

# 9075

Diag. Cht. No. 8553.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. FF-5-2-69 Office No. H-9075

### LOCALITY

State Alaska

General locality Cook Inlet

Locality Vicinity of Nikishka

1969

CHIEF OF PARTY

E. A. Taylor

LIBRARY & ARCHIVES

DATE 1-14-71

USCOMM-DC 87022-P66

# 9075



A. PROJECT

The hydrography on this survey was completed in accordance with General Project Instructions dated 4 February, 1969 and with Project Instructions OPR 469 dated 30 April, 1969. This project was designated as priority.

Not available  
See Review  
Paragraph 8

B. AREA SURVEYED

The area of this survey covers the approaches to the Nikishka Docks (Arness Terminal) on the North side of East Foreland, Cook Inlet, Alaska. The approximate boundaries of the survey are within the four corners as follows:

	<u>LAT.</u>	<u>LONG.</u>
1.	60° 44.7' N	151° 17.5' W ✓
2.	60° 45.4' N	151° 18.2' W ✓
3.	60° 45.4' N	151° 20.3' W ✓
4.	60° 44.37' N	151° 19.5' W ✓

The bottom is ~~generally flat~~ <sup>gently sloping</sup> with a variation between ~~three~~ <sup>MHW Line</sup> and ~~five~~ <sup>Nine-Ten</sup> fathoms deep.

Work began on July 17 and was completed on July 24. One hour of additional shoreline work was performed on July 30. The previous survey of this area is H-3210 in 1910 at a scale of 1:40,000. There are no contemporary surveys which junction with this survey.

C. SOUNDING VESSEL

All hydrography was completed using the following two launches: ✓

<u>LAUNCH</u>	<u>COLOR</u>	<u>POSITION NUMBER</u>
ML #1	Blue	0001 - 0388 <sup>94</sup>
ML #2	Violet	1001 - 1368

D. SOUNDING EQUIPMENT

The Raytheon DE 723 fathometer was used throughout the entire survey. ✓

#### D. SOUNDING EQUIPMENT (CONT'D)

All soundings are in fathoms and tenths. Bar checks were used to determine the draft correction to be applied. A value of +0.30 was used for the total fathometer and draft correction as determined from these bar checks. The initial was scanned on all fathograms and all corrections were applied to the TC/VI tape: ✓

ML # 1 used fathometer # <sup>5</sup>522

ML # 2 used fathometer # 140

#### E. SMOOTH SHEET

The smooth sheet will be prepared by EDAT, Pacific Marine Center, Seattle, Washington. Ship's personnel have prepared punched paper tapes for the electronic processing. ✓

#### F. CONTROL

All hydrography was completed using visual control. Fifteen banner signals were located by ground survey methods. See "Nikishka Traverse Report 1969 USC&GSS PATHFINDER" for details and computations. ✓

#### G. SHORELINE

No photo support or T-Sheets were supplied for this survey. The MHWL was located in relation to each visual signal on the beach and was plotted accordingly on PF 5-2-69 (A). Ten fixes were used to locate the existing dock facilities. These are plotted and drawn accordingly on PF 5-2-69 (A). <sup>Latest T-sheets</sup> <sup>Complete manuscripts (1968-69)</sup> ✓  
H-4075 (1969) Boat sheet Dock Facilities drawn in red ink on the smooth sheet while the shoreline is drawn as a red dashed line.

#### H. CROSSLINES

Crosslines accounted for 10% of the total hydrography completed. Agreement with the major system of sounding lines is good with one exception. A discrepancy exists at  $60^{\circ} 45' 15''$  N.,  $151^{\circ} 19' 35''$  W. Attempts have been made to resolve this discrepancy and it is thought to be the result of an error in position. It is suspected that course changes were made between fixes #372 and #377 in order to start and maintain the line against heavy tidal currents. As course change notations are not indicated in the sounding volume, the ability to resolve this discrepancy is doubtful. Due to the smoothness of the depth curves in this area and the fact that this discrepancy was not observed further south, it is believed that the section of crossline between fixes #372 and #374 is in error and should be rejected. ✓  
Crossing agreement considered adequate

### I. JUNCTIONS

*Agreement in overlap No contemporary junctional surveys exist.*  
Junctions between the limits of this survey and the continuation of survey H-3210 <sup>(1912)</sup> are poor. The six-fathom curve appears to have moved about 0.1 nautical mile away from shore. Depth curves near the shore show better agreement.

### J. COMPARISON WITH PRIOR SURVEY

*See Review Paragraph 6*  
Prior survey H-3210, 1910 at a scale of 1:40,000 was compared with the boat sheets of this survey. Several discrepancies were noted. It is believed these discrepancies were the result of bottom changes which were caused by the strong current and ice formation reactions on the mud bottom. Due to the age of the prior survey, comparison with this survey is considered of little value.

*P*  
Prior survey review item #25 OPR-469 mentions the new installation of a dock composed of grounded "Liberty Ships". These exist and are drawn on boat sheet 5-2-69 (A). Fixes used to determine the positions are located on pages 22 and 58 of sounding volume II Launch #1.

*H-9075 (1969)*

### K. COMPARISON WITH CHART

Comparison was made with chart 8553 Dec. 16, 1968. The wooden hull and engine of wreck lies above the MLLW line and is not shown on chart 8553. It is located at 60° 44.40' N, 151° 19.36' W. The wreck is approximately 50 feet long and bares about 3 feet above MHW. This is not considered a hazard to navigation.

### L. ADEQUACY OF SURVEY

This survey is complete and adequate to prepare an inset on chart 8553 for the Nikishka Docks.

### M. AIDS TO NAVIGATION

A fixed red light privately maintained exists on the Northwest tip of the grounded Liberty Ship dock COBB. The light is operated by an electric eye and is in operation all year. See form 567 included in this report.

No floating aids to navigation exist within the area of this survey.

## N. STATISTICS

	<u>ML #1</u>	<u>ML #2</u>	<u>TOTAL</u>
Visual Launch Hydrography	34.2	31.1	65.3 nm.
Launch Positions	<del>378</del> <sup>88</sup>	<del>343</del> <sup>61</sup>	<del>721</del> <sup>755</sup> - includes rejected position numbers
Detached Positions			12
Bottom Samples			0
Signals			15
Triangulation Stations Recovered			3
Triangulation Stations Set			1
Area Surveyed			2 sq. nm.

## O. MISCELLANEOUS

A brief search was made for the 350 foot steel pipe laying boom, mentioned in the Local Notice to Mariners, with a location of 60° 46.4' N, 151° 41.9' W. The boom was not found.

*Falls outside the limits of the smooth sheet*

## P. RECOMMENDATIONS

None

## Q. REFERENCES TO REPORTS

1. Seasons Report 1969 USC&GSS PATHFINDER
2. Fathometer Report 1969 USC&GSS PATHFINDER
3. Nikishka Traverse Report 1969 USC&GSS PATHFINDER
4. Memo, dated March 12, 1970, C33/W-61-CSS
5. Descriptive Report Knik Arm Shoal Survey H-9076
6. Memo, dated Sept. 12, 1969, C3312-173-CSS

Respectfully Submitted,

*Richard D. Olson*

Richard D. Olson  
LTJG USESSA

APPROVAL SHEET

H-9075 (1969)  
OPR 469, PF 5-2-69, Nikishka Bay

The field work on this survey has been inspected and the hydrographic sheets have been examined and approved. ✓

*E. A. Taylor*

E. A. Taylor, CAPT., USESSA  
Comdg., USC&GSS PATHFINDER



LOGGING EQUIPMENT

A Friden Flexowriter (BCD code) was used to produce all punch tapes and printouts. The dual indicator formats were used on all tapes. ✓

HYDRO SIGNALS\*

STATION	LATITUDE	LONGITUDE
001	60-44 - 27.076 ✓	151-18 - 36.578 ✓
002	60-44 - 25.224 ✓	151-18 - 54.480 ✓
003	60-44 - 23.061 ✓	151-19 - 12.287 ✓
004	60-44 - 21.770 ✓	151-19 - 30.694 ✓
005	60-44 - 19.954 ✓	151-19 - 49.045 ✓
006	60-44 - 18.235 ✓	151-20 - 07.357 ✓
007	60-44 - 16.542 ✓	151-20 - 25.707 ✓
008	60-44 - 14.854 ✓	151-20 - 43.719 ✓
009	60-44 - 13.051 ✓	151-21 - 01.234 ✓
010	60-44 - 11.205 ✓	151-21 - 19.785 ✓
011	60-44 - 30.750 ✓	151-18 - 14.633 ✓
012	60-44 - 33.284 ✓	151-17 - 59.529 ✓
013	60-44 - 36.849 ✓	151-17 - 42.371 ✓
014	60-44 - 40.955 ✓	151-17 - 25.899 ✓
015	60-44 - 35.995 ✓	151-18 - 34.145 ✓

\* All signals were computed in the Nikishka  
Traverse Report 1969

## ML # 2 TC/TI CORRECTIONS

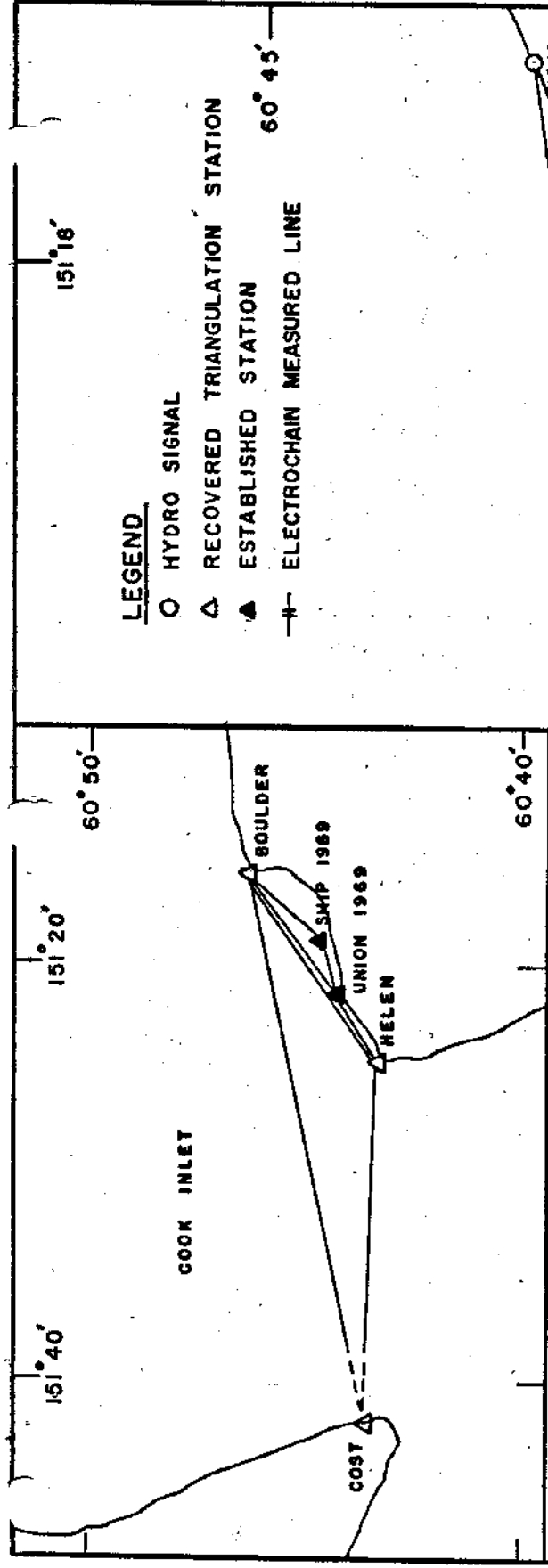
PF 5-2-69 (H-9075 (1969))

TIME	CORRECTIONS			VELOCITY TABLE	DAY
	DRAFT	INITIAL	TC/TI		
103700	+0.3	-0.1	0002	0001	198
104630	+0.3	0.0	0003	0001	198
110130	+0.3	+0.2	0005	0001	198
110700	+0.3	0.0	0003	0001	198
130715	+0.3	+0.2	0005	0001	198
131415	+0.3	+0.1	0004	0001	198
133700	+0.3	+0.2	0005	0001	198
133800	+0.3	-0.1	0002	0001	198
134400	+0.3	+0.1	0004	0001	198
140415	+0.3	0.0	0003	0001	198
140830	+0.3	+0.1	0004	0001	198
142930	+0.3	0.0	0003	0001	198
143030	+0.3	+0.1	0004	0001	198
145900	+0.3	0.0	0003	0001	198
150845	+0.3	+0.1	0004	0001	198
152030	+0.3	+0.2	0005	0001	198
152100	+0.3	0.0	0003	0001	198
154300	+0.3	+0.1	0004	0001	198
154345	+0.3	0.0	0003	0001	198
092100	+0.3	+0.1	0004	0001	204
104645	+0.3	0.0	0003	0001	204
130400	+0.3	+0.1	0004	0001	204
130530	+0.3	0.0	0003	0001	204
132100	+0.3	+0.1	0004	0001	204
133930	+0.3	0.0	0003	0001	204
140200	+0.3	+0.1	0004	0001	204
140630	+0.3	0.0	0003	0001	204
144245	+0.3	+0.1	0004	0001	204
155045	+0.3	+0.2	0005	0001	204
155315	+0.3	0.0	0003	0001	204
155500	+0.3	-0.1	0002	0001	204
091500	+0.3	0.0	0003	0001	205
104945	+0.3	+0.1	0004	0001	205
115100	+0.3	0.0	0003	0001	205

ML # 2 TC/TI CORRECTIONS

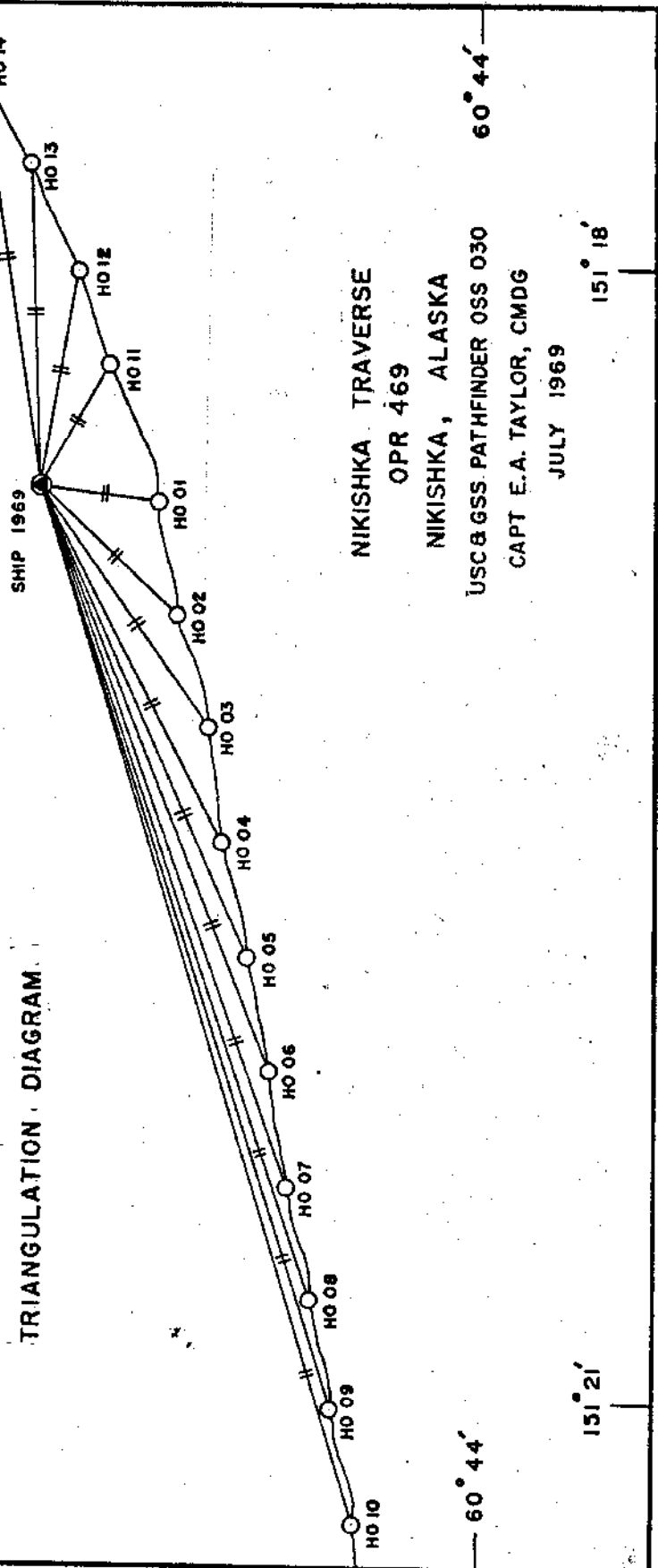
PF 5-2-69  
H-9075 (1969)

TIME	CORRECTIONS			VELOCITY TABLE	DAY
	DRAFT	INITIAL	TC/TI		
094100	+0.3	0.0	0003	0001	198
092720	+0.3	+0.1	0004	0001	204
093220	+0.3	+0.2	0005	0001	204
094340	+0.3	0.0	0003	0001	204
092020	+0.3	0.0	0003	0001	205



TRIANGULATION DIAGRAM

- LEGEND**
- HYDRO SIGNAL
  - △ RECOVERED TRIANGULATION STATION
  - ▲ ESTABLISHED STATION
  - ELECTROCHAIN MEASURED LINE



NIKISHKA TRAVERSE

OPR 469

NIKISHKA, ALASKA

USC&GSS PATHFINDER OSS 030

CAPT E.A. TAYLOR, CMDG

JULY 1969

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED } STRIKE OUT ONE  
~~TO BE CHARTED~~ }  
July 1969

I recommend that the following objects which have (have not) been inspected from seaward to determine their value as landmarks be charted on ~~(charts)~~ the charts indicated.

The positions given have been checked after listing by R. D. OLSON, ENS. USESSA

E. A. TAYLOR, CAPT USESSA  
Chief of Party.

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION				METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
				LATITUDE #	LONGITUDE #		DATUM						
	Arness Terminal Light	Fixed Red Navigation Light showing 360° around the horizon		60 44	36.01"	151 18	34.38"	Sextant cut and distance	July 1969	X			8553 inset

*Duplicate of L. 288 (1970)*

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating* aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

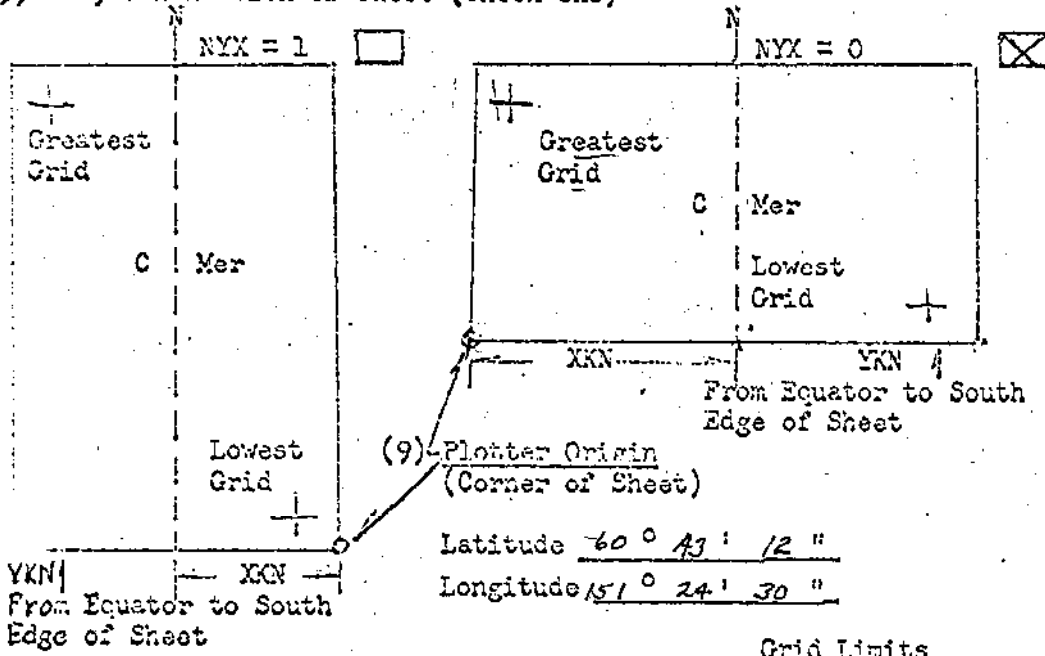
PARAMETERS FOR DIGITAL COMPUTING  
POLAROIDIC PROJECTION

Revised 10/2/67

5/16/69

- (1) Project No. OPR 469
- (2) H.No. 30049
- (3) Field No. "AL"
- (4) Requested by E.A. TAYLOR, Cmdr
- (5) Ship or Office PATHFINDER
- (6) Date Required ASAP
- (7) Visual  Ft.(0) or Fathoms (1)  (8) Electronic  (fill out form #13)
- (10) XKN (SP 5) Distance from CYER to East Edge (NYX = 1) or West Edge (NYX = 0). 36392 Meters
- (11) YKN (SP 241) Distance from Equator to South Edge of Sheet. 6,734,089.038 Meters
- (12) Central Meridian 151° 20' 30"
- (13) Survey Scale 1: 5,000
- (14) Size of Sheet (Check one) 36x60  42x60
- (15) NYX, Orientation of sheet (Check one)

(3) MYLAN  
KACH)



see back  
for

Δ STATIONS

Grid Limits	
(16) Greatest Latitude	<u>60° 45' 30"</u> (Projection Line)
(17) Lowest Latitude	<u>60° 43' 15"</u> Interval Page 4
(18) Difference	<u>0 2' 15"</u> (19) <u>0' 15"</u> Hydro Manual)
(20)	<u>9</u> YSN
(21) Greatest Longitude	<u>151° 24' 15"</u>
(22) Lowest Longitude	<u>151° 16' 30"</u> (24) <u>0' 15"</u>
(23) Difference	<u>0 7' 45"</u> (25) <u>31</u> YSN

30049.

- |      |                     |              |               |
|------|---------------------|--------------|---------------|
| 101) | HELEN               | 60-43-11.793 | 151-24-18.369 |
| 102) | EAST FORELAND, 1908 | 60-43-12.597 | 151-24-21.448 |
| 103) | EAST FORELAND LIGHT | 60-43-12.370 | 151-24-20.671 |



PF

REF ID: A11

H  
Field No. 30049  
Date 5/16/69

PARAMETER CARD II

Semi major axis of the earth		6,378,206.4										RDA	1	2	3	4	5	6	7	8	9	10
Y Constant - Distance from central meridian to origin of plotter SP 5		meters										RYN	1	2	3	4	5	6	7	8	9	10
Y Constant - Distance from equator to origin of plotter SP 241		meters										RYN	1	2	3	4	5	6	7	8	9	10
Central Meridian of Projection		15 1 2 0 3 0 1										OMR	1	2	3	4	5	6	7	8	9	10
Plotter Scale/Survey Scale		1:10498.6876										SCA	1	2	3	4	5	6	7	8	9	10
North/south axis of sheet - to correspond to (Y axis - 0)		0 - feet										NYX										
Feet/Fathom indicator		1 - fathom										POP										
H Identification No.												JN										
POP - 1												TR										

PARAMETER CARD III

Lowest Lat. Intersection	6	0	4	3	1	5	1	YST	1	2	3	4	5	6	7	8	9	10
Lowest Long. Intersection	1	5	1	6	1	1	2	YST	11	12	13	14	15	16	17	18	19	20
Difference between Grid					1	5	1	DIX	21	22	23	24	25	26	27	28	29	30
Interval (Long)								XSN										
Interval (Lat)								YSN										

Computed \_\_\_\_\_  
Punched \_\_\_\_\_  
Checked \_\_\_\_\_  
Date \_\_\_\_\_

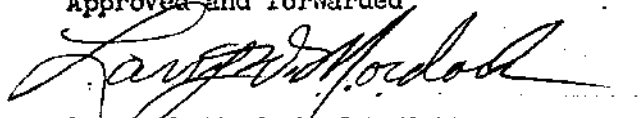
APPROVAL SHEET

The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's report.)

Examined and approved

  
William M. Martin  
Supervisory Carto. Tech.

Approved and forwarded

  
Larry W. Mordock, LT, NOAA  
Acting Chief, Processing Division, PMC

#### TIDE NOTE

Actual tides from the Bristol Bubbler Tide Gage established at Nikiski were originally used to reduce soundings on the boatsheets. Gross inconsistencies were evident using this original data with crosslines differing as much as 0.9 fm. and adjacent sounding lines in the regular system varying by 0.5 fm. in some cases. After reviewing all other sources of error, it was evident that data from the gage at Nikiski did not represent the actual tides which occurred at Nikishka. Using a systematic approach of matching crosslines with the main system of sounding lines, a correction to be applied to Nikiski tidal data was determined. This correction is + 20 minutes to high water and + 30 minutes to low water. Using these projected tides, agreement between the regular system of sounding lines and the crosslines is good, and the depth curves are presented in a logical manner.

Similar problem arising from tide data have occurred in Upper Cook Inlet due to the large tidal ranges. (See References No. 4, 5, and 6). To reduce the chances of this problem arising again, it is recommended that in the Upper Cook Inlet working grounds, tide gages be installed in the immediate vicinity of each survey sheet.

TIDE NOTE FOR HYDROGRAPHIC SHEET

December 16, 1970

~~XXXXXXXXXXXXXXXXXXXX~~: Pacific Marine Center

Plane of reference approved ~~to~~  
~~celestial observing records~~ for

HYDROGRAPHIC SHEET 9075

Locality: Cook Inlet, Alaska

Year  
~~Start Date~~ 1969

Plane of reference is mean lower low water

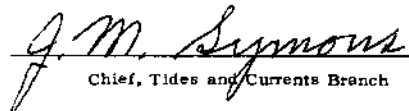
Tide Station Used (Form C&GS-681):

Nikiski

Height of Mean High Water above Plane of Reference is as follows:

20.0 feet

Remarks

  
Chief, Tides and Currents Branch

GEOGRAPHIC NAMES

Survey No. **H-9075**

Name on Survey											
	A	B	C	D	E	F	G	H	K		
Arness Terminal											1
Cook Inlet											2
Kenai Peninsula											3
Nikishka											4
Nikishka Bay											5
											6
											7
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											26
											27

PREPARED BY

*Frank W. Prescott*  
CARTOGRAPHIC TECHNICIAN

APPROVED BY

*A. Joseph Wright*  
CHIEF GEOGRAPHER

GEOGRAPHIC NAMES PENCILED ON H-9075

ARNESS TERMINAL ✓

COOK INLET ✓

KENAI PENINSULA ✓

NIKISHKA ✓

NIKISHKA BAY ✓

HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. H 9075

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET <i>4 PNO</i>		<i>1</i>	BOAT SHEETS		<i>2</i>	
DESCRIPTIVE REPORT		<i>1</i>	OVERLAYS		<i>3 preliminary</i> <i>1-2-70</i>	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			<i>1</i>			
CAHIERS	<i>1</i>		<i>1</i>			
VOLUMES	<i>3</i>					
BOXES						
T-SHEET PRINTS (List)						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				<i>762</i>
POSITIONS CHECKED		<i>762</i>	<i>3</i>	<i>762</i>
POSITIONS REVISED		<i>1</i>	<i>-</i>	
DEPTH SOUNDINGS REVISED		<i>32 ADDED</i> <i>32 CHANGED</i>	<i>38</i>	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		<i>3</i>	<i>-</i>	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		<i>0</i>	<i>-</i>	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS			<i>8</i>	
JUNCTIONS			<i>-</i>	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		<i>135</i>	<i>4</i>	
SPECIAL ADJUSTMENTS			<i>-</i>	
ALL OTHER WORK		<i>74</i>	<i>33</i>	
<b>TOTALS</b>		<i>209</i>	<i>45</i>	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>J.L. Davis</i>	<i>7-12-70</i>		<i>11-9-70</i>	
REVIEW BY <i>D.J. Rosenberg</i>	<i>9-26-73</i>		<i>10-3-73</i>	

*Sup. RACostas 5 hrs 4/30/74*

Reg. No. H-9075

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey the following shall be completed:

CARDS CORRECTED ----

DATE \_\_\_\_\_ TIME REQ'D \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:



INFORMATION FOR FUTURE PRE-SURVEY REVIEWS

The 0.5 fathom sounding brought forward to the present survey from the prior survey should be investigated and verified or disproved on any future surveys of this area.

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
604	1512	6	2	25 Years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9075

FIELD NO.: PE-5-2-69

Alaska, Cook Inlet, Vicinity of Nikishka

SURVEYED: July 17-24, 1969

SCALE: 1:5,000

PROJECT NO.: OPR-469

SOUNDINGS: DE-723 Depth Recorders

CONTROL: Sextant Angles on  
shore signals

Chief of Party..... E. A. Taylor  
Surveyed by..... M. Kawka  
..... G. B. Mills  
..... N. W. Wright  
..... K. A. Domoto  
..... J. C. Bishop, Jr.  
..... R. D. Olson  
..... R. M. Mathis  
..... G. Holloway  
Protracted by..... Gerber Digital Plotter-PMC  
Soundings Plotted by..... Gerber Digital Plotter-PMC  
Verified and inked by..... V. L. Davis  
Reviewed by..... D. J. Romesburg  
Date: 10-2-73  
Inspected by..... R. H. Carstens

1. Description of the Area

This survey covers approximately two square miles of Nikishka Bay. With the Arness Terminal Docks centered on the southern survey limits, hydrography extends offshore  $1\frac{1}{2}$  miles to depths of  $9\frac{1}{2}$ -10 fathoms and alongshore, northeast and southwest of the docks, for three-quarters of a mile.

The bottom is gently sloping but has minor irregularities throughout the area.

2. Control and Shoreline

The origin of the control is given in the Descriptive Report.

The reviewer inked the shoreline on the smooth sheet as a dashed red line and the Arness Terminal Docks as a solid red line. There was no

photo support for this project and the latest T-sheets available were incomplete manuscripts of 1960-61. The mean high water line was located on the boat sheet by the hydrographer in relation to the control stations. The Arness Terminal Docks were positioned with three point fixes. (See Volume II, pages 22 and 58 of Launch No 1).

### 3. Hydrography

- A. Depths at crossings are in good agreement.
- B. The usual depth curves are adequately delineated. Several dashed curves were added to emphasize bottom features.
- C. The development of the bottom configuration and least depths is considered adequate. Several boulders should have been investigated and least depths obtained by hand lead to confirm or lend credence to the fathometer readings. Several offlying rocks on prior surveys were not investigated adequately.

### 4. Condition of the Survey

The survey records, automated plotting, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual for Automated Hydrographic Surveys except as follows:

- A. An abstract of the bar check correctors was not prepared and entered in the Descriptive Report.
- B. No bottom characteristics were obtained on the present survey.
- C. Many soundings, overlooked during verification procedures, were removed from the excess overlay and added to open areas on the smooth sheet by the reviewer.
- D. No notes regarding the visible wreck that bares 3 feet at MHW in lat.  $60^{\circ}44.40'$ , long.  $151^{\circ}19.36'$  were found in the automated records or sounding volumes although information is noted in Section K of the Descriptive Report and on the boat sheet.
- E. Distortion points were not plotted on the smooth sheet.

### 5. Junctions

There are no contemporary junctional surveys in this area. Soundings at the limit of the present survey are in harmony with charted depths.

### 6. Comparison with Prior Surveys

H-3044 (1909) 1:100,000  
 H-3199 (1910) 1:100,000  
H-3210 (1910) 1:40,000

These prior surveys cover the area of the present survey. Because of the much smaller scale of these earlier surveys, a detailed comparison with the present survey was impossible. However, several differences were noted.

The Arness Terminal Docks did not exist on the prior surveys.

The detached shoal located on H-3210 (1910) in lat.  $60^{\circ}44.91'$ , long.  $151^{\circ}18.72'$  with a rock awash and least depths of  $\frac{1}{2}$  and  $\frac{3}{4}$  fathoms has shifted northwestward about 300 meters and deepened to least depths of 2.9 to 3.0 fathoms. A general shoaling of about 1 fathom has extended northwestward of this feature. Depths at the prior position of the feature have deepened to 3 to 4 fathoms. The size of the shoal has decreased from its earlier delineation by approximately one half. *Fathometer investigation on H-9648 (1976-77) was unable to find the rock. 3/7/79*

The probable cause for these bottom changes is erosion from ice and the strong tidal currents in this area. Tidal current observations on H-3044 (1909) show an average current velocity of 2.0 to 3.4 knots.

Scattered boulders, either dropped from ice or washed into Cook Inlet from the surrounding mountains are characteristic of this section of Cook Inlet. Since no specific investigation was made on the present survey to prove or disprove its existence, a rock covered three feet at MLLW was carried forward to the present survey from H-3210 (1910) in lat.  $60^{\circ}44.52'$ , long.  $151^{\circ}19.21'$ . The plotted position of the rock could not be verified because the Record Center apparently has misfiled the records.

Several bottom characteristics were also carried forward from H-3210 (1910) to supplement the present survey.

With the addition of the above items the present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 8553 (Latest print date 14th Ed. Jan. 20, 1973)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration, supplemented by partial application of depths from the verified smooth sheet and from the boat sheets of the present survey. Numerous soundings charted from the boat sheets are about 0.4 fathoms shoaler than smooth sheet soundings.

Pre-survey review item #25, the installation of docks in Nikishka Bay, was surveyed and positions determined by hydrographic methods. The docks are depicted on the smooth sheet of the present survey in red ink.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

Arness Terminal Light (Privately Maintained) on the present survey in lat.  $60^{\circ}44.60'$ , long.  $151^{\circ}18.57'$  agrees with its charted position and adequately serves the purpose intended.


8. Compliance with Instructions


No record of General Project Instructions for OPR-469 dated February 4, 1969 (noted in the Descriptive Report) could be found by the Operations and Requirements Branch. Project Instructions dated April 30, 1969 were available and the survey adequately complies with these.

9. Additional Field Work

This is an adequate basic survey and no additional field work is required. However, verification of the 0.5 fathom sounding in lat.  $60^{\circ}44.52'$ , long.  $151^{\circ}19.21'$  should be accomplished when work is resumed in this area.

Examined and Approved:

  
\_\_\_\_\_  
Chief  
Marine Chart Division

  
\_\_\_\_\_  
Associate Director  
Office of Marine Surveys  
and Maps

PE 5-2-69

OPR 469 AREA Nishka

H-9075

VESSEL ALL

DAY ALL

POSITION ALL TO

TYPE OF TAP Tide Tape

094600 00 1015 0000 198 0 094100 000000

095600 00 1014

100600 00 1013

101600 00 1012

102600 00 1011

103500 00 1010

104500 00 1009

105400 00 1008

110300 00 1007

111200 00 1006

112100 00 1005

113200 00 1004

114300 00 1003

115500 00 1002

120800 00 1001

122000 00 1000

123600 00 0001

125700 00 0002

133000 00 0003

135000 00 0002

140300 00 0001

141300 00 0000

142200 00 1001

142900 00 1002

143700 00 1003

144300 00 1004

145000 00 1005

145700 00 1006

150300 00 1007

151000 00 1008

151700 00 1009

152300 00 1010

153000 00 1011

153900 00 1012

154800 00 1013

155700 00 1014

160600 00 1015

161500 00 1016

162400 00 1017

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163800 00 1019

164500 00 1020

165200 00 1021

165900 00 1022

170600 00 1023

171300 00 1024

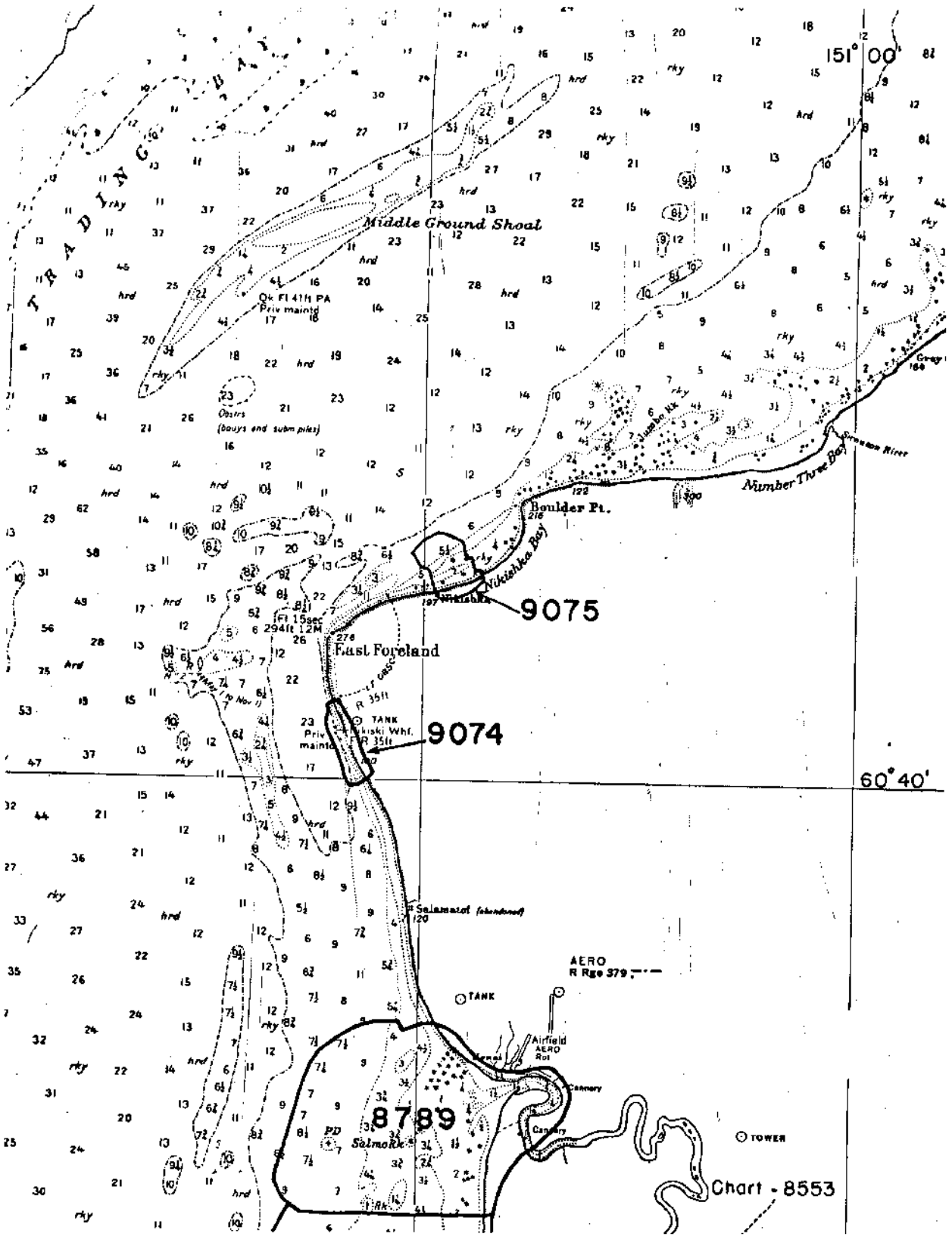
170101

172000 00 1025 ✓  
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100900 00 1022  
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141500 00 1020  
143200 00 1019  
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150500 00 1017  
152100 00 1016  
153900 00 1015  
155900 00 1014  
162200 00 1013 ✓  
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093100 00 1014  
094100 00 1015  
095000 00 1016  
100000 00 1017  
101300 00 1018  
102800 00 1019  
104100 00 1020  
105500 00 1021  
110900 00 1022  
112500 00 1023  
114000 00 1024  
120100 00 1025  
123600 00 1026  
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141000 00 1026  
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160200 00 1020  
161800 00 1019  
163500 00 1018  
165000 00 1017  
170600 00 1016  
172400 00 1015  
174300 00 1014  
174800 00 1013 ✓

1970-1971 MONTHLY STATEMENT OF INCOME

Tides and Currents Branch

12/15/70



Middle Ground Shoal

East Foreland

Salmoak

9075

9074

8789

151° 00'

60° 40'

Chart - 8553



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO.

H-9075

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
8553	3-18-71	Roger J. P...	<del>Part</del> After Verification <del>Signed</del> Via Drawing No. <u>APP'D TO NIKISHKA INSET ONLY</u>
8553	10-4-71	J. Graham	<del>Part</del> After Verification <del>Signed</del> Via Drawing No. <u>17 Exam for critical corr only</u> <u>How NIKISHKA INSET to base chart No</u> <del>Full</del> After Verification Review Inspection Signed Via
8553	3/10/77	J. Stumbel	Drawing No. <u>23</u>  Full Part Before After Verification Review Inspection Signed Via Drawing No.  Full Part Before After Verification Review Inspection Signed Via Drawing No.  Full Part Before After Verification Review Inspection Signed Via Drawing No.  Full Part Before After Verification Review Inspection Signed Via Drawing No.  Full Part Before After Verification Review Inspection Signed Via Drawing No.  Full Part Before After Verification Review Inspection Signed Via Drawing No.  Full Part Before After Verification Review Inspection Signed Via Drawing No.  Full Part Before After Verification Review Inspection Signed Via Drawing No.