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SHA

# 3677

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Acc. No.

Diag. Ch. No. 1204 13

Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

*O. S. Tuttleman*  
Superintendent.

State: M A I N E.

DESCRIPTIVE REPORT.

*Hyd.* Sheet No. **3677**

LOCALITY:

Casco Bay.

Outer Approaches.

Wire Drag Survey.

1914.

CHIEF OF PARTY:

N. H. Heck Assistant.

11-4645

3677

3677

M A I N E .

Casco Bay

Cutter Approaches

Wire Drag Survey. 3677

N. E. Heck, Assistant,  
Chief of Party.

1914.

May 7, ..... Sept. 28.

1/20,000.

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Launches, "ESCORT", "KATHERINE" "MILLED".  
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O F F I C E R S .

Assistants:

R. F. Luce.  
L. C. Colbert.  
John H. Hawley.

Aids:

E. W. Eickelberg.  
W. H. Clark.

Watch Officer:

Geo. Olson.

-----  
Deck Officers.

Lec C. Dyke.  
Carl Egner.  
Raymond P. Eylan.  
Harold H. Griffin.  
G. C. Grigby.

Alfred S. Milliken.  
Chester H. Ober.  
Charles Shaw.  
S. D. Winship.  
William H. Kearns.

Leonard H. Zeman.

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Tides from Automatic Tide Gauge - Portland, Maine.  
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*Hyd.*  
Descriptive Report Sheet X. 3677  
Season 1914.

This sheet includes the approaches to Portland Harbor between the 18 fathom curve and a line from Half Way Rock to Cushings Island, to the westerly limit of entering channel; also Portland Harbor from entrance to dredged portion.

The plan of work included the dragging to an effective depth of 48 ft. wherever a greater depth existed, and for less depth within one or two feet of charted depths.

The only area left unfinished is in the vicinity of very shoal charted depths, (buoyed), and a few small areas developed in the final plotting after leaving Portland.

In considering the shoals located the area will be considered in five parts. The shoal area lying between Cape Elizabeth and Ram Island, lying westward of meridian  $70^{\circ} 10'$ . The remaining comparatively open parts of Casco Bay from  $69^{\circ} 58'$  to  $70^{\circ} 10'$ .

The general shoal area known as West Cod Ledges from Richmond Island to Round Shoal.

The area lying to seaward between these ledges and the 18 fathom curve. Portland Harbor.

In the first named area numerous shoal groups were found. A 30 foot shoal off of Portland Head, and two found with 31 and 36 feet between Ram Island Ledge and Witch Rock, were located.

The channel between Witch Rock and Ram Island is generally rocky and should be avoided by deep draft vessels in rough weather.

Trundy Reef, Willard Rock, Pine Tree Ledge, are the shoal charted portions of a continuous ridge which extends to a point south of Witch Rock.

Depths of 36 and 37 feet were found between Willard Rock and Pine Tree Ledge, and 33 feet to eastward of Pine Tree Ledge. This affords a safe channel for vessels of moderate draft, but deep draft vessels should preferably pass to the eastward of this ridge. 27 feet was found on Willard Rock.

Between Willard Rock and Broad Cove Rock, an almost continuous rocky ridge was developed with depth from 33 to 39 feet. This ridge lies parallel to a line joining the buoys marking above named shoal and about 1/2 mile to the eastward.

An extensive shoal area lies south-east of Broad Cove Rock was found to be more extensive than charted.

The course used by the battleship Rhode Island entering Portland after above described shoal had been placed on the chart is to be recommended. She entered from the south, passing between Corwin Rock and ~~W.~~ Cod Rock. She held a course ~~from~~ <sup>for</sup> a point about one mile east of Ram Island Light House until Witch Rock buoy was on the the south part of Cushings Island, then entered harbor passing south of Witch Rock and north of 30 ft. shoal.

The second named area, the portion of Casco Bay between the water line of Islands and Cod Ledges, was found to be generally clear except at certain points where 10 fathoms or less was indicated on the chart and an extensive shoal area lying between the charted 5- $\frac{3}{4}$  fathom shoal lying two miles S.E. from Green Island and Bulwark Shoal. The 5- $\frac{3}{4}$  fathom shoal was found to extend 200 meters in N $\frac{1}{2}$ S direction with 34 feet least depth, a ridge with 41 - 48 feet lies to the South West, 800 meters long by 200 meters wide, a 43 foot small ridge lies to the South East.

Halfway between the 5- $\frac{3}{4}$  fathom shoal and Bulwark Shoal there is a rocky area extending 1000 meters, N.W.\*S.E. and 600 meters N.E.-S.W. with depths of 40 feet and over.

A shoal 150 meters in diameter with 43 feet, lies between Green Island and Half Way Rock, to the south of line joining them. A 49 foot pinnacle lies 500 meters north of this shoal. Depth of less than 8 fathoms (45 & 46) were found to extend S.W'ly. from Half Way Rock to a distance of 1100 meters.

A shoal area with from 44 to 48 feet was developed about a mile to eastward of Halfway Rock, 700 meters by 300 meters. Two shoals at depth of 38 & 42 feet were found about  $\frac{3}{4}$  mile N. W. of Bache Rock.

The third area, the Cod Ledges and their extension to the Westward, is an extensive rocky area which was carefully developed with the result of finding shoal ridges with less depth than charted over nearly its entire extent.

Beginning from the eastward, a ridge with 41 feet was found to N. E. of Round Shoal. There was a distinct ridge from Bulwark Shoal westward to West Cod Ledge Rock. The main ridge has depth of 29 - 31 feet at intervals from Bulwark Shoal to West Cod Ledge Rock. The only portion of considerable depth is that with 7 fathoms, extending between points  $1\frac{1}{8}$  &  $5/8$  miles from West Cod Ledge Rock. As this is so near the main channel it is of little importance.

The outer ridge has a least depth of 35 feet south of Bulwark shoal. Depths of 40 - 47 feet were found at intervals, from a point southwest of Bulwark Shoal to a 47 foot pinnacle, lying E.S.E. of West Cod Ledge Rock.

Alden Rock was found to be more extensive than charted. A 12 foot spot lies to eastward. A depth of 42-33 feet were found to extend to the westward of Alden Rock for a distance of 1000 meters. A least depth of 23 feet was found off West Hue and Cry Rock and a depth of 36 feet to the eastward of East Hue and Cry Rock.

\* The 6 1/2 fathom shoal lying halfway between East Hue and Cry and Corwin Rocks does not exist and should be removed from the chart. I have examined the bromides of the original sheets and cannot find this sounding. There is possibly an error in location.

Retain this sounding for present as drag does not satisfactorily disprove its existence.

No grounding obtained in 1941. Records filed with those of #3677 (1914) WD

\* This area dragged to 43 ft and 45 ft in opposite directions July 22, 1941. Charted sdg changed to 43 ft (least depth cleared two directions)

A.L.S. (Nov. 8, 1924)

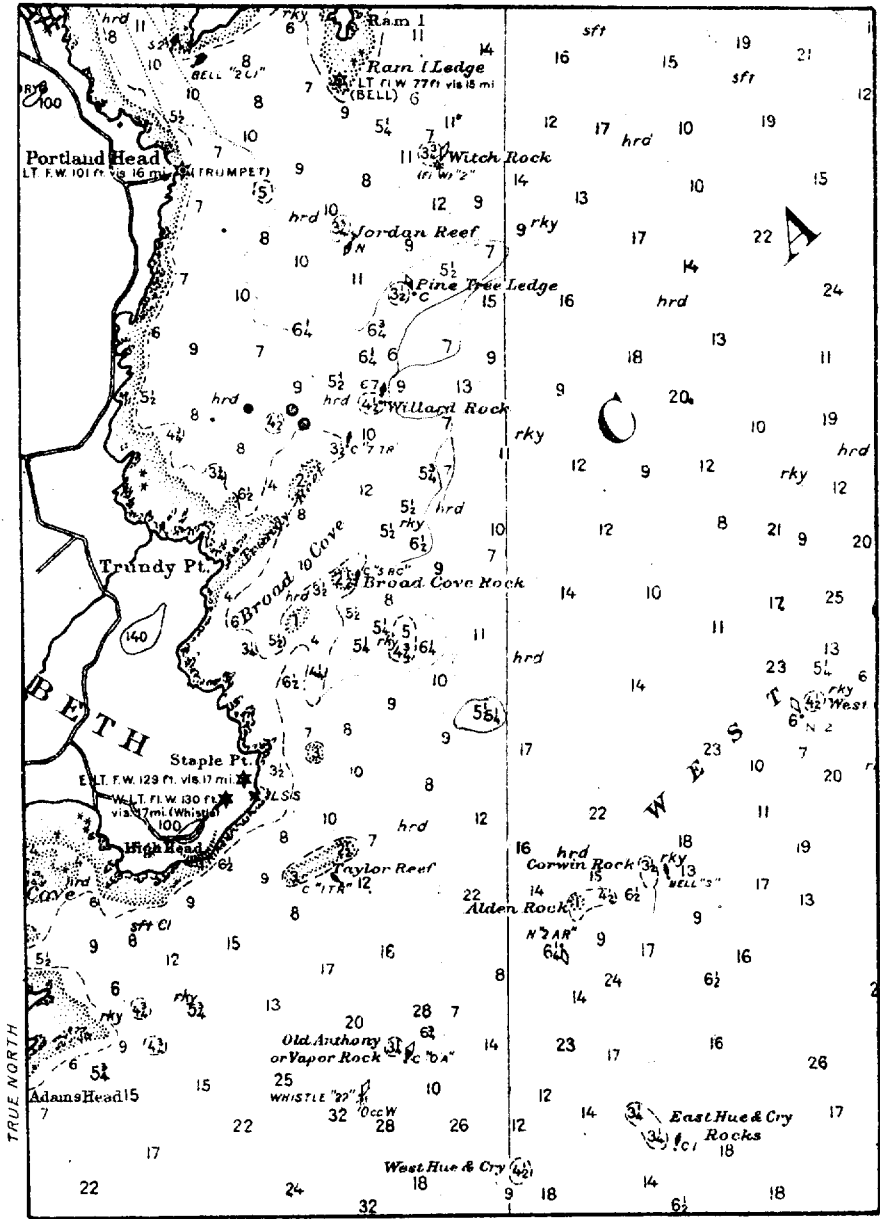
H.F.S. 9/11/41 See Chart Letter 460 (1941)

No shoals were found in the fourth area named above. A statement that the dragging was carried to the 18 fathom curve will explain the southern outline of the area dragged over.

Depths somewhat less than charted were reported in this area, but none less than 8 fathoms, and the dragging failed to discover any less than this depth.

In Portland Harbor, the object was to drag the channel between Portland Head and the dradged channel- no shoals were located east of Spring Point Ledge with a least depth of 29 feet. The average affective depth of drag was 35 feet in all soundings. Above are in feet at M. L. W., directions are true, and distances in meters. The color scheme for effective depths is that given in special publication No. 21.

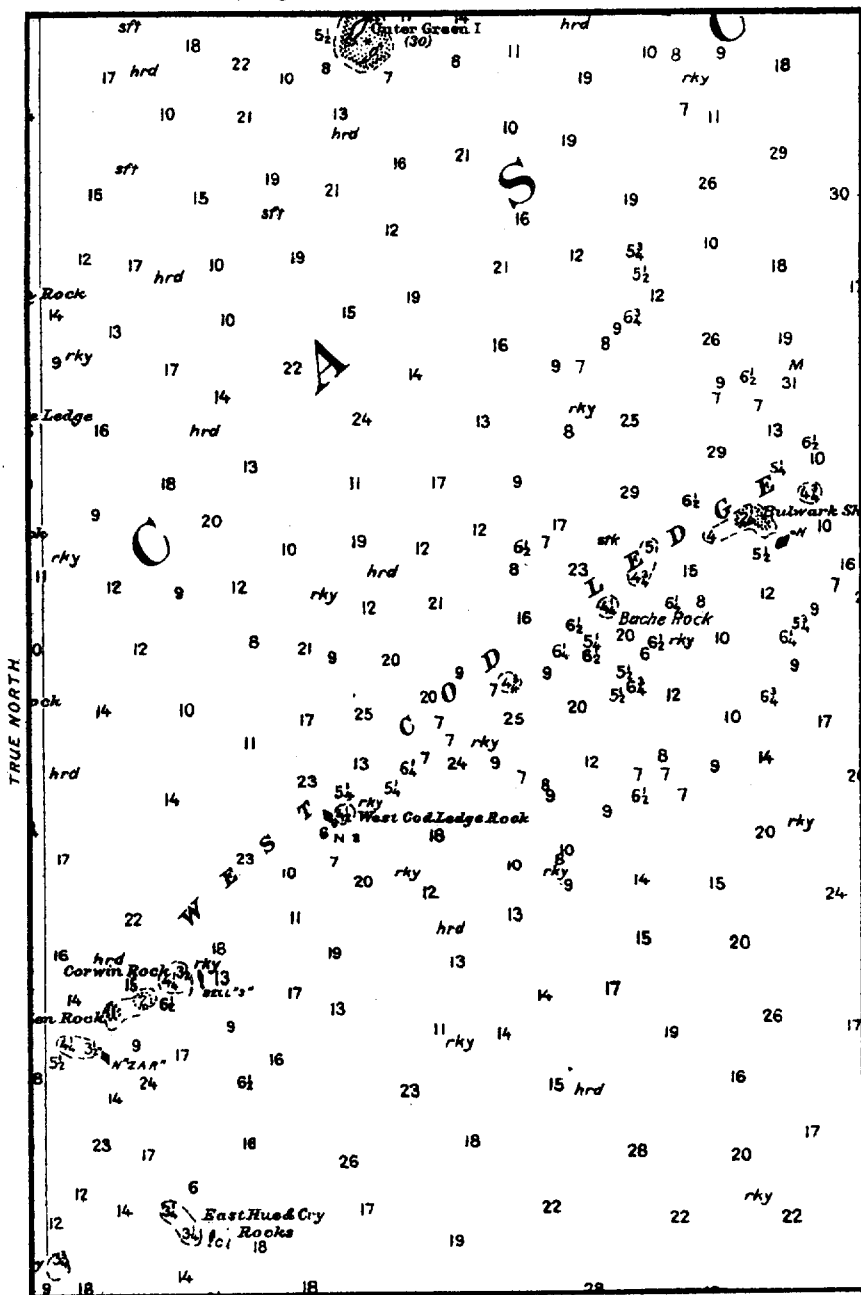
To accompany Notice to Mariners No. 31, 1914



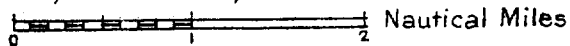
Reproduction of portion of Chart No. 1204.

0 1 2 Nautical Miles

To accompany Notice to Mariners No. 42, 1914.

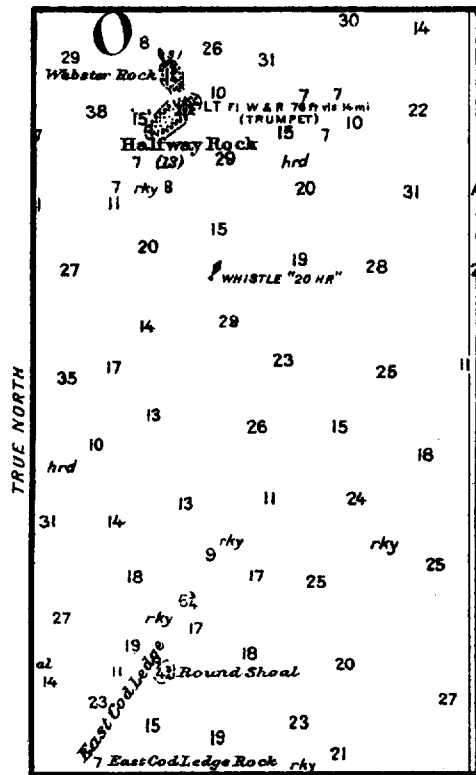


Reproduction of portion of Chart No. 1204.

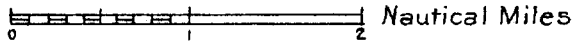




To accompany Notice to Mariners No. 42, 1914.



Reproduction of portion of Chart No. 1204



STATISTICS

3677

Coast of Maine - Approaches to Portland Harbor.

1914.

Date.	Day	Vel.	Angles	Miles.	Drag lenght	Soundings		Remarks.
						No.	Angles.	
May 7.	A	1	90	2.0	3050	20	54	
" 8.	B	"	24	0.25	3050	6	15	
" 11.	C	"	84	1.0	3000	11	32	
" 12.	D	"	204	5.0	3000	1	3	
" 14.	E	"	126	1.50	2400	10	27	
" 15.	F	"	66	1.50	4200	8	22	
" 18.	G	"	72	0.50	3000	18	51	
" 19.	H	"	30	0.25	3000	0	0	
" 20.	J	"	222	7.50	2700	2	2	
<hr/>								
May 26.	K	2	84	1.25	3000	17	48	
" 27.	L	"	56	1.0	3000	15	45	
" 28.	M	"	186	3.0	3000	10	28	
" 29.	N	"	162	3.25	2700	4	11	
June 1.	O	"	222	5.75	3900	1	3	
" 2.	P	"	234	7.0	3900	4	12	
<hr/>								
June 3.	Q	3	162	2.50	3000	5	15	
" 6.	R	"	96	3.75	3900	2	6	
" 8.	S	"	96	2.50	3000	0	0	
" 9.	T	"	168	5.0	3600	2	4	
" 11.	U	"	198	4.50	3600	5	12	
" 12.	V	"	78	1.75	3000	10	22	
" 13.	W	"	204	4.75	3000	1	4	
" 16.	X	"	90	3.25	3000	0	0	
<hr/>								
June 18.	Y	4	54	1.50	2700	13	27	
" 19.	Z	"	36	1.0	3000	23	68	
" 23.	A'	"	84	1.50	3050	10	30	
" 24.	B'	"	138	5.75	3000	12	19	
" 25.	C'	"	142	4.50	3600	0	0	
" 26.	D'	"	58	1.75	3900	6	14	
" 27.	E'	"	156	4.0	4400	1	3	
July 3.	F'	"	126	5.0	4000	0	0	
" 6.	G'	"	96	3.0	4800	6	14	
" 9.	H'	"	126	3.0	4800	4	16	
<hr/>								
July 10.	J'	5	36	1.25	3600	1	2	
" 13.	K'	"	222	6.50	3650	0	00	
" 14.	L'	"	78	1.0	3600	9	25	
" 15.	M'	"	84	1.50	4000	7	20	
" 18.	N'	"	54	1.25	3200	7	18	
" 20.	O'	"	114	2.50	4800	11	26	
" 21.	P'	"	0	C	C	3	6	Drag work rejected - no area covered.
Carried forward, ... 4558						265	714	

E. M.

Statistics - Coast of Maine, - continued.

Date.	Day.	Vol.	Angles.	Miles.	Drag Length.	Soundings No.	Angles.	Remarks.
Brought forward,		.....	4558	113.75		265	714	
July 22	Q'	5	42	1.0	4000	1	3	
" 23	R'	"	192	4.0	4000	1	2	
" 24	S'	"	186	4.50	4800	1	3	
" 25	T'	6	126	3.50	5200	0	0	
" 27	U'	"	144	3.50	5200	8	21	
" 28	V'	"	168	6.50	5200	0	0	
" 29	W'	"	60	1.0	4000	0	0	
" 31	X'	"	108	3.0	4400	2	4	
Aug. 1	Y'	"	114	2.25	3000	6	14	
" 3	Z'	"	174	2.0	(1200) 4000	8	18	
" 4	A''	"	42	1.0	1200	0	0	
" 13	B''	7	246	3.50	4400	0	0	
" 15	C''	"	168	3.00	4000	10	27	
" 17	D''	"	180	2.80	2800	6	14	
" 19	E''	"	192	5.0	3800	9	20	
" 20	F''	"	270	6.20	4000	0	0	
" 22	G''	"	216	6.50	4400	0	0	
" 24	H''	8	126	3.0	2000	0	0	
" 25	J''	"	150	4.75	5600	0	0	
" 26	K''	"	156	4.25	5200	0	0	
" 27	L''	"	222	5.0	4000	2	4	
" 31	M''	"	84	3.0	4400	0	0	
Sept 1	N''	"	78	3.0	4800	6	10	
" 2	O''	"	66	1.0	2400	0	0	
" 3	P''	"	48	0.50	4000	18	41	
" 4	Q''	"	78	1.50	4000	1	2	
" 5	R''	"	102	1.50	3200	9	20	
" 11	S''	9	192	2.50	3600	7	16	
" 12	T''	"	192	3.0	3600	4	9	
" 14	U''	"	174	3.20	2400 & 3200	4	9	
" 15	V''	"	276	6.0	4000	8	18	
" 16	W''	"	114	2.0	4000	14	27	
" 17	X''	"	294	6.0	4000	3	6	
" 18	Y''	"	282	6.0	4000	3	6	
" 21	Z''	10	252	7.50	4400	0	0	
" 22	A''''	"	198	3.70	2400	0	0	
" 23	B''''	"	150	2.50	800 & 2800	0	0	
" 24	C''''	"	84	3.0	4400	4	8	
" 25	D''''	"	102	3.20	4000	0	0	
" 28	E''''	"	138	3.0	1600	0	0	
			<u>10,744</u>	<u>252.10</u>		<u>400</u>	<u>1016</u>	

Correct Copy from Statistic Book.  
E.M.

Summary.

Number of Miles, ..... 252.10  
 ..... 10,744  
 Number of Angles, ..... 1,016 11,760  
 Number of Soundings, ..... 400  
 Number of Square miles, ..... 78

HYd. sheet 3677.

The tidal reducers used at Portland, Maine, were obtained from the automatic tide gauge, maintained by the Coast and Geodetic Survey. I believe that it is so stated in the wire drag records.

As to failure to give information <sup>as to organization</sup> in the sounding records, I think that this has not been done by any wire drag party. The sounding record has been considered as supplementary to the wire drag record which gives all the details. The sounding record is a compilation from other records and is not prepared by a record but by each officer copying in the results of his days work. If it is desired that the information relating to sounding operations be repeated in the sounding record, it is desirable that all parties be so instructed, as I feel certain that this is not clearly understood.

The difference between depths as given in advance reports and as finally plotted is probably chiefly in the tides, the advance reports usually being based on predictions as the tide gauge rolls were not usually available till the <sup>tenth</sup> end of the following month.

*H. H. Spick*  
*assistant*

VEC  
July 1, 1915.

HYDROGRAPHIC SHEET 3677.

*L. P. S.*

Coast of Maine, by Assistant N.H. Heck  
in 1914.

TIDES.

	Portland ft.
Mean low water, or plane of reference on staff	8.7
Lowest tide observed " "	4.4
Highest " " " "	21.4
Mean range of tide	8.9

## Hydrographic Sheet 3677

No tidal records for this work were filed in the Office, and none of the sounding books indicate the source from which the tide reducers were obtained. If the reducers were obtained from the U.S. Engineers then a transcription of their observations should have been furnished.

The two volumes of examinations by the tenders fail to state the organizations of the parties.

The depths given on the finished <sup>sheet</sup> differ, in some instances, from those on the charts that were based on advance information by Mr. Heck. The charts, therefore, will require further correction.

The limits of dragged areas, and areas missed, are outlined on charts 325 and 1204 in files of the F.R. Section.

The sheet is ready for approval.

E. P. Bell

Dec. 27, 1915

Hyd = 3677

The work consists of a Drag Survey of the Approaches to Portland Harbor. The area was very well covered, although a few splits were missed and a number of very shoal charted areas were left unfinished. In the final plotting the area covered by the sag of the drag, forming at the start of the line, has been considered all through the work as "doubtful" and rejected.

Comparing this work with the previous surveys (see charts 325 & 1204) it was found that the drag has passed over areas of lesser "charted" depths than those at which the drag has been set up.

In some instances (as shown on the tracing) it will be noticed, that during this survey, the drag at a certain depth has passed over shoals of lesser depths.

Positions 1 to 11 incl. of day "R" were considered by the party as doubtful. This area was partly covered during days Q, R, S etc and the rest was plotted as recorded with an accompanying note "doubtful".

A number of inaccuracies in plotting were discovered and corrected. The shoals and dangers are fully described in the Descriptive Report of the Chief of the Party, letters 203, 222, 249, 289, 321 (all of 1914) & Blueprint 14522.

Records were kept in good charge.

J. P. Shiklan.

Applied to chart 3201. Jan. 1943. F.A.M.

Generalized dragged area applied to chart 315 July 1958 L.A.M.

325 (Extension of Limits) added dragged areas 2-21-66 A.R.J.

87112