



St. Louis District

**SURVEY NOTES:**

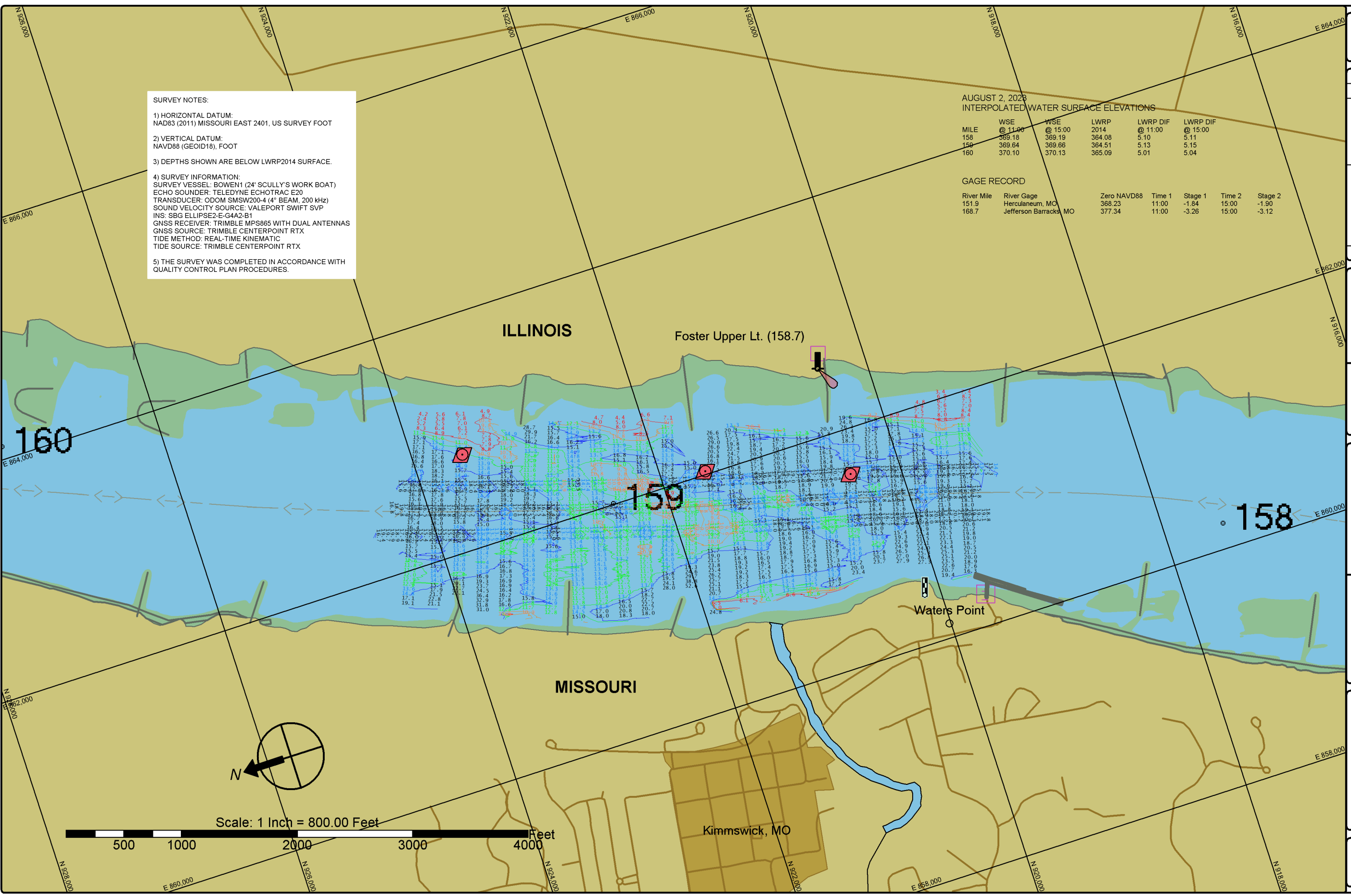
- 1) HORIZONTAL DATUM:  
NAD83 (2011) MISSOURI EAST 2401, US SURVEY FOOT
- 2) VERTICAL DATUM:  
NAVD88 (GEOID18), FOOT
- 3) DEPTHS SHOWN ARE BELOW LWRP2014 SURFACE.
- 4) SURVEY INFORMATION:  
SURVEY VESSEL: BOWEN1 (24' SCULLY'S WORK BOAT)  
ECHO SOUNDER: TELEDYNE ECHOTRAC E20  
TRANSDUCER: ODOM SMSW200-4 (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.

**AUGUST 2, 2023  
INTERPOLATED WATER SURFACE ELEVATIONS**

| MILE | WSE @ 11:00 | WSE @ 15:00 | LWRP 2014 | LWRP DIF @ 11:00 | LWRP DIF @ 15:00 |
|------|-------------|-------------|-----------|------------------|------------------|
| 158  | 369.18      | 369.19      | 364.08    | 5.10             | 5.11             |
| 159  | 369.64      | 369.66      | 364.51    | 5.13             | 5.15             |
| 160  | 370.10      | 370.13      | 365.09    | 5.01             | 5.04             |

**GAGE RECORD**

| River Mile | River Gage             | Zero NAVD88 | Time 1 | Stage 1 | Time 2 | Stage 2 |
|------------|------------------------|-------------|--------|---------|--------|---------|
| 151.9      | Herculeanum, MO        | 368.23      | 11:00  | -1.84   | 15:00  | -1.90   |
| 168.7      | Jefferson Barracks, MO | 377.34      | 11:00  | -3.26   | 15:00  | -3.12   |



**DATES OF SURVEY:**  
AUGUST 2, 2023

**FIELD BOOKS:**  
FILE NO.: 159-R223  
REQUEST NO.: W91P23F086

**SCALE:**  
1" = 800' (ANSI B)

**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  
PRE DREDGE SURVEY  
RIVER MILES 159.3 - 158.4**

**SHEET NO.**  
1 OF 1

