



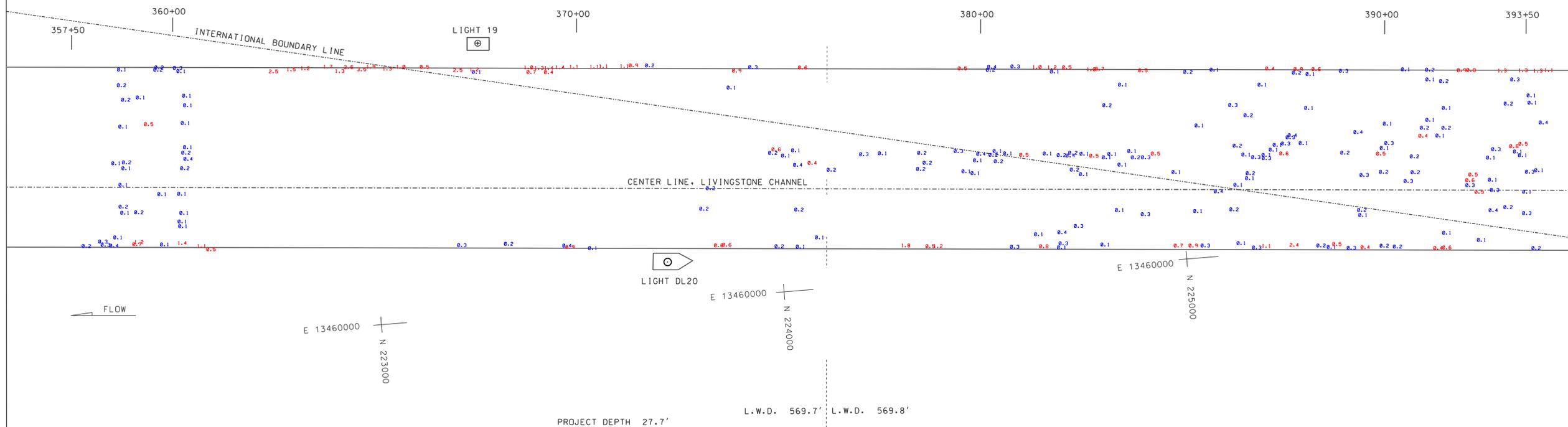
ALL STRIKES 0.4 OR LARGER HAVE BEEN REMOVED

E 13459000  
N 226000

E 13459000  
N 223000

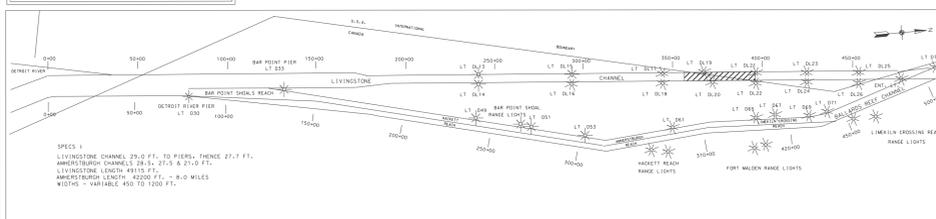
E 13459000  
N 224000

E 13459000  
N 225000



PROJECT DEPTH 27.7' L.W.D. 569.7' L.W.D. 569.8'

ALL STRIKES 0.4 OR LARGER HAVE BEEN REMOVED



**LEGEND**  
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THE TIME.

**LOW WATER DATUM**  
ELEVATIONS AND PROJECT DEPTHS ARE REFERRED TO INTERNATIONAL GREAT LAKES DATUM, (1985)

**GRID COORDINATES**  
GRIDS SHOWN ARE BASED ON NATIONAL GEODETIC SURVEY PROJECTION TABLES, STATE OF MICHIGAN, SOUTH ZONE (2113), LAMBERT PROJECTION, 1983 NORTH AMERICAN DATUM.  
ALL COORDINATES ARE IN U.S. SURVEY FEET.

**DIRECTIONS**  
ALL DIRECTIONS ARE GRID AZIMUTHS REFERRED TO NORTH ZERO.  
PROJECT DEPTHS ARE AS SHOWN ON DRAWING.  
THE AUTOMATED ELECTRONIC SURVEY WAS CONDUCTED BY JOHN C. HAAS AND CHRISTOPHER V. LINDMAN, ABOARD THE USACE SURVEY VESSEL "WHEELER".

**AUTOMATED EQUIPMENT USED**  
POSITIONING: TSS POS-MV 4  
SOFTWARE: HYPACK HYSWEEP  
SONIC SOUNDER: R2 SONIC 2024

**NOTES:**

- GAGES USED WERE OBTAINED FROM A TEMPORARY GAGE BOARD SET FROM A TBM ON LIGHT DL20.
- POSITIONS WERE DETERMINED BY GPS REFERENCE BEACON 838, LOCATED AT FORT WAYNE DETROIT, MICHIGAN - FREQUENCY 319 KHZ, 200 BPS
- DEPTH MEASURED USING R2 SONIC 2024 ULTRA HIGH RESOLUTION FOCUSED MULTI-BEAM ECHOSOUNDER SYSTEM AND THE ODOM DIGIBAR PRO DB1200 VELOCITY PROFILER, THE FREQUENCY USED WAS 400 KHZ AND THE BEAM ANGLE WAS 120°.
- EDITED MULTIBEAM SOUNDINGS WERE SORTED INTO A 37 FT. BY 15 FT. MATRIX. THE LARGEST STRIKE LOCATED IN EACH MATRIX CELL WAS THEN SELECTED FOR PLOTTING AT THE CELL CENTER.



NO.	DATE	REVISION	BY
U.S. ARMY ENGINEER DISTRICT, DETROIT CORPS OF ENGINEERS DETROIT, MICHIGAN			
DESIGNED BY:	DETROIT AREA OFFICE		13 OCTOBER 2011
DRAWN BY:	R.W.P.		
CHECKED BY:	DETROIT RIVER, MICHIGAN LIVINGSTONE CHANNEL CS 357+50 TO CS 393+50 MULTI-BEAM CONDITION SWEEP SURVEY STRIKE PLOT		
REVIEWED BY:			
SUBMITTED BY:	P.E.	APPROVAL RECOMMENDED:	P.E. DATE
CHIEF - PROJ. OPNS SEC	CHIEF - OPERATIONS TECHNICAL SUPPORT BRANCH		
APPROVED:	SCALE AS SHOWN		DRAWING NUMBER
CHIEF - CONSTRUCTION - OPERATIONS DIVISION	P.E.	SHEET 11 OF 14	liv11cs1011.dgn