

8422

Diag. Cht. No. 5902-2.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. WCFP-1258 Office No. H-8422

LOCALITY

State Oregon - Washington

General locality Columbia River Estuary

Locality Hammond to Astoria

1958

CHIEF OF PARTY

John O. Boyer

LIBRARY & ARCHIVES

DATE

APR 21 1958

USCOMM-DC 5087

8422

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8422

Field No. WCFP-1258

State Oregon - Washington

General locality Columbia River Estuary

Locality Hammond to Astoria

Scale 1 : 10,000 Date of survey May - July 1958

Instructions dated 14 November 1957

Vessel West Coast Field Party

Chief of party LCDR John O. Boyer

Surveyed by LTJG B. L. Gabrielsen

Soundings taken by fathometer, graphic recorder, ~~hand lead, wire~~

Fathograms scaled by Party Personnel

Fathograms checked by Party Personnel

Protracted by LTJG B. L. Gabrielsen, ENS. R. E. Moses

Soundings penciled by ENS. R. E. Moses

Soundings in ~~fathoms~~ feet at ~~M/LW~~ MLLW

REMARKS:

.....
.....
.....
.....
.....

BO 2158

123°40'

46°20'

WCFP 1158

H-8421

WCFP 1358

H-8423

BO 1258

H-8419

BO 1358

H-8420

WCFP 1258

H-8422

H-8418

BO 1158

46°10'

124°00'

H-8417

BO 2258

SHEET LAYOUT
 PROJECT CS 404
 SCALE OF CHARTS 5902-6002
 USC & GSS BOWIE
 WEST COAST FIELD PARTY

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SURVEY
FIELD NO. WCFP-1258 - REGISTRY NO. H-8422

PROJECT CS-404
COLUMBIA RIVER ESTUARY
HAMMOND TO ASTORIA

DATE OF SURVEY : MAY - JULY 1958
SCALE OF SURVEY : 1:10,000

WEST COAST FIELD PARTY - LCDR JOHN O. BOYER, OFFICER IN CHARGE
SURVEYED BY: LTJG BERNARD L. GABRIELSEN

A. PROJECT:

Instructions for project CS-404 are dated 14 November 1957 and signed by the Director.

B. SURVEY LIMITS AND DATES:

This survey extends from the Oregon to Washington shores and from Hammond to Astoria. It joins contemporary surveys H-8420 to the east and H-8421 to the west. See Boat Sheet Layout attached.

Hydrography began 9 May and ended 25 July 1958.

C. VESSEL AND EQUIPMENT:

All hydrography was done with launch CS-92, a 30-foot motor-sailor, except for a few zero soundings obtained by walking shoals.

808 type fathometer No. 152SPX equipped with reeds calibrated for 800 fms/sec was used. The transceiver units were mounted in the keel about midship where there was no appreciable effect from squat.

The launch based at the mooring basin near Hammond.

D. TIDE AND CURRENT STATIONS:

Portable tide gages were maintained at Chinook, Point Adams, and Port Docks (Astoria). The area was divided into four tide zones which are clearly marked on the boat sheet. See TIDE NOTE attached.

No current stations were observed.

E. SMOOTH SHEET:

The projection was made by hand. A sheet 42 inches wide was required to accommodate the signals used for hydrography.

The shoreline was transferred from the latest incomplete manuscripts and ~~not~~ inked, ~~but~~ details in the water area that originated with the manuscripts and were verified by the hydrographer were inked.

F. CONTROL STATIONS:

Most of the hydrographic signals were located photogrammetrically on Incomplete Manuscripts T-10346, 47, 48, 53, 54, 55, 60, and 61. These points were selected by the hydrographer and located by a photo unit working out of the Portland Photogrammetric Office. Eight signals were located by 3-point sextant fixes with check angles. The remaining signals were USC&GS triangulation stations.

Some of the photogrammetric points are aids to navigation. The photo unit will locate these aids by triangulation during the fall of 1958. The manuscripts in this area are well controlled, and it is believed the photo location of these aids, as shown on the smooth sheet, is satisfactory for hydrographic control.

G. SHORELINE AND TOPOGRAPHY:

The shoreline was transferred from the Incomplete Manuscripts mentioned above. Hydrography did not conflict with the shoreline from the manuscripts except along the north shore in the vicinity of Megler. Considerable fill has been deposited in this area for the construction of a new highway. *Corrections to the shoreline were received from Portland Photogrammetric office and are applied to the smooth sheet.*

H. SOUNDINGS:

Soundings were measured in feet with 808-type portable depth recorder. The fathometer initial was kept at 2.0 feet, which is a little less than the actual depth of the sounding units in the keel.

Corrections were determined from bar checks taken at 5-foot depth intervals on 32 different days. No appreciable difference was noted between the values obtained at various stages of the tide. Corrections were determined for the various scales used. All corrections were applied to the nearest 0.2 of a foot. See abstract of Bar Checks attached.

I. CONTROL OF HYDROGRAPHY:

Three-point sextant fixes were used to control hydrography. Some positioning in the Astoria dock area was by estimates of distances from natural objects, such as dock corners, etc..

J. ADEQUACY OF SURVEY:

The survey is considered complete and adequate for charting purpose, and it should supersede all previous surveys.

Junctions with contemporary surveys H-8420 to the east and H-8421 to the west and survey H-7940 (1951) to the south are satisfactory. Depth curves at the junctions can be smoothly drawn.

K. CROSSLINES:

Crosslines were run to the extent of approximately 10 percent of the regular system of sounding lines. Crossings were satisfactory.

L. COMPARISON WITH PRIOR SURVEYS:

A comparison with survey H-6179 (1936) indicates a little shoaling of the deep water channel along the north shore between McGowan Landing and Cliff Point. Generally the northern portion of Desdemona Sands has shoaled some, and the northern end of the Megler - Astoria channel has moved west considerably.

H-7940 (1951) shows a little significant change. The channel off Hammond has deepened some, a shoal is building out from the west side of the entrance to Skipanon Waterway, and the waterway is shoaling.

M. COMPARISON WITH CHART:

Depths of 11 feet were found in the area of latitude $46^{\circ} 12.2'$, longitude $123^{\circ} 50.4'$ where the chart shows a small shoal with 3 feet; however, a small shoal not charted at latitude $46^{\circ} 12.3'$, longitude $123^{\circ} 50.8'$ which ^{bars} 1 foot at MLLW was found.

It is recommended that the note "Shoaling Reported" shown at the entrance to Youngs Bay be deleted from the chart. This survey shows no significant change in this area since the 1951 survey.

The sunken barge shown in Youngs River at latitude $46^{\circ} 10.3'$, longitude $123^{\circ} 49.6'$, just off this sheet, still exists.

N. DANGERS AND SHOALS:

All dangers and shoals are evident on the smooth sheet.

O. COAST PILOT INFORMATION:

Coast Pilot information has been submitted as a separate report.

P. AIDS TO NAVIGATION:

The fixed aids to navigation were located by triangulation executed by a field unit of the Portland Photogrammetric Office during the fall of 1958. Form 567 will be submitted by that party.

The following buoys were located by the hydrographic party:

Latitude	Longitude	Name
46° 11.9'	123° 55.4'	Desdemona Sands Channel Buoy 27
46° 11.6'	123° 54.3'	" " " " 29
46° 11.1'	123° 54.3'	Skipanon Waterway Buoy 5
46° 11.1'	123° 54.4'	" " " 6
46° 10.9'	123° 54.4'	" " " 8
46° 10.8'	123° 54.5'	" " " 10
46° 10.7'	123° 54.6'	" " " 12
46° 11.7'	123° 52.2'	Tansy Point Range Buoy 33
46° 11.8'	123° 51.0'	" " " " 35
46° 11.8'	123° 50.1'	Astoria Crossing Buoy 37
46° 13.4'	123° 51.7'	" " " AC

Q: LANDMARKS FOR CHARTS:

There are many natural objects within the area of this survey. The selection shown as landmarks on chart 6151 is good and no changes are recommended.

R. GEOGRAPHIC NAMES:

A report on geographic names will be submitted by the photogrammetric unit working in the area.

S. SILTED AREAS:

The bottom characteristic for the entire area is sand which has been moved by and settled out of the river. There are 5 to 10-foot sand waves in the deep water off the north shore between McGowan and Point Ellice.

T. BY-PRODUCT INFORMATION:

A small boat basin at Warrenton was completed and dedicated during the summer of 1958.

Z. TABULATION OF APPLICABLE DATA:

1. Tide data for gages at Point Adams, Chinook, and Port Docks (Astoria).
2. Incomplete Manuscripts T-10346,47, 48, 53, 54, 55, 60, and 61.
3. Aids to Navigation form 567 to be submitted by the Portland Photogrammetric Office.
4. Coast Pilot Report submitted 10/22/58.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "John O. Boyer". The signature is written in dark ink and is positioned above the typed name.

John O. Boyer
LEDR, C&GS

TIDE NOTE
HYDROGRAPHIC SURVEY H-8422 (1958)

Portable automatic tide gages listed below were maintained during this survey.

POINT ADAMS:

Lat. $46^{\circ} 12.5'$ Long. $123^{\circ} 57.1'$ MLLW on staff 2.1 ft.

CHINOOK:

Lat $46^{\circ} 16.1'$ Long. $123^{\circ} 56.9'$ MLLW on staff 3.4 ft.

PORT DOCKS (ASTORIA)

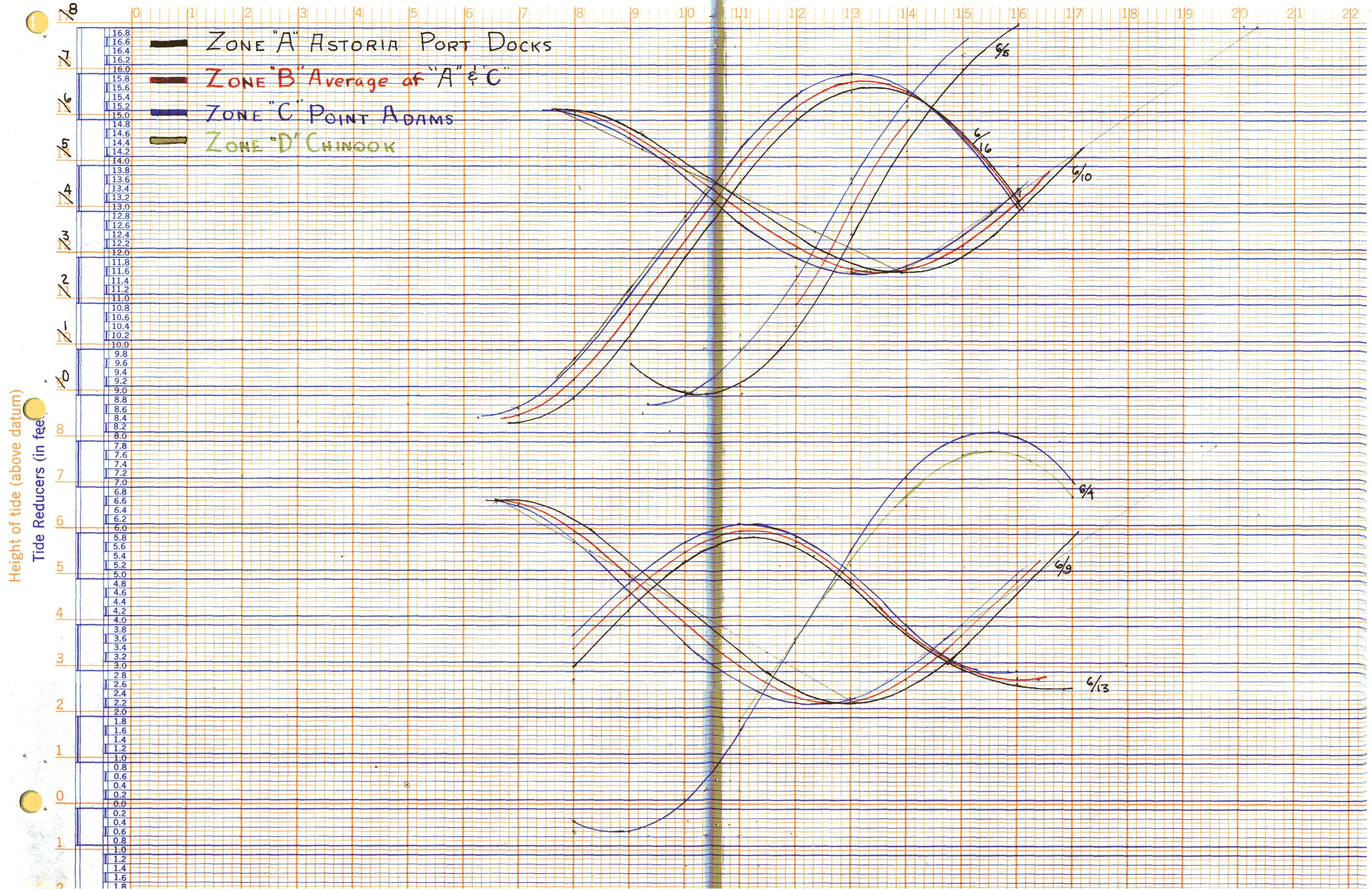
Lat. $46^{\circ} 11.2'$ Long. $123^{\circ} 51.6'$ MLLW on staff 2.5 ft.

The area was divide into 4 tide zones which are clearly marked on the boat sheet.

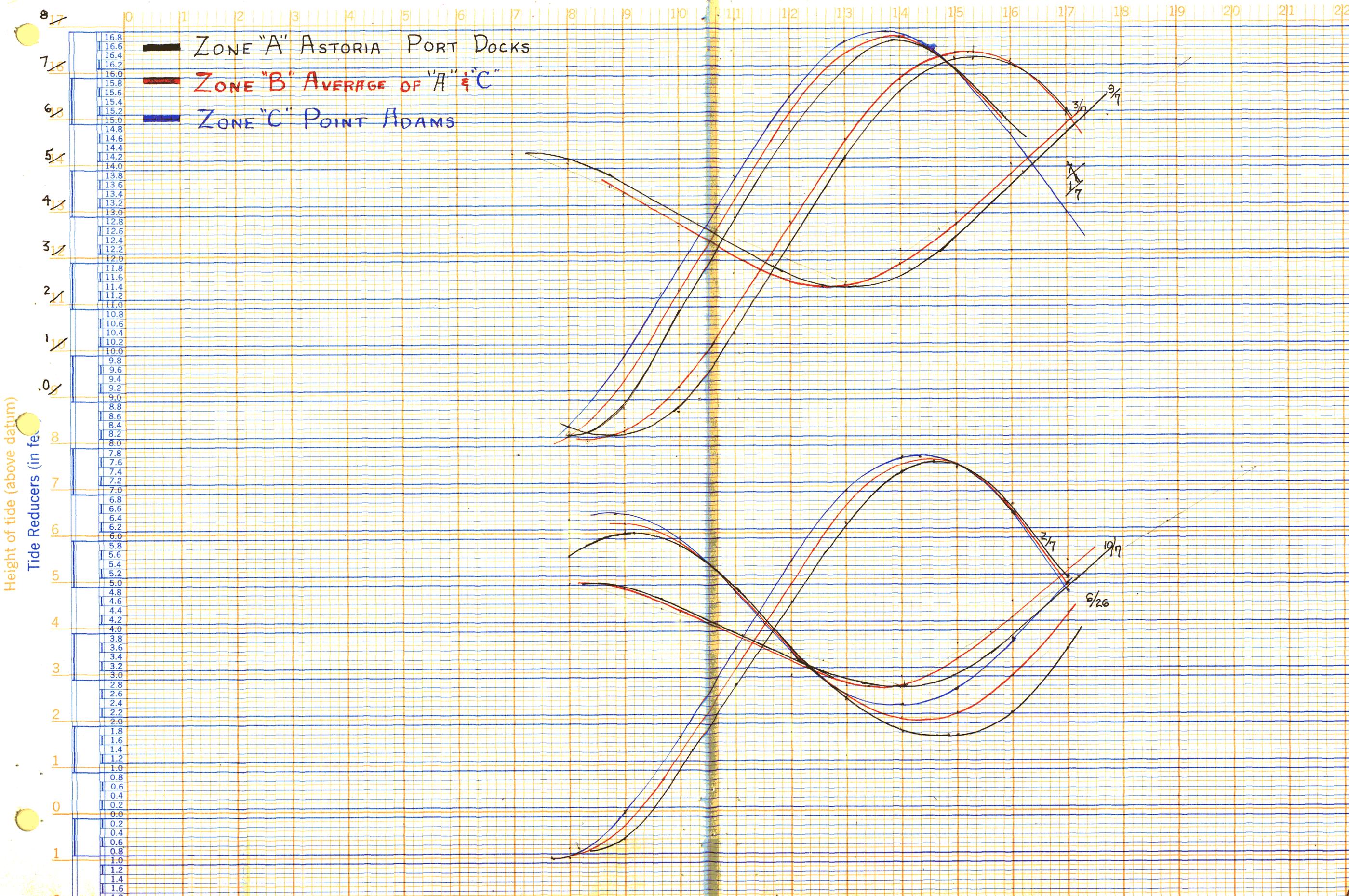
Zone A used PORT DOCKS tides
" B " mean of PORT DOCKS and POINT ADAMS
" C " POINT ADAMS
" D " CHINOOK

Tide reducers were entered to the nearest 0.2 of a foot. The reducers were taken from curves plotted from hourly heights. Several days' marigrams at Port Docks were missed, and curves for these days were drawn using a time correction to the observed tides at Point Adams as determined by the Washington Office. The curves from which tide reducers were taken are attached.

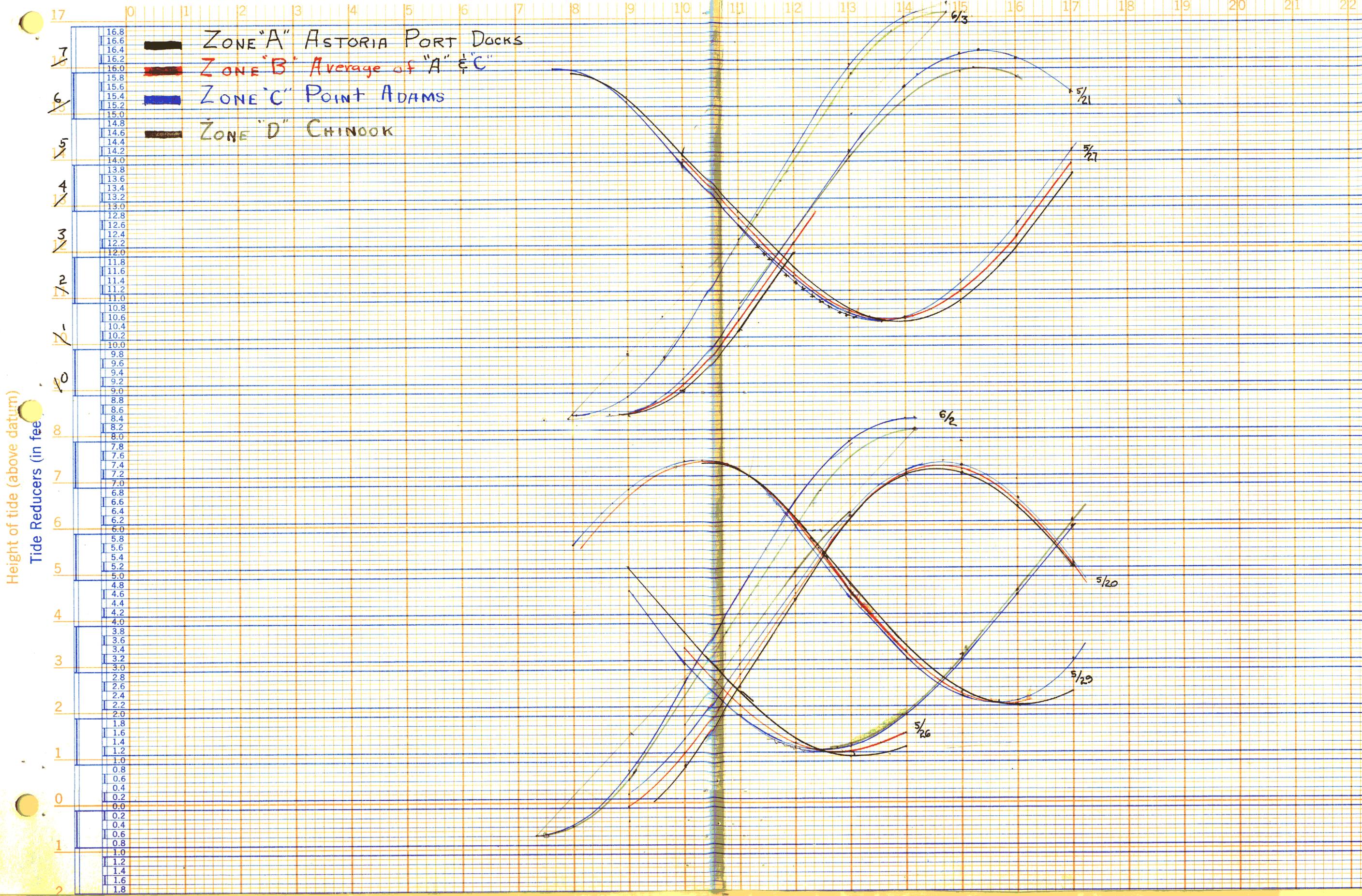
WCFP 1258
 GRAPH FOR TIDE REDUCERS (FATHOMS) (FEET)



WCF.P 1258
 GRAPH FOR TIDE REDUCERS (FATHOMS) (FEET)

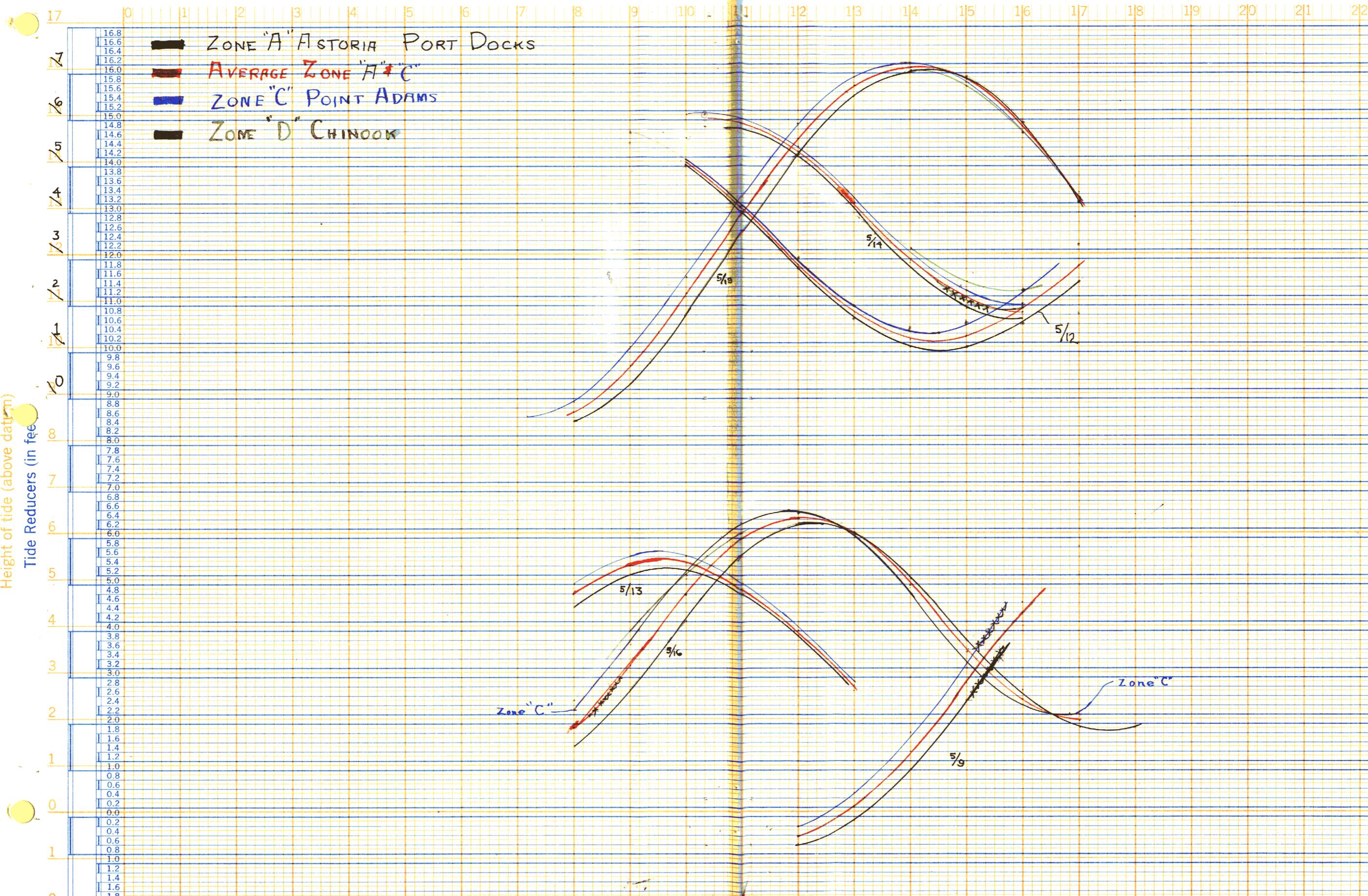


WCFP 1258
 GRAPH FOR TIDE REDUCERS (FATHOMS) (FEET)



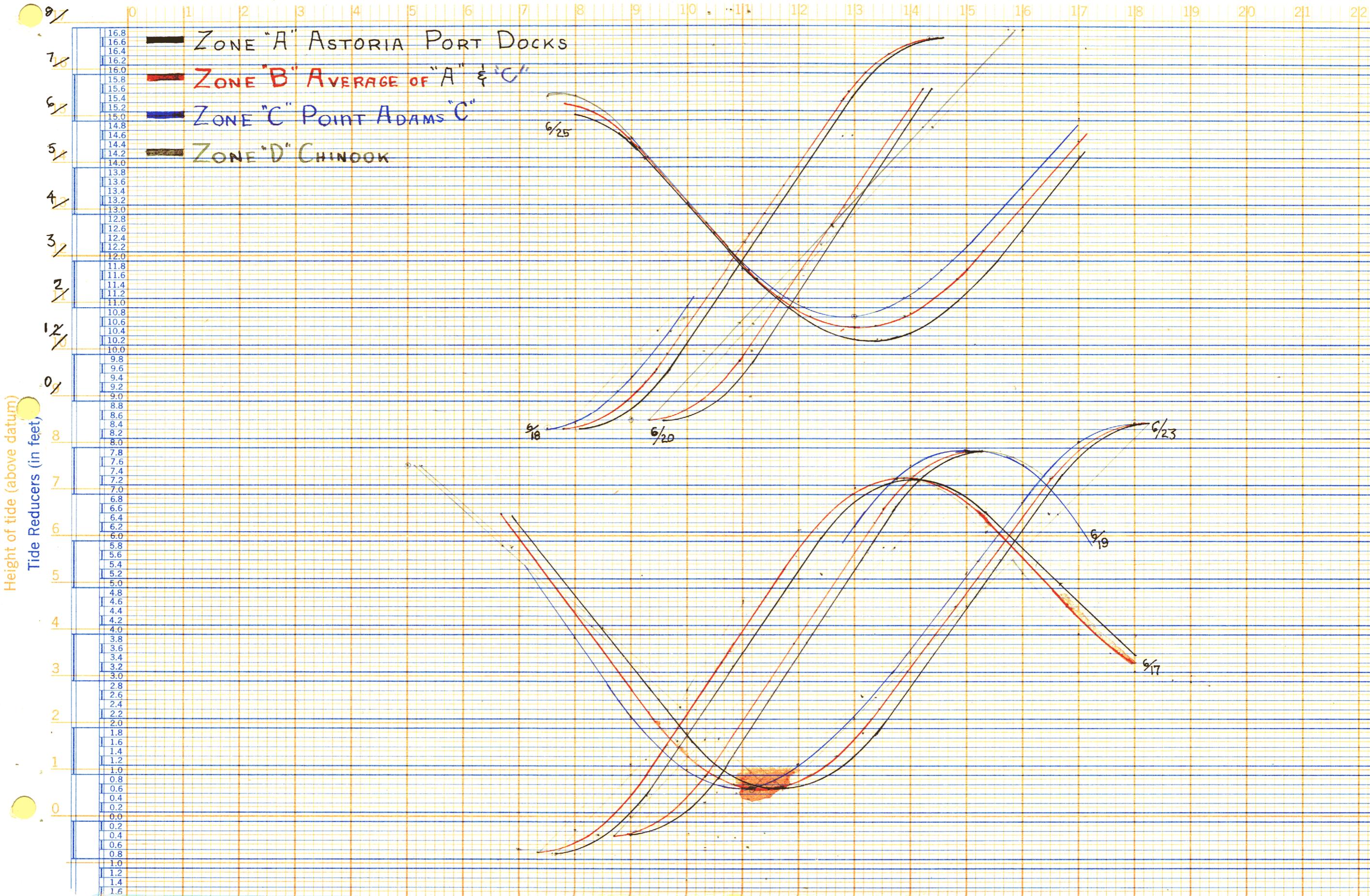
WCFP 1258

GRAPH FOR TIDE REDUCERS (FATHOMS) (FEET)

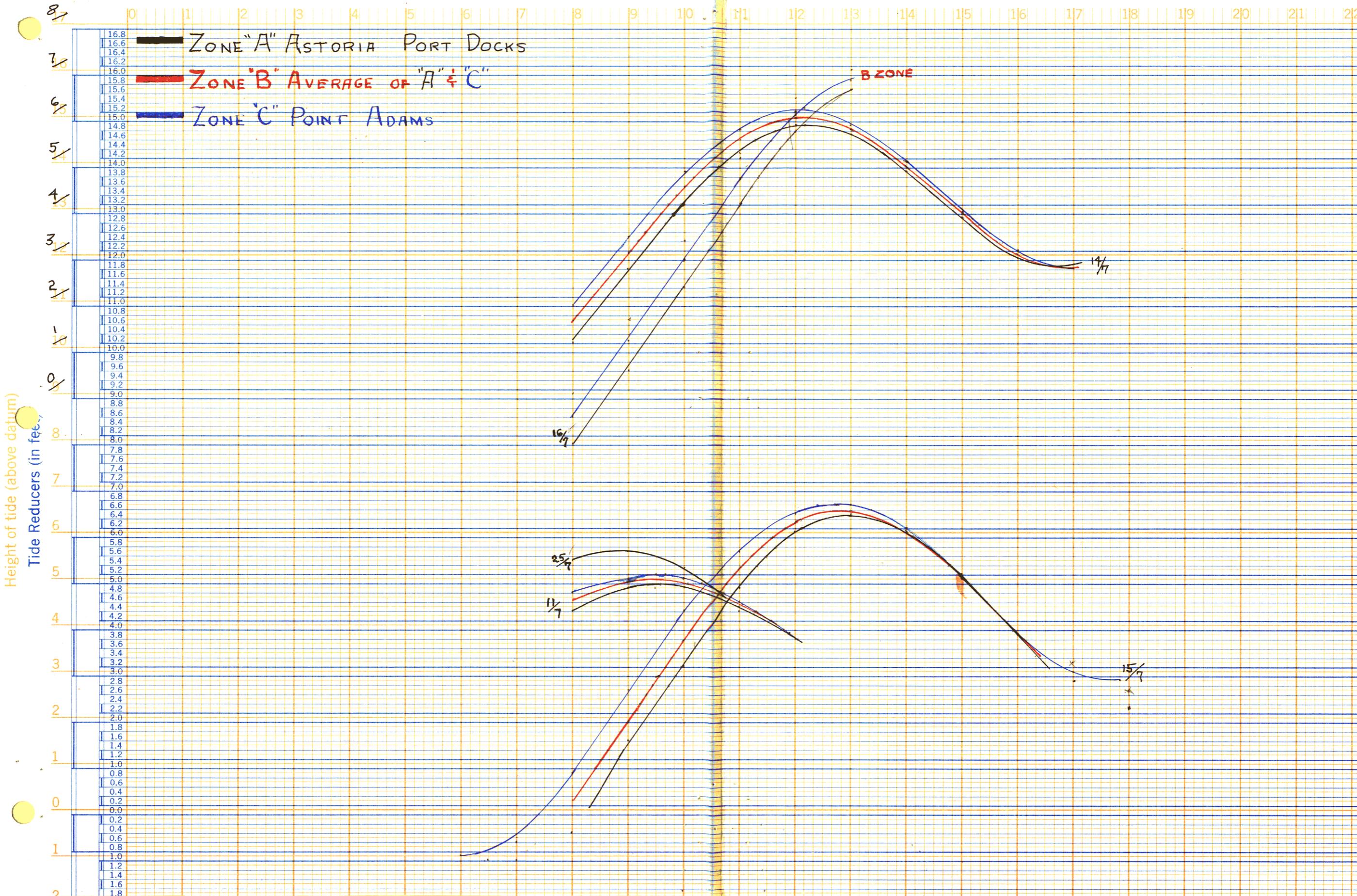


Reviewer - extract
tide curves and low
checks and file with
figs

WCFP 1258
 GRAPH FOR TIDE REDUCERS (FATHOMS) (FEET)



W.C.F.P. 1258
 GRAPH FOR TIDE REDUCERS (FATHOMS) (FEET)



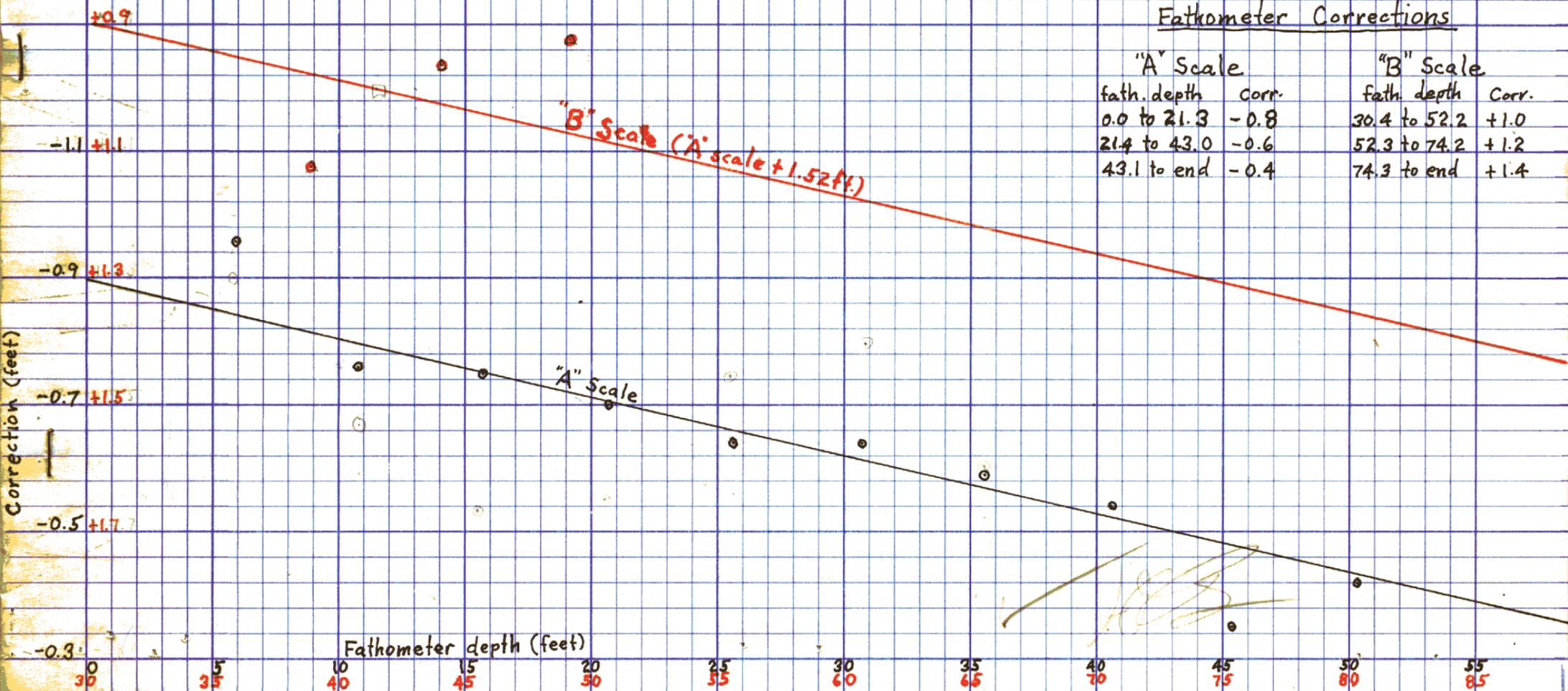
Date Day Lt True Depth (feet)
5 10 15 20 25 30 35 40 45 50

"B" Scale Phase Tide
35 40 45 50

Date	Day	Lt	5	10	15	20	25	30	35	40	45	50	"B" Scale	Phase	Tide			
5/9	a					-0.2	-0.2	-0.2	(0.0)						F			
5/13	c		-1.0	-0.8	-0.5	-0.5	-0.3	-0.2	-0.3	-0.3	-0.2	-0.2	+0.8	+0.8	+1.1	E		
			-0.6	-0.4	-0.8	-0.6	-0.6	-0.6	-0.4	-0.2	0.0	-0.2	+1.0	+0.8	1.0			
															1.0			
															1.0			
5/16	e		-0.8	-0.9	-0.5	-0.6	-0.6	-0.7	-0.7	-0.8	(0.6)		0.0			F		
			-1.1	-0.9	-1.0	-0.8	-0.7	-1.0	-0.9	-1.0								
5/19	f		-0.6	(-0.2)	-0.4	-0.6	-0.4	-0.4	(0.0)							F		
			-1.0	-1.0	-0.8	-0.6	(0.0)	-0.2	0.3									
5/20	g		-0.8	-0.9	-1.0	-0.9	-0.9	-0.8	-0.9	-0.8						F		
			-1.0	-0.7	-1.0	(0.0)	(0.0)	-0.4	-0.4	-0.6						F		
			-0.6	-0.8	-1.0	-1.0	-0.6	-0.6	-0.6				(-2.6)					
			-0.9	-0.8	-0.8	-1.0	-1.0	-0.8	0.8	-0.6								
5/21	h		-0.7	-0.7	-0.8	-0.8	-1.0	-1.0	-0.9							F		
			-1.3	-0.6	-0.6	-0.6	-0.6	-0.8	-0.6	-0.8			(-0.4)					
													(0.0)					
5/26	J		-0.8	-0.7	-1.0	-0.8	-0.6	-0.6	-0.3	(0.4)			+0.9		1.2	E		
			-1.1	-0.9	-0.8	-0.6	-0.7	-0.6	-0.6				+1.0		1.6			
5/27	K		-1.1	-0.6	-0.9	-0.6	-0.6	-0.5	-0.6	-0.4	-0.4	-0.4	+1.0	+0.6	+1.1	1.4	E	
			-0.8	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.3	-0.6		+0.8	+0.8	+0.4	1.5		
													+0.4	+0.7		1.0		
5/29	L		-0.7	-0.6	-0.5	-0.6	-0.7	-1.0	-0.5	-0.5			+1.2		1.2	F		
			-0.7	-0.4	-0.9	-0.2	-0.3	-0.2	(0.0)	-0.2			+2.0		1.0			
													+1.2		1.5			
													+1.2		1.3			
6/2	m		-1.0	-0.8	-1.0	-0.8	-1.0	-1.0	-0.8	-0.6	-0.8		+0.4	+0.4	0.9	F		
			-1.4	-1.0	-1.0	-1.0	-0.8	-0.6	-0.4	(+0.4)	-0.4		+1.0	+0.8	1.0			
															1.7			
6/3	n		-0.8	-0.8	-1.0	-1.0	(-1.2)	-1.0	-1.0	-1.0			+0.2		2.2	F		
			-1.4	-1.0	(-1.4)	-1.0	-1.0	-1.0	-0.8	(+1.2)			+1.0		1.8			
															1.0			
															1.2	HW		
															1.2			
6/4	P		-1.0	-0.8	-0.9	-0.6	-0.8	-1.0	-0.7	-0.6	-0.3		+0.7	+0.8	+1.2	LW		
			-0.6	-0.8	-0.7	-0.8	-0.7	-0.8	-0.6	-0.4	-0.3	-0.2	+0.7	+1.0	+0.9	1.4		
															1.6			
															1.3			
6/9	r		-1.0	-0.8	-0.9	-1.0	-1.0	-1.0	-0.9	-0.7			+0.4		1.1			
			-1.0	-0.8	-0.7	-0.7	-0.8	-1.0	-1.0	-0.8			+1.0		0.9			
			-1.0	-0.9	-1.0	-1.0	-0.8	-0.7	(0.0)	-0.8			+0.6		1.3			
			-0.7	-0.4	-0.8	-0.8	-0.8	-0.8							1.2			
6/10	s		-0.9	-0.8	-0.9	-1.0	-1.0	-1.1	-1.0	-0.8	-0.6	-0.8	+0.8	+1.0	+1.4	+0.4	+0.6	1.1
			-1.2	-0.8	-1.0	-1.0	-1.0	(-1.2)	(-1.2)	-1.0	-1.0	-1.0			+0.6	+0.6	1.8	
																	1.4	
6/13	t		-1.0	-0.6	-0.6	-0.8	-1.0	-1.0	-0.6	-0.8	-0.5	-0.4	+0.8	+1.0	+1.0		1.6	
			-0.8	-1.0	-0.8	-0.8	-0.8	-0.8	-1.0	-1.0	-0.8		+1.0	+0.9			2.2	
			-1.0	-0.6	-0.8	-1.0	-1.0	-1.0	-1.0	-0.8			+1.0				1.6	
			-0.9	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0				+1.0				1.6	
													+1.0				1.5	
													+1.0				1.4	
																	1.7	
6/16	u		-0.9	-0.8	-0.6	-0.8	-0.7	-0.9	-0.9	-0.9	-0.9		+1.8	+1.1			2.0	
			-1.2	-0.7	-0.8	-0.8	-0.8	-0.9	-1.0	-0.9			+1.1				1.8	
																	2.0	
																	2.7	
													+1.0	+0.5	+0.9	+1.0	2.0	
																	2.0	
6/17	v		-1.2	-1.0	-1.0	-0.8	-0.5	-0.9	-0.9								2.0	
			-1.0	-0.7	-0.8	-0.8	-0.7	-0.7									1.8	
			-1.0	-0.5	-0.5	-0.3	-0.4	-0.3	-0.3	-0.1			+1.5				1.6	
			-1.0	-0.7	-0.6	-0.5	-0.5	-0.5	-0.3								1.6	
6/18	w		-1.0	-0.8	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.2	-0.3	+1.2	+0.8	+1.0		1.5	
			-1.1	-0.9	-0.9	-0.8	-0.7	-0.7	-0.4	-0.3							1.0	
			-1.0	-0.8	-0.6	-0.6	-0.7	-0.5	-0.5	-0.4			+1.2				1.3	
			-1.0	-0.7	-0.7	-0.4	-0.4	-0.4	-0.3								1.6	
6/19	x		-1.0	-0.8	-0.7	-0.8	-0.8	-0.7	-0.8	-1.0			+1.0	0.0			1.7	
			-0.8	-0.9	-0.9	-0.6	-0.6	-0.6	-0.5	-0.7							1.7	
			-0.8	-0.8	-1.1	-1.0	(-1.4)										1.7	
			-1.4	-1.0	-1.0	-1.0	(-1.2)										1.7	
6/20	y		-1.3	(-1.4)	-1.0	-1.0	(-1.2)	-1.0	-1.0								1.7	
			-1.1	-1.2	-1.1	-1.0	-1.1	-1.0									1.7	
			-0.8	-1.0	-0.7	-0.7	-0.6	-0.4	-0.4				+0.8				1.2	
			-1.0	-1.0	-0.8	-0.7	-0.7	-0.3	(0.0)	-0.2							1.2	
6/23	z		-1.0	-0.8	-0.4	-0.4	-0.3	-0.3	-0.2	-0.4			+1.3				1.7	
			-1.1	-1.0	-0.6	-0.4	(-0.1)	(-0.1)	(0.0)	-0.3							1.2	
			-1.2	-1.0	-0.7	-0.8	-0.6	-0.6	-0.4	-0.2	0.0		+1.1				1.2	
			-1.0	-1.0	-1.0	-0.4	-0.4	-0.6	-0.4	-0.2							1.2	
6/25	aa		-1.0	-0.6	-0.4	-0.5	-0.3	-0.4	-0.3	-0.1	0.0	0.0	+0.9	+0.9	+0.9		1.0	
			-0.9	-0.7	-0.6	-0.3	-0.2	-0.4	-0.2	-0.2	0.0						0.9	
			-1.0	-0.6	-0.8	-0.7	-0.8	-0.8	-0.6	-0.5	-0.4		+1.8	+1.4			0.9	
			-1.0	-0.8	-0.6	-0.5	-0.4	-0.7	-0.5	-0.5							1.3	
																	1.8	
6/26	ab		-1.0	-0.5	-0.4	-0.5	-0.5	-0.6	-0.5	-0.3	-0.3		+1.6	+1.3			1.9	
			-0.9	-0.6	-0.7	-0.7	-0.8	-0.8	-0.8	-0.5	-0.3						1.6	
			-0.9	-0.7	-0.6	-0.7	-0.3	-0.6	-0.2	(0.0)	0.0		+1.9	+1.3			1.9	
			-1.0	-1.0	-0.7	-0.7	-0.2	-0.2	(0.0)								1.9	
7/1	ac		-1.2	-0.8	-0.7	-0.5	-0.4	-0.5	-0.3	-0.3	-0.4		+1.1	+1.6			1.4	
			-1.0	-0.9	-0.6	-0.5	-0.4	(-0.1)	0.2	-0.3							2.0	
7/2	ad		-1.0	-0.8	-0.6	-0.7	-0.5	-0.6	-0.7	-0.6			+1.7				2.3	
			-0.9	-0.5	-0.6	-0.4	-0.3	-0.6	-0.6								2.3	
7/5	ae		-1.0	-0.8	-1.0	-0.8	-0.1	-0.1									1.7	
			-0.9	-0.6	-0.8	-0.7	-0.9										1.7	
7/9	af		-0.8	-0.8	-1.0	-1.0	(-1.3)	-1.1	(-1.2)	-1.0							1.7	

Fathometer Corrections

"A" Scale		"B" Scale	
fath. depth	corr.	fath. depth	Corr.
0.0 to 21.3	-0.8	30.4 to 52.2	+1.0
21.4 to 43.0	-0.6	52.3 to 74.2	+1.2
43.1 to end	-0.4	74.3 to end	+1.4



FATHOMETER CORRECTIONS
HYDROGRAPHIC SURVEY H-8422 (1958)

Launch CS-92

Fathometer No. 152SPX

Initial set 2.0 ft.

"A" Scale:

Depth	Correction
00.0 to 21.3 ft.	-0.8 ft.
21.4 to 43.0	-0.6
43.1 to end	-0.4

"B" Scale:

Depth	Correction
30.4 to 52.2	1.0 ft.
52.3 to 74.2	1.2
74.3 to end	1.4

NOTE:

The abstract of bar checks and the curves from which the above corrections were taken is attached.

STATISTICS FOR
HYDROGRAPHIC SURVEY H-8422 (1958)

Volume	Day Letter	Date	No. of Positions	Naut. miles Soundings
1	a	9 May	72	10.2
1	b	12 "	119	17.1
2	c	13 "	72	10.7
2	d	14 "	126	17.1
3	e	16 "	143	18.3
4	f	19 "	163	24.3
5	g	20 "	132	17.9
5,6	h	21 "	158	20.1
6	j	26 "	112	12.8
7	k	27 "	94	11.4
7	l	29 "	107	15.5
8	m	2 June	30	3.0
8	n	3 "	124	9.4
8	p	4 "	83	6.3
9	q	5 "	27	4.5
9	r	9 "	157	22.8
10	s	10 "	203	26.1
11	t	13 "	178	26.2
12	u	16 "	131	12.3
12,13	v	17 "	182	29.2
13	w	18 "	97	13.2
14	x	19 "	198	24.1
15	y	20 "	118	13.1
15,16	z	23 "	155	20.8
16,17	aa	25 "	201	27.6
17	ab	26 "	154	22.4
18	ac	1 July	147	17.8
18,19	ad	2 "	169	22.4
19,20	ae	3 "	111	13.2
20	af	9 "	129	12.2
20	ag	10 "	92	5.0
21	ah	11 "	74	9.3
21,22	aj	14 "	159	19.6
22	ak	15 "	197	19.8
23	al	16 "	70	9.4
23	am	25 "	3	0.3
TOTALS			4487	565.4

TOTAL AREA: 19.3 square nautical miles

GEOGRAPHIC NAMES LIST

HYDROGRAPHIC SURVEY H-8422 (1958)

Astoria
Chinook
Chinook Pt.
Cliff Pt.
Columbia River
Desdemona Sands
Fort Columbia
Hammond
Hungry Harbor
McGowan Ldg.
Megler
Oregon
Pt. Ellice
Skipanon Waterway
Smith Pt.
Tansy Pt.
Warrenton
Washington
Youngs Bay

LIST OF SIGNALS USED
HYDROGRAPHIC SURVEY H-8422 (1958)

Hydro Name	Origin
ACK	HAMMOND, POINT ADAMS CANNERY TALLER STACK, 1951
ARF	FORT STEVENS WHARF 26 LIGHT, 1951
AKE	Manuscript T-10346, Baker Bay East Channel Lt. 6
AXE	" T-10346, Dol
BAY	YOUNGS BAY ENTRANCE LIGHT, 1951
BOA	HAMMOND, PILOT STATION BOATHOUSE DOWNSTREAM GABLE, 1951
BOY	Manuscript T-10346, Chinook Dike Lt.
BUSH	" T-10348, No. PP-A
CAN	" T-10346, No. 023
CRAB	" T-10354, No. 018
CUP	POINT ADAMS COAST GUARD STATION CUPOLA, 1951
DES	DESDEMONA SANDS UPPER LIGHT, 1951
DID	Volume 1, page 4
DOC	Manuscript T-10354, No. 021
DUD	" T-10354, No. 029
EGG	" T-10354, No. 030
FAT	" T-10354, No. 031
FOR	" T-10347, about 2 meters SW of FORT, 1935
GAB	" T-10354, No. 017
GIG	TANSY POINT FRONT RANGE LIGHT, 1951
HAT	Manuscript T-10347, No. 014
HEN	WARRENTON BLACK TANK, 1935
HOW	Volume 3, page 3
ICE	POINT ELLICE LIGHT, 1951
INK	Volume 3, Page 3
IRE	MC GOWAN CHURCH SPIRE, 1913
JAR	Manuscript T-10347, No. 015
JOE	YOUNGS BAY RAILROAD BRIDGE SWING SPAN LIGHT, 1909
KAY	Manuscript T-10354, No. 019
KID	" T-10455, No. 040
KIP	SKIPANON WATERWAY WEST LIGHT, 1951
LIC	Manuscript T-10355, No. 041
LID	" T-10360, Dol
LIG	LOWER SANDS LIGHT, 1951
LOW	Manuscript T-10354, No. 020
MAD	" T-10354, No. 022
MAN	POINT ELLICE (U.S.E.), 1913
MAR	CHINOOK CHANNEL LIGHT, 1952
MEG	Manuscript T-10355, Megler Range Front Lt.
MID	" T-10355, No. 042
MONA	DESDEMONA SANDS UPPER LIGHT, 1951
MOW	Manuscript T-10360, Dol

Hydro
Name

Origan

NAN	ASTORIA PORT DOCK BLACK TANK, 1935
NEW	Manuscript T-10360, Dol
NOT	" T-10355, No. 061
OAK	" T-10355, No. 060
OBO	" T-10360, No. 032
OFF	" T-10354, No. 016
OIL	" T-10355, No. 043
PAC	" T-10360, No. 033
PAD	" T-10355, No. 059
PAN	SKIPANON WATERWAY REAR RANGE LIGHT, 1951
PAR	Manuscript T-10355, No. 044
RAN	" T-10348 , Megler Range Rear Lt. 1957
RAT	" T-10355, No. 058
RED	" T-10348, No. 055
RIG	" T-10355, Astoria Lt. No. 36
ROS	" T-10360, No. 034
RUS	" T-10355, No. 046
SAG	" T-10348, No. 056
SAL	" T-10355, No. 045
SAT	ASTORIA ST. MARYS CHURCH SPIRE, 1916
SIR	Manuscript T-10360, No. 035
SKI	SKIPANON WATERWAY EAST LIGHT, 1951
SUE	Volume 2, page 29
TAC	ASTORIA PP&L STACK, 1935
TAN	FORT STEVANS QUARTERMASTER TANK, 1951
TAP	Volume 18, page 68
TAR	Manuscript T-10355, No. 047
TIC	Volume 1, page 5
TOL	Manuscript T-10360, No. 039
VAN	Volume 1, page 5 and volume 12, page 18
VEL	Manuscript T-10360, No. 037
WAS	" T-10360, No. 036
WIG	Volume 1, page 4 and volume 12, page 18
WIT	Manuscript T-10355, No. 049
YAK	" T-10355, No. 038
YEN	" T-10355, No. 050
YOU	" T-10348, No. 051
ZAG	" T-10348, Quarantine Lt.
ZIP	" T-10360, Skipanon Waterway Front Range Lt.
ZOR	" T-10355, No. 048

APPROVAL SHEET

HYDROGRAPHIC SURVEY H-8422 (1958)

This survey was done under my daily supervision. I believe the survey is complete, adequate for charting purposes, and no additional work is necessary.

I am being transferred at this time, and the smooth sheet has not been completed. Most positions have been plotted but no soundings are penciled. The boat sheet indicates the development is adequate and the crossings and junctions will be satisfactory. The smooth sheet will be completed under the supervision of LCDR Richards, OinC, Seattle Ships' Base Processing Pool. If any additions to this report seem warranted after completion of the smooth sheet, LCDR Richards or the junior officer completing the sheet will add them.



John O. Boyer
LCDR, C&GS
Officer in Charge

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF COASTAL SURVEYS~~

7/22/59

Division of Charts: R. H. Carstens

Plane of reference approved in
23 volumes of sounding records for

HYDROGRAPHIC SHEET 8422

Locality Columbia River, Washington - Oregon

Chief of Party: J.O. Boyer in 1958
Plane of reference is mean lower low water, reading
2.2 ft. on tide staff at Astoria (Port Docks)
18.7 ft. below B. M. 3 (1946)

2.1 ft. on tide staff at Point Adams
12.0 ft. below B.M. 1 (1935)

3.4 ft. on tide staff at Chinook
12.6 ft. below B.M. 1 (1933)

Height of mean high water above plane of references is:

COASTAL SURVEYS	Astoria	7.3 ft.
	Point Adams	7.6 ft.
	Chinook	7.3 ft.



Tides Branch

Chief, ~~DIVISION OF TIDES AND CURRENTS~~

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ⁸⁴²².....

Records accompanying survey:

Boat sheets ¹...; sounding vols. ²³...; wire drag vols.;
 bomb vols.; graphic recorder rolls ¹⁵...; Envelopes
 special reports, etc. ¹... Smooth sheet and ¹... Descriptive report.

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

Number of positions on sheet
Number of positions checked
Number of positions revised
Number of soundings revised (refers to depth only)
Number of soundings erroneously spaced
Number of signals erroneously plotted or transferred
Topographic details	Time
Junctions	Time
Verification of soundings from graphic record	Time
Verification by.....	Total time Date
Reviewed by.....	Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8422

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
6. All positions verified instrumentally were check marked in the sounding records.
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
8. The metal protractor has been checked within the last three months.
9. The protracting and plotting of all bad crossings were verified.
10. All detached positions locating critical soundings, rocks or buoys were verified.
11. The boat sheet was compared with the smooth sheet.

- 12 The spacing of soundings as recorded in the records was closely followed.
13. The bottom characteristics were shown on outstanding shoals.
14. The reduction and plotting of doubtful soundings were checked.
15. The transfer of contemporary topographic information was carefully examined.
16. All junctions were transferred and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
22. Unnecessary pencil notes have been removed.
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
24. The low water line and delineation of shoal areas have been properly shown.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows:
34. The protracting was satisfactory except as follows:
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

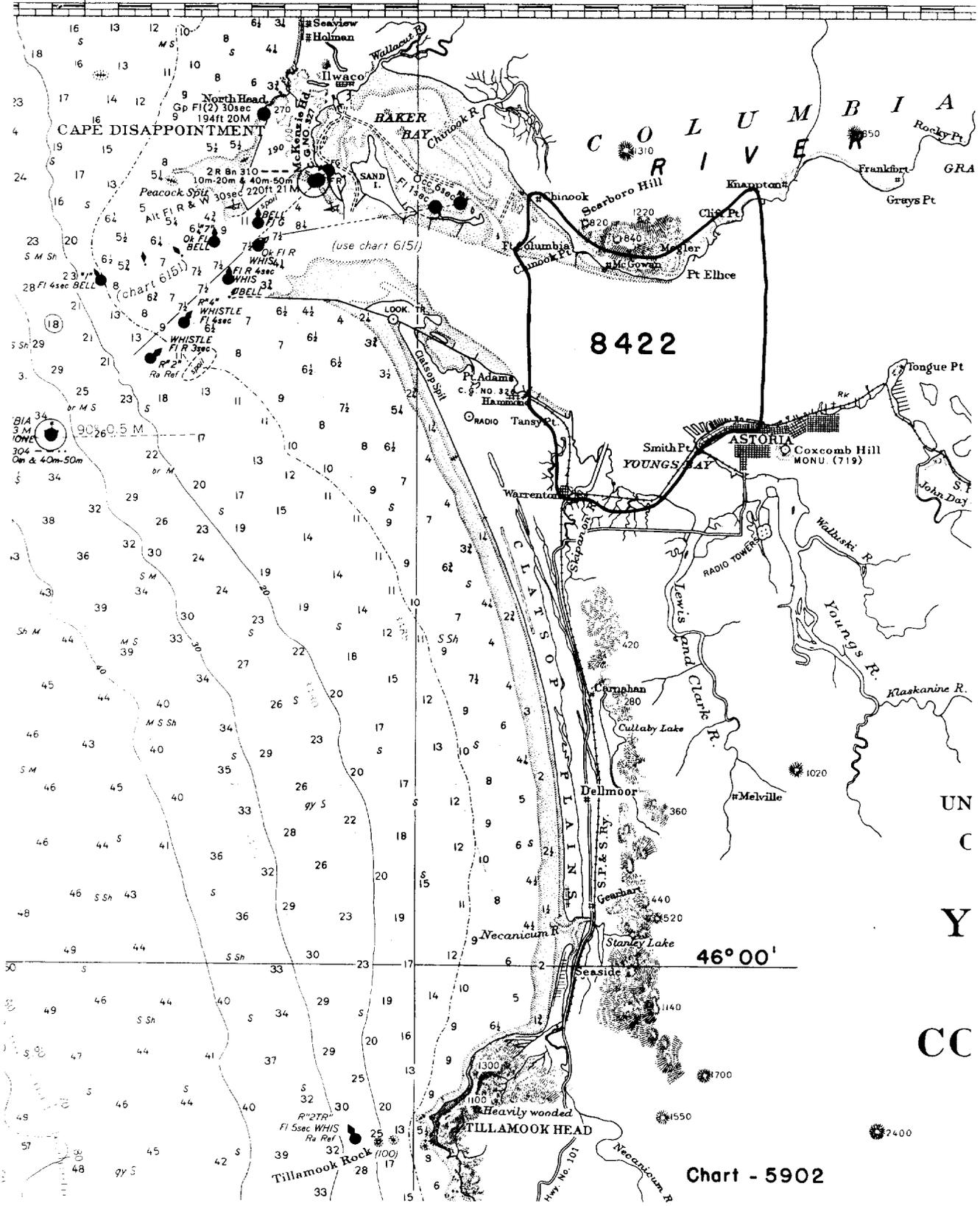
Verified by

Date

10'

124°

50'



8422

46° 00'

Chart - 5902

UN
C
Y
CC

Examined before V & R for ch. 615-1 - Partially aff'd 4/30/59 JHE