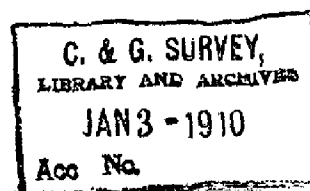


2973



Department of Commerce and Labor
COAST AND GEODETIC SURVEY

J. N. Littmann
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

9 Sheet No. *2973*

LOCALITY:

*Cordova Bay, Brownson
Bay to Barrier Islands*

1909

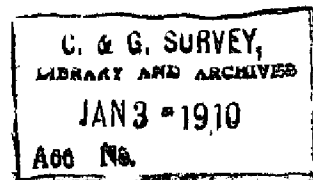
CHIEF OF PARTY:

R. B. Derickson

2973

COAST AND
GEODETIC SURVEY
JAN 3 1910
Assistant in Charge.

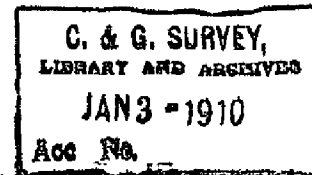
2973



Descriptive Report
to accompany
Plane Table Sheet of the Barrier
Islands and the Southwestern Ex-
tremity of Prince of Wales Island,
S.E. Alaska.

2973


Descriptive Report to accompany Plane Table Sheet of the
Barrier Islands and Southwestern Extremity of Prince of
Wales Island, S.E. Alaska.



The following is a descriptive report of the topographic survey of the shore-line of the Barrier Islands and the southwestern point of Prince of Wales Id. It joins the topographic sheet of Capes Chacon and Nunez, executed during the season of 1908, at \triangle Surf, a prominent point two and half miles west of Point Nunez, and extends to a point on the northern entrance of Eureka Pass Narrows, where it joins sheet #2 of this seasons (1909) work. It also includes the Barrier Islands which lie off the western part of this shore-line.

Appearance of the Shore. On approaching the shore from Dixon Entrance, the Barrier Islands give the appearance of low land extending south-westward from the foot of the mountains. On the eastern section of the sheet, Mt. Nichols and adjoining peaks loom up; then to the westward a ridge of lower hills running north and south showing the neck of land to the westward of Brownson Bay. Several high snow-covered summits arise further inland. These are very prominent from seaward but as they are not visible from the shore, the heights were not determined. They are beyond the limits of the sheet.

Description of the shore from Surf to Eureka Pass. Starting at the eastern edge of the topographic sheet and working west, the prominent features of the shoreline are: \triangle Surf, Brownson Bay, Point Marsh, Hessa Inlet, Mexico Point, Eureka

Pass and the Barrier Islands.  Surf is situated on a large rock lying about 75 meters off the shore. It is locally known as the "Sitting Brown Bear" because of its appearance, it is marked as a bad point for small boats on account of the numerous tide rips in this vicinity.

Brownson Bay is the first bay to the westward. It is three miles long extending in a north and south direction with a narrows 280 meters wide one and half miles from the outer entrance. South of the narrows the bay is a 1000 meters wide. There are two small wooded islands on the east side of the entrance and directly south of these islands the water is foul. A rocky ledge lies off the end of the islands; another group of rocks about 260 meters off bare 5 feet, and two small rocks covered at half tide lie half mile south of the end of these islands and in the middle of the outer entrance. The passage into the bay along the west side appears to be clear. North of the narrows the bay is about one third of a mile wide with a small arm branching off at right angles on the starboard side. There are two small islets on the southern side of this arm and another in mid channel. A rock covering at high water lies in the middle of the head of the bay. By following a small stream at the head of the arm and making a carry of half^a mile over a portage, a small lake can be reached in a canoe. This lake is one of a chain of three which connect with a stream at the head of Nichols Bay by another short portage. A large waterfall on the west side and one quarter mile above the narrows, is a good place to obtain fresh water; there is plenty

of water flowing and a launch or small boat can get close to the beach at low water. This bay is declared by the Coast Pilot to be "utterly unfit as an anchorage for vessels" but a hydrographic examination proved this statement to be erroneous. There is an anchorage at the head of the bay off the starboard arm in 14 to 20 fathoms, ^{with sticky bottom.} The west shore should be kept fairly close aboard on entering to avoid rock at entrance, and after the entrance islands are passed, a straight course can be made thru the narrows to the anchorage. For more specific directions see the sailing directions which accompany the hydrographic report.

Between \triangle Surf and Brownson Bay are two broad indentations on the shoreline. As they are open to the south-west they afford no shelter; there is no anchorage and a heavy sea rises with only moderate wind. Foul ground with kelp and rocky ledges extend along the shoreline especially off the point between the two bights. There is a prominent reef in the second of these bights 350 meters off the east shore, and a rock ~~baring~~ at half tide, lies in the middle of the head about 150 meters off shore. The first bight is foul with rocky ledges and pinnacles lying all around the shoreline about 200 meters off.

The shoreline is very bold and steep-to rising from the beach to an average height of 1000 feet. Inshore from \triangle Surf is a ridge 900 feet high, running with the shoreline. From this ridge, the ascent continues more gradually to a height of 1200 feet in a direction normal to the first ridge. Nichols

Mountain 1750 feet high, is about a mile north of the point between the two bights. A ridge, with two knolls on it, extends southerly from the mountain and from the end of this ridge a sharp drop is made to the beach. There is an 1100 feet peak half mile north west of Nichols Mt. These hills are all covered with Spruce, Hemlock, and Cedar,^{and} at the summit stunted Pine prevails.

Bald Mountain is a bare rocky hill 800 feet high, on the eastern side of the entrance to Brownson Bay. Above the 300 feet contour, this hill is bare of trees and the rock has a greyish white appearance. It is very difficult to ascend. Between Bald Mt. and the peak north west of Nichols Mt., is a 700 feet ridge with deep valleys at each end.

Immediately east of Brownson Bay is a small bay known as Little Brownson Bay. The entrance, which is hidden behind several small islands, is very foul and narrow. It is marked on the west by a round wooded island 260 meters in diameter, and on the east by a large white rock which stands about 30 feet out of the water. This rock greatly resembles a haystack, by which name it is locally known.

On entering this bay with a launch of 6 ft. draft, a mid-channel course is held until the north end of the wooded island on the port side, is abeam, then the course winds between several small rocks, which bare at low tide, until the rocky islet at the head of the passage is passed on the starboard hand. From here the bay itself opens up covering about 80 acres. As an anchorage for small launches it is well sheltered from the sea but williwaws sweep down from Bald Mt. during a southerly

gale. It can be entered only by small launches on account of the narrow and foul entrance. A small boat passage, bare at low water, connects the northern part of this bay with Brownson Bay proper. On the south east side of the bay is a small cove with two cabins on the beach; ^{of which} one is an old Indian fishing hut but the other is a good log cabin owned by two prospectors who have located several bornite claims in this vicinity.

Shore from Brownson Bay to Point Marsh. On the west side of the entrance to Brownson Bay is a small arm extending in-shore a half mile, at the entrance are two rocks awash at low water and about one third of the distance off each shore of the arm. A quarter of a mile into the arm is a center rocky islet and opposite this is a sunken rock 60 meters off the northern shore.

There are two small wooded islands south of this arm. the inner is low; but the outer is about 80 feet high to the top of the trees and on the outer extremity is bare, making a bold prominent point, to mark the western side of the approach to Brownson Bay. South-west of this point are numerous rocks covered at high water which extend 400 meters off shore so that vessels to clear them must approach the point from a southeasterly direction.

Along the main shore to the westward are two small bights which are very foul. There are several rocky islets offshore, and the water between them and the shore is full of kelp.

Just west of the second bight is a low island covered with trees and surrounded with rocky ledges. Point Marsh is the

south west point of this island. The point is about 60 feet high with sloping bare rocks to the waters edge. Trees fringe the point 60 feet above the water. There are two rocky inlets off the point and the water south and south east of the point is filled with rocks, the most of which cover at high water. The most dangerous of these is the outermost rock lying half a mile south west of the point. This rock is covered at high tide. Another reef lies three quarters of a mile south east of the point. This is the outermost rock in this direction; the others lying between it and the shore.

North of this island is another about half its size, the north shore of which is a wall of rock 25 feet high. The passage between this latter island and the main shore is narrow, with a slight current, but clear, and it is used by all small boats and launches to escape the seas off Point Marsh. There is a rock covered at high water in the passage just before entering the narrows and on the south side of the channel. It is cleared by a mid-channel course thru the passage and heading for the narrows.

Minnie Bay is a small sheltered bay on the east side of the narrows, which separate the islets south west from the point. It affords good anchorage for the launches and small boats which seek this bay for shelter or to await favorable weather to continue to the eastward. This bay is entered by keeping a mid-channel course and following the port shore until the two islets on the starboard hand, are passed. Anchorage is then found anywhere above the island, but launches should

not go too close to shore, as mud flats extend off shore from the head of the bay and a small reef covered at high water extends off the east shore. There are two streams emptying into the bay. A tide staff and bench marks were established here.

Coast to the North of Point Marsh and the Launch Passage between the Islands to the Northward. An open bight north of the ^{launch} narrows is foul and has a rocky bottom unsuitable for anchorage. Numerous rocks most of which cover at high tide. abound in the waters north and north west of the ^{launch} narrows. From the ^{Launch} narrows behind Point Marsh, the launch passage thru the islands to the northwest passes between two different pairs of these rocks. The course is practically a straight line from the narrows to the entrance of the passage thru the islands behind Mexico Point. For a mile and half the course is across a stretch of open water where sharp and high seas prevail during a southwest blow. There is a sunken rock about one and a quarter miles southeast of Mexico Point. A large black rock about 20 feet high is passed to the starboard, about three quarters of the way across, ^{the open stretch} Just before entering the passage, a small reef must be avoided, on the port side of the channel. On this side of the passage are several small islands and on the other side there are but two large islands, heavily wooded and not higher than 100 feet to the top of the trees. A small cove in the first island has a very foul entrance, and it is impossible to enter this cove except at high water, by anything larger than a canoe. There is an Indian fishing shack here and a small stream of water. Off the entrance to the cove

is a rock and about 240 meters along the shore to the south-east is another. Both of these are covered at high water but a mid-channel course clears them. There is another Indian hut in a slight cove in the island on the port side after passing the first cove on the starboard hand.

From the entrance to this passage the course is changed about half a point to starboard, heading for a small round island one and a quarter miles away. When well round this island, a course can be set for Center Id. two miles distant, care being taken to keep well off the northwest point of the first island on the starboard hand, as kelp patches show off that point. From Center Id. the course changes to starboard about two points, heading for the south point of a small island and passing Leading Point, a prominent point on the island to starboard, about one third mile distant. After passing Leading Point, the narrows of Eureka Pass are well open and the course can be changed to pass thru these in mid-channel. When thru the narrows a sunken rock with about 3 feet over it, on the port hand, and a reef bare of kelp and covering at half tide on the starboard, must be avoided. The rock lies 200 meters off the northern point of the island on the west side of the Eureka Narrows. The reef is known as "Guide Rocks" and lies half a mile northeast of the Narrows. All dangers in the passage are marked by kelp.

Inner Launch Passage and Hessa Inlet. From the large black rock at the east end of the above passage is a chain of small islands which form the eastern shore of a second and inner launch passage. This passage follows the main shore of

Prince of Wales Id. to a point two and half miles distant where it opens into the head of a body of water reaching inshore from Mexico Point. The passage is narrow in three places, the narrowest part, one mile from the entrance, is only 60 meters wide. Just before reaching these narrows it connects with the regular launch channel by a passage on the south side of a large triangular island.

Hessa Inlet, a large body of water three and half miles long and 800 meters wide at the head, branches from the inner passage at a point two miles from the entrance. The entrance to the Inlet is only 50 meters wide and except at slack water there is a strong current flowing, attaining a maximum velocity of about 6 knots. Except when the maximum current is flowing local launches are able to stem it by hugging the northwest shore where the water is deep and the shore steep-to. At the head of the Inlet are two large salmon creeks. There is another creek on the northwest shore and two at the head of the eastern arm of the Inlet. The shore line is of the same general character, rocky and steep. Bushes grow to the high water line.

The Peninsula between Brownson Bay and Hessa Inlet. On the west shore of Brownson Bay a chain of hills extend north and south. The highest peak, 1100 feet high, is about two and half miles east of Point Marsh. In the west central part is a prominent peak 1010 feet high with two 700 foot knobs south of it, the southern of which has a bare rocky face. The contours within this section are very irregular, several knobs rising

unexpectedly along a gradual decent. Towards the south end the land is lower and scattered with hills rising about 100 feet above the general level. All the hills are heavily wooded with evergreens. There are numerous small ponds on the flats of this peninsula, but on account of the thickly timbered country in this section it ^{was} ~~is~~ impossible to determine more than the small streams which indicate their outlets. The lake in the center was located by cuts taken from Nichols Mt. and by the position of the contours. This was checked by a trip to the hill above the lake sketched. There are two large and several small islands in the lake. The elevation of the lake is about 250 feet. A large stream takes the overflow of the lake into Brownson Bay where it empties as a large waterfall mentioned above as a suitable watering place.

Mexico Point and Islands back of it. Mexico Point is wooded. The west face has high steep bluffs, the east end is lower and trees grow about 10 feet above the water line. It is a high prominent point three miles northwest of Point Marsh. It is on a large island with a head 170 feet high at the point and several high rocky islets extending a quarter mile offshore. Between Mexico Pt. and the first launch channel is a group of ~~of~~ smaller islands with trees and several rocky islets. These islands are surrounded by rocky ledges for the most part and the passages between them are very foul.

Eureka Pass. Mexico Point is on the eastern entrance to Eureka Pass, a passage suitable for moderate sized ships with local pilots, and a short cut to Hunters Bay and Cordova Bay.

A group of bare rocks lie one mile north of Mexico Point and a half mile beyond is a small island covered with trees. One quarter mile northwest of the point of this island is a sunken rock marked by a small patch of kelp, and to the northeast of the island is a group of small wooded islands. East of these islands an arm extends in to connect with the inner launch passage mentioned above. There is a kelp patch near the south shore and a reef off the northern shore. In the center of the arm is a group of rocky islets and reefs. At the head, a cove extends a quarter mile to the north with a small stream at the head and shingle beach.

Center Island is a small round island, with a few trees, in Eureka Pass three miles north of Mexico Point. This island forms a good front range for entering the pass. A reef covered at high water lies 300 meters ^{about} west of Center Id.

Leading Point is the next prominent point, about one third of a mile distant, on the large island north east of Center Id. A half mile northeast of Leading Point the pass narrows down to a width of 120 meters. Between Leading Point and the Narrows the shore line forms a deep bight, in which the Str. "Gedney" anchored for two weeks; but it is not a desirable anchorage, as there is not less than 19 fathoms with rocky bottom. West of the Narrows are two islands and the channel on the far side of these is sometimes used by steamers instead of the Narrows. There is a small rock bare of kelp and covered at high water 180 meters west of the southern end of this group of islands.

One half mile northeast of the Narrows a small cove leads into a series of salt lagoons which connect at high water and empty into the water east of Eureka Pass. There are four of these lagoons. The passages between them are bare at low water and after high water these passages are full of rapids and falls. The beaches are shingle in some places and rocky in others. A passage can be made by a canoe thru the chain of lagoons at high water.

Barrier Islands. Extending to the westward from Eureka Pass is a large group of scattered islands known as the Barrier Islands. These islands appear to form naturally into three groups; the first group consisting of the chain of islands immediately west of Eureka Pass, the second, that group between the channel west of the first group and east of the Round Ids., which comprise the third group.

The first group form a chain running in a north and south direction and on the western side of Eureka Pass. The most southern is the largest and has the highest knolls, which are scattered over the island, but are all of the same approximate height of 200 feet. The southern point of this island is known as Far Point. It marks the northwest entrance to Eureka Pass and is one and half miles north-northwest of Mexico Point. The point is very bold; a white cliff extending along the eastern shore. Several rocky islets some of them partly wooded extend off shore to the southwest. The passages between the islands of this chain are foul and for the most part narrow.

The second group is the largest of the three. The principal island of this group and the largest of the Barriers is two

miles long with an average width of half a mile. It is heavily wooded and has a hill 260 feet high near the middle of the west shore. North of this island is a cluster of small islands with rocky ledges surrounding them, and west of the island is a chain of four islands. All the islands of this group are heavily wooded. Between this chain and the large island is a channel about 240 meters wide at the narrowest part. It is passable to small launches by avoiding the kelp at the southern, and rocks which bare at low water at the northern entrance. Off the southern entrance are a number of rocky islets the largest of which has a few trees on it. One mile south of the end of the large island is a high rocky islet with a few scattered pine trees, and one quarter mile south of this islet is a high prominent black rock. There is a cluster of rocks covered at high water in the water near this rock and islet.

Between the first and second group of islands is a broad channel whose dangers apparently all show at low water. There is a high bare rock in the center and the channel to the west of it clears the reef one quarter of a mile to the southeast and ^athe rock the same distance northeast. Another rock about five feet above high water lies a half a mile to the northward and a rock awash at low water lies 200 meters beyond. There is a rock uncovered at low water in the middle of the northern entrance, one third of a mile west of the northern point of the first group. All these rocks are marked by kelp, so that launches using the channel should keep clear of all kelp patches.

The third group, known as the Round Islands consists of four islands, all covered with timber and about 150 feet high. Off the western shore of these islands are two reefs which bare at half tide. There are two kelp patches, one third and two thirds of a mile ^{respectively}, off the southern end of this group. Half a mile north of the north end of the island is a large bare rock about 20 feet high, known as Egg Rock, which is surrounded by rocky ledges at low water. Between this rock and the Round Islands is a considerable area of kelp.

One mile north of Egg Rock is a large narrow wooded island, about 60 feet high. There is a high rocky ledge running with the shore on the northeast side, and a rocky ledge lies 140 meters southwest of the south end of the island, with a rock awash at half tide between this ledge and the shore.

Half way between Egg Rock and this island is a reef awash at low water and a similar reef lies 340 meters east of the south end of the island. There is a cluster of rocky ledges and reefs in the center of the area between Round Islands and the second group. The two prominent ledges of this cluster are 15 and 20 feet high. These are surrounded by rocks awash and the reefs which cover at half tide lie to the northwest.

A small wooded island lies three quarters of a mile off ^{of the chain of four islands} the north end ^{these} of the second group of islands with two wooded islets and two rocks awash extending between the point and this island. There is a large kelp patch about 100 meters off the island.

Boat Rocks, two bare rocks, the larger about 15 feet high

are the northwesternmost rocks of the Barrier Islands. There is a small kelp patch north of the rocks. About three quarters of a mile east of the Boat Rocks is a small wooded islet, with two high rocky ledges lying off the southern shore and a sunken rock 125 meters east of it. Two reefs bare at low water exist one quarter and two thirds of a mile east of the islet.

In some places the passage between the islands of the Barrier group are so foul with kelp that it is impossible for a launch to pass thru. In the larger channels, however, a safe passage can be made by avoiding every appearance of kelp; altho, even then, local knowledge of these passages should be had. Except in a few coves which indent the islands, the beaches are all rocky, in some places dropping abruptly from the tree line and in others composed of rocky ledges running out 50 meters from the high water mark. The heights to the tops of the trees were obtained for all the larger islands.

Dewey Rocks are a cluster of small rocks covering an area of about 150 square meters, most of which are bare at low water and which lie one and half miles south-southeast of Round Islands. The most southern rock in the group is about 10 feet high and the only one which does not cover at ^{extreme} high-water.

The Topography of this sheet, was controlled by a scheme of triangulation carried from Cordova Bay to the outer Barrier Islands, thru Eureka Pass to Mexico Point and connects with the recovered triangulation station Surf, at the eastern limit of the sheet. Triangulation points were established at convenient intervals over the sheet and from these subsidiary flags and signals were cut in by the plane table. Between the

triangulation stations the survey was carried by traverse. The summits of the hills were cut in and the angles observed to the tops of the trees. The heights were computed by the aid of the plane table manual and noted on the sheet. The contours show 100 feet differences in elevation with every fifth contour ~~being~~ prominent. The height of Nichols Mt. was computed last season from observed double zenith distances.

The Survey of the shore-line of Hessa Inlet was made with sextant and a few Plane Table cuts. The principal points were cut in by sextant, checked by cuts from Nichols Mt., and the outline of the shore sketched between these points, connecting with the plane table survey inside the entrance. Cuts were taken from Nichols Mt., to the lake in the peninsula west of Brownson Bay and its location determined by contours and from vertical angles to its shore line.

The Shore-line of the whole sheet is rocky and for the most part bold. In some of the coves shingle beaches are found but as a rule the beaches consist of rocky ledges. In many places there is a sheer drop from high-water mark.

The shore shown on this sheet is densely wooded with trees of the evergreen growth, consisting of Spruce and Hemlock with Cedar in places and some stunted Pine on the summits of the higher hills. *and the coast line exposed to the SE Seas*

All directions to various objects in this report are given in true bearings taken from the topographic sheet.

On account of the shrinkage of the sheet due to the unusual wet conditions met with, the coordinate intersections were not inked but left in pencil, in case any adjustments

was deemed necessary by the Cartographic Division.

Statistics: Number of miles of shore-line; 131 miles, area (extending inland as far as contours were determined) 30 square miles, lakes and outlets 1, number of old triangulation stations recovered and used 3, new triangulation stations 9,. The stations upon which the projection is based are \triangle Nichols, \triangle Surf, \triangle Barrier.

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Plane Table Positions.

The following is a list of plane table positions and triangulation stations. The triangulation stations only are recoverable, the others were used by the hydrographic party following the topographic survey and are not permanent objects:

Station	Latitude	Dist. in Meters	Longitude	Dist. in Meters
Surf Δ	54° 41'	726.3	132° 09'	920.0 <i>in error</i>
Bet	54 42	<div style="border: 1px solid black; padding: 2px;">+136.0 648.2</div>	132 11	<div style="border: 1px solid black; padding: 2px;">-95.0 801.3</div>
White Δ	54 42	1802.2	132 14	51.2
Mid	54 43	1176.3	132 14	957.2
Steve	54 44	745.9	132 14	423.8
Dead	54 44	1608.8	132 14	482.9
Pole	54 45	1136.1	132 13	831.6
Rock	54 45	1635.0	132 14	94.8
In	54 44	1705.3	132 14	704.0
May	54 44	1349.7	132 14	892.2
Tre	54 44	607.2	132 14	1036.8
To	54 43	905.4	132 15	00.0
Flag	54 43	992.9	132 16	821.7
Ent	54 42	1551.9	132 16	102.8
Marsh Δ	54 42m	959.0	132 17	180.7
West Δ	54 42	1853.0	132 19	370.5
Bay	54 44	233.0	132 18	941.8
Out	54 44	1598.7	132 19	680.1
Col	54 44	1683.6	132 19	825.1
New	54 44	1297.3	132 20	703.6
Mex Δ	54 45	315.1	132 22	579.5
Try	54 45	256.8	132 20	272.8

PLANE TABLE POSITIONS. Continued. -:2:-

Stations	Latitude	Dist. in Meters	Longitude	Dist. in Meters
Hag	54 ⁰ 45'	256.8	132 ⁰ 20'	272.8
Go	54 45	1302.6	132 20	701.5
Buck	54 45	1627.7	132 20	871.8
Yet	54 46	618.3	132 21	24.3
Sim	54 46	268.6	132 20	959.2
Hat	54 46	984.3	132 20	921.3
No	54 46	810.0	132 20	111.0
Come	54 46	591.0	132 20	964.3
Nut	54 46	1161.6	132 21	75.5
Dump	54 46	870.0	132 22	464.9
Lunch	54 47	377.1	132 22	415.8
Front	54 48	129.8	132 22	701.4
Mimas	54 48	769.3	132 22	515.1
Ruth	54 48	1103.8	132 22	222.6
Sol	54 48	1091.0	132 22	677.6
Pin	54 48	1071.5	132 22	926.2
Stub	54 48	1556.8	132 22	499.5
Treg	54 48	1563.3	132 22	23.5
Bo	54 48	1694.2	132 22	212.8
Titan Δ	54 49	40.5	132 21	994.7
Can	54 49	369.5	132 22	196.2
Top	54 49	1021.9	132 21	121.5
Chop	54 49	520.2	132 22	978.6
Tack	54 48	1485.2	132 22	744.3
Clio Δ	54 48	1825.2	132 22	931.6

PLANE TABLE POSITIONS. Continued - :3:-

Station	Latitude	Dist. in Meters	Longitude	Dist. in Meters
Verdi	54 ⁰ 48'	1205.9	132 ⁰ 23'	794.3
Gris	54 48	778.1	132 23	444.3
Tori	54 48	73.8	132 23	494.6
Dope	54 47	835.5	132 23	255.3
Far Δ	54 46	1512.0	132 23	342.7
Dio ⊙ ▲	54 46	974.0	132 24	492.6
Black	54 45	1446.3	132 25	666.6
Cept	54 47	331.3	132 24	890.5
Tan	54 47	687.3	132 25	440.0
Rag	54 48	250.6	132 25	93.7
Creek Δ	54 49	1110.0	132 24	244.7
Poe Δ	54 49	1403.7	132 26	501.9
Barrier Δ	54 49	1350.6	132 26	935.1
Boat Δ	54 49	779.2	132 29	1019.9
Egg Δ	54 47	1228.1	132 30	237.7
Bad	54 47	296.7	132 28	146.2
Fall	54 46	900.6	132 29	322.5
Dewey	54 44	1712.0	132 29	104.1

Respectfully submitted,

L.O. Colbert.

Aid, C. & G. Survey,
Topographer.

Approved,

R.B. Benson

Asst., Comdg. Chief of Party.