109:00 9.9914:00	5.81109:00 5.7814:00	5.20109:00 5.5914:00	3.25109:00 3.2814:00

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (14.000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chkd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: MM/DD/YYYY
File name: MISSISSIPPI_SURVEY_CALCULATIONS

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

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 AND MAY NOT BE ACCURATE AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

CHANNEL PATROL

RIVER MILES 85.0 - 87.1

PLATE NUMBER
57

1. SOUNDED JANUARY 22, 2013 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.

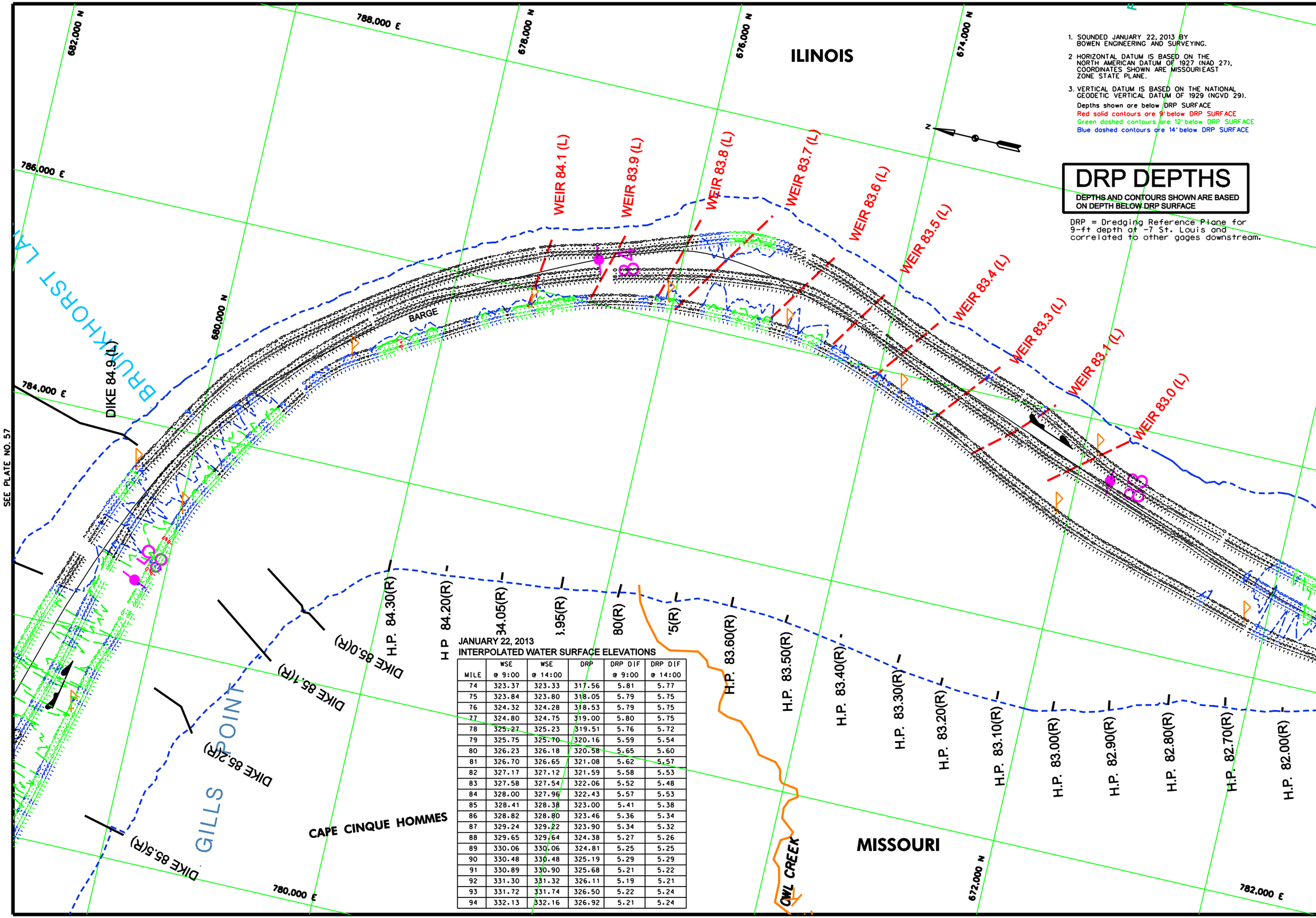
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

Depths shown are below DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	9.90109001 9.9914-001	5.81109001 5.7814-001	5.20109001 5.5914-001	3.25109001 3.2814-001

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (14.000 C.F.S.)

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: ##########
File name: ##########

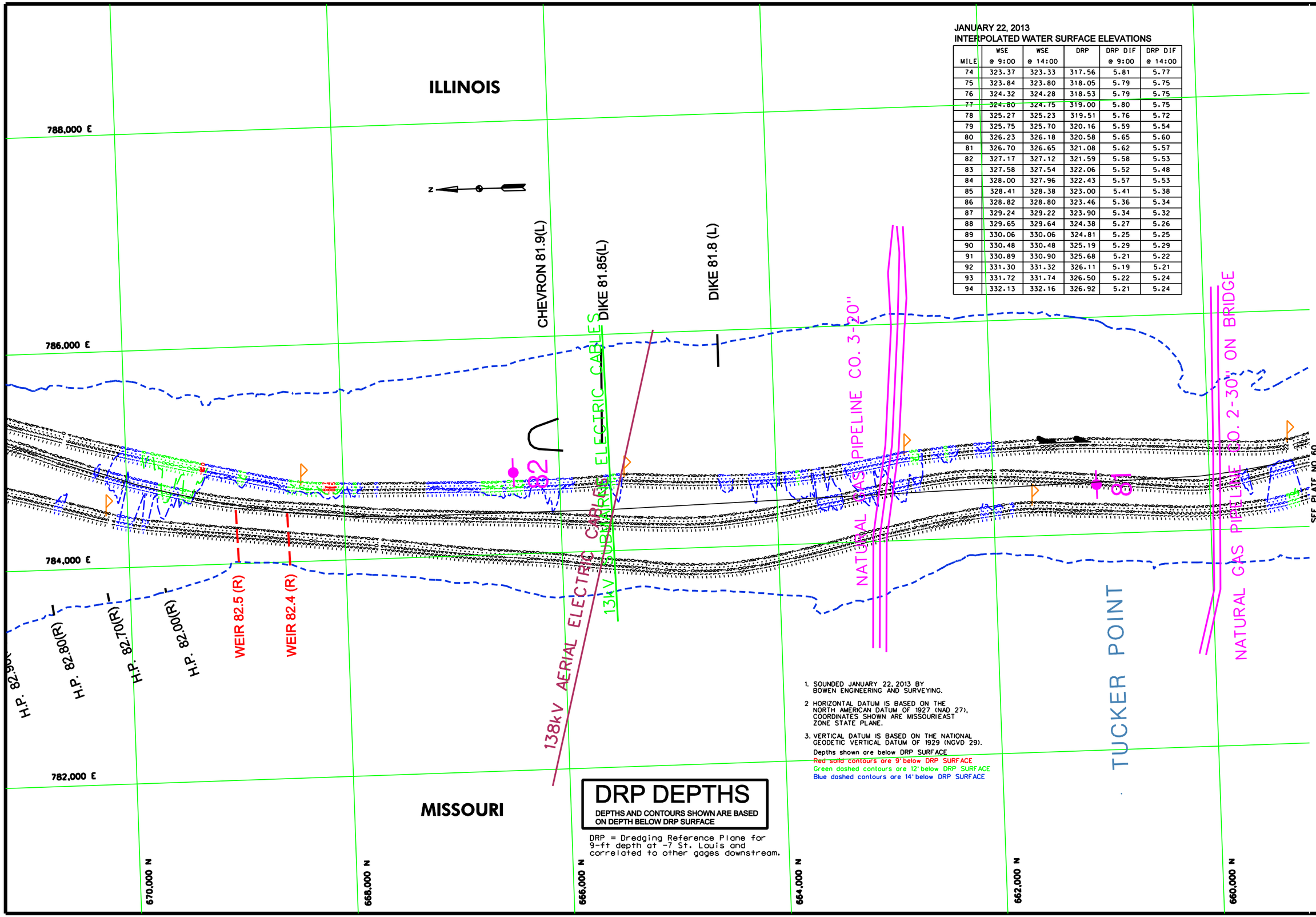
120 0 120 240 METERS
400 0 400 800 FEET

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

CHANNEL PATROL

RIVER MILES 82.7 - 85.0

PLATE NUMBER
58



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.9009:00	5.9914:00	5.7814:00	5.2009:00	5.5014:00	3.2509:00	3.2814:00

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. ELWRP:1:54.000 C.F.S.)

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

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chk'd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: 08/06/2013 7:46:08AM
File name: M:\MISSISSIPPI\ELEVATIONS\DRP\

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

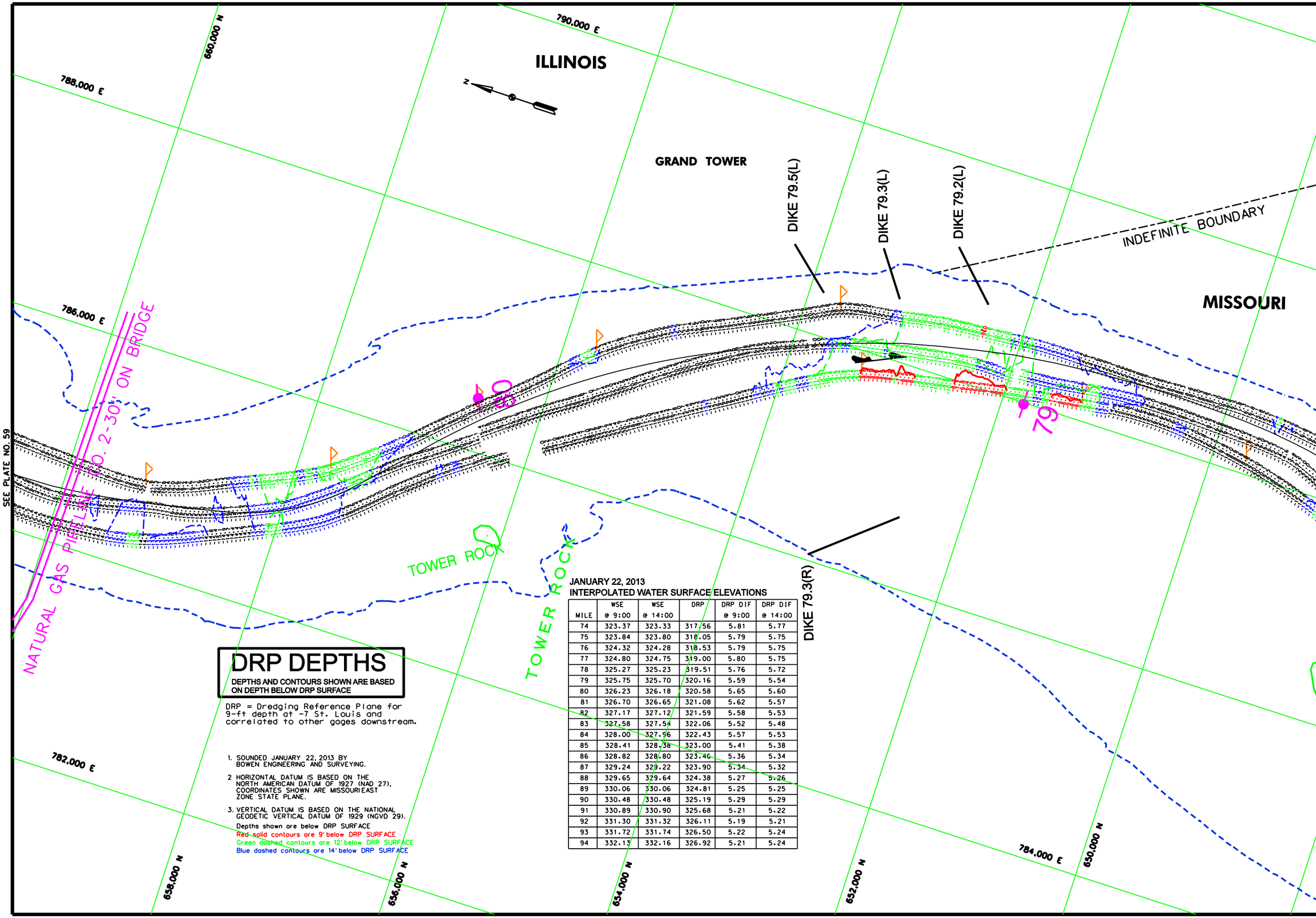
0 120 240 METERS
0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE INDICATED. THE SURVEYS DO NOT NECESSARILY INDICATE THE GENERAL CONDITIONS EXISTING AT THAT TIME.

CHANNEL PATROL

RIVER MILES 80.7 - 82.7

PLATE NUMBER
59



DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.9009:001	5.8914:001	5.7814:001	5.2009:001
	5.9009:001	5.7814:001	5.5014:001	3.2509:001

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. ELIMINATE 14,000 C.F.S.

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: MM/DD/YYYY
File name: MMDDSONDPLDRPTSCATCONWB

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

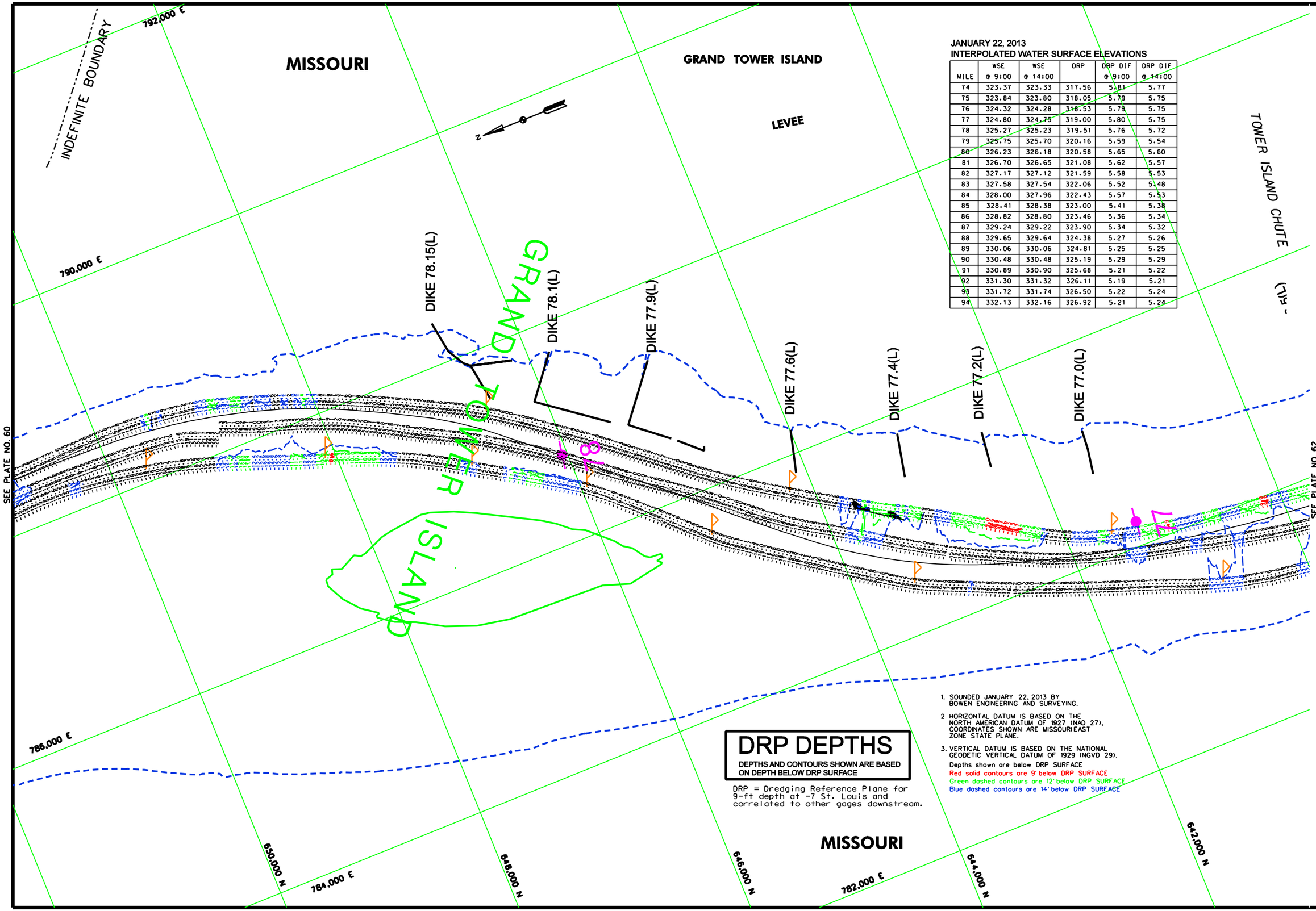
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

120 0 120 240 METERS
400 0 400 800 FEET

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

CHANNEL PATROL
RIVER MILES 80.7 – 78.6

PLATE NUMBER
60



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60
81	326.70	326.65	321.08	5.62	5.57
82	327.17	327.12	321.59	5.58	5.53
83	327.58	327.54	322.06	5.52	5.48
84	328.00	327.96	322.43	5.57	5.53
85	328.41	328.38	323.00	5.41	5.38
86	328.82	328.80	323.46	5.36	5.34
87	329.24	329.22	323.90	5.34	5.32
88	329.65	329.64	324.38	5.27	5.26
89	330.06	330.06	324.81	5.25	5.25
90	330.48	330.48	325.19	5.29	5.29
91	330.89	330.90	325.68	5.21	5.22
92	331.30	331.32	326.11	5.19	5.21
93	331.72	331.74	326.50	5.22	5.24
94	332.13	332.16	326.92	5.21	5.24

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.90E09:00 9.99E14:00	5.88E09:00 5.78E14:00	5.20E09:00 5.50E14:00	3.25E09:00 3.28E14:00

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. ELIMINATION CFS.

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
RIVER MILES 76.8 – 78.6

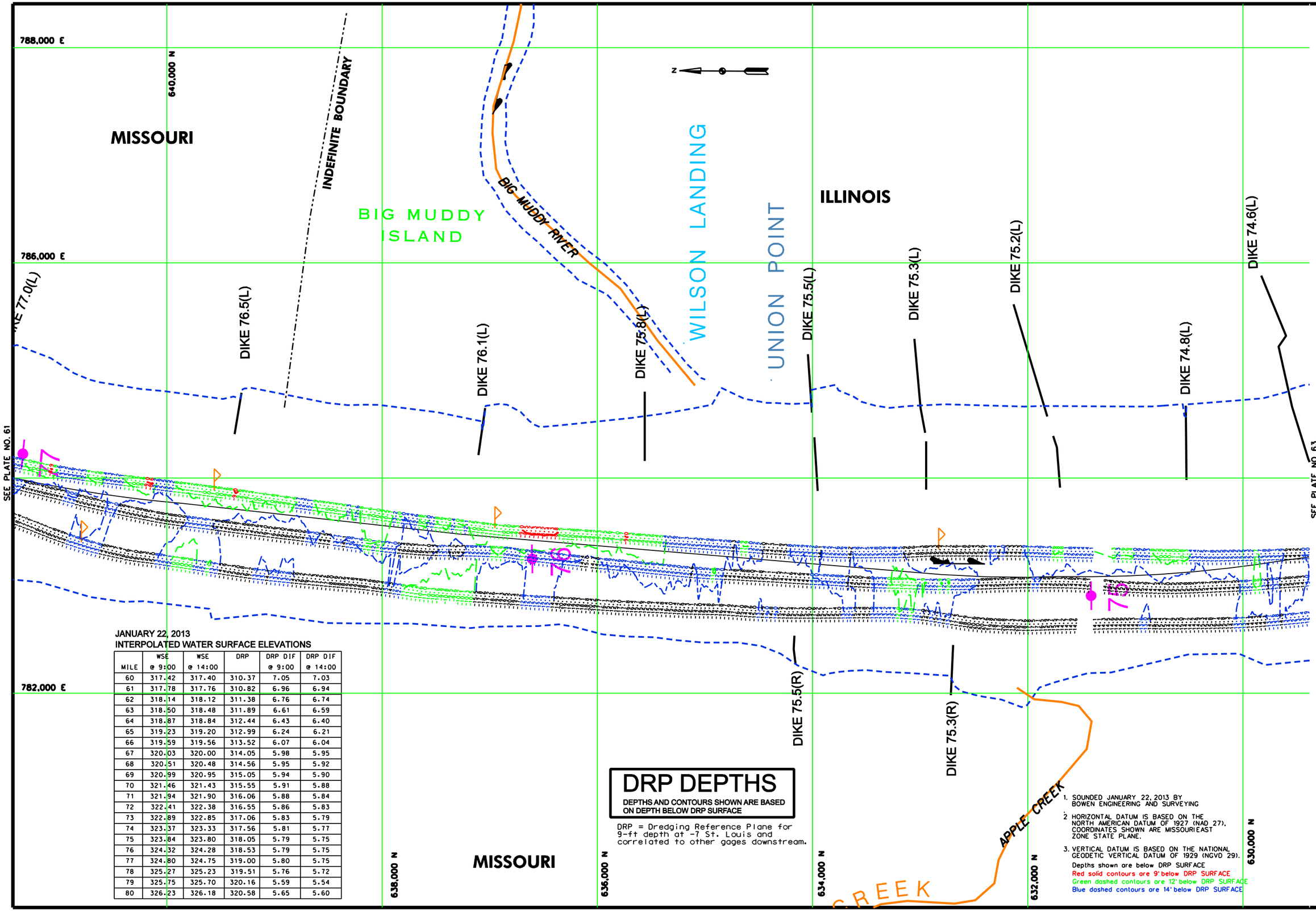
Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Ckd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: 00000DATE/MLS0000
File name: 00000DSGN\MPLE\DRP\TCC\CATCH\000

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 INDICATED. THIS INFORMATION IS PRESENTED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

CHANNEL PATROL
RIVER MILES 76.8 – 78.6

PLATE NUMBER
61



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88
71	321.94	321.90	316.06	5.88	5.84
72	322.41	322.38	316.55	5.86	5.83
73	322.89	322.85	317.06	5.83	5.79
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.9009:001 9.9914:001	5.8109:001 5.7814:001	5.2009:001 5.5914:001	3.2509:001 3.2814:001

ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. G.W.R.P.(1)=5,000 C.F.S.

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Ckd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: ##MONTH-YR##
File name: ##PROJDIR\PLEXPCFIG\FIG##

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

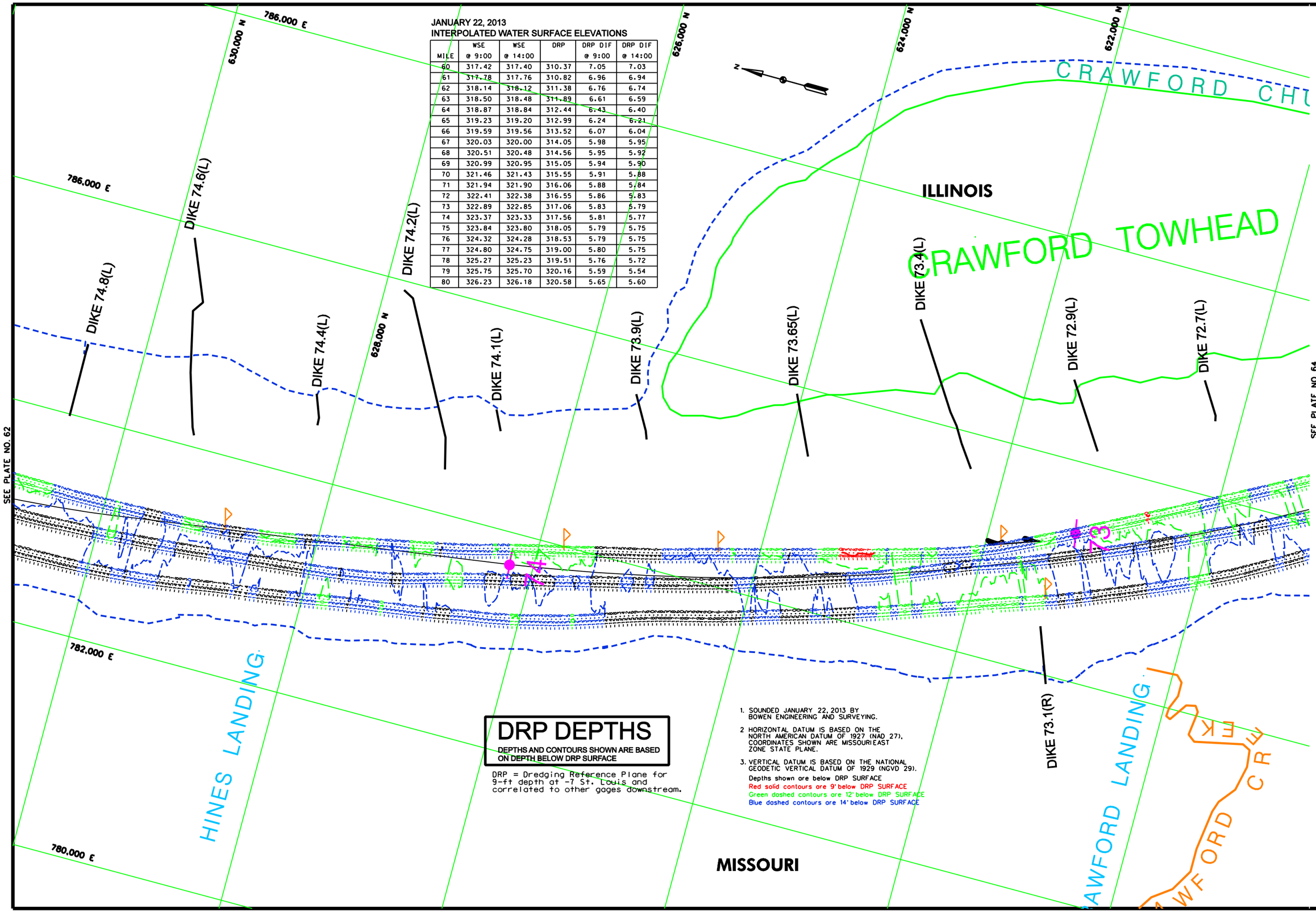
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

240 METERS 120 0 120 400
800 FEET 400 0 400

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

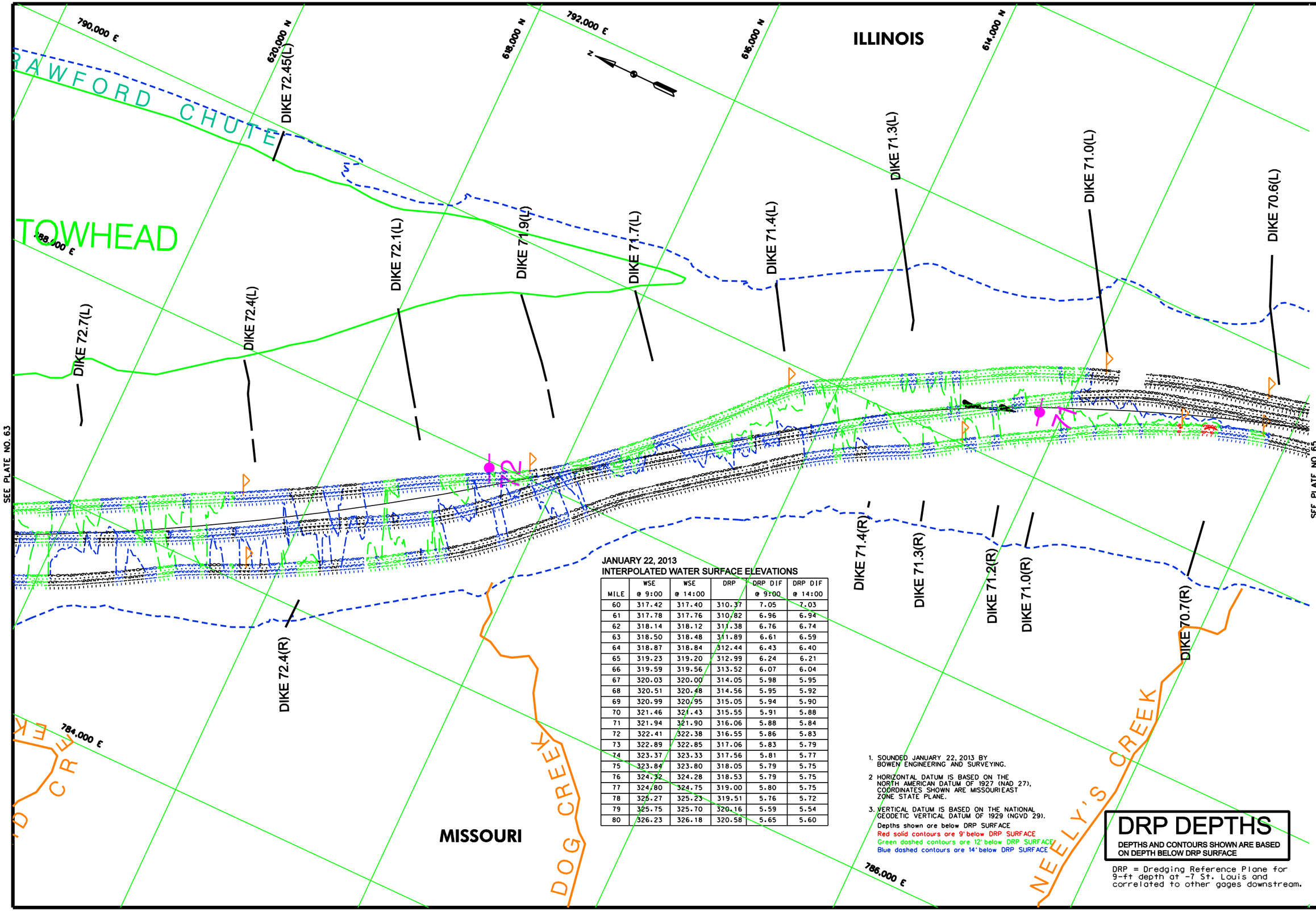
CHANNEL PATROL
RIVER MILES 74.7 – 76.8

PLATE NUMBER
62



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88
71	321.94	321.90	316.06	5.88	5.84
72	322.41	322.38	316.55	5.86	5.83
73	322.89	322.85	317.06	5.83	5.79
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88
71	321.94	321.90	316.06	5.88	5.84
72	322.41	322.38	316.55	5.86	5.83
73	322.89	322.85	317.06	5.83	5.79
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.90/09:00 9.99/14:00	5.81/09:00 5.78/14:00	5.20/09:00 5.50/14:00	3.25/09:00 3.28/14:00

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (14,000 C.F.S.)

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: ####/STE/YMD####
File name: ##DRDSIGNFIELDPRTFCATIONS##

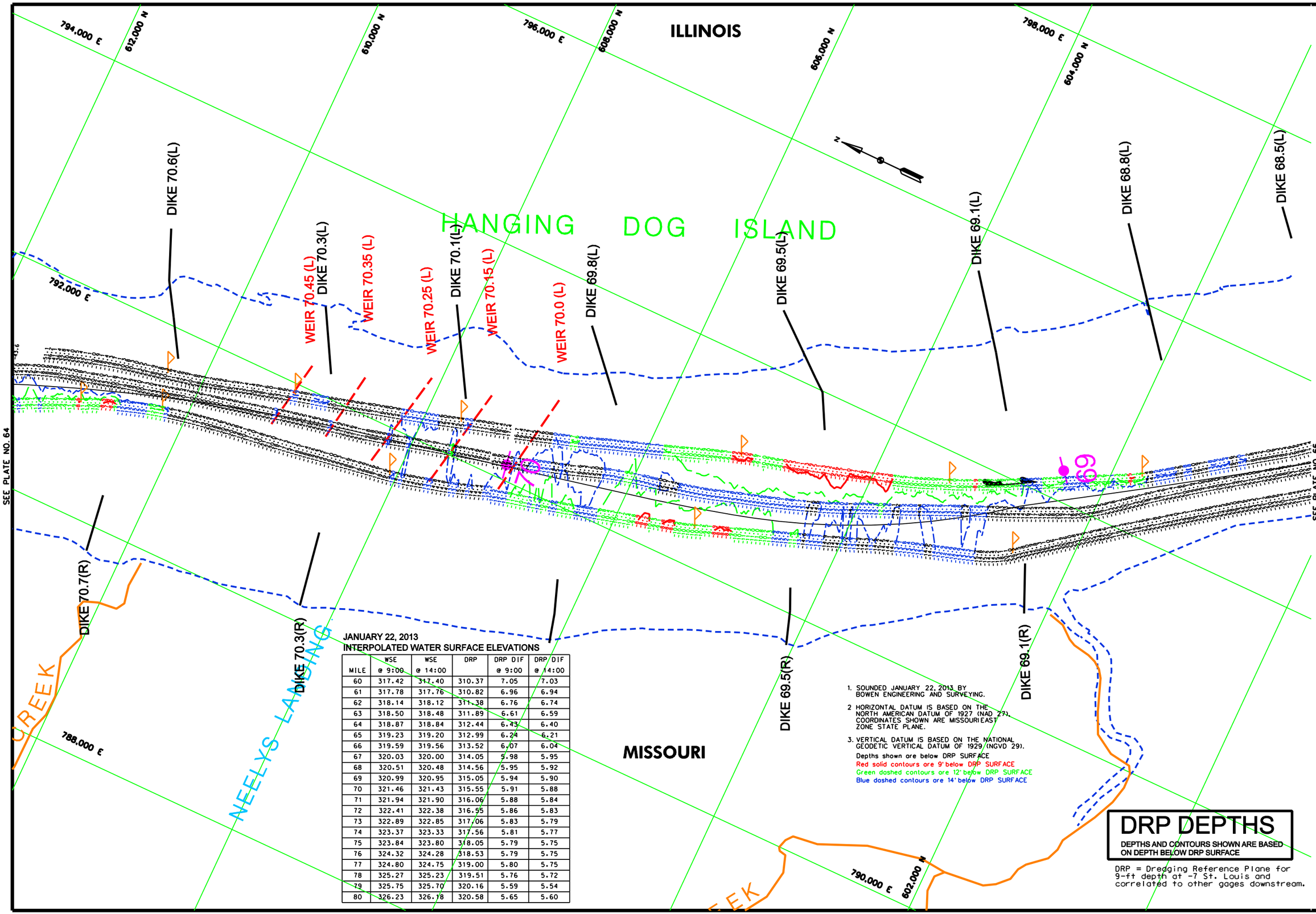
0 120 240 METERS
0 400 800 FEET

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

CHANNEL PATROL

RIVER MILES 70.7 – 72.7

PLATE NUMBER
64



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88
71	321.94	321.90	316.06	5.88	5.84
72	322.41	322.38	316.55	5.86	5.83
73	322.89	322.85	317.06	5.83	5.79
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

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
MLE	52.1	66.3	81.9	94.1
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.9009:001	5.8109:001	5.7814:001	5.5914:001	3.2509:001	3.2814:001

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1954-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (14.000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Ckd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: MMDDYYYY:HHMMSS
File name: MMDDSSHHMMSSEXPCSCONNNN

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

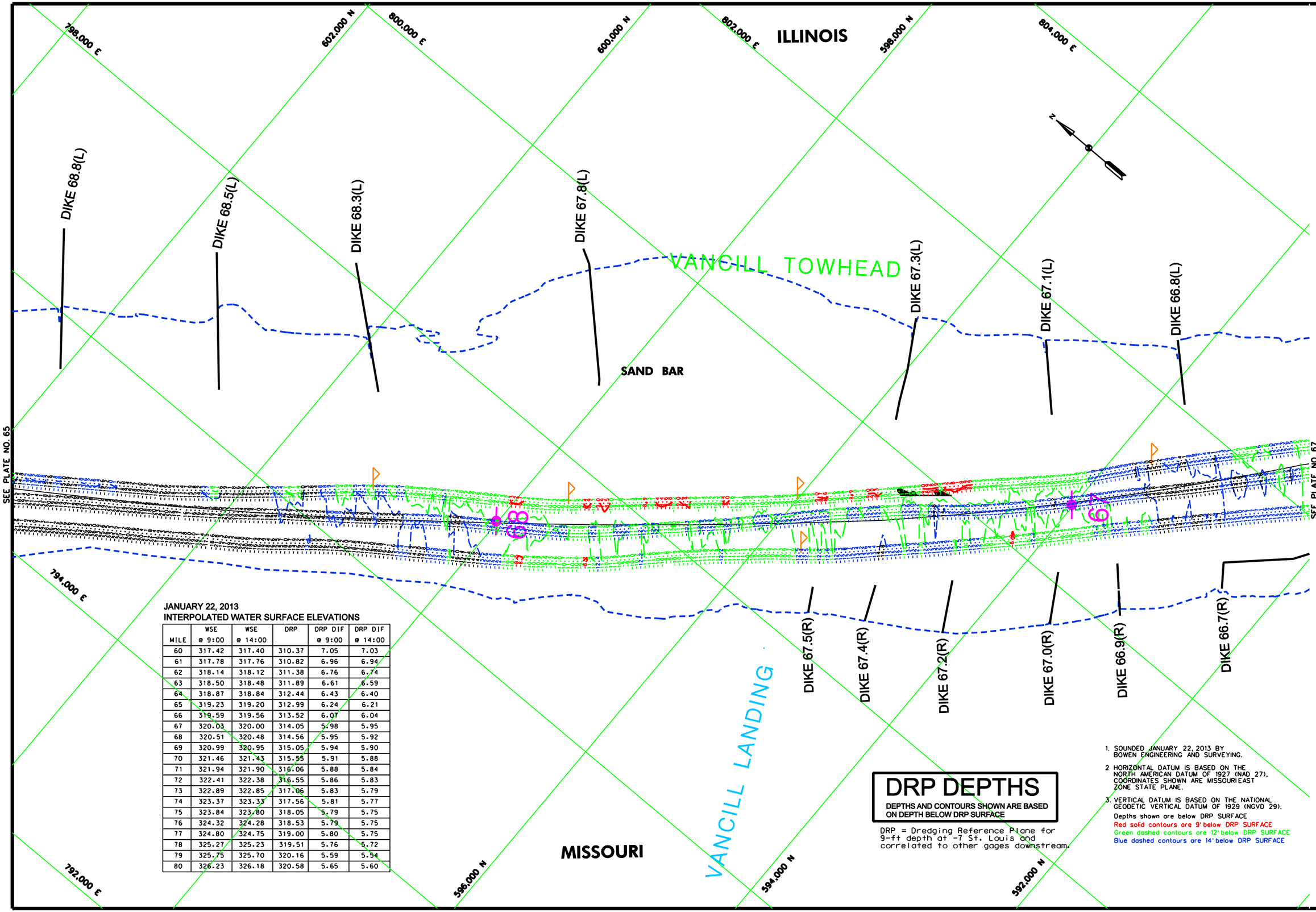
120 0 120 240 METERS
400 0 400 800 FEET

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

CHANNEL PATROL

RIVER MILES 68.7 – 70.7

PLATE NUMBER
65



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88
71	321.94	321.90	316.06	5.88	5.84
72	322.41	322.38	316.55	5.86	5.83
73	322.89	322.85	317.06	5.83	5.79
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.90109:001 9.9914:001	5.81109:001 5.7814:001	5.20109:001 5.5914:001	3.25109:001 3.2814:001

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (14.000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Ckd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: 8/8/2013 7:16:28 AM
File name: M:\MISSISSIPPI\LEBERFORD\CHANNEL\

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

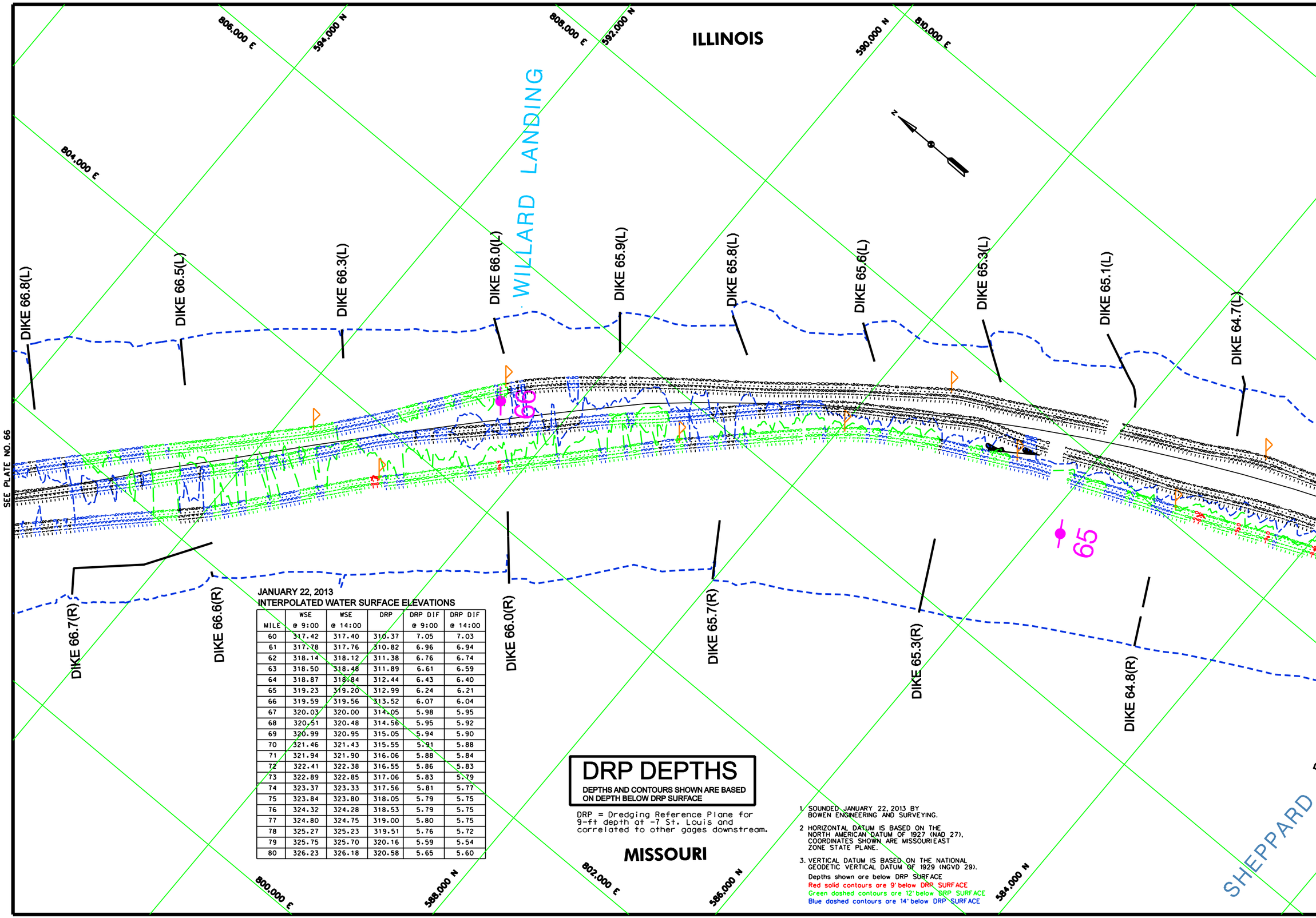
120 0 120 240 METERS
400 0 400 800 FEET

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE DATE INDICATED. THIS INFORMATION IS SHOWN AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

CHANNEL PATROL

RIVER MILES 66.7 - 68.7

PLATE NUMBER
66



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88
71	321.94	321.90	316.06	5.88	5.84
72	322.41	322.38	316.55	5.86	5.83
73	322.89	322.85	317.06	5.83	5.79
74	323.37	323.33	317.56	5.81	5.77
75	323.84	323.80	318.05	5.79	5.75
76	324.32	324.28	318.53	5.79	5.75
77	324.80	324.75	319.00	5.80	5.75
78	325.27	325.23	319.51	5.76	5.72
79	325.75	325.70	320.16	5.59	5.54
80	326.23	326.18	320.58	5.65	5.60

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.

1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

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
L. W. R. P.	309.9	317.8	325.3	330.7
22 JAN 2013	5.9009:001	5.8109:001	5.7814:001	5.2009:001	5.5914:001	3.2509:001	3.2814:001

ELEVATIONS ARE REFERED TO N.G.V.D. - CONTOURS ARE BELOW 1954-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (14.000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: 00000:00:00:0000
File name: 00000000000000000000000000

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

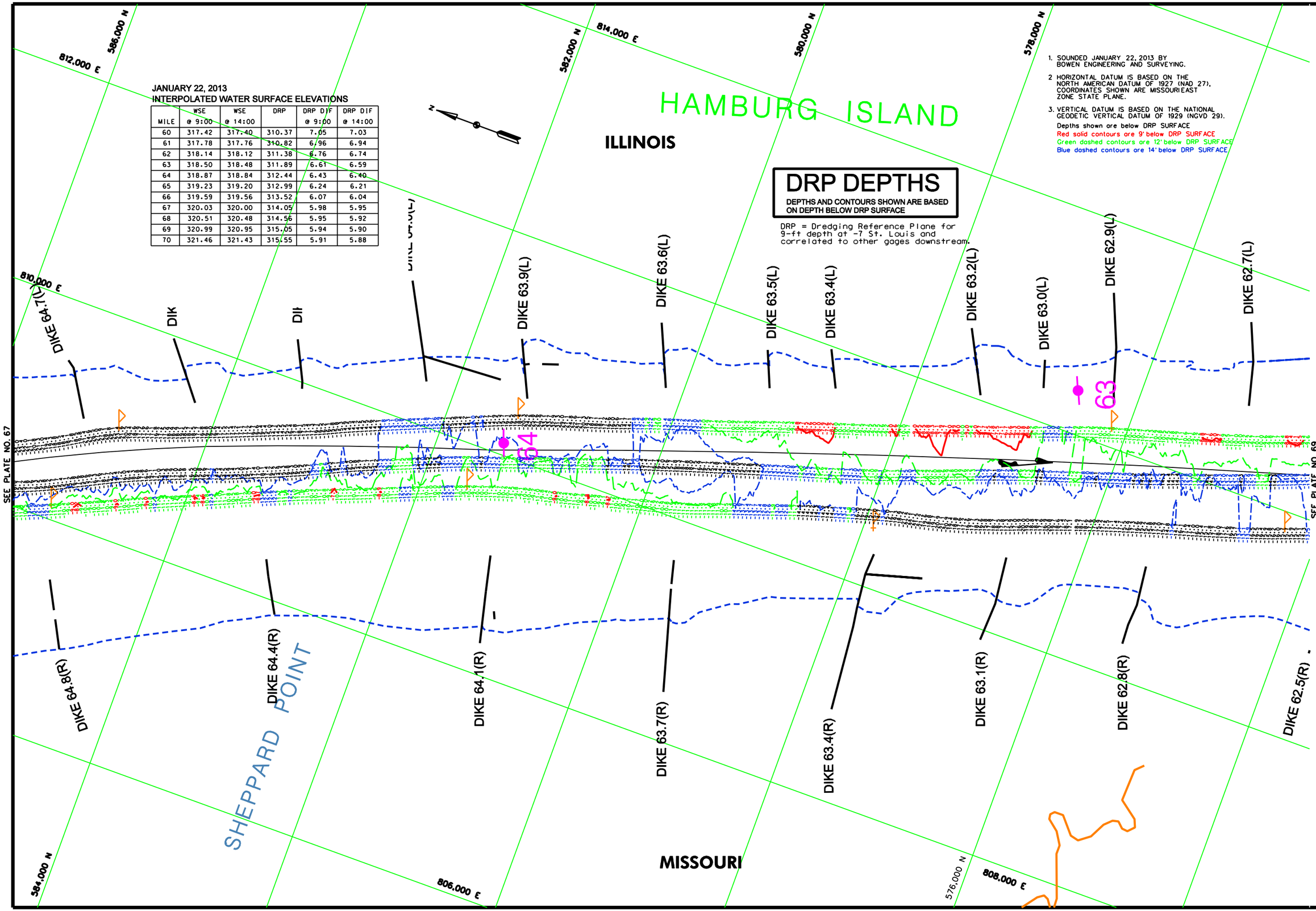
120 0 120 240 METERS
400 0 400 800 FEET

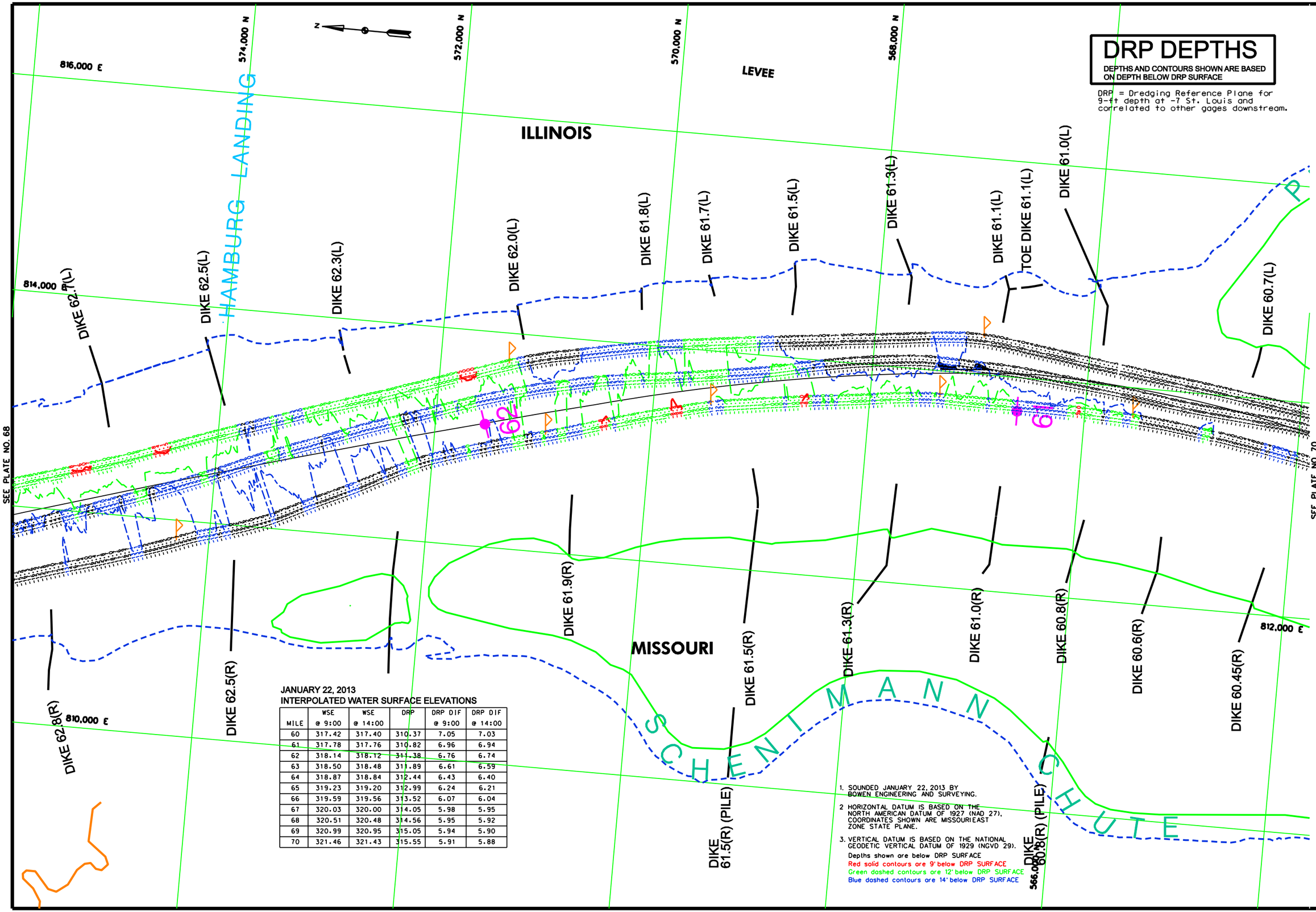
THE INFORMATION REPORTED IN THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE INDICATED AND IS INTENDED ONLY AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

CHANNEL PATROL

RIVER MILES 64.7 - 66.7

PLATE NUMBER
67


HAMBURG ISLAND
ILLINOIS
MISSOURI
SHEPPARD POINT
DRP DEPTHS
DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE
DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.
1. SOUNDED JANUARY 22, 2013 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 DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE
JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS
MILE | WSE @ 9:00 | WSE @ 14:00 | DRP | DRP DIF @ 9:00 | DRP DIF @ 14:00
60 | 317.42 | 317.40 | 310.37 | 7.05 | 7.03
61 | 317.78 | 317.76 | 310.82 | 6.96 | 6.94
62 | 318.14 | 318.12 | 311.38 | 6.76 | 6.74
63 | 318.50 | 318.48 | 311.89 | 6.61 | 6.59
64 | 318.87 | 318.84 | 312.44 | 6.43 | 6.40
65 | 319.23 | 319.20 | 312.99 | 6.24 | 6.21
66 | 319.59 | 319.56 | 313.52 | 6.07 | 6.04
67 | 320.03 | 320.00 | 314.05 | 5.98 | 5.95
68 | 320.51 | 320.48 | 314.56 | 5.95 | 5.92
69 | 320.99 | 320.95 | 315.05 | 5.94 | 5.90
70 | 321.46 | 321.43 | 315.55 | 5.91 | 5.88
DIKE 64.7(L)
DIKE 63.9(L)
DIKE 63.6(L)
DIKE 63.5(L)
DIKE 63.4(L)
DIKE 63.2(L)
DIKE 63.0(L)
DIKE 62.9(L)
DIKE 62.7(L)
DIKE 64.8(R)
DIKE 64.4(R)
DIKE 64.1(R)
DIKE 63.7(R)
DIKE 63.4(R)
DIKE 63.1(R)
DIKE 62.8(R)
DIKE 62.5(R)
64
63
SEE PLATE NO. 67
SEE PLATE NO. 69
810,000 E
812,000 E
814,000 E
808,000 E
806,000 E
586,000 N
584,000 N
582,000 N
580,000 N
578,000 N
576,000 N
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
L. W. R. P. | 309.9 | 317.8 | 325.3 | 330.7
22 JAN 2013 | 5.9009+001 9.9914+001 | 5.8109+001 5.7814+001 | 5.2009+001 5.5014+001 | 3.2509+001 3.2814+001
ELEVATIONS ARE REFERRED TO N.G.V.D. - CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE. ELIMRP.1 (04.000 C.F.S.)
Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 22, 2013
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: 08/08/2013 08:08
File name: M:\MISSISSIPPI\GIS\PROJECTS\HAMBURG
U.S. ARMY ENGINEER DIVISION CORPS OF ENGINEERS ST. LOUIS, MISSOURI
UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
0 120 240 METERS
0 400 800 FEET
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATE INDICATED. THIS MAP IS PRESENTED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME
CHANNEL PATROL
RIVER MILES 62.7 – 64.7
PLATE NUMBER
68



JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88

1. SOUNDED JANUARY 21 AND 22, 2013 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.

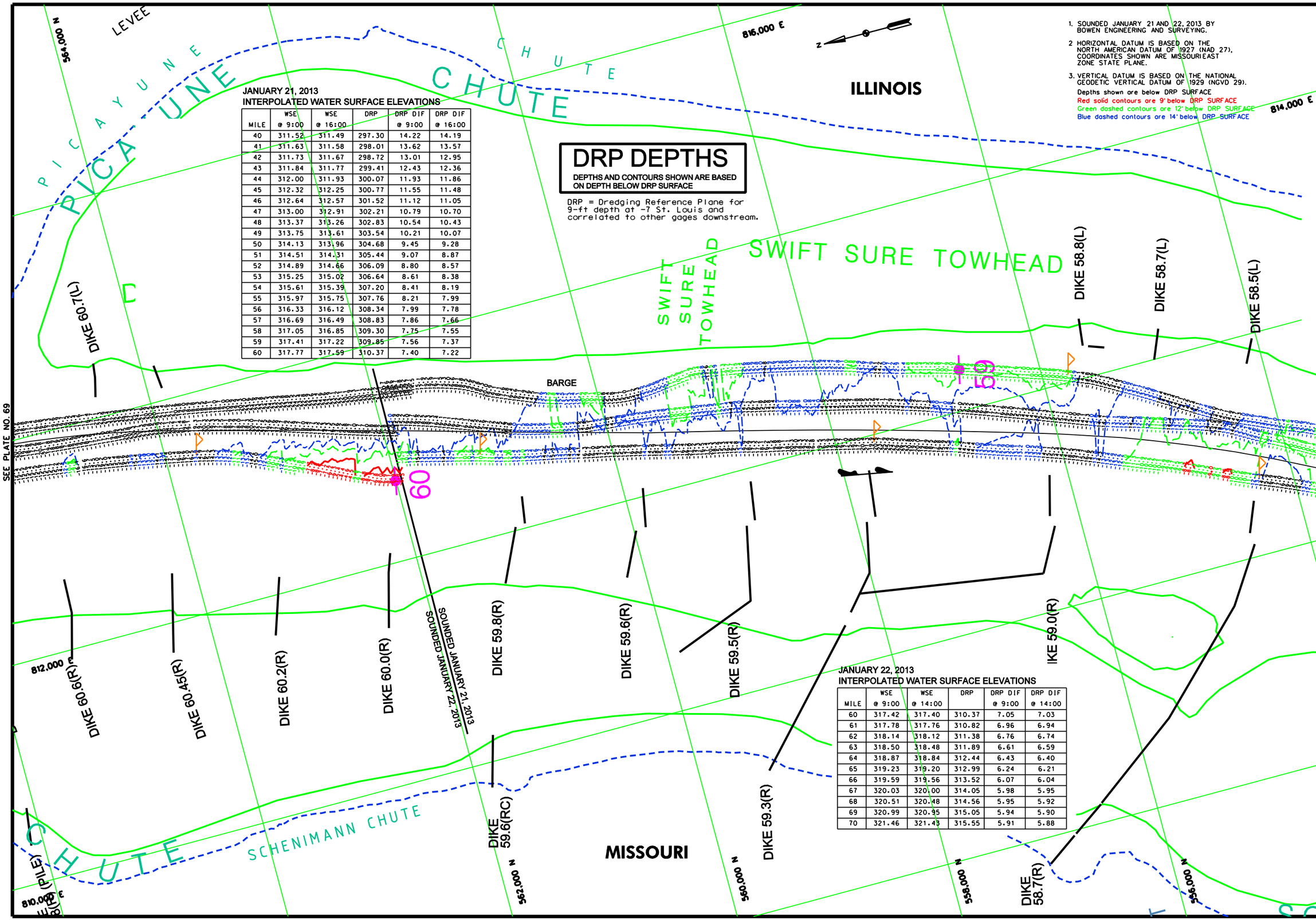
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

Depths shown are below DRP SURFACE
Red solid contours are 9' below DRP SURFACE
Green dashed contours are 12' below DRP SURFACE
Blue dashed contours are 14' below DRP SURFACE

DRP DEPTHS

DEPTHS AND CONTOURS SHOWN ARE BASED ON DEPTH BELOW DRP SURFACE

DRP = Dredging Reference Plane for 9-ft depth at -7 St. Louis and correlated to other gages downstream.



JANUARY 21, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 16:00	DRP	DRP DIF @ 9:00	DRP DIF @ 16:00
40	311.52	311.49	297.30	14.22	14.19
41	311.63	311.58	298.01	13.62	13.57
42	311.73	311.67	298.72	13.01	12.95
43	311.84	311.77	299.41	12.43	12.36
44	312.00	311.93	300.07	11.93	11.86
45	312.32	312.25	300.77	11.55	11.48
46	312.64	312.57	301.52	11.12	11.05
47	313.00	312.91	302.21	10.79	10.70
48	313.37	313.26	302.83	10.54	10.43
49	313.75	313.61	303.54	10.21	10.07
50	314.13	313.96	304.68	9.45	9.28
51	314.51	314.31	305.44	9.07	8.87
52	314.89	314.66	306.09	8.80	8.57
53	315.25	315.02	306.64	8.61	8.38
54	315.61	315.39	307.20	8.41	8.19
55	315.97	315.75	307.76	8.21	7.99
56	316.33	316.12	308.34	7.99	7.78
57	316.69	316.49	308.83	7.86	7.66
58	317.05	316.85	309.30	7.75	7.55
59	317.41	317.22	309.85	7.56	7.37
60	317.77	317.59	310.37	7.40	7.22

JANUARY 22, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	DRP	DRP DIF @ 9:00	DRP DIF @ 14:00
60	317.42	317.40	310.37	7.05	7.03
61	317.78	317.76	310.82	6.96	6.94
62	318.14	318.12	311.38	6.76	6.74
63	318.50	318.48	311.89	6.61	6.59
64	318.87	318.84	312.44	6.43	6.40
65	319.23	319.20	312.99	6.24	6.21
66	319.59	319.56	313.52	6.07	6.04
67	320.03	320.00	314.05	5.98	5.95
68	320.51	320.48	314.56	5.95	5.92
69	320.99	320.95	315.05	5.94	5.90
70	321.46	321.43	315.55	5.91	5.88

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
L. W. R. P.	309.9	317.8	325.3	330.7
21 JAN 2013	0.28/09:00	10.04/16:00	6.50/09:00	6.01/16:00	x	x
22 JAN 2013	5.90/09:00	9.91/14:00	5.81/09:00	5.78/14:00	5.20/09:00	5.50/14:00	3.72/09:00	3.28/14:00

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

Surveyed by: BOWEN ENGINEERING
Survey Date: JANUARY 21 & 22, 2013
Drawn by: x
Chd by: x
Reviewed by: x
SUBMITTED: x
APPROVED: x
Plot date: MM/DD/YYYY
File name: MISSISSIPPI.SURVEYS.DGN

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

240 METERS 120 0 120 400 0 400 800 FEET

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

CHANNEL PATROL

RIVER MILES 58.5 - 60.6

PLATE NUMBER
70