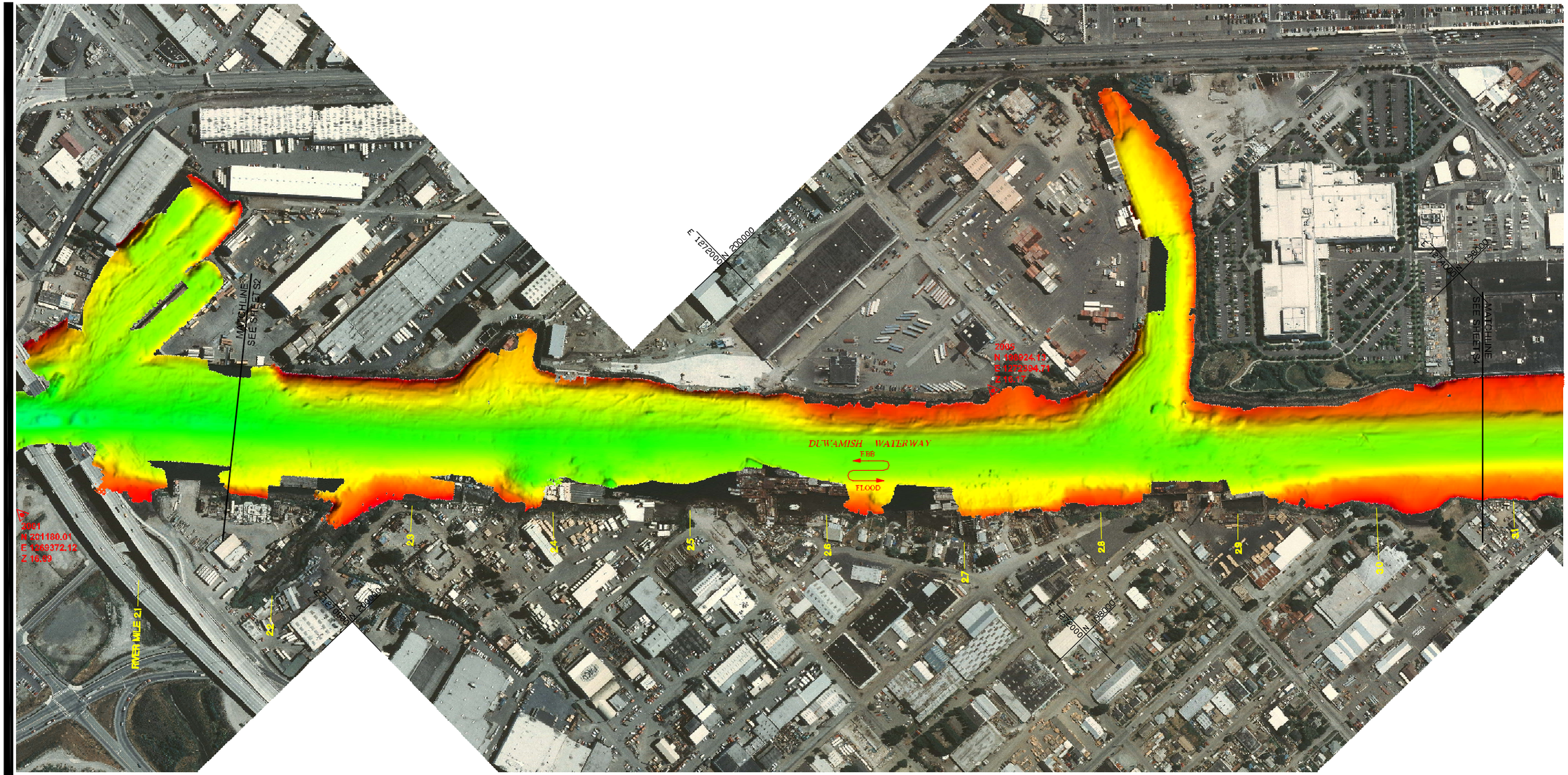
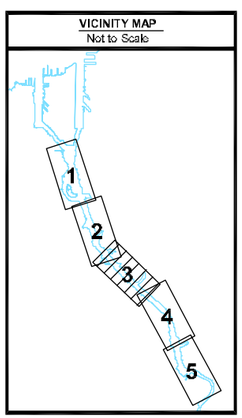


SUN-ILLUMINATED IMAGERY
RIVER MILE 2.2 TO 3.1
WINDWARD ENVIRONMENTAL, LLC
DUWAMISH WATERWAY, SEATTLE, WASHINGTON

DAVID EVANS AND ASSOCIATES INC.
2100 Southwest River Parkway
Portland Oregon 97201
Phone: 503.223.6663

VICINITY MAP
Not to Scale



NOTES:

1. This drawing presents the results of a multibeam bathymetric survey conducted by David Evans and Associates, Inc. (DEA).
2. Date of Survey: August 25-29, 2003.
3. Horizontal Datum: North American Datum of 1983 - 91 adj. (NAD83/91), State Plane Coordinate System (SPCS), Washington North Zone.
4. Units: US Survey Foot.
5. Vertical Datum: Mean Lower Low Water (MLLW), 1960-1978 Epoch.
6. Water surface elevations were obtained from a Real-Time Kinematic Global Positioning System (RTK GPS). An RTK GPS base station was deployed at control monument 2005 to provide real-time GPS correctors. RTK correctors were applied to the shipboard GPS for logging of water surface elevations at one-second intervals. A 60-second average of RTK GPS observations was used for correcting multibeam soundings to MLLW elevations.
7. The sun-illuminated image was generated from a Digital Terrain Model (DTM) based on a three-foot grid of multibeam data in Caris HIPS software. Illumination angles and color scale are shown in the legend.
8. Aerial photographs were provided by Windward Environmental, LLC.
9. Horizontal positions were acquired with an Applanix POS/MV, combined inertial and Differential Global Positioning System (DGPS), augmented with RTK GPS positions.
10. Depths were acquired with a Reson Seabat 8101 multibeam bathymetric sonar integrated with an Applanix POS/MV positioning and motion reference system.
11. Soundings were not selected by shoal bias and do not represent least depths. This map is not intended for navigation.

This hydrographic survey was completed under the direction of an American Congress on Surveying and Mapping, Certified Hydrographer.

Jon L. Dasler,
ACSM Certified Hydrographer (107)

DUWAMISH WATERWAY Datum Planes at 8th Ave.	
Datum Plane	MLLW
Highest Estimated Tide	15.00 +/- 0.5
Mean Higher High Water	11.10
Mean High Water	10.24
Mean (Half) Tide Level	6.50
Mean Low Water	2.76
Mean Lower Low Water	0.00
Lowest Estimated Tide	-4.50 +/- 0.5

SUN-ILLUMINATION

AZIMUTH	INCLINATION
345°	55°

DEPTH LEGEND
(IN FEET MLLW)

0
-10
-20
-30
-40
-50

200 100 0 200 400 600
SOUNDINGS IN FEET
SCALE: 1"=200'

REVISIONS:	APPD.

DATE: 11/21/03
DESIGN: DKPI
DRAWN: DKPI
CHECKED:
REVISION NUMBER:

SCALE: 1" = 200'

PROJECT NUMBER:
WINW0000-0005

DRAWING FILE:
winw5_S3.dwg

SHEET NO.
S3
OF S5