FE358

Diagram No. 8002-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-5-2-90

Registery No. FE-358

LOCALITY

State Alaska

General Locality Taiya Inlet

Sublocality Vicinity of Skagway

1990

CHIEF OF PARTY
CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE September 17, 1991

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

FE358

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

FE-358

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 5-2-90

State: Alaska

General locality: Taiya Inlet

Locality: Vicinity of Skagway

Scale: 1:5000 Date of survey: Oct. 29 - Nov. 3, 1990

Instructions dated: September 17, 1990 Project No.: S-0926-RA

Vessel: NOAA Ship RAINIER, Launches (2123), (2124), (2125)

Chief of party: CAPT John C. Albright

Surveyed by: LT D. Cole, LT G. Glang, LTJG D. Simmons, LTJG H. Muench, LTJG P. Webber, ENS C. Ward

Soundings taken by echo sounder, hand lead, pole: DSF-6000N

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Verification by: B. Brown Automated plot by: PHS Xynetics Plotter

Evaluation by: R. Davies

Soundings in Meters ~~fathoms feet~~ at MLW MLLW: and Decimeters

REMARKS: Time in UTC. Revisions and marginal notes in black were generated during office processing. Some separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWOLS & SURF CHECK 11/18/91 MCR

K.W.W. 11/20/91

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215

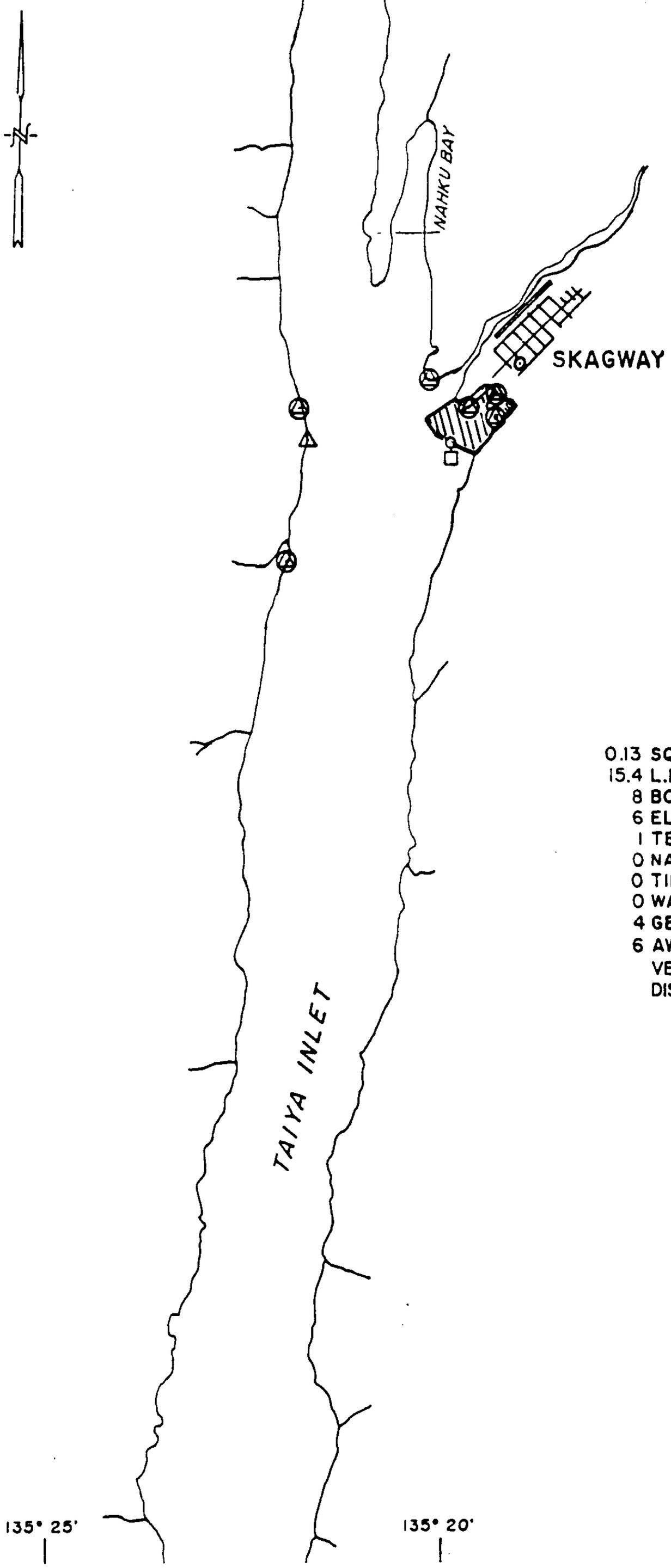
135° 25'

135° 20'

135° 15'

59° 30'

59° 30'



59° 25'

59° 25'

0.13 SQ. N.M. SOUNDINGS
15.4 L.N.M. SOUNDINGS
8 BOTTOM SAMPLES (GRAB)
6 ELECT. CONTROL STATIONS
1 TEMP., DEPTH, SOUND VEL. CAST
0 NANSEN CAST
0 TIDE GAGES
0 WATER SAMPLES ANALYZED
4 GEODETIC CONTROL STATIONS EST.
6 AWOIS ITEMS INVESTIGATED:
VERIFIED-51727, 51728
DISPROVED-51729, 51730, 51731, 51732

PROGRESS SKETCH

S-0926-RA
HYDROGRAPHIC SURVEY
SKAGWAY, ALASKA
OCT 29-NOV 3, 1990
NOAA SHIP RAINIER

JOHN C. ALBRIGHT, CAPT.
COMMANDING

SCALE OF CHART 17317

59° 20'

135° 25'

135° 20'

135° 15'

59° 20'

Descriptive Report to Accompany Field Examination FE-358

Field Number RA-5-2-90
Scale 1:5,000
October-November 1990

NOAA Ship RAINIER
Chief of Party: Captain John C. Albright

A. PROJECT ✓

This field examination was completed in Skagway, Alaska, as specified by Project Instructions S-O926-RA dated September 7, 1990.

This survey will provide contemporary hydrographic data for updating existing nautical charts covering the Skagway area. It responds to requests from the Southeastern Alaska Pilots' Association and the White Pass and Yukon Railway. The Pilots' Association is particularly concerned with dredging, pier repairs, and pier improvements which have been completed within the last year. In addition, a few months prior to the survey, the south end of the ore pier was destroyed by a cruise ship. The results of that event are included in this report.

B. AREA SURVEYED ✓

The survey is located in Taiya Inlet, Alaska, in the vicinity of Skagway harbor and its approaches. The survey is bounded on the north, east, and southeast sides by the shore. The survey limits extend southwest from the shore on the southeast side of the Skagway River at 59°26'21"N, 135°19'51"W to a point at 59°26'54"N, 135°20'19"W, then southeast to a point on the eastern shore at 59°26'37"N, 135°19'39"W (NAD27). Data acquisition was conducted from October 29, to November 3, 1990 (DN 302 to 307).

See EVAL Report, section I for survey limits in NAD 83.

C. SURVEY VESSELS ✓

All data were acquired by the three automated survey launches shown below:

Vessel	EDP No.	Operation
RA-3	2123	Hydrography
RA-4	2124	Hydrography Item Investigations
RA-5	2125	Hydrography Bottom Samples AML Cast

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

Data acquisition and processing were accomplished with Hewlett-Packard (HP) 340M workstations and the following HDAPS programs:

Program Name	Version	Date Installed
SURVEY, w/ RAINIER mods	4.51	10-07-90
w/o RAINIER mods	4.55	10-28-90
POSTSUR, w/ RAINIER mods	4.15	8-17-90
FILESYS	1.68	8-17-90
ABST, w/ RAINIER mods	3.05	6-01-90
PLOTALL, w/ RAINIER mods	1.74	8-17-90
w/o RAINIER mods	1.77	11-15-90
POINT	1.20	8-17-90
BACKUP	1.02	3-09-90
DIAGNOSTIC	2.15	3-09-90
INVERSE	1.21	8-17-90
INSTALL	1.20	3-09-90
CONPUTE	2.02	3-09-90
CONSTAT, w/ RAINIER mods	2.05	7-03-90
CONPLOT, w/ RAINIER mods	1.02	7-03-90
CONVERT	2.36	6-01-90
PRINTOUT	2.23	6-01-90
AUTOST (BIGAUTOST)	2.00	3-09-90
BASELINE	1.02	8-17-90
LOADNEW	1.00	8-17-90
QUICK	1.04	10-07-90
CARTO	1.00	10-28-90
PC-DAS SURVEY (MANUAL R/AZ)	3.55	3-28-90

Velocity corrections were determined using:

Program Name	Version	Version Date
Velocity	1.11	3-09-90

The HDAPS Survey, Postsur, and Plotall (vers. 1.74) programs are modified to allow for seven settlement and squat cases, and are corrected for a program error in the Pretidepre module.

The HDAPS Constat and Conplot programs are modified to allow up to 25-character descriptions to be entered in the "Remarks" field of a Contact Table. This is necessary for plotting legible bottom sample descriptions.

E. SONAR EQUIPMENT ✓

Not applicable.

F. SOUNDING EQUIPMENT ✓

All survey launches were equipped with the Raytheon DSF-6000N echo sounders shown below. The echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls on both high and low frequencies to obtain the best analog trace. Soundings were recorded in meters and tenths of meters. Six-meter bar checks were conducted and recorded daily, using both the LOW and the HIGH + LOW (HIGH DIGITIZED) functions. The echo sounders were operated in accordance with the Provisional Instructions "Raytheon

DSF-6000N Echo-Sounder Operating and Processing Instructions", dated July 5, 1983, and the Field Procedures Manual for Hydrographic Surveying (FPM).

Raytheon DSF-6000N Echo Sounders

Vessel	Serial No.	DN
2123	A117N	302
2124	B046N	303-306
2125	B048N	303-307

The echo sounders were continuously monitored during data acquisition. All sounding data were scanned at least two times, not only to ensure all significant peaks were inserted, but also to verify the digitized depths. While running over steep or irregular areas, the echo sounders sometimes failed to track properly. Running at minimum speeds usually alleviated this problem, but marginal analog traces could not always be avoided.

Diver obtained depths were determined with a 3D Instruments pneumatic depth gage S/N 8504192N.

G. CORRECTIONS TO ECHO SOUNDINGS

Corrections to echo soundings were determined for static draft, heave, velocity of sound through water, settlement and squat, and predicted tides. Sounding correctors apply to both narrow and wide beams of the DSF-6000N echo sounder. Supporting data and computations for all corrections to echo soundings, except heave, are included in the separates supplementing this report. *

Sound Velocity

Correctors for the velocity of sound through water were determined from the cast listed below:

Cast No.	Deepest Depth (m)	DN	Geographic Position
1	95.8	302	59°26'45"N, 135°19'51"W (NAD83)

Sound velocity correctors were acquired with an AML SVP, S/N 3042, which was calibrated at the Northwest Regional Calibration Center (NRCC) in Bellevue, WA, on March 27, 1990.

Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) #69. A printout of Velocity Table No. 1 used in the HDAPS Post Survey program is included with the separates accompanying the survey data. *

Static Draft

For all launches. the distance from the transducer face to the gunwhale was measured with a large metal square. Static draft measurements were then

* Filed with the hydrographic data

determined by dropping a leadline from the gunwhale to the water and subtracting this distance from the distance measured with the square. The measurements from the gunwhale to the waterline were conducted with the fuel tanks averaging 3/4 full and three people aboard. A transducer depth of 0.6 meter was determined for all launches on March 20, 1990. This transducer depth agrees with the launches' historical records.

Settlement and Squat

Settlement and squat correctors were determined for Vesno. 2124 in Shilshole Bay, WA, on February 23, 1990. Vesno. 2123 was tested on April 12, 1990, in Icy Strait, AK, and Vesno. 2125 was tested on May 20, 1990, in Bartlett Cove, AK.

All tests were conducted over a hard bottom in depths well exceeding seven times the vessels' drafts. Both sea and wind were calm. Observations were made through a Zeiss Ni2 leveling instrument (S/N 103453) to a rod held vertically on deck, directly over the transducer. Correctors were computed in accordance with Hydrographic Manual 4.9.4.2.

The following is a summary of all Offset Tables used on this survey and their applicable period:

Vessel No.	Offset Table No.	Period used on line (DN)
2123	3	302
2124	4	303-306
2125	5	303-307

Copies of all offset tables are included with the separates supplementing this report. *

Heave

Corrections for heave were applied while scanning echograms. The scanning technique used in comparing the analog trace with the digital record eliminated significant fluctuations resulting from sea action.

Pneumatic Depth Gage

The Pneumatic Depth gage was calibrated February 7, 1990, by the Pacific Operations Group (N/OMA1214). In addition, field systems checks were performed via comparison with diver depth gages each day the pneumatic depth gage was used. Calibration data and correctors applied to the pneumatic depth gage are included with the separates supplementing this report. *

Bar Check Lines

Bar check lines were calibrated by RAINIER personnel during January 1990 at PMC. Calibration forms are included with the separates supplementing this report. *

* Filed with the hydrographic data.

Tide Correctors ✓

Tidal zoning and correctors applicable to predicted tides for the Juneau, Alaska tide station (945-2210) were provided in the project instructions and are shown below:

Hydrographic Area	Time Corrector	Height Ratio
Skagway, Taiya Inlet, Alaska	+0 hr 03 min High +0 hr 02 min Low	x1.02

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report. *

The Skagway, Alaska Tide Station is a permanent installation maintained by Pacific Operations Group (POG) located 50 feet northeast of a conveyor belt on Skagway ore pier. The Skagway Tide Observer was contacted prior to beginning field operations to ensure the gage was operating properly. The tide station descriptions and tide records can be obtained through Pacific Operations Group (N/OMA 1214).

The leveling records and the Field Tide Note have been forwarded to N/OMA1212 in accordance with HSG 50 and FPM 4.3. Request for approved tides has been forwarded to N/OMA12. A copy of the Field Tide Note and the request for approved tides is included in Appendix V. *

H. CONTROL STATIONS ✓

Geographic positions for all control stations are based on the North American Datum of 1983 (NAD83) and the Geodetic Reference System 1980 Ellipsoid. A listing of the geodetic stations used to control this survey is included in this report.

Positions for all existing stations are from the NGS data base. All existing stations were recovered in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. New stations were positioned via traverse methods to meet Third-Order, Class I standards. Further information can be found in the Fall 1990 Horizontal Control Report for S-O926-RA. * Also see Evaluation Report, section 7.d.

I. HYDROGRAPHIC POSITION CONTROL

Soundings, bottom samples, and detached positions were located using the Motorola Mini-Ranger Falcon 484 microwave positioning system in multiple-range and manual range-azimuth modes.

Accuracy requirements stated in FPM 3.1.3.1 were generally met. When maximum residuals exceeded the specified limits, OIC's deselected the station(s) with the highest residual. On occasion, ECR's and maximum residuals persistently exceeded the specified limits. This data was generally rejected and re-run with different control. Manual range-azimuth soundings acquired as detached positions were rejected if the range was less than 100m.

* Filed with the hydrographic data.

Hydrography collected close inshore often occurred with one or more LOP's blocked, resulting in high ECR's and/or maximum residuals. In these cases, OIC's generally annotated the raw master printout (RMPO). If the data plotted on track and sounding intervals appeared correct, the data was retained. Some hydrography was acquired with only two LOP's because stations were blocked or deselected. In these cases, only ECR values were monitored to assure data acquisition requirements, as stated in FPM 3.1.3.1, were met.

A Wild T-2 theodolite was used for the manual range-azimuth observations, in addition to the Motorola Mini-Ranger Falcon 484 positioning system. Serial numbers for all equipment are annotated on the RMPO for each day of hydrography. Electronic equipment serial numbers are included with the survey data separates. ✶

All baseline calibrations were conducted in accordance with FPM 3.1.2.1 and 3.1.3.2. From September 28 to September 30 (DN 271-DN 273), calibrations were conducted over a measured range of 970.7m and 972.7m from Vesno. 2125 (in davits) at PMC, across Lake Union, to station MR CAL 1 at the Seattle Naval Reserve Center. Calibration data and the baseline description are included with the survey data separates. ✶

System checks for multiple LOP hydrography were conducted in accordance with FPM 3.1.3.3. Azimuth checks for range-azimuth hydrography were performed by sighting on an additional third-order control station. The check was considered satisfactory if the azimuth difference was less than 30 seconds of arc.

Final field sheets were plotted with correctors determined from the baseline calibrations.

J. SHORELINE See EVAL Rpt Section 2

Shoreline verification was conducted in accordance with FPM 7.1 and the project instructions. Shoreline support data for Skagway were provided in the form of revisions to a copy of the chart base of NOS chart 17317, 15th edition, September 3/83, 1:10,000 scale (NAD27), referred to as BP-132480, in the Project Instructions. The revisions were based on 1987 NOS photography.

A 1:5,000-scale enlargement of BP-132480 was used to transfer shoreline detail to the final field sheets. The NADCON program was used to apply the datum shift from NAD27 to NAD83.

Shoreline verification and disprovals are addressed in detail in Sections M and N of this report, and will not be discussed here.

K. CROSSLINES ✓

A total of 0.52 nautical miles of crosslines were run perpendicular to mainscheme lines, representing 3.4% of the mainscheme hydrography. Crossline soundings agree to within two meters with mainscheme soundings in all areas. The vessel acquiring crossline data collected did not always collect the corresponding mainscheme data.

✶ Filed with the hydrographic data

L. JUNCTIONS ✓

Not applicable. See Evac Report, section 5

M. COMPARISON WITH PRIOR SURVEYS See Evac Report, section 6

This survey was compared to the following prior survey:

H-6945 (1:2,000; 1943):

Because considerable shoreline changes have occurred on the northern half of the survey since H-6945 was conducted, comparisons were made between soundings and features located primarily on the southern half of the survey and H-6945.

Overall sounding agreement is excellent, where soundings agree to within two meters.

Two charted pilings, not listed as AWOIS Items, originate from the prior survey. Because the charted pilings were not seen, a diver investigation was conducted on DN 304, Vesno. 2124. The positions of the pilings were scaled-off from the chart, converted to NAD83 with program NADCON, and labeled as pile1 and pile2 in the survey records as target geographic positions for survey operations.

Pile1 charted at 59°26'54.00"N, 135°19'15.90"W (NAD27) was investigated by divers using a 50 meter search radius centered around the GP above. No pilings or obstructions were found on the gently sloping sand bottom. A detached position (D.P.) was not taken.

Pile2 charted at 59°26'54.50"N, 135°19'15.00"W (NAD27) was investigated by divers using a visual search radius of 25 meters. A metal/concrete piling was found lying on its side, covered with algae, and partially buried in the sand. A D.P. (Pos. No. 4004) was taken at the northern and shoalest end of the piling.

On DN 307, the evening before RAINIER left the working grounds, piling stumps were seen in the vicinity of the charted pilings mentioned above. A visual investigation of the area from shore revealed 10-12 piling stumps. The observation occurred after dark during a negative tide (negative tides of this magnitude were not encountered during preceding days of survey operations, or during daylight hours). The stumps protrude only slightly above the sand bottom. The stumps were located near the base of the jetty on its southside. No positions were obtained and the piling stumps are not considered a danger to navigation.

Recomendation: Delete the two pilings charted at 59°26'54.00"N, 135°19'15.90"W concur and 59°26'54.50"N, 135°19'15.00"W (NAD27). Chart a generalized note stating "submerged pile ruins" in this same location. Do not concur, Chart obstruction with least depth of 1.5 meters (¾ fathoms) at lat. 59/26/53.73 N, long. 135/19/21.88 W.

AWOIS Items

Four AWOIS items originating from H-6945 lie near the survey limits and are discussed below. Charted positions are based on NAD27. The geographic positions were converted to NAD83 using program NADCON. The converted positions were used to direct the survey operations to the target investigation area.

1. AWOIS #51729 is a tanker berth dolphin charted at 59°26'39.30"N, 135°19'33.80"N (NAD27) and was reported to have been destroyed. On DN 304 divers searched the area using a 50 meter search radius and found a piling standing approximately 8 feet high off the silt covered, steeply sloping bottom. A D.P. was taken at 59°26'38.29"N, 135°19'39.98"W NAD83 (Vesno. 2124, Pos. No. 4003). Because the bottom dropped off steeply, and several rock outcrops protruded above and shoaler than the piling, the piling was not considered a danger to navigation (see diver investigation form in the survey records).

Recommendation: Retain the pile charted at 59°26'39.30"N, 135°19'33.80"W (NAD27), and label as "submerged". Do not concur. Chart obstruction with a least depth of 3.4 meters (1 3/4 fathoms) at lat. 59/26/38.28 N, long. 135/19/39.98 W (NAD83)

2. AWOIS #51730 is a group of three tanker berth dolphins approximately 20 meters apart charted at 59°26'36.00"N, 135°19'36.75"W (NAD27). The dolphins were reported to have been destroyed. A diver investigation revealed no dolphins or obstructions within a 50 meter search radius around the stated position of the center dolphin. A detached position was not taken (DN 303, Vesno. 2124).

Recommendation: Delete the three dolphins charted at 59°26'36.00"N, 135°19'44.51"W (NAD27). concur

3. AWOIS #51731 is a group of three tanker berth dolphins charted at 59°26'32.85"N, 135°19'38.85"W (NAD27). The dolphins were reported to have been destroyed. A diver investigation involving a 50 meter search radius showed no submerged dolphins or obstructions on the steeply sloping bottom. A detached position was taken at 59°26'31.41"N, 135°19'44.51"W (NAD83) to mark the area searched (DN 303, Vesno. 2124, Pos. No. 4000).

Recommendation: Delete the three dolphins charted at 59°26'32.85"N, 135°19'38.85"W (NAD27). concur

4. AWOIS #51732 is a pile charted at 59°26'28.95"N, 135°19'44.85"W (NAD27). Divers conducted a 50 meter circle search radius around the given position and found no pile or obstructions on the steeply sloping bottom. A detached position was not taken.

Recommendation: Delete the pile charted at 59°26'28.95"N, 135°19'44.85"W (NAD27). concur

N. COMPARISON WITH THE CHART See Evaluation Report, section 7

This survey was compared to an inset on NOS Chart 17317, 15th Edition, September 3, 1983, 1:80,000 (NAD27). A 1:5,000-scale enlargement of cartographic revision print BP-132480 was provided for comparison of shoreline and charted detail. The revisions were based on 1987 NOS photography.

AWOIS Items

Two AWOIS Items, not addressed in Section M, lie within the survey limits and are discussed below. Charted positions are based on NAD27 and survey positions are based on NAD83.

1. AWOIS #51727 is a 25 foot reported depth in a dredged area that extends approximately 50 meters out from the ferry terminal pier along the full length of the pier. Hydrography was run over the entire area in the form of two lines along the pier (Pos. Nos. 6100-6103) and 5 meter splits (Pos. Nos. 6155-6180) on DN 304, Vesno. 2125. A shoal area with depths ranging from ~~5.6~~ 5.6m to 7.6m (19.0ft to 25ft) was found at the southwest end of the pier. The ~~5.6~~ 5.6m depth is located next to the pier at 59°26'56.28"N, 135°19'32.65"W (NAD83, Pos. No. 6100+6). (Excessed) See next paragraph for least depth in area.

In addition to the five meter splits, a dive investigation was conducted on a charted 2 1/2 fathom sounding 60 meters west of the pier. On DN 304 divers investigated the area using a visual search radius of 30 meters centered at a GP scaled off the chart (and converted to NAD83). Divers then followed the rising bottom toward the ferry pier. A least depth of 5.2m (~~2 3/4~~ 2 3/4fm) was found at 59°26'56.27"N, 135°19'33.19"W (NAD83) on a gravel and sand "dune" (Vesno. 2124, Pos. No. 4005).

Recommendation: The hydrographer recommends soundings from this survey be used to update the chart. Concur, delete note "25ft rep1980".

2. AWOIS #51728 is a notation that the small boat harbor is dredged to 15 feet (State of Alaska, 1979). In 1983, the Corps of Engineers found a 9.9 foot depth at 59°26'58.20"N, 135°19'06.20"W between two marina piers. A notation of "10 FT 1983" is planned to supersede the previous notation on the next edition of chart 17317. A diver investigation using a 30 meter search radius revealed a least depth of 2.0m (6.7ft). A detached position was taken at 59°26'56.77"N, 135°19'13.20"W, DN 306, Vesno. 2124, Pos. No. 4025.

Recommendation: The hydrographer recommends soundings from this survey be used to update the chart and the "15FT Rep 1979" be deleted. Concur

Dangers to Navigation ✓

Two dangers to navigation were reported by radio message and hard copy to the Seventeenth Coast Guard District and DMAHTC. Copies of the correspondence are appended to this report. Position numbers associated with each reported danger are included on the copy of the radio message.

Comparison of Soundings ✓

A comparison between the survey and the 1:5,000-scale enlargement of cartographic revision print BP-132480 shows excellent agreement except for the four discrepancies discussed below.

1. Ore Pier damage: During the summer of 1990, a cruise ship destroyed the south end of the ore pier. The pier was under construction during the time of this survey and is scheduled to be completed in the spring of 1991. The design for the newly constructed pier is different than the original pier. A copy of the engineering plans is included in the raw data. At the time of the survey, two

dolphins and one pile for the new section of the pier were in place. Detached positions were taken at each of the dolphins and at the pile (DN 304, Vesno. 2125, Pos. Nos. 6096-6098). The pile at position #6096 marks the southern-most extent of the planned pier. (lat. 59/26/57.36 N, long. 135/19/47.43 W) (NAD 83)

Recommendation: The hydrographer recommends that data from this survey, supplemented by the engineering diagrams, be used to upate the chart. See smooth sheet for depiction of this feature.

2. New cruise ship pier: As stated in the Project Instructions Section 1.1, a new cruise ship pier was constructed in Skagway harbor during the spring of 1990. Each end of the pier was positioned via horizontal control methods (EAST PIER, and WEST PIER). The dimensions of the pier were measured by hand and a sketch was drawn to a scale of 1:5,000 on the final field sheet and 1:1,000 on a rough track plot. The hand written measurements are included in survey records. These measurements compare well with the copy of engineering plans provided with the Project Instructions. (lat. 59/27/01 N, long 135/19/28 W.) NAD83 - New cruise ship pier.

Recommendation: The hydrographer recommends that data from this survey, supplemented by the engineering diagrams, be used to update the chart. See Smooth sheet for depiction of this feature.

3. Charted pilings: Four charted pilings located next to a pier at 59°26'58.2"N, 135°19'12.5"W were investigated by divers on DN 307, Vesno. 2127. A 20 meter visual search radius conducted along the length of the pier revealed no pilings. A DP was not taken.

Recommendation: Delete the four pilings charted in the vicinity of 59°26'58.2"N, 135°19'12.5"W. Concur

4. Uncharted piling: A single piling located just south of the railroad pier, was found to be uncharted. A detached position was taken at 59°26'41.77"N, 135°19'36.22"W on DN 307, Vesno. 2125, Pos. No. 6408.

Recommendation: The hydrographer recommends a piling symbol be added to the chart at 59°26'42.95"N, 135°19'29.63"W (NAD27). Concur
59/26/41.76 N, 135/19/36.22 W (NAD 83).

O. ADEQUACY OF SURVEY ✓

This survey is adequate to supersede the areas common to the prior survey listed in Section 6.10 of the Project Instructions. Concur

P. AIDS TO NAVIGATION See Evm Report, Section 7.d.

There are no floating aids to navigation within the limits of this survey.

There are two charted non-floating aids to navigation which lie in and near the limits of this survey. Skagway Breakwater Light 2 and Taiya Inlet Light were positioned to Third Order, Class I specifications (see Fall 1990 Horizontal Control Report for S-O926-RA). RAINIER's field positions were compared to published and charted positions. Comparisons are shown below:
Taiya Inlet Light is outside the limits of this smooth sheet.

Navigation Aid	Published (NAD27)*	Charted (NAD27)	Survey (NAD83)	Survey (NAD27)	
Skagway Breakwater Light 2; FL R 4s	59°26'54"N 135°19'12"W	59°26'56.8"N 135°19'14.8"W	59°26'55.7"N 135°19'21.5"W	59°26'56.8"N 135°19'14.9"W	
Taiya Inlet Light; FL W 2.5s	59°26'48"N 135°21'36"W	59°26'48.0"N 135°21'38.0"W	59°26'47.2"N 135°21'46.5"W	59°26'48.3"N 135°21'39.9"W	(outside survey limits)

*Source: U.S. Coast Guard Light List, Volume VI, 1990

The Light List characteristics given above were observed in the field and agree with charted and published characteristics. The lights adequately serve the apparent purpose for which they were established.

A comparison of the published, charted, and survey positions showed good agreement.

Two uncharted, privately maintained, non-floating aids were positioned to Third Order, Class I specifications and are not shown in the U.S. Coast Guard Light List, Volume VI, 1990. The lights' positions and characteristics are listed below:

Light	Characteristic	Survey Position (NAD83)
Ferry Light (PA)	F R	~~59°26'54.3~~"N 59/26/54.1 N ~~135°19'33.4~~"W 135/19/35.4 W (scaled positions)
West Pier	Fl R 4s	59°26'57.7"N 135°19'34.3"W

The Ferry Light is a fixed red light located on the narrow catwalk section extending southwest of the ferry terminal. The light does not mark the extreme southwest end of the pier. The position of the light was not determined on October 31, 1990 by RAINIER personnel. See Evnt Report section 7d.

The West Pier light is a flashing red, four second light marking the southwest end of the cruise ship pier. The position of the light was determined on October 30, 1990 by RAINIER personnel.

Recommendation: The hydrographer recommends the Ferry Light and West Pier light be added to the chart as privately maintained navigational aids with the characteristics listed above and Ferry Light have a note PA added to the description.

There are no bridges, overhead cables, or overhead pipelines within the limits of this survey.

There is a submarine cable area and a sewer pipe shown on the chart, but any associated crossing signs alongshore were not investigated. Retain as charted.

Although the Alaskan Marine Highway ferries do travel to Skagway, there is no delineated ferry route on the chart.

Q. STATISTICS ✓

Vessel:	2123	2124	2125	Total
# of Pos	67	62	425	554
NM Hydro	4.7	1.5	9.2	15.4
Days of Prod.	1	4	5	10

NM^2 Hydrography	0.13	Velocity Casts	1
Detached Positions	83	Tide Stations	1
Bottom Samples	8	Current/Magnetic Stations	0

R. MISCELLANEOUS ✓

No comparisons were made as to the adequacy of the tidal current predictions in the survey area.

No current measurements were made as no anomalous currents were observed within this survey's limits.

Bottom samples were not submitted to the Smithsonian Institution.

A small area along the ore pier, east of the dolphin at Pos. No. 6098, went unsurveyed due to the continuous presence of a construction barge. (lat. 59/26/58N, long. 135/19/44W. (NAD83)

Most of the charted inshore soundings originate from an unverified survey conducted by DAVIDSON in 1974 at a scale of 1:2,500 (survey BP92389-90 on the Chart Markup). The Project Instructions did not require a direct comparison to the DAVIDSON survey, nor was a copy of the survey provided for comparison.

One fix number, 6141, was duplicated on DN 304, Vesno. 2125.

There is no change to the section of the high water line on the northeast end of the small boat basin that was truncated on the final field sheet.

S. RECOMMENDATIONS ✓

None.

T. REFERRAL TO REPORTS ✓

The following supplemental reports contain additional information relevant to this survey:

Title	Date Sent to N/CG245
Fall 1990 Horizontal Control Report for S-O926-RA	December, 1990
Fall 1990 Coast Pilot Report for S-O926-RA	December, 1990

The Corrections to Echo Sounding data and Electronic Control data are included in the Separates to this report.

Respectfully Submitted,

for Heidi J. Muench
Lieutenant Junior Grade, NOAA

Approved and Forwarded,

John C. Albright
Captain, NOAA
Commanding Officer

CONTROL STATIONS

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY
101	F	059:26:55.417	135:19:20.989	8	250	0.0	0.0	1	10/29/90
[illegible]	F	059:27:08.173	135:20:11.020	7	250	0.0	0.0	2	10/29/90
[illegible]	F	059:26:54.551	135:21:46.950	6	250	0.0	0.0	3	10/29/90
[illegible]	F	059:26:02.150	135:21:58.353	6	250	0.0	0.0	4	10/29/90
105	F	059:26:59.959	135:19:40.714	10	250	0.0	0.0	5	10/31/90
106	F	059:27:04.803	135:19:21.445	5	250	0.0	0.0	5	11/02/90
107	V	059:26:55.657	135:19:21.423	8	250	0.0	0.0		11/02/90

CONTROL STATIONS

101 BREAKWATER 1959
102 SHARP 1894
103 STORE 1894
104 FRAME 1890
105 ORE 1990
106 EAST PIER 1990
107 ~~WEST PIER 1990~~ Renamed Skagway Breakwater Light 2, A90

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [X] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [X] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office)	STATE	LOCALITY	DATE
NOAA Ship RAINIER	ALASKA	SKAGWAY	12-17-90

The following objects HAVE [X] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0926-RA	N/A	FE-RA-5-2-90	NAD83

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
L.L. 23935	SKAGWAY BREAKWATER LIGHT 2	59 26	55.664	135 19	21.494		F-2-6-L 11-4-90	17317 17300
L.L. 23940	TAIYA INLET LIGHT (Off chart limits)	59 26	47.151	135 21	46.504		F-2-6-L 11-4-90	17317 17300
	L-103(91)							

RESP LE PERSONNEL

TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD	CAPT John C. Albright, NOAA	☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
		OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64,

OFFICE

I. OFFICE IDENTIFIED AND LOCATED OBJECTS

Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.

EXAMPLE: 75E(C)6042
8-12-75

FIELD

I. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F-2-6-L
8-12-75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont'd)

B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.

EXAMPLE: P-8-V
8-12-75
74L(C)2982

II. TRIANGULATION STATION RECOVERED

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.

EXAMPLE: Triang. Rec.
8-12-75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8-12-75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

SUPERSEDES NOAA FORM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U.S.GPO:1975-0-665-080/1155

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Rockville, MD 20852-3019

OFFICE OF NOAA CORPS OPERATIONS
Office of NOAA Corps Operations
NOAA Ship RAINIER S221
1801 Fairview Avenue East
Seattle, Washington 98102-3767

December 17, 1990

Commander
Seventeenth Coast Guard District
Post Office Box 3-5000
Juneau, Alaska 99802

Dear Sir:

Attached is a confirmation copy of the radio message sent to your office regarding the dangers to navigation which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of the chart showing the areas in which the dangers exist is also attached.

Sincerely,

Thomas W. Richards
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC

ZCZC
NC
NC DE OA
P 172200Z DEC 90
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
ACCT CM-VCAA
BT
UNCLAS
NOAA SHIP RAINIER HAS FOUND 2 DANGERS TO NAVIGATION IN SKAGWAY, ALASKA (PROJECT S-0926-RA) WITHIN THE LIMITS OF HYDROGRAPHIC SURVEY RA-5-2-90 (SKAGWAY HARBOR; ITEMS A-B) THE FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED: 17317 15TH ED SEPT 3/83 1:80,000 NAD27
17300 25TH ED APR 29/89 1:209,978 NAD83

DEPTHS ARE REDUCED TO MLLW BASED ON PREDICTED TIDES.

Unrevised, Retransmitted as reported

ITEM	DANGER	CHART	DEPTH	DATUM	LATITUDE	LONGITUDE	
A.	SHOAL	17317	2-3/4FM	NAD27	59-26-57.45N	135-19-26.60W	FIX 4005
	COV	17300		NAD83	59-26-56.27N	135-19-33.19W	
J	SHOAL	17317	1FM	NAD27	59-26-57.94N	135-19-06.61W	FIX 4025
	COV	17300		NAD83	59-26-56.77N	135-19-13.20W	

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE CHIEF, PACIFIC HYDROGRAPHIC SECTION AT (206) 526-6835. A LETTER WITH ATTACHED CHARTLET IS BEING MAILED TO CONFIRM THIS MESSAGE.
BT
NNNN

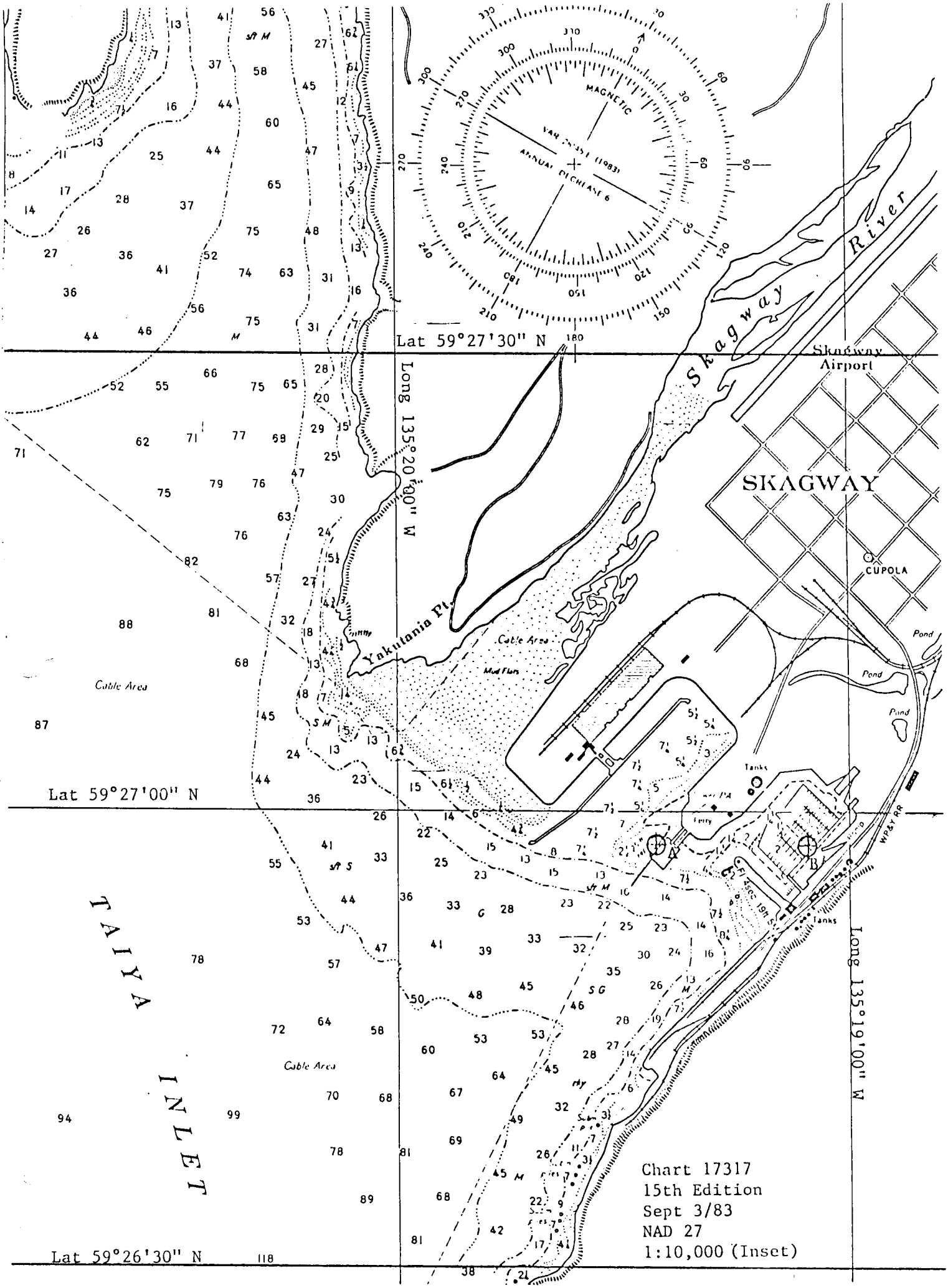


Chart 17317
15th Edition
Sept 3/83
NAD 27
1:10,000 (Inset)

APPROVAL SHEET

for

FE- 358

(RA-5-2-90)

Standard procedures were followed in accordance with the Hydrographic Manual (Fourth Edition), the Hydrographic Survey Guidelines, and the Field Procedures Manual in producing this survey. The data were examined daily during data acquisition and processing.

The field sheets and accompanying records have been examined by me and are approved. This survey is considered complete and adequate for charting purposes.

for John C. Albright
Captain, NOAA
Commanding Officer

ORIGINAL

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 5, 1991

MARINE CENTER: Pacific

OPR: S-0926-RA

HYDROGRAPHIC SHEET: FE-358

LOCALITY: Skagway Harbor, Taiya Inlet, AK.

TIME PERIOD: October 29 - November 3, 1990

TIDE STATION USED: 945 2400 Skagway, AK.

PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 4.87 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 15.6 ft.

RECOMMENDED ZONING:

Zone direct on Skagway, AK. (945 2400)

James C. Hubbard

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SURVEY NUMBER

FE-358

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 17317	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS Skagway B-1	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (TITLE)	X		X							1
SKAGWAY	X		X							2
SKAGWAY RIVER	X		X							3
TAIYA INLET	X		X							4
YAKUTANIA POINT	X		X							5
										6
										7
										8
										9
										10
										11
										12
										13
										14
				Approved:						15
										16
				Charles E. Harrington						17
				Chief Geographer - N/CG2x3						18
				MAY - 6 1991						19
										20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83) | U.S. DEPARTMENT OF COMMERCE | REGISTRY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

FE-358

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	9
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	3

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			554
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	37		37
VERIFICATION OF SOUNDINGS	141		141
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	63		
COMPARISON WITH PRIOR SURVEYS AND CHARTS		11	11
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		18	18
GEOGRAPHIC NAMES			
OTHER* Dig	7		7
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	248	29	277

Pre-processing Examination by M. Brown	*Beginning Date* 10/29/90	*Ending Date* 11/3/90
Verification of Field Data by B. Brown	*Time (Hours)* 241	*Ending Date* 7/12/91
Verification Check by J. Stringham	*Time (Hours)* 28	*Ending Date* 7/18/91
Evaluation and Analysis by R. Davies	*Time (Hours)* 29	*Ending Date* 8/27/91
Inspection by D. Hill	*Time (Hours)* 4	*Ending Date* 8-30-91

EVALUATION REPORT

FE-358

1. INTRODUCTION

Survey FE-358 is a field examination accomplished by the NOAA Ship RAINIER under Project Instructions S-O926-RA, dated September 7, 1990.

This survey occurred in Alaska and covers an area in the northern portion of Taiya Inlet. This survey includes the harbor area of Skagway and its approaches. The surveyed area extends from latitude 59/27/06N to latitude 59/26/31N and from the mainland offshore to longitude 135/20/21W. The survey area includes numerous large piers and a marina. The bottom consists of sand and mud. Depths range from zero to 113 meters.

Predicted tides for Juneau, Alaska, were used for the reduction of soundings during field processing. Approved hourly heights zoned direct from Skagway, Alaska, gage 945-2400, were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA, sound velocity and electronic control correctors are adequate. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey as required by the specifications contained in Hydrographic Survey Guideline No. 53, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report and the Fall 1990 Horizontal Control Report for S-O926-RA contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1990 field and published values based on NAD 83. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with the NGS program, NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections

Latitude: -1.176 seconds (-36.399 meters)
Longitude: 6.590 seconds (103.835 meters)

The year of establishment of control stations shown on the smooth sheet originates with an NGS station listing and the horizontal control data for the project.

The quality of several positions exceeds limits in terms of error circle radius and residual. A review of the data, however, indicates that none of these fixes are used to position a

danger to navigation. The features or soundings located by these fixes are consistent with surroundings. These fixes are considered acceptable.

There are no shoreline maps applicable to this survey. Shoreline depicted on the smooth sheet in brown originates with a cartographic revision print of chart 17317, 15th edition, dated September 3, 1983, BP-132480, and is to be used for orientation only.

The following shoreline changes are depicted in red on the smooth sheet and are supported with positional information. They are adequate to supersede the common photogrammetrically delineated shoreline. Refer to the smooth sheet for an accurate depiction.

Feature	Latitude(N)	Longitude(W)
HWL from	59/26/40.5	135/19/33.0
to	59/26/52.0	135/19/16.0
Pier from	59/26/58.0	135/19/34.5
to	59/27/04.5	135/19/21.5

3. HYDROGRAPHY

Hydrography is adequate to:

a. delineate the bottom configuration, determine least depths, and draw the standard depth curves;

b. reveal there are no significant discrepancies or anomalies requiring further investigation; and

c. show the survey was properly controlled and soundings are correctly plotted.

Soundings plotted along several piers and bulkheads in Skagway harbor have been offset to improve legibility.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual dated April 1990.

5. JUNCTIONS

There are no junction requirements in the Projection Instructions for survey FE-358. A comparison with charted depths reveals fair agreement in the common areas.

6. COMPARISON WITH PRIOR SURVEYS

H-6945 (1943) 1:2,000

Survey H-6945 covers the entire area of the present survey except for the new marina and boat basin to the northeast. These areas have been added since the prior survey was completed. Soundings in these areas agree within + or - 2 meters of the present survey.

of this survey, agree within four meters, the present survey being deeper. Some discrepancies between the two surveys were noted, however, and are discussed in section K of the hydrographer's report.

In accordance with Hydrographic Survey Guideline No. 39, the effects of the 1964 Prince William Sound earthquake were considered in the comparison of these surveys. No reasonable adjustment value for prior soundings could be determined.

The following AWOIS items originate with the prior survey: 51729, 51730, 51731 and 51732. The disposition of all the items is adequately discussed by the hydrographer in section K.

Survey FE-358 is adequate to supersede the prior survey within the common area.

7. COMPARISON WITH CHART

Chart 17317, 15th edition, dated September 3, 1983; scale 1:77,812, and inset of 1:10,000

a. Hydrography

Charted hydrography originates with survey H-6945 and miscellaneous sources.

Survey FE-358 is adequate to supersede charted hydrography within the common area.

b. AWOIS

The following AWOIS items originate with miscellaneous sources: 51727 and 51728. The disposition of all the items is adequately discussed by the hydrographer in section L.

c. Controlling Depths

The following controlling depth in the charted channel at the entrance to Skagway marina is recommended for charting.

Controlling Depth	Latitude(N)	Longitude(W)(NAD83)
5 meters(2 1/2 fm)	59/26/56.24	135/19/24.06

d. Aids to Navigation

There are no floating aids located within the area of this survey. There is one charted fixed aid and two uncharted fixed aids to navigation within the survey limits. Skagway Breakwater Light 2 and a privately maintained light, West Pier Light, were located and serve their intended purpose. Ferry Light was located but the position obtained was incorrect. During office processing, Ferry Light was determined to probably exist in the vicinity of latitude 59/26/54.1N, longitude 135/19/35.4W, and should be charted at this location with a note, "PA".

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

The hydrographer reported two dangers, shoals, to the USCG, N/CG221, PMC and DMAHTC. A copy of the report is attached. No additional dangers were discovered during office processing.

8. COMPLIANCE WITH INSTRUCTIONS

Survey FE-358 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good hydrographic survey. No additional field work is recommended.

Charles R Davies

C. R. Davies
Cartographer

APPROVAL SHEET
FE-358

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Date: 9-3-91

Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

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 Evaluation Report.

Date: 4 Sep 91

Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

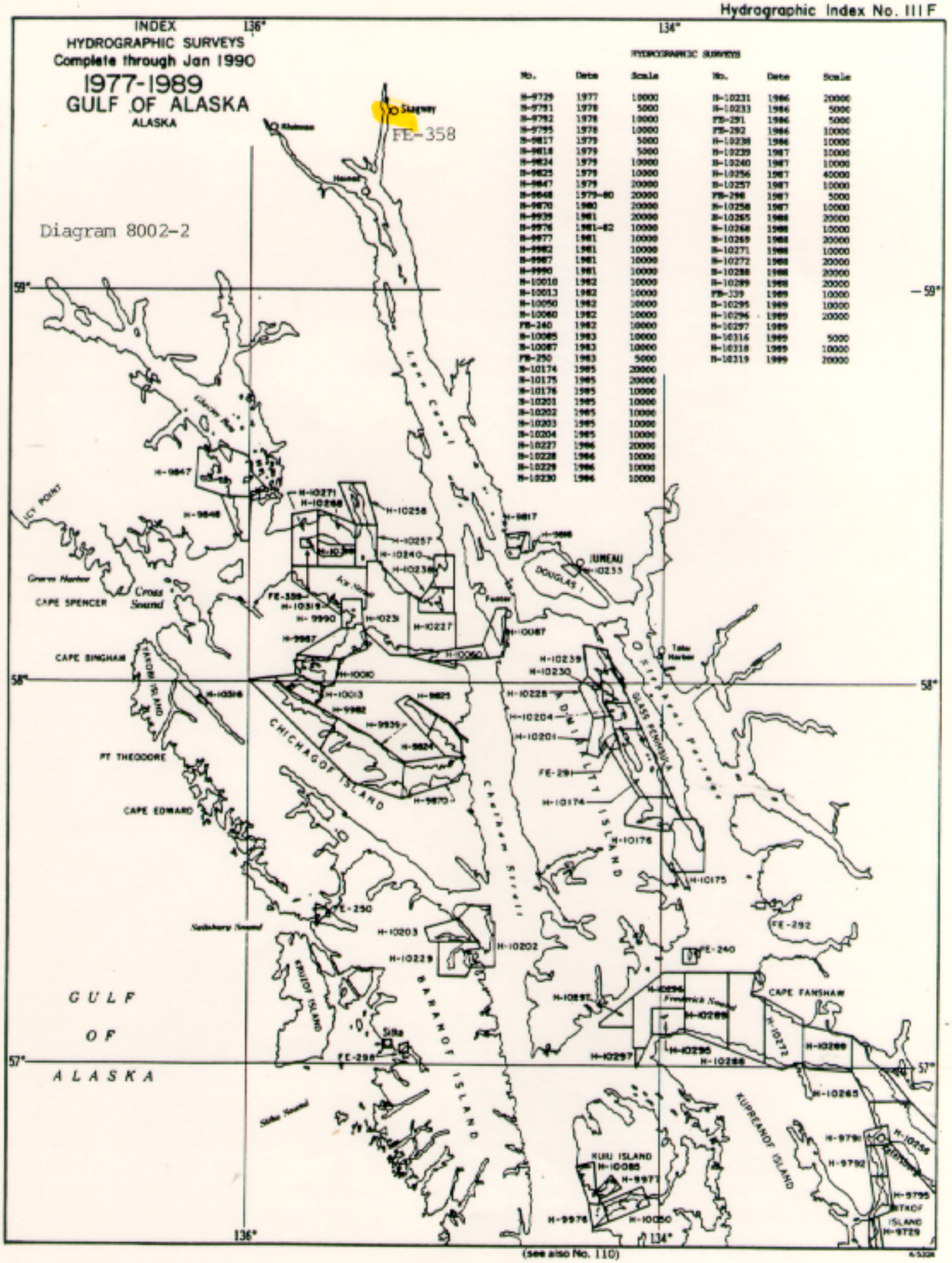
****

Final Approval

Approved:

Date: 10/25/91

J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey



HYDROGRAPHIC SURVEYS

No.	Date	Scale	No.	Date	Scale
H-9729	1977	10000	H-10231	1986	20000
H-9791	1978	5000	H-10233	1986	5000
H-9792	1978	10000	FS-291	1986	5000
H-9795	1978	10000	FS-292	1986	10000
H-9817	1979	5000	H-10238	1986	10000
H-9818	1979	5000	H-10239	1987	10000
H-9824	1979	10000	H-10240	1987	10000
H-9825	1979	10000	H-10256	1987	40000
H-9847	1979	20000	H-10257	1987	10000
H-9848	1979-80	20000	FS-298	1987	5000
H-9870	1980	20000	H-10258	1987	10000
H-9939	1981	20000	H-10265	1988	20000
H-9976	1981-82	10000	H-10268	1988	10000
H-9977	1981	10000	H-10269	1988	20000
H-9982	1981	10000	H-10271	1988	10000
H-9987	1981	10000	H-10272	1988	20000
H-9990	1981	10000	H-10288	1988	20000
H-10010	1982	10000	H-10289	1988	20000
H-10013	1982	10000	FS-239	1989	10000
H-10050	1982	10000	H-10295	1989	10000
H-10060	1982	10000	H-10296	1989	20000
FS-240	1982	10000	H-10297	1989	
H-10085	1983	10000	H-10316	1989	5000
H-10087	1983	10000	H-10318	1989	10000
FS-250	1983	5000	H-10319	1989	20000
H-10174	1985	20000			
H-10175	1985	20000			
H-10176	1985	10000			
H-10201	1985	10000			
H-10202	1985	10000			
H-10203	1985	10000			
H-10204	1985	10000			
H-10227	1986	20000			
H-10228	1986	10000			
H-10229	1986	10000			
H-10230	1986	10000			

SKAGWAY

FE-358

ALASKA, TAIYA INLET
VICINITY OF SKAGWAY

Date of Survey: Oct.- Nov. 1990
Scale: 1:5000
Soundings in METERS and DECIMETERS at MLLW
Datum: NAD 83

Shoreline in brown for orientation only:
Blueprint 132480

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 00" 135° 18' 45" 135° 18' 30"

59° 27' 00"

59° 26' 45"

59° 26' 30"

135° 19' 00"

NAD 27

59° 26' 45"

07/09/91 B.H.B.

102 SHARP, 1894

Southern end of pier under construction

SKAGWAY RIVER

TIDE STATION

105 ORE, 1990
(Field position)

106 EAST PIER, 1990 TP

107 SKAGWAY BREAKWATER LT 2, 1990
(Field position)

101 BREAKWATER, 1959

A WEST PIER, 1990
(Field position)

B FERRY LIGHT, 1990
(Field position)

TAIYA INLET

dol

pile

br M

bk P

5 Obstr (concrete pile)

foul (subm piles)

pile (2³)

foul

3⁴ Obstr (subm pile)

obstr (2³)
(concrete mooring)

FE-358

POSITION OVERLAY A

135° 20' 15" | 135° 20' 00" | 135° 19' 45" | 135° 19' 30" | 135° 19' 15" | 135° 19' 00" | 135° 18' 45" | 135° 18' 30"

59° 27' 00"

59° 26' 45"

59° 26' 30"

102

105

106

107

101

135° 19' 00"

NAD 27

59° 26' 45"

135° 20' 15" | 135° 20' 00" | 135° 19' 45" | 135° 19' 30" | 135° 19' 15" | 135° 19' 45" | 135° 18' 45" | 135° 18' 30"

FE-358

POSITION OVERLAY B

59° 27' 00"

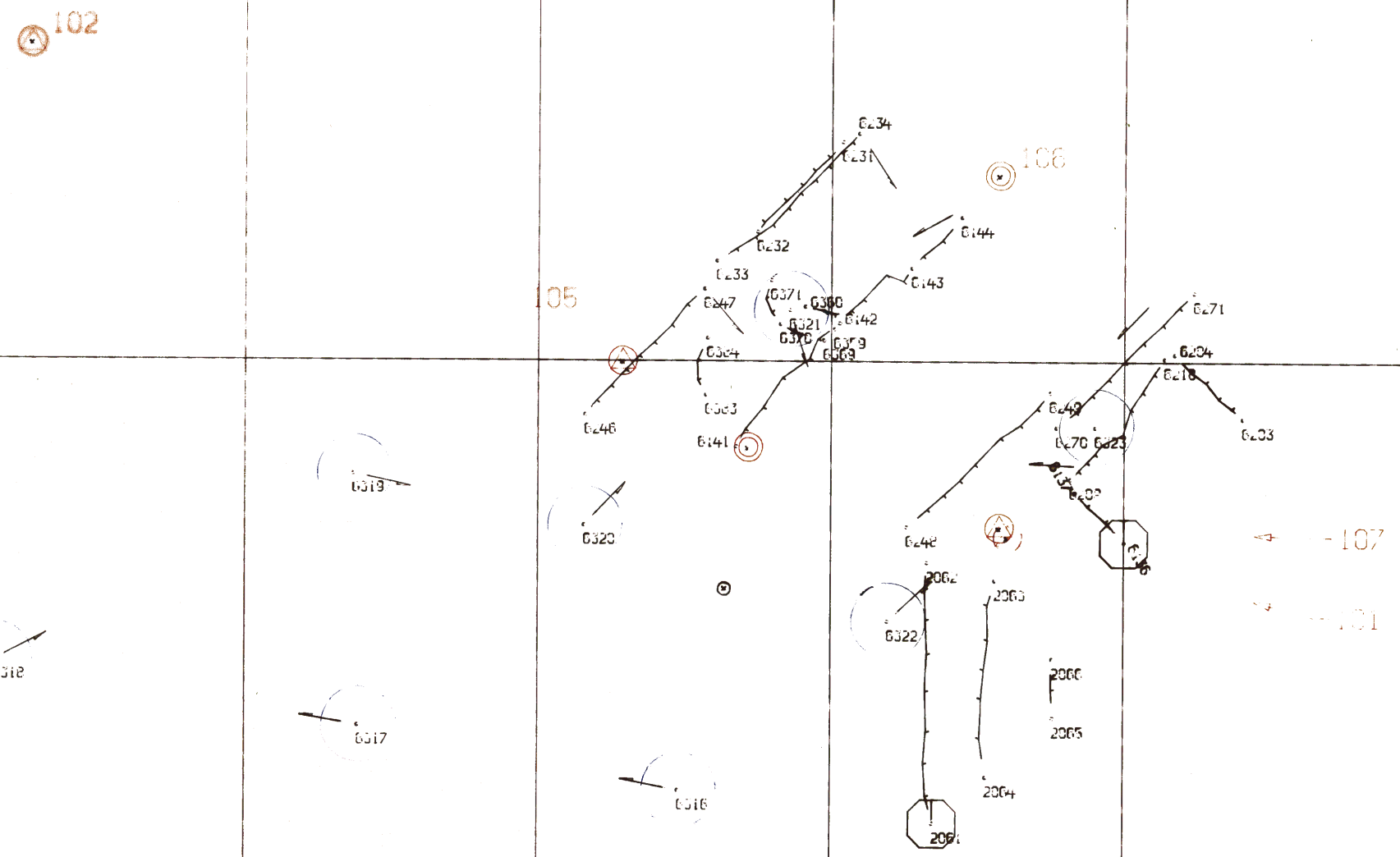
59° 26' 45"

135° 19' 00"

NAD 27 59° 26' 45"

59° 26' 30"

135° 20' 15" | 135° 20' 00" | 135° 19' 45" | 135° 19' 30" | 135° 19' 15" | 135° 19' 00" | 135° 18' 45" | 135° 18' 30"



135° 20' 15" | 135° 20' 00" | 135° 19' 45" | 135° 19' 30" | 135° 19' 15" | 135° 19' 45" | 135° 18' 45" | 135° 18' 30"

59° 27' 00"

FE-358

POSITION OVERLAY C

59° 26' 45"

135° 19' 00"

NAD 27 59° 26' 45"

59° 26' 30"

135° 20' 15" | 135° 20' 00" | 135° 19' 45" | 135° 19' 30" | 135° 19' 15" | 135° 19' 00" | 135° 18' 45" | 135° 18' 30"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 45" 135° 18' 45" 135° 18' 30"

102

106

105

FE-358

POSITION OVERLAY D

59° 27' 00"

107

101

135° 19' 00"

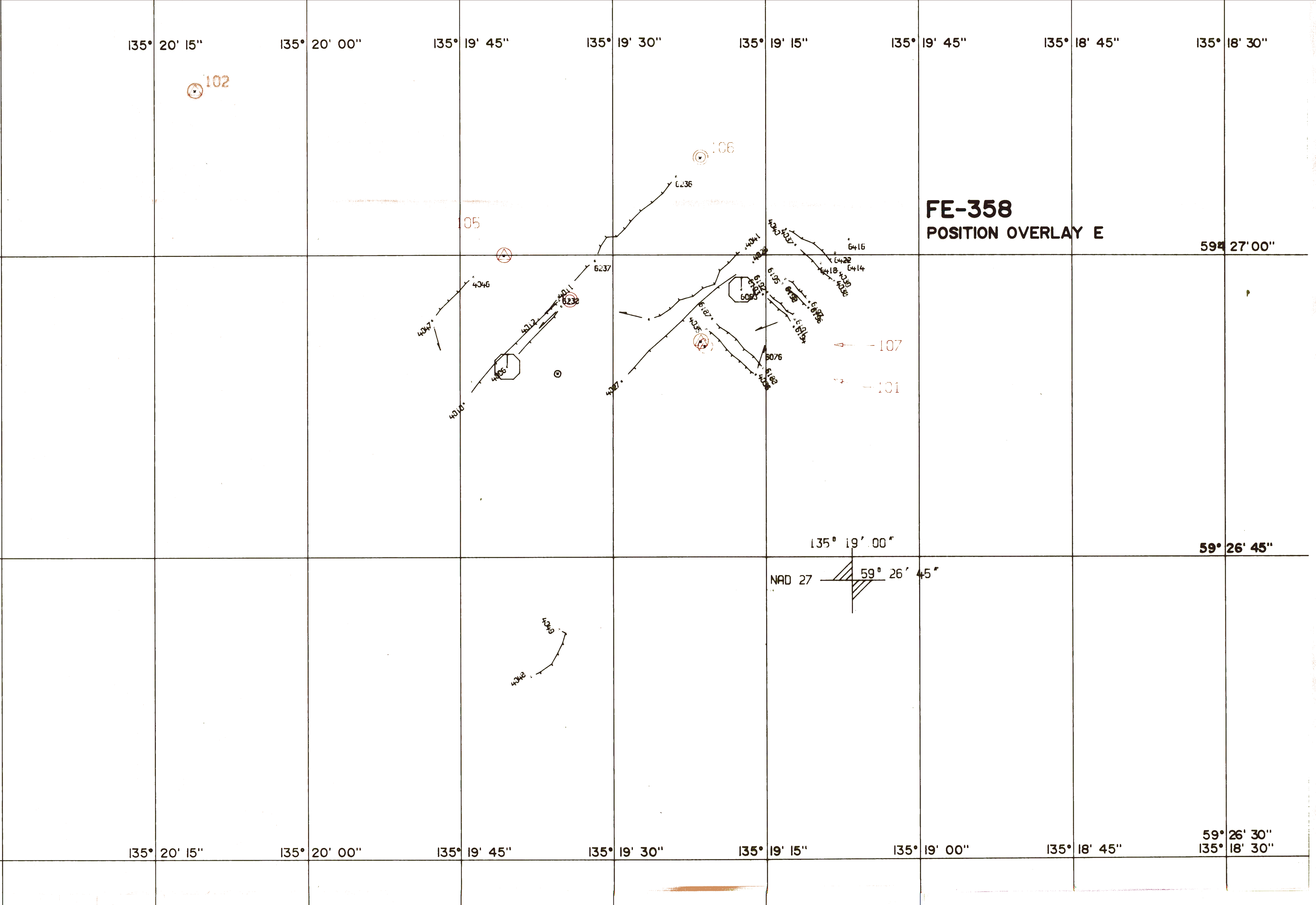
59° 26' 45"

NAD 27

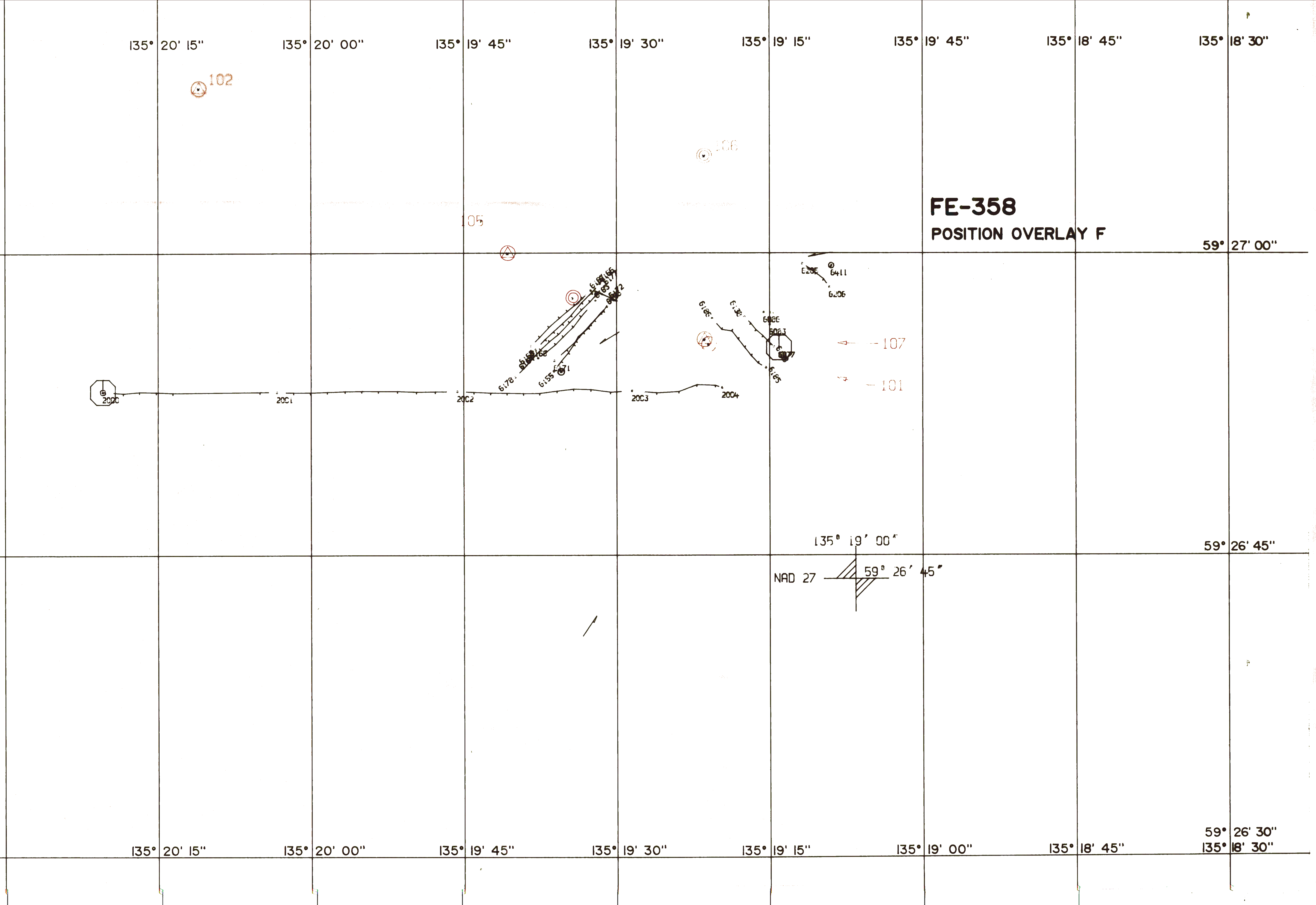
59° 26' 45"

59° 26' 30"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 00" 135° 18' 45" 135° 18' 30"



FE-358
POSITION OVERLAY E
135° 20' 15"
135° 20' 00"
135° 19' 45"
135° 19' 30"
135° 19' 15"
135° 19' 45"
135° 18' 45"
135° 18' 30"
59° 27' 00"
59° 26' 45"
59° 26' 30"
135° 19' 00"
NAD 27
135° 19' 00"
59° 26' 45"
102
105
106
107
101
6236
6237
4046
4047
4011
6232
4012
4006
4010
4007
4041
4038
4043
4037
6416
6422
6414
6418
6063
6195
6076
6183
4035
6187
4049
4048



FE-358
POSITION OVERLAY F
135° 20' 15"
135° 20' 00"
135° 19' 45"
135° 19' 30"
135° 19' 15"
135° 19' 45"
135° 18' 45"
135° 18' 30"
59° 27' 00"
59° 26' 45"
59° 26' 30"
135° 19' 00"
102
105
107
101
2000
2001
2002
2003
2004
6411
6206
NAD 27
135° 19' 00"
59° 26' 45"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 45" 135° 18' 45" 135° 18' 30"

102

TIDE STATION

105

106

107

101

FE-358

EXCESS LEVEL I

59° 27' 00"

59° 26' 45"

135° 19' 00"

NAD 27

59° 26' 45"

59° 26' 30"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 00" 135° 18' 45" 135° 18' 30"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 45" 135° 18' 45" 135° 18' 30"

102

TIDE STATION

105

106

107

101

FE-358

EXCESS LEVEL 2

59° 27' 00"

59° 26' 45"

135° 19' 00"

NAD 27

59° 26' 45"

59° 26' 30"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 00" 135° 18' 45" 135° 18' 30"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 45" 135° 18' 45" 135° 18' 30"

102

TIDE STATION

105

106

107

101

FE-358

EXCESS LEVEL 3

59° 27' 00"

59° 26' 45"

135° 19' 00"

NAD 27 59° 26' 45"

59° 26' 30"

135° 18' 30"

135° 20' 15" 135° 20' 00" 135° 19' 45" 135° 19' 30" 135° 19' 15" 135° 19' 00" 135° 18' 45"

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-358

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.

CHART	DATE	CARTOGRAPHER	REMARKS
17317	9/4/91	Charles R. Davies	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of soundings from Smooth sheet
17300	10/04/91	RUSS DAVIES	Full ~~Part Before~~ After Marine Center Approval Signed Via FULL APPLICATION
			Drawing No. OF SOUNDINGS FROM S.S. 1 SDG APPLIED
			20 FM AT 59°22'00"N, 35°20'00"W (INSET)
531	7-18-95	K. Elliott	[✓ Full] Part Before After Marine Center Approval Signed Via
	8-1-95	D. Harpine	Drawing No. 21 NO CORR (Due to Scale)
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED