

11293

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	
DESCRIPTIVE REPORT	
<i>Type of Survey</i> HYDROGRAPHIC	
<i>Field No.</i> S-N904-RA-04	
<i>Registry No.</i> H-11293	
LOCALITY	
<i>State</i> Washington	
<i>General Locality</i> Lake Washington	
<i>Sublocality</i> Dabney Point Sand Point	
<hr/> 2004 <hr/>	
CHIEF OF PARTY	
CDR John W. Humphrey, NOAA	
LIBRARY & ARCHIVES	
DATE	

HYDROGRAPHIC TITLE SHEET

H11293

INSTRUCTIONS The hydrographic sheet should be accompanied by this form,
filled in as completely as possible, when the sheet is forwarded to the office.FIELD NO.
RA-10-01-04State WashingtonGeneral Locality Lake WashingtonSublocality Dabney Point to Sand PointScale 1:10,000Date of Survey 3/17/2004 - 4/1/2004Instructions Date 2/3/2004Project No. S-N904-RA-04Vessel NOAA Ship launches 1006, 1016, 1021Chief of Party CDR. John W. Humphrey, NOAASurveyed by RAINIER PersonnelSoundings taken by echo sounder Knudsen 320M, Reson SeaBat 8101Graphic record scaled by RAINIER PersonnelGraphic record checked by RAINIER PersonnelEvaluation by R. Davies Automated plot by HP Designjet 1050CVerification by R. Davies, E. DomingoSoundings in Feet at Lake Washington Low Water of Lake DatumREMARKS: Time in UTC. UTM Projection Zone 10

Revisions and annotations appearing as endnotes were

generated during office processing.

All separates are filed with the hydrographic data.

As a result, page numbering may be interrupted or non-sequential

Descriptive Report to Accompany Hydrographic Survey H11293

Project S-N904-RA-04
Lake Washington, Washington
Scale 1:10,000
March 2004
NOAA Ship RAINIER
Chief of Party: Commander John W. Humphrey, NOAA

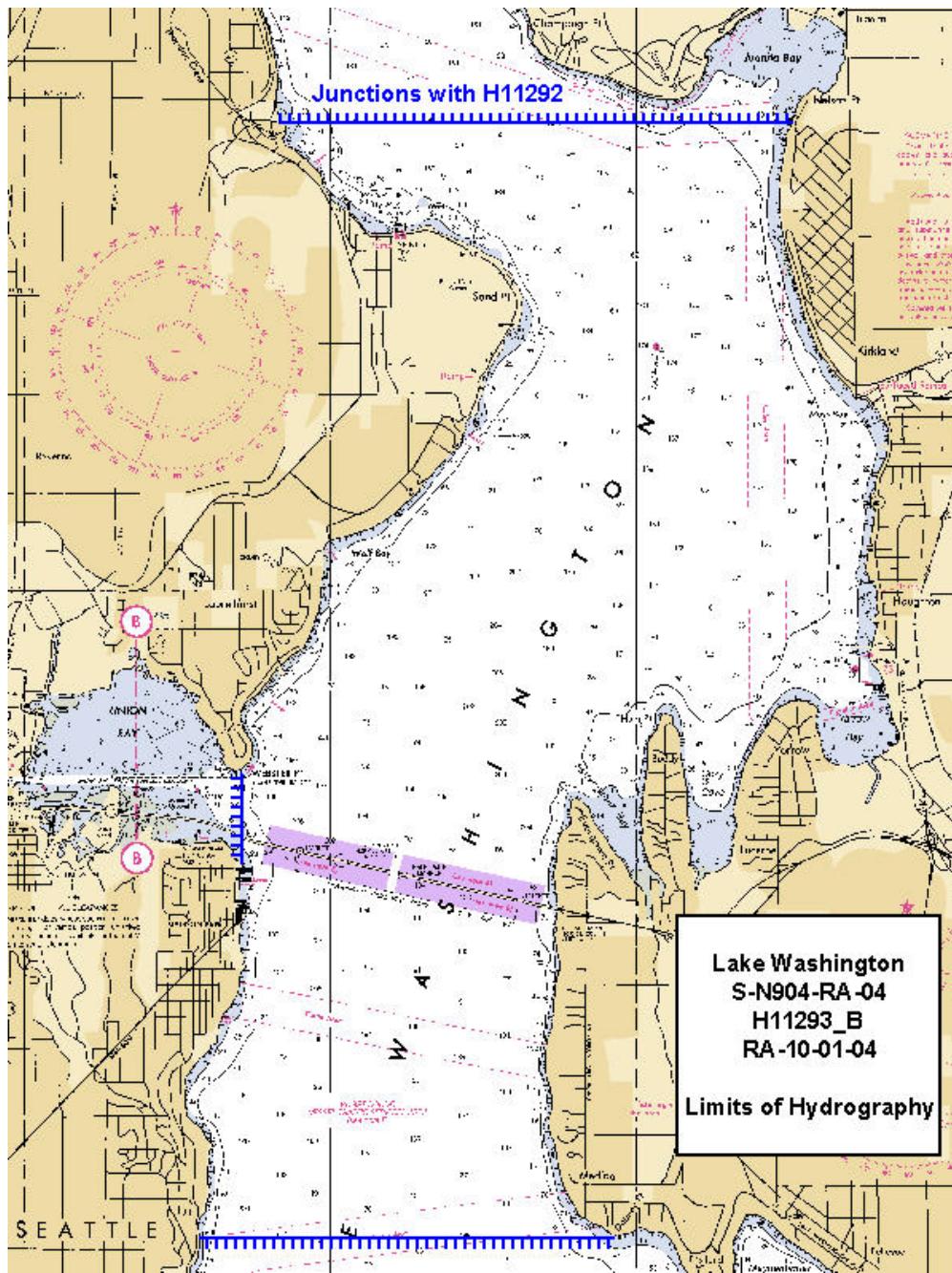


Figure 1. H11293 Survey Limits

A. AREA SURVEYED

Hydrographic survey H11293 was completed as specified by Hydrographic Survey Letter Instructions S-N904-RA-04, dated February 3, 2004, Draft Standing Project Instructions dated March 23, 2003 and NOS Hydrographic Specifications and Deliverables dated March 2003. The survey area is Lake Washington, Washington. This survey corresponds to sheet B in the sheet layout provided with the Letter Instructions.

One hundred percent shallow-water multibeam (SWMB) coverage was obtained in the survey area in waters 8 meters and deeper. In 4-8 meters of water, 100% SWMB coverage was obtained as much as possible and to acquire least depths over significant features or shoals.

Data acquisition was conducted from DN 77 to 92.¹

B. DATA ACQUISITION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *S-N904-RA-04 Data Acquisition and Processing Report* (DAPR), submitted under separate cover.² Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Launches 1006, 1016, and 1021 were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles. No unusual vessel configurations were used for data acquisition.³

B2. Quality Control

Crosslines

Shallow Water Multibeam (SWMB) crosslines totaled 18.56 linear nautical miles, comprising 6.86% of SWMB hydrography. The mainscheme bathymetry was manually compared to the XL nadir beams in CARIS subset mode and agreed well, with differences averaging less than 0.5 meter.

A statistical Quality Control Report has been conducted on representative data collected with each system used for this survey and is included in the *S-N904-RA-04 DAPR*.

Through manual examination of the data and statistical analysis of data, accuracy standards for this survey have been met.

Junctions

The following contemporary surveys junctions with H11293 (see *Figure 1*.)

Registry #	Scale	Date	Junction side
H11292	1:10,000		North

Survey H11293 was not compared with H11292 after smooth tides were applied. Survey H11292 has not been completed, and smoothed tides are not available for the data. The two surveys were compared in the overlapping areas when the zero tide file, zerotide.tid, had been applied to all of the data in the project area. In this comparison, surveys H11292 and H11293 compared well, with a difference of less than 0.5m.

Final comparisons will be made after the completion of survey H11292.⁴

Data Quality Factors

In several areas near shore, thick aquatic grasses often obscured the detection of the bottom. In the SWMB data, removal of soundings obtained over eelgrass was not possible in HDCS SwathEdit, as there is no definitive way to determine if a sounding is on a feature such as a rock, or on eelgrass. In HDCS Subset Mode, in some instances, it was possible to discern the true bottom, as aquatic grasses often appeared as soundings “disconnected” from the continuous bottom. In these instances soundings over aquatic grass were rejected. However, when unable to clearly distinguish between the bottom and aquatic grass, the soundings were not rejected.⁵

Data collected on multiple days showed slight Sound Velocity errors. Sound velocity profiles from other vessels were added to the concatenated *.svp and applied to the data, reflecting time of acquisition and location. These files were applied to the data *nearest in time*. In some areas the sound velocity errors were not completely resolved. In these areas, the error is less than 1.0m.⁶

A dynamic wobble is visible in a 2m, 9pixel shoal weighted grid with 1m exaggeration, in the Reson 8125 data on days 078, and 086 - 088. This may have been caused by a variable latency between the motion sensors and the Reson 8125 on launch 1016. A similar wobble was also visible in hull 1006, Reson 8101 data on Dn078. Although these dynamic sensor errors are visible in the Caris 5.4 Shoal weighted grid, the data meets IHO Order 1 standards.⁷

Data collected with Launch 1006 on March 26, 2004 (DN086) exhibits deeper than expected nadir returns, resulting in erroneous along track “troughs”. See *Figure 2*. A likely explanation for these “troughs” is that the substrate consists of either fine silt or mud. This could then result in the Reson 8101 system having difficulty in tracking the bottom and effectively penetrating into the substrate near nadir. The extreme false deep soundings were removed with Caris 5.3 Subset Editor. Slight “troughs” of less than 1m were left in the data set.⁸

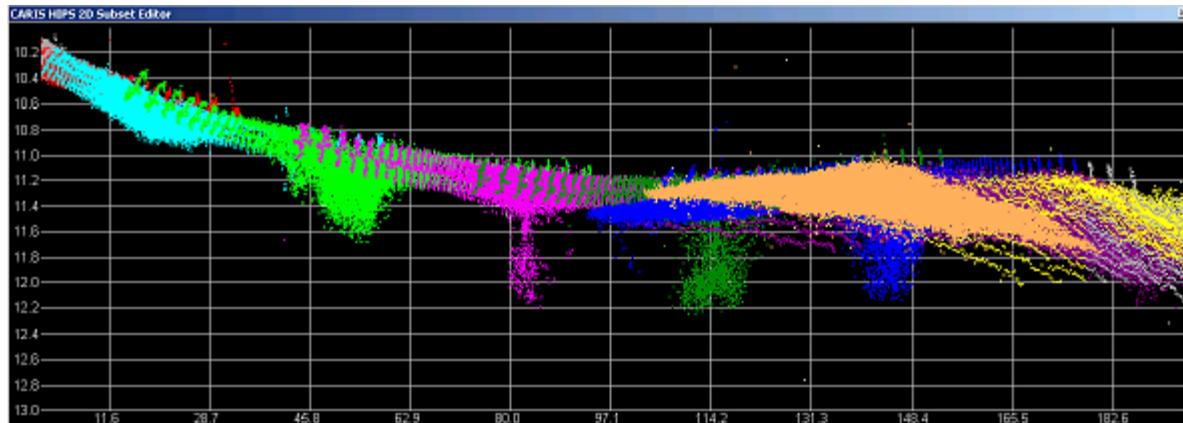


Figure 2. S-N904-RA-04 H11293 DN086 2004 False deep flyers at nadir were collected in an area of soft substrate, using a Reson 8101 sonar system.

B3. Data Reduction

Data reduction procedures for survey H11293 conform to those detailed in the *S-N904-RA-04 DAPR*.

C. HORIZONTAL AND VERTICAL CONTROL

A complete description of horizontal and vertical control for survey H11293 can be found in the *S-N904-RA-04 Horizontal and Vertical Control Report*, submitted under separate cover.⁹ A summary of horizontal and vertical control for this survey follows.

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacons at Robinson Point (323 kHz), Whidbey Island (302 kHz) and Fort Stevens (287 kHz) were utilized during this survey. Launch-to-launch DGPS performance checks using U.S. Coast Guard beacons at Whidbey Island (302 kHz) and Fort Stevens (287 kHz) as the check stations were performed in accordance with Section 3.2 of the FPM. Copies of the performance checks are included in the *S-N904-RA-04 Horizontal and Vertical Control Report*.

Vertical Control

The vertical datum for this project is Lake Washington Low Water of Lake datum (LWLWD). The operating National Water Level Observation Network (NWLN) primary tide station at Sand Point, WA (944-7239) served as control for datum determination and as the primary source for water level reducers for survey H11293.

A request for delivery of final approved (smooth) tides for survey H11293 was forwarded to N/OPS1 on April 21, 2004. A copy of the request is included in Appendix IV.¹⁰ Approved (smoothed) tide observations from the tide station 944-7239 were received and have been

applied to the data. Copies of the Tide Note and Tide Zone Point Locations are included in Appendix IV.¹¹ See *Appendix V. Supplemental Correspondence.*¹²

D. RESULTS AND RECOMMENDATIONS

D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations

A total of thirteen (13) AWOIS items were located within the limits of H11293 and investigated during this survey. Investigation methods, results, and charting recommendations have been entered into Pydro and are submitted with the digital data. A Printout of the AWOIS Report, H11293AWOIS.Report.pdf is included in this report.¹³

D.2 Chart Comparison

Survey H11293 was compared with chart 18447 (26th Ed, Jan 25, 1997 1:25,000)¹⁴ with smooth tides applied to all of the data. The soundings generally agreed within 6 feet (1 fathom). The near shore depths tended to agree within one foot, but in deeper areas, soundings tended to be 3 to 5 feet shallower than reported on the chart. This could be attributed to the higher accuracy of the equipment and greater bathymetric coverage.¹⁵

Throughout the survey H11293 area, 329, charted soundings on Chart 18447 correspond with Survey H11293. Of these charted soundings, 20 are shallower than the soundings surveyed. Most of these charted soundings are between 10 and 20 feet shallower than the surveyed depths, with exception to the charted depth of 111ft at position 47°36'47.12"N 122°16'34.47"W; (554389.48, 5273548.74). The surveyed depth at this position is 212 ft. The charted depths should be corrected to reflect the surveyed depths in their corresponding areas.¹⁶

In several instances, this survey found shallower soundings between charted soundings even though agreement at the position of the charted depths was good. This can be attributed to increased bottom coverage using SWMB methods.¹⁷ The increased bottom coverage also redefined the 60 ft and 18 ft contours. In some instances these contours extend further offshore than reported on the chart.

D.3 Shoreline

Shoreline Source

NOAA ENC digital vector database files in native format and MapInfo tables of S-57 objects were supplied on the project CD for reference purposes only. In addition, features shown on the current editions of charts 18447, that were not depicted on the shoreline source document were digitized in MapInfo by RAINIER personnel and displayed in Hypack for field verification.

Shoreline Verification

Complete shoreline verification was not conducted for survey H11293. Significant changes were positioned from bathymetric features flagged “Designate” in Caris 5.4 Subset Editor. Significant shoal depths were marked as outstanding in the CARIS Subset Editor and processed in Pydro.

Source Shoreline Changes and New Features

See *H11293 Bathymetric Feature Report*¹⁸

Charted Features

See *H11293 Bathymetric Feature Report*

Recommendations

The Hydrographer recommends that the shoreline as depicted on the Bathymetric Feature plot and H11293 Final Field sheet supersede and complement shoreline information on the charts, as noted.¹⁹

D.4 Dangers to Navigation

No DTONs were submitted for survey H11293.²⁰

D.5 Aids to Navigation

Survey H11293 included ten (10) aids to navigation (ATONs). Each ATON was found to serve its intended purpose.²¹

D.6 Miscellaneous

Bottom samples were not collected for this survey.²²

E. APPROVAL

As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this survey in accordance with the Hydrographic Manual, Fourth Edition, Hydrographic Survey Guidelines, Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2003.

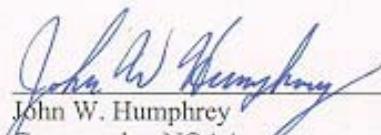
The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

Survey H11293 is complete and adequate to supersede charted soundings in their common areas.²³

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

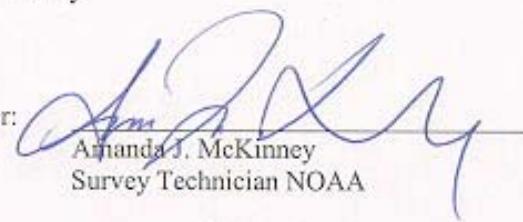
<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Data Acquisition and Processing Report for S-N904-RA-04	Nov. 12, 2004	N/CS34
Horizontal and Vertical Control Report for S-N904-RA-04	May 28, 2004	N/CS34
Tides and Water Levels Package for S-N904-RA-04	May 28, 2004	N/OPS1

Approved and Forwarded:


John W. Humphrey
Commander, NOAA
Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

Survey Sheet Manager:


Amanda J. McKinney
Survey Technician NOAA

Field Operations Officer:


Kevin Slover, Field Operations Officer
Lieutenant, NOAA

Revisions Compiled During Office processing and Certification

¹ March 17-April 1, 2004

² Filed with the project records.

³ Concur

⁴ The junction with survey H11292 is complete. A *Joins* note has been added to the smooth sheet.

⁵ A note, grass, has been added to the smooth sheet in these areas.

⁶ A review of this survey was completed and it complies with the specifications and requirements set forth in the NOS Hydrographic Surveys Specifications and Deliverables Manual, the Field Procedures Manual and the Standing and Letter Project Instructions

⁷ Concur

⁸ Sere endnote 6

⁹ Filed with the project records.

¹⁰ Filed with the hydrographic records.

¹¹ Attached to this report.

¹² Filed with the survey records.

¹³ Concur

¹⁴ 28th Edition, dated Dec.1, 2005

¹⁵ Concur

¹⁶ Concur, the evaluator recommends that Note B on chart 18447 be retained as charted. Several soundings along the floating bridge have been excessed and placed on level 60 as they represent isolated returns off the submerged cables and anchors. Another charted item (submerged piles) at latitude, 47/41/11N, longitude, 122/14/48W was not addressed by the hydrographer. The charted submerged piles fall in present survey depths exceeding seventy feet and was ensonified by one hundred percent multibeam coverage. Office analysis of the digital imagery provided no detection of these features and the evaluator recommends this item be removed from the chart.

¹⁷ Concur

¹⁸ Attached to this report.

¹⁹ Concur with clarification, charted shoreline and features not addressed by the hydrographer should be retained as charted.

²⁰ Concur, no additional dangers were reported during office processing.

²¹ The evaluator recommends that MCD use the latest information to chart aids to navigation.

²² Retain all charted bottom characteristics

²³ Concur

H11293 AWOIS Report

Registry Number: H11293
State: Washington
Locality: Lake Washington
Sub-locality: Dabney Point to Sand Point
Project Number: S-N904-RA-04
Survey Dates: March 17, 2004 - April 1, 2004

Charts Affected

Number	Version	Date	Scale
18447	27th Ed.	04/01/2004	1:10000
18441	43rd Ed.	07/01/2003	1:80000
18440	27th Ed.	11/01/2003	1:150000
18003	19th Ed.	03/01/2003	1:736560
18007	31st Ed.	03/31/2001	1:1200000
501	12th Ed.	11/01/2002	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

AWOIS	[no data]	[no data]	[no data]
AWOIS	[no data]	[no data]	[no data]

1 - AWOIS

1.1) AWOIS #7637 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 37' 59.350" N, 122° 16' 04.440" W

Historical Depth: [None]

Search Radius: 1000

Search Technique: S2,MB,ES,DI,SD

Technique Notes: [None]

History Notes:

[None]

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #7637- Plane wreck disproved with 100% SWMB

Hydrographer Recommendations

[None]

Office Notes

No obstruction appears on the chart.

1.2) AWOIS #51891 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 41' 19.200" N, 122° 15' 25.200" W
Historical Depth: [None]
Search Radius: 25
Search Technique: S2,BD,DI,SD
Technique Notes: [None]

History Notes:

NANCI SHORELINE REVISION/83--POSSIBLE SOURCE OF SUBMERGED PILE iAPPEARING ON CHT. 18447, 22ND ED, 1/86 IN POS. LAT.47-41-19.2N, iLONG.122-15-25.2W (NAD 83). POS. SCALED FROM CHART 18447, 23RD iED, 1989. HISTORY OF CHART COMPILATION MISSING FROM FILES. i(ENTERED 1/91 MCR) BP126607/85--CMP-TP00646; POSSIBLE SOURCE OF SUBM. PILE. SOURCE iDOCUMENTS NOT AVAILABLE AT THIS TIME. BP SHOULD SHOW FIELD EDIT iWORK ACCOMPLISHED IN 1980. (ENTERED 1/91 MCR) FE359/91; S-N933-DA; DIVER INVESTIGATION PERFORMED THREE 30 iMETER RADIUS SEARCHES. NO PILE OR OTHER OBSTR. FOUND. EVALUATOR iRECOMMENDS TO DELETE SUBM. PILE FROM THE CHART. (UPDATED 2/92 iMCR)

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #51891- Pile disproved with 100% SWMB

Hydrographer Recommendations

[None]

Office Notes

Remove charted submerged piles

1.3) AWOIS #51893 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 41' 20.050" N, 122° 15' 25.150" W
Historical Depth: [None]
Search Radius: 25
Search Technique: S2,DI,SD,BD,##
Technique Notes: CONDUCT A 200% SSS SEARCH TO A 25 METER RADIUS FOR EACH OF THE FOUR SUBM. PILE POSITIONS. CONDUCT THE SEARCH AT A SPEED OF 2.5 KNOTS. PILE CLOSEST INSHORE MAY REQUIRE BD INVESTIGATION.

History Notes:

BP67127--1/65, DEPT. OF NAVY; PLAN FOR APPROACH LIGHTING (MARKERS) RUNNING FROM POS. LAT.47-41-22N, LONG.122-15-26W (NAD 83) TO THE SHORE IN A SE DIRECTION. (ENTERED 1/91 MCR) H9742/78--S-N203-DA-78; THREE ABANDON RUNWAY APPROACH LIGHTS BARING 4 FT AT LWD LOCATED IN THE FOLLOWING POS. LAT.47-41-20.7N, LONG.122-15-20.7, LAT.47-41-21.75N, LONG.122-15-21W AND LAT. 47-41-22.65N, LONG.122-15-21.5W (NAD 27). A PILE PA IS SHOWN IN POS. LAT.47-41-19.8N, LONG.122-15-20.4W (NAD 27). EVALUATORS REPORT STATES THAT COMMUNICATIONS WITH THE 13TH CGD INDICATES THE RUNWAY APPROACH LIGHTS WERE BEING REMOVED AT THE TIME OF EVALUATION (9/79). (ENTERED 1/91 MCR) CL1423/80-USPS; VISUAL SEARCH IN 10/80 REVEALED MARKERS NO LONGER EXIST. (ENTERED 1/91 MCR) FE359/91--S-N933-DA; DIVER AND BOTTOM DRAG INVESTIGATION REVEALED NO SUBMERGED PILES IN SEARCH AREA, HOWEVER THE EVALUATOR STATES THAT THE TWO PILES TO THE NW WERE NOT ADDRESSED; RETAIN AS CHARTED. HYDROGRAPHER BELIEVES THAT RUNWAY LIGHTS WERE REMOVED AND TAKEN TO DEEPER WATER FOR DISPOSAL. A BOTTOM DRAG / DIVER INVESTIGATION LOCATED A SUBMERGED RUNWAY LIGHT AND ASSOCIATED DEBRIS APPROX. 60 METERS NE OF THE SEAWARD-MOST CHARTED SUBM. DOL; REPORTED AS SUBMERGED OBSTR. IN POS. LAT.47-41-22.87N, LONG.122-15-23.92W (NAD 83) WITH A LD OF 14.2 METERS. (UPDATED 2/92 MCR)

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #51893- Light debris disproved with 100% SWMB

Hydrographer Recommendations

[None]

Office Notes

Remove charted submerged piles, chart 117 ft obstruction at the survey position. This 117 ft obstruction, lat. 47/41/38.97N, long. 122/15/31.05W, is believed to be the debris of the Approach lights.

1.4) AWOIS #53091 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 41' 39.360" N, 122° 16' 12.450" W

Historical Depth: [None]

Search Radius: 100

Search Technique: VS,S2,MB,DI,SD

Technique Notes: [None]

History Notes:

CL 1352, 10/22/84; USCG AUX. LETTER REPORTS TWO VISIBLE DOLPHINS (THREE MEMBERS EACH)
25 FT APART IN LAT. 47/41/40 N, LON. 122/16/08 W (NAD27) (ENTERED 12/03 BY KRW)

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53091- Dolphins visually noted at charted position.

Hydrographer Recommendations

[None]

Office Notes

AWOIS item is discussed in the Descriptive Report for H11292.

1.5) AWOIS #53092 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 41' 25.000" N, 122° 15' 55.500" W

Historical Depth: [None]

Search Radius: 100

Search Technique: S2,MB,DI,SD

Technique Notes: [None]

History Notes:

H-9742, 10/1/78; REPORTS THE EXISTANCE OF TWO SUBMERGED DOLPHINS IN LAT. 47/41/25 N, LON. 122/15/55.5 W. (NAD83) AND LAT. 47/41/24.5 N, LON. 122/15/54 W. (NAD83) FE-359, 5/1/1991; REPORTS NO CHANGE TO THE CHARTED POSITION GIVEN IN H-9742. (ENTERED 12/03 BY KRW)

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53092- Submerged dolphins disproved with 100% SWMB.

Hydrographer Recommendations

[None]

Office Notes

Concur

1.6) AWOIS #53093 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 41' 22.950" N, 122° 15' 23.080" W

Historical Depth: [None]

Search Radius: 100

Search Technique: S2,MB,ES,DI,SD

Technique Notes: [None]

History Notes:

LMN 12/91, 03/19/1991; REPORTS THE CORRECTION OF AN OBSTRUCTION (53 FT) POSITION FROM NAD27 TO NAD83 IN LAT. 47/41/22.95 N, LON. 122/15/23.08 W (NAD83) . (ENTERED 12/03 BY KRW)

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53093- Feature noted, with least depth of 14.1m, from SWMB.

Hydrographer Recommendations

[None]

Office Notes

Remove charted submerged obstruction and chart 39 ft obstruction, position 1091/6 at lat. 47/41/21.885N, long. 122/15/21.836W. Revise the danger curve to include the 46 ft sounding found in this investigation.

1.7) AWOIS #53094 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 41' 09.370" N, 122° 14' 52.150" W

Historical Depth: [None]

Search Radius: 200

Search Technique: S4,MB,DI

Technique Notes: [None]

History Notes:

BP-103544, 04/24/1979; REPORTS THE EXISTANCE OF A DOLPHIN IN LAT. 47/41/10.1 N, LON. 122/14/47.7 W. (NAD27) CL-1423, 11/10/1980; USPS REPORTS THE DOLPHIN IN ABOVE LOCATION DOES NOT EXIST. THE OBSTRUCTION WAS RETAINED AS SUBMERGED PILES BY CHART COMPILER CITING CL-1423. (ENTERED 12/03 BY KRW)

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53094- Submerged piles disproved visually and with SWMB

Hydrographer Recommendations

[None]

Office Notes

Remove charted submerged piles note and piles symbols.

1.8) AWOIS #53095 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 40' 33.000" N, 122° 14' 55.000" W

Historical Depth: [None]

Search Radius: 200

Search Technique: VS,S2,MB,DI,SD

Technique Notes: [None]

History Notes:

POSITION AQUIRED FROM MAPINFO RASTER CHART. CL-1423, 10/10/1980; REPORTS THE EXISTANCE OF 3 DOLPHINS IN 150 FT APART 50 FT OFF THE DOCK CENTERED IN LAT. 47/40/33 N, LON 122/14/55 W. (NAD27). (ENTERED 12/03 BY KRW).

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53095- Dolphins disproved visually and with SWMB

Hydrographer Recommendations

[None]

Office Notes

Remove charted dols.

1.9) AWOIS #53096 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 40' 22.360" N, 122° 14' 58.450" W

Historical Depth: [None]

Search Radius: 200

Search Technique: VS,S2,MB,DI,SD

Technique Notes: [None]

History Notes:

CL 781/1980, 06/27/1980; REPORTS THE EXISTANCE OF AN INTAKE PIPE IN LAT. 47/40/23 N, LON. 122/14/54 W. (NAD27) THE INTAKE SLED IS LOCATED AT THE ABOVE POSITION WITH ASSOCIATED PIPE EXTENDING TOWARD THE SHORE. (ENTERED 12/03 BY KRW).

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53096- SWM extent of sewer pipe located inshore of Charted position.

Hydrographer Recommendations

[None]

Office Notes

Remove charted intake and chart sewer pipe at survey position. Retain charted (covered by 50 ft) See smooth sheet for the depiction of the area. Retain charted submerged piles.

1.10) AWOIS #53097 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 39' 28.000" N, 122° 12' 39.000" W

Historical Depth: [None]

Search Radius: 200

Search Technique: VS,S2,MB,DI,SD

Technique Notes: [None]

History Notes:

POSITION AQUIRED FROM MAPINFO RASTER CHART. CL-1423/80, 11/10/1980; REPORTS THE EXISTANCE OF DOLPHINS IN LAT. 47/39/25 N, LON. 122/12/37 W.(NAD 83) (ENTERED 12/03 BY KRW).

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53097- Dolphins disproved visually and with SWMB.

Hydrographer Recommendations

[None]

Office Notes

Concur, remove charted dols

1.11) AWOIS #53098 - UNKNOWN

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 39' 24.360" N, 122° 12' 32.450" W
Historical Depth: [None]
Search Radius: 200
Search Technique: VS,MB,ES,DI,SD
Technique Notes: [None]

History Notes:

CL-1341/1982, 11/17/82; USPS REPORTS THE EXISTANCE OF A DANGEROUS VISIBLE WRECK OF A BURNED FERRY, ON THE SOUTH SIDE OF THE PROMIENT DOCK, IN LAT. 47°39'25N. LON. 122°12'28W.(NAD27). A PORTION OF THE HULL IS VISIBLE. THE PROMINENT DOCK SHOWN IS IN DISREPAIR AND NOT PROMINENT FOR THE LAST 100FT OF LENGTH. (ENTERED 12/03 BY KRW).

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53098- Wreck not visually observed. Submerged wreck verified with SWMB.
Bathy Feature hdfs_data/h11293/1016_reson8125/2004-088/101_1957/33/189 at 47°39'25.453"N, 122°12'32.665"W (559389.32E, 5278489.15N)

Hydrographer Recommendations

[None]

Office Notes

Chart area as foul with submerged piles and a 11 ft submerged wreck at the survey position.

1.12) AWOIS #53100 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 39' 20.000" N, 122° 12' 41.000" W

Historical Depth: [None]

Search Radius: 200

Search Technique: S2,MB,DI,SD

Technique Notes: [None]

History Notes:

POSITION AQUIRED FROM CURRENT CHART. CL-1423/80, 11/10/1980; REPORTS THE EXISTANCE OF SUBMERGED PILES IN LAT. 47/39/20 N, LON. 122/12/41 W.(NAD 83) (ENTERED 12/03 BY KRW).

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53100- Four (4) submerged piles noted in AWOIS area.

Hydrographer Recommendations

[None]

Office Notes

Chart area a foul with submerged piles

1.13) AWOIS #53101 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 047° 40' 24.360" N, 122° 12' 29.450" W

Historical Depth: [None]

Search Radius: 100

Search Technique: VS,S2,MB,ES,DI,SD

Technique Notes: [None]

History Notes:

POSITION APPROXIMATE CENTER OF THE THREE DOLPHINS. CL 1423-1980, 11/10/1980; REPORTS THE ESISTANCE OF 3 VISIBLE DOLPHINS ALONG SIDE A DOCK IN LAT. 47/40/25 N. LON. 122/12/25 W. (NAD27). (ENTERED 12/03 BY KRW).

Survey Summary

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS #53101- Dolphins were not observed during SWMB. Shoreline verification was not conducted for this survey.

Hydrographer Recommendations

[None]

Office Notes

No shoreline investigation was completed, therefore, it is recommended that the dols be retain at there charted position.

H11293 Shoreline Report

Registry Number: H11293
State: Washington
Locality: Lake Washington
Sub-locality: Dabney Point to Sand Point
Project Number: S-N904-RA-04
Survey Dates: March 17, 2004 - April 1, 2004

Charts Affected

Number	Version	Date	Scale
18447	27th Ed.	04/01/2004	1:10000
18441	43rd Ed.	07/01/2003	1:80000
18440	27th Ed.	11/01/2003	1:150000
18003	19th Ed.	03/01/2003	1:736560
18007	31st Ed.	03/31/2001	1:1200000
501	12th Ed.	11/01/2002	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

Feature Type	Survey Depth	Survey Latitude	Survey Longitude
Wreck	37.74 m	047° 40' 34.459" N	122° 14' 28.855" W
Sounding	35.76 m	047° 41' 38.973" N	122° 15' 31.055" W
Wreck	5.82 m	047° 38' 44.456" N	122° 13' 26.722" W
Wreck	3.75 m	047° 38' 46.890" N	122° 13' 59.180" W
Wreck	2.72 m	047° 38' 29.469" N	122° 16' 33.671" W
Wreck	4.57 m	047° 37' 33.917" N	122° 16' 47.192" W
Pile	5.34 m	047° 39' 04.032" N	122° 16' 32.226" W
Pile	6.99 m	047° 41' 33.652" N	122° 13' 06.860" W
Wreck	5.83 m	047° 39' 49.073" N	122° 12' 33.614" W
Sounding	7.91 m	047° 40' 07.425" N	122° 12' 33.392" W
Sounding	3.70 m	047° 39' 14.453" N	122° 12' 32.431" W

Sounding	5.89 m	047° 39' 24.462" N	122° 12' 34.405" W
Sounding	5.95 m	047° 39' 17.136" N	122° 12' 32.846" W
Wreck	50.70 m	047° 37' 21.877" N	122° 15' 29.812" W
Wreck	5.71 m	047° 38' 48.626" N	122° 14' 16.010" W
Pile	4.24 m	047° 41' 31.942" N	122° 16' 02.751" W
Wreck	39.30 m	047° 39' 23.444" N	122° 15' 08.497" W
Wreck	42.00 m	047° 41' 37.361" N	122° 14' 47.245" W
Wreck	42.93 m	047° 41' 19.457" N	122° 14' 42.448" W
Sounding	50.48 m	047° 40' 16.206" N	122° 13' 41.342" W
Sounding	50.63 m	047° 40' 14.996" N	122° 13' 32.161" W
Wreck	45.51 m	047° 40' 04.548" N	122° 14' 29.366" W
Wreck	51.06 m	047° 40' 19.862" N	122° 14' 02.166" W
Wreck	51.05 m	047° 39' 45.521" N	122° 14' 25.768" W
Wreck	54.43 m	047° 39' 57.139" N	122° 14' 20.007" W
Wreck	44.11 m	047° 39' 46.838" N	122° 13' 29.282" W
Wreck	35.37 m	047° 39' 39.872" N	122° 13' 28.923" W
Wreck	28.36 m	047° 39' 30.941" N	122° 13' 30.841" W
Wreck	11.54 m	047° 39' 00.910" N	122° 14' 10.056" W
Sounding	52.21 m	047° 40' 22.018" N	122° 13' 47.025" W
Pile	2.84 m	047° 38' 40.083" N	122° 13' 24.865" W
Sounding	8.68 m	047° 38' 53.687" N	122° 13' 23.385" W
Sounding	7.93 m	047° 38' 49.603" N	122° 13' 27.000" W
Wreck	21.69 m	047° 39' 28.444" N	122° 13' 04.939" W
Wreck	14.54 m	047° 39' 53.947" N	122° 15' 35.447" W
Sounding	45.20 m	047° 40' 39.725" N	122° 13' 21.103" W
Sounding	6.40 m	047° 39' 01.080" N	122° 13' 40.044" W
Wreck	20.32 m	047° 39' 21.738" N	122° 13' 21.404" W
Sounding	16.23 m	047° 39' 28.550" N	122° 13' 00.770" W
Wreck	41.34 m	047° 39' 42.048" N	122° 13' 35.469" W
Pile	5.50 m	047° 39' 21.893" N	122° 12' 33.356" W
Pile	5.61 m	047° 39' 16.342" N	122° 12' 35.827" W
Sounding	7.15 m	047° 40' 31.663" N	122° 14' 55.517" W
Wreck	46.91 m	047° 40' 34.627" N	122° 14' 25.924" W
Wreck	5.74 m	047° 37' 40.103" N	122° 16' 41.448" W
Pipe	15.42 m	047° 40' 22.178" N	122° 15' 01.511" W
Sounding	6.95 m	047° 39' 22.655" N	122° 12' 33.359" W

Sounding	3.29 m	047° 39' 25.012" N	122° 12' 31.484" W
Sounding	3.33 m	047° 39' 25.453" N	122° 12' 32.665" W
Sounding	4.95 m	047° 39' 24.970" N	122° 12' 34.029" W
Pile	7.37 m	047° 39' 17.903" N	122° 12' 38.548" W
Sounding	2.43 m	047° 39' 25.392" N	122° 12' 31.417" W
Sounding	5.41 m	047° 39' 24.337" N	122° 12' 35.840" W
Sounding	5.57 m	047° 39' 24.362" N	122° 12' 36.354" W
Sounding	3.68 m	047° 39' 25.512" N	122° 12' 35.251" W
Sounding	3.60 m	047° 39' 25.485" N	122° 12' 35.104" W
Sounding	3.34 m	047° 39' 25.589" N	122° 12' 34.652" W
Sounding	3.80 m	047° 39' 24.992" N	122° 12' 33.023" W
Pile	6.05 m	047° 39' 20.486" N	122° 12' 38.664" W
Sounding	6.88 m	047° 39' 16.214" N	122° 12' 35.094" W
Sounding	3.00 m	047° 41' 41.399" N	122° 16' 12.339" W
Pile	3.73 m	047° 41' 24.934" N	122° 15' 55.277" W
Sounding	5.83 m	047° 41' 37.902" N	122° 16' 10.474" W
Sounding	3.79 m	047° 39' 22.784" N	122° 12' 36.512" W
Sounding	4.59 m	047° 39' 14.391" N	122° 12' 31.206" W
Sounding	11.92 m	047° 41' 21.885" N	122° 15' 21.836" W
Wreck	[None]	047° 40' 19.545" N	122° 14' 02.670" W
Wreck	[None]	047° 40' 04.254" N	122° 14' 28.610" W
Wreck	[None]	047° 39' 23.173" N	122° 15' 08.294" W
Wreck	[None]	047° 39' 56.553" N	122° 14' 20.351" W
Wreck	[None]	047° 39' 46.277" N	122° 14' 25.661" W
Pile	[None]	047° 39' 20.505" N	122° 12' 38.551" W
AWOIS	[no data]	[no data]	[no data]
AWOIS	[no data]	[no data]	[no data]
AWOIS	[no data]	[no data]	[no data]
AWOIS	[no data]	[no data]	[no data]
AWOIS	[no data]	[no data]	[no data]
Sounding	50.55 m	047° 39' 23.352" N	122° 15' 08.340" W
SSS	[None]	047° 40' 22.213" N	122° 14' 05.384" W
Sounding	52.96 m	047° 40' 19.636" N	122° 14' 02.832" W
Sounding	8.32 m	047° 41' 35.061" N	122° 13' 14.937" W
Sounding	998.37 m	047° 38' 26.132" N	122° 15' 35.011" W
Sounding	-0.63 m	047° 38' 25.680" N	122° 15' 32.088" W

1 - Features

1.1) Profile/Beam - 4816/15 from h11293 / 1006_reson8101 / 2004-078 / 119_1839

Survey Summary

Survey Position: 047° 40' 34.459" N, 122° 14' 28.855" W

Least Depth: 37.74 m

Timestamp: 2004-078.18:58:30.136 (03/18/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-078 / 119_1839

Profile/Beam: 4816/15

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Plane wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

124ft (18447_3)

20fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

37m (501_1, 50_1)

Office Notes

Chart 124 ft wreck (airplane wreck) at survey position

1.2) Profile/Beam - 630/31 from h11293 / 1006_reson8101 / 2004-079 / 157_1641

Survey Summary

Survey Position: 047° 41' 38.973" N, 122° 15' 31.055" W

Least Depth: 35.76 m

Timestamp: 2004-079.16:43:49.387 (03/19/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-079 / 157_1641

Profile/Beam: 630/31

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature, poss. light debris AWOIS #51893

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

117ft (18447_3)

19fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

36m (501_1, 50_1)

Office Notes

Chart 117 foot Obstruction (light debris) at the survey position. This is part of AWOIS 51893.

1.3) Profile/Beam - 618/59 from h11293 / 1006_reson8101 / 2004-086 / 292_2058

Survey Summary

Survey Position: 047° 38' 44.456" N, 122° 13' 26.722" W

Least Depth: 5.82 m

Timestamp: 2004-086.20:58:58.526 (03/26/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-086 / 292_2058

Profile/Beam: 618/59

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

19ft (18447_3)

3fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.8m (501_1, 50_1)

Office Notes

Chart 19 foot submerged wreck at survey position.

1.4) Profile/Beam - 2570/26 from h11293 / 1006_reson8101 / 2004-086 / 316_1911**Survey Summary**

Survey Position: 047° 38' 46.890" N, 122° 13' 59.180" W

Least Depth: 3.75 m

Timestamp: 2004-086.19:14:11.355 (03/26/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-086 / 316_1911

Profile/Beam: 2570/26

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

12ft (18447_3)

2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.7m (501_1, 50_1)

Office Notes

Chart 12 foot submerged wreck at survey position.

1.5) Profile/Beam - 7936/14 from h11293 / 1006_reson8101 / 2004-088 / 114_2115**Survey Summary**

Survey Position: 047° 38' 29.469" N, 122° 16' 33.671" W

Least Depth: 2.72 m

Timestamp: 2004-088.21:23:39.971 (03/28/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-088 / 114_2115

Profile/Beam: 7936/14

Charts Affected: 18447_2, 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

9ft (18447_2, 18447_3)

1 ½fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

2.7m (501_1, 50_1)

Office Notes

Chart 9 ft (submerged) wreck at survey position.

1.6) Profile/Beam - 1420/13 from h11293 / 1006_reson8101 / 2004-088 / 233_2215**Survey Summary**

Survey Position: 047° 37' 33.917" N, 122° 16' 47.192" W

Least Depth: 4.57 m

Timestamp: 2004-088.22:17:16.829 (03/28/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-088 / 233_2215

Profile/Beam: 1420/13

Charts Affected: 18447_2, 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

15ft (18447_2, 18447_3)

2 ½fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

4.5m (501_1, 50_1)

Office Notes

Chart 15 foot submerged wreck at survey position.

1.7) Profile/Beam - 667/228 from h11293 / 1016_reson8125 / 2004-086 / 132_2213**Survey Summary**

Survey Position: 047° 39' 04.032" N, 122° 16' 32.226" W

Least Depth: 5.34 m

Timestamp: 2004-086.22:14:00.719 (03/26/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-086 / 132_2213

Profile/Beam: 667/228

Charts Affected: 18447_2, 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

17ft (18447_2, 18447_3)

2 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.3m (501_1, 50_1)

Office Notes

Chart 17 foot obstruction, submerged pile, at survey position.

1.8) Profile/Beam - 2654/14 from h11293 / 1016_reson8125 / 2004-087 / 205_1855**Survey Summary**

Survey Position: 047° 41' 33.652" N, 122° 13' 06.860" W

Least Depth: 6.99 m

Timestamp: 2004-087.18:58:31.802 (03/27/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-087 / 205_1855

Profile/Beam: 2654/14

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

23ft (18447_3)

3 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

7.0m (501_1, 50_1)

Office Notes

Chart 23 foot obstruction, submerged pile, at survey position.

1.9) Profile/Beam - 4166/52 from h11293 / 1016_reson8125 / 2004-087 / 248_2229

Survey Summary

Survey Position: 047° 39' 49.073" N, 122° 12' 33.614" W

Least Depth: 5.83 m

Timestamp: 2004-087.22:34:37.725 (03/27/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-087 / 248_2229

Profile/Beam: 4166/52

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

19ft (18447_3)

3 1/4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.8m (501_1, 50_1)

Office Notes

Chart 19 foot submerged wreck at the survey position.

1.10) Profile/Beam - 3199/27 from h11293 / 1016_reson8125 / 2004-087 / 254_2220**Survey Summary**

Survey Position: 047° 40' 07.425" N, 122° 12' 33.392" W

Least Depth: 7.91 m

Timestamp: 2004-087.22:24:28.139 (03/27/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-087 / 254_2220

Profile/Beam: 3199/27

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Obstruction

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

26ft (18447_3)

4 1/4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

7.9m (501_1, 50_1)

Office Notes

Chart 26 ft submerged obstruction.

1.11) Profile/Beam - 258/15 from h11293 / 1016_reson8125 / 2004-087 / 277_2244**Survey Summary**

Survey Position: 047° 39' 14.453" N, 122° 12' 32.431" W

Least Depth: 3.70 m

Timestamp: 2004-087.22:44:47.115 (03/27/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-087 / 277_2244

Profile/Beam: 258/15

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Obstruction

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

12ft (18447_3)

2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.7m (501_1, 50_1)

Office Notes

Chart 12 ft submerged wreck at the survey position.

1.12) Profile/Beam - 354/49 from h11293 / 1016_reson8125 / 2004-088 / 189_1942**Survey Summary**

Survey Position: 047° 39' 24.462" N, 122° 12' 34.405" W

Least Depth: 5.89 m

Timestamp: 2004-088.19:43:21.413 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 189_1942

Profile/Beam: 354/49

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations**Cartographically-Rounded Depth (Affected Charts):**

19ft (18447_3)

3 1/4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.9m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles

1.13) Profile/Beam - 336/72 from h11293 / 1021_reson8101 / 2004-085 / 277_1425**Survey Summary**

Survey Position: 047° 39' 17.136" N, 122° 12' 32.846" W

Least Depth: 5.95 m

Timestamp: 2004-085.22:26:27.164 (03/25/2004)

Survey Line: h11293 / 1021_reson8101 / 2004-085 / 277_1425

Profile/Beam: 336/72

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Obstruction

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

19ft (18447_3)

3 1/4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.9m (501_1, 50_1)

Office Notes

Due to scale of the chart and other obstructions and wrecks in the area the 19 ft. obstruction could not be charted.

1.14) Profile/Beam - 401/83 from h11293 / 1021_reson8101 / 2004-090 / 124_2128**Survey Summary**

Survey Position: 047° 37' 21.877" N, 122° 15' 29.812" W

Least Depth: 50.70 m

Timestamp: 2004-090.21:33:32.932 (03/30/2004)

Survey Line: h11293 / 1021_reson8101 / 2004-090 / 124_2128

Profile/Beam: 401/83

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Plane wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

166ft (18447_3)

27fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

50m (501_1, 50_1)

Office Notes

Chart 166 ft. wreck (plane wreck) at the survey position.

1.15) Profile/Beam - 1827/8 from h11293 / 1006_reson8101 / 2004-086 / 314_1846**Survey Summary**

Survey Position: 047° 38' 48.626" N, 122° 14' 16.010" W

Least Depth: 5.71 m

Timestamp: 2004-086.18:47:57.542 (03/26/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-086 / 314_1846

Profile/Beam: 1827/8

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

18ft (18447_3)

3fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.7m (501_1, 50_1)

Office Notes

Chart 18 ft. wreck at survey position.

1.16) Profile/Beam - 2293/5 from h11293 / 1016_reson8125 / 2004-085 / 367_2228**Survey Summary**

Survey Position: 047° 41' 31.942" N, 122° 16' 02.751" W

Least Depth: 4.24 m

Timestamp: 2004-085.22:30:50.306 (03/25/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-085 / 367_2228

Profile/Beam: 2293/5

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

14ft (18447_3)

2 1/4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

4.2m (501_1, 50_1)

Office Notes

Chart a 14 ft obstruction, submerged pile, at survey position.

1.17) Profile/Beam - 1812/95 from h11293 / 1006_reson8101 / 2004-078 / 124_2233**Survey Summary**

Survey Position: 047° 39' 23.444" N, 122° 15' 08.497" W

Least Depth: 39.30 m

Timestamp: 2004-078.22:44:11.686 (03/18/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-078 / 124_2233

Profile/Beam: 1812/95

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Plane wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 129 ft wreck (airplane wreck) at the survey position.

1.18) Profile/Beam - 257/41 from h11293 / 1006_reson8101 / 2004-083 / 139_1850**Survey Summary**

Survey Position: 047° 41' 37.361" N, 122° 14' 47.245" W

Least Depth: 42.00 m

Timestamp: 2004-083.18:51:24.996 (03/23/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-083 / 139_1850

Profile/Beam: 257/41

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Plane wreck

Hydrographer Recommendations

[None]

Office Notes

The 136 ft wreck (airplane wreck) fall within the junction area but originates with survey H11292. Chart according to survey H11292 position.

1.19) Profile/Beam - 1219/1 from h11293 / 1006_reson8101 / 2004-083 / 140_1902

Survey Summary

Survey Position: 047° 41' 19.457" N, 122° 14' 42.448" W

Least Depth: 42.93 m

Timestamp: 2004-083.19:08:48.658 (03/23/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-083 / 140_1902

Profile/Beam: 1219/1

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Plane wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 141 ft wreck (airplane wreck) at the survey position.

1.20) Profile/Beam - 2812/92 from h11293 / 1006_reson8101 / 2004-083 / 145_2044**Survey Summary**

Survey Position: 047° 40' 16.206" N, 122° 13' 41.342" W

Least Depth: 50.48 m

Timestamp: 2004-083.20:57:02.299 (03/23/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-083 / 145_2044

Profile/Beam: 2812/92

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature

Hydrographer Recommendations

[None]

Office Notes

Chart 165 ft obstruction at the survey position.

1.21) Profile/Beam - 2931/11 from h11293 / 1006_reson8101 / 2004-083 / 145_2044**Survey Summary**

Survey Position: 047° 40' 14.996" N, 122° 13' 32.161" W

Least Depth: 50.63 m

Timestamp: 2004-083.20:57:35.096 (03/23/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-083 / 145_2044

Profile/Beam: 2931/11

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature

Hydrographer Recommendations

[None]

Office Notes

Chart 166 ft obstruction at the survey position.

**1.22) Profile/Beam - 882/92 from h11293 / 1006_reson8101 / 2004-084 /
250_1804****Survey Summary**

Survey Position: 047° 40' 04.548" N, 122° 14' 29.366" W

Least Depth: 45.51 m

Timestamp: 2004-084.18:08:44.031 (03/24/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-084 / 250_1804

Profile/Beam: 882/92

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 149 ft wreck at the survey position.

1.23) Profile/Beam - 206/16 from h11293 / 1006_reson8101 / 2004-084 / 250_1804**Survey Summary**

Survey Position: 047° 40' 19.862" N, 122° 14' 02.166" W

Least Depth: 51.06 m

Timestamp: 2004-084.18:05:21.971 (03/24/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-084 / 250_1804

Profile/Beam: 206/16

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 167 ft wreck at the survey position.

1.24) Profile/Beam - 2132/80 from h11293 / 1006_reson8101 / 2004-084 / 251_1826**Survey Summary**

Survey Position: 047° 39' 45.521" N, 122° 14' 25.768" W

Least Depth: 51.05 m

Timestamp: 2004-084.18:38:36.841 (03/24/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-084 / 251_1826

Profile/Beam: 2132/80

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 167 ft wreck at the survey position.

1.25) Profile/Beam - 2399/13 from h11293 / 1006_reson8101 / 2004-084 / 251_1826**Survey Summary**

Survey Position: 047° 39' 57.139" N, 122° 14' 20.007" W

Least Depth: 54.43 m

Timestamp: 2004-084.18:40:08.762 (03/24/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-084 / 251_1826

Profile/Beam: 2399/13

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 176 ft wreck at the survey position.

1.26) Profile/Beam - 2996/78 from h11293 / 1006_reson8101 / 2004-085 / 101_1822**Survey Summary**

Survey Position: 047° 39' 46.838" N, 122° 13' 29.282" W

Least Depth: 44.11 m

Timestamp: 2004-085.18:33:36.283 (03/25/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-085 / 101_1822

Profile/Beam: 2996/78

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 144 ft wreck at the survey position.

1.27) Profile/Beam - 558/23 from h11293 / 1006_reson8101 / 2004-085 / 160_1839**Survey Summary**

Survey Position: 047° 39' 39.872" N, 122° 13' 28.923" W

Least Depth: 35.37 m

Timestamp: 2004-085.18:42:40.655 (03/25/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-085 / 160_1839

Profile/Beam: 558/23

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 116 ft wreck at the survey position.

1.28) Profile/Beam - 886/89 from h11293 / 1006_reson8101 / 2004-085 / 169_2234**Survey Summary**

Survey Position: 047° 39' 30.941" N, 122° 13' 30.841" W

Least Depth: 28.36 m

Timestamp: 2004-085.22:38:02.161 (03/25/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-085 / 169_2234

Profile/Beam: 886/89

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 93 ft wreck at the survey position.

1.29) Profile/Beam - 2780/69 from h11293 / 1006_reson8101 / 2004-085 / 181_2254**Survey Summary**

Survey Position: 047° 39' 00.910" N, 122° 14' 10.056" W

Least Depth: 11.54 m

Timestamp: 2004-085.22:59:34.057 (03/25/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-085 / 181_2254

Profile/Beam: 2780/69

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 38 ft wreck at the survey position.

1.30) Profile/Beam - 21/17 from h11293 / 1006_reson8101 / 2004-085 / 485_1754**Survey Summary**

Survey Position: 047° 40' 22.018" N, 122° 13' 47.025" W

Least Depth: 52.21 m

Timestamp: 2004-085.17:54:17.893 (03/25/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-085 / 485_1754

Profile/Beam: 21/17

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature

Hydrographer Recommendations

[None]

Office Notes

Chart 171 ft obstruction at the survey position.

1.31) Profile/Beam - 1761/14 from h11293 / 1006_reson8101 / 2004-086 / 148_2039**Survey Summary**

Survey Position: 047° 38' 40.083" N, 122° 13' 24.865" W

Least Depth: 2.84 m

Timestamp: 2004-086.20:40:54.307 (03/26/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-086 / 148_2039

Profile/Beam: 1761/14

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Pile

Hydrographer Recommendations

[None]

Office Notes

Chart 9 ft obstruction (subm pile) at the survey position.

1.32) Profile/Beam - 2404/33 from h11293 / 1006_reson8101 / 2004-086 / 291_2116**Survey Summary**

Survey Position: 047° 38' 53.687" N, 122° 13' 23.385" W

Least Depth: 8.68 m

Timestamp: 2004-086.21:19:07.355 (03/26/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-086 / 291_2116

Profile/Beam: 2404/33

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature

Hydrographer Recommendations

[None]

Office Notes

Chart 28 ft obstruction at the survey position.

1.33) Profile/Beam - 703/50 from h11293 / 1006_reson8101 / 2004-086 / 293_2111

Survey Summary

Survey Position: 047° 38' 49.603" N, 122° 13' 27.000" W

Least Depth: 7.93 m

Timestamp: 2004-086.21:12:33.464 (03/26/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-086 / 293_2111

Profile/Beam: 703/50

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature

Hydrographer Recommendations

[None]

Office Notes

Chart 26 ft submerged obstruction at the survey position.

1.34) Profile/Beam - 2974/238 from h11293 / 1016_reson8125 / 2004-078 / 179_1934**Survey Summary**

Survey Position: 047° 39' 28.444" N, 122° 13' 04.939" W

Least Depth: 21.69 m

Timestamp: 2004-078.19:40:00.218 (03/18/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-078 / 179_1934

Profile/Beam: 2974/238

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 71 ft wreck at the survey position.

1.35) Profile/Beam - 7668/20 from h11293 / 1016_reson8125 / 2004-086 / 382_1854**Survey Summary**

Survey Position: 047° 39' 53.947" N, 122° 15' 35.447" W

Least Depth: 14.54 m

Timestamp: 2004-086.19:03:39.974 (03/26/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-086 / 382_1854

Profile/Beam: 7668/20

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 47 ft wreck at the survey position.

1.36) Profile/Beam - 167/240 from h11293 / 1016_reson8125 / 2004-087 / 043_2159**Survey Summary**

Survey Position: 047° 40' 39.725" N, 122° 13' 21.103" W

Least Depth: 45.20 m

Timestamp: 2004-087.22:00:09.061 (03/27/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-087 / 043_2159

Profile/Beam: 167/240

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged buoy

Hydrographer Recommendations

[None]

Office Notes

Chart 148 ft obstruction (subm buoy) at the survey position.

1.37) Profile/Beam - 320/240 from h11293 / 1016_reson8125 / 2004-088 / 122_2143**Survey Summary**

Survey Position: 047° 39' 01.080" N, 122° 13' 40.044" W

Least Depth: 6.40 m

Timestamp: 2004-088.21:43:29.758 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 122_2143

Profile/Beam: 320/240

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Obstruction

Hydrographer Recommendations

[None]

Office Notes

Chart 21 ft obstruction at the survey position.

1.38) Profile/Beam - 627/88 from h11293 / 1021_reson8101 / 2004-086 / 173_1112**Survey Summary**

Survey Position: 047° 39' 21.738" N, 122° 13' 21.404" W

Least Depth: 20.32 m

Timestamp: 2004-086.19:15:52.014 (03/26/2004)

Survey Line: h11293 / 1021_reson8101 / 2004-086 / 173_1112

Profile/Beam: 627/88

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Plane wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 66 ft wreck (airplane wreck) at the survey position.

1.39) Profile/Beam - 1045/92 from h11293 / 1021_reson8101 / 2004-086 / 177_1231**Survey Summary**

Survey Position: 047° 39' 28.550" N, 122° 13' 00.770" W

Least Depth: 16.23 m

Timestamp: 2004-086.20:35:00.394 (03/26/2004)

Survey Line: h11293 / 1021_reson8101 / 2004-086 / 177_1231

Profile/Beam: 1045/92

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature

Hydrographer Recommendations

[None]

Office Notes

Chart 53 ft wreck at the survey position.

1.40) Profile/Beam - 2806/76 from h11293 / 1006_reson8101 / 2004-085 / 101_1822**Survey Summary**

Survey Position: 047° 39' 42.048" N, 122° 13' 35.469" W

Least Depth: 41.34 m

Timestamp: 2004-085.18:32:45.854 (03/25/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-085 / 101_1822

Profile/Beam: 2806/76

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 135 ft wreck at the survey position.

1.42) Profile/Beam - 318/11 from h11293 / 1021_reson8101 / 2004-085 / 246_1420**Survey Summary**

Survey Position: 047° 39' 16.342" N, 122° 12' 35.827" W

Least Depth: 5.61 m

Timestamp: 2004-085.22:21:03.027 (03/25/2004)

Survey Line: h11293 / 1021_reson8101 / 2004-085 / 246_1420

Profile/Beam: 318/11

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

18ft (18447_3)

3fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.6m (501_1, 50_1)

Office Notes

Chart as 18 ft obstruction (subm pile) at the survey position.

1.43) Profile/Beam - 2778/53 from h11293 / 1006_reson8101 / 2004-077 / 555_2310**Survey Summary**

Survey Position: 047° 40' 31.663" N, 122° 14' 55.517" W

Least Depth: 7.15 m

Timestamp: 2004-077.23:14:02.511 (03/17/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-077 / 555_2310

Profile/Beam: 2778/53

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

SWM extent sewer pipe outfall

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

23ft (18447_3)

3 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

7.1m (501_1, 50_1)

Office Notes

Chart sewer, position 2778/58, lat. 47/40/31.73N, long. 122/14/55.53W

1.45) Profile/Beam - 1341/44 from h11293 / 1006_reson8101 / 2004-088 / 235_2225**Survey Summary**

Survey Position: 047° 37' 40.103" N, 122° 16' 41.448" W

Least Depth: 5.74 m

Timestamp: 2004-088.22:26:30.064 (03/28/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-088 / 235_2225

Profile/Beam: 1341/44

Charts Affected: 18447_2, 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Office Notes

Chart 19 foot submerged wreck at survey position.

1.46) Profile/Beam - 4328/226 from h11293 / 1016_reson8125 / 2004-086 / 115_1827**Survey Summary**

Survey Position: 047° 40' 22.178" N, 122° 15' 01.511" W

Least Depth: 15.42 m

Timestamp: 2004-086.18:36:43.631 (03/26/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-086 / 115_1827

Profile/Beam: 4328/226

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

SWM ext sewer pipe, AWOIS #53096

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

50ft (18447_3)

8 1/4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

15.4m (501_1, 50_1)

Office Notes

Remove charted intake and chart sewer pipe at survey position. Retain charted (covered by 50 ft) See smooth sheet for the depiction of the area. Retain charted submerged piles.

**1.47) Profile/Beam - 8899/2 from h11293 / 1016_reson8125 / 2004-087 /
248_2229****Survey Summary**

Survey Position: 047° 39' 22.655" N, 122° 12' 33.359" W

Least Depth: 6.95 m

Timestamp: 2004-087.22:39:05.973 (03/27/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-087 / 248_2229

Profile/Beam: 8899/2

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Obstruction, pier ruins

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

23ft (18447_3)

3 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

6.9m (501_1, 50_1)

Office Notes

Remove charted visible wreck at lat. 47/39/24.1N, long. 122/12/33.9W. Remove charted submerged piles at the following positions. lat. 47/39/25.2N, long. 122/12/39.5W lat. 47/39/25.1N, long. 122/12/38.4W lat. 47/39/28.3N, long. 122/12/39.1W lat. 47/39/28.2N, long. 122/12/37.6W lat. 47/39/22.3N, long. 122/12/37.4W lat. 47/39/21.6N, long. 122/12/37.5W Retain submerged pile at lat. 47/39/20.3N, long. 122/12/41.3W. Chart foul with subm piles centered at lat. 47/39/24.7N, long 122/12/33.1W.

1.48) Profile/Beam - 366/8 from h11293 / 1016_reson8125 / 2004-088 / 100_1955**Survey Summary**

Survey Position: 047° 39' 25.012" N, 122° 12' 31.484" W

Least Depth: 3.29 m

Timestamp: 2004-088.19:56:19.113 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 100_1955

Profile/Beam: 366/8

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Obstruction

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

11ft (18447_3)

1 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.3m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles

1.49) Profile/Beam - 333/189 from h11293 / 1016_reson8125 / 2004-088 / 101_1957**Survey Summary**

Survey Position: 047° 39' 25.453" N, 122° 12' 32.665" W

Least Depth: 3.33 m

Timestamp: 2004-088.19:57:55.287 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 101_1957

Profile/Beam: 333/189

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck AWOIS #53098

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

11ft (18447_3)

1 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.3m (501_1, 50_1)

Office Notes

See AWOIS item 53098

1.50) Profile/Beam - 557/199 from h11293 / 1016_reson8125 / 2004-088 / 101_1957**Survey Summary**

Survey Position: 047° 39' 24.970" N, 122° 12' 34.029" W

Least Depth: 4.95 m

Timestamp: 2004-088.19:58:07.725 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 101_1957

Profile/Beam: 557/199

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

16ft (18447_3)

2 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

4.9m (501_1, 50_1)

Office Notes

Chart area as foul with submerged piles

1.51) Profile/Beam - 885/237 from h11293 / 1016_reson8125 / 2004-088 / 153_1932

Survey Summary

Survey Position: 047° 39' 17.903" N, 122° 12' 38.548" W

Least Depth: 7.37 m

Timestamp: 2004-088.19:33:30.880 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 153_1932

Profile/Beam: 885/237

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Sailboat

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

24ft (18447_3)

4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

7.3m (501_1, 50_1)

Office Notes

Chart as 24 ft submerged wreck

1.52) Profile/Beam - 204/17 from h11293 / 1016_reson8125 / 2004-088 / 194_1947**Survey Summary**

Survey Position: 047° 39' 25.392" N, 122° 12' 31.417" W

Least Depth: 2.43 m

Timestamp: 2004-088.19:47:51.115 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 194_1947

Profile/Beam: 204/17

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

8ft (18447_3)

1 ¼fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

2.4m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles

1.53) Profile/Beam - 826/2 from h11293 / 1016_reson8125 / 2004-088 / 194_1947**Survey Summary**

Survey Position: 047° 39' 24.337" N, 122° 12' 35.840" W

Least Depth: 5.41 m

Timestamp: 2004-088.19:48:25.676 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 194_1947

Profile/Beam: 826/2

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

17ft (18447_3)

3fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.4m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles and pier ruins.

1.54) Profile/Beam - 893/30 from h11293 / 1016_reson8125 / 2004-088 / 194_1947**Survey Summary**

Survey Position: 047° 39' 24.362" N, 122° 12' 36.354" W

Least Depth: 5.57 m

Timestamp: 2004-088.19:48:29.397 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 194_1947

Profile/Beam: 893/30

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile is swm extent of area foul with submerged piles and pier ruins.

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

18ft (18447_3)

3fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

5.5m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles and pier ruins.

1.55) Profile/Beam - 545/11 from h11293 / 1016_reson8125 / 2004-088 / 195_1949**Survey Summary**

Survey Position: 047° 39' 25.512" N, 122° 12' 35.251" W

Least Depth: 3.68 m

Timestamp: 2004-088.19:49:54.162 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 195_1949

Profile/Beam: 545/11

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

12ft (18447_3)

2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.7m (501_1, 50_1)

Office Notes

Chart area as foul with submerged piles

1.56) Profile/Beam - 562/27 from h11293 / 1016_reson8125 / 2004-088 / 195_1949**Survey Summary**

Survey Position: 047° 39' 25.485" N, 122° 12' 35.104" W

Least Depth: 3.60 m

Timestamp: 2004-088.19:49:55.115 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 195_1949

Profile/Beam: 562/27

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

12ft (18447_3)

2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.6m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles

1.57) Profile/Beam - 625/6 from h11293 / 1016_reson8125 / 2004-088 / 195_1949**Survey Summary**

Survey Position: 047° 39' 25.589" N, 122° 12' 34.652" W

Least Depth: 3.34 m

Timestamp: 2004-088.19:49:58.615 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 195_1949

Profile/Beam: 625/6

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

11ft (18447_3)

1 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.3m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles

1.58) Profile/Beam - 288/84 from h11293 / 1016_reson8125 / 2004-088 / 197_1954**Survey Summary**

Survey Position: 047° 39' 24.992" N, 122° 12' 33.023" W

Least Depth: 3.80 m

Timestamp: 2004-088.19:54:22.788 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 197_1954

Profile/Beam: 288/84

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

12ft (18447_3)

2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.8m (501_1, 50_1)

Office Notes

Chart area as foul with subm piles and a 11 ft submerged wreck at the survey position.

1.59) Profile/Beam - 2845/95 from h11293 / 1021_reson8101 / 2004-085 / 244_1348**Survey Summary**

Survey Position: 047° 39' 20.486" N, 122° 12' 38.664" W

Least Depth: 6.05 m

Timestamp: 2004-085.21:57:49.551 (03/25/2004)

Survey Line: h11293 / 1021_reson8101 / 2004-085 / 244_1348

Profile/Beam: 2845/95

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

20ft (18447_3)

3 1/4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

6.0m (501_1, 50_1)

Office Notes

Chart as 20 ft Wreck at the survey position.

1.61) Profile/Beam - 1376/88 from h11293 / 1006_reson8101 / 2004-087 / 165_1854**Survey Summary**

Survey Position: 047° 41' 41.399" N, 122° 16' 12.339" W

Least Depth: 3.00 m

Timestamp: 2004-087.18:56:31.892 (03/27/2004)

Survey Line: h11293 / 1006_reson8101 / 2004-087 / 165_1854

Profile/Beam: 1376/88

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Office Notes

Chart 10 ft obstruction,submerged pile, at the survey position.

1.62) Profile/Beam - 2464/1 from h11293 / 1016_reson8125 / 2004-085 / 354_2202**Survey Summary**

Survey Position: 047° 41' 24.934" N, 122° 15' 55.277" W

Least Depth: 3.73 m

Timestamp: 2004-085.22:05:44.695 (03/25/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-085 / 354_2202

Profile/Beam: 2464/1

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Dolphin visible above water.

Bathymetric Feature created to provide position.

Hydrographer Recommendations

[None]

Office Notes

Remove charted submerged dolphins and chart HW dol(12ft) at survey position.

1.63) Profile/Beam - 1202/5 from h11293 / 1016_reson8125 / 2004-085 / 929_2237

Survey Summary

Survey Position: 047° 41' 37.902" N, 122° 16' 10.474" W

Least Depth: 5.83 m

Timestamp: 2004-085.22:39:15.922 (03/25/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-085 / 929_2237

Profile/Beam: 1202/5

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

Chart submerged wreck (19ft) at survey position.

Office Notes

Concur, chart 19 ft submerged wreck at the survey position.

1.64) Profile/Beam - 180/240 from h11293 / 1016_reson8125 / 2004-088 / 193_1945

Survey Summary

Survey Position: 047° 39' 22.784" N, 122° 12' 36.512" W

Least Depth: 3.79 m

Timestamp: 2004-088.19:45:56.244 (03/28/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-088 / 193_1945

Profile/Beam: 180/240

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Chd(18477) submerged pile verified with SWMB

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

12ft (18447_3)

2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

3.8m (501_1, 50_1)

Office Notes

Chart 12 ft submerged pile within the foul with submerged piles. See smooth sheet for depiction of the area.

1.65) Profile/Beam - 264/238 from h11293 / 1016_reson8125 / 2004-087 / 277_2241**Survey Summary**

Survey Position: 047° 39' 14.391" N, 122° 12' 31.206" W

Least Depth: 4.59 m

Timestamp: 2004-087.22:41:36.443 (03/27/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-087 / 277_2241

Profile/Beam: 264/238

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Wreck

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

15ft (18447_3)

2 ½fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

4.6m (501_1, 50_1)

Office Notes

Chart submerged wreck (12ft) at survey position. Same as position 258/15, see page 20 of features listing.

1.66) Profile/Beam - 1091/6 from h11293 / 1016_reson8125 / 2004-085 / 347_1854**Survey Summary**

Survey Position: 047° 41' 21.885" N, 122° 15' 21.836" W

Least Depth: 11.92 m

Timestamp: 2004-085.18:56:44.909 (03/25/2004)

Survey Line: h11293 / 1016_reson8125 / 2004-085 / 347_1854

Profile/Beam: 1091/6

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged pile

Hydrographer Recommendations

[None]

Office Notes

See AWOIS item 53093

1.72) Contact/Point - 0001/1 from h11293 / 1021_reson8101 / 2004-085 / 244_1348**Survey Summary**

Survey Position: 047° 39' 20.505" N, 122° 12' 38.551" W

Least Depth: [None]

Timestamp: 2004-175.01:00:34 (06/23/2004)

Survey Line: h11293 / 1021_reson8101 / 2004-085 / 244_1348

Contact/Point: 0001/1

Charts Affected: 18447_3, 18441_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Back scatter image of wreck 2845/95

Hydrographer Recommendations

[None]

Office Notes

Chart submerged wreck at survey position.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: August 27, 2004

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-N904-RA-2004

HYDROGRAPHIC SHEET: H11293

LOCALITY: Lake Washington, WA

TIME PERIOD: March 17 - April 1, 2004

TIDE STATION USED: 944-7239 Sand Point, WA

Lat. 47° 41.3'N Lon. 122° 15.5'W

PLANE OF REFERENCE (Lake Washington Low Water of
Lake datum): 0.000 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: LW1.

Refer to attachments for zoning information.

Note 1: The provided time series data at Sand Point, WA (944-7239) are tabulated in metric units (meters), relative to Lake Washington Low Water of Lake datum (LWLWD) and on Greenwich Mean Time on the new 1983-2001 National Tidal Datum Epoch (NTDE). Retrieve verified water level data using the Station Datum option to retrieve water level data on Lake Washington Low Water of Lake datum (LWLWD).

X Thomas N. Mero 8/30/04

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



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Final tide zone node point locations for OPR-N904-RA-2004, Sheet H11293.

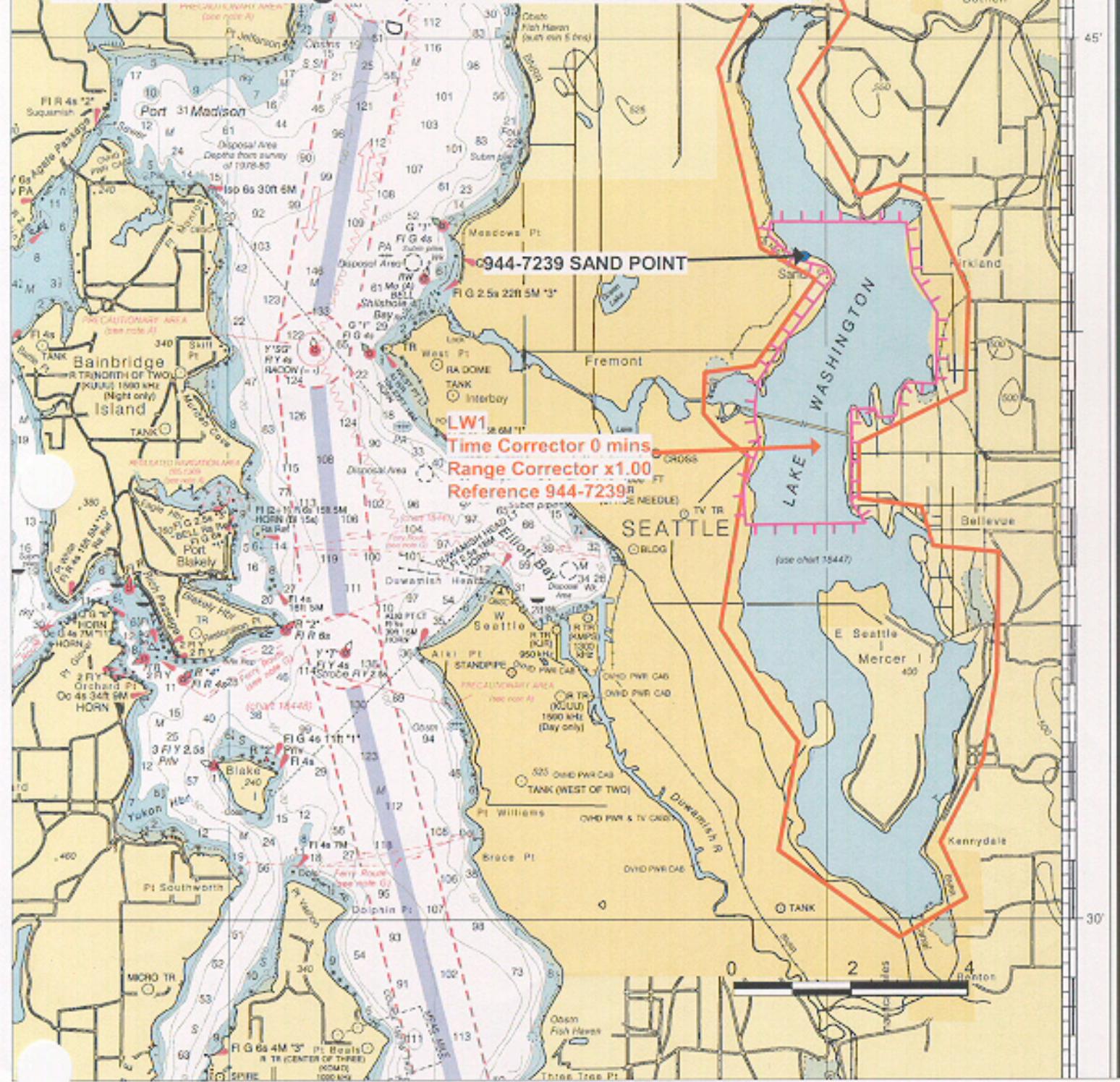
Format: Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction
Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone LW1	944-7239	0	1.00
-13608193.63	6035808.64		
-13612016.42	6035579.25		
-13613774.87	6032291.53		
-13611787.03	6023881.03		
-13609263.99	6022428.31		
-13612092.85	6018375.99		
-13614386.54	6018070.16		
-13614463	6016158.69		
-13613621.99	6015164.72		
-13612398.7	6014170.75		
-13613698.45	6006142.55		
-13611328.29	6002472.52		
-13610105	6000790.43		
-13611022.48	5995744.13		
-13605441.19	5991691.8		
-13602306.53	5993526.82		
-13603529.82	5996126.43		
-13601541.94	5999949.38		
-13600853.85	6004078.16		
-13600777.38	6009659.66		
-13603835.63	6009965.5		
-13604370.83	6011800.52		
-13607276.15	6012182.8		
-13607276.15	6014782.41		
-13602306.53	6017229.11		
-13602153.6	6021816.64		
-13604141.44	6026327.72		
-13605517.66	6026862.94		
-13607276.15	6026327.72		
-13610028.54	6031297.56		
-13607734.89	6034738.2		
-13608193.63	6035808.64		

Final Zoning for S N904-RA-2004

Lake Washington, WA - Sheet H11293

• supplemental information concerning aids to navigation



APPROVAL SHEET
H11293

Initial Approvals:

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

Bruce Olmstead

Bruce Olmstead
Cartographic Team
Pacific Hydrographic Branch

Date: 3/28/07

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.

DW Haines

Donald W. Haines
CDR, NOAA
Chief, Pacific Hydrographic Branch

Date: 24 APR 2007

MARINE CHART BRANCH

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-11193

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
 2. In "Remarks" column cross out words that do not apply.
 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.