4851

Drag Cht. No. 1206-2 & 1207-2

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: Massachusetts

11—5613

DESCRIPTIVE REPORT

Hydrographic *Sheet No.* 2 4851

LOCALITY:

Cape Ann

Annisquam River & Jones River

Mill River & Lobster Cove

1923

CHIEF OF PARTY:

Raymond P. Eymen

4851

dortzb3

Descriptive Report

to accompany

Hydrographic Sheet #2.

(1) Authority.

This work was done under instructions from the Director dated May 22, 1928.

(2) Limits and Scale.

This sheet includes a development of the Annisquam River from a point of juncture on the south with sheet #1 out over the bar into Ipswich Bay to the north, and also includes an investigation of Jones River, Mill River, and Lobster Cove.

The work is shown on a projection of 1 to 5000 scale.

(3) Survey Methods.

All signals with the exception of the following: Art, Tip, Oil, Slip, Gas, and May (which were located by the hydrographic party) were transferred from topographic sheet "B" or were located by triangulation.

The hydrography was executed in the usual manner from a small boat using a hand lead line and positions fixed by the usual sextant angles. The channel proper and the area over and outside of the bar was done from a 30 ft. power launch, the balance of the work was done from a small skiff or dinghy under oars. No unusual methods were resorted to, except that much of the shoal area covered with the launch was of necessity done at high tide. Only in a few places were lines run on compass courses and as much as possible ranges were steered.

(4) Dangers.

Throughout the river the channel is very narrow and the largest dangers are in not keeping to the channel as the banks on either side are shoal.

The channel from beacon #5 to beacon #3 is very narrow but rather well marked with the worst shoal lying on the west side of the channel from beacon #5 to red buoy #10. Immediately north and south of beacon #3 are shoal areas preventing too sharp a turn at this point although there is plenty of water on the channel side just west of the beacon. To the westward of red spar buoy #6 and fairly close by are three submerged rocks that bear at low water.

In the vicinity of beacon #2 is a large sand shoal that makes out into the channel on all sides and the beacon must be given a wide berth. Beyond this point to the northward there are no immediate dangers as the channel is wider and easier followed. A large shoal area extends from Barn Rocks to the S.S.E. and also to the northward out across the bar, but this is usually fairly well defined by the discoloration of the water or breakers in a small swell.

(5) Channels.

A controlling depth of 9 ft. is shown on crossing the bar into the river from Ipswich Bay although at a point about 250 meters N. x W. of the Annisquam Harbor Lt. a 9 ft. channel is very narrow and probably 8 ft. would be the best that could be relied upon. Once inside the river, the depths are greater until a point is reached about 85 meters N.N.E. of beacon #2 where the deep water is in a very narrow channel but the controlling depth of 8 ft. can still be carried.

In the vicinity of buoy #8 are several 7 ft. soundings and one six ft. spot with deeper water on either side, however, seven feet is the best that could be carried through with safety. To the east and southeast of and near buoy #10 is an area of 7 ft. depth and the least depth of channel is found to the N.W. of beacon #5 where 6 ft. is the best depth.

A general depth of 7 to 8 feet can be carried into Lobster Cove to a point just south of the bridge. Above the bridge there is little or no water.

A narrow and winding channel leads into Mill River to a point between stations Bit and Tod. This channel has a controlling depth of about 4 ft. near its entrance and about 6 ft. inside, just south of the "bottle neck" of the river are two small spoil banks that bare at low tide and the channel lies to the westward and southward of these banks, and close to them.

The bar at the mouth of Jones River has a controlling depth of 2 ft. but once inside the channel deepens till the river takes a bend to the southward and is then lost, there being several spots where deep holes are to be found, but no connecting channel. At high tide small boats pass through Jones River and out into the Annisquam by the southern branch. The channel in the north branch is very narrow and fairly close to the north bank; it is most easily seen at extreme low water.

(6) Anchorages.

Numerous small boats anchor in or near the channel throughout the length of the Annisquam River. Lobster Cove is the most favored anchorage and this area is usually filled with small yachts and fishing

boats. A few small fish boats find anchorage in Mill River just where the river bends to the south. An occasional boat is to be found in Jones River. About 300 meters to the southward of the stone beacon at the entrance to Lobster Cove is a deep hole of moderate extent in which several large yachts have anchorage buoys.

(7) Currents.

The tide currents appear to divide in the section of the river between beacons #3 and #5 and usually there is not a great amount of current in this section. North of this area the ebb tide sets out to the northward. Very strong ebb tide currents make out through the river from a point at the mouth of Mill River to the vicinity of the entrance beacon (▲ Perch). Flood tide currents are also fairly strong in this vicinity but do not appear to reach the strength of the ebb tide currents. Strong tide currents have been noted throughout the section from beacon #3 to the mouth of the river but are of less frequent occurrence.

(8) Tide data.

All hydrography in Annisquam River to the southward of beacon #2 was referred to a plain staff gauge maintained on the eastern side of the River at the base of Wolf Hill. The rest of the work on the sheet was referred to a portable automatic gauge maintained on the stone beacon at the entrance to Lobster Cove.

(9) Conclusion.

Accompanying this report is a table of statistics, a tide data sheet, and a table of tide reducers.

Respectfully submitted,

Raymond P. Eyman.

Chief of Party.

Tide Data Sheet

Wolf Hill Tide Station.

Gauge used: Plain staff.

Location: East side of Annisquam River at base of Wolf Hill.

Levels

Bms.	1	2	3
Elevation above 0 of 1928 staff	18.279	14.801	19.531

Tide Planes

Plane	Rdg. on 1928 staff
Highest tide obs.	12.7
M.H.W.	11.09
M.T.L.	6.62
M.L.W.	2.15
Lowest tide obs.	1.0
Mn.	8.94

Annisquam Tide Station.

Gauge used: Portable automatic.

Location: On stone beacon, entrance to Lobster Cove.

Levels

Bms.	1	2	3
Elevation above 0 of 1928 staff	13.178	25.137	15.930

Tide Planes

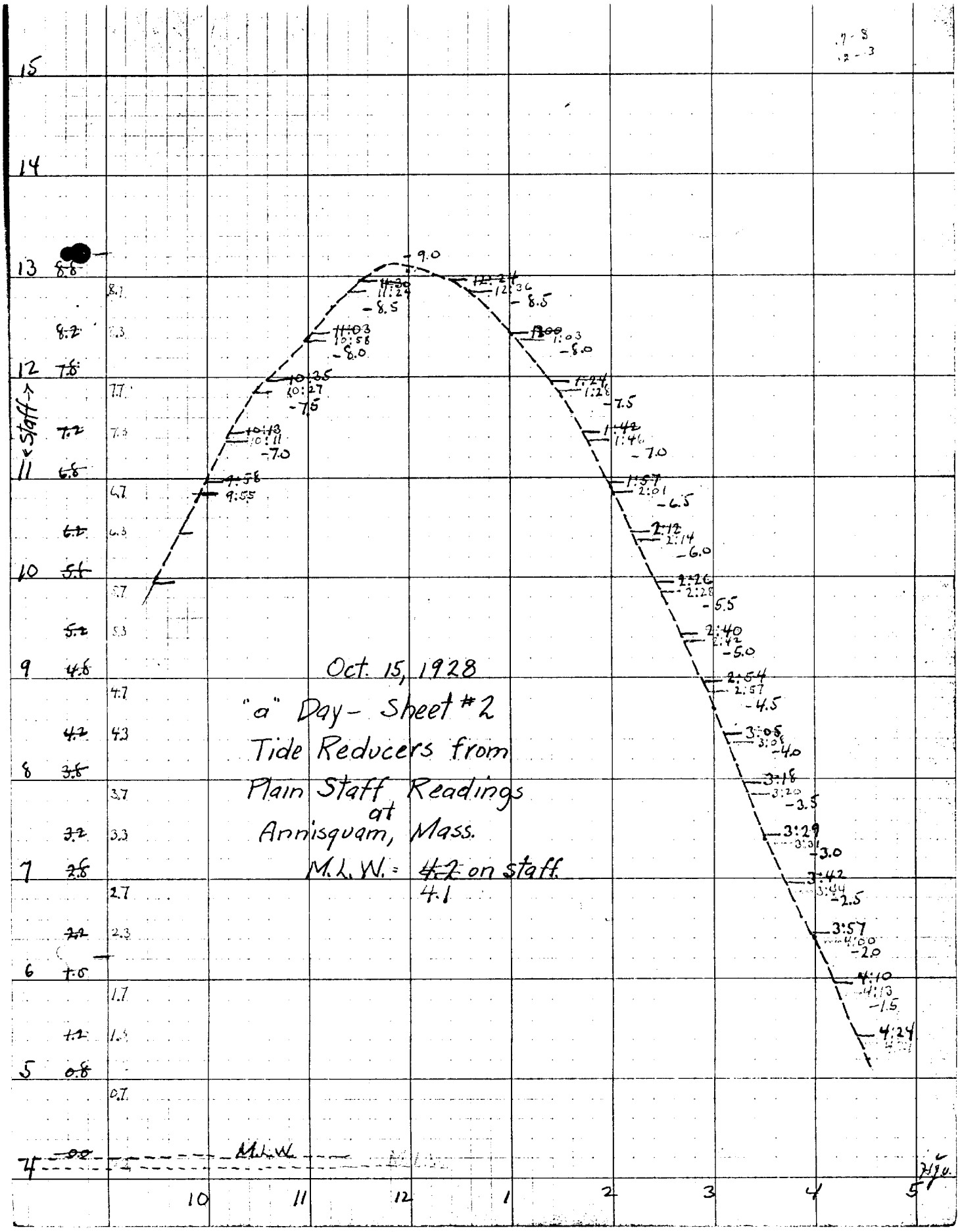
Plane	Rdg. on 1928 staff
Highest tide obs.	14.2
M.H.W.	12.61
M.T.L.	8.36
M.L.W.	4.10
Lowest tide obs.	2.6
Mn.	8.51

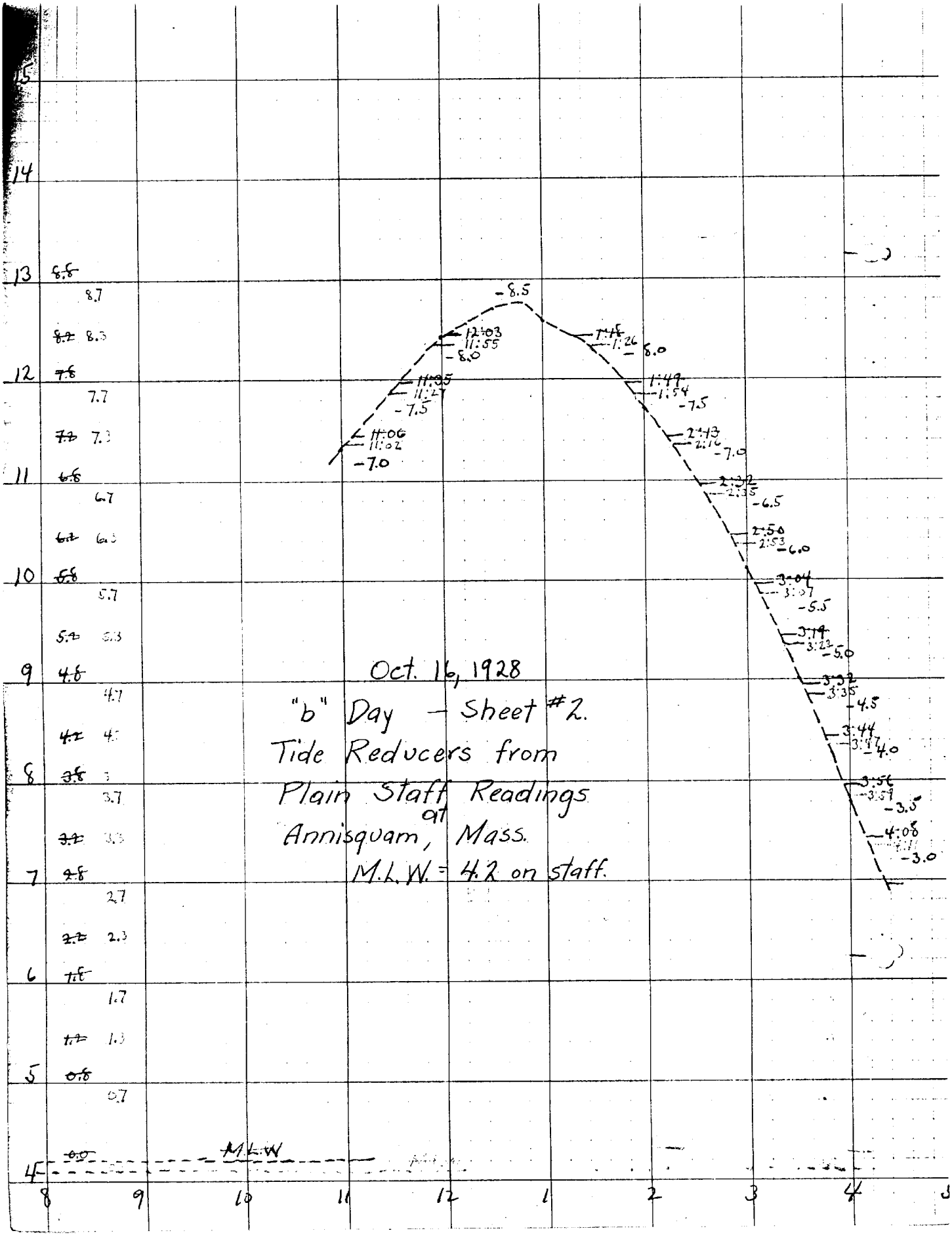
Statistics Sheet #2.

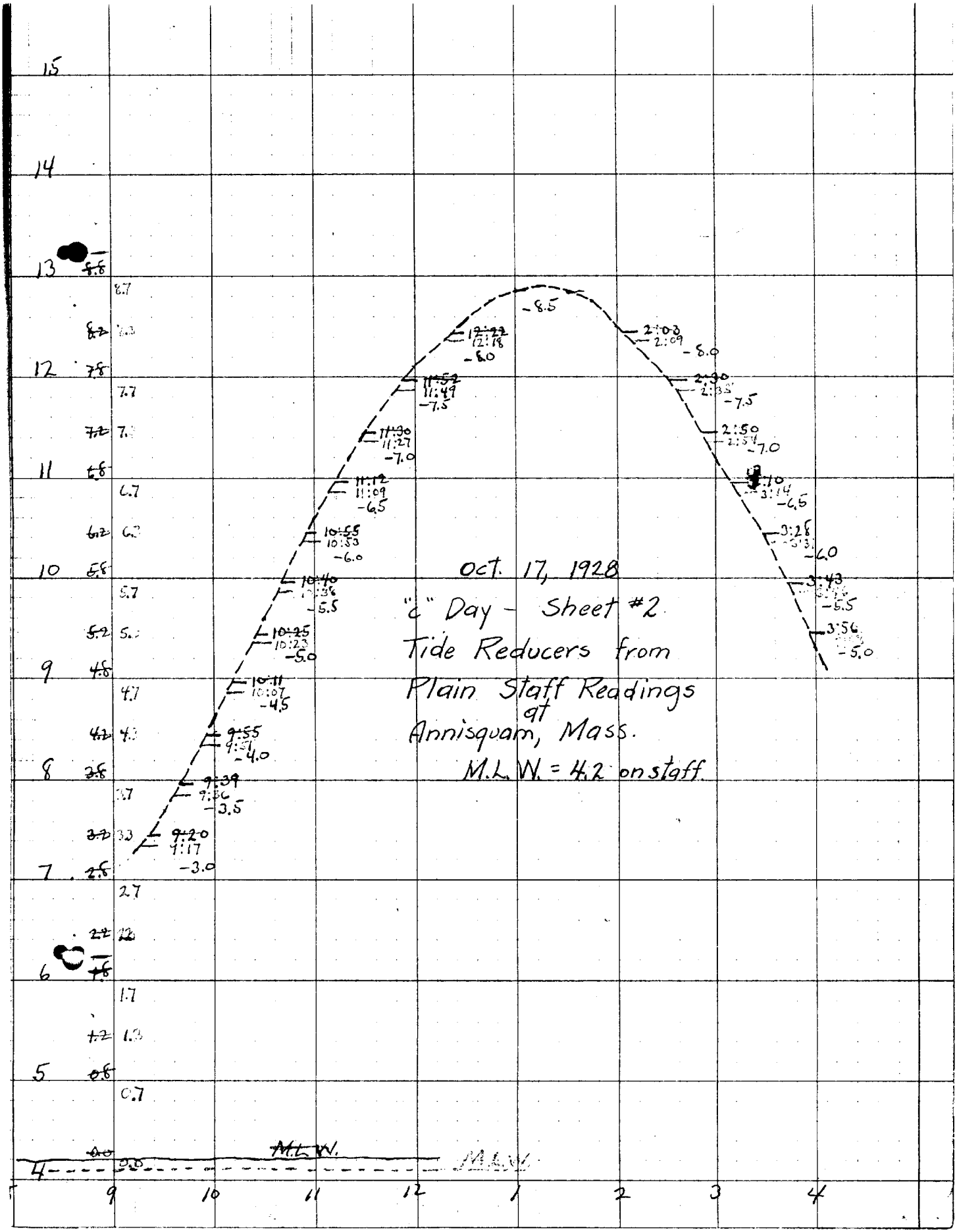
Annisquam River.

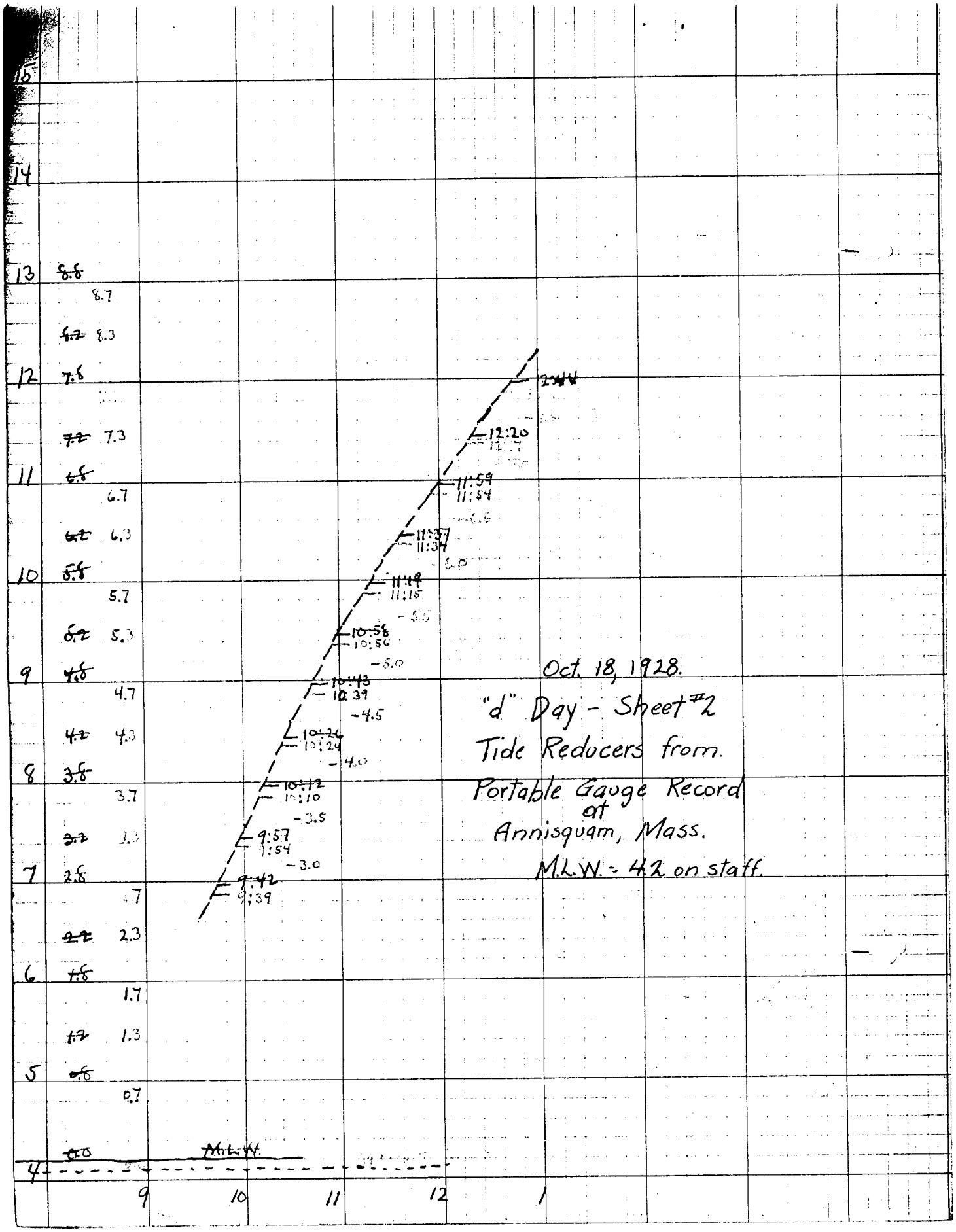
Date	Day	Stat. mi.	Soundings	Positions	*Boat	Vol.
1928						
Oct. 15	a	20.4	854	172	L	1
16	b	15.5	620	136	L	1
17	c	17.3	752	161	L	1 & 2
18	d	1.5	218	39	D	2
19	e	6.3	755	129	D	2
22	f	6.4	751	153	D & L	2 & 3
23	g	9.8	751	168	L & D	3
29	h	3.8	177	39	L	3
30	j	0.5	29	8	L	3
Totals	9	81.5	4907	1005		3

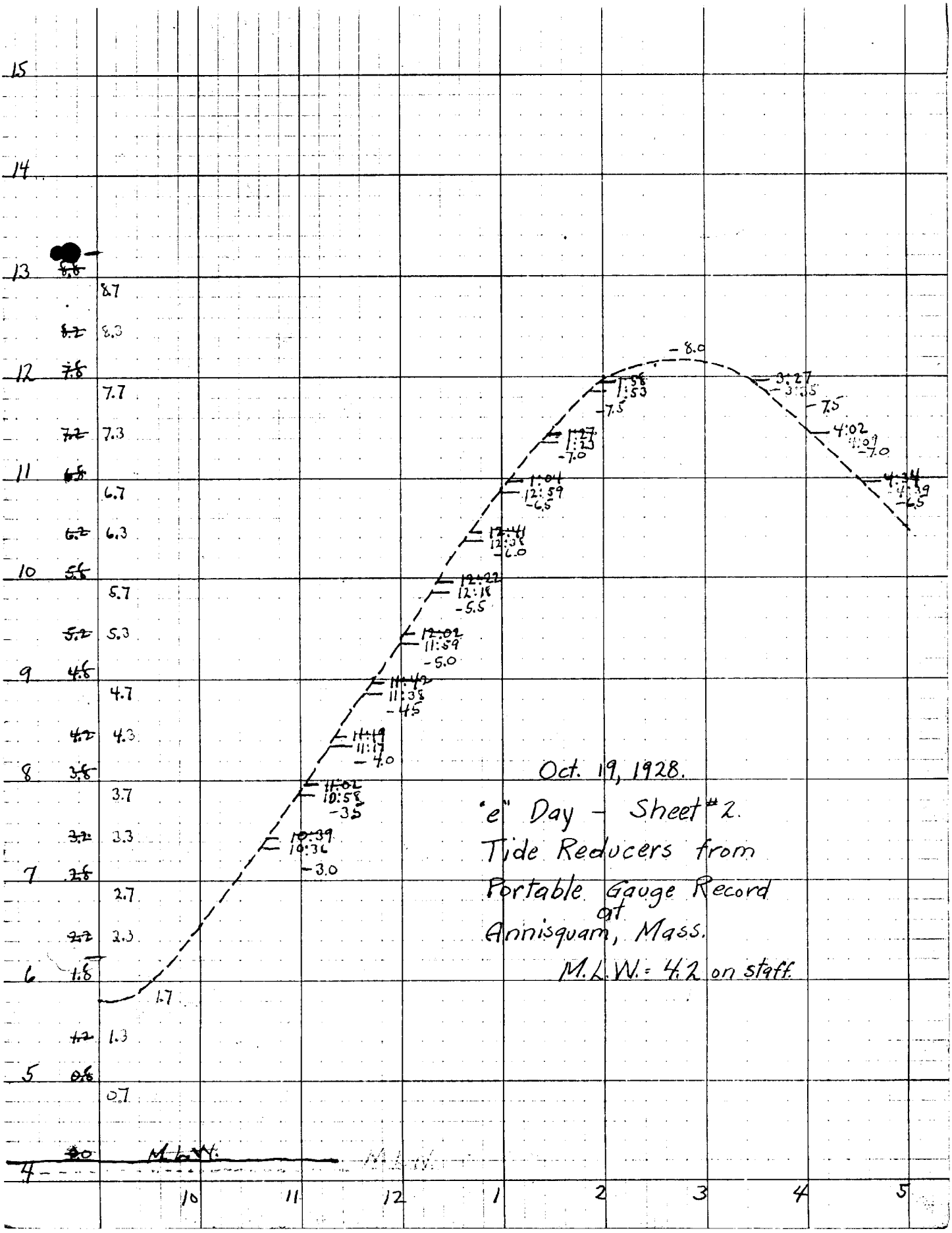
*L = Launch
D = Dinghy or skiff


Oct. 15, 1928
"a" Day - Sheet #2
Tide Reducers from
Plain Staff Readings
at
Annisquam, Mass.
M.L.W. = 4.2 on staff
4.1
M.L.W.
Staff
10
11
12
1
2
3
4
5


Oct. 16, 1928
"b" Day — Sheet #2.
Tide Reducers from
Plain Staff Readings
at
Annisquam, Mass.
M.L.W. = 4.2 on staff.
M.L.W.
-8.5
12:03
11:55
-8.0
11:27
-7.5
11:06
11:02
-7.0
1:49
1:54
-7.5
2:43
2:16
-7.0
2:50
2:53
-6.0
3:04
3:07
-5.5
3:19
3:23
-5.0
3:32
3:35
-4.5
3:44
3:47
-4.0
3:56
3:59
-3.5
4:08
-3.0
8
9
10
11
12
1
2
3
4


Oct. 17, 1928
"c" Day - Sheet #2
Tide Reducers from
Plain Staff Readings
at
Annisquam, Mass.
M.L.W. = 4.2 on staff.
M.L.W.
M.L.W.
9
10
11
12
1
2
3
4

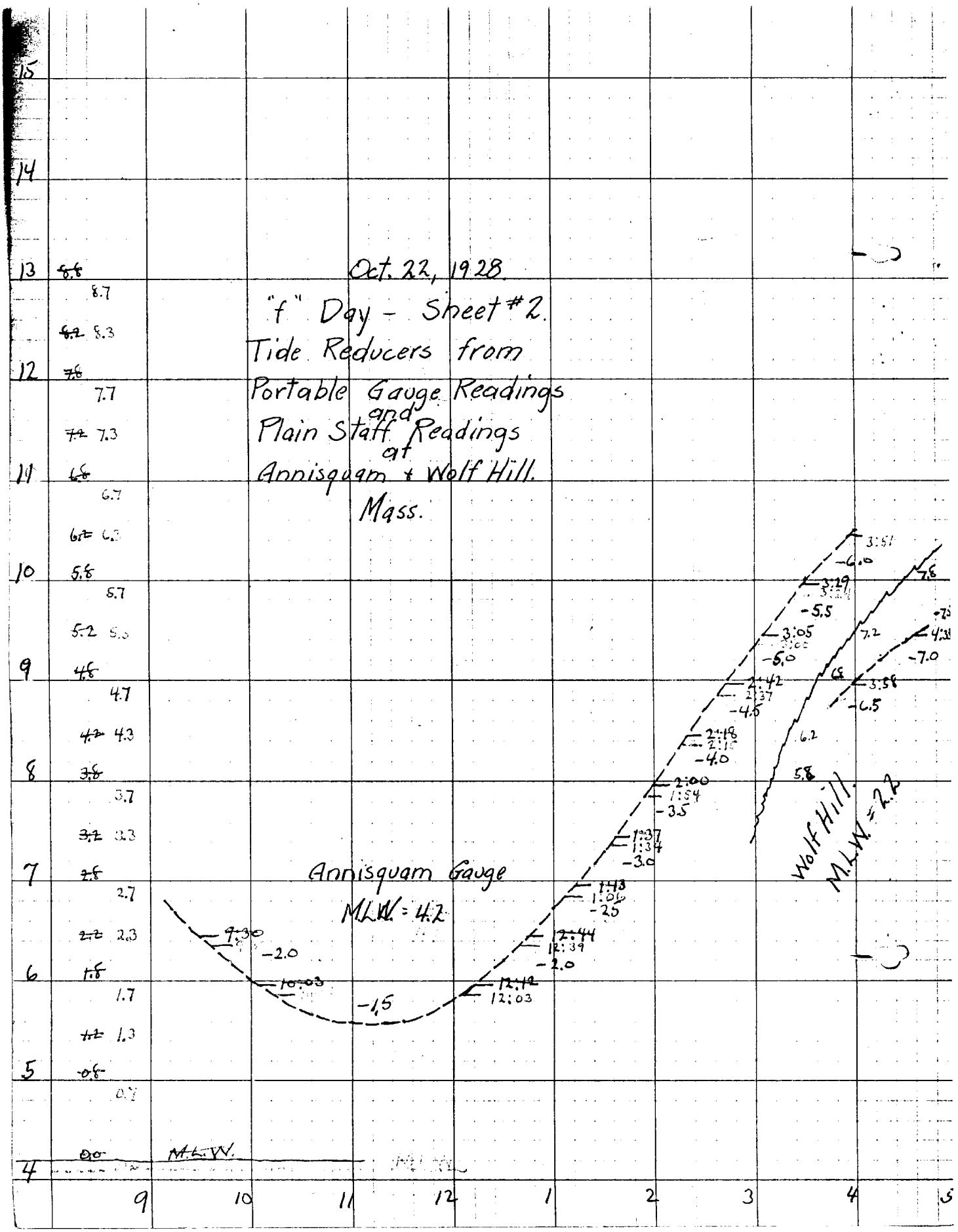

15
14
13
12
11
10
9
8
7
6
5
4
9
10
11
12
1
8.7
8.3
7.3
6.7
6.3
5.7
5.3
4.7
4.3
3.7
2.3
1.7
1.3
0.7
M.L.W.
9:42
9:39
9:57
9:54
-3.0
10:12
10:10
-3.5
10:26
10:24
-4.0
10:43
10:39
-4.5
10:58
10:56
-5.0
11:19
11:15
11:37
11:34
-6.0
11:59
11:54
12:20
Oct. 18, 1928.
"d" Day - Sheet #2
Tide Reducers from.
Portable Gauge Record
at
Annisquam, Mass.
M.L.W. = 4.2 on staff.

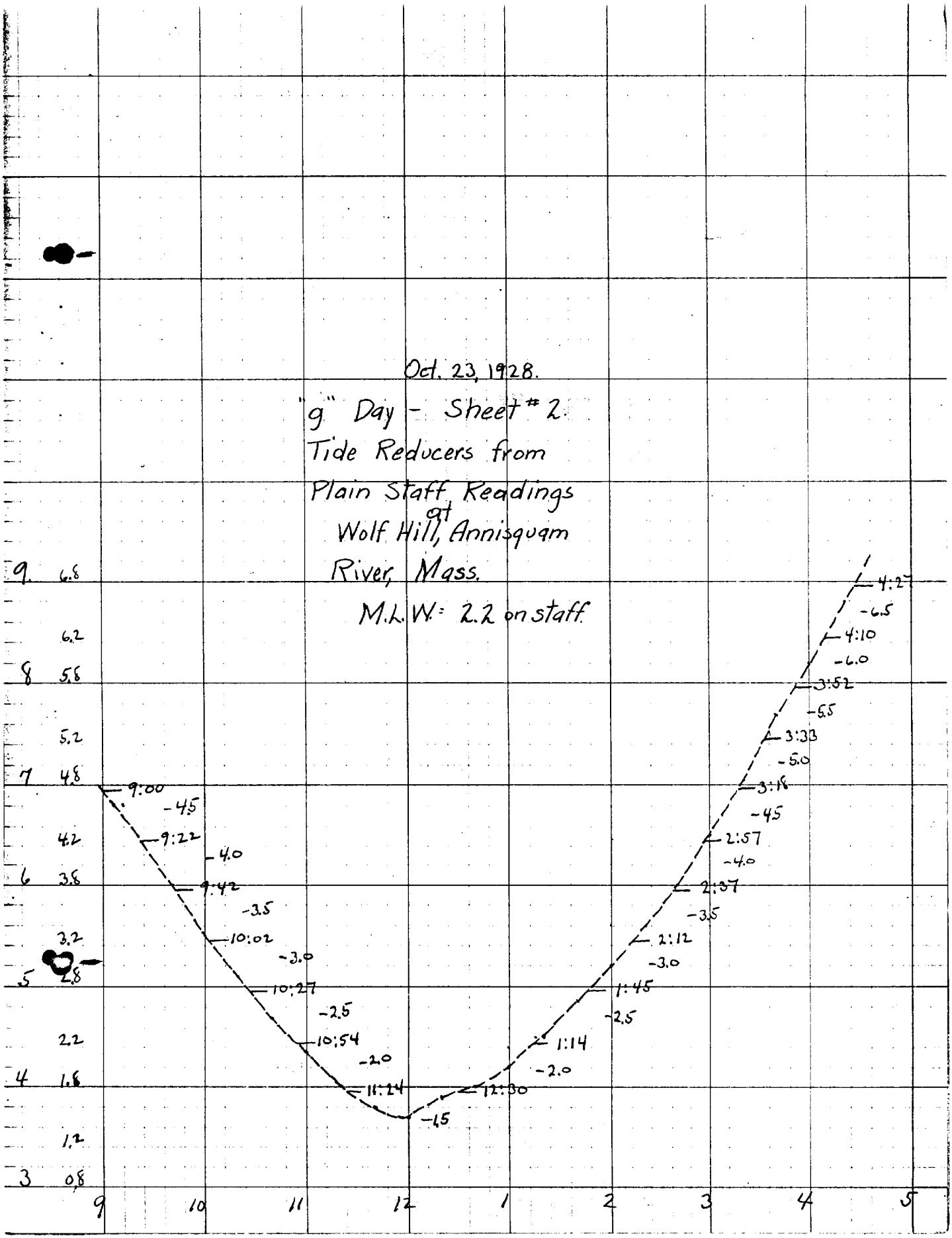

15
14
13
12
11
10
9
8
7
6
5
4
8.7
8.3
7.7
7.3
6.7
6.3
5.7
5.3
4.7
4.3
3.7
3.3
2.7
2.3
1.7
1.3
0.7
M.L.W.
10
11
12
1
2
3
4
5
-8.0
-7.5
-7.0
-6.5
-6.0
-5.5
-5.0
-4.5
-4.0
-3.5
-3.0
Oct. 19, 1928.
"e" Day - Sheet #2.
Tide Reducers from
Portable Gauge Record
at
Annisquam, Mass.
M.L.W. = 4.2 on staff.

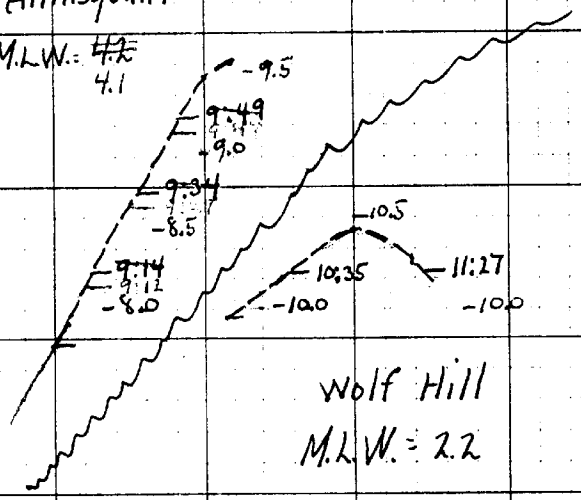
Oct. 22, 1928

"f" Day - Sheet #2.

Tide Reducers from Portable Gauge Readings and Plain Staff Readings at Annisquam & Wolf Hill. Mass.



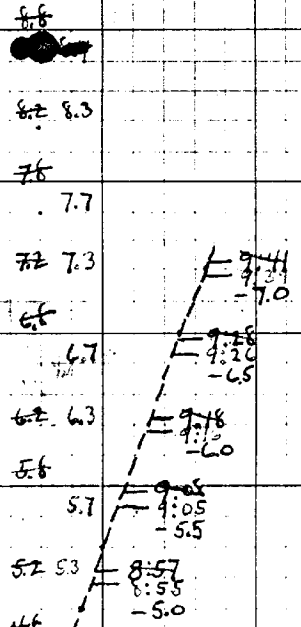

Oct. 23, 1928.
"g" Day - Sheet # 2.
Tide Reducers from
Plain Staff Readings
at
Wolf Hill, Annisquam
River, Mass.
M.L.W. = 2.2 on staff
9
8
7
6
5
4
3
6.8
6.2
5.6
5.2
4.8
4.2
3.8
3.2
2.8
2.2
1.6
1.2
0.8
9:00
-4.5
9:22
-4.0
9:42
-3.5
10:02
-3.0
10:27
-2.5
10:54
-2.0
11:24
-1.5
12:30
1:14
-2.0
1:45
-2.5
2:12
-3.0
2:37
-3.5
2:57
-4.0
3:18
-4.5
3:38
-5.0
3:52
-5.5
4:10
-6.0
4:27
-6.5
9
10
11
12
1
2
3
4
5



Oct. 29, 1928.

"h" Day – Sheet #2.

Tide Reducers from Plain Staff Readings at Annisquam & Wolf Hill, Mass.



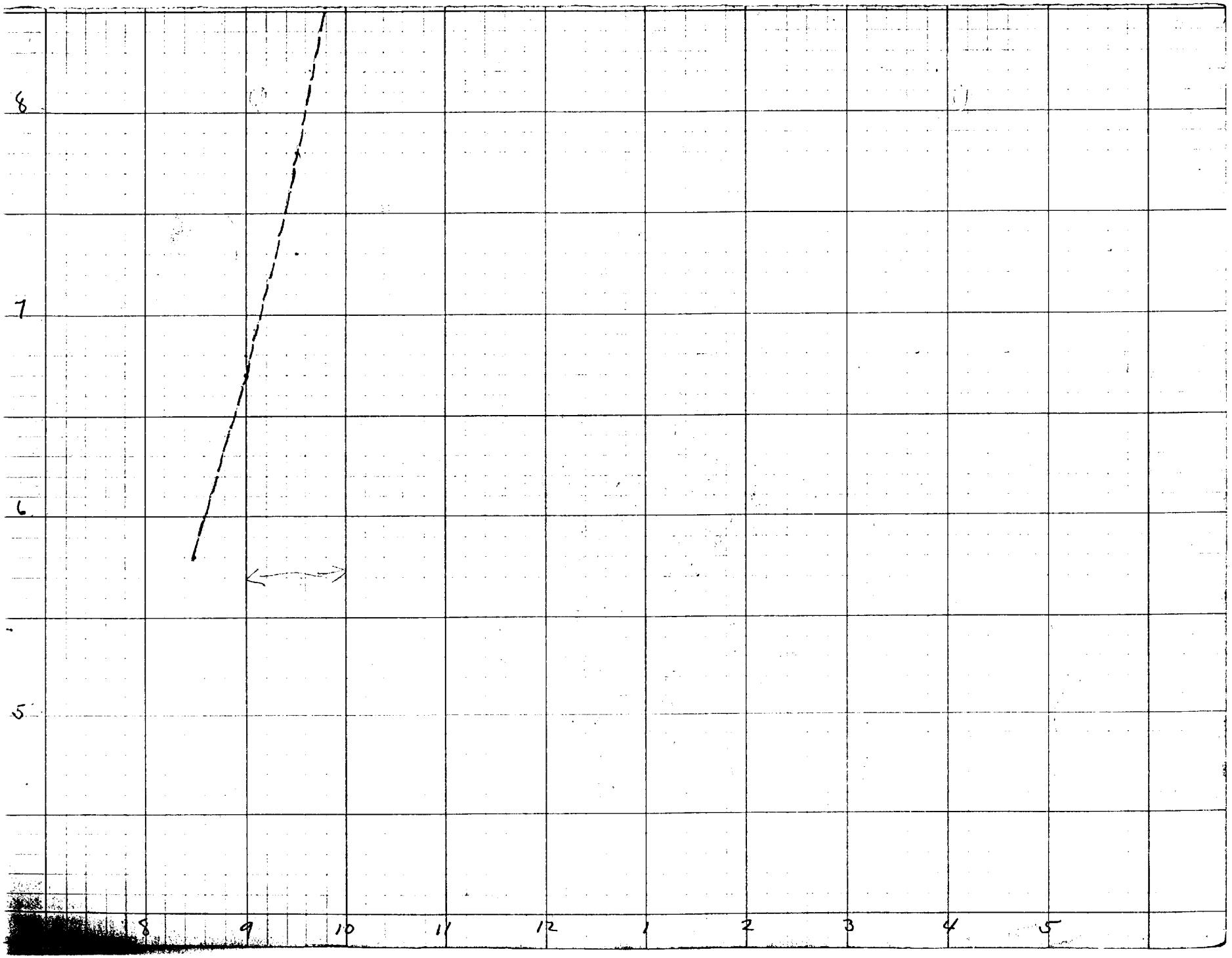
Oct. 30, 1928

"j" Day - Sheet #2

Tide Reducers from Plain Staff Readings at Annisquam, Mass.

M.L.W. = 4.2 on staff

9 10 11


8
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12
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Sec. of Field Records EAL

Mar. 19, 1929.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 4851

Locality: Annisquam River, Mass.

Chief of Party: [illegible] Hyman in 1928.
Plane of reference is Mean low water, reading
4.1 ft. on tide staff at Annisquam, Mass.
3.2 " " " " " Wolf Hill, Mass

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

H. A. Marmer
Chief, Division of Tides and Currents.

Section of Field Records

Report on Sheet No. 4851 — Surveyed in Oct. 1928
Chief of Party R.P. Eyman — Surveyed by R.P.E. & J.C.J.
Protracted by J.C. Johnson — soundings plotted by J.C.J.
Verified and Inked by J.T. Stessin and J.T. Walker

The sounding records were neatly kept and were complete except that several rocks which were located were not described as to height.

The protracting was accurately done with few exceptions.

The soundings were plotted according to the time intervals.

The sheet was legible. It was a little soiled when received but this probably occurred while in the hands of Mr. Stessin.

The drafting conformed to General Instructions.

Mr. Stessin left no record of what he had done on the sheet and it was assumed that the soundings he inked in were also verified by him. The following soundings were inked in by Mr Stessin :- 47a to 52a, 60a to 67a, 73a to 172a, 1b to 7b, 34b to 67b, 1c to 36c, 76c to 80c.

a note after position 8 j" Vol. 3 page 46 refers to a three foot sounding at pos. 26 ä dry. The actual reduced sounding at that position is nine feet.

The soundings between 12 and 13 g Vol. 3 page 9 were not inked as their position is doubtful.

There is some doubt as to the position of 142 g.

There is also some confusion regarding the two redbuoys, both numbered 4 between signals Pan and Red. (Location at pos 166 ? accepted 4 2g)

Reviewed by

Respectfully submitted
J T Walker
5/29/29

Section of Field Records

Report on Hyd. Sheet No 4851

Annisquam River and Approach from Ipswich Bay, Mass.

Surveyed in 1928

Instructions dated May 22, 1928. (Lieut. R.P. Eyman)

Chief of Party - R.P. Eyman
Surveyed by - R.P. Eyman and L.C. Johnson
Protracted and plotted by - L.C. Johnson
Verified and inked by - J.T. Stessin and J.T. Walker

1. The records conform to the requirements except that after some positions, there was a long time interval, with no "ahead" time noted.
(See note on p. 23 Vol. 2)

2. The plan and character of development conforms to the requirements of the General Instructions.

3. The plan and extent of the survey satisfies the specific instructions.

4. In general the crossings are satisfactory. There are a number of kinks in the curves some of which might have been eliminated by adjustment in the plotting of the sounding lines.

5. The information is sufficient for drawing the usual depth curves.

6. The junction on the south with H. 4849, the only contemporary survey, is satisfactory.

7. The usual amount of field plotting was well done by the field party.

8. Character and scope of survey – good.

9. Additional work is not necessary.

Reviewed by R. L. Johnston June 10, 1929.
a/p. A. M. Zakrzelski
B/Boden

Form 537

MAR 23 1929
MAR 23 1929
MAR 23 1929

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4851

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.

Field No. 2

REGISTER NO. 4851

State Massachusetts

General locality Cape Ann

Locality Annisquam River and Approach from Ipswich Bay

Scale 1:5000 Date of survey October, 1928

Vessel U. S. C. & G. S. L. #65

Chief of Party Raymond P. Eyman, H. & G. E.

Surveyed by Raymond P. Eyman and L. C. Johnson

Protracted by L. C. J.

Soundings penciled by L. C. J.

Soundings in ~~########~~ feet

Plane of reference M. L. W.

Subdivision of wire dragged areas by

Inked by J.T. Stessin & J.T. Walker

Verified by J.T. Stessin & J.T. Walker

Instructions dated May 22, 1928

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

38/30 — 41/30 — (397) topo.

70°-40' — 70°42' 5

42°37' — 40°

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4851

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

Number of positions on sheet	1005
Number of positions checked	214
Number of positions revised	5
Number of soundings recorded	4907
Number of soundings revised	21
Number of signals erroneously plotted or transferred	0

Date: May 28 1929

Cartographer: J W Walker

Note: Part of this sheet was verified and inked by Mr. Stessin. The number of positions he checked and revised were not counted.