SURVEY NOTES:

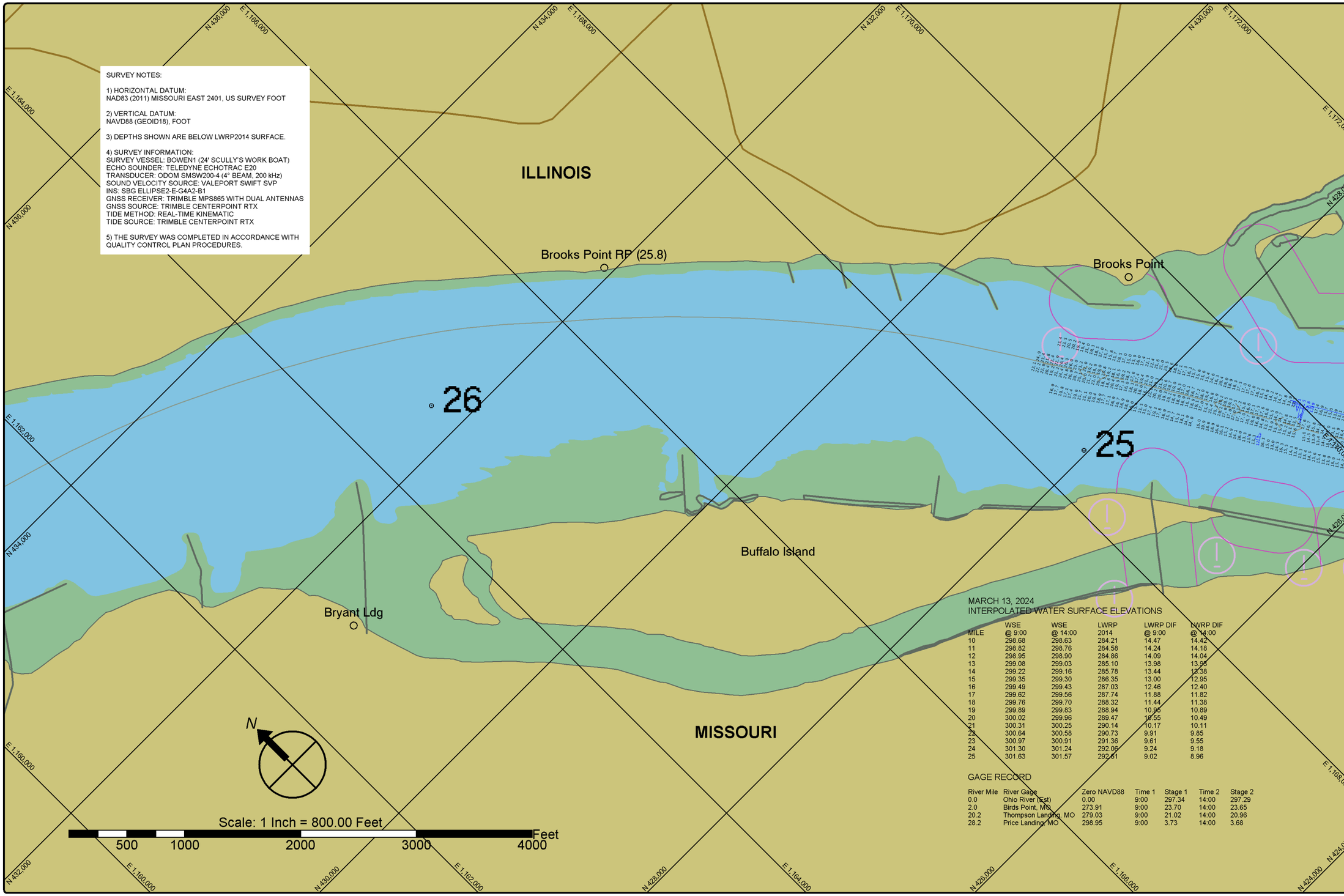
1) HORIZONTAL DATUM:
NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

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 13, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
10	298.68	298.63	284.21	14.47	14.42
11	298.82	298.76	284.58	14.24	14.18
12	298.95	298.90	284.86	14.09	14.04
13	299.08	299.03	285.10	13.98	13.93
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22	300.64	300.58	290.73	9.91	9.85
23	300.97	300.91	291.36	9.61	9.55
24	301.30	301.24	292.06	9.24	9.18
25	301.63	301.57	292.61	9.02	8.96

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
0.0	Ohio River (Est)	0.00	9:00	297.34	14:00	297.29
2.0	Birds Point, MO	273.91	9:00	23.70	14:00	23.65
20.2	Thompson Landing, MO	279.03	9:00	21.02	14:00	20.96
28.2	Price Landing, MO	298.95	9:00	3.73	14:00	3.68

St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

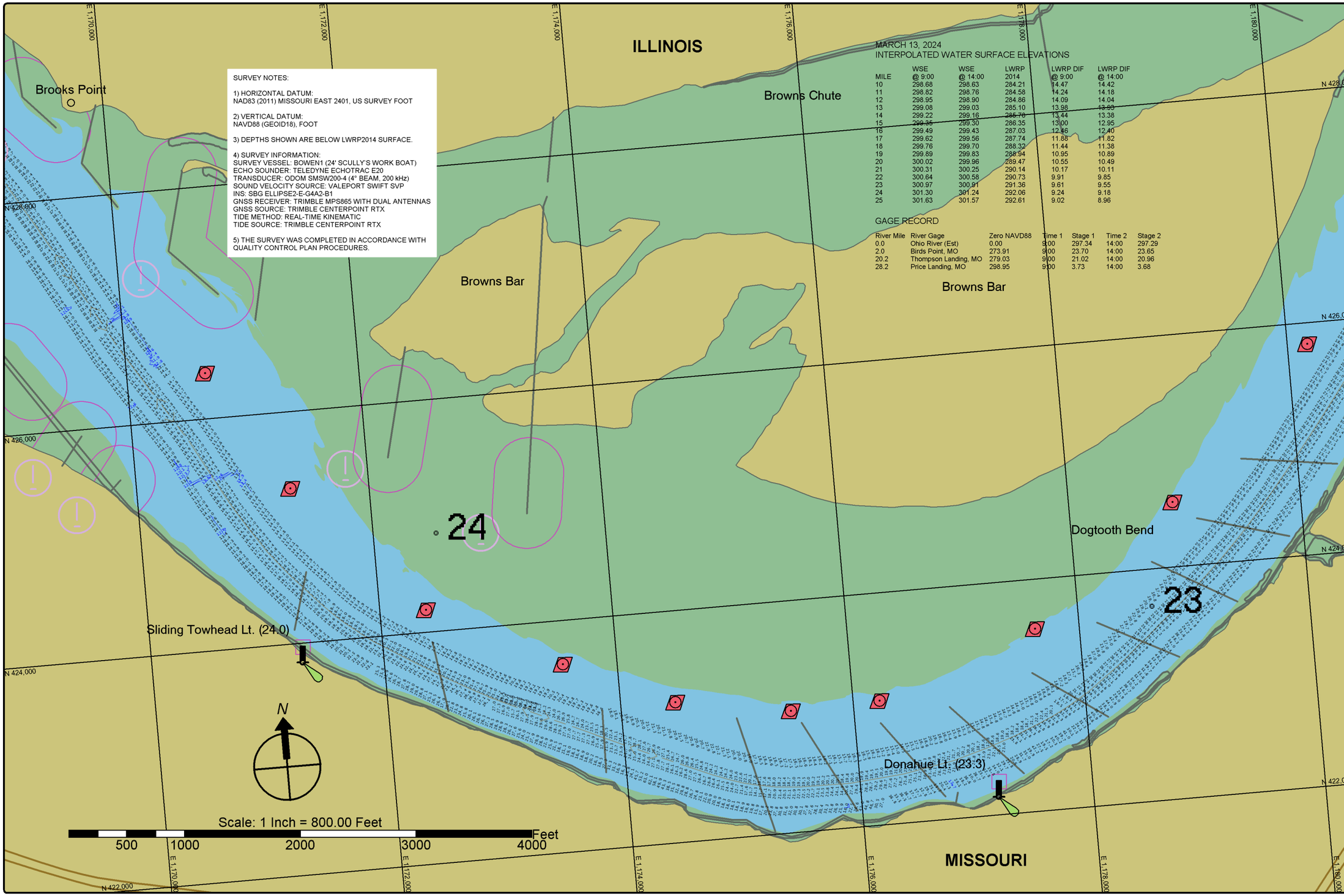
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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

SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEDIAN DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 24.6 - 26.6

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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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 13, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

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St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

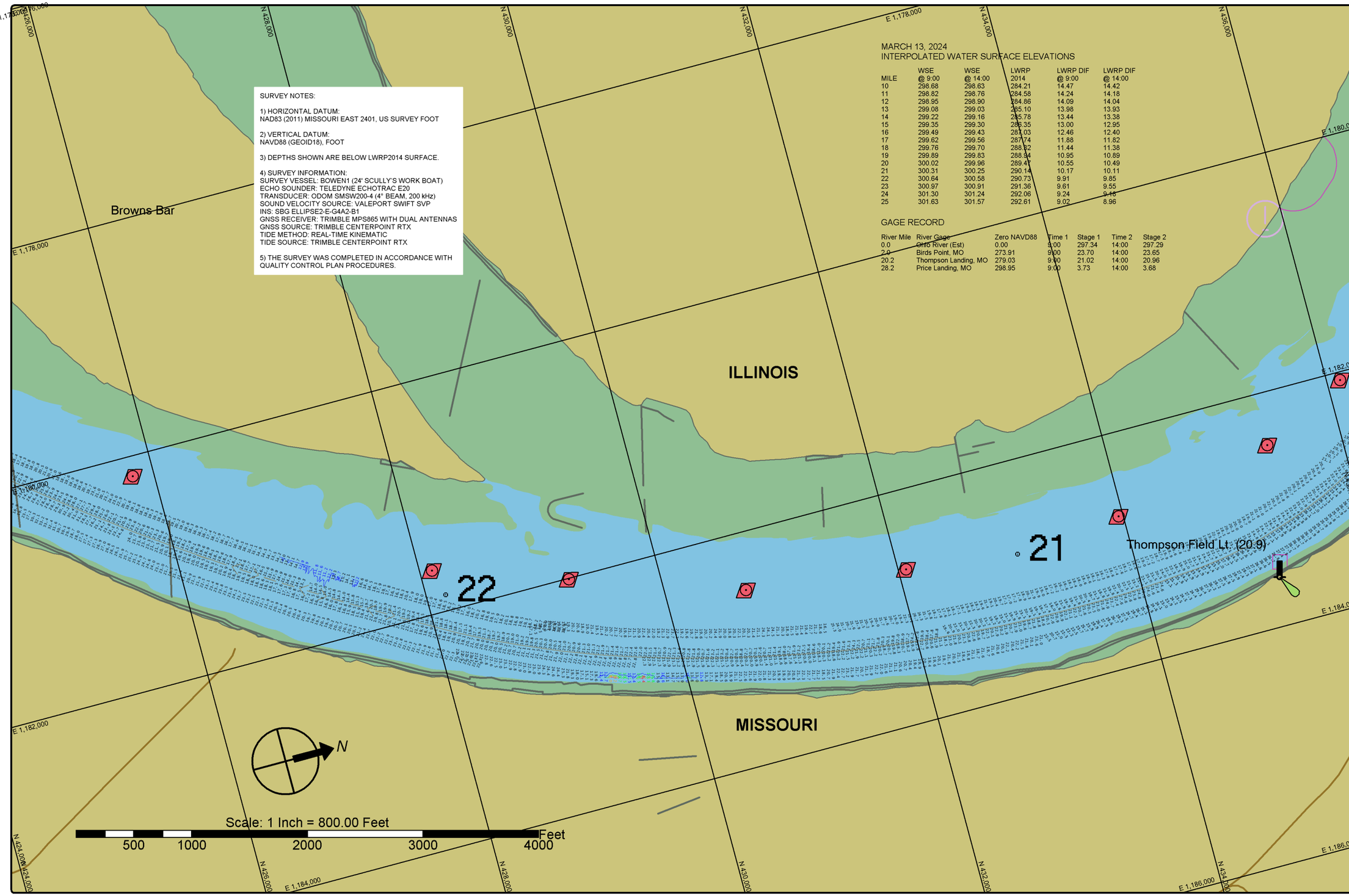
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 22.5 - 24.6

SHEET NO.
1 OF 1



SURVEY NOTES:

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GNSS RECEIVER: TRIMBLE MPS865 WITH DUAL ANTENNAS
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TIDE METHOD: REAL-TIME KINEMATIC
TIDE SOURCE: TRIMBLE CENTERPOINT RTX

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MARCH 13, 2024
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St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

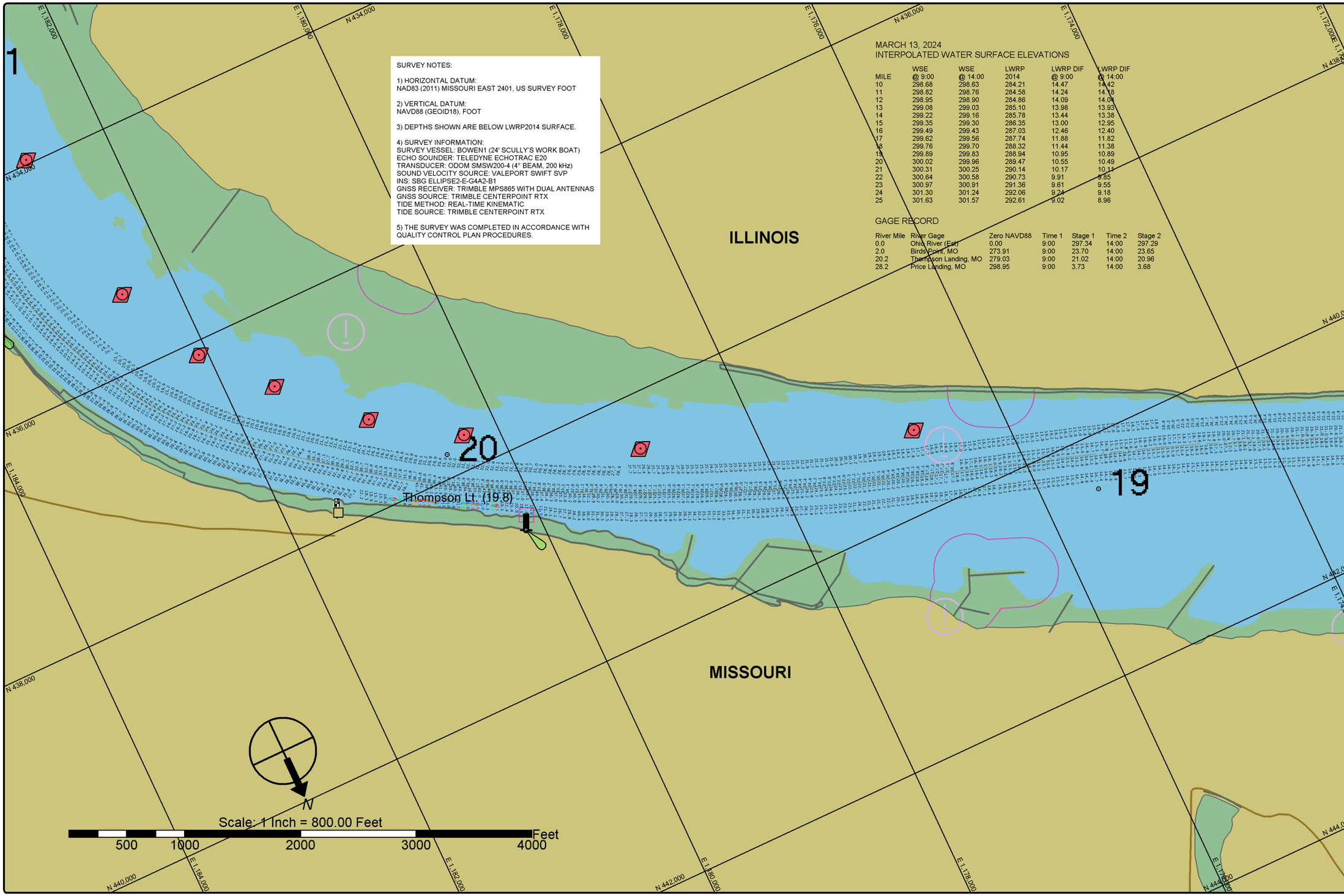
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST. CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 20.5 - 22.5

SHEET NO.
1 OF 1



SURVEY NOTES:

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TIDE METHOD: REAL-TIME KINEMATIC
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MARCH 13, 2024
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St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

Approved: FIELD CARTOGRAPHER
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 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 18.7 - 20.5

SHEET NO.
1 OF 1

SURVEY NOTES:

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NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

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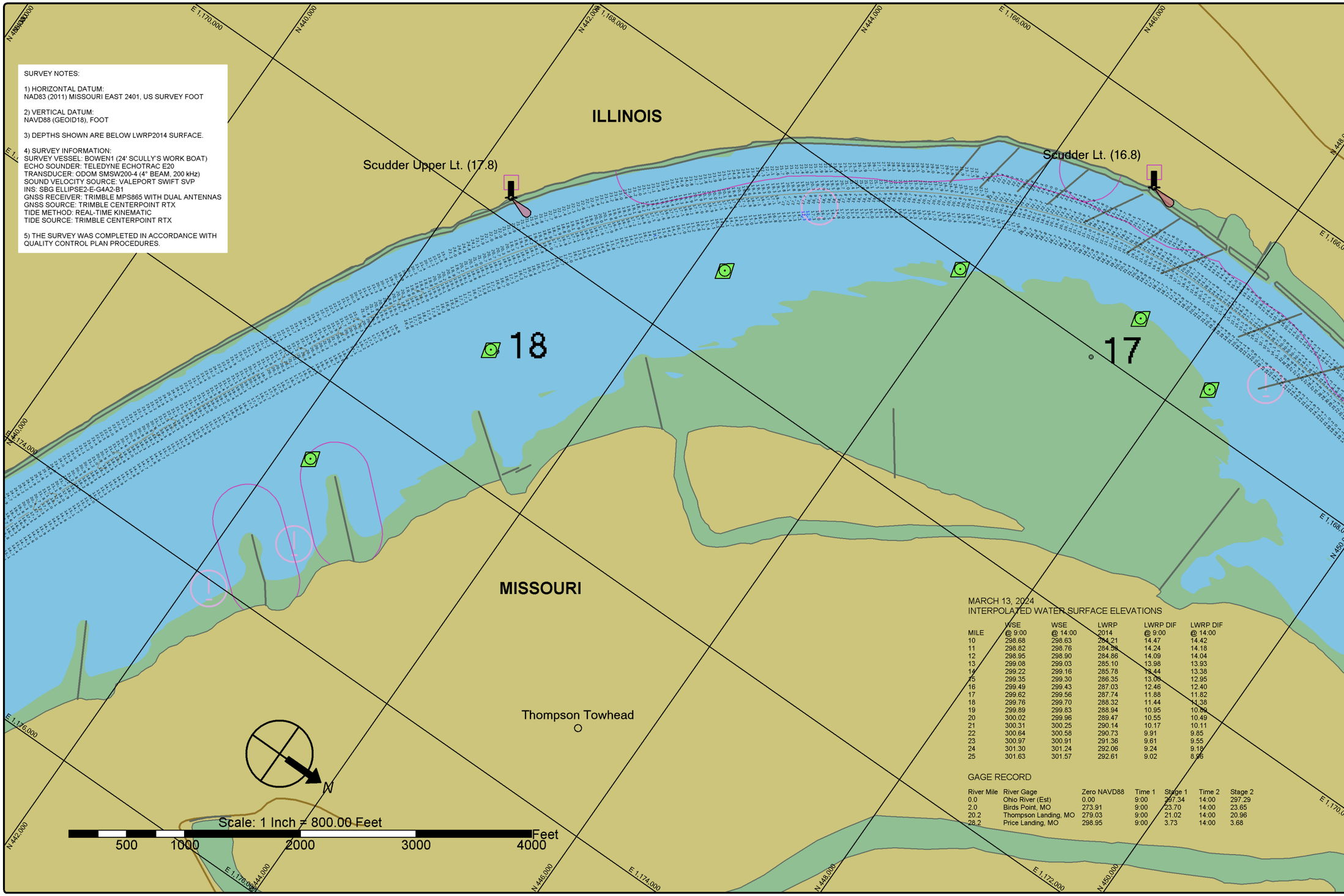

MARCH 13, 2024
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St. Louis District

DATES OF SURVEY:
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FIELD BOOKS:

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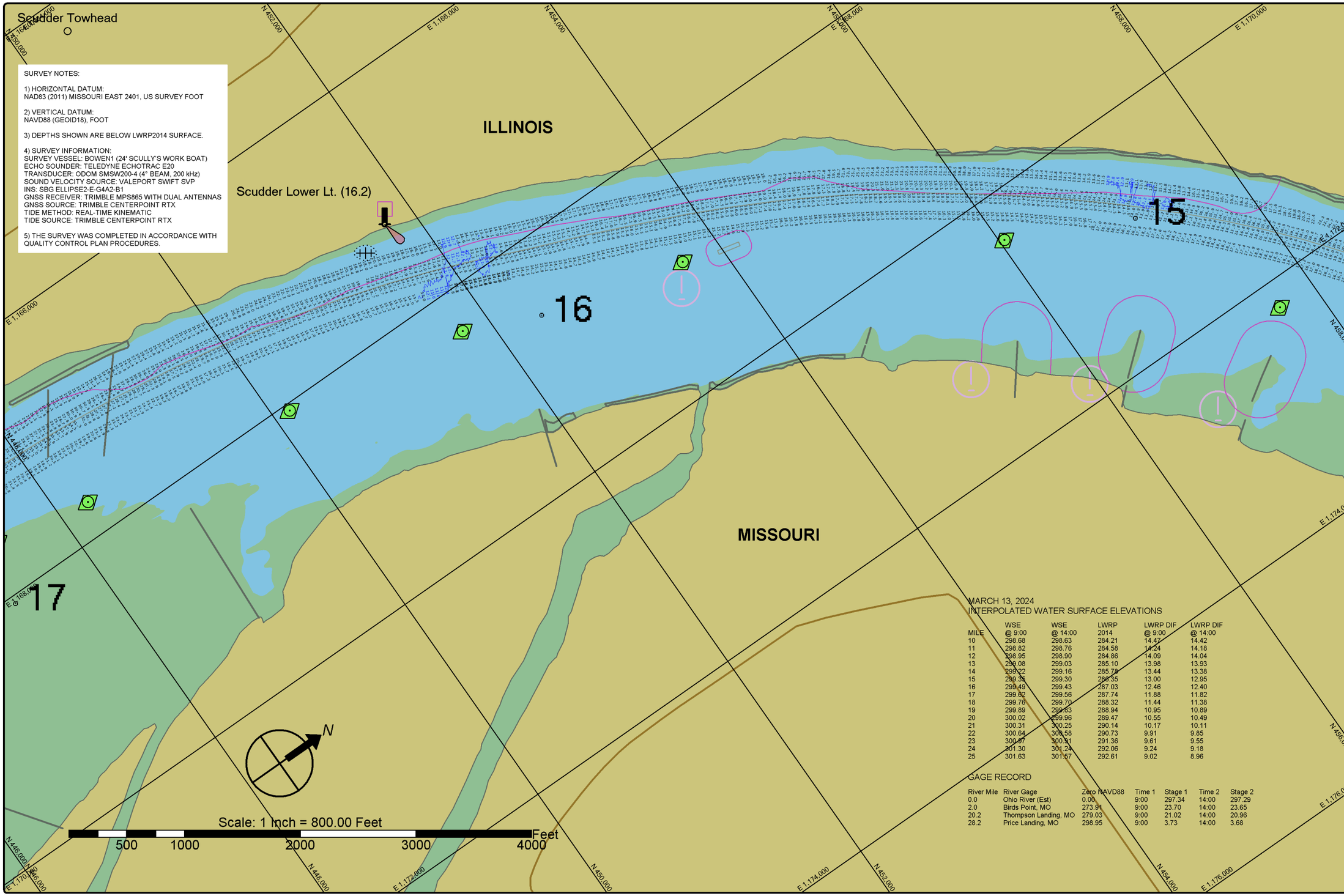
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEDAR DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 16.4 - 18.7

SHEET NO.
1 OF 1



SURVEY NOTES:

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MARCH 13, 2024
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St. Louis District

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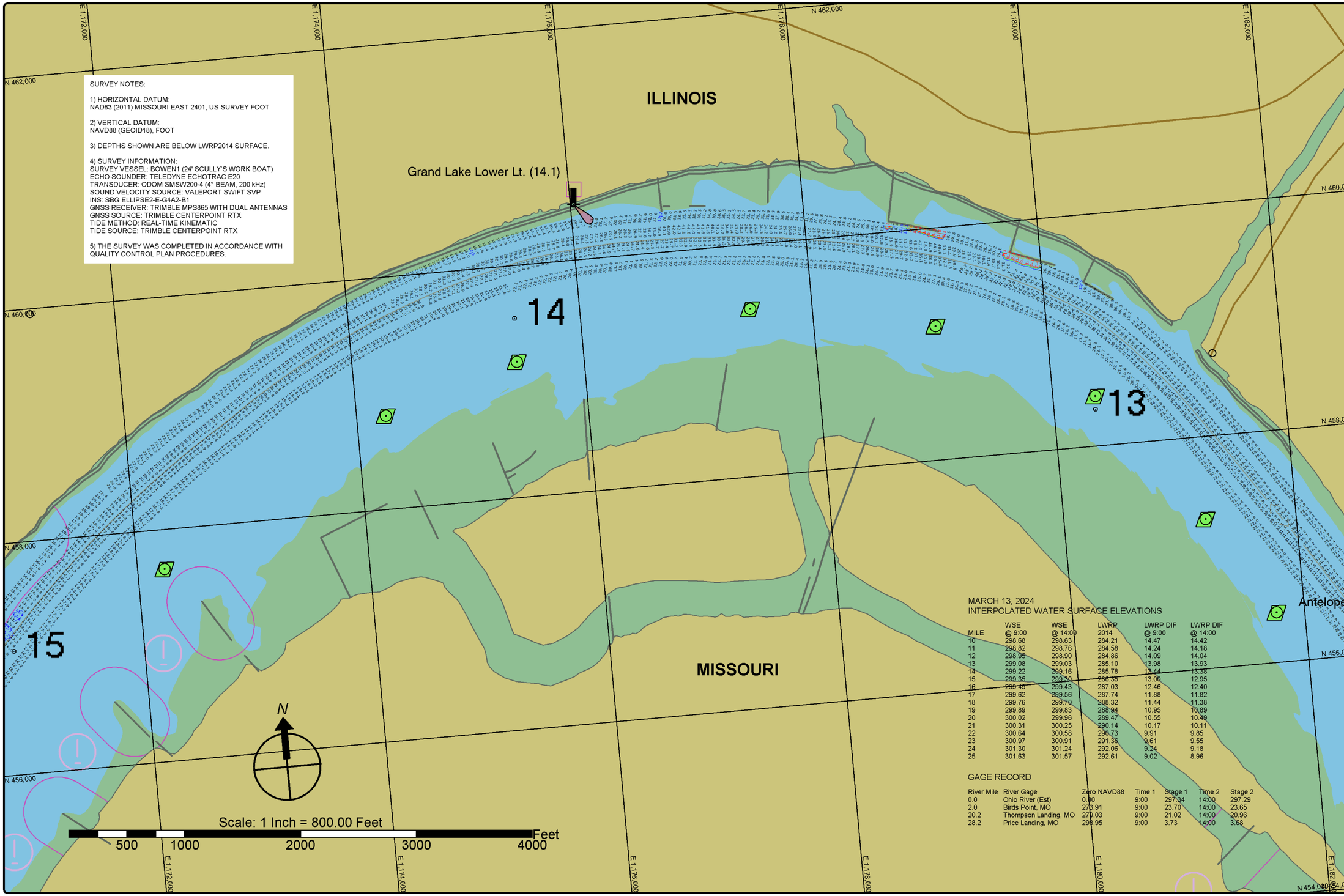
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEDIAN DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 14.7 - 16.4

SHEET NO.
1 OF 1



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TIDE METHOD: REAL-TIME KINEMATIC
TIDE SOURCE: TRIMBLE CENTERPOINT RTX

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

MARCH 13, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
10	298.68	298.63	284.21	14.47	14.42
11	298.82	298.76	284.58	14.24	14.18
12	298.95	298.90	284.86	14.09	14.04
13	299.08	299.03	285.10	13.98	13.93
14	299.22	299.16	285.78	13.44	13.38
15	299.35	299.30	286.35	13.00	12.95
16	299.49	299.43	287.03	12.46	12.40
17	299.62	299.56	287.74	11.88	11.82
18	299.76	299.70	288.32	11.44	11.38
19	299.89	299.83	288.94	10.95	10.89
20	300.02	299.96	289.47	10.55	10.49
21	300.31	300.25	290.14	10.17	10.11
22	300.64	300.58	290.73	9.91	9.85
23	300.97	300.91	291.36	9.61	9.55
24	301.30	301.24	292.06	9.24	9.18
25	301.63	301.57	292.61	9.02	8.96

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
0.0	Ohio River (Est)	0.00	9:00	297.34	14:00	297.29
2.0	Birds Point, MO	273.91	9:00	23.70	14:00	23.65
20.2	Thompson Landing, MO	279.03	9:00	21.02	14:00	20.96
28.2	Price Landing, MO	293.95	9:00	3.73	14:00	3.68

St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

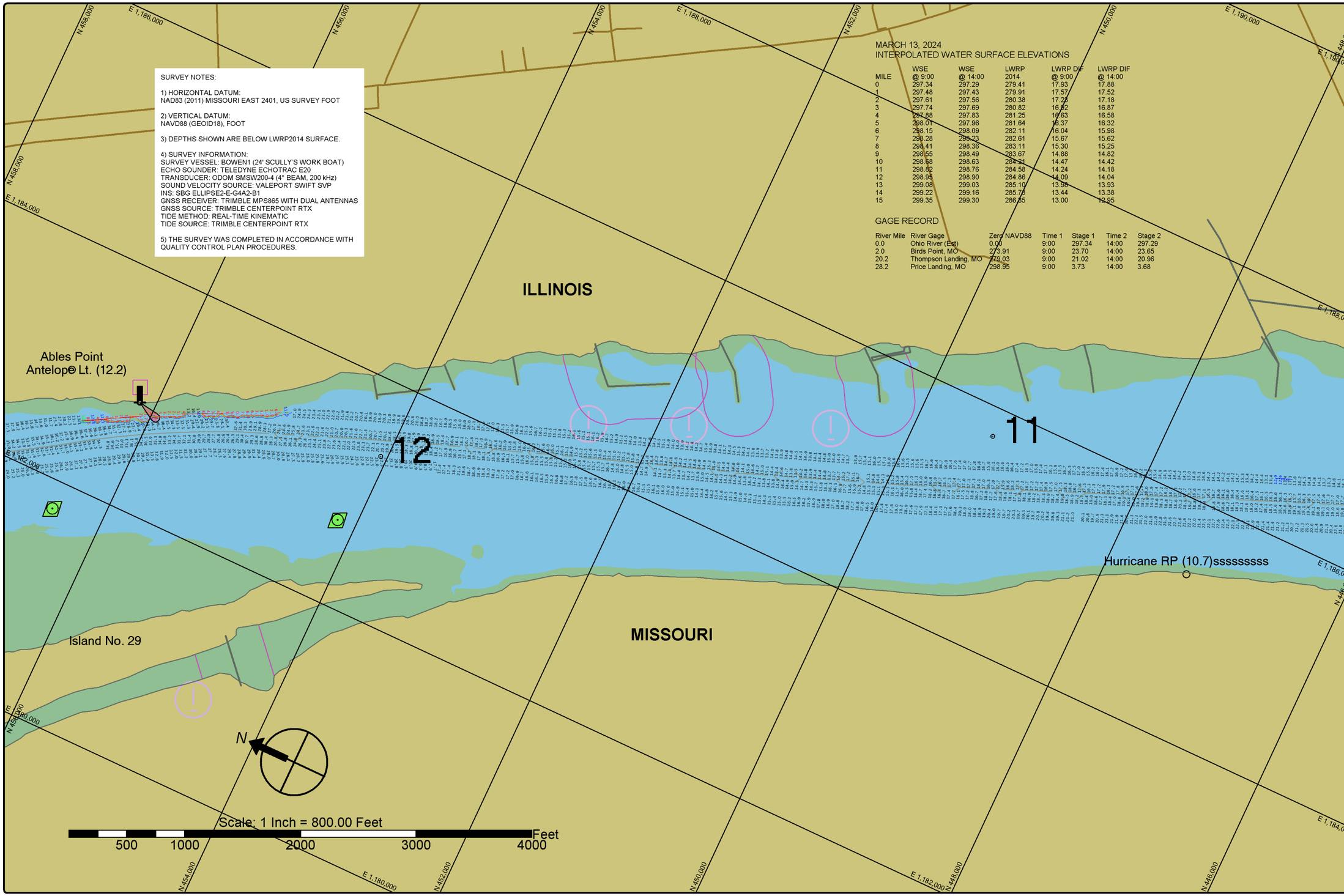
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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

SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEDIAN DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 12.5 - 14.7

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.

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 13, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
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1	297.48	297.43	279.91	17.57	17.52
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4	297.88	297.83	281.25	16.63	16.58
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St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

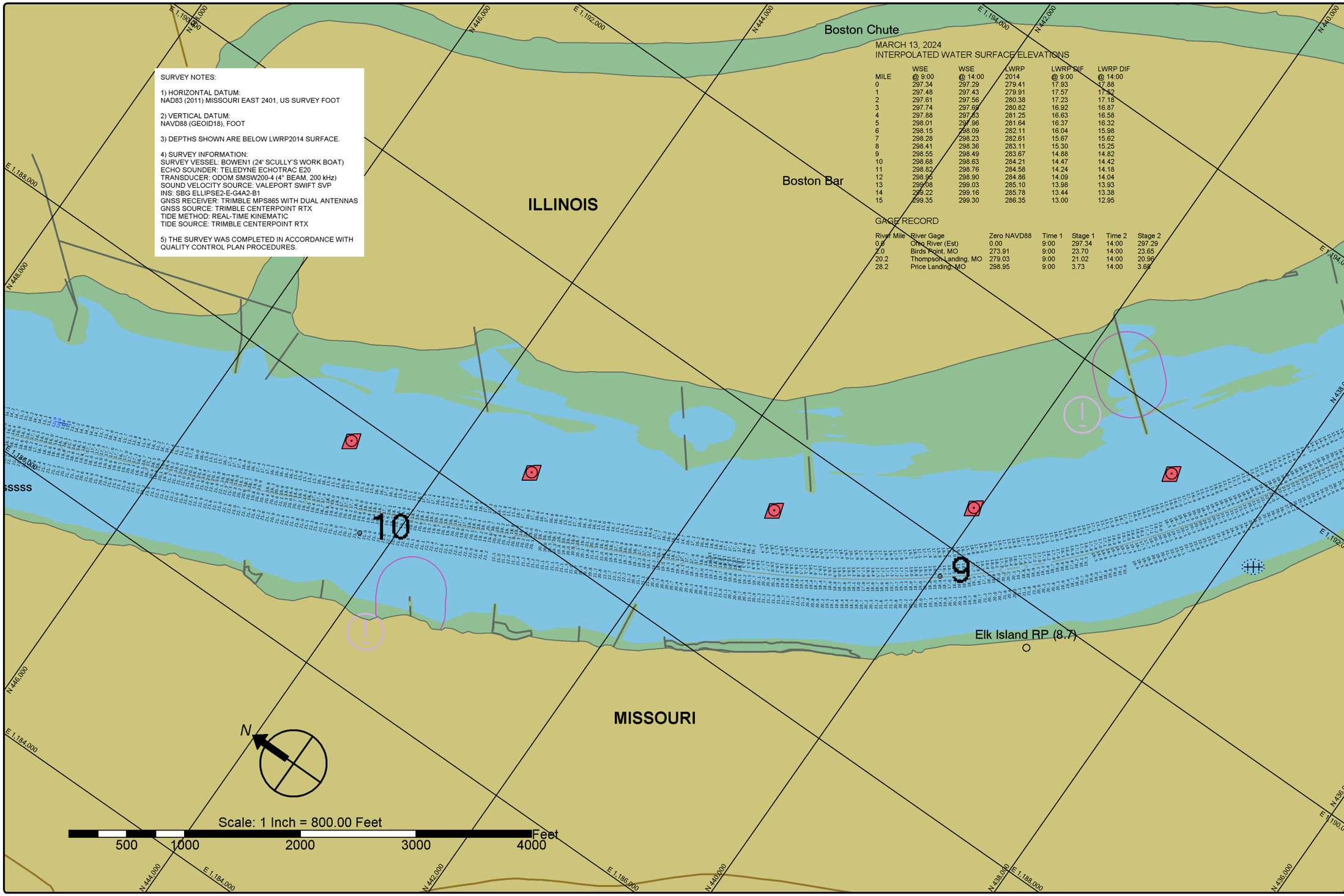
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST. CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 10.5 - 12.5

SHEET NO.
1 OF 1



SURVEY NOTES:

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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

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MARCH 13, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

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3	297.74	297.69	280.82	16.92	16.87
4	297.88	297.83	281.25	16.63	16.58
5	298.01	297.96	281.64	16.37	16.32
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St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

Approved: FIELD CARTOGRAPHER
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 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 8.3 - 10.5

SHEET NO.
1 OF 1

SURVEY NOTES:

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NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

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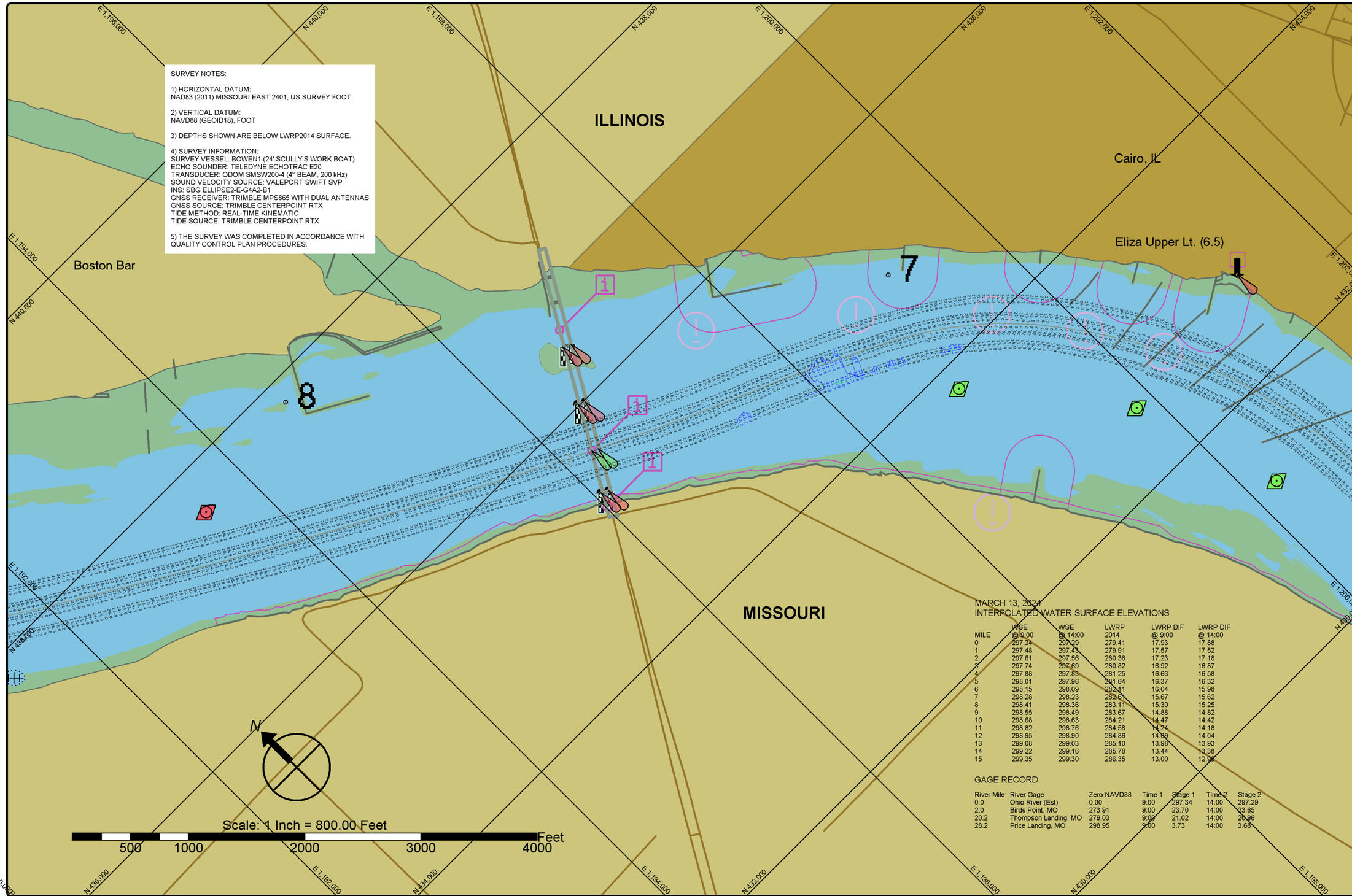

MARCH 13, 2024
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St. Louis District

DATES OF SURVEY:
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Date:

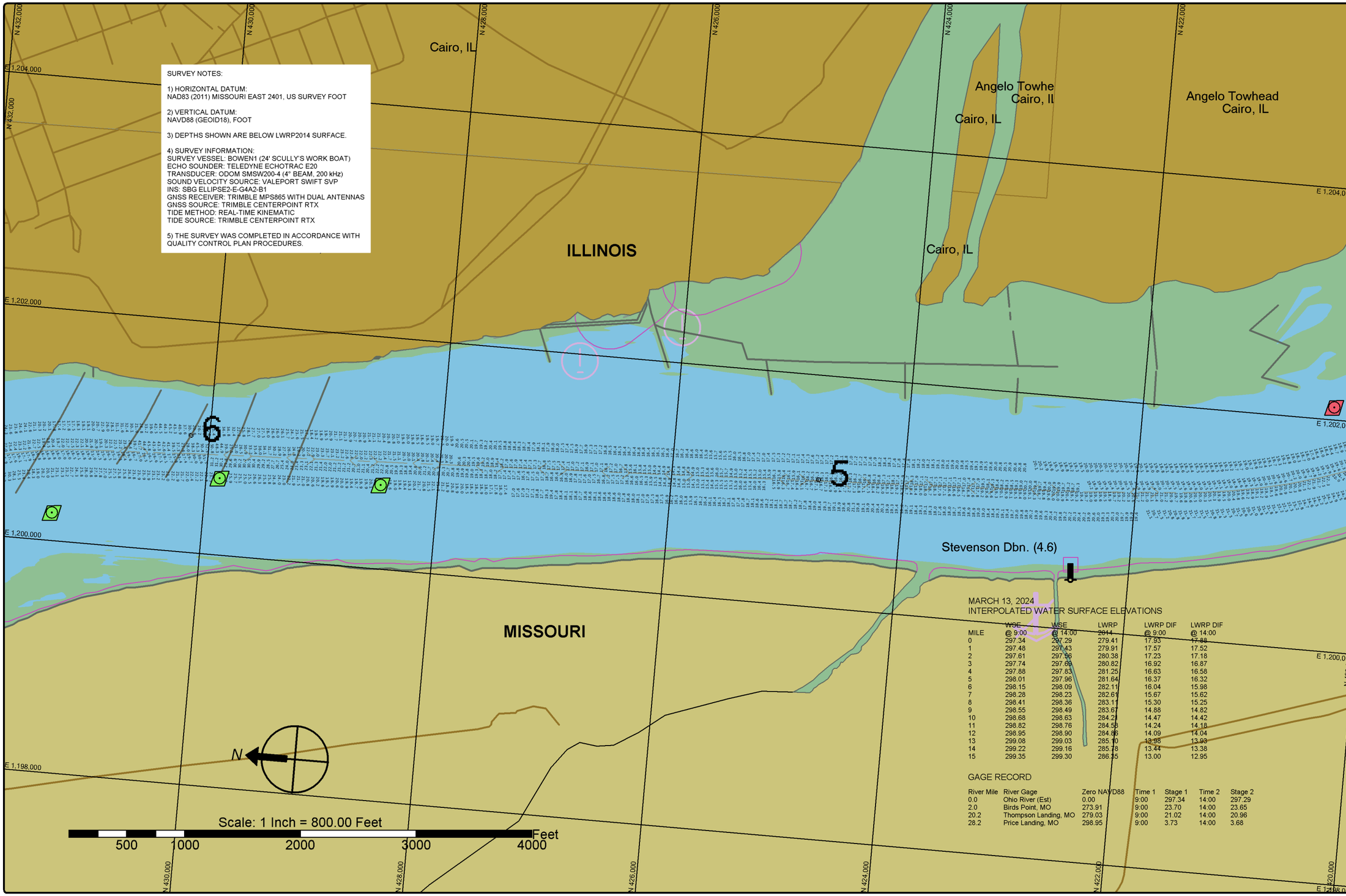
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEDIAN DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

CHANNEL PATROL
RIVER MILES 6.2 - 8.3

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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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
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MARCH 13, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

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St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
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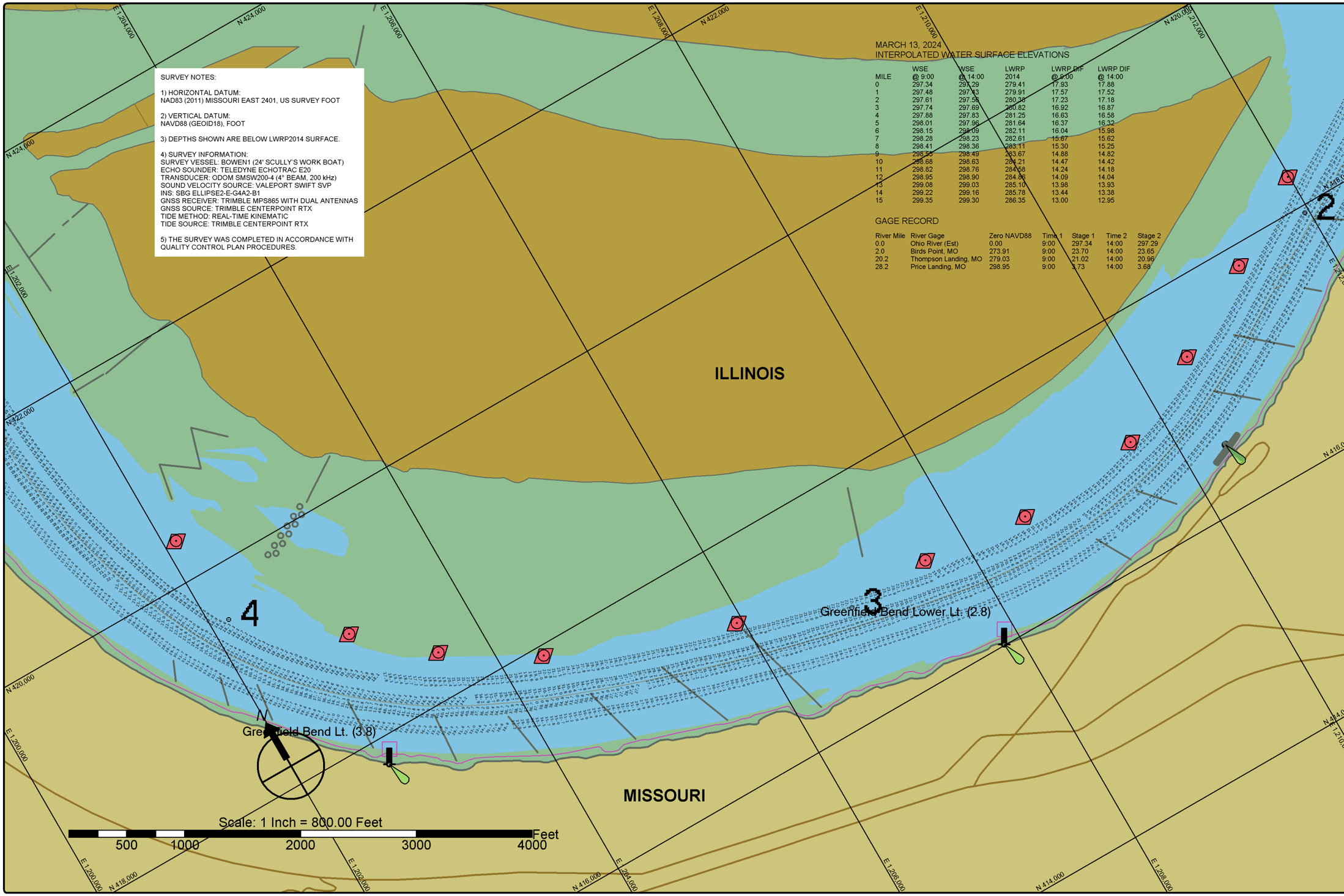
Date:

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 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 4.2 - 6.2

SHEET NO.
1 OF 1



SURVEY NOTES:

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MARCH 13, 2024
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St. Louis District

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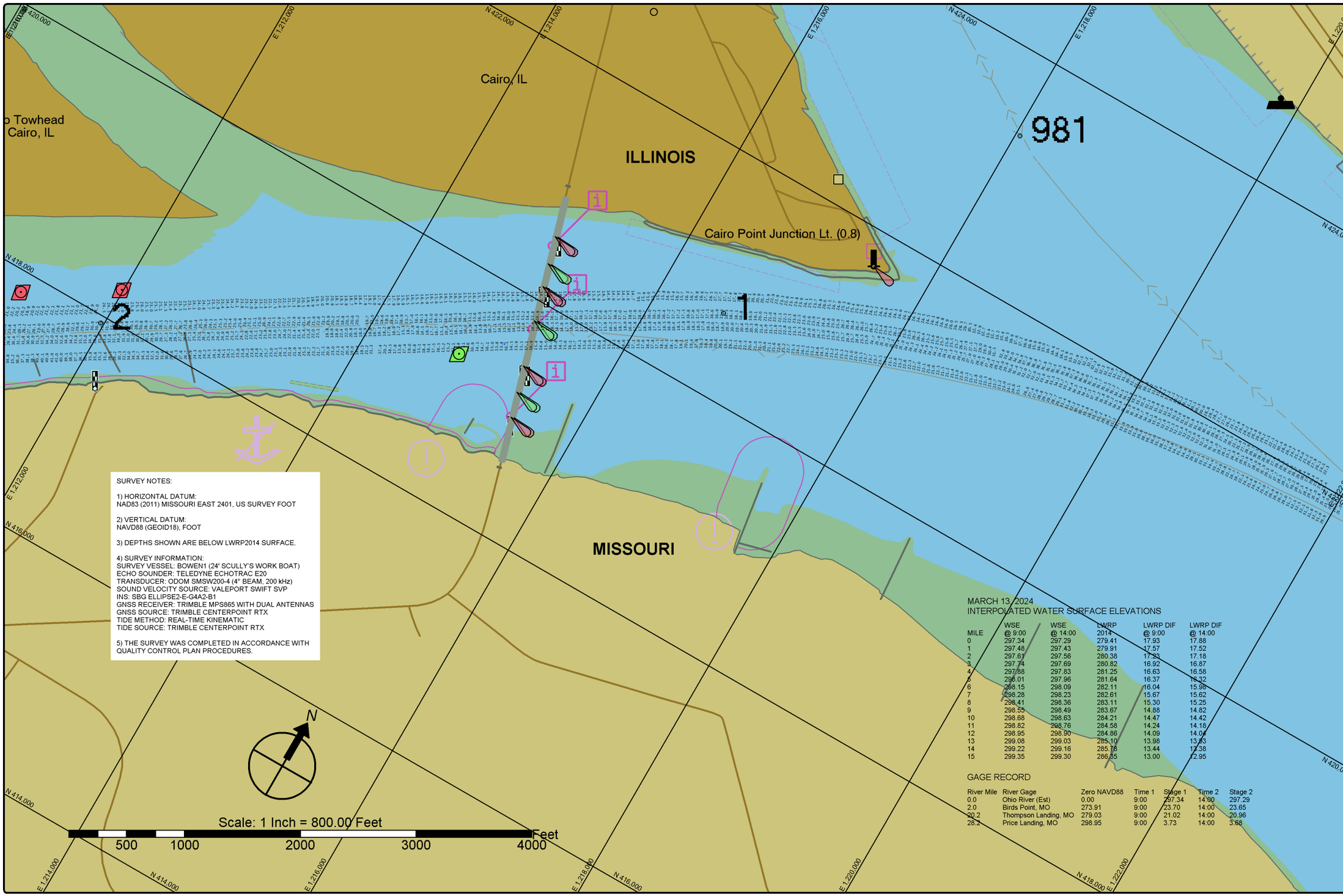
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEGAN DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 2.0 - 4.2

SHEET NO.
1 OF 1



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MARCH 13, 2024
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10	298.68	298.63	284.21	14.47	14.42
11	298.82	298.76	284.58	14.24	14.18
12	298.95	298.90	284.86	14.09	14.04
13	299.08	299.03	285.10	13.98	13.93
14	299.22	299.16	285.78	13.44	13.38
15	299.35	299.30	286.35	13.00	12.95

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
0.0	Ohio River (Est)	0.00	9:00	297.34	14:00	297.29
2.0	Birds Point, MO	273.91	9:00	23.70	14:00	23.65
20.2	Thompson Landing, MO	279.03	9:00	21.02	14:00	20.96
28.2	Price Landing, MO	298.95	9:00	3.73	14:00	3.68

St. Louis District

DATES OF SURVEY:
MARCH 13, 2024

FILE NO.: 025_000C1324
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

Approved: FIELD CARTOGRAPHER
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 MEDIAN DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER

CHANNEL PATROL
RIVER MILES 0 - 2.0

SHEET NO.
1 OF 1