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

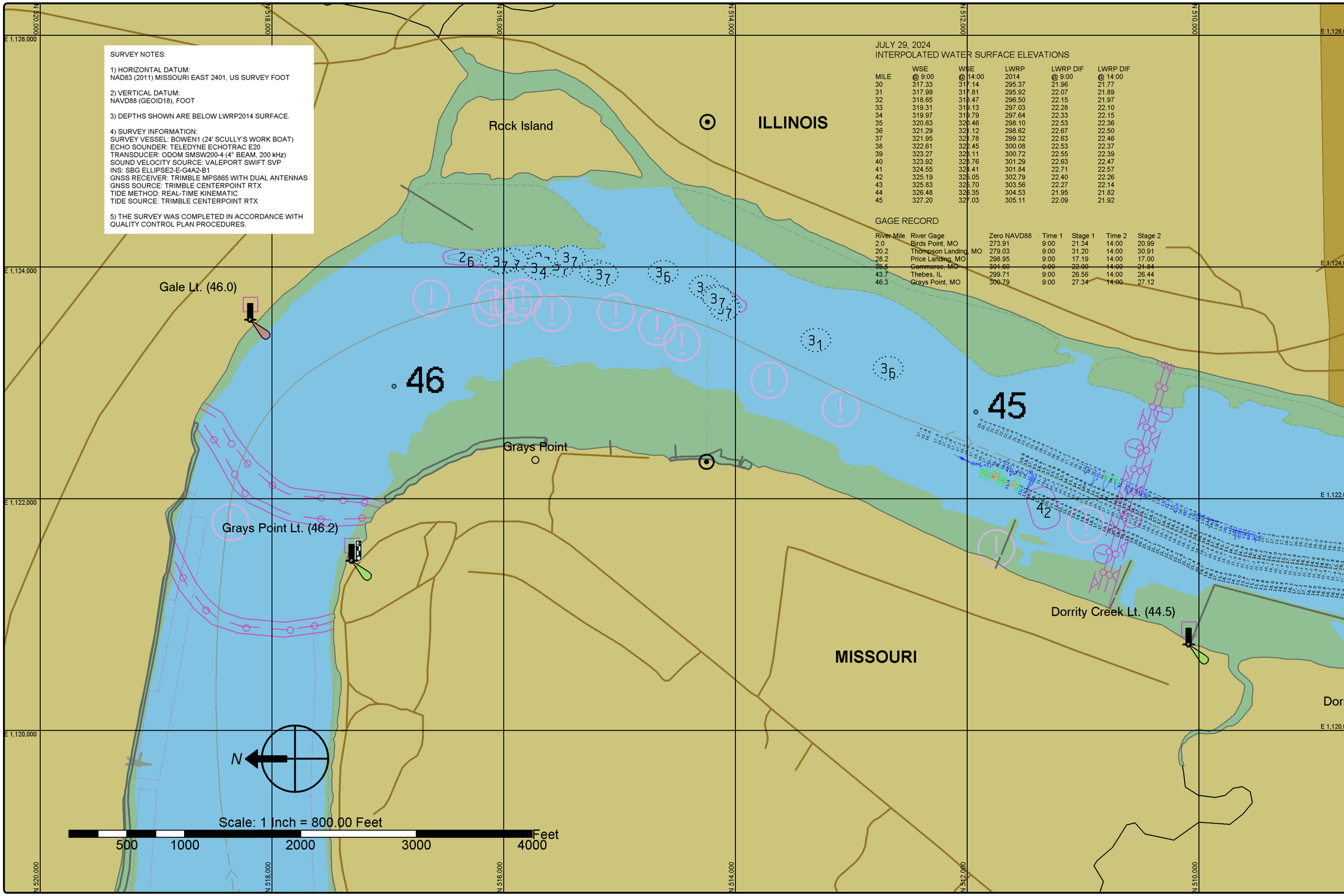
5) THE SURVEY WAS COMPLETED IN ACCORDANCE WITH QUALITY CONTROL PLAN PROCEDURES.

JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
30	317.33	317.14	295.37	21.96	21.77
31	317.99	317.81	295.92	22.07	21.89
32	318.65	318.47	296.50	22.15	21.97
33	319.31	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36
36	321.29	321.12	298.62	22.67	22.50
37	321.95	321.78	299.32	22.63	22.46
38	322.61	322.45	300.08	22.53	22.37
39	323.27	323.11	300.72	22.55	22.39
40	323.92	323.76	301.29	22.63	22.47
41	324.55	324.41	301.84	22.71	22.57
42	325.19	325.05	302.79	22.40	22.26
43	325.83	325.70	303.56	22.27	22.14
44	326.48	326.35	304.53	21.95	21.82
45	327.20	327.03	305.11	22.09	21.92

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
2.0	Birds Point, MO	273.91	9:00	21.34	14:00	20.99
20.2	Thompson Landing, MO	279.03	9:00	31.20	14:00	30.91
28.2	Price Landing, MO	298.95	9:00	17.19	14:00	17.00
39.5	Commerce, MO	304.60	9:00	22.00	14:00	21.84
43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12



St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

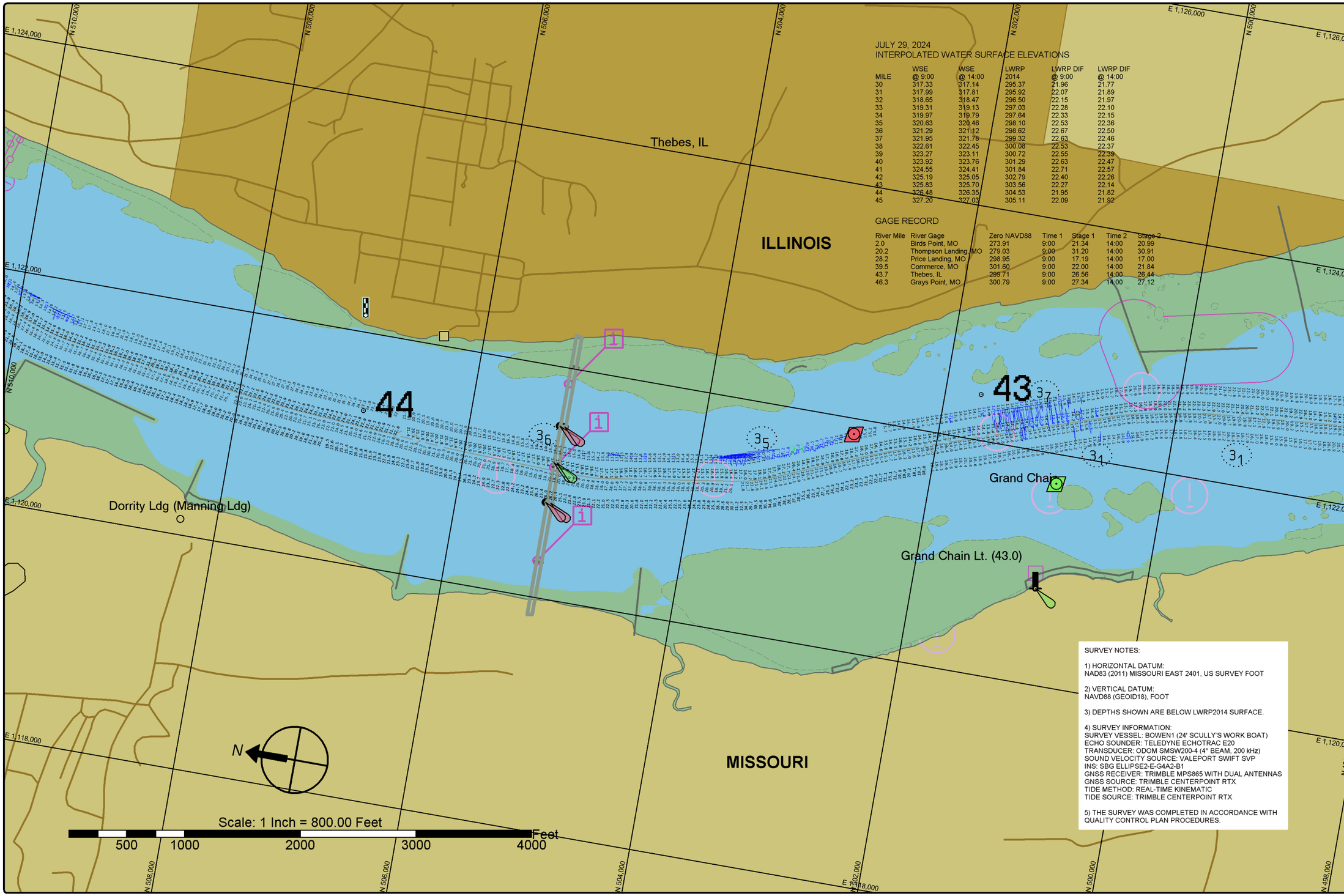
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST. CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 44.4 - 46.3

SHEET NO.
1 OF 1



JULY 29, 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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31	317.99	317.81	295.92	22.07	21.89
32	318.65	318.47	296.50	22.15	21.97
33	319.31	319.13	297.03	22.28	22.10
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43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

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.

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

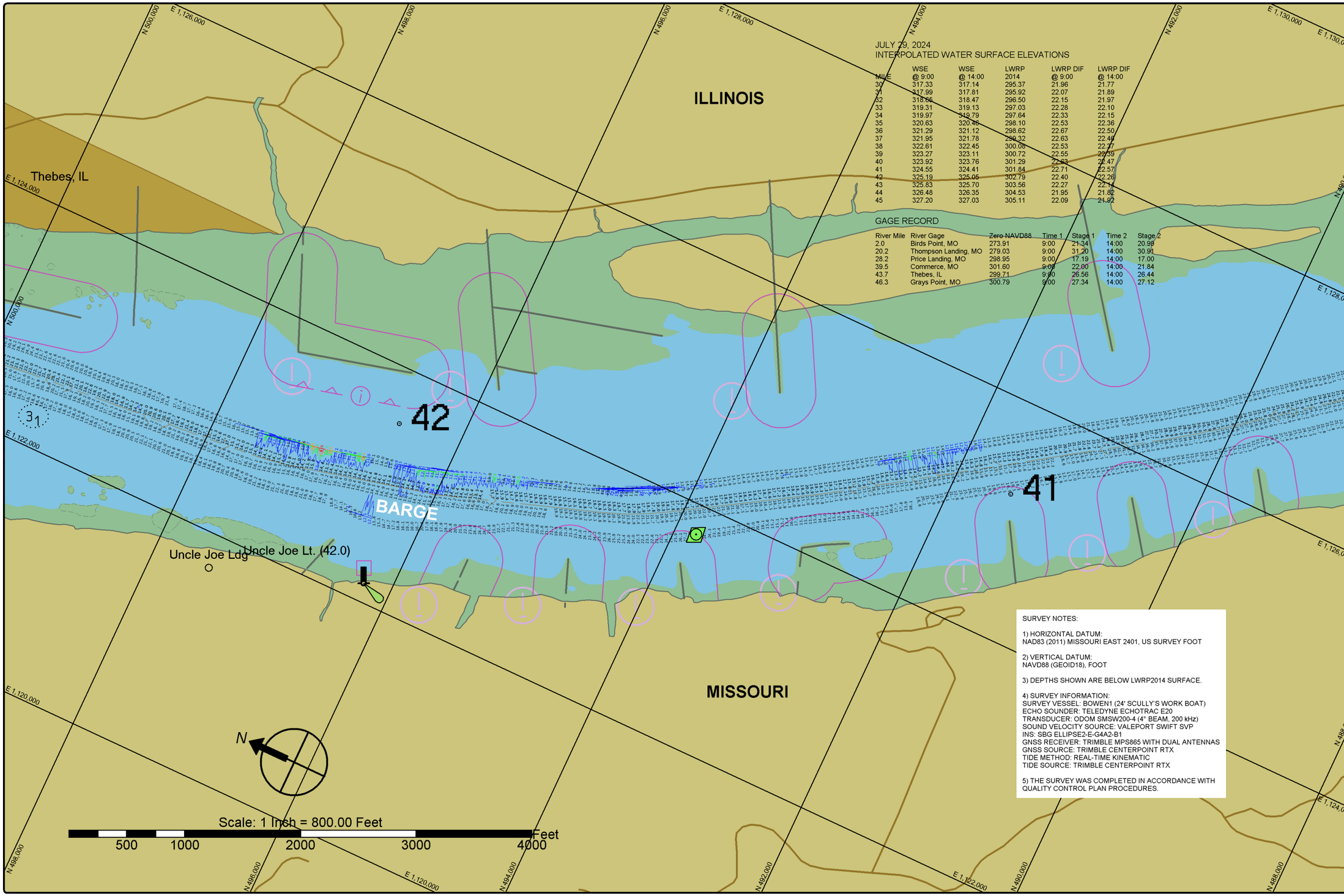
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 42.5 - 44.4

SHEET NO.
1 OF 1



JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
30	317.33	317.14	295.37	21.96	21.77
31	317.99	317.81	295.92	22.07	21.89
32	318.66	318.47	296.50	22.15	21.97
33	319.31	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36
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River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
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SURVEY NOTES:

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

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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

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

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
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 40.5 - 42.5

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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TIDE SOURCE: TRIMBLE CENTERPOINT RTX

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JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

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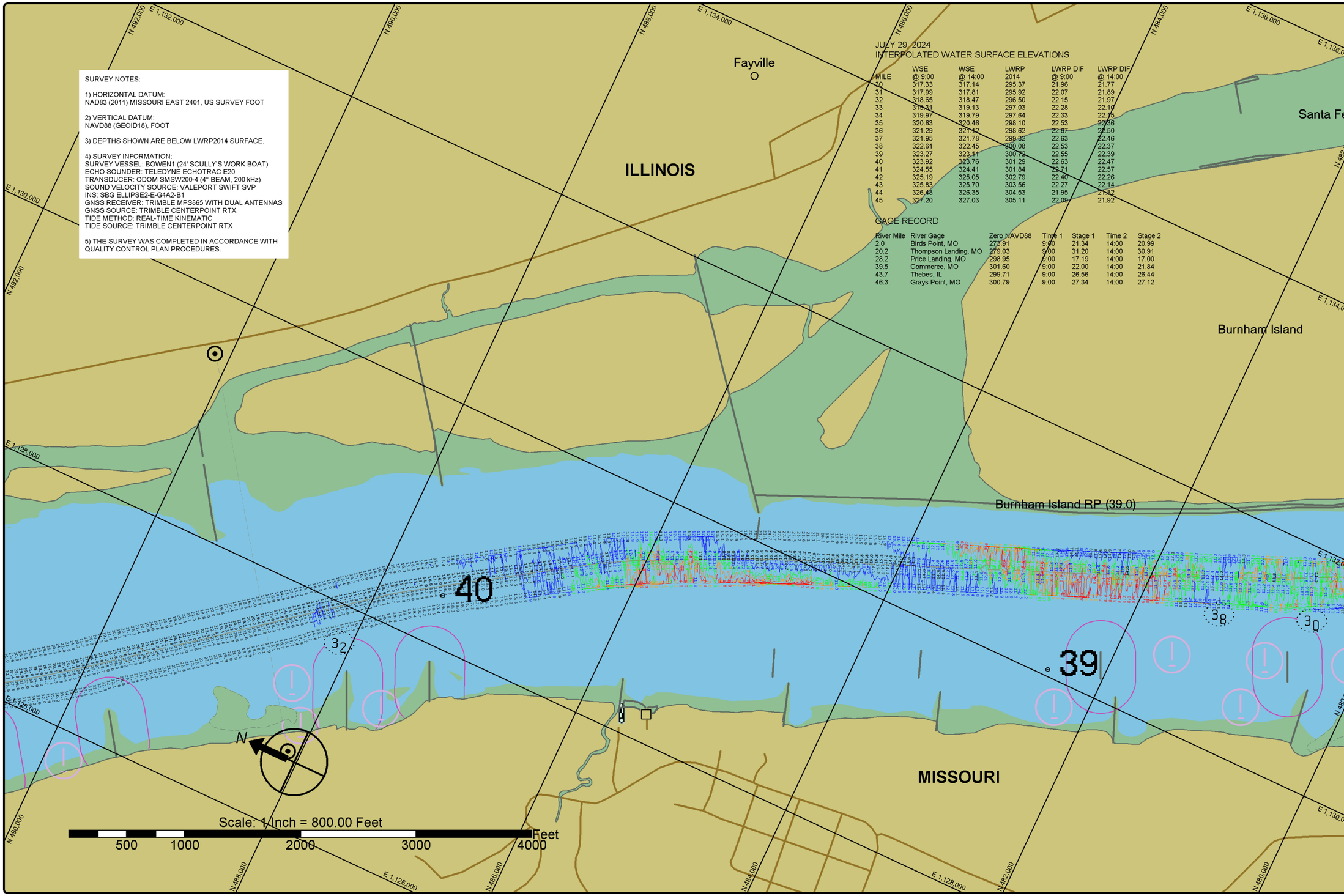
43	325.83	325.70	303.56	22.27	22.14
44	326.48	326.35	304.53	21.95	21.82
45	327.20	327.03	305.11	22.09	21.92

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
2.0	Birds Point, MO	273.91	9:00	21.34	14:00	20.99
20.2	Thompson Landing, MO	279.03	9:00	31.20	14:00	30.91
28.2	Price Landing, MO	298.95	9:00	17.19	14:00	17.00
39.5	Commerce, MO	301.60	9:00	22.00	14:00	21.84
43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12



St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

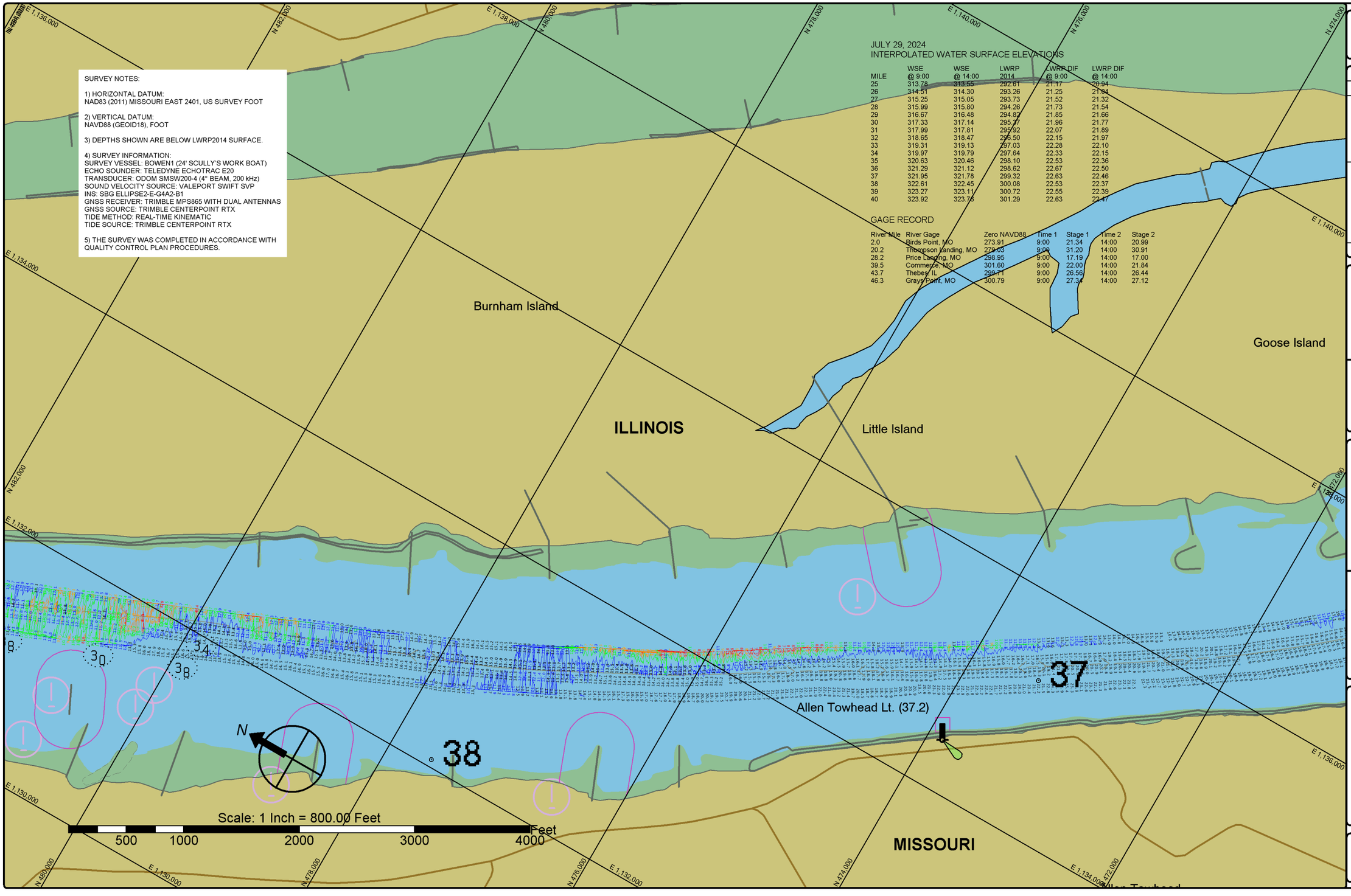
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 38.5 - 40.5

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.

JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
27	315.25	315.05	293.73	21.52	21.32
28	315.99	315.80	294.26	21.73	21.54
29	316.67	316.48	294.82	21.85	21.66
30	317.33	317.14	295.37	21.96	21.77
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GAGE RECORD

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46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

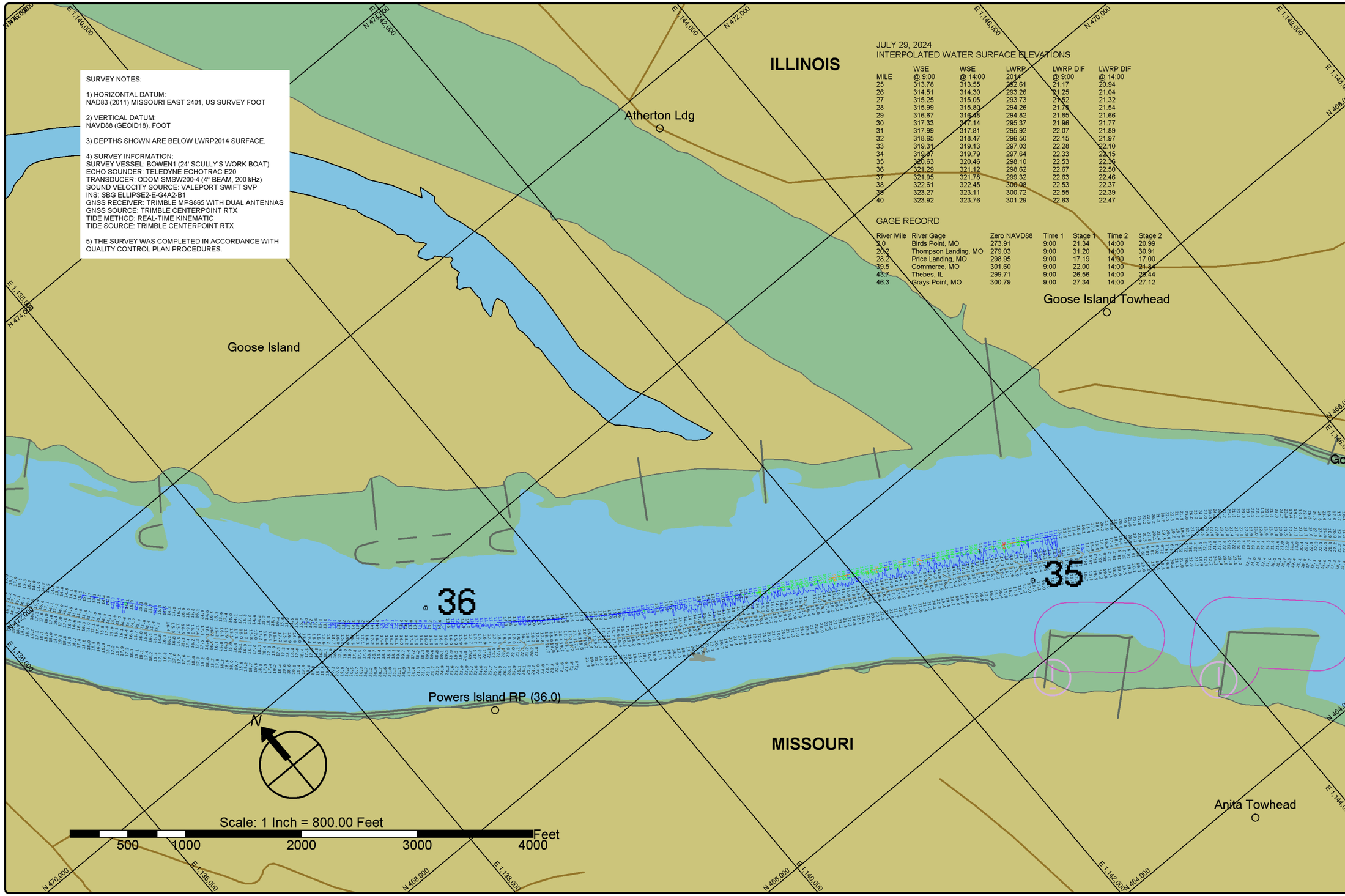
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 36.5 - 38.5

SHEET NO.
1 OF 1



SURVEY NOTES:

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NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT

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JULY 29, 2024
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St. Louis District

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JULY 29, 2024

FILE NO.: 045_020G2924
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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 MEDAR DRIVE
CAPE GIRARDEAU, MO 63701

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 34.5 - 36.5

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

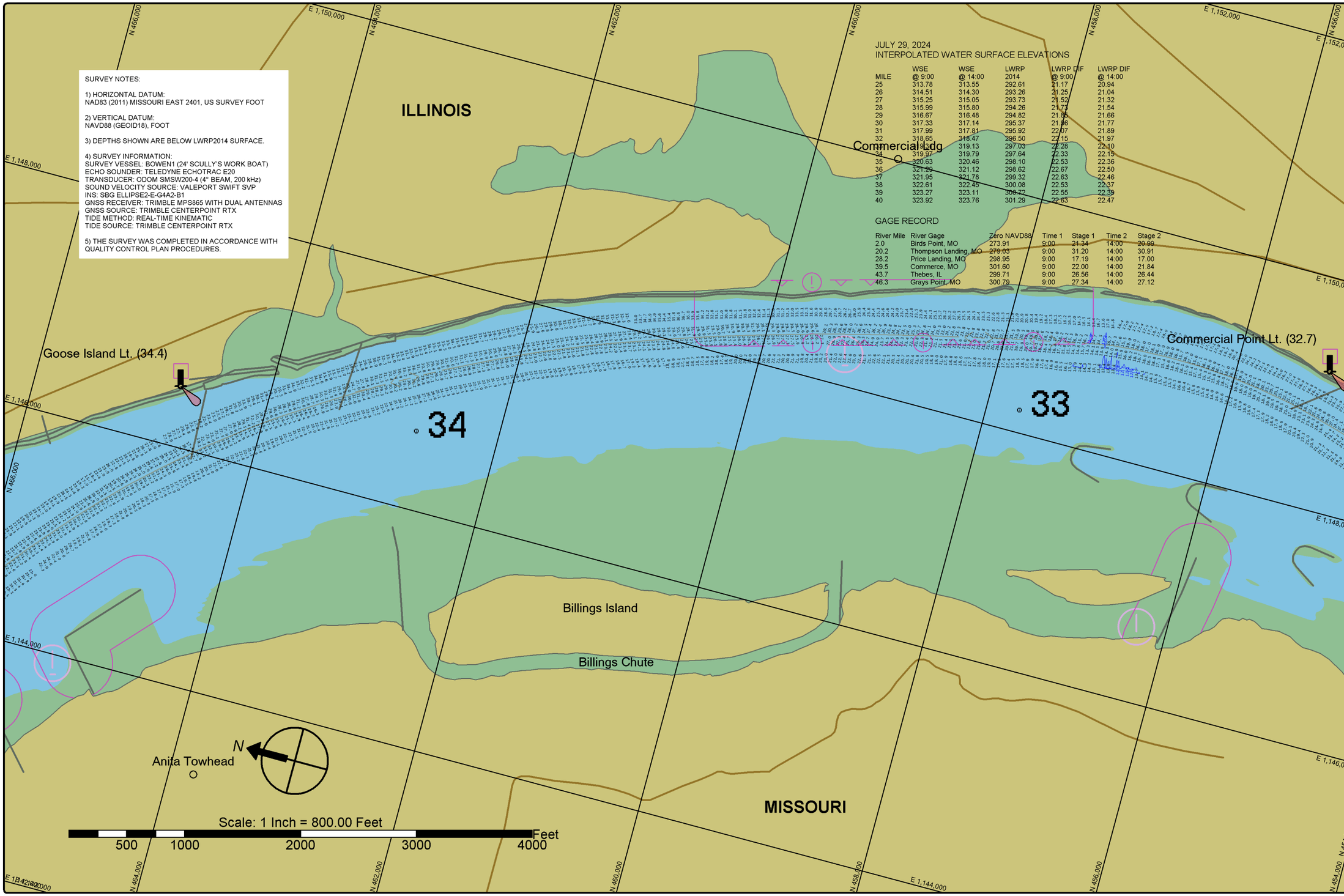
5) THE SURVEY WAS COMPLETED IN ACCORDANCE WITH QUALITY CONTROL PLAN PROCEDURES.

JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
27	315.25	315.05	293.73	21.52	21.32
28	315.99	315.80	294.26	21.73	21.54
29	316.67	316.48	294.82	21.85	21.66
30	317.33	317.14	295.37	21.96	21.77
31	317.99	317.81	295.92	22.07	21.89
32	318.65	318.47	296.50	22.15	21.97
33	319.41	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36
36	321.29	321.12	298.62	22.67	22.50
37	321.95	321.78	299.32	22.63	22.46
38	322.61	322.45	300.08	22.53	22.37
39	323.27	323.11	300.72	22.55	22.39
40	323.92	323.76	301.29	22.63	22.47

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
2.0	Birds Point, MO	273.91	9:00	21.34	14:00	20.99
20.2	Thompson Landing, MO	279.03	9:00	31.20	14:00	30.91
28.2	Price Landing, MO	298.95	9:00	17.19	14:00	17.00
39.5	Commerce, MO	301.60	9:00	22.00	14:00	21.84
43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12



St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

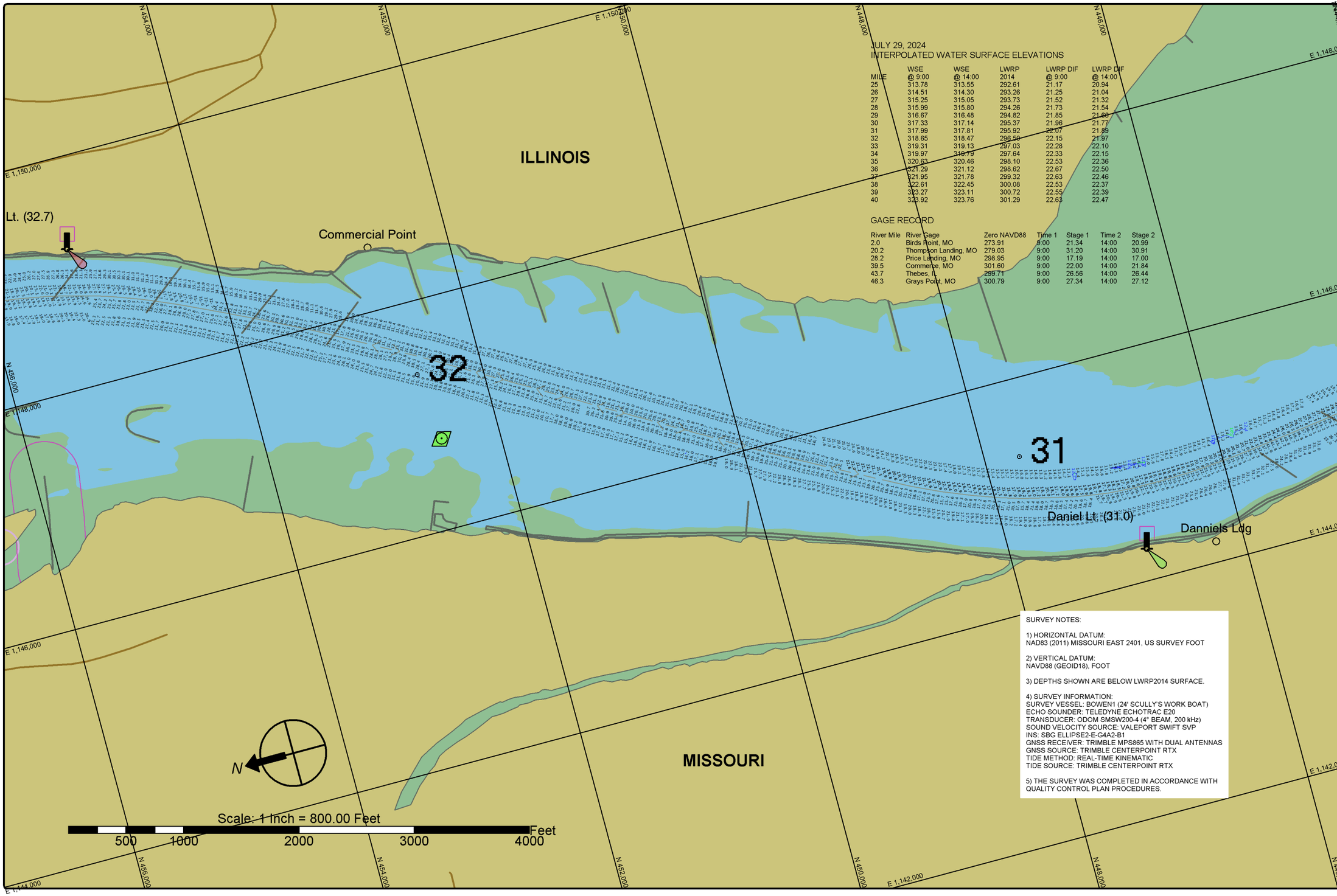
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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

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

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHANNEL PATROL
RIVER MILES 32.5 - 34.5

SHEET NO.
1 OF 1



JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
27	315.25	315.05	293.73	21.52	21.32
28	315.99	315.80	294.26	21.73	21.54
29	316.67	316.48	294.82	21.85	21.66
30	317.33	317.14	295.37	21.96	21.77
31	317.99	317.81	295.92	22.07	21.89
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33	319.31	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36
36	321.29	321.12	298.62	22.67	22.50
37	321.95	321.78	299.32	22.63	22.46
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GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
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43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

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.

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

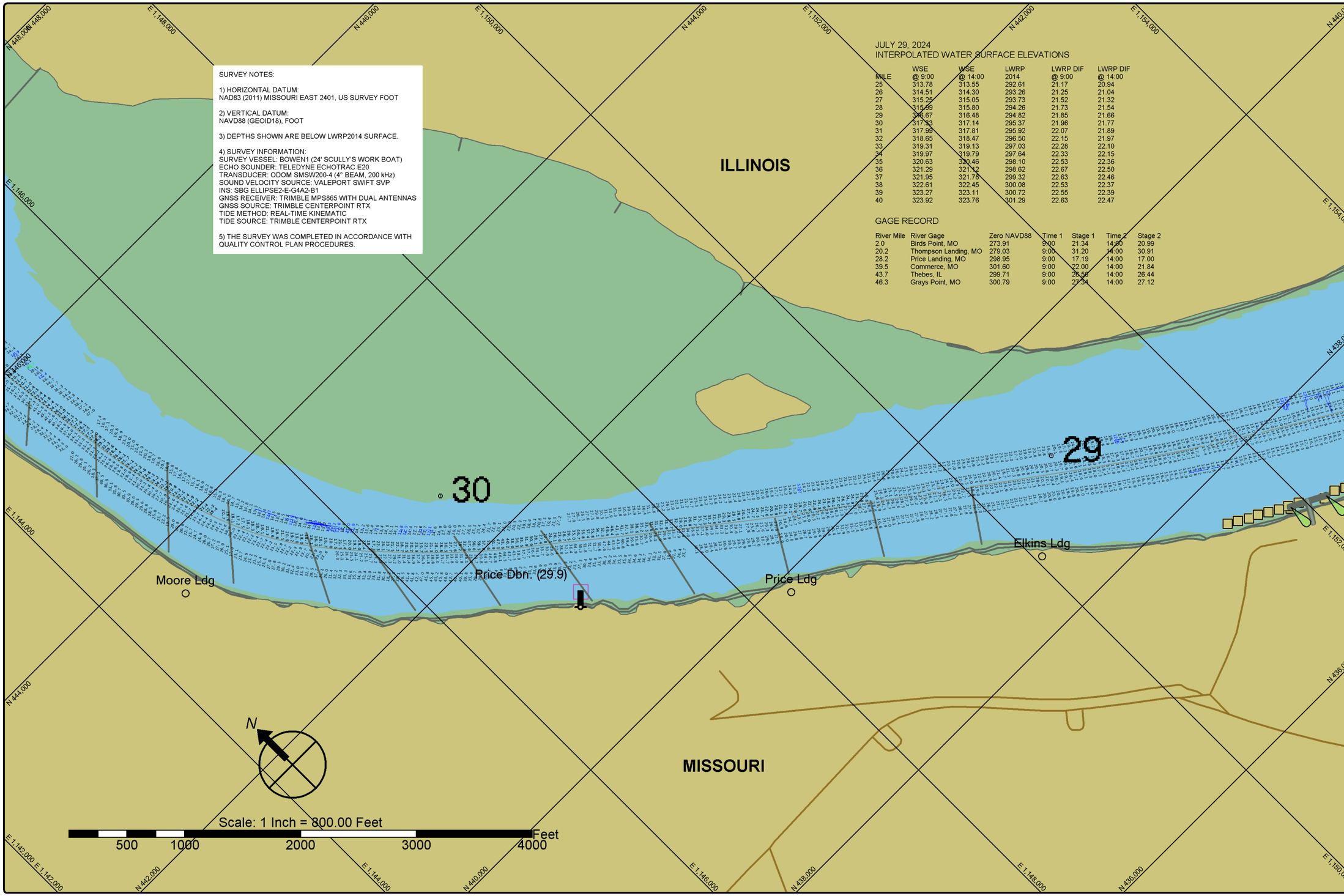
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST. CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 30.5 - 32.5

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.

JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
27	315.25	315.05	293.73	21.52	21.32
28	315.99	315.80	294.26	21.73	21.54
29	316.67	316.48	294.82	21.85	21.66
30	317.33	317.14	295.37	21.96	21.77
31	317.99	317.81	295.92	22.07	21.89
32	318.65	318.47	296.50	22.15	21.97
33	319.31	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36
36	321.29	321.12	298.62	22.67	22.50
37	321.95	321.78	299.32	22.63	22.46
38	322.61	322.45	300.08	22.53	22.37
39	323.27	323.11	300.72	22.55	22.39
40	323.92	323.76	301.29	22.63	22.47

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
2.0	Birds Point, MO	273.91	9:00	21.34	14:00	20.99
20.2	Thompson Landing, MO	279.03	9:00	31.20	14:00	30.91
28.2	Price Landing, MO	298.95	9:00	17.19	14:00	17.00
39.5	Commerce, MO	301.60	9:00	22.00	14:00	21.84
43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

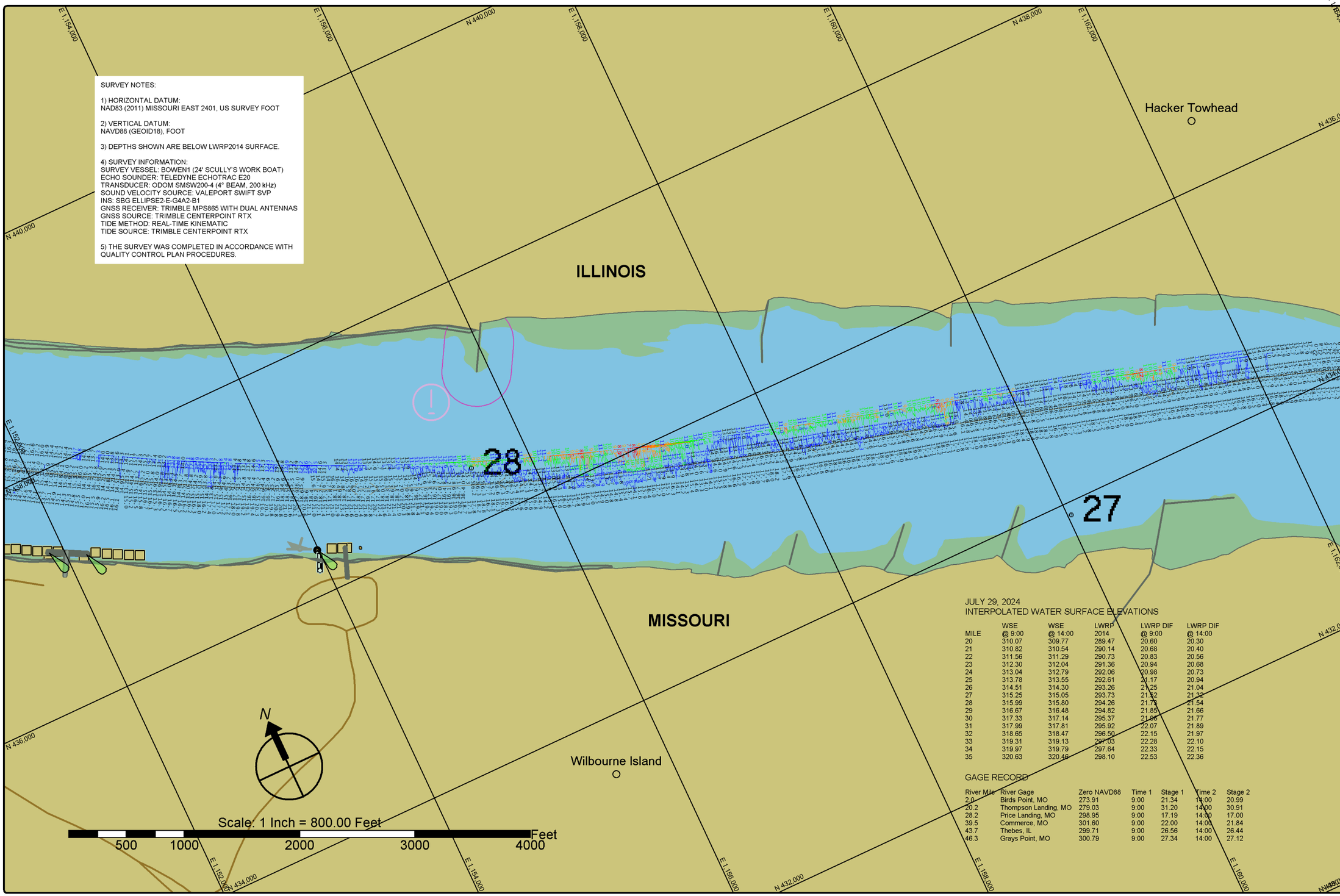
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST. CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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 28.6 - 30.5

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.

JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
20	310.07	309.77	289.47	20.60	20.30
21	310.82	310.54	290.14	20.68	20.40
22	311.56	311.29	290.73	20.83	20.56
23	312.30	312.04	291.36	20.94	20.68
24	313.04	312.79	292.06	20.98	20.73
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
27	315.25	315.05	293.73	21.52	21.32
28	315.99	315.80	294.26	21.73	21.54
29	316.67	316.48	294.82	21.85	21.66
30	317.33	317.14	295.37	21.96	21.77
31	317.99	317.81	295.92	22.07	21.89
32	318.65	318.47	296.50	22.15	21.97
33	319.31	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
2.0	Birds Point, MO	273.91	9:00	21.34	14:00	20.99
20.2	Thompson Landing, MO	279.03	9:00	31.20	14:00	30.91
28.2	Price Landing, MO	298.95	9:00	17.19	14:00	17.00
39.5	Commerce, MO	301.60	9:00	22.00	14:00	21.84
43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
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 26.6 - 28.6

SHEET NO.
1 OF 1

SURVEY NOTES:

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

2) VERTICAL DATUM:
NAVD88 (GEOID18), FOOT

3) DEPTHS SHOWN ARE BELOW LWRP2014 SURFACE.

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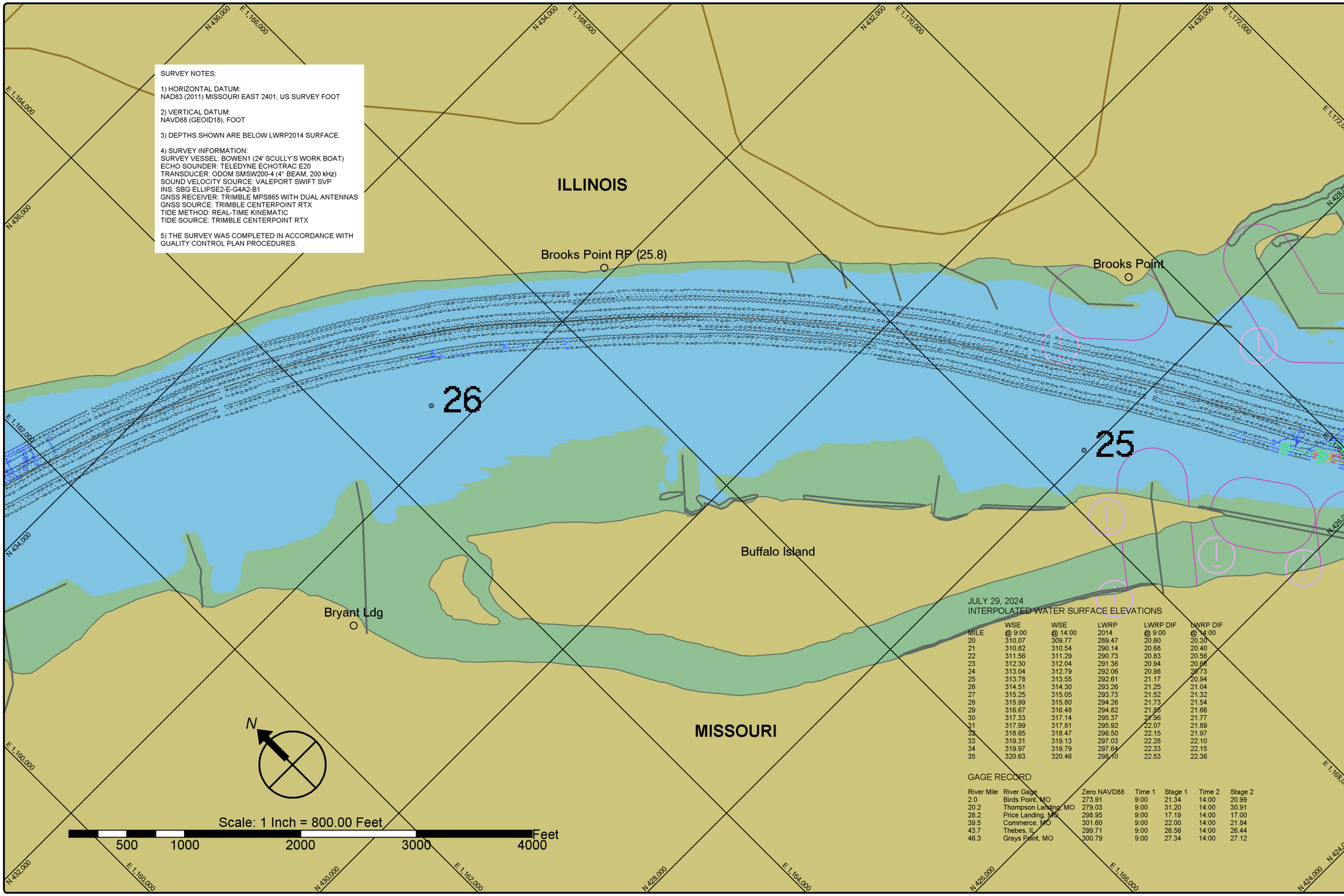
SURVEY VESSEL: BOWEN1 (24' SCULLY'S WORK BOAT)
ECHO SOUNDER: TELEDYNE ECHOTRAC E20
TRANSDUCER: ODOM SMSW200-4 (4° BEAM, 200 kHz)
SOUND VELOCITY SOURCE: VALEPORT SWIFT SVP
INS: SBG ELLIPSE2-E-G4A2-B1
GNSS RECEIVER: TRIMBLE MPS865 WITH DUAL ANTENNAS
GNSS SOURCE: TRIMBLE CENTERPOINT RTX
TIDE METHOD: REAL-TIME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

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



JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
20	310.07	309.77	289.47	20.60	20.30
21	310.82	310.54	290.14	20.68	20.40
22	311.56	311.29	290.73	20.83	20.56
23	312.30	312.04	291.36	20.94	20.68
24	313.04	312.79	292.06	20.98	20.73
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
27	315.25	315.05	293.73	21.52	21.32
28	315.99	315.80	294.26	21.73	21.54
29	316.67	316.48	294.82	21.85	21.66
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31	317.99	317.81	295.92	22.07	21.89
32	318.65	318.47	296.50	22.15	21.97
33	319.31	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
2.0	Birds Point, MO	273.91	9:00	21.34	14:00	20.99
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46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

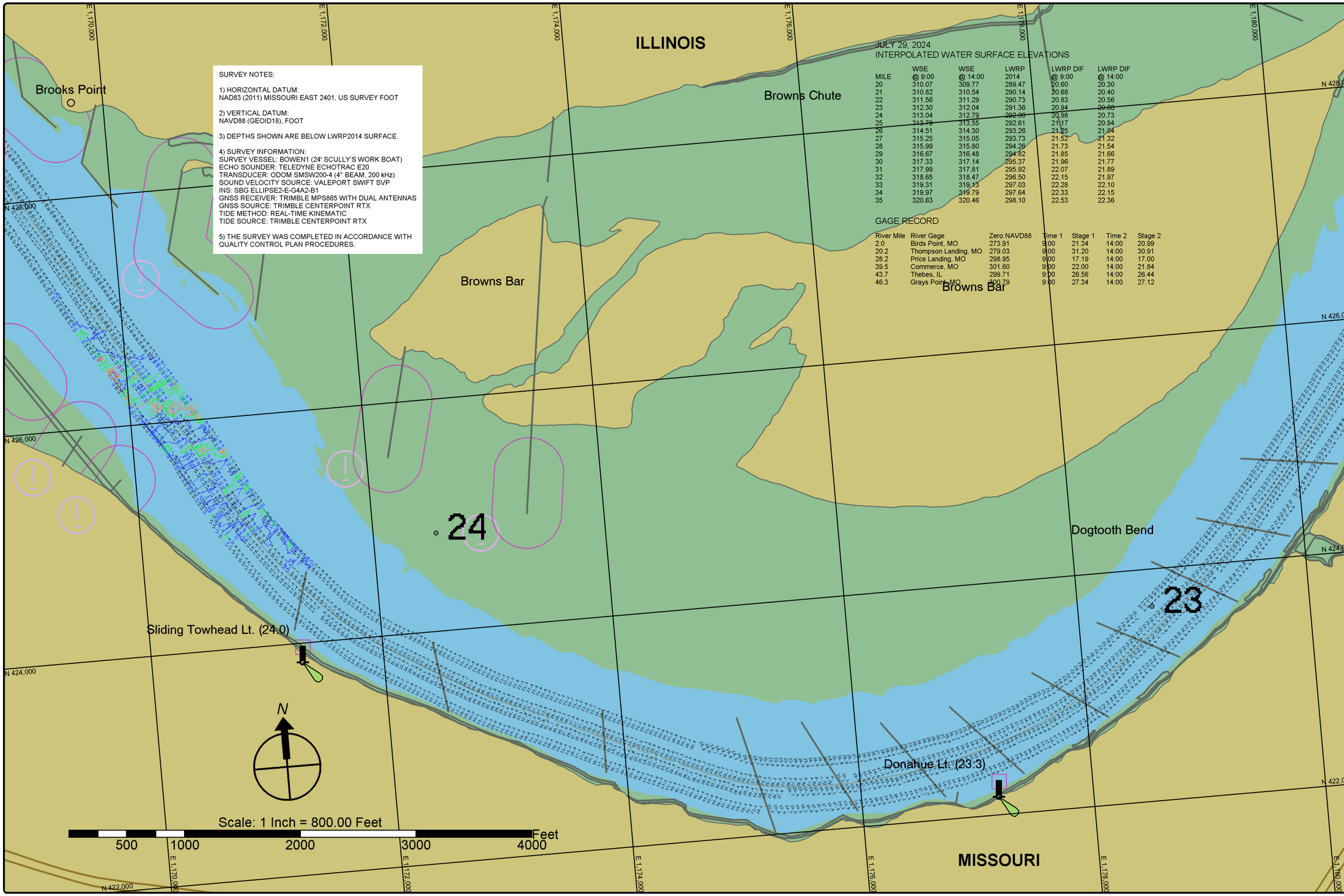
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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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SURVEY VESSEL: BOWEN1 (24' SCULLY'S WORK BOAT)
ECHO SOUNDER: TELEDYNE ECHOTRAC E20
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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

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

JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
20	310.07	309.77	289.47	20.60	20.30
21	310.82	310.54	290.14	20.68	20.40
22	311.56	311.29	290.73	20.83	20.56
23	312.30	312.04	291.36	20.94	20.68
24	313.04	312.79	292.06	20.98	20.73
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
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GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
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46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

Approved: FIELD CARTOGRAPHER
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Approved: CHIEF OF SURVEY
Date:

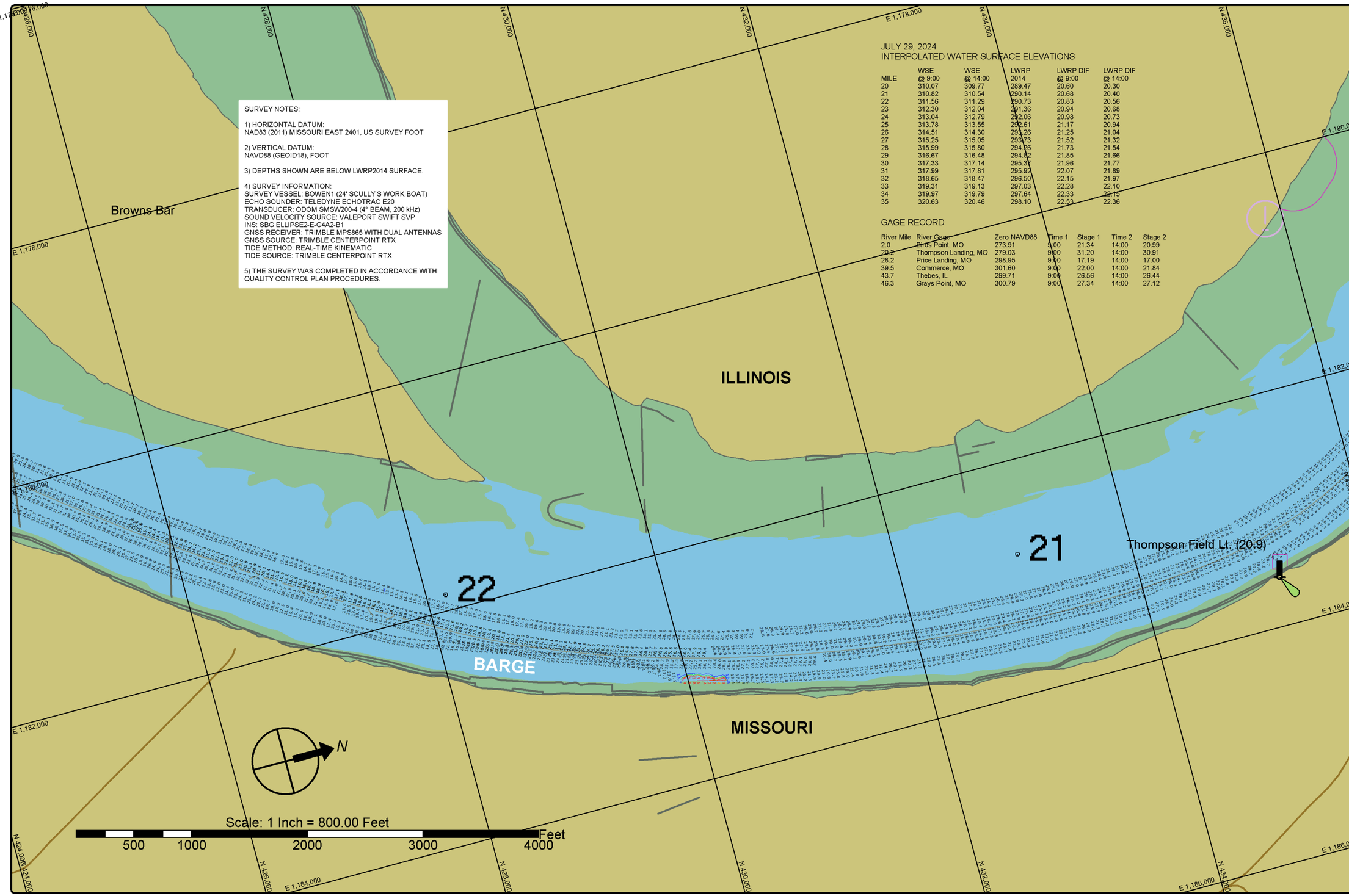
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

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 22.5 - 24.6

SHEET NO.
1 OF 1



SURVEY NOTES:

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

2) VERTICAL DATUM:
NAVD88 (GEOID18), FOOT

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.

JULY 29, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
20	310.07	309.77	289.47	20.60	20.30
21	310.82	310.54	290.14	20.68	20.40
22	311.56	311.29	290.73	20.83	20.56
23	312.30	312.04	291.36	20.94	20.68
24	313.04	312.79	292.06	20.98	20.73
25	313.78	313.55	292.61	21.17	20.94
26	314.51	314.30	293.26	21.25	21.04
27	315.25	315.05	293.73	21.52	21.32
28	315.99	315.80	294.26	21.73	21.54
29	316.67	316.48	294.82	21.85	21.66
30	317.33	317.14	295.37	21.96	21.77
31	317.99	317.81	295.92	22.07	21.89
32	318.65	318.47	296.50	22.15	21.97
33	319.31	319.13	297.03	22.28	22.10
34	319.97	319.79	297.64	22.33	22.15
35	320.63	320.46	298.10	22.53	22.36

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
2.0	Birds Point, MO	273.91	9:00	21.34	14:00	20.99
20.2	Thompson Landing, MO	279.03	9:00	31.20	14:00	30.91
28.2	Price Landing, MO	298.95	9:00	17.19	14:00	17.00
39.5	Commerce, MO	301.60	9:00	22.00	14:00	21.84
43.7	Thebes, IL	299.71	9:00	26.56	14:00	26.44
46.3	Grays Point, MO	300.79	9:00	27.34	14:00	27.12

St. Louis District

DATES OF SURVEY:
JULY 29, 2024

FILE NO.: 045_020G2924
REQUEST NO.: W912P924F0029

SCALE:
1" = 800' (ANSI B)

FIELD BOOKS:

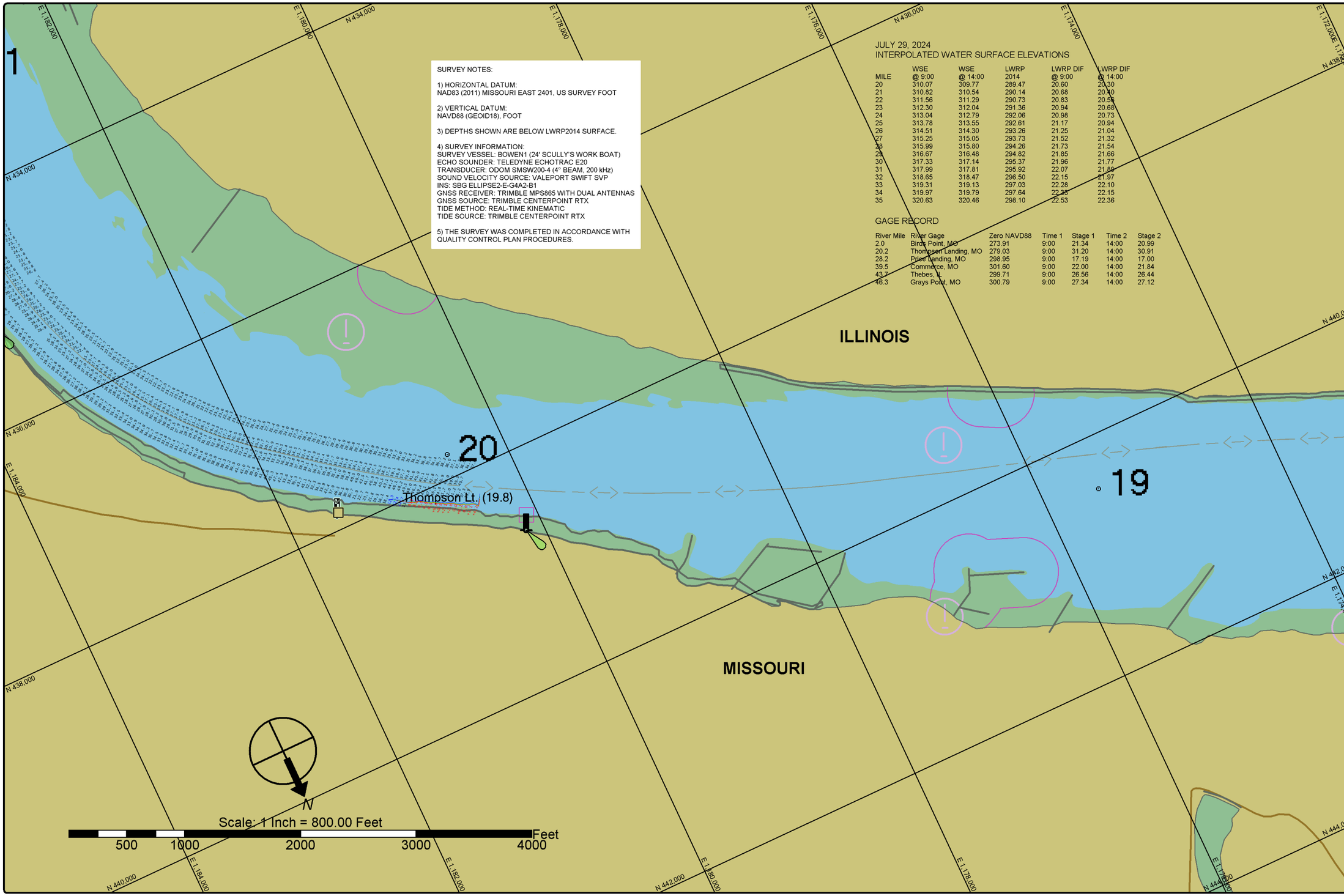
Approved: FIELD CARTOGRAPHER
Approved: CIVIL ENGINEERING TECHNICIAN
Approved: ASST. CHIEF OF SURVEY
Approved: CHIEF OF SURVEY
Date:

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



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UPPER MISSISSIPPI RIVER BASIN
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SHEET NO.
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