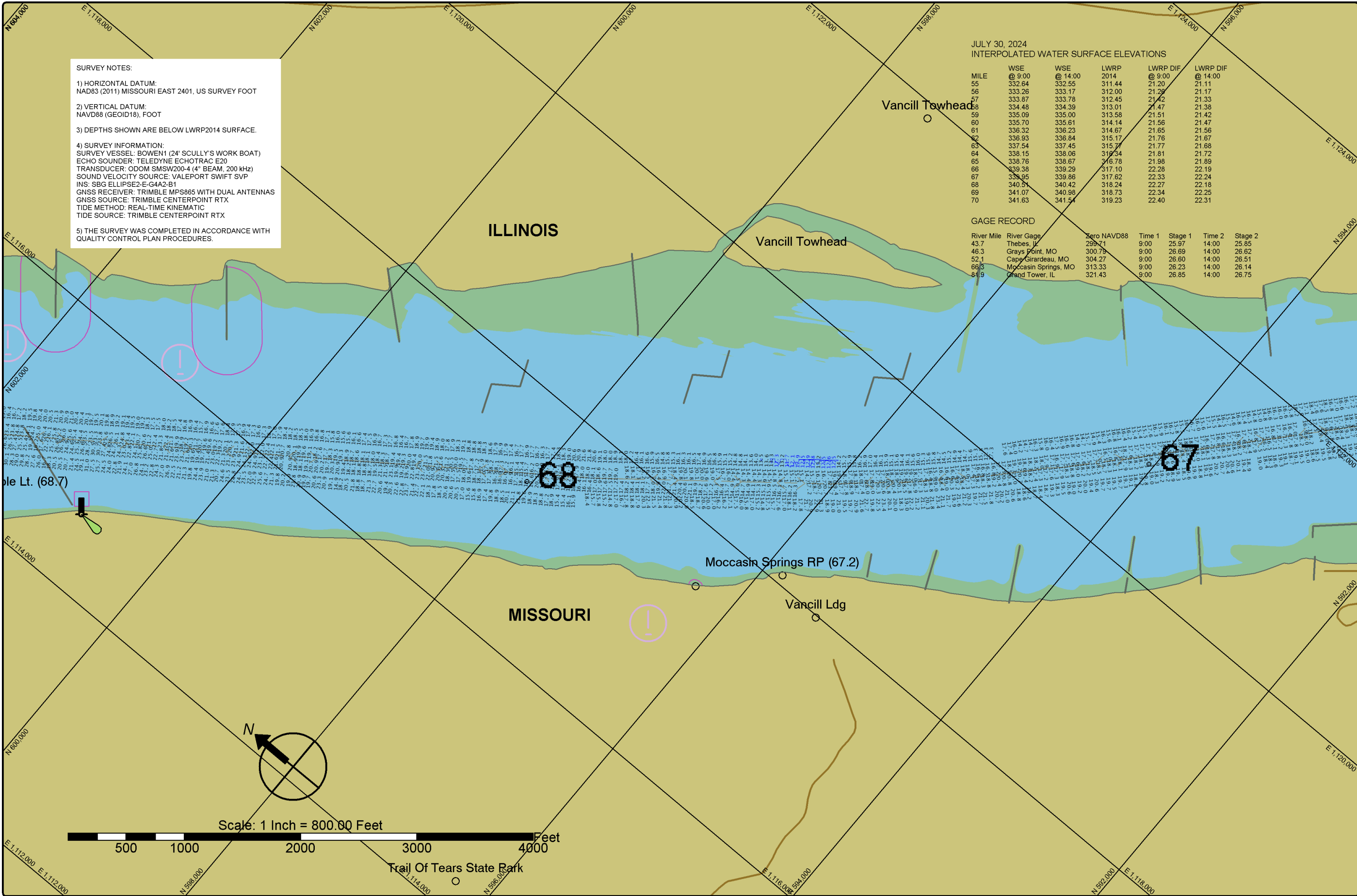
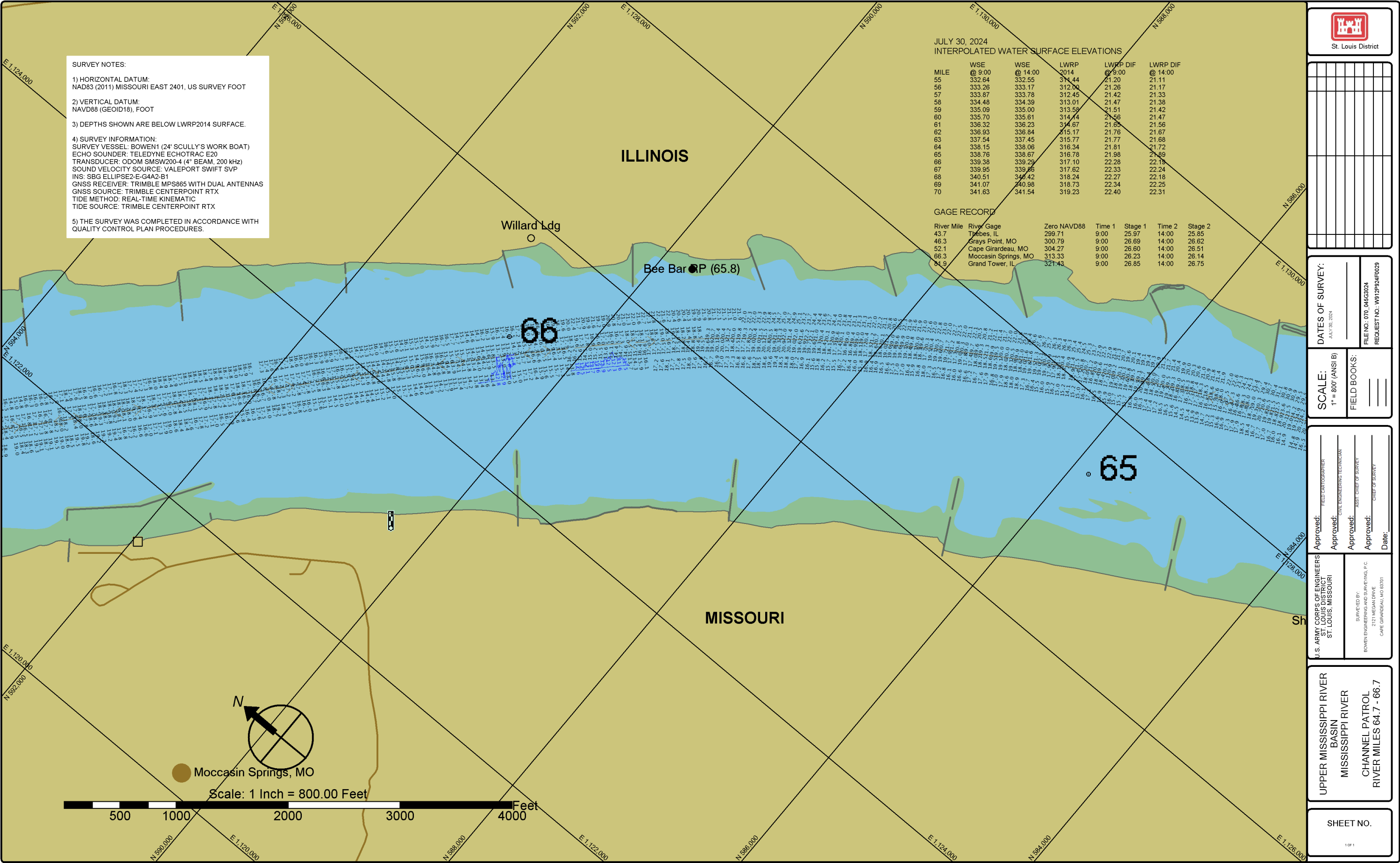
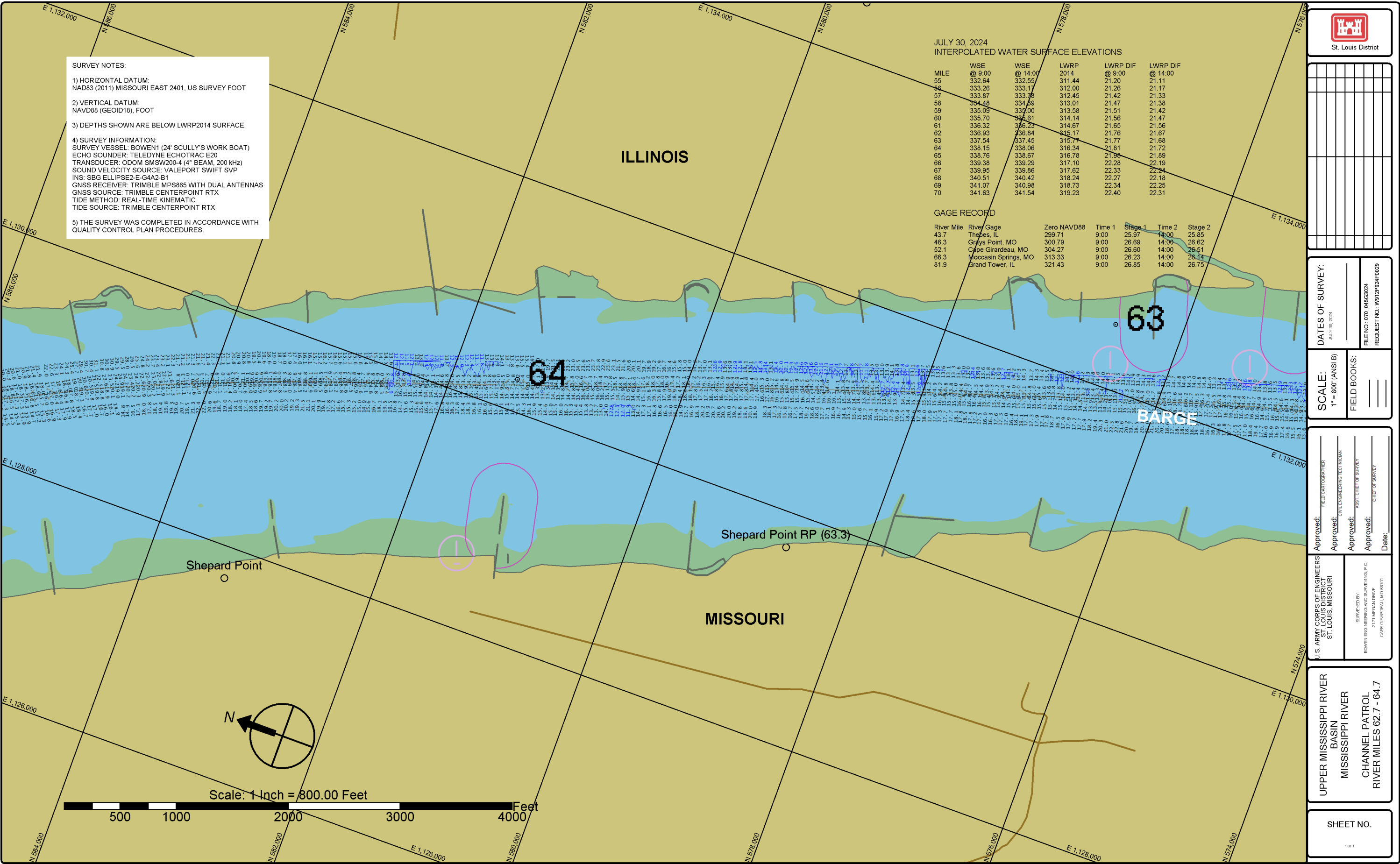
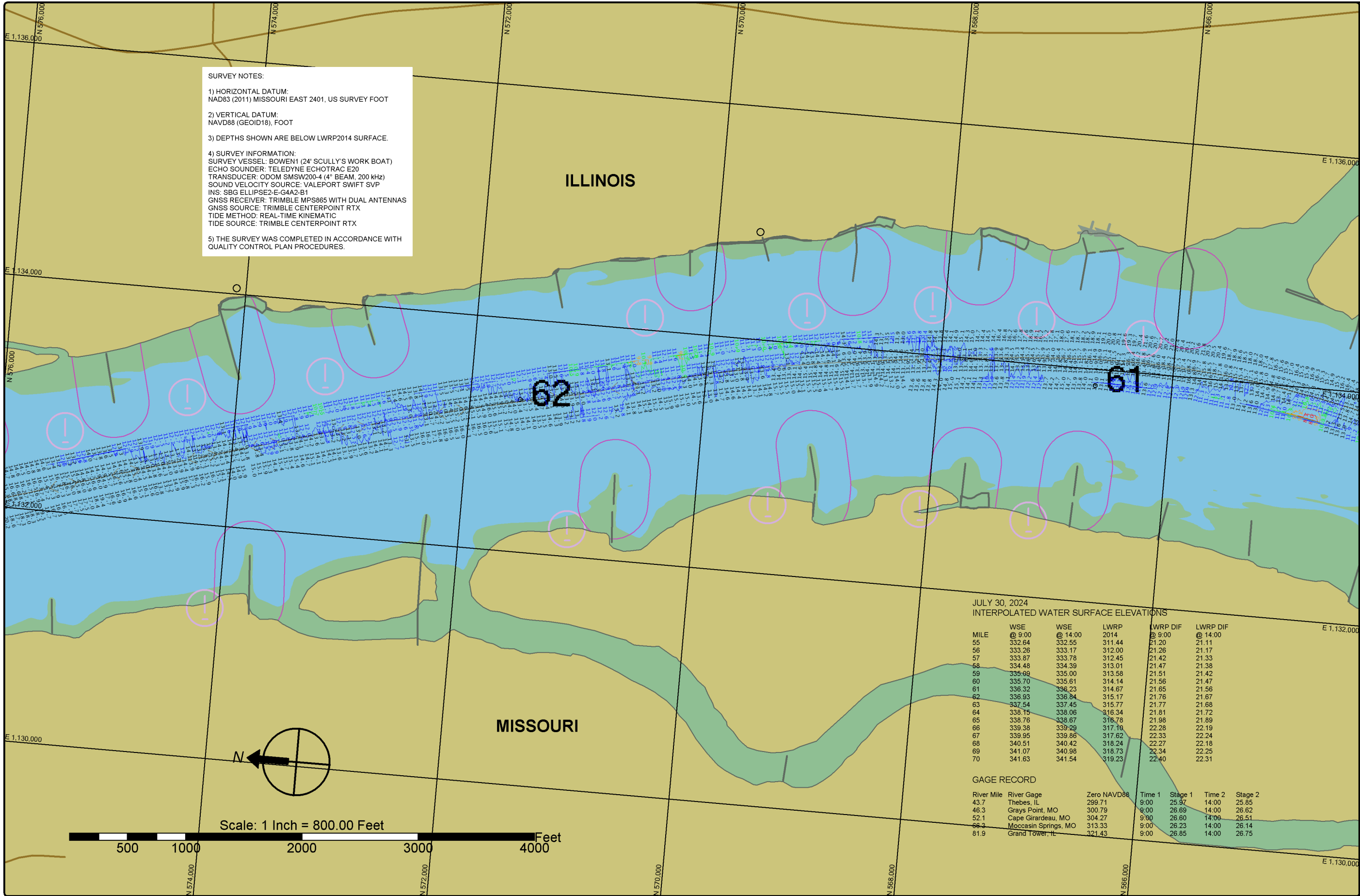










SURVEY NOTES:

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

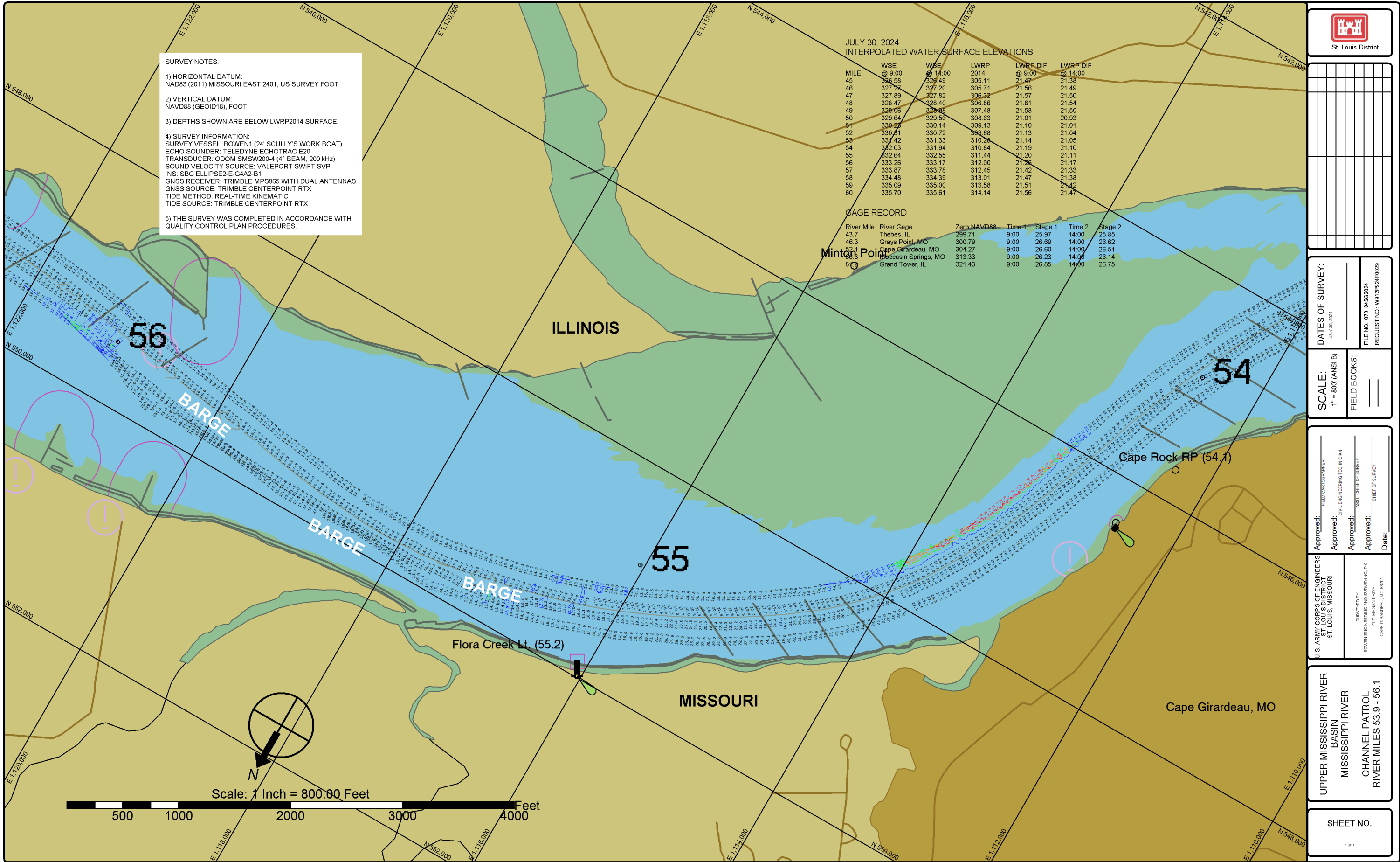
5) THE SURVEY WAS COMPLETED IN ACCORDANCE WITH
QUALITY CONTROL PLAN PROCEDURES.

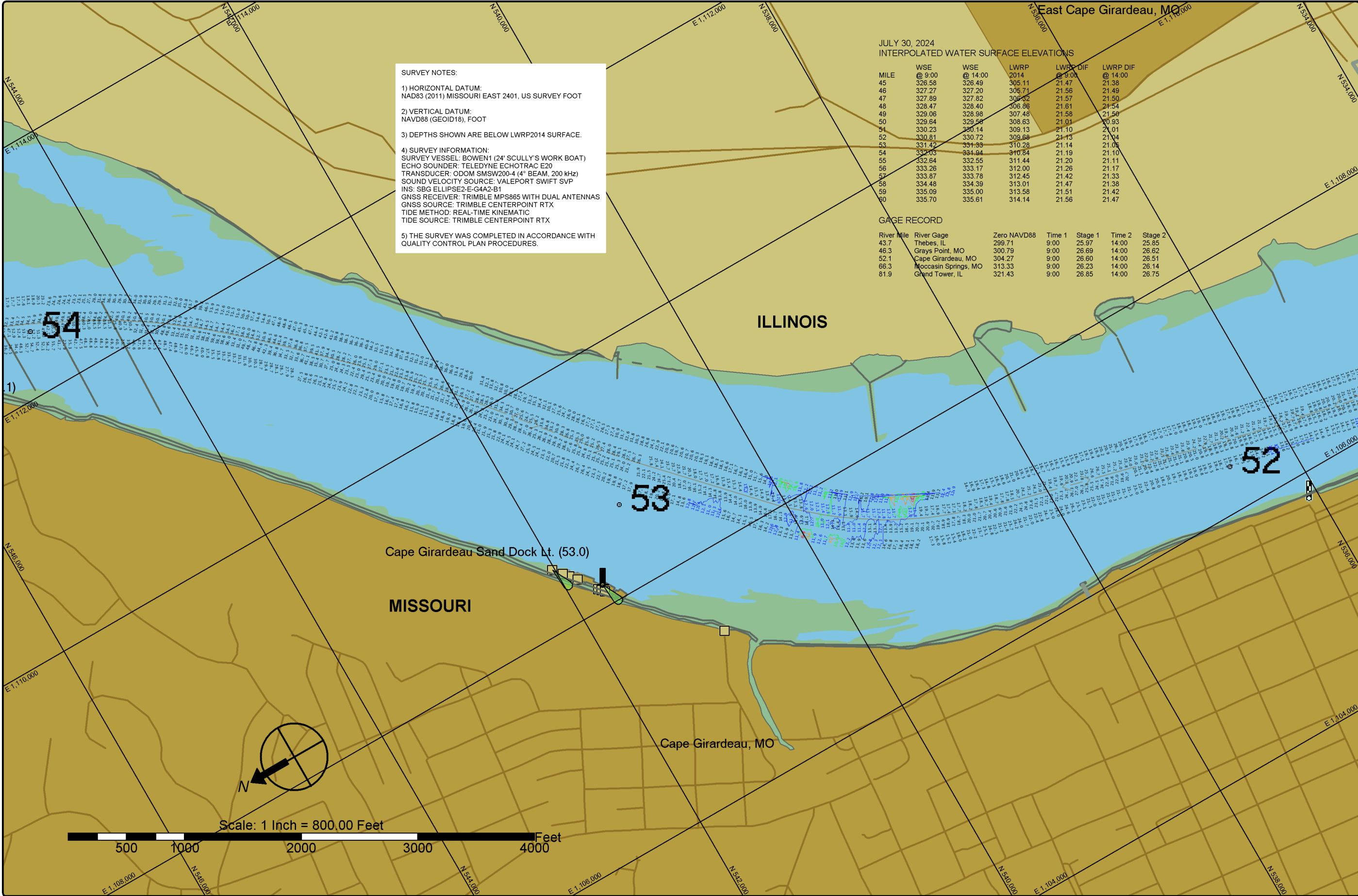
JULY 30, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
55	332.64	332.55	311.44	21.20	21.11
56	333.26	333.17	312.00	21.26	21.17
57	333.87	333.78	312.45	21.42	21.33
58	334.48	334.39	313.01	21.47	21.38
59	335.09	335.00	313.58	21.51	21.42
60	335.70	335.61	314.14	21.56	21.47
61	336.32	336.23	314.67	21.65	21.56
62	336.93	336.84	315.17	21.76	21.67
63	337.54	337.45	315.77	21.77	21.68
64	338.15	338.06	316.34	21.81	21.72
65	338.76	338.67	316.78	21.98	21.89
66	339.38	339.29	317.16	22.28	22.19
67	339.95	339.86	317.62	22.33	22.24
68	340.51	340.42	318.24	22.27	22.18
69	341.07	340.98	318.73	22.34	22.25
70	341.63	341.54	319.23	22.40	22.31

GAGE RECORD

River Mile	River Gage	Zero NAVD88	Time 1	Stage 1	Time 2	Stage 2
43.7	Thebes, IL	299.71	9:00	25.97	14:00	25.85
46.3	Grays Point, MO	300.79	9:00	26.69	14:00	26.62
52.1	Cape Girardeau, MO	304.27	9:00	26.60	14:00	26.51
66.3	Moccasin Springs, MO	313.33	9:00	26.23	14:00	26.14
81.9	Grand Tower, IL	321.43	9:00	26.85	14:00	26.75





SURVEY NOTES:

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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.

JULY 30, 2024
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 9:00	WSE @ 14:00	LWRP 2014	LWRP DIF @ 9:00	LWRP DIF @ 14:00
45	328.58	326.49	305.11	21.47	21.38
46	327.27	327.20	305.71	21.56	21.49
47	327.89	327.82	306.32	21.57	21.50
48	328.47	328.40	306.86	21.61	21.54
49	329.06	328.98	307.48	21.58	21.50
50	329.64	329.58	308.63	21.01	20.93
51	330.23	330.14	309.13	21.10	21.01
52	330.81	330.72	309.68	21.13	21.04
53	331.42	331.33	310.28	21.14	21.05
54	332.03	331.94	310.84	21.19	21.10
55	332.64	332.55	311.44	21.20	21.11
56	333.26	333.17	312.00	21.26	21.17
57	333.87	333.78	312.45	21.42	21.33
58	334.48	334.39	313.01	21.47	21.38
59	335.09	335.00	313.58	21.51	21.42
60	335.70	335.61	314.14	21.56	21.47

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81.9	Grand Tower, IL	321.43	9:00	26.85	14:00	26.75



St. Louis District

DATES OF SURVEY:

JULY 30, 2024

SCALE:

1" = 800' (ANSI B)

FIELD BOOKS:

Approved:

FIELD CATEGORIZER

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

MISSISSIPPI BASIN

MISSISSIPPI RIVER

CHANNEL PATROL

RIVER MILES 51.8 - 53.9

SHEET NO.

1 OF 1

