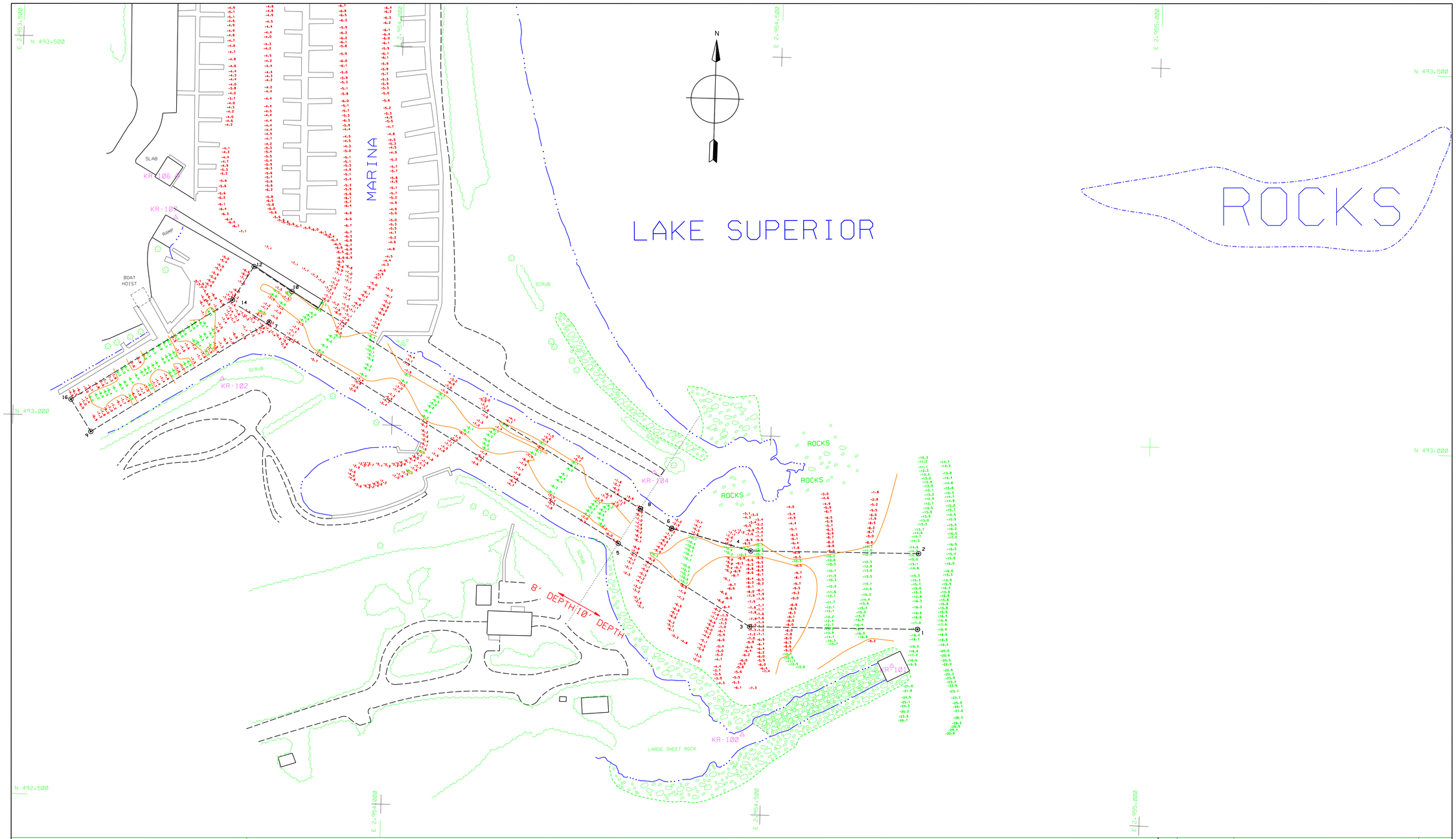

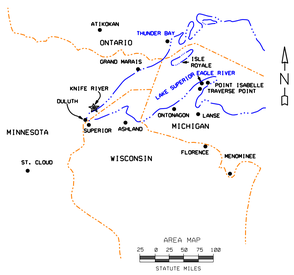

NOTES

1) 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 PRESENT AT THAT TIME.

2) ALL SOUNDINGS ARE IN FEET AND ARE REFERENCED TO LOW WATER DATUM ELEVATION 601.1 ABOVE MEAN SEA LEVEL, I.G.L.D. 1985.

3) PROJECT DEPTHS FOR THIS AREA ARE 8'&10'

4) THE GRID COORDINATE SYSTEM SHOWN IS REFERENCED TO THE MINNESOTA STATE PLANE COORDINATE SYSTEM, LAMBERT PROJECTION, NORTH ZONE (2201), NORTH AMERICAN DATUM 1983 (NAD 83), US FOOT.

5) THE LOCATION OF NAVIGATION BUOYS REPRESENTS THE GENERAL LOCATION ON THE DATE OF THE SURVEY AND CANNOT BE CONSIDERED FOR NAVIGATION.

6) THE SURVEY SHOWN WAS CONDUCTED BY MATT HUGHES, CIVIL ENGINEER TECH DURING 19 AUG. 2011 USING DGPS POSITIONING, AN INNERSPACE 448 SOUNDER, AND A HYPACK AUTOMATED HYDROGRAPHIC SURVEY SYSTEM.

7) THE BASE MAP FEATURES DEPICTED ON THIS MAP WERE DIGITIZED FROM EXISTING CHARTS AND ARE OUTDATED AND INACCURATE.

COMBINED GRID SCALE FACTOR = 0.99996907
GRID DIST. DIVIDED BY COMBINED GRID SCALE FACTOR = GROUND DIST.

50 0 50 100 200
1" = 50'

COORDINATE TABLE

STA.	DESCRIPTION	COORDINATES NORTHING	COORDINATES EASTING
PT.1	CHANNEL LINE PT.	492750.870	2954700.447
PT.2	CHANNEL LINE PT.	492850.870	2954699.149
PT.3	CHANNEL LINE PT.	492747.971	2954479.247
PT.4	CHANNEL LINE PT.	492847.970	2954477.849
PT.5	CHANNEL LINE PT.	492852.873	2954302.810
PT.6	CHANNEL LINE PT.	492874.771	2954372.850
PT.7	CHANNEL LINE PT.	493131.470	2953834.232
PT.8	CHANNEL LINE PT.	492899.328	2954330.616
PT.9	CHANNEL LINE PT.	492980.273	2953603.354
PT.10	CHANNEL LINE PT.	493172.370	2953863.159
PT.12	CHANNEL LINE PT.	493203.970	2953812.259
PT.14	CHANNEL LINE PT.	493159.071	2953785.058
PT.16	CHANNEL LINE PT.	493022.072	2953575.955

HORIZONTAL CONTROL

STA.	COORDINATES NORTHING	COORDINATES EASTING
KR-100	492605.317	2954473.592
KR-101	492701.460	2954668.205
KR-102	493054.835	2953774.598
KR-104	492947.716	2954347.853
KR-106	493321.073	2953707.655
KR-107	493265.474	2953707.041

LEGEND

- HORIZONTAL CONTROL POINT
- DREDGING LIMIT TURNING POINT
- NO. — CHANNEL LINE TURNING POINT
- CHANNEL LINE
- DREDGING LIMIT
- SHORELINE
- PROJECT DEPTH CONTOUR

NO.	DATE	REVISION	BY

U.S. ARMY ENGINEER DISTRICT, DETROIT
CORPS OF ENGINEERS
DETROIT, MICHIGAN

KNIFE RIVER HARBOR
MINNESOTA

CONDITION SURVEY - AUGUST 2011

DULUTH AREA OFFICE — DULUTH, MN

DESIGNED BY:*
DRAWN BY:* RJB
CHECKED BY:*
REVIEWED BY:*
SUBMITTED BY:*
CHIEF, PROJ. OPNS. SEC.
APPROVED:*
CHIEF, CONST.-OPNS. DIVISION
(* AS REQUIRED BY ENGINEERING CIRCULAR 1110-1-76)

APPROVAL RECOMMENDED:*
CHIEF, OTS BRANCH
DATE

SCALE AS SHOWN 1" = 50'
CADD FILE NAME:KnifeRvrC11.DGN
DRAWING NUMBER
SHEET 1 OF 1

knife 7570/52