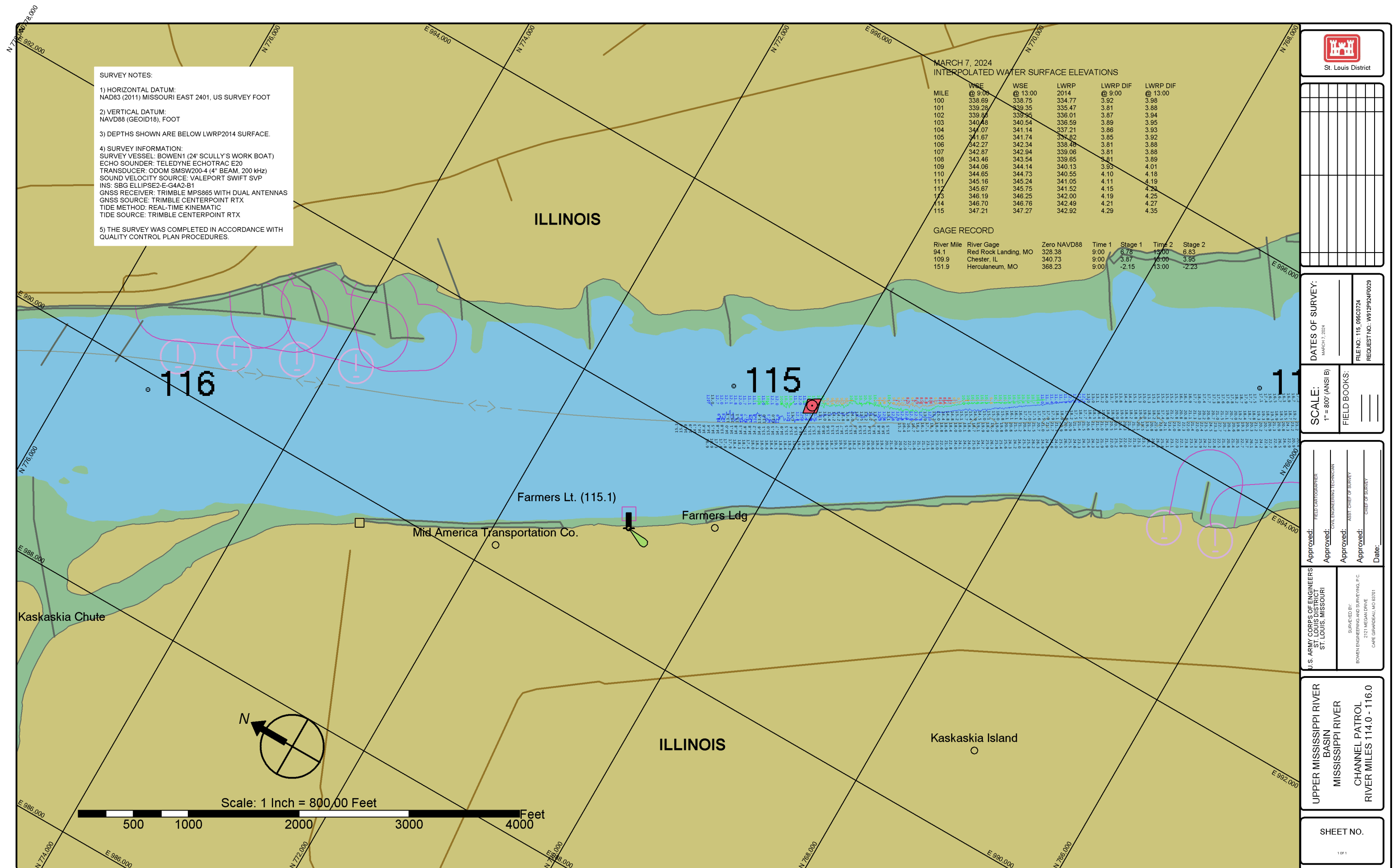




St. Louis District

[illegible]

DATES OF SURVEY:
MARCH 7, 2024

REQUEST NO.: W912P924F0029

1111

SCALE:
1" = 800' (ANSI B)

 $\theta = 800^\circ \text{ (ANSI B)}$

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1100

Approved: _____
FIELD CARTOGRAPHER

Approved: _____
CIVIL ENGINEERING TECHNICIAN

Date: _____
CHIEF OF SURVEY _____

Date: _____

...

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

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2121 MEGAN DRIVE
CAPE GIRARDEAU, MO 63701

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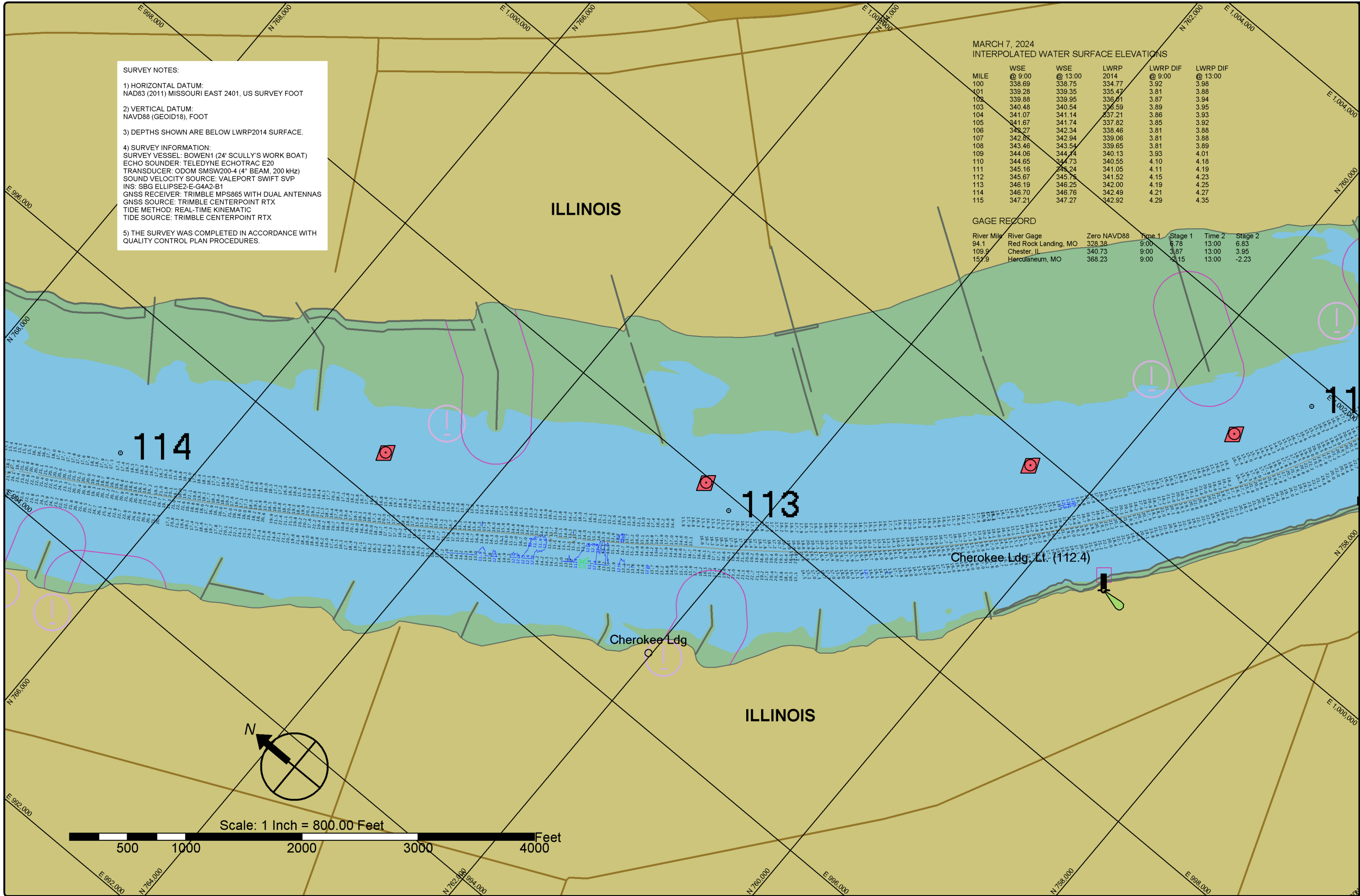
UPPER MISSISSIPPI RIVER
BASIN
MISSISSIPPI RIVER

MISSISSIPPI RIVER
BASIN

RIVER MILES 114.0 - 116.0

HEET NO.

OF 1



SURVEY NOTES:

1) HORIZONTAL DATUM:
NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

2) VERTICAL DATUM:
NAVD88 (GEOID18), FOOT

3) DEPTHS SHOWN ARE BELOW LWRP2014 SURFACE.

4) SURVEY INFORMATION:
SURVEY VESSEL: BOWEN1 (24' SCULLY'S WORK BOAT)
ECHO SOUNDER: TELEDYNE ECHOTRAC E20
TRANSDUCER: ODOM SMSW200-4 (4° BEAM, 200 kHz)
SOUND VELOCITY SOURCE: VALEPORT SWIFT SVP
INS: SBG ELLIPSE2-E-G4A2-B1
GNSS RECEIVER: TRIMBLE MPS865 WITH DUAL ANTENNAS
GNSS SOURCE: TRIMBLE CENTERPOINT RTX
TIDE METHOD: REAL-TIME KINEMATIC
TIDE SOURCE: TRIMBLE CENTERPOINT RTX

5) THE SURVEY WAS COMPLETED IN ACCORDANCE WITH
QUALITY CONTROL PLAN PROCEDURES.

MARCH 7, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
100	338.69	338.75	334.77	3.92	3.98
101	339.28	339.35	335.47	3.81	3.88
102	339.88	339.95	336.11	3.87	3.94
103	340.48	340.54	336.59	3.89	3.95
104	341.07	341.14	337.21	3.86	3.93
105	341.67	341.74	337.82	3.85	3.92
106	342.27	342.34	338.46	3.81	3.88
107	342.87	342.94	339.06	3.81	3.88
108	343.46	343.54	339.65	3.81	3.89
109	344.06	344.14	340.13	3.93	4.01
110	344.65	344.73	340.55	4.10	4.18
111	345.16	345.24	341.05	4.11	4.19
112	345.67	345.75	341.52	4.15	4.23
113	346.19	346.25	342.00	4.19	4.25
114	346.70	346.76	342.49	4.21	4.27
115	347.21	347.27	342.92	4.29	4.35

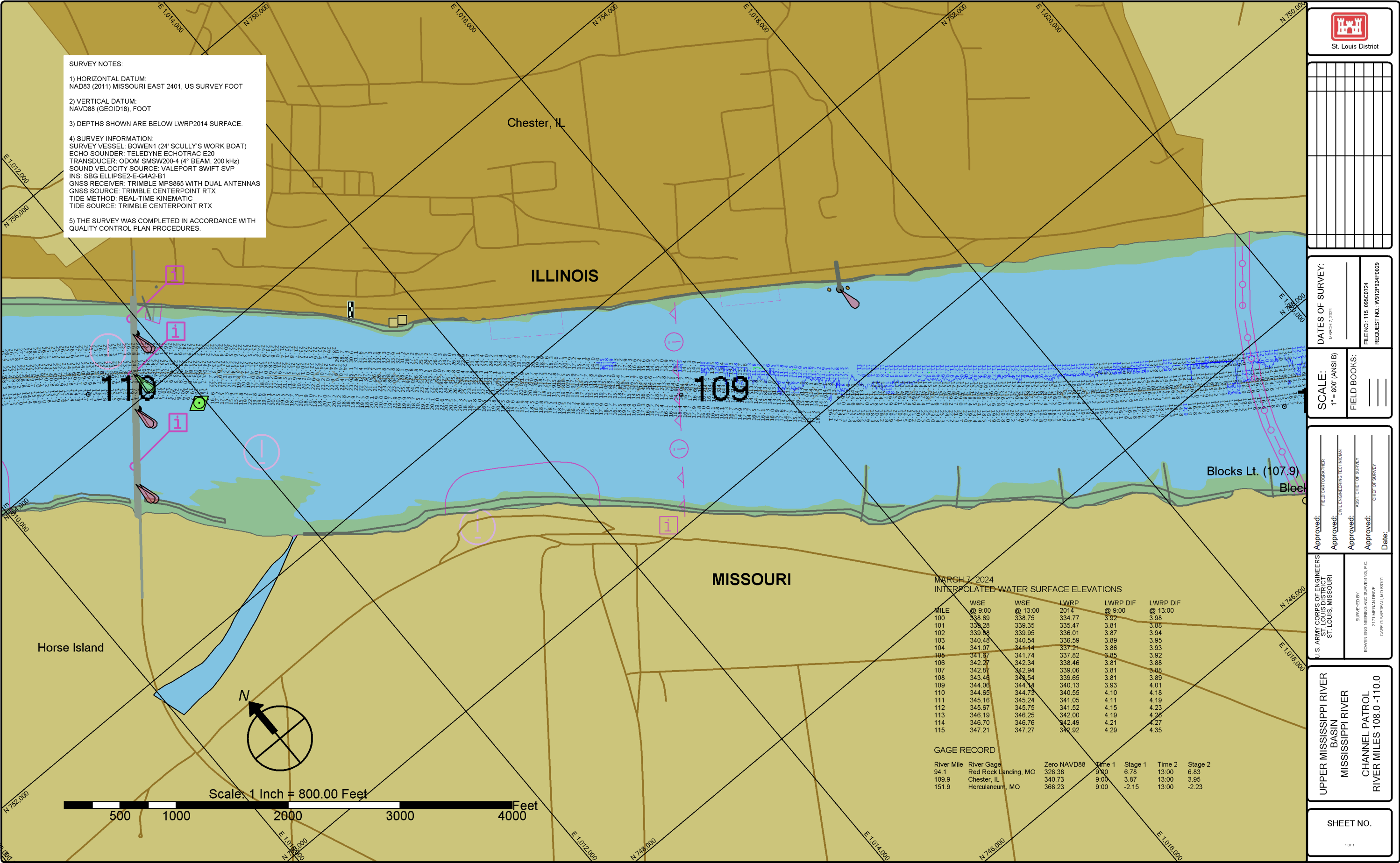
GAGE RECORD

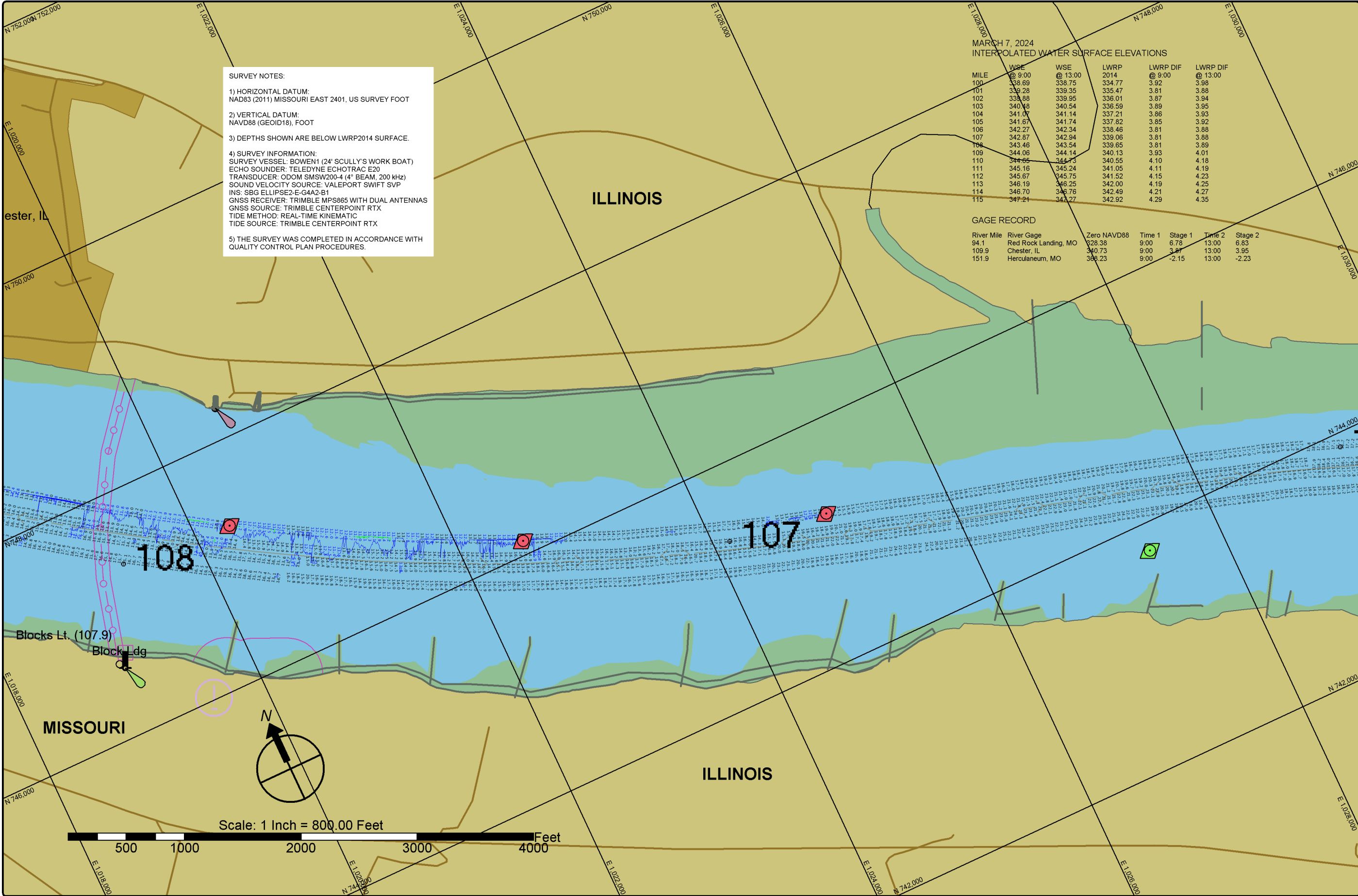
River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
94.1	Red Rock Landing, MO	328.38	9:00	6.78	13:00	6.83
109.9	Chester, IL	340.73	9:00	3.87	13:00	3.95
151.9	Herculeaneum, MO	368.23	9:00	-2.15	13:00	-2.23



St. Louis District

DATES OF SURVEY: MARCH 7, 2024		FILE NO.: 115_095C0724	REQUEST NO.: W91P924F0029
SCALE: 1" = 800' (ANSI B)		FIELD BOOKS: _____ _____	
Approved: _____ FIELD CATEGORIST	Approved: _____ CIVIL ENGINEERING TECHNICIAN	Approved: _____ ASST. CHIEF OF SURVEY	Approved: _____ CHIEF OF SURVEY
U.S. ARMY CORPS OF ENGINEERS ST. LOUIS DISTRICT ST. LOUIS, MISSOURI		SURVEYED BY: BOWEN ENGINEERING AND SURVEYING, P.C. 2121 MEGAN DRIVE CAPE GIRARDEAU, MO 63301	
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER CHANNEL PATROL RIVER MILES 112.0 - 114.0			
SHEET NO. 1 OF 1			





SURVEY NOTES:

1) HORIZONTAL DATUM:
NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

2) VERTICAL DATUM:
NAVD88 (GEOID18), FOOT

3) DEPTHS SHOWN ARE BELOW LWRP2014 SURFACE.

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TRANSDUCER: ODOM SMSW200-4 (4" BEAM, 200 kHz)
SOUND VELOCITY SOURCE: VALEPORT SWIFT SVP
INS: SBG ELLIPSE2-E-G4A2-B1
GNSS RECEIVER: TRIMBLE MPS865 WITH DUAL ANTENNAS
GNSS SOURCE: TRIMBLE CENTERPOINT RTX
TIDE METHOD: REAL-TIME KINEMATIC
TIDE SOURCE: TRIMBLE CENTERPOINT RTX

5) THE SURVEY WAS COMPLETED IN ACCORDANCE WITH
QUALITY CONTROL PLAN PROCEDURES.

MARCH 7, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
100	338.69	338.75	334.77	3.92	3.98
101	339.28	339.35	335.47	3.81	3.88
102	339.88	339.95	336.01	3.87	3.94
103	340.48	340.54	336.59	3.89	3.95
104	341.07	341.14	337.21	3.86	3.93
105	341.67	341.74	337.82	3.85	3.92
106	342.27	342.34	338.46	3.81	3.88
107	342.87	342.94	339.06	3.81	3.88
108	343.46	343.54	339.65	3.81	3.89
109	344.06	344.14	340.13	3.93	4.01
110	344.65	344.73	340.55	4.10	4.18
111	345.16	345.24	341.05	4.11	4.19
112	345.67	345.75	341.52	4.15	4.23
113	346.19	346.25	342.00	4.19	4.25
114	346.70	346.76	342.49	4.21	4.27
115	347.21	347.27	342.92	4.29	4.35

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
94.1	Red Rock Landing, MO	328.38	9:00	6.78	13:00	6.83
109.9	Chester, IL	340.73	9:00	3.87	13:00	3.95
151.9	Herculaneum, MO	368.23	9:00	-2.15	13:00	-2.23



St. Louis District

DATES OF SURVEY:

MARCH 7, 2024

SCALE:

1" = 800' (ANSI B)

FIELD BOOKS:

FILE NO.: 115_095C0724

REQUEST NO.: W91P924F0029

Approved:

FIELD CATEGORIST

CIVIL ENGINEERING TECHNICIAN

Approved:

ASST. CHIEF OF SURVEY

Approved:

CHIEF OF SURVEY

Date:

U.S. ARMY CORPS OF ENGINEERS

ST. LOUIS DISTRICT

ST. LOUIS, MISSOURI

SURVEYED BY:

BOWEN ENGINEERING AND SURVEYING, P.C.

2121 MEGAN DRIVE

CAPE GIRARDEAU, MO 63301

UPPER MISSISSIPPI RIVER

BASIN

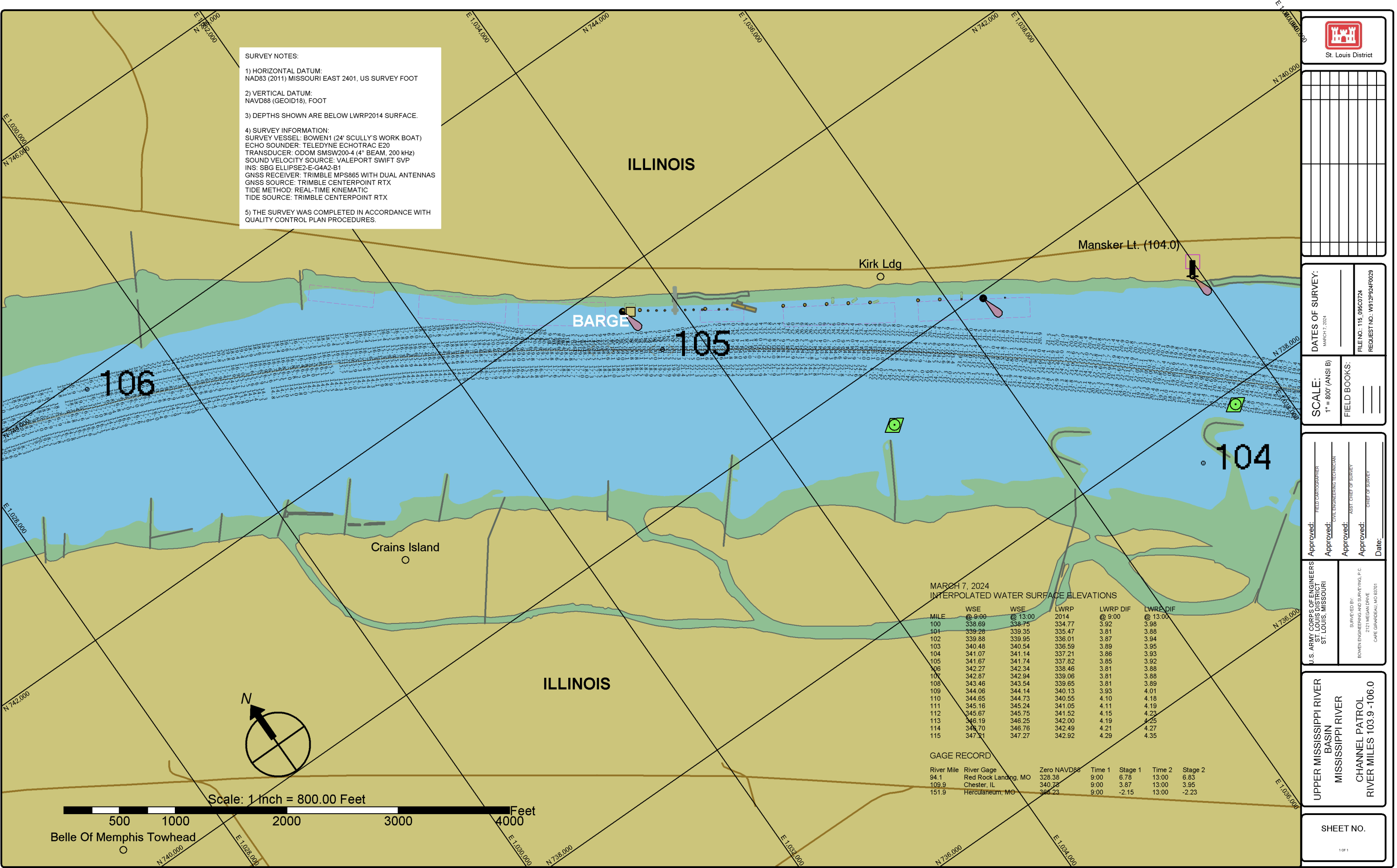
MISSISSIPPI RIVER

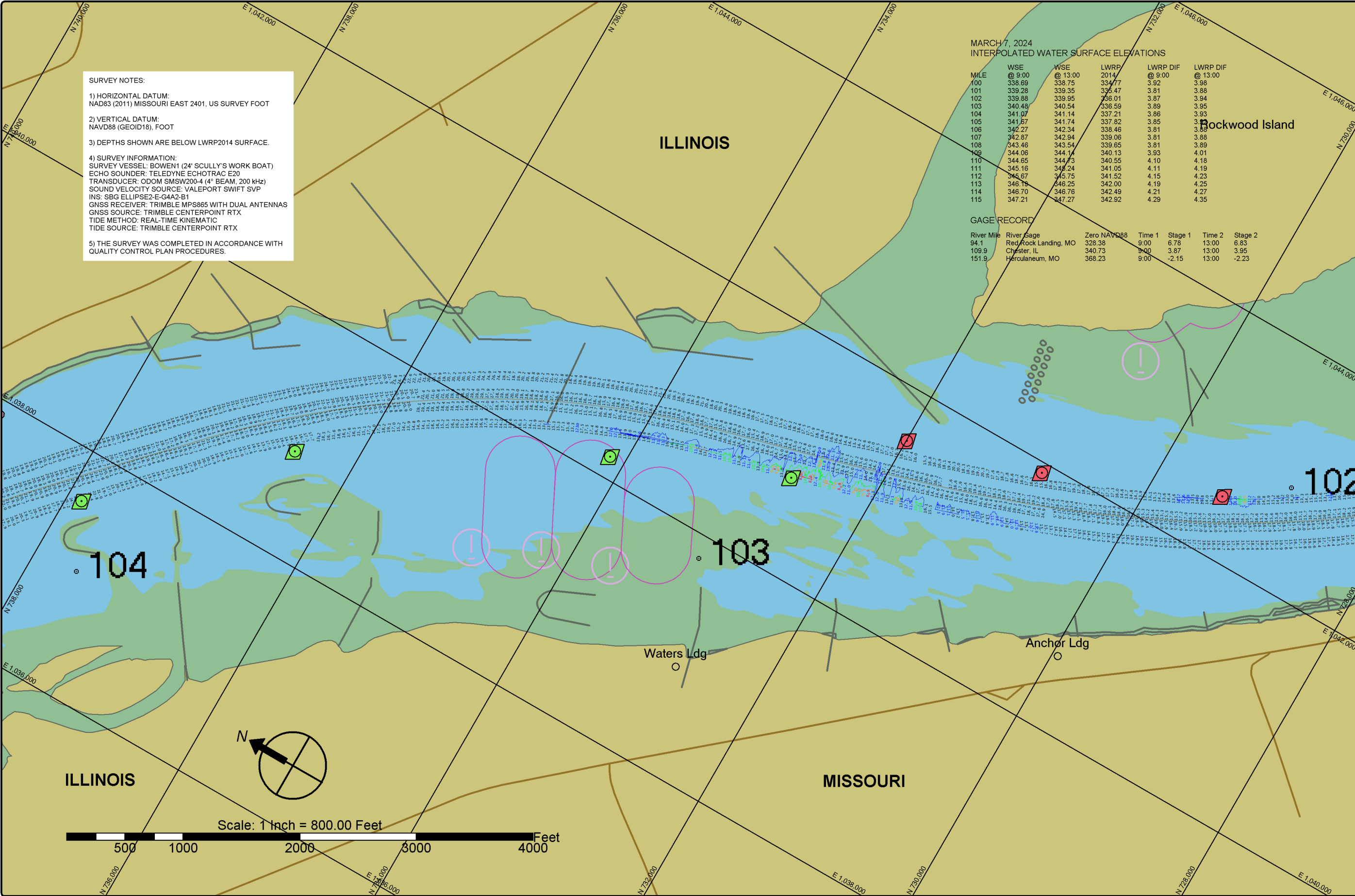
CHANNEL PATROL

RIVER MILES 106.0 - 108.0

SHEET NO.

1 OF 1





SURVEY NOTES:

1) HORIZONTAL DATUM:
NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

2) VERTICAL DATUM:
NAVD88 (GEOID18), FOOT

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SOUND VELOCITY SOURCE: VALEPORT SWIFT SVP
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GNSS RECEIVER: TRIMBLE MPS865 WITH DUAL ANTENNAS
GNSS SOURCE: TRIMBLE CENTERPOINT RTX
TIDE METHOD: REAL-TIME KINEMATIC
TIDE SOURCE: TRIMBLE CENTERPOINT RTX

5) THE SURVEY WAS COMPLETED IN ACCORDANCE WITH QUALITY CONTROL PLAN PROCEDURES.

MARCH 7, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
100	338.69	338.75	334.77	3.92	3.98
101	339.28	339.35	335.47	3.81	3.88
102	339.88	339.95	336.01	3.87	3.94
103	340.48	340.54	336.59	3.89	3.95
104	341.07	341.14	337.21	3.86	3.93
105	341.67	341.74	337.82	3.85	3.90
106	342.27	342.34	338.46	3.81	3.88
107	342.87	342.94	339.06	3.81	3.88
108	343.46	343.54	339.65	3.81	3.89
109	344.06	344.14	340.13	3.93	4.01
110	344.65	344.73	340.55	4.10	4.18
111	345.16	345.24	341.05	4.11	4.19
112	345.67	345.75	341.52	4.15	4.23
113	346.18	346.25	342.00	4.19	4.25
114	346.70	346.76	342.49	4.21	4.27
115	347.21	347.27	342.92	4.29	4.35

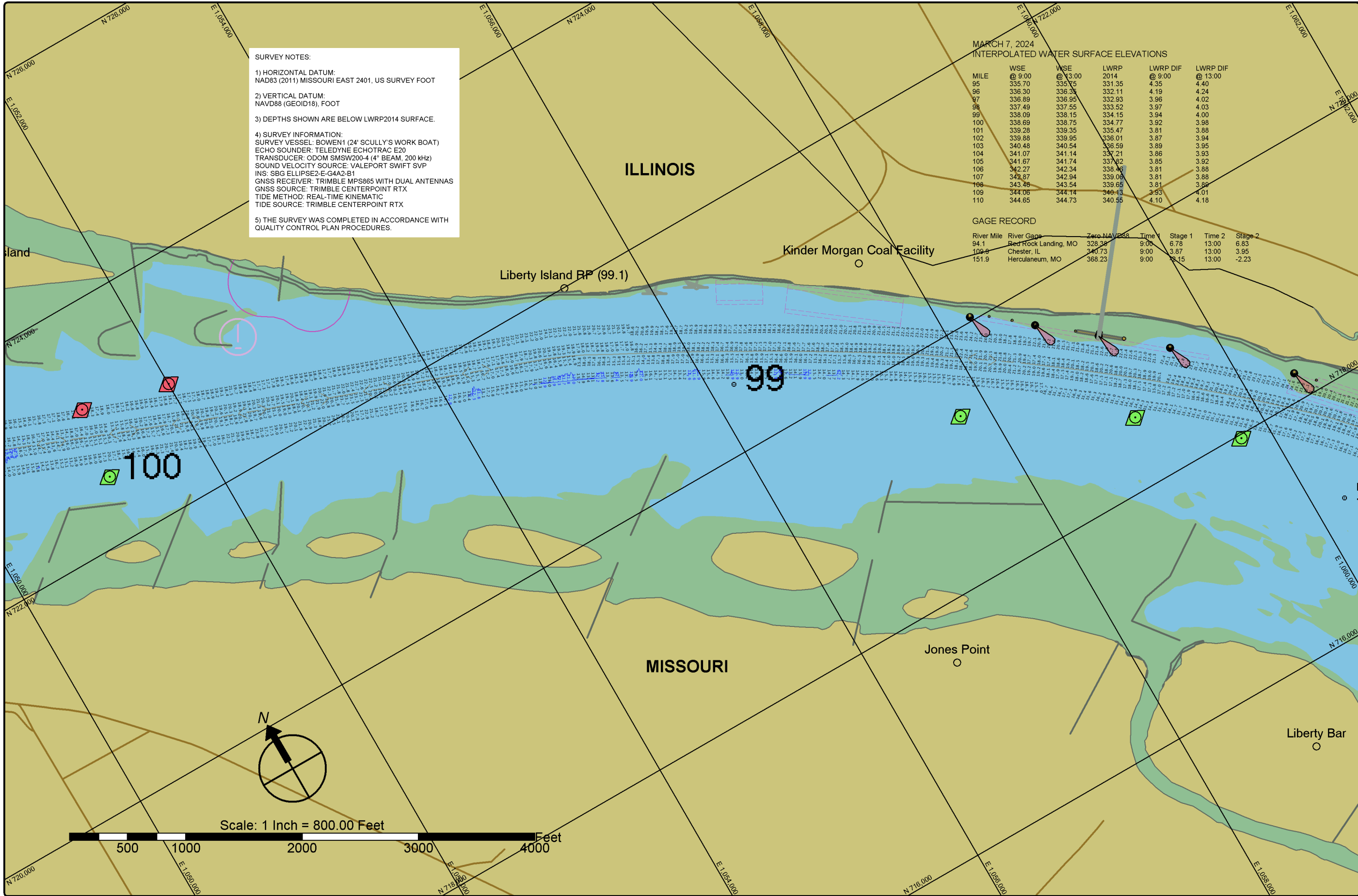
GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
94.1	Red Rock Landing, MO	328.38	9:00	6.78	13:00	6.83
109.9	Chester, IL	340.73	9:00	3.87	13:00	3.95
151.9	Herculaneum, MO	368.23	9:00	-2.15	13:00	-2.23



St. Louis District

DATES OF SURVEY: MARCH 7, 2024		FILE NO.: 115_095C0724	REQUEST NO.: W91P924F0029
SCALE: 1" = 800' (ANSI B)	FIELD BOOKS: _____		
Approved: _____ FIELD CATEGORIST	Approved: _____ CIVIL ENGINEERING TECHNICIAN	Approved: _____ ASST. CHIEF OF SURVEY	Approved: _____ CHIEF OF SURVEY
U.S. ARMY CORPS OF ENGINEERS ST. LOUIS DISTRICT ST. LOUIS, MISSOURI		SURVEYED BY: BOWEN ENGINEERING AND SURVEYING, P.C. 2121 MEGAN DRIVE CAPE GIRARDEAU, MO 63301	
UPPER MISSISSIPPI RIVER BASIN MISSISSIPPI RIVER CHANNEL PATROL 102.0 - 103.9			
SHEET NO. 1 OF 1			



SURVEY NOTES:

1) HORIZONTAL DATUM:
NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

2) VERTICAL DATUM:
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MARCH 7, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
95	335.70	335.75	331.35	4.35	4.40
96	336.30	336.35	332.11	4.19	4.24
97	336.89	336.95	332.93	3.96	4.02
98	337.49	337.55	333.52	3.97	4.03
99	338.09	338.15	334.15	3.94	4.00
100	338.69	338.75	334.77	3.92	3.98
101	339.28	339.35	335.47	3.81	3.88
102	339.88	339.95	336.01	3.87	3.94
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107	342.87	342.94	339.08	3.81	3.88
108	343.46	343.54	339.65	3.81	3.88
109	344.06	344.14	340.13	3.93	4.01
110	344.65	344.73	340.55	4.10	4.18

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
94.1	Red Rock Landing, MO	328.38	9:00	6.78	13:00	6.83
109.9	Chester, IL	340.73	9:00	3.87	13:00	3.95
151.9	Herculeanum, MO	368.23	9:00	38.15	13:00	-2.23



St. Louis District

DATES OF SURVEY:

MARCH 7, 2024

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

FILE NO.: 115_095C0724

REQUEST NO.: W912P924F0029

Approved: FIELD CATEGORIST

Approved: CIVIL ENGINEERING TECHNICIAN

Approved: ASST. CHIEF OF SURVEY

Approved: CHIEF OF SURVEY

Date:

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEGAN DRIVE
CAPE GIRARDEAU, MO 63011

UPPER MISSISSIPPI RIVER
BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 98.0 - 100.0

SHEET NO.

1 OF 1

