SURVEY NOTES:

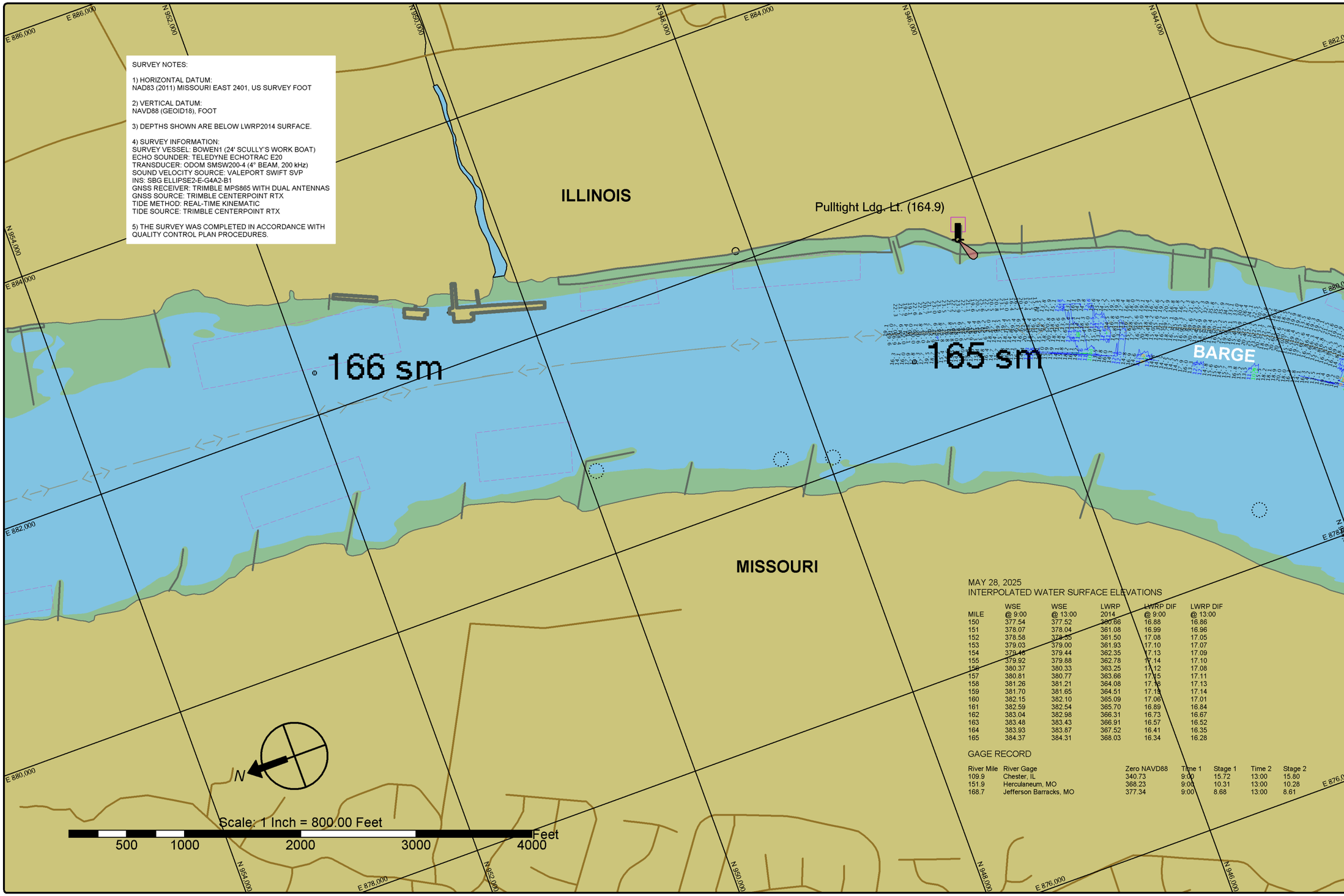
1) HORIZONTAL DATUM:
NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

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.



MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
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159	381.70	381.65	364.51	17.19	17.14
160	382.15	382.10	365.09	17.06	17.01
161	382.59	382.54	365.70	16.89	16.84
162	383.04	382.98	366.31	16.73	16.67
163	383.48	383.43	366.91	16.57	16.52
164	383.93	383.87	367.52	16.41	16.35
165	384.37	384.31	368.03	16.34	16.28

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
109.9	Chester, IL	340.73	9:00	15.72	13:00	15.80
151.9	Herculaneum, MO	368.23	9:00	10.31	13:00	10.28
168.7	Jefferson Barracks, MO	377.34	9:00	8.68	13:00	8.61

St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 165_140E2825
REQUEST NO.: W912P525F0006

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

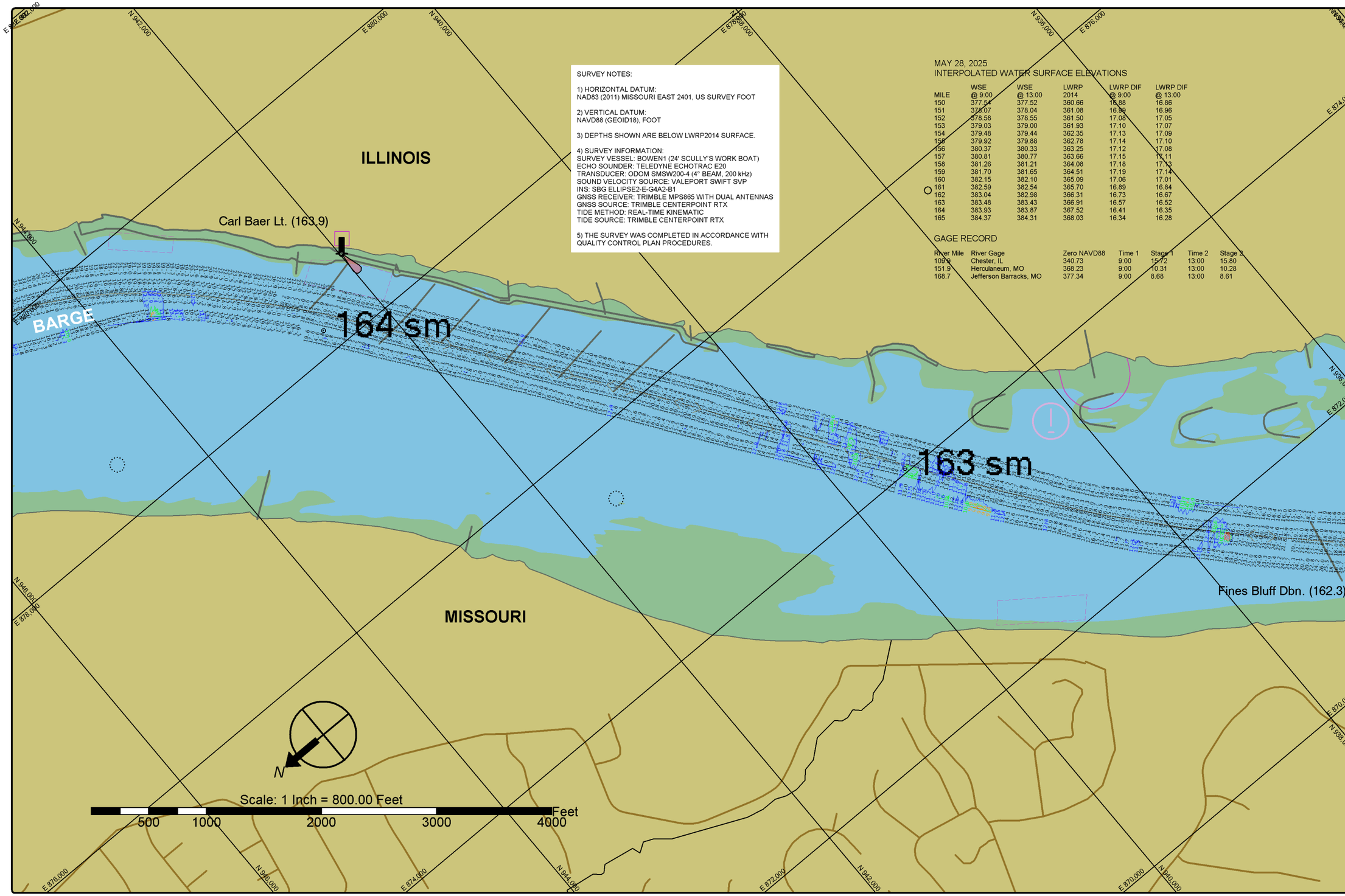
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST. CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 164.3 - 166.3

SHEET NO.
1 OF 1



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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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MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

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St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 165_140E2825
REQUEST NO.: W912P925F0006

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 162.3 - 164.3

SHEET NO.
1 OF 1

SURVEY NOTES:

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MAY 28, 2025
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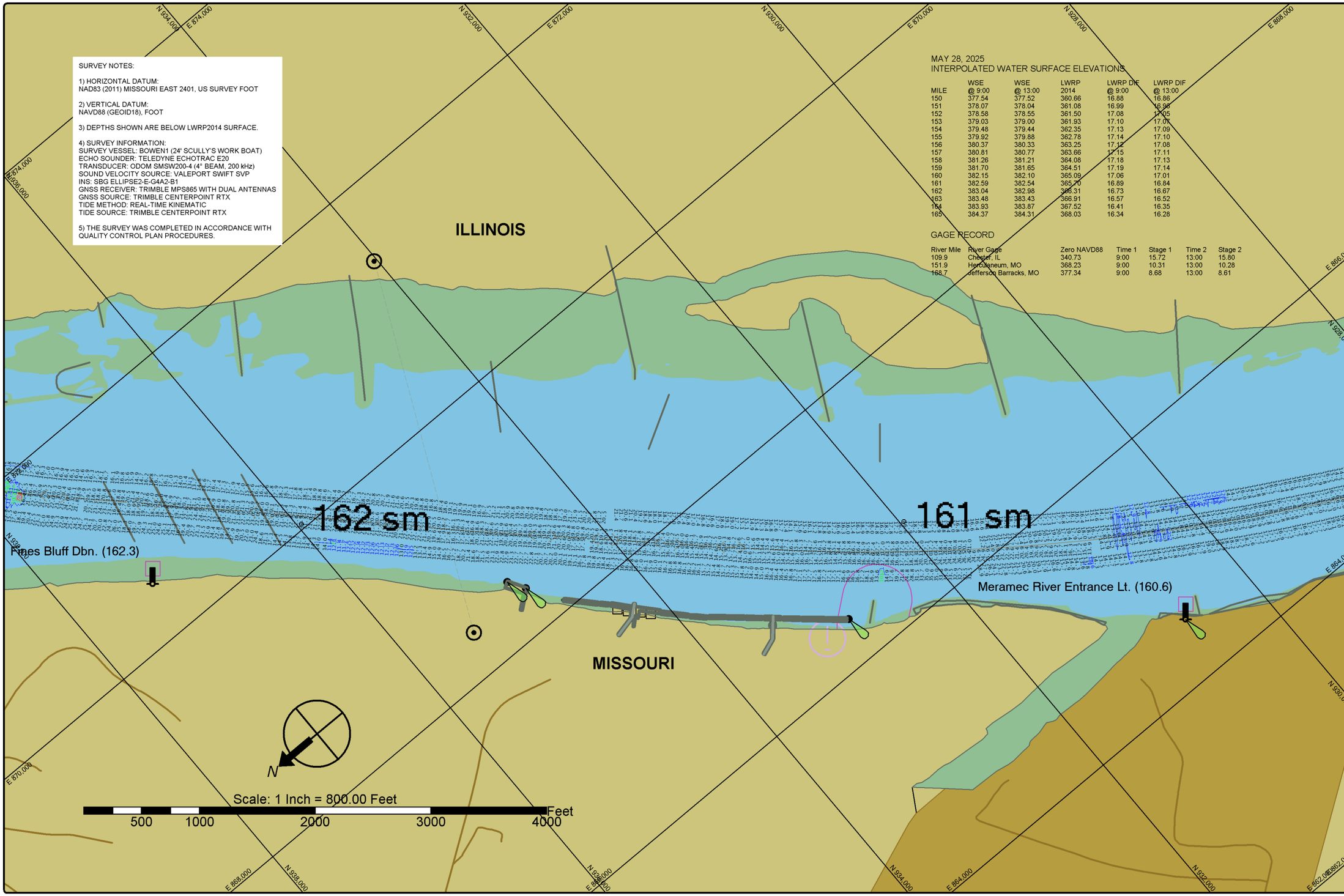

St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 165_140E2825
REQUEST NO.: W912P925F0006

SCALE:
1" = 800' (ANSI B)

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Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF 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 160.3 - 162.3

SHEET NO.
1 OF 1

SURVEY NOTES:

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MAY 28, 2025
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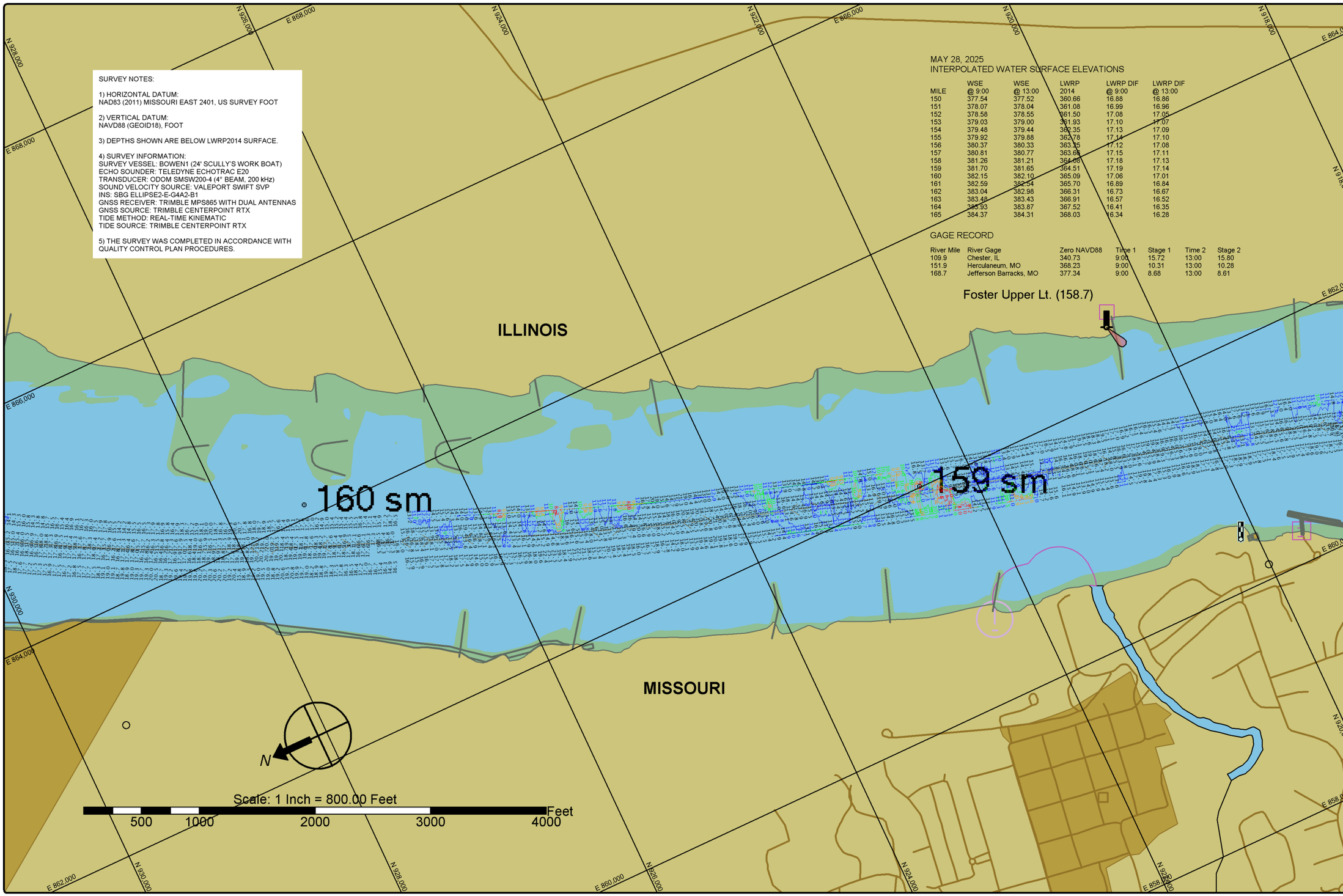

St. Louis District

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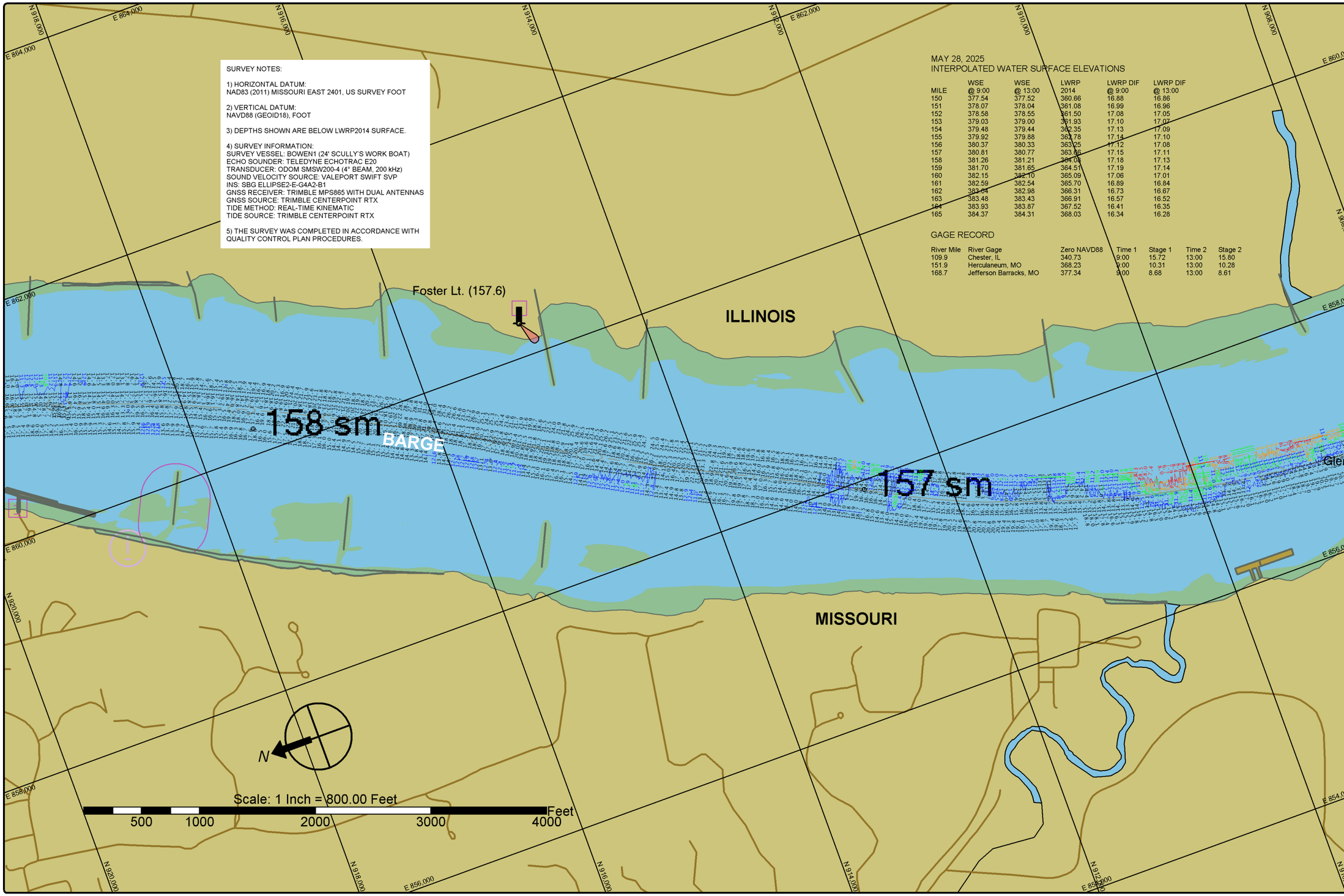
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 158.3 - 160.3

SHEET NO.
1 OF 1



SURVEY NOTES:

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MAY 28, 2025
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U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

SURVEYED BY:
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2121 MEGAN DRIVE
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UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
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RIVER MILES 156.2 - 158.3

SHEET NO.
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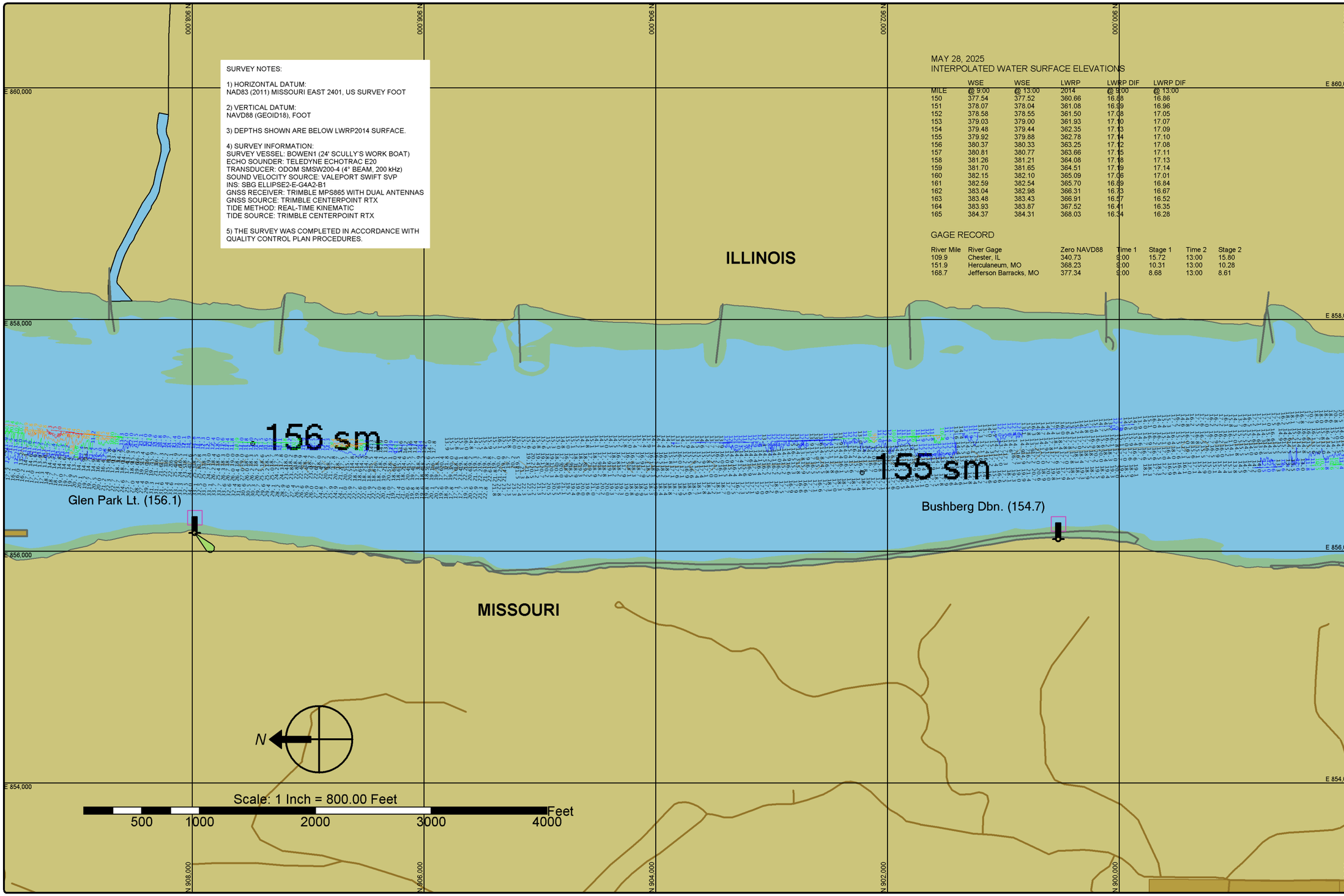

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ST. LOUIS DISTRICT
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SURVEYED BY:
BOWEN ENGINEERING AND SURVEYING, P.C.
2121 MEGAN DRIVE
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UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 154.2 - 156.2

SHEET NO.
1 OF 1

SURVEY NOTES:

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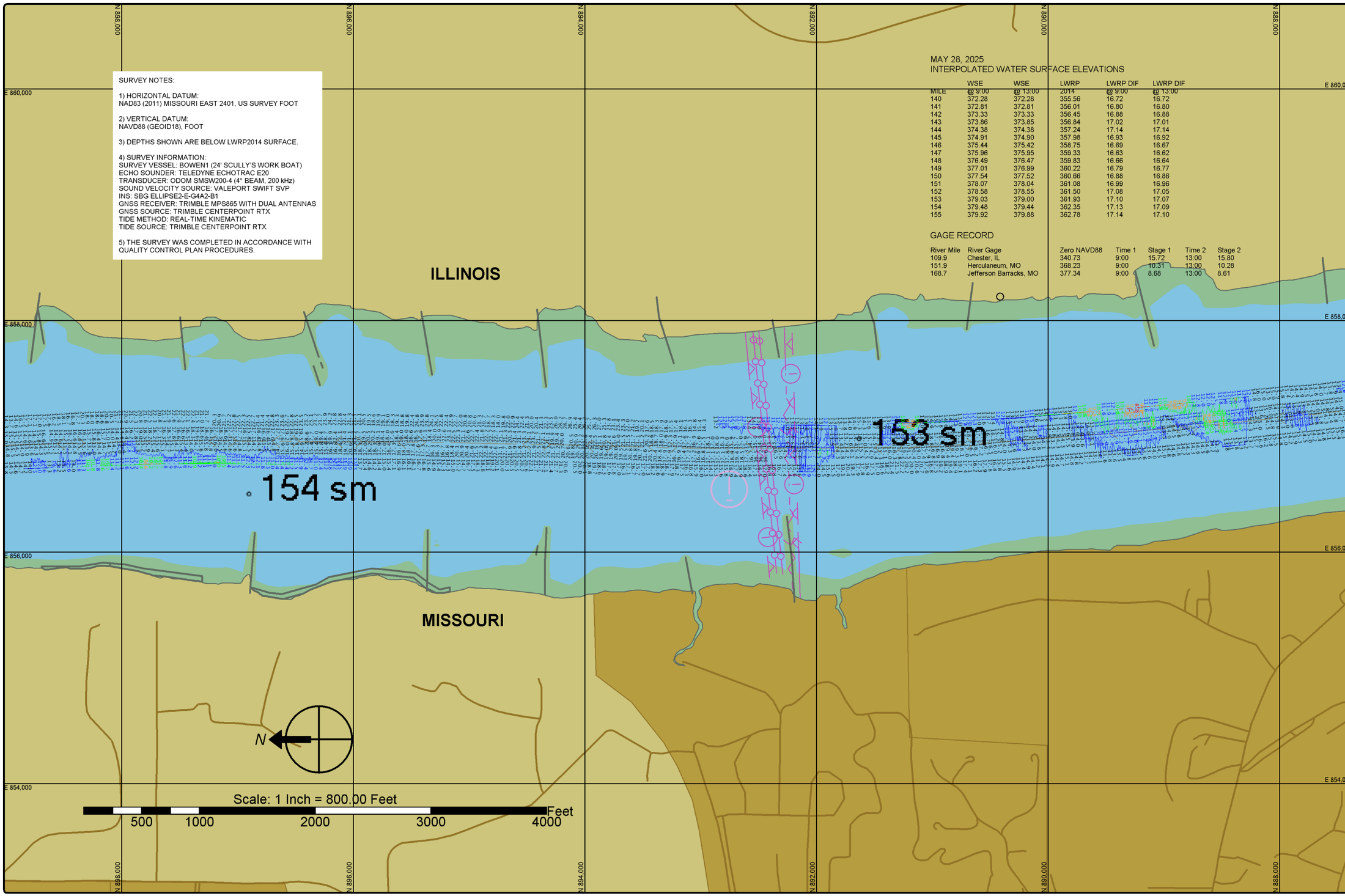
153	379.03	379.00	361.93	17.10	17.07
154	379.48	379.44	362.35	17.13	17.09
155	379.92	379.88	362.78	17.14	17.10

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
109.9	Chester, IL	340.73	9:00	15.72	13:00	15.80
151.9	Herculaneum, MO	368.23	9:00	10.31	13:00	10.28
168.7	Jefferson Barracks, MO	377.34	9:00	8.68	13:00	8.61



St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 169_140E2825
REQUEST NO.: W912P925F0006

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 152.2 - 154.2

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.

MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
140	372.28	372.28	355.56	16.72	16.72
141	372.81	372.81	356.01	16.80	16.80
142	373.33	373.33	356.45	16.88	16.88
143	373.86	373.85	356.84	17.02	17.01
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109.9	Chester, IL	340.73	9:00	15.72	13:00	15.80
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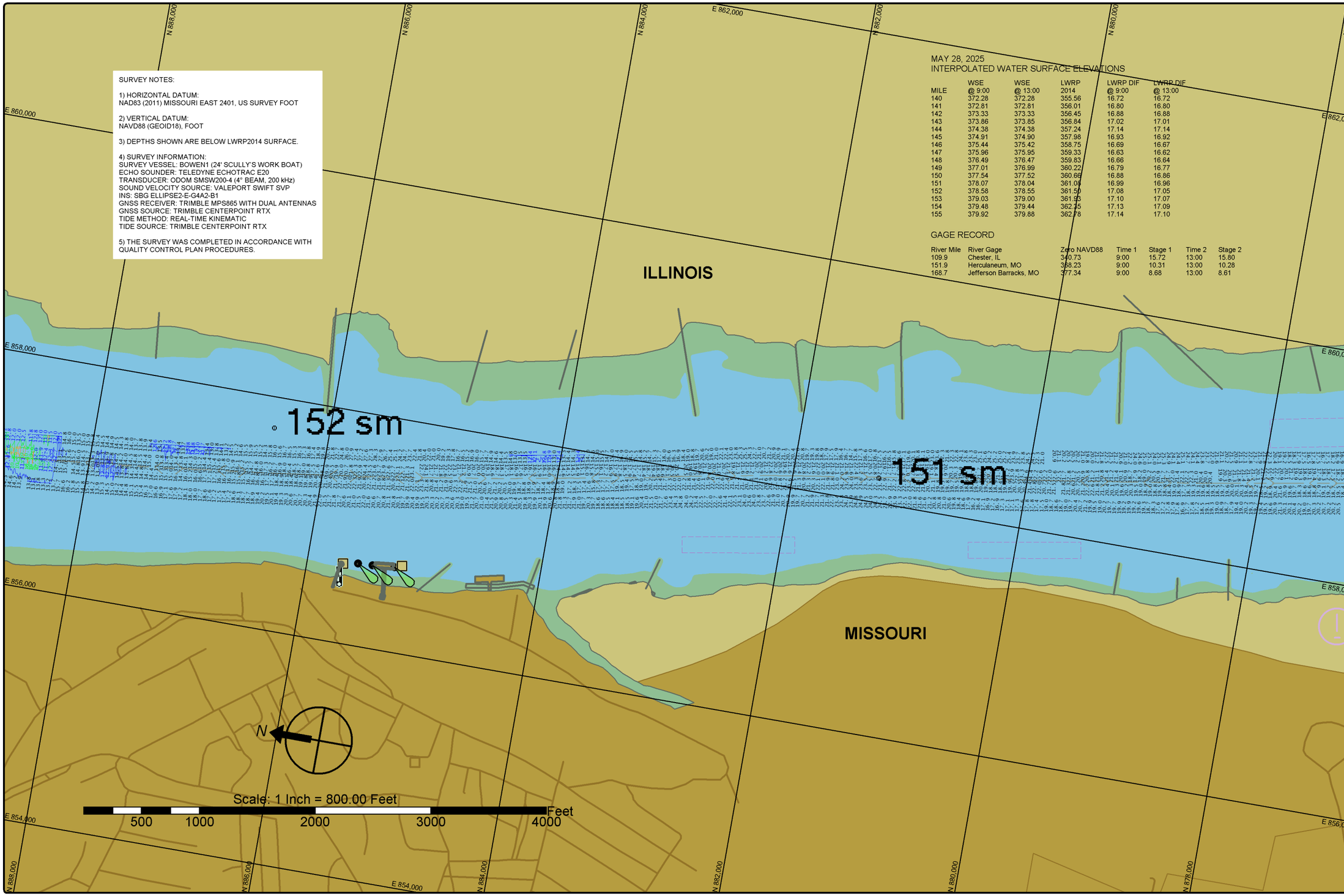
168.7	Jefferson Barracks, MO	377.34	9:00	8.68	13:00	8.61



St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 169_140E2825
REQUEST NO.: W912P925F0006

SCALE:
1" = 800' (ANSI B)

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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 150.2 - 152.2

SHEET NO.
1 OF 1

SURVEY NOTES:

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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

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MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

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River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
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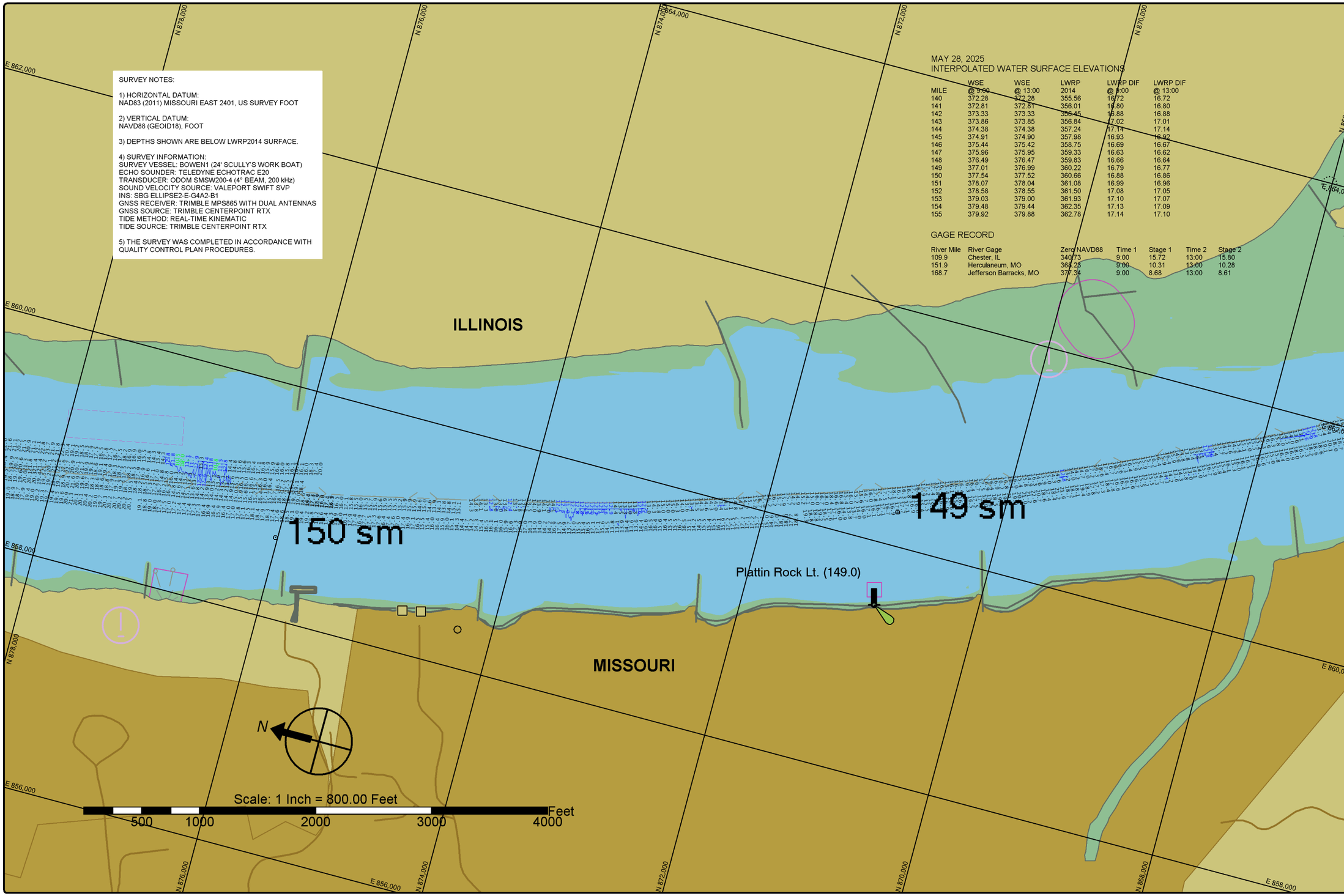

St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 169_140E2825
REQUEST NO.: W912P925F0006

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

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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 148.3 - 150.3

SHEET NO.
1 OF 1

SURVEY NOTES:

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

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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.

MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

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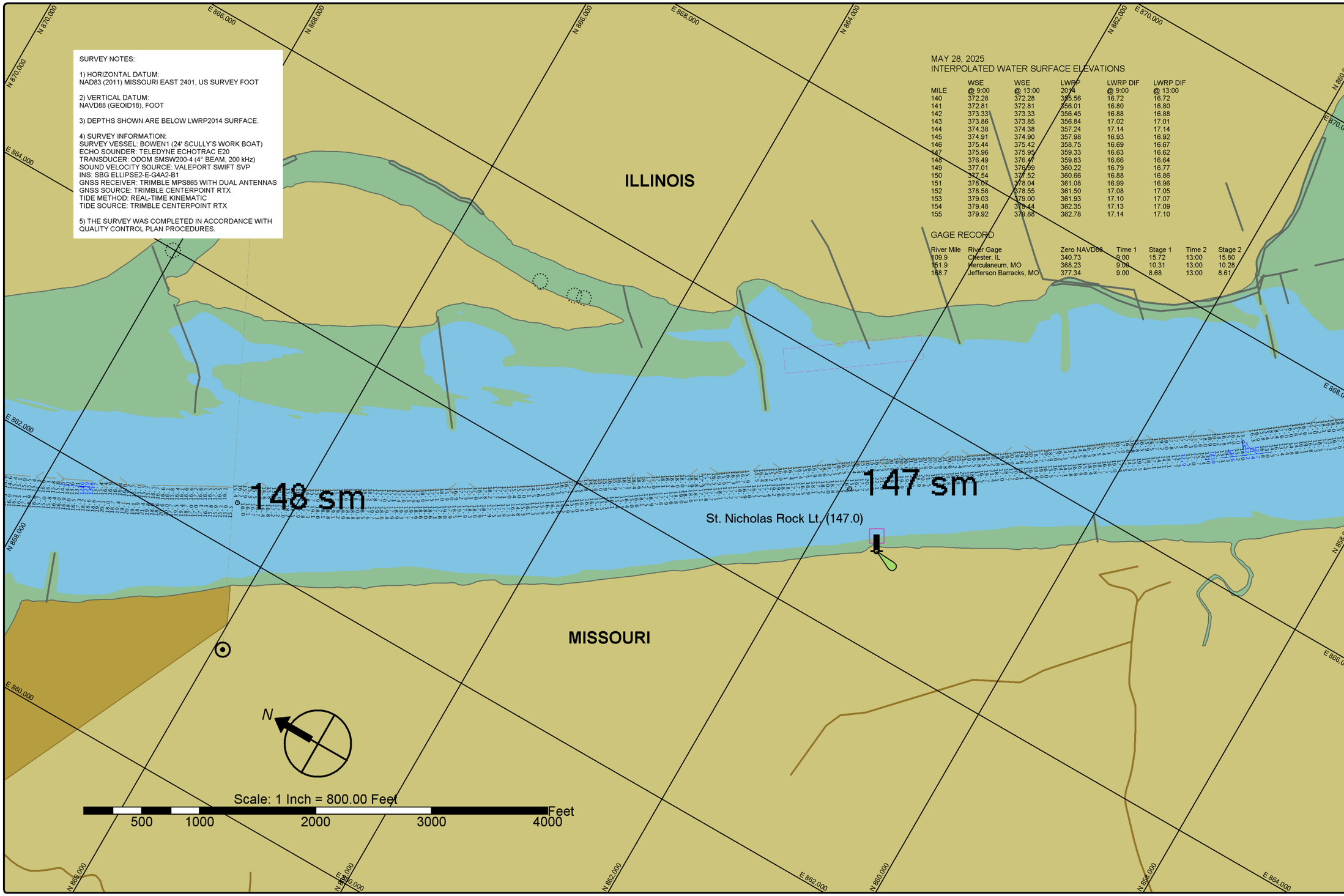

St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 169_140E2825
REQUEST NO.: W912P925F0006

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 146.2 - 148.3

SHEET NO.
1 OF 1

SURVEY NOTES:

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

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

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MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

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GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
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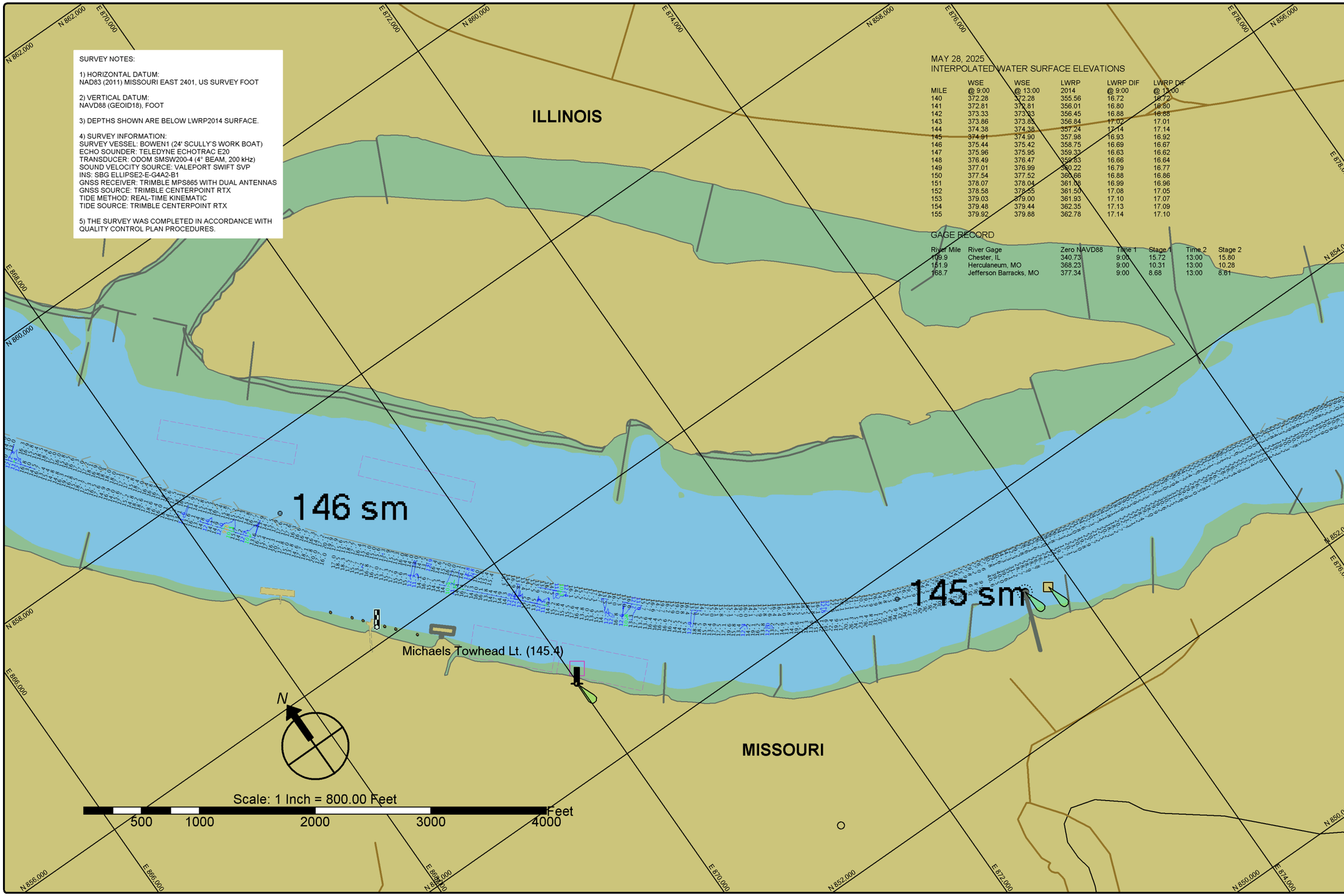

St. Louis District

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MAY 28, 2025

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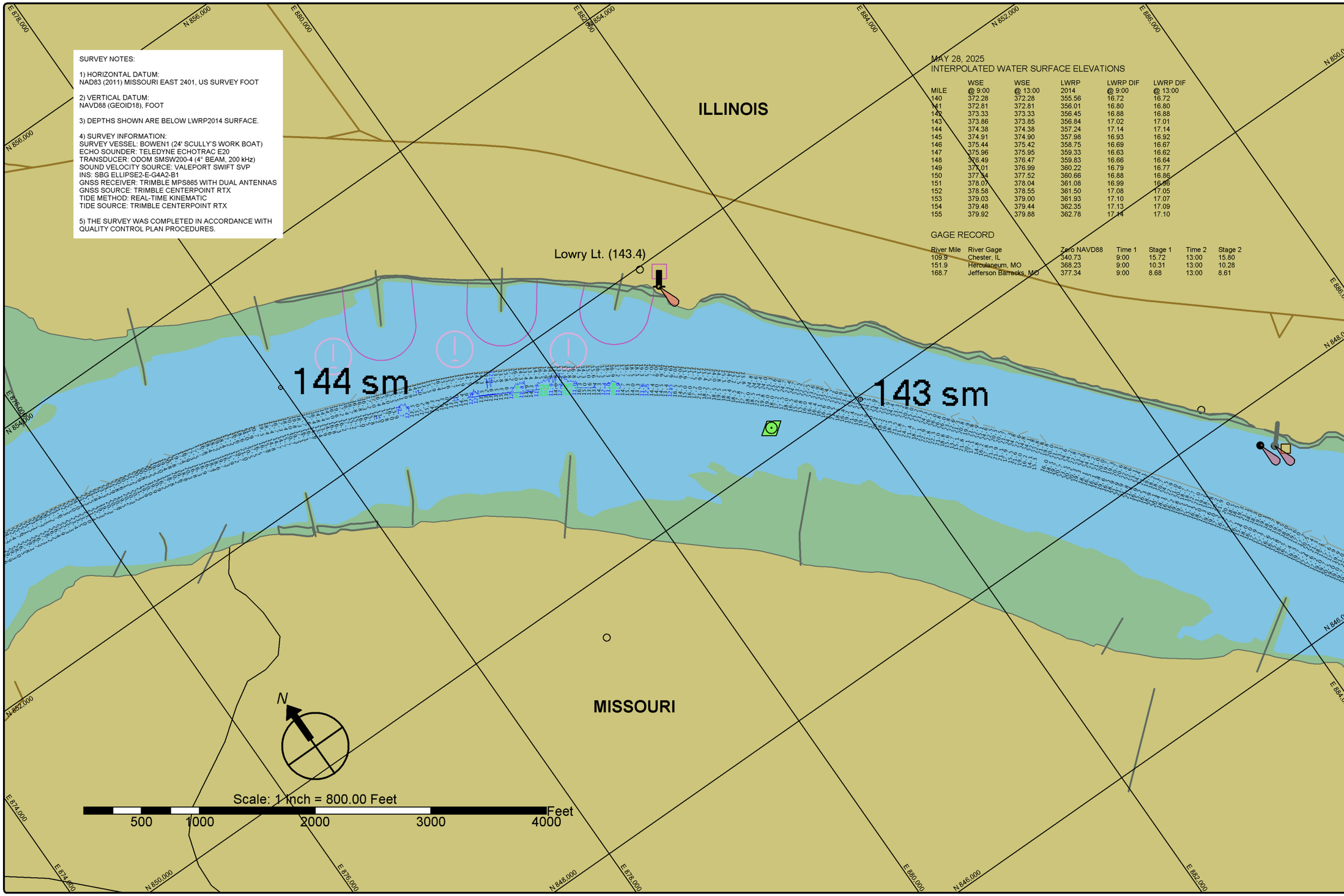
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

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 144.2 - 146.2

SHEET NO.
1 OF 1



SURVEY NOTES:

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NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

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

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MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

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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 142.2 - 144.2

SHEET NO.
1 OF 1

SURVEY NOTES:

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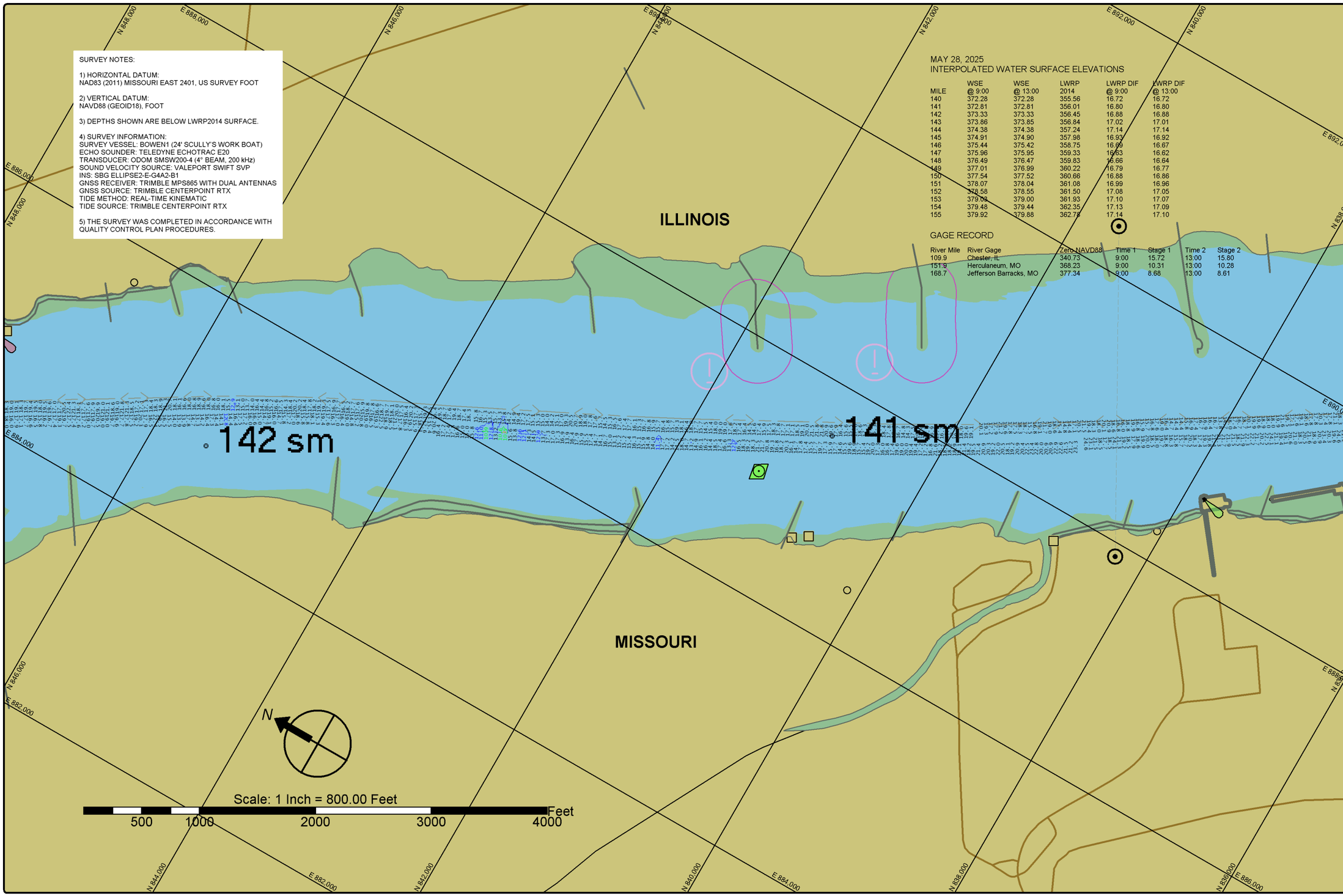

St. Louis District

DATES OF SURVEY:
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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 140.2 - 142.2

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

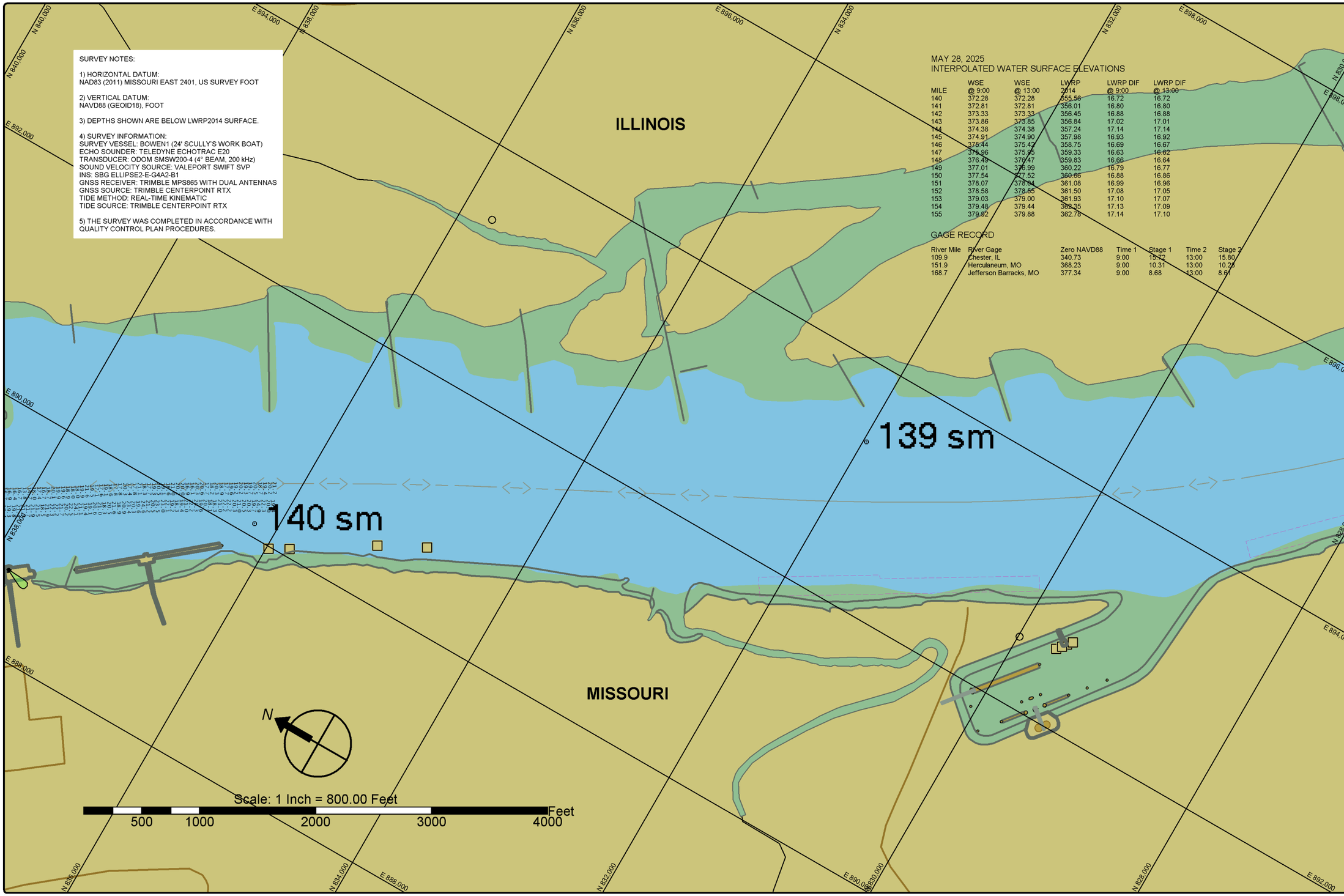
5) THE SURVEY WAS COMPLETED IN ACCORDANCE WITH QUALITY CONTROL PLAN PROCEDURES.

MAY 28, 2025
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 13:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 13:00
140	372.28	372.28	355.56	16.72	16.72
141	372.81	372.81	356.01	16.80	16.80
142	373.33	373.33	356.45	16.88	16.88
143	373.86	373.85	356.84	17.02	17.01
144	374.38	374.38	357.24	17.14	17.14
145	374.91	374.90	357.98	16.93	16.92
146	375.44	375.42	358.75	16.69	16.67
147	375.96	375.95	359.33	16.63	16.62
148	376.49	376.47	359.83	16.66	16.64
149	377.01	376.99	360.22	16.79	16.77
150	377.54	377.52	360.66	16.88	16.86
151	378.07	378.04	361.08	16.99	16.96
152	378.58	378.55	361.50	17.08	17.05
153	379.03	379.00	361.93	17.10	17.07
154	379.48	379.44	362.35	17.13	17.09
155	379.92	379.88	362.78	17.14	17.10

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
109.9	Chester, IL	340.73	9:00	15.72	13:00	15.80
151.9	Herculaneum, MO	368.23	9:00	10.31	13:00	10.23
168.7	Jefferson Barracks, MO	377.34	9:00	8.68	13:00	8.61



St. Louis District

DATES OF SURVEY:
MAY 28, 2025

FILE NO.: 165_140E2825
REQUEST NO.: W912P925F0006

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

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

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