

942
Survey

HOLMES & NARVER, INC.
Engineers - Constructors

408007

TO: E. R. Berrien
ATT: L. S. Hammond

JOB: 942 J/S No. 3467

FROM: C. F. Dunlap *CFD*

RE: Transmittal of Triangulation Station
Recovery Notes for Eniwetok Atoll

DATE: 14 March 1957

Reference: Ltr. Dunlap to Berrien, "Drawing Transmittal and
Triangulation Recommendations", dtd. 3-1-57.

Transmitted herewith are one print and one reproducible of
28 triangulation station recovery notes for Eniwetok Atoll
primary and secondary triangulation stations.

Also enclosed is one 8 x 10 print of photo W-594-8 showing
the Oscar structure with the new 20' tower which is presently
in place.

REPOSITORY Nevada Operations Office
COLLECTION 326 67 A 1016
BOX No. 223138 or ?
FOLDER Survey: Project Engineering
File

CFD:MPC:hg
Encl: 28 reproducibles & 28
prints of recovery notes.
One 8x10 photo.

- cc: H/O Chrono
- H/O Central
- J/S Chrono
- J/S Central
- J/S Survey
- J/S Engineering
- J/S Engr. Reading File

BEST COPY AVAILABLE

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HOLMES & NARVER, INC
ENGINEERS - CONSTRUCTORS
JOB 942

RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Parry	SITE	Elmer
ESTABLISHED BY	H&N	YEAR	1949-50
RECOVERED BY	H. C. Dalton	YEAR	1956
FIELD BOOK NO.	294	DATE	12-10-56
PAGE	2-4		
			Parry Island
			Eniwetok Atoll
			Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION	
	DISTANCE			DIRECTION
	FEET	METERS		
Parry	--	--	8.656	
Japtan	--	--	--	
RM #1	39.68	12.094	00 - 00 - 00	
RM #2	53.51	16.310	13 - 25 - 42	
RM #3	48.94	14.917	100 - 51 - 30	
			193 - 25 - 45	
			9.011	

BRIEF HISTORY OF STATION:

This station is located at the north end of Parry Island 10 ft. east of the road opposite Bldg. 229, a P.I. & S. aluminum building. It is in approximately the same location as U.S.N. steel (1944) which is shown as a tower on H.O. chart #6033. The station, as it now exists, was a principal station in the 1949-50 control survey. It was destroyed in 1951 and replaced from its reference marks. It was used as an azimuth mark for the island traverse orientation in the H&N 1952 expansion of horizontal control.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed Holmes & Narver brass disc 2-5/8" in diameter stamped "Parry". It is set in concrete flush with the ground surface in a depression approximately 1/2 ft. below the surrounding ground surface.

The reference marks listed on page 2, Field Book 122 were not recovered. Three new reference marks were set as a part of the recovery survey.

RM's #1, #2 and #3 are standard 2-5/8" diameter brass discs marked "RM #1 (2 & 3) Parry H&N 1956". They are set in concrete 4" below the ground surface. RM #1

PAGE 2 - RECOVERY NOTE - TRIANGULATION STATION

STATION Parry SITE Elmer

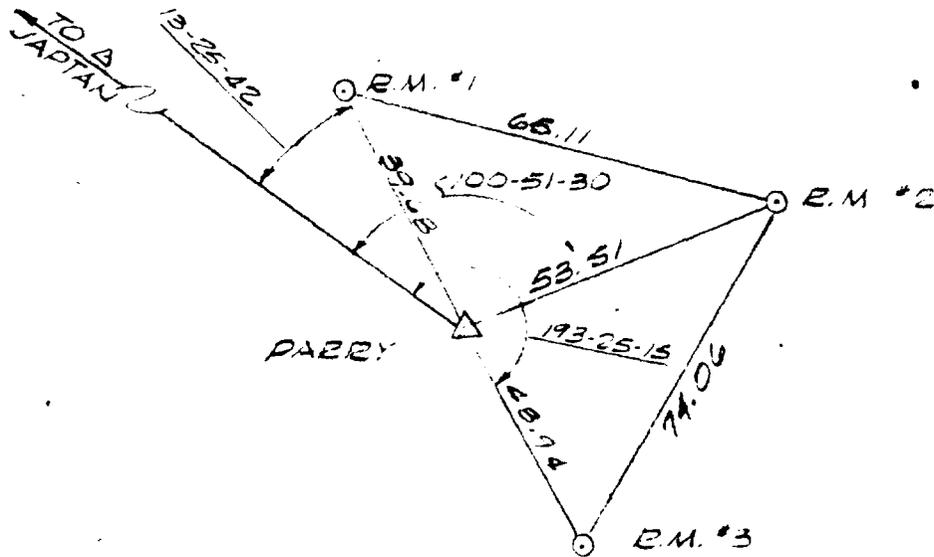
DETAILED DESCRIPTION OF STATION (CONT D)

is on the line between Parry and the U.S.N. light beacon on Japtan island.

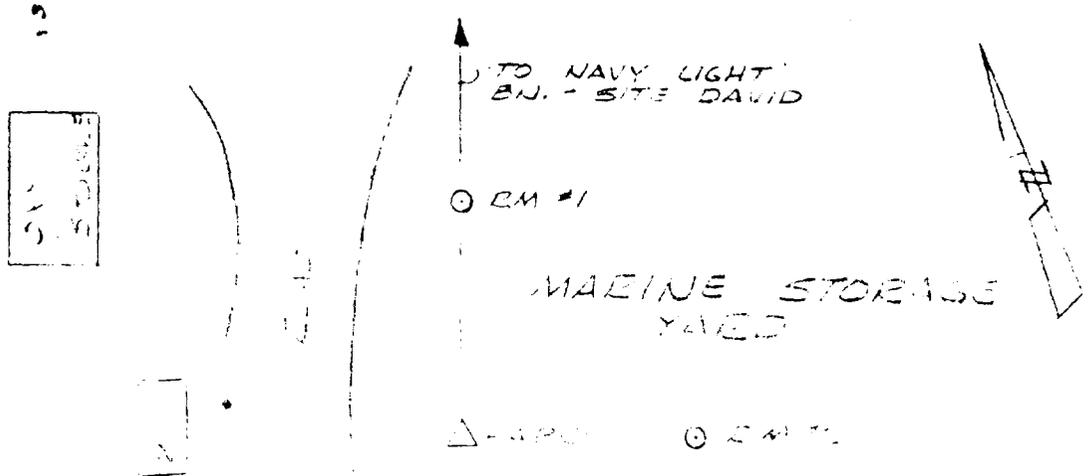
RM #2 is nearly due east of "Parry" and RM #3 is nearly due south of "Parry".

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
106	29	3-3-51
122	2	3-2-51
294	2-4	12-10-56



LOCATION SKETCH:



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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Privelege (Eniwetok) SITE Fred
ESTABLISHED BY USN YEAR 1944 Eniwetok Island
RECOVERED BY E. F. Klanchar YEAR 1956 Eniwetok Atoll
FIELD BOOK NO 285 PAGE 23 DATE 11-28-56 Marshall Islands

OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		
Privelege	--	--	---	11.02
Mon. Rose	79.52	24.238	00 - 00 - 00	11.60
RM #1	79.37	24.192	124 - 01 - 58	12.62

BRIEF HISTORY OF STATION.

This station was a primary station in the following surveys: USS Bowditch, 1944; Holmes & Narver, 1949-50; Holmes & Narver Expansion, 1952. In the Holmes & Narver records, it has been called "Eniwetok" to identify the island it is located upon.

DETAILED DESCRIPTION OF STATION.

This station is located at the extreme northerly end of Eniwetok Island. It is approximately 35 ft. north of the north face of Bldg. #1, a structure on a concrete slab.

This station was recovered in good condition. The station mark is a standard embossed USN SURVEY brass disc, 2" in diameter. It is set in an 8" x 8" concrete post, 9" below the ground surface.

RM Rose is in good condition. It is a flat brass disc, 2-1/2" in diameter, stamped "Rose-H&N-53". It is set in a concrete cylinder 16" in diameter, 9" below

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PAGE 2 - RECOVERY NOTE - TRIANGULATION STATION

STATION Privelege (Eniwetok) SITE Fred

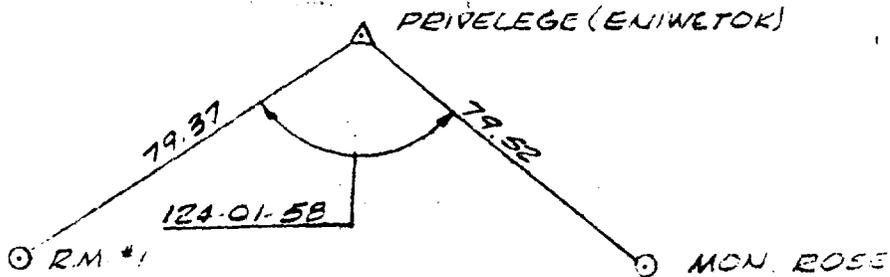
DETAILED DESCRIPTION OF STATION (CONT'D)

the ground surface.

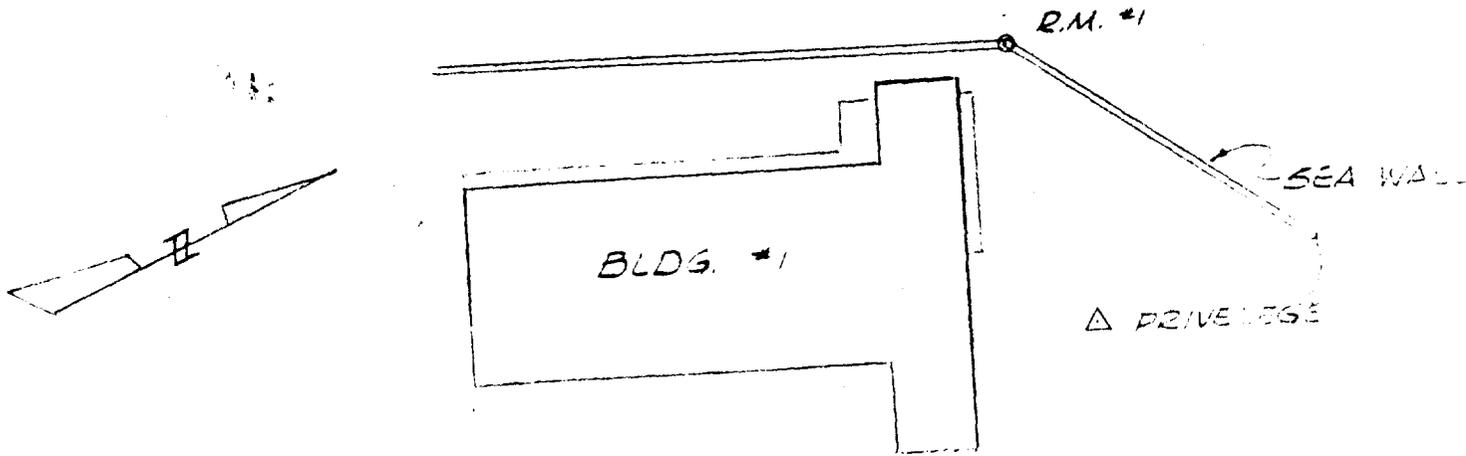
RM #1 was set during the present survey, 28 November 1956. It is a tack set in a lead plug driven into a hole in the top of the concrete sea-wall. It is in the north corner of the section which is a sheet pile cap and projects 3' - 1-1/2" above the greater portion of the Sea-wall. "RM #1" is chiseled in the concrete near the marker.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
174	26	7-3-52
285	23	11-28-56



LOCATION SKETCH:



PAGE 2-RECOVERY NOTE - TRIANGULATION STATION

STATION Piiraa'i SITE Wilma

DETAILED DESCRIPTION OF STATION (CONT.)

References:

Field Book

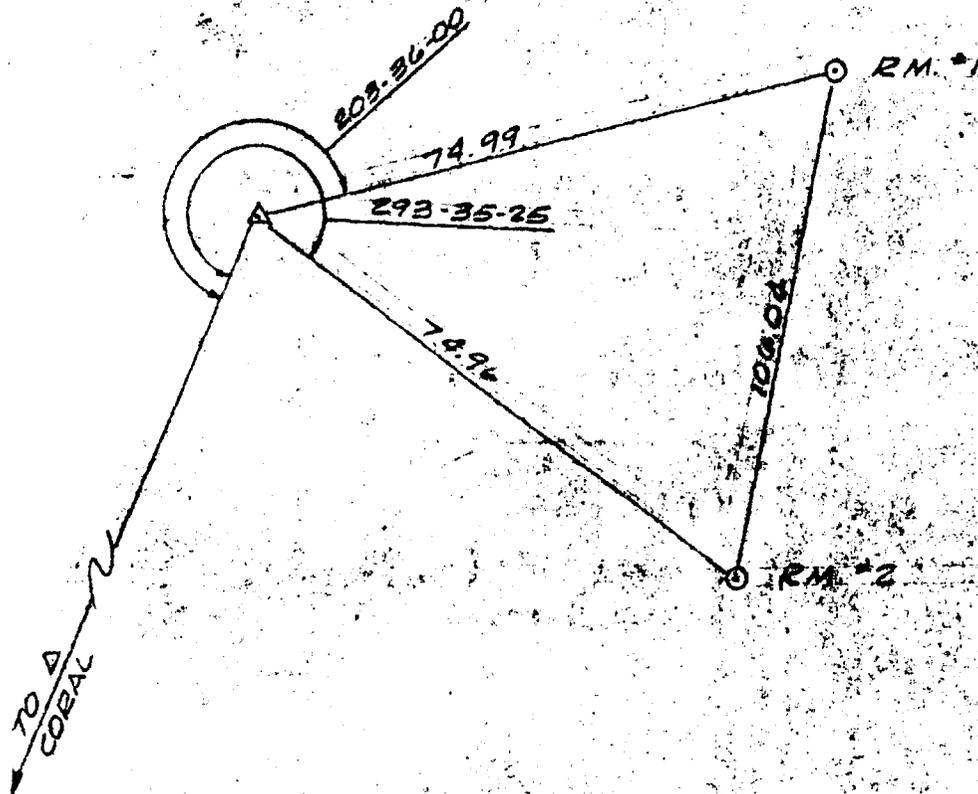
Page

Date

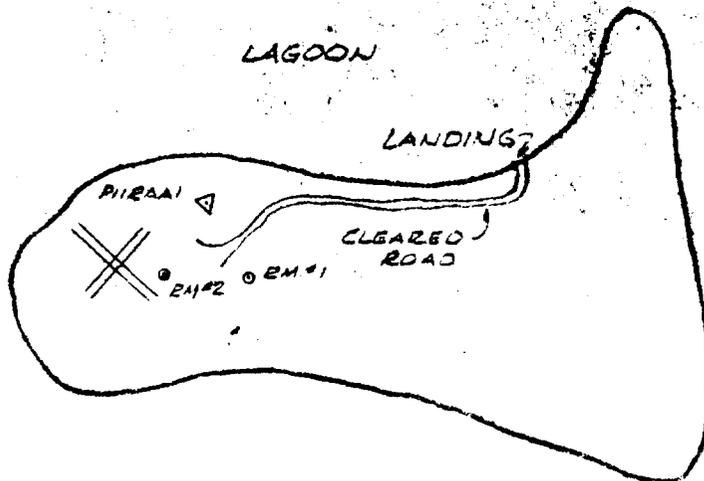
133
207
230
294

18
23
8
29-30

6-25-51
11-13-53
5-12-54
1-4-57



LOCATION SKETCH:



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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Runit SITE: Yvonne
ESTABLISHED BY JTF-7 YEAR 1946 Runit Island
RECOVERED BY H. C. Dalton YEAR 1956 Eniwetok Atoll
FIELD BOOK NO 294 PAGE 12-14 DATE 12-13-56 Marshall Islands

OBJECT	DISTANCES		DIRECTION	MARKS ELEVATION
	FEET	METERS		
Runit	--	--	---	8.345
Coral	--	--	00 - 00 - 00	--
RM #1	61.15	18.639	127 - 41 - 30	10.175
RM #2	122.29	37.274	127 - 42 - 10	10.275

BRIEF HISTORY OF STATION:

This station was a primary station in the following surveys: JTF-7, 1947-48; Holmes & Narver, 1949-50; Holmes & Narver Expansion 1952.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard stamped U.S.C. & G.S. brass disc, 3" in diameter, stamped "Runit". It is set in a concrete block 1-1/2 ft. below the ground surface.

RM #1 is in good condition. It is a cross cut in the slab of latrine #76, 8.4 ft. from the west edge of the slab and 7.2 ft. from the north edge.

RM #2 is in good condition. It is a cross cut in the slab of tent #56, 2.1 ft. from the west edge of the slab and 2.2 feet from the north edge.

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PAGE 2-RECOVER..Y NOTE - TRIANGULATION STATION

STATION Runit SITE Yvonne

DETAILED DESCRIPTION OF STATION CONT'D

References:

Field Book

Page

Date

135

27

7-9-51

230

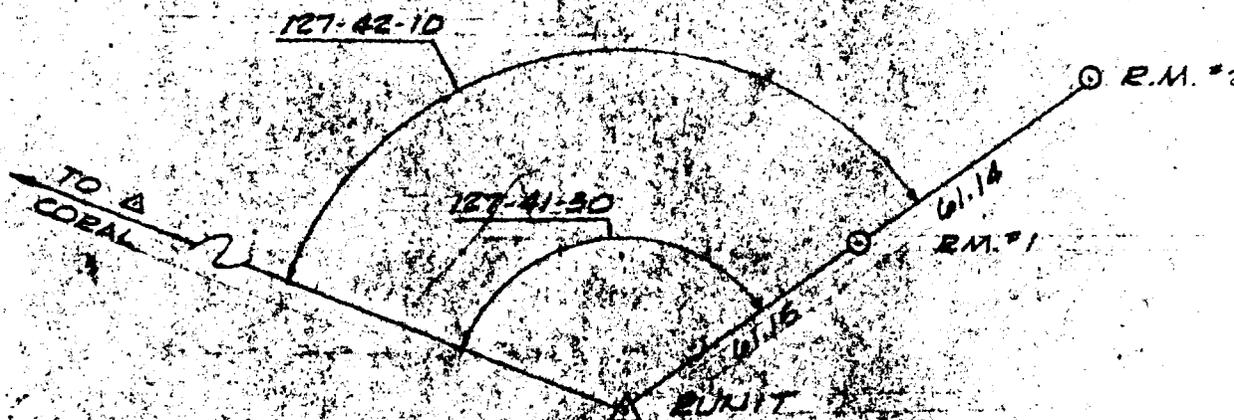
2

5-6-54

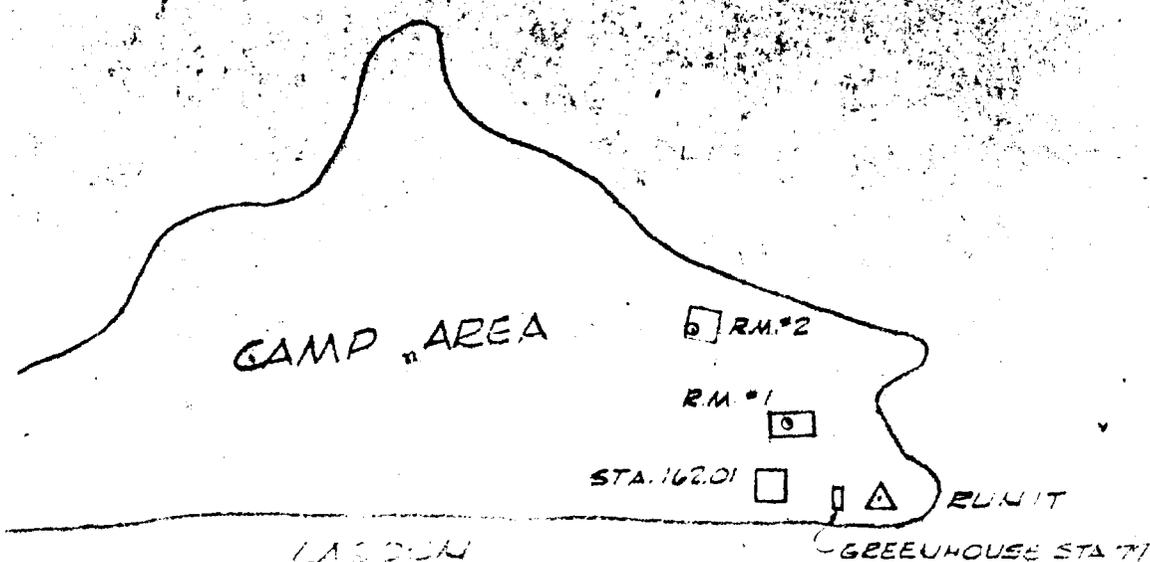
294

12 - 14

12-13-56



LOCATION SKETCH



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RECOVERY NOTE - TRIANGULATION STATION

1 NAME OF STATION Sand SITE Uriah
 ESTABLISHED BY USN YEAR 1944 3rd Sand Spit So. of Yvonne
 RECOVERED BY E. F. Klanchar YEAR 1956 Eniwetok Atoll
 FIELD BOOK NO. 294 PAGE 25-26 DATE 12/31/56 Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION
	DISTANCE		
	FEET	METERS	
Sand	--	--	10.81
Coral	--	--	--
RM #1	64.66	19.708	9.71
RM #2	71.48	21.787	9.46

BRIEF HISTORY OF STATION:

This station was a primary station in the following surveys: USS Bowditch, 1944; JTF-7, 1947-48; Holmes & Narver, 1949-50; Holmes & Narver 1952 Expansion. U. S. Navy Beacon "G", shown on H.O. chart #6033, was originally erected over this station, but was moved 25.7 feet lagoonward to make room for the erection of an observing platform.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed "USN-SURVEY" disc 2" in diameter. It is set in concrete flush with the ground surface.

RM #1 is in good condition. It is a 2-5/8" diameter flat brass disc stamped "Sand-RM 1 - H&N - 1954". It is set in concrete 1 foot below the ground surface.

RM #2 is in good condition. It is a 2-5/8" diameter flat brass disc stamped "Sand-RM 2 - H&N - 1954". It is set in concrete 1 foot below the ground surface.

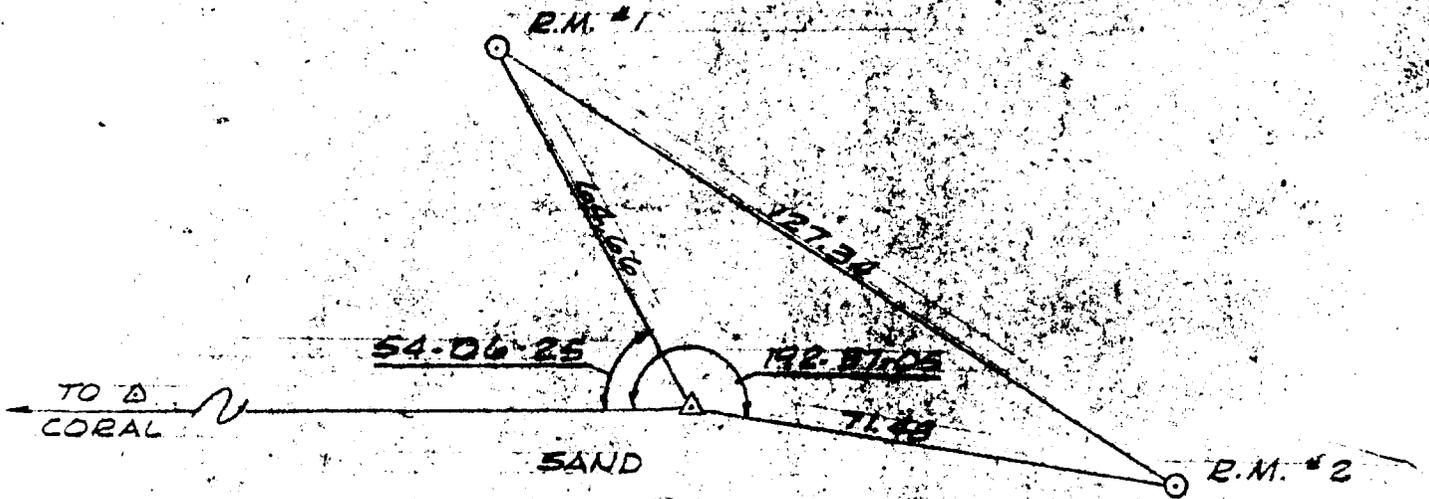
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PAGE 2-RECOVERY NOTE - TRIANGULATION STATION

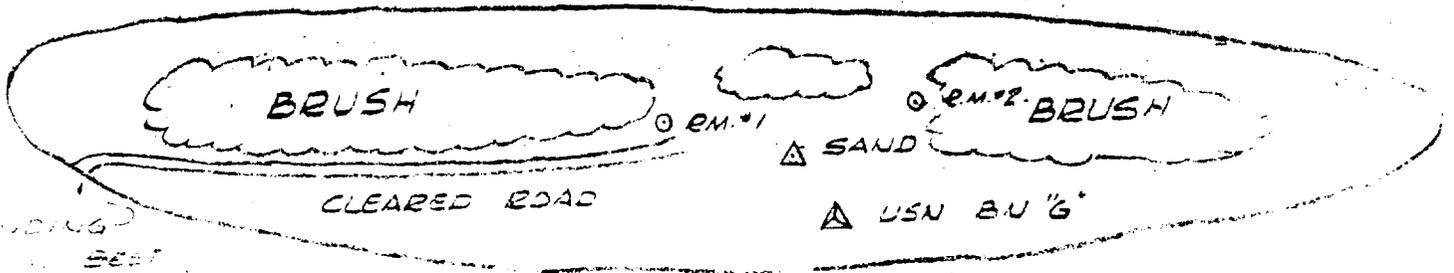
STATION Sand SITE: Uriah, 3rd Sand Spit So. Of Yvonne, Eniwetok Atoll, M.I.
DETAILED DESCRIPTION OF STATION (CONT'D)

References:

Field Book	Page	Date
165	30	4-19-52
172	7	6-6-52
227	15	5-6-54
294	25 & 26	12-31-56



LOCATION SKETCH:



LANDING
TO THE EAST
(TIDE)

LAGOON

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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Yeiri	SITE	Nancy
ESTABLISHED BY	H&N	YEAR	1951
RECOVERED BY	E. F. Klanchar	YEAR	1957
FIELD BOOK NO	296	DATE	1-10-57
PAGE	12&13		Marshall Islands

OBJECT	DISTANCES		DIRECTION	ELEVATION
	AND DIRECTIONS TO REFERENCE MARKS			
	DISTANCE			
	FEET	METERS		
Yeiri	--	--	---	9.96
Coral	--	--	00 - 00 - 00	--
RM #1	50.00	15.240	108 - 07 - 30	10.02
RM #2	99.98	30.474	108 - 07 - 30	10.27

BRIEF HISTORY OF STATION.

This station is a third order station in the Atoll control net. It was established as a part of the Holmes & Narver 1952 control expansion by triangulation from Coral and Aomon.

DETAILED DESCRIPTION OF STATION.

This station was recovered in good condition. The station mark is an aluminum pipe capped with an aluminum cap 2" in diameter. It is stamped "Yeiri - H&N" and is set in concrete 8" below the ground surface.

RM #1 is in good condition. It is a steel cap, 2" in diameter stamped "RP-50" set in concrete 8" below the ground surface.

RM #2 is in good condition. It is a steel cap 2" in diameter stamped "RP 100" with a crossed arrow pointing toward the station. It is set in concrete 8" below the ground surface.

PAGE 2-RECOVER Y NOTE TRANSLATION STATION

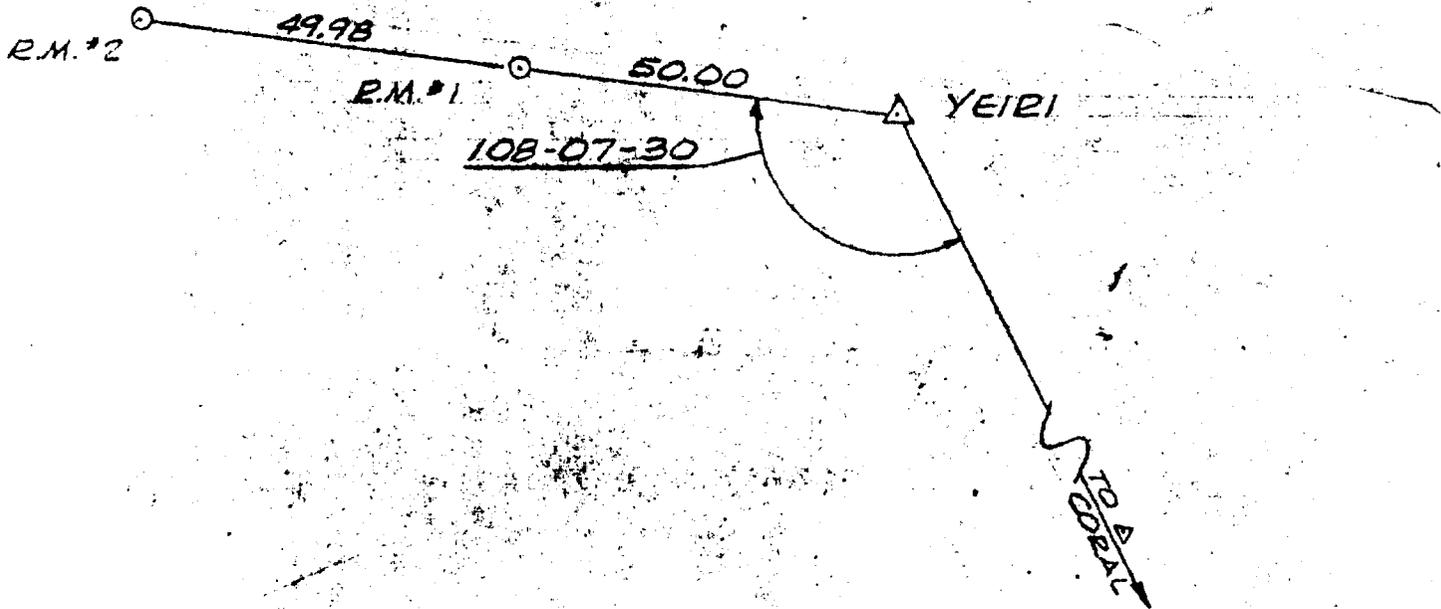
STATION Yeiri Nancy, Yeiri Is., Eniwetok Atoll, M.I.

DETAILED DESCRIPTION OF STATION COORDINATES

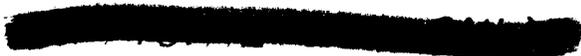
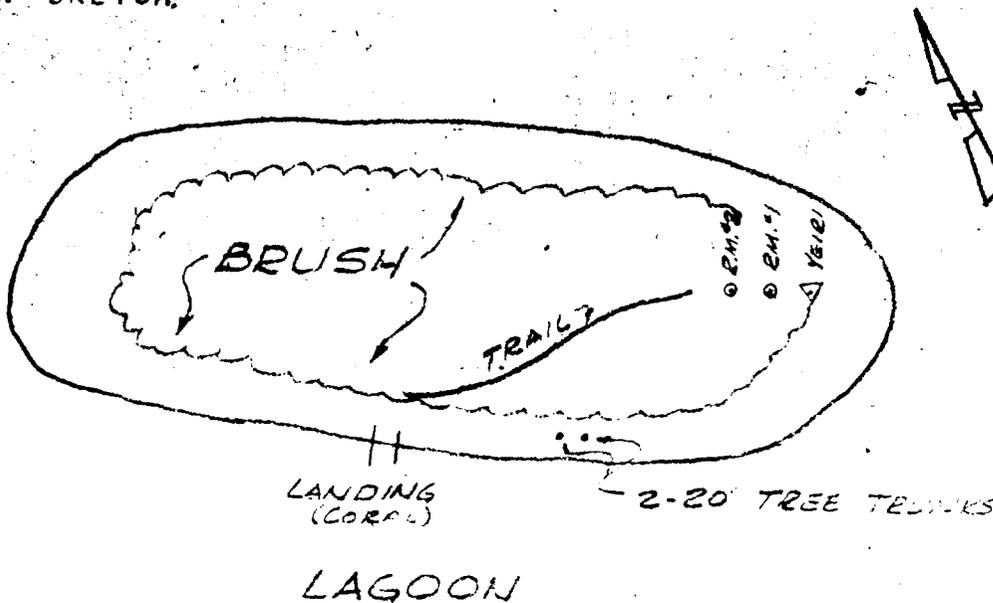
Both steel RM markers are corroded, but can still be read.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
186	13	10-13-52
230	22	6-3-54
296	12 & 13	1-10-57



LOCATION SKETCH:



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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Gene SITE: Gene
ESTABLISHED BY H&N YEAR: 1955 Teiteiripucchi Island
RECOVERED BY YEAR: Eniwetok Atoll
FIELD BOOK NO: PAGE: DATE: Marshall Islands

DISTANCES AND DIRECTIONS TO REFERENCE MARKS				
OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		

BRIEF HISTORY OF STATION:

This station was established as a second order station in the Holmes & Narver 1955 control survey.

DETAILED DESCRIPTION OF STATION:

This station was not recovered due to its location. It is assumed to be destroyed.

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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Elgin (Engebi)	SITE	Janet
ESTABLISHED BY	JTF-7	YEAR	1946
RECOVERED BY	E. F. Klanchar	YEAR	1957
FIELD BOOK NO.	296	PAGE	23-25
		DATE	1-14-57
			Engebi Island
			Eniwetok Island
			Marshall Islands

OBJECT	DISTANCE		DIRECTION	ELEVATION
	AND DIRECTIONS TO REFERENCE MARKS			
	FEET	METERS		
Elgin	--	--	---	10.08
Coral	--	--	00 - 00 - 00	--
RM #1	58.68	17.886	45 - 03 - 17	9.46
FI #1	154.93	47.223	60 - 41 - 00	9.69
RM #2	50.01	15.243	105 - 43 - 32	8.72

BRIEF HISTORY OF STATION:

This station was established by JTF-7 in 1946 as one end of the timing line. It has been a primary station in the following surveys since then: Holmes & Narver 1949-50; Holmes & Narver control expansion, 1952; Holmes & Narver Supplemental, 1955. It has been called "Engebi" to designate the island it is located upon.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard stamped USC & GC disc, 3-1/2" in diameter, stamped "Elgin". It is set in an 11" x 11" concrete block, 6" above the ground surface.

RM #1 is in good condition. It is a standard 2-5/8" diameter embossed Holmes & Narver disc unmarked except for a punch mark. It is set in concrete 6" below the ground surface.

RM #2 is in good condition. It is a standard 2-5/8" diameter embossed Holmes & Narver disc marked only with a crossed arrow pointing toward the station. It



PAGE 2-RECORDARY NOTE - TRIANGULATION STATION

STATION Elgin (Engebi) THE Janet

DETAILED DESCRIPTION OF STATION (CONT'D)

is set in concrete 18" below the ground surface.

PI #1 is in good condition. It is a spike embedded in a concrete block with the point protruding 1/2". The spike is rusty, but still in identifiable condition.

Reference:

Field Book

Page

Date

120

6

3-9-51

248

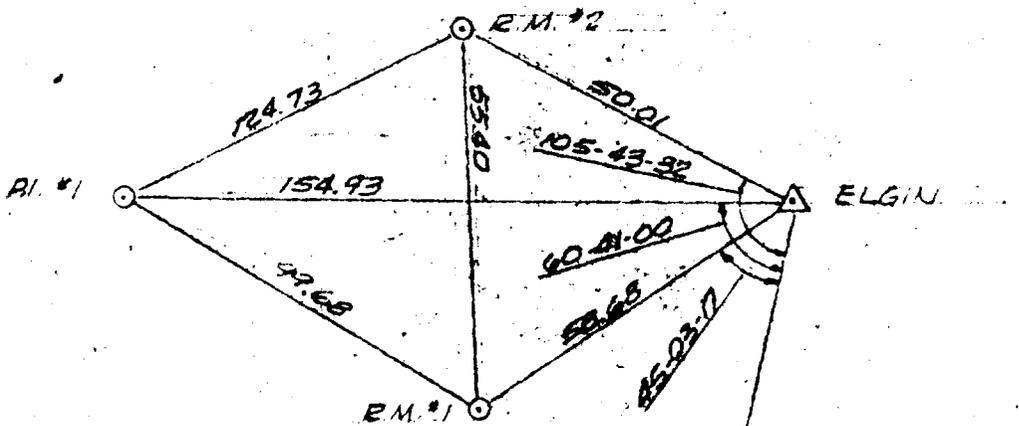
29

6-11-55

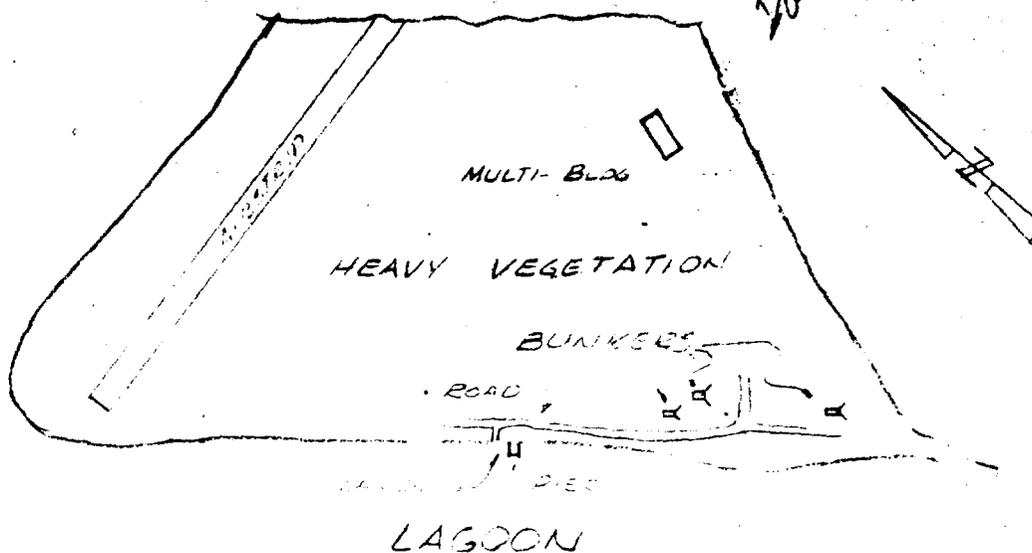
296

23-25

1-14-57



LOCATION SKETCH:



HOLMES & NARVER, INC.
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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Ivy	SITE	Elmer
ESTABLISHED BY	H&N	YEAR	1952
RECOVERED BY	E. F. Klanchar	YEAR	1956
FIELD BOOK NO.	285	DATE	11-26-56
PAGE	20-21		
			Parry Island
			Eniwetok Atoll
			Marshall Islands

OBJECT	DISTANCES		DIRECTION	MARKS ELEVATION
	AND DIRECTIONS TO REFERENCE			
	FEET	METERS		
Ivy	--	--	---	24.96
Coral	--	--	00 - 00 - 00	--
RM #1	44.18	13.466	219 - 25 - 45	24.955
RM #2	78.67	23.979	312 - 33 - 10	17.835

BRIEF HISTORY OF STATION:

This station is located on a concrete slab in the camp area near the northwest corner of the intersection of Sandstone Ave. and Hanford Road. In the 1952 Expansion of Horizontal Control this station was a second order control point. Observations were made from, and lights observed on an elevated point in Building #310, a 40 ft. wooden tower on the northerly end of the slab. The structure was subsequently removed. There are no structures on the slab at present. The slab is cracked in many places and pieces have been broken off the west edge.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a brass screw with a cross chiseled in its top, set in a lead plug in the concrete slab.

RM #1 is in fair condition. It is a brass screw with a cross chiseled in its top set in a lead plug in the concrete slab. The plug is loose. "R.P. 1" is chiseled in the concrete slab near the mark.

RM #2 is in good condition. It is a brass pipe cap, 2-3/4" in diameter, set in a 12" x 12" concrete block flush with the ground surface. This mark is in good condition. It is stamped "H&N - RM 2".

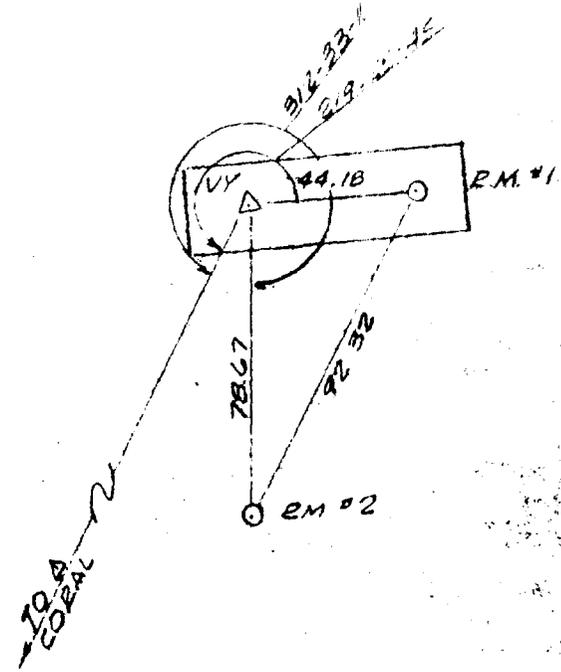
PAGE 2-RECOVERED TRAIL STATION

STATION Ivy

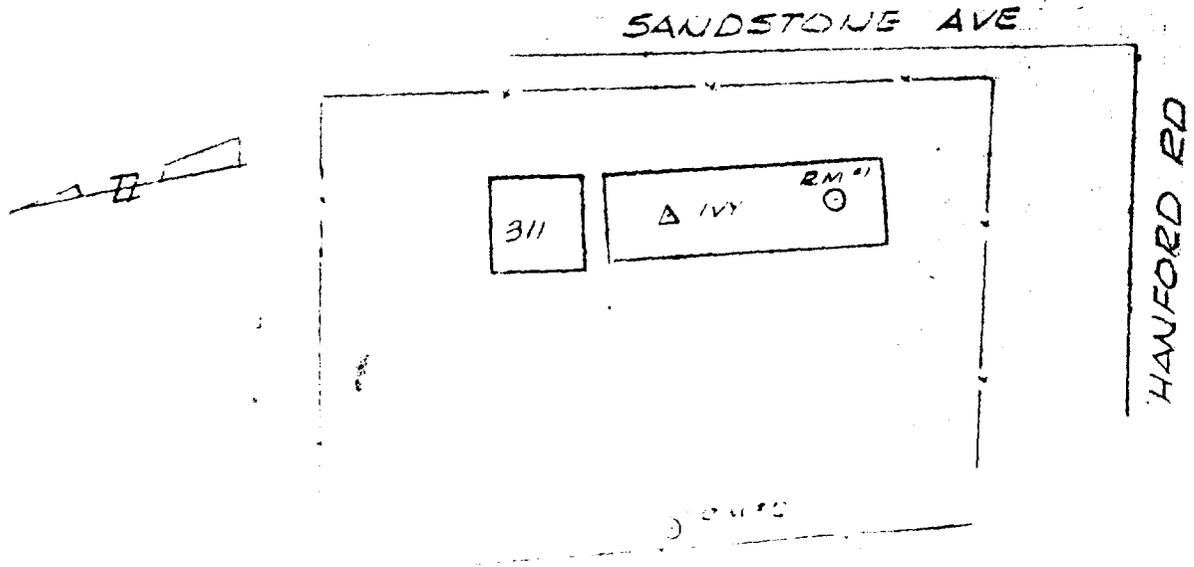
DETAILED DESCRIPTION

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
148	30	7-12-52
173	11 & 12	6-14-52
226	29	5-4-54
227	9	4-21-54
229	12	10-27-54
285	20 & 21	11-26-56



LOCATION SKETCH:



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JOB 942**

RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Aster (Kirinian)	SITE Lucy	
ESTABLISHED BY USN	YEAR: 1944	Kirinian Island
RECOVERED BY E. F. Klanchar	YEAR: 1957	Eniwetok Atoll
FIELD BOOK NO. 296 PAGE 14-16	DATE: 1-10-57	Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION	
	DISTANCE			DIRECTION
	FEET	METERS		
Aster	--	--	8.60	
Alice	--	--	--	
RM #1	52.28	15.935	7.11	
RM #2	102.68	31.297	6.72	

BRIEF HISTORY OF STATION:

This station was a primary station in the USS Bowditch Survey, 1944. It is shown on USN H.O chart 6033 as Beacon "M". It was a secondary station in the Holmes & Narver 1949-50 survey. It is a third order station in the Holmes & Narver 1952 Control Expansion Survey and has been called "Kirinian" to designate the island it is located upon.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed USN SURVEY disc, 2" in diameter. It is set in an 8" x 8" concrete post 6" above the ground surface.

RM #1 is in good condition. It is a standard 2-5/8" diameter embossed Holmes & Narver disc, unmarked except for a punch mark. It is set in concrete 6" below the ground surface.

RM #2 is in good condition. It is a standard 2-5/8" diameter embossed Holmes &

PAGE 2 - RECOVERY NOTE - TRIANGLE ISLAND STATION

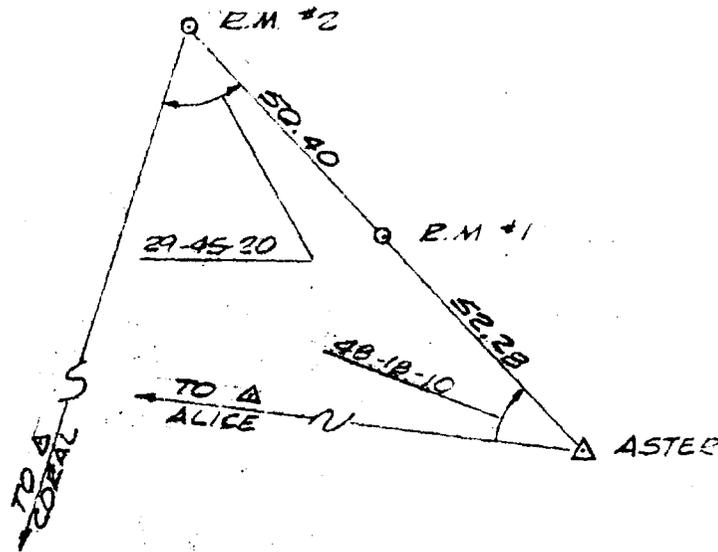
STATION Aster (Kirinian) SITE Lucy

DETAILED DESCRIPTION OF STATION COMPONENTS

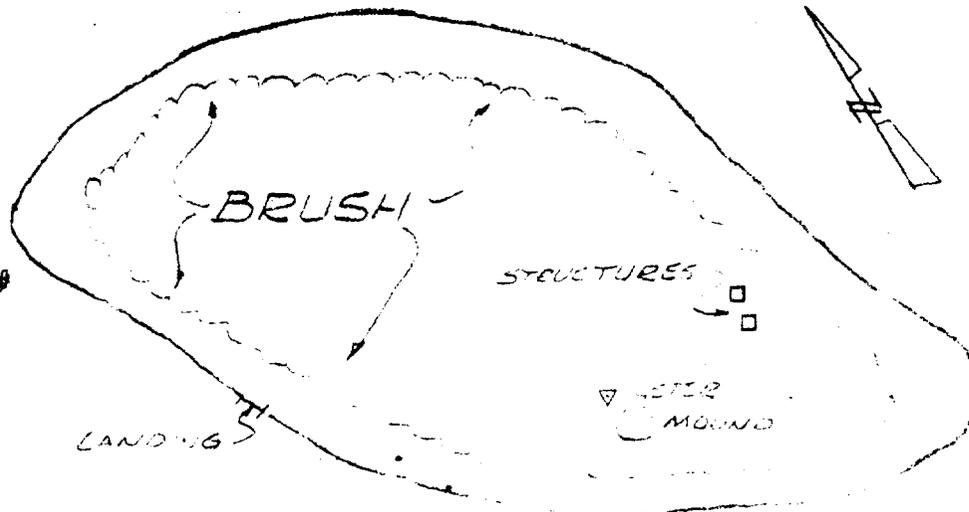
Narver disc, unmarked except for a punch mark. It is set in concrete 8" below the ground surface.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
37	7	4-12-50
142	2	6-14-51
230	3	5-8-54
296	14 - 16	1-10-56



LOCATION SKETCH:



LAGOON

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS
JOB 942

RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Lilac SITE: Rex
ESTABLISHED BY USN YEAR: 1944 Jieroru Island
RECOVERED BY E. E. Snyder YEAR: 1956 Eniwetok Atoll
FIELD BOOK NO. 294 PAGE: 5-7 DATE: 12-12-56 Marshall Islands

OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		
Lilac	--	--		20.12
Japtan	--	--	00 - 00 - 00	--
RM #1	80.24	24.457	111 - 44 - 15	14.25
RM #4	39.37	12.000	257 - 04 - 35	19.05
RM #5	61.70	18.806	39 - 32 - 55	18.79

BRIEF HISTORY OF STATION:

This station was a secondary station in the USS Bowditch Survey, 1944. It was included as a third order station in the present Atoll control net in 1952. This is shown on USN Hydrographic chart 6033 as Beacon "D".

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is standard embossed "USN SURVEY" disc 2" in diameter. It is set in a 6" x 6" concrete post, flush with the ground surface.

RM #1 is in good condition. It is a 2-5/8" diameter flat brass disc stamped "RM 1 - H&N - 1954". It is set in concrete flush with the ground surface.

RM's #2 and #3 were destroyed by the construction of a road to the dynamite cap storage building, RM's #4 and #5 were set as a part of the recovery program. They are .30 caliber cartridge case set in concrete 2" above the ground surface.

PAGE 2-RECOVERY NOTE - TRIANGULATION STATION

STATION Lilac

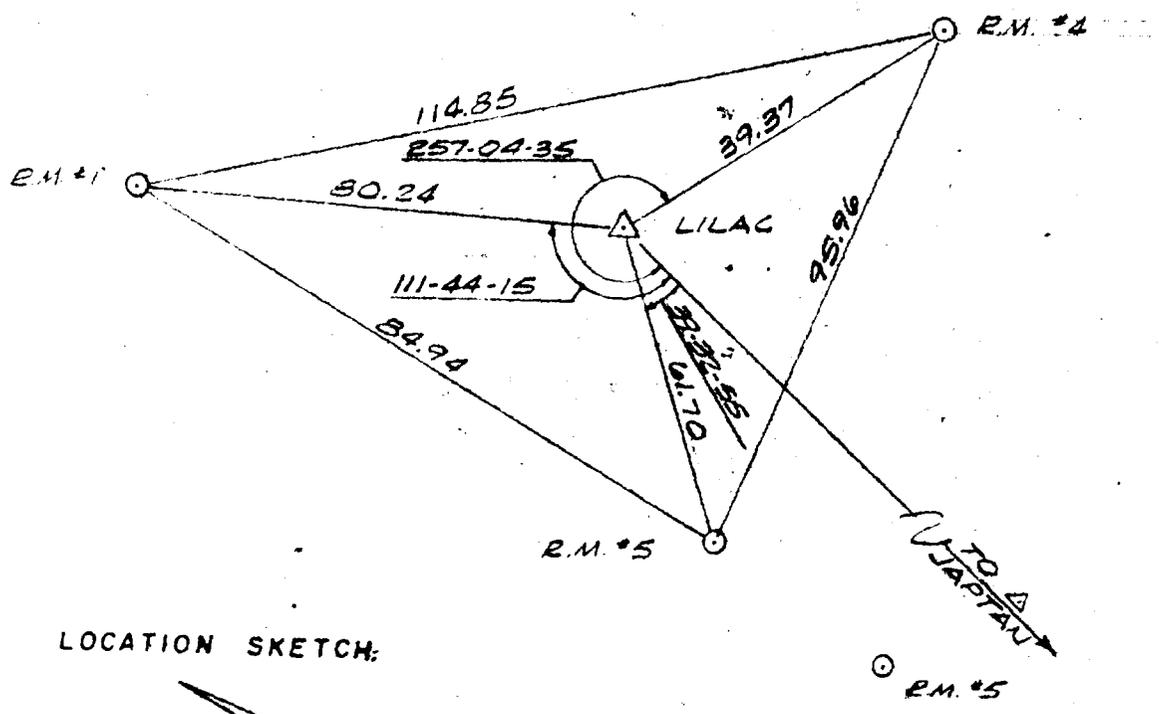
SITE: Rex

DETAILED DESCRIPTION OF STATION (CONT'D)

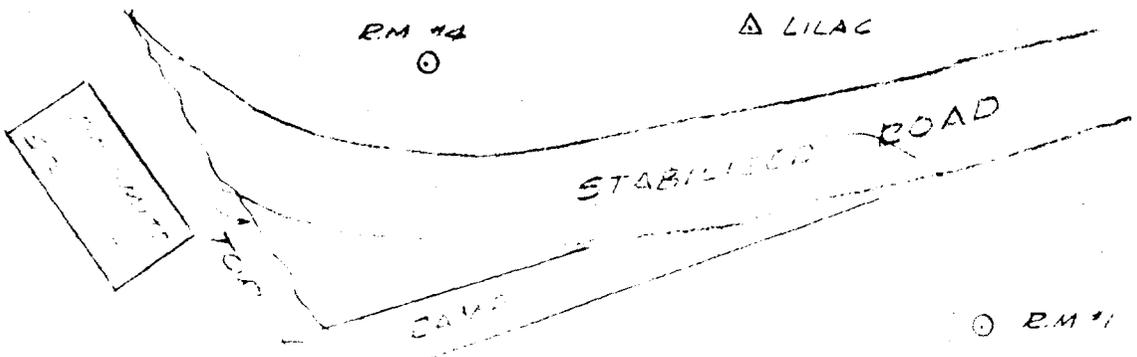
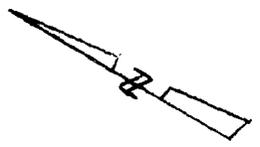
RM #4 bears the Ordnance marks "U-42-1" around its rim. RM #5 bears the Ordnance marks "U-4-2" around its rim.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
227	10	4-24-54
294	5-7	12-12-56



LOCATION SKETCH:



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ENGINEERS - CONSTRUCTORS
JOB 942

RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Lucy	SITE Vera	
ESTABLISHED BY H&N	YEAR 1951	Aaraanbiru Island
RECOVERED BY E. F. Klanchar	YEAR 1957	Eniwetok Atoll
FIELD BOOK NO. 296 PAGE: 2-4	DATE 1-4-57	Marshall Islands

DISTANCES AND DIRECTIONS TO REFERENCE MARKS				
OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		
Lucy	--	--	---	8.44
Coral	--	--	00 - 00 - 00	--
RM #1	142.51	43.437	239 - 46 - 00	11.62
RM #2	90.19	27.490	03 - 19 - 32	3.31
RM #3	65.84	20.068	96 - 55 - 18	2.68

BRIEF HISTORY OF STATION:

This station was established and triangulated as a part of the Operation GREENHOUSE "V" zero development. It is a third order station in the Atoll control net.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed Holmes & Narver disc 2-5/8" in diameter stamped "Lucy" with a cross for the station mark. It is set in concrete flush with the ground surface.

RM #1 is in good condition. It is a cross cut in the concrete roof of GREENHOUSE station 75. The cross is located at the approximate center of the roof.

RM #2 was set as a part of the recovery survey. It is a brass tack driven into a 1-1/2" square lead plug driven into a hole in the lagoonside reef, approximately 2 feet north of the Lucy - Coral line. The lead plug is stamped "RM 2 - Lucy -

PAGE 2-RECOVERY NOTE - TRIANGULATION STATION

STATION Lucy SITE Vera

DETAILED DESCRIPTION OF STATION (CONT)

H&N - 1951".

RM #3 was set as a part of the recovery survey. It is a brass tack driven into a 1-1/2" diameter Circular lead plug driven into a hole in the lagoonside reef. The lead plug is stamped "RM 3 - Lucy - H&N - 1951".

References:

Field Book

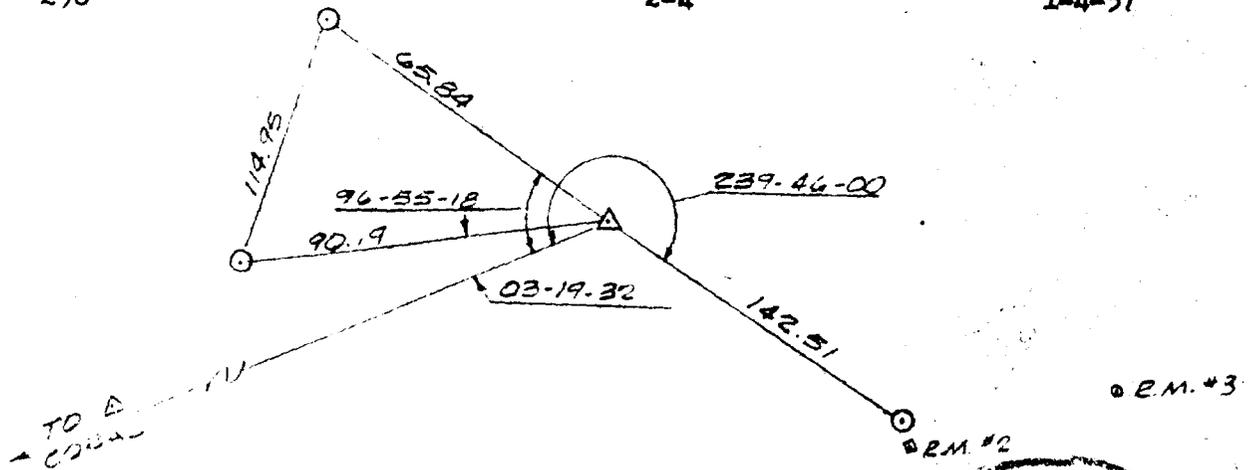
Page

Date

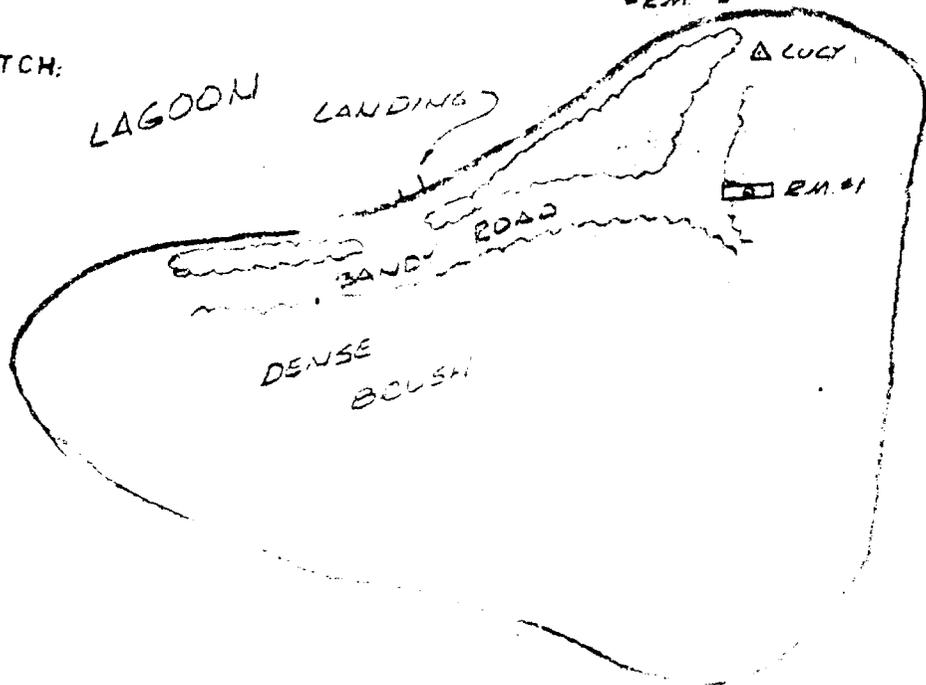
52
133
215
230
296

7-30
17
13
4
2-4

7-18-50 - 7-20-50
6-25-51
12-2-53
5-8-54
1-4-57



LOCATION SKETCH:



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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Aitsu SITE Olive
 ESTABLISHED BY H&N YEAR 1952 Aitsu Island
 RECOVERED BY E. F. Klanchar YEAR 1957 Eniwetok Atoll
 FIELD BOOK NO. 296 PAGE 8 & 9 DATE 1-8-57 Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION	
	DISTANCE			DIRECTION
	FEET	METERS		
Aitsu	--	--	10.05	
Coral	--	--	--	
RM #1	49.98	15.234	9.37	
RM #2	100.01	30.483	9.30	

BRIEF HISTORY OF STATION:

This station was established as a third order station in the control net in the Holmes & Narver 1952 control expansion survey.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is an aluminum pipe capped with an aluminum cap 2" in diameter, stamped "Aitsu-H&N." It is set in concrete 4" below the ground surface.

RM #1 is in good condition. It is an aluminum pipe cap 2" in diameter stamped "50 R.F.-Aitsu" set in concrete 6" below the ground surface.

RM #2 is in good condition. It is an aluminum pipe cap 2" in diameter, stamped "RM 2-Aitsu-H&N-1952" set in concrete 6" below the ground surface.

Both reference marks are badly corroded but still identifiable.

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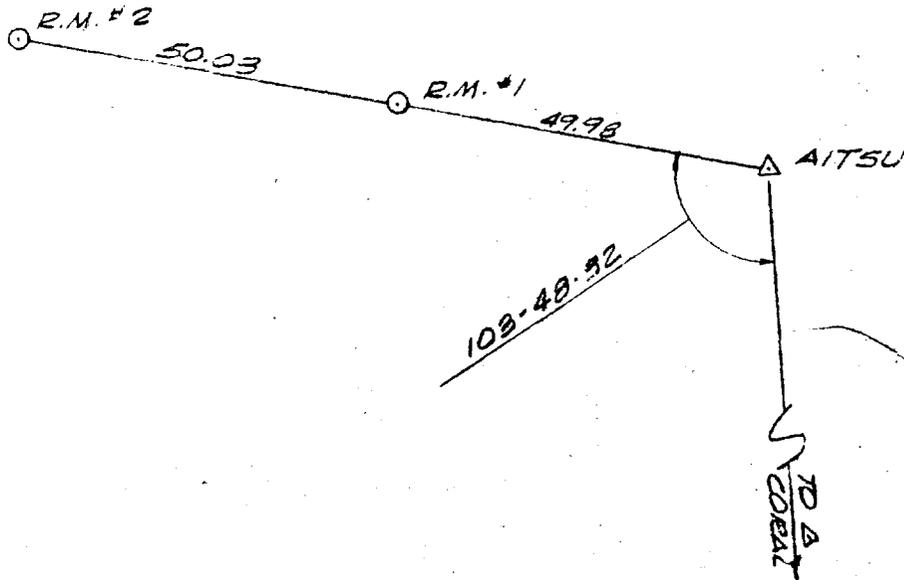
PAGE 2 - RECOVERY NOTE - TRIANGULATION STATION

STATION Aitsu SITE Olive

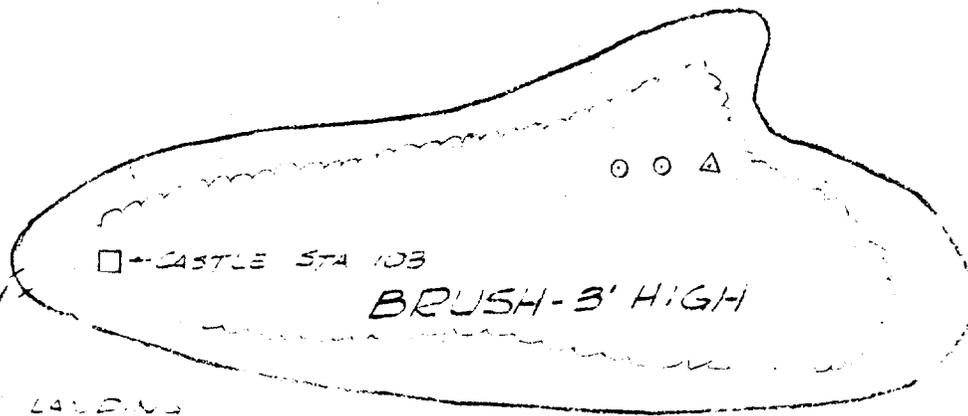
DETAILED DESCRIPTION OF STATION (CONT'D)

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
186	14	10-13-52
227	14	4-22-54
296	8 & 9	1-8-57



LOCATION SKETCH:



LAGOON

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS
JOB 942

RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Japtan	SITE	'David
ESTABLISHED BY	H&N	YEAR	1951
RECOVERED BY	E. E. Snyder	YEAR	1956
FIELD BOOK NO.	263	DATE	12-8-56
PAGE	29-30		
			Japtan Island
			Eniwetok Atoll
			Marshall Islands

OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		
Japtan	--	--	---	8.12
Lilac	--	--	00 - 00 - 00	--
RM #1	45.58	13.892	101 - 54 - 05	8.195
RM #2	50.21	15.304	208 - 00 - 15	10.095
RM #3	26.46	8.065	258 - 20 - 52.5	8.025

BRIEF HISTORY OF STATION:

This station was included in the 1952 Expansion as a third Order Station.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is an aluminum pipe capped with an aluminum cap 2-1/2" in diameter, stamped "Japtan, H&N, 1954". It is set in a concrete monument flush with the ground surface in a 20' diameter depression in the ground.

Reference markers #1, #2 and #3 were all recovered undisturbed in the locations given in F.B. 227, pages 7 and 8. They are standard 2-5/8" diameter brass discs, set in concrete, marked "RM 1 (2 & 3)-H&N-1954".

RM #1 is 1-1/2 ft. below the surface of the ground.

PAGE 2-RECOVERY NOTE TRAIN STATION

STATION Japtan S. Dav

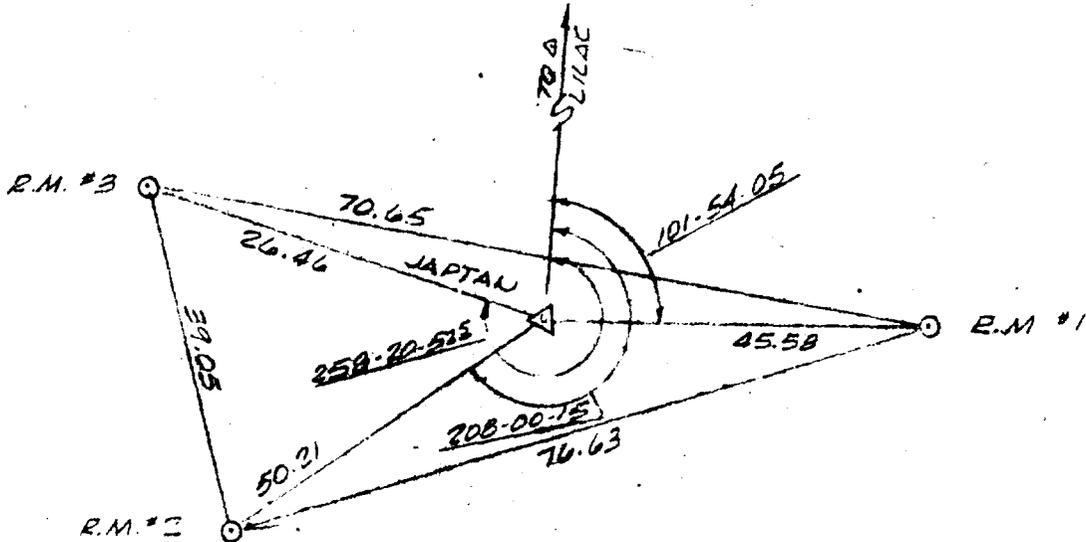
DETAILED DESCRIPTION OF STATION

RM #2 is flush with the surface of the ground

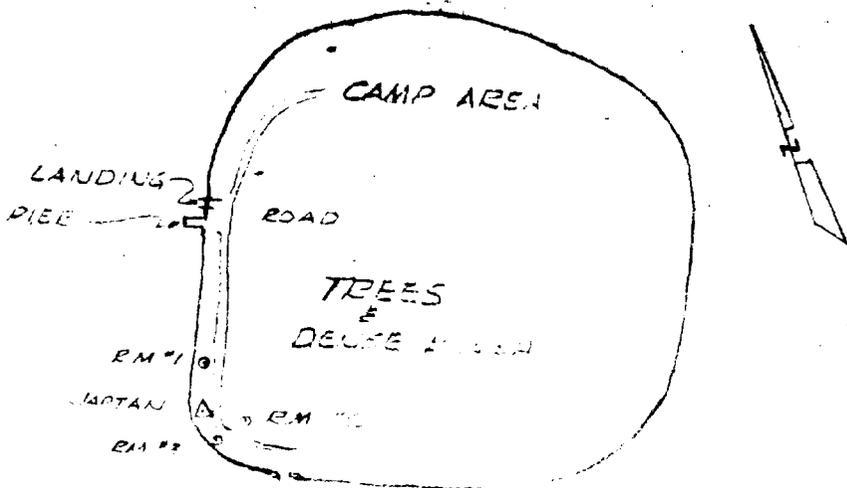
RM #3 is 6" below the surface of the ground and covered with approximately 2-1/2 ft. of rubble.

References:

Field Book	Page	Date
201	13-31	8-11-52 - 8-14-52
227	7-8	4-21-54
263	29-30	12-8-54



LOCATION SKETCH:



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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Alice	SITE	Alice
ESTABLISHED BY	H&N	YEAR	1955
RECOVERED BY		YEAR	
FIELD BOOK NO.	PAGE	DATE	
			Bogallua Island
			Eniwetok Atoll
			Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION	
	DISTANCE			DIRECTION
	FEET	METERS		
Alice	--	--	39.14	
RM #1	18.455	5.625		
RM #2	18.615	5.674		

BRIEF HISTORY OF STATION:

This station was established as a second order station in the 1955 Holmes & Narver Survey.

DETAILED DESCRIPTION OF STATION:

This station was not recovered. Due to its isolated and protected location it is assumed to be undisturbed. The station mark is a lead and tack at the approximate working point of Ivy station 300, a 3 story concrete building. It is located 5 feet back from the forward edge of the station on the center axis of the station on the highest portion of the station roof.

Reference marks #1 and #2 are lead and tacks at the two rear corners of the highest portion of the station roof.

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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Kodak (Aniyaanii) SITE Bruce
ESTABLISHED BY JTF-7 YEAR 1947 Aniyaanii Island
RECOVERED BY E. F. Klanchar YEAR 1956 Eniwetok Atoll
FIELD BOOK NO: 294 PAGE: 22-24 DATE: 12-31-56 Marshall Islands

DISTANCES AND DIRECTIONS TO REFERENCE MARKS				
OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		
Kodak	--	--	---	9.60
Coral	--	--	00 - 00 - 00	--
RM #1	57.40	17.496	113 - 03 - 35	10.395
RM #3	95.40	29.078	222 - 05 - 18	10.905

BRIEF HISTORY OF STATION:

This station has been a primary station in the following surveys: Joint Task Force Seven, 1947-48; Holmes & Narver, 1949-50; Holmes & Narver 1952 Expansion. In the Holmes & Narver Surveys it was renamed "Aniyaanii" to designate the name of the island on which it is located. The station was disturbed by construction operations in 1951, but was reestablished from RM's using the same brass marker.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard USC & GS brass marker 3-1/2" in diameter stamped "Kodak". It is set in concrete 1-1/2 ft. below the ground surface.

RM #1 is in good condition. It is a 3-1/2" USC & GC brass marker stamped "RM-1-KODAK" with a crossed arrow pointing toward the station. It is set in concrete flush with the ground surface.

RM #2 was not recovered. Digging at the recorded angle and distance unearthed 2 signal cables so it is assumed that RM #2 was destroyed by ditching. RM #3

PAGE 2-RECOVERY NOTE TRIANGULATION STATION

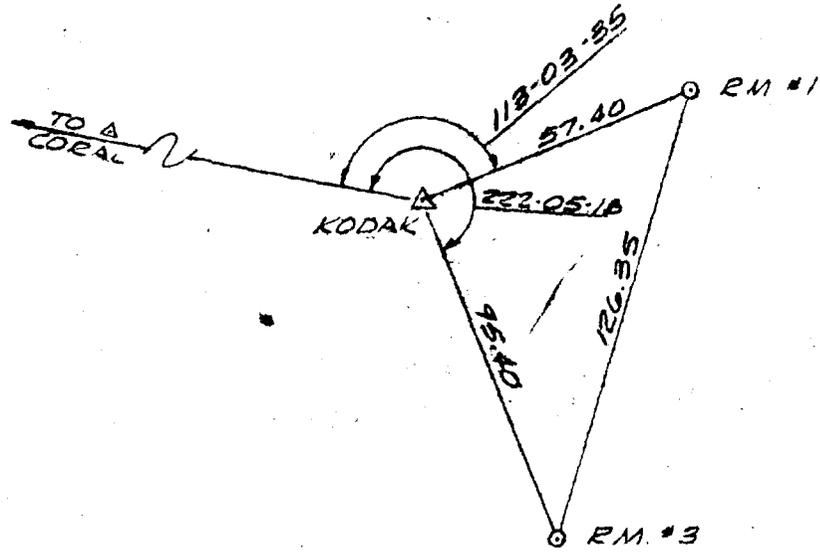
STATION Kodak (Aniyaanii) SITE Bruce

DETAILED DESCRIPTION OF STATION CONT'D:

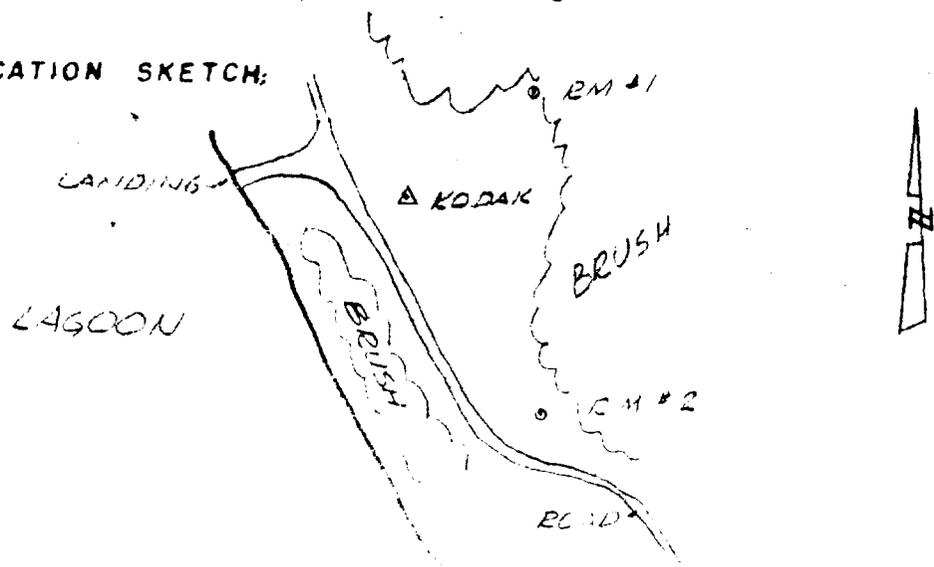
was set as a part of the recovery survey. It is a brass marker 2" in diameter stamped "RM #3 - KODAK - USC & GC - 1947" set in concrete 4" below the ground surface.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
141	30	6-7-51
165	14	4-17-52
227	11	4-24-54
294	22-24	12-31-56



LOCATION SKETCH:



HOLMES & NARVER, INC.
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JOB 942

RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Islet SITE Sam
ESTABLISHED BY: H&N YEAR 1949 1st Sand Spit South of Yvonne
RECOVERED BY: E. F. Klanchar YEAR 1956 Eniwetok Atoll
FIELD BOOK NO. 294 PAGE: 27-28 DATE 12-31-56 Marshall Islands

DISTANCES AND DIRECTIONS TO REFERENCE MARKS				
OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		
Islet	--	--	---	11.09
Coral	--	--	00 - 00 - 00	--
RM #1	82.45	25.131	148 - 19 - 48	6.49
RM #2	119.06	36.290	193 - 20 - 22	5.71

BRIEF HISTORY OF STATION:

This station was a part of the following surveys: Holmes & Narver, 1949-50; Holmes & Narver Expansion, 1952.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed Holmes & Narver disc 2-5/8" in diameter stamped only with the station point. It is set in concrete 1 foot above the ground surface.

RM #1 is in good condition. It is a transit tack driven into a triangular lead plug driven into a hole in a prominent coral ledge on the ocean reef, directly opposite the station.

RM #2 is in good condition. It is a transit tack driven into a circular lead plug driven into a hole in the ocean reef opposite the south end of the sand spit.

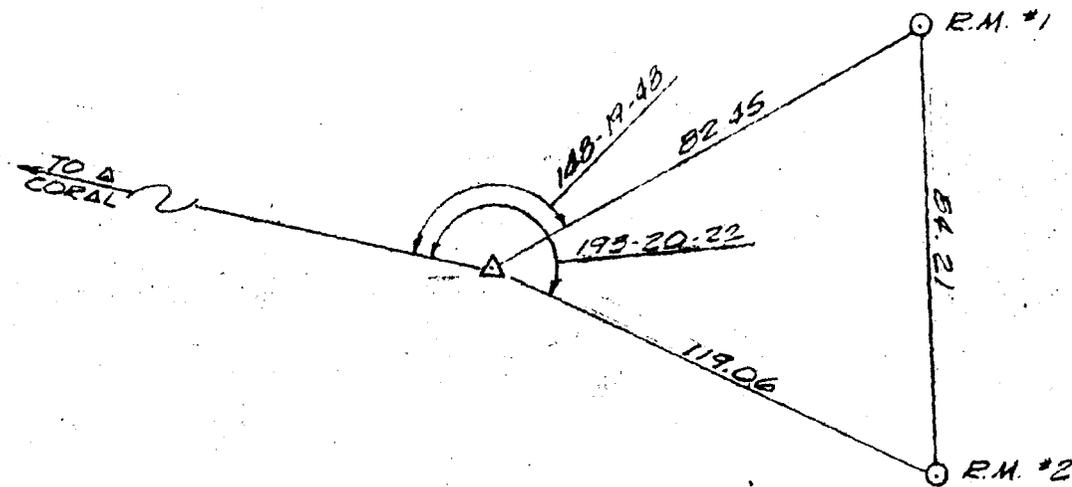
PAGE 2-RECOVERY NOTE STATION

STATION Islet SITE

DETAILED DESCRIPTION OF STATION

References:

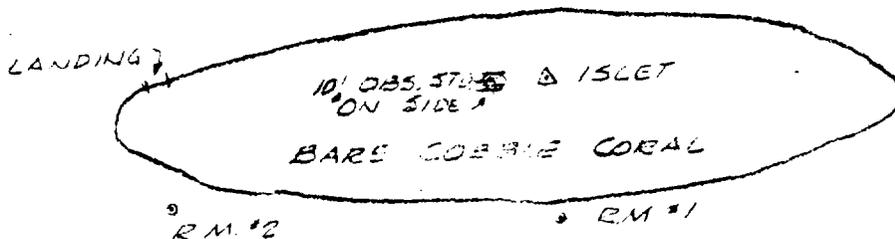
<u>Field Book</u>	<u>Page</u>	<u>Date</u>
165	30	4-19-52
230	9	5-12-54
294	27 & 28	12-31-56



LOCATION SKETCH:



LAGOON



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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Rigili #2	SITE	Leroy
ESTABLISHED BY	H&N	YEAR	1952
RECOVERED BY	E. F. Klanchar	YEAR	1957
FIELD BOOK NO.	296	DATE	1/12/57
	PAGE 20-22		Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION
	FEET	METERS	
Rigili	--	--	8.32
Photo	--	--	--
RM #1	31.40	9.571	7.57
RM #2	30.01	9.147	7.57
RM #3	08.35	20.833	6.37

BRIEF HISTORY OF STATION:

This station was a third order station in the 1949-50 Holmes & Narver Survey. It was known as 11 + 50 and Rigili #1. It was destroyed and later replaced and re-triangulated as a second order station as a part of the 1952 Holmes & Narver Control Expansion.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a .50 caliber machine gun cartridge set in concrete flush with the ground surface.

RM #1 is in good condition. It is a spike embedded in a concrete block, 6" below the ground surface.

RM #2 is in good condition. It is a spike embedded in a concrete block 3" below the ground surface.

RM #3 was set as a part of the recovery survey. It is a brass disc 2" in diameter stamped "RM #3-Rigili-H&N 1952". It is set in concrete 6" below the ground

PAGE 2-RECOVER. WIDE TRAIL STATION TATION

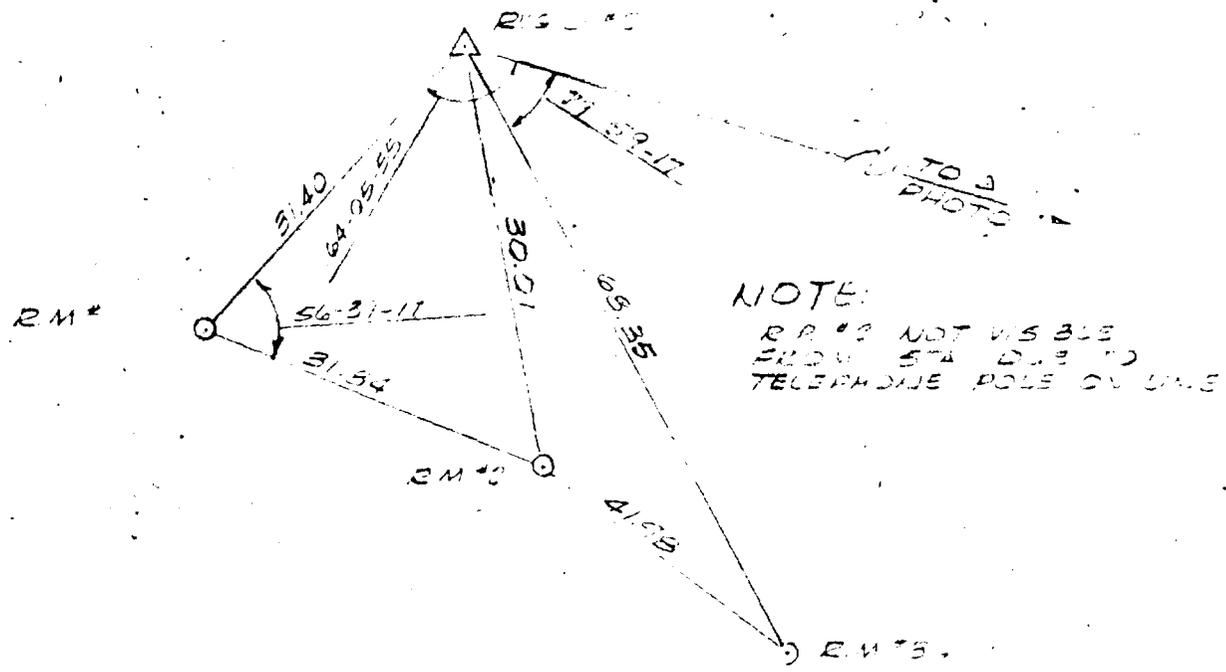
STATION Rigili #2 Leroy

DETAILED DESCRIPTION STATION

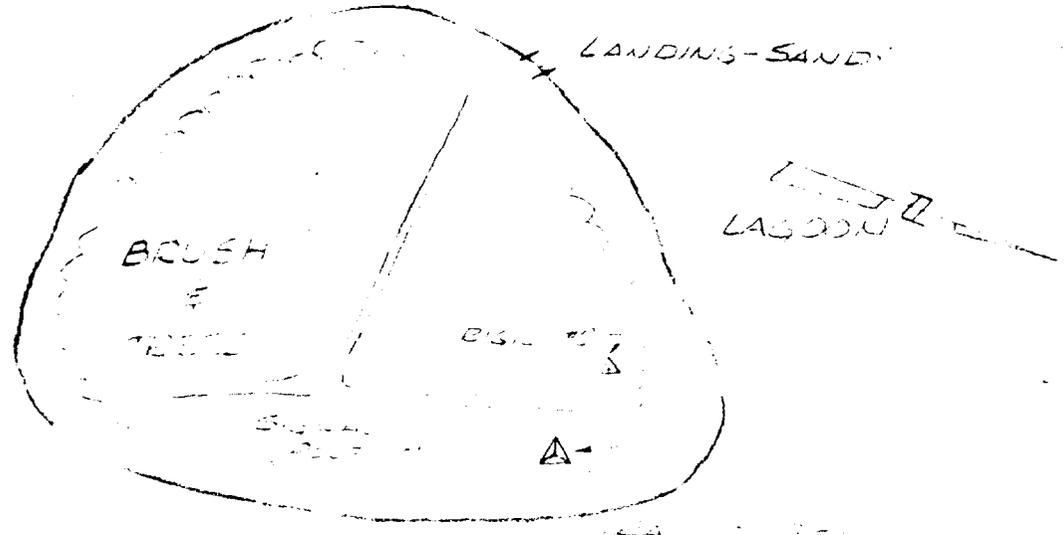
surface, 5-1/2 feet from the N.W. corner of a large metal radar reflector.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
122	4	3-5-51
159	4	2-21-54
296	20-22	1-12-57



LOCATION SKETCH.



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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Aomon	SITE	Sally
ESTABLISHED BY	JTF-7	YEAR	1947
RECOVERED BY	M. P. Curran	YEAR	1957
FIELD BOOK NO.	297	PAGE	10
		DATE	2-4-57
			Aomon Island
			Eniwetok Atoll
			Marshall Islands

DISTANCES AND DIRECTIONS TO REFERENCE MARKS				
OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		

BRIEF HISTORY OF STATION:

This station has been a primary station in the following surveys: JTF-7, 1948-49; Holmes & Narver, 1949-50; Holmes & Narver 1952 Control Expansion.

DETAILED DESCRIPTION OF STATION:

This station and its reference marks has been disturbed beyond replacement.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
132	13	4-17-51
202	13	5-13-53
202	16	5-15-53
227	12	4-23-54
297	10	2-4-57

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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Muzin - P.I. #1 SITE Kate
ESTABLISHED BY H&N YEAR 1950 Muzinbaarikku Island
RECOVERED BY E. F. Klanchar YEAR 1957 Eniwetok Atoll
FIELD BOOK NO. 296 PAGE 17-19 DATE 1-11-57 Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE		MARKS	
	DISTANCE			ELEVATION
	FEET	METERS		
Muzin	--	--	6.40	
Coral	--	--	--	
RM #1	43.36	13.216	00 - 00 - 00	
RM #2	49.84	15.191	244 - 14 - 47	
RM #3	62.01	18.901	291 - 37 - 30	
			170 - 27 - 32	
			8.64	
			10.26	
			4.20	

BRIEF HISTORY OF STATION:

This station is a third order station in the atoll control net. It was originally established as P.I. #1 of the Muzinbaarikku island traverse. It was tied in by local triangulation to the Engebi grid in the Holmes & Narver, 1949-50 survey. It was integrated in the atoll net in the Holmes & Narver 1952 control expansion.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed Holmes & Narver disc 2-5/8" in diameter, stamped "Muzin - P.I. #1". It is set in concrete inside a 55 gallon drum. The mark is 1-1/2 ft. below the top of the drum and the drum is 1 ft. below the ground surface.

RM #1 is in good condition. It is a standard embossed Holmes & Narver disc unmarked except for a punch mark set in concrete in a 55 gallon drum. The marker is 1.7 ft. below the top of the drum and the drum extends 1 ft. above the ground surface.

RM #2 was set as a part of the recovery survey. It is a 2" diameter brass

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PAGE 2-RECOVERY NOTE TRIANGULATION STATION
STATION Muzin - P.I. #1 SITE NAME

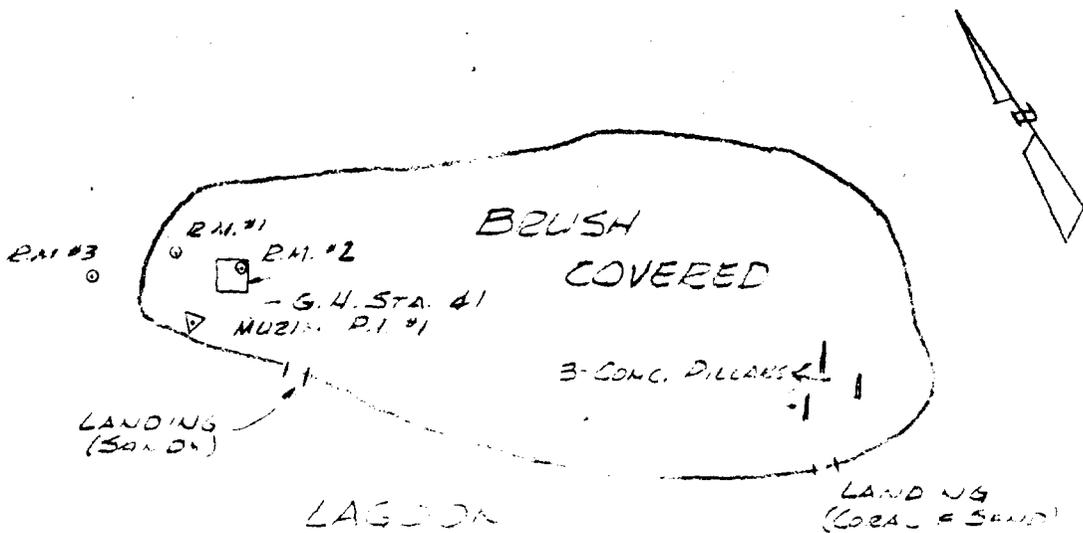
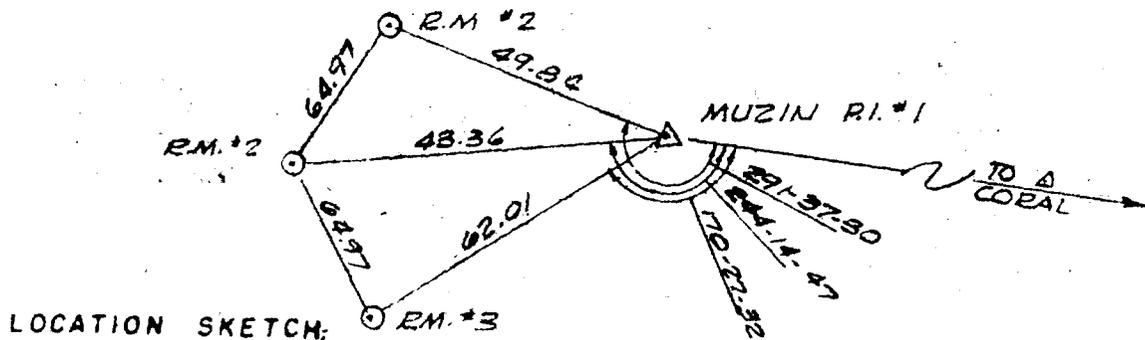
DETAILED DESCRIPTION OF STATION POINTS

disc stamped "RM #2 - Muzin H&N-1950". It is set in concrete in the northeast corner of Greenhouse station #41, an asphalt slab. The mark is 2" below the surface of the slab.

RM #3 was set as a part of the recovery survey. It is a brass tack in a lead plug driven into a hole in the reef coral. The lead plug is stamped "RM #3- Muzin-H&N-1950".

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
28	7	1-23-50
45	7-8	5-29-50
48	8-9	6-12-50
230	20	5-26-54
296	17-19	1-11-57



HOLMES & NARVER, INC.
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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Lantana	SITE	Glenn
ESTABLISHED BY	USN	YEAR	1944
RECOVERED BY	E. F. Klanchar	YEAR	1957
FIELD BOOK NO.	296	DATE	1/26/57
	PAGE: 27-29		Eniwetok Atoll Marshall Islands

DISTANCES AND DIRECTIONS TO REFERENCE MARKS				
OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		
Lantana	--	--	--	5.42
Photo	--	--	00 - 00 - 00	--
RM #1	74.655	22.755	119 - 38 - 10	8.62
RM #2	73.84	22.506	206 - 21 - 42	5.01

BRIEF HISTORY OF STATION:

This station was a secondary station in the USS Bowditch Survey 1944. It has not been included in any subsequent triangulation schemes, but coordinate location of the station has been computed using the 1944 geographic position computations and the station has been used as a third order station as needed.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed "USN SURVEY" disc, 2" in diameter. It is set in a 10" x 15" concrete block flush with the ground surface at the intersection of the diagonals of the footings of the 100' steel navigation tower which is erected over the station.

RM's #1 and #2 were set as a part of the recovery survey. They are standard 2-5/8" diameter brass discs stamped "RM #1 (2) - Lantana - USN-1944". They are set in concrete filled 5" diameter cans, set in the top of concrete monuments.

PAGE 2-RECOVER Y NOTE - TRIANGULATION STATION

STATION Lantana

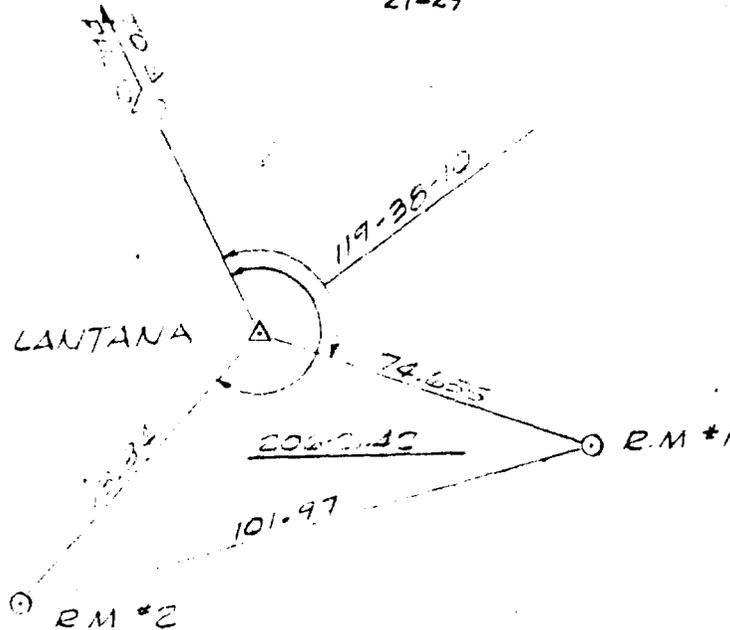
SITE Glenn

DETAILED DESCRIPTION OF STATION CONTAINS

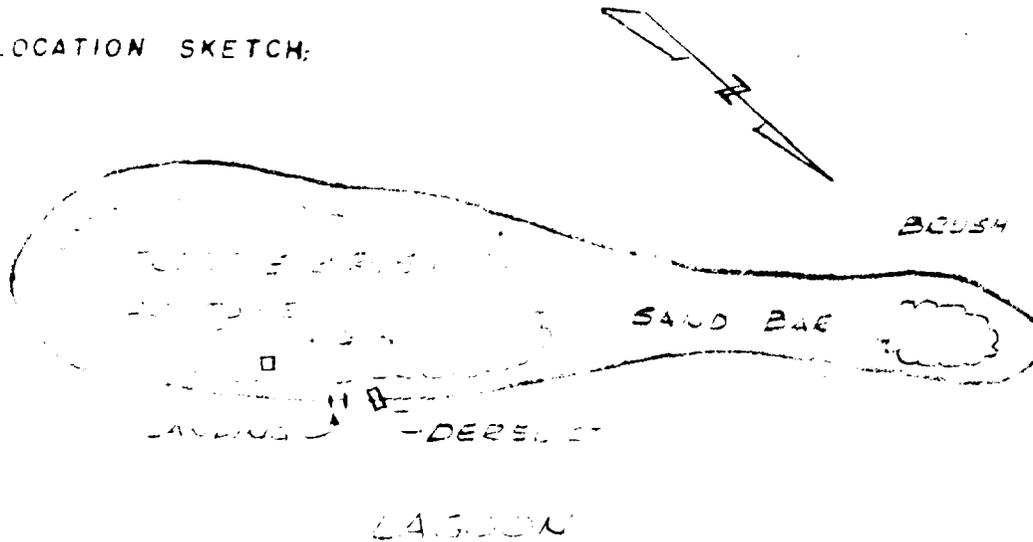
The marks are flush with the ground surfaces.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
223	30	4-13-54
296	27-29	1-26-57



LOCATION SKETCH:



HOLMES & NARVER, INC.
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JOB 942

RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION: Bokon SITE: Mary
ESTABLISHED BY: H&N YEAR: 1949 Bokonaarappu Island
RECOVERED BY: E. P. Klanchar YEAR: 1957 Eniwetok Atoll
FIELD BOOK NO. 296 PAGE 10&11 DATE: 1-8-57 Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION	
	DISTANCE			DIRECTION
	FEET	METERS		
Bokon	--	--	10.40	
Coral	--	--	--	
RM #1	50.02	15.246	9.75	
RM #3	80.18	24.439	9.33	

BRIEF HISTORY OF STATION:

This station has been a second order station in the following surveys: Holmes & Narver, 1949-50; Holmes & Narver 1952 Expansion.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard embossed Holmes & Narver disc 2-5/8" in diameter stamped "Bokon". It is in concrete flush with the ground surface.

RM #1 is in good condition. It is a standard 2-5/8" diameter embossed Holmes & Narver disc stamped "RPI" with an arrow pointing toward the station, set in concrete 6" below the ground surface.

RM #2 was not recovered in the 1951 recovery program.

PAGE 2-RECORDARY NOTE - TRIANGULATION STATION

STATION Bokon

SITE Mary

DETAILED DESCRIPTION OF STATION (CONT'D)

RM #3 is in good condition. It is a cross chiseled in the center of the top of a concrete anchor block of GREENHOUSE station 60.

References:

Field Book

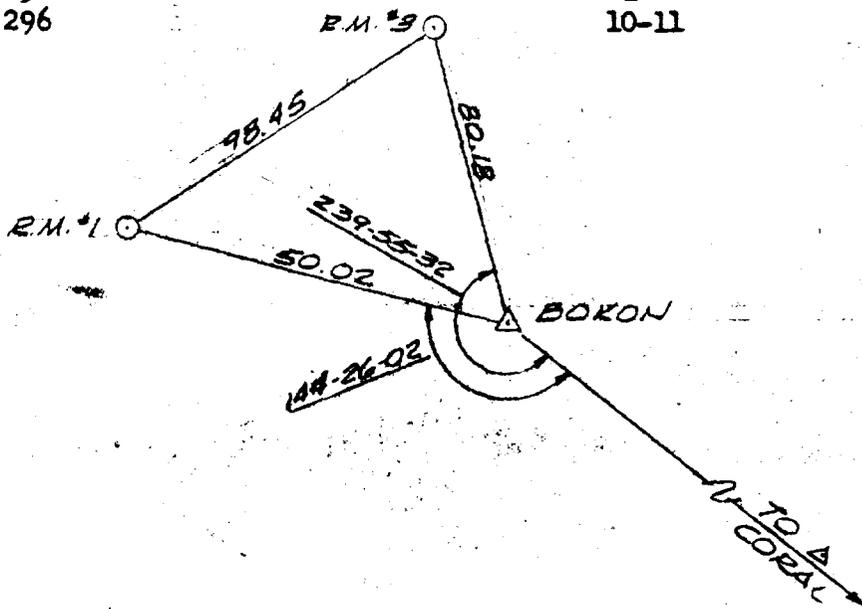
Page

Date

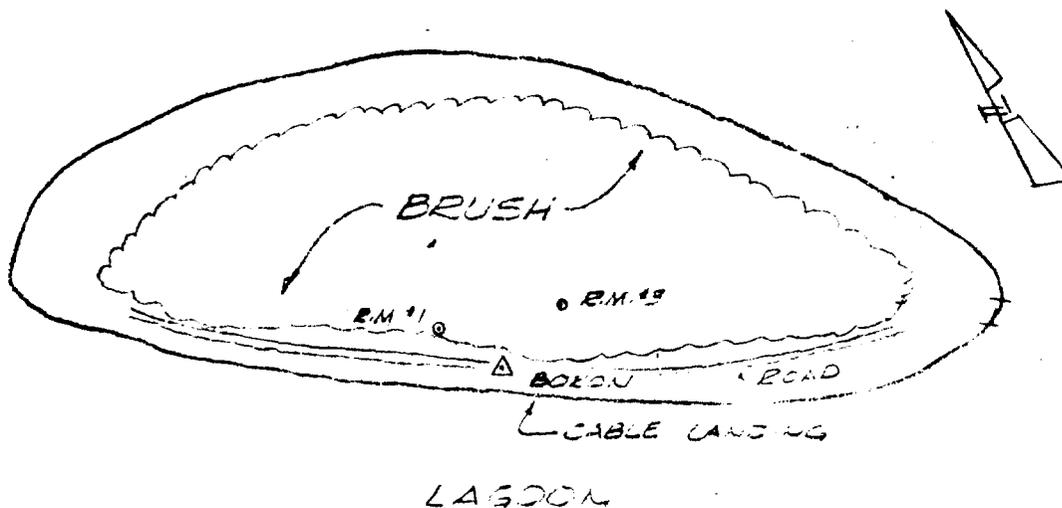
31
31
133
230
296

2
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10-11

3-19-50
3-19-50
6-25-51
6-3-54
1-8-57



LOCATION SKETCH:



LAGOON

HOLMES & NARVER, INC.
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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION	Photo	SITE	Mack
ESTABLISHED BY	JTF-7	YEAR	1947
RECOVERED BY		YEAR	1957
FIELD BOOK NO.	296	DATE	2-2-57
PAGE	26		
			Coral Head
			Eniwetok Lagoon
			Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		
	DISTANCE		DIRECTION
	FEET	METERS	

BRIEF HISTORY OF STATION:

This station has been a secondary station in the following surveys: JTF-7, 1947-48; Holmes & Narver, 1949-50; Holmes & Narver Control Expansion, 1952.

DETAILED DESCRIPTION OF STATION:

This station was destroyed by the replacement of the decking under the photo tower. A living quarters building has been erected over the station location making it impossible to reestablish it at the present time.

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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION. Rujoru	SITE. Pearl
ESTABLISHED BY H&N	YEAR. 1952
RECOVERED BY E. F. Klanchar	YEAR. 1957
FIELD BOOK NO. 296 PAGE. 5-7	DATE. 1-7-57

Rujoru Island
Eniwetok Atoll
Marshall Islands

DISTANCES AND DIRECTIONS TO REFERENCE MARKS				
OBJECT	DISTANCE		DIRECTION	ELEVATION
	FEET	METERS		

BRIEF HISTORY OF STATION:

This station was established as a third order station in the 1952 Holmes & Narver Expansion Survey. It was established by observation of a triangle from Aomon and Coral.

DETAILED DESCRIPTION OF STATION:

This station and its two reference marks were recovered, but had been disturbed sufficiently to make it impossible to reestablish it. This station is considered to be destroyed.

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
159	9	4-21-52
186	15	10-13-52
227	13	4-23-54
296	5 - 7	1-7-57

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RECOVERY NOTE - TRIANGULATION STATION

NAME OF STATION Coral SITE Oscar
ESTABLISHED BY JTF-7 YEAR 1947-48 Coral Head
RECOVERED BY E. F. Klanchar YEAR 1957 Eniwetok Lagoon
FIELD BOOK NO. 289 PAGE: 30 DATE: 1-31-57 Marshall Islands

OBJECT	DISTANCES AND DIRECTIONS TO REFERENCE MARKS		ELEVATION
	DISTANCE		
	FEET	METERS	
Coral	--	--	---
Photo			00 - 00 - 00
RM #1	93.31	28.441	260 - 23 - 33

BRIEF HISTORY OF STATION:

This station was established by JTF-7 on the same coral head where the USN 1944 intersection station "Reef" was located. It has been a primary station in all subsequent surveys and is the origin of coordinates (N 100,000, E 100,000) for the "Ivy" grid.

DETAILED DESCRIPTION OF STATION:

This station was recovered in good condition. The station mark is a standard stamped USC & GS brass disc 3" in diameter stamped "Coral". It is set in concrete, 1/4" below the surface of the surrounding concrete.

RM #1 is in good condition. It is a lead and tack in the small coral head 90' south-east of the main station structure. A piece of angle iron is embedded in the coral head directly behind the RM on the coral - RM #1 line.

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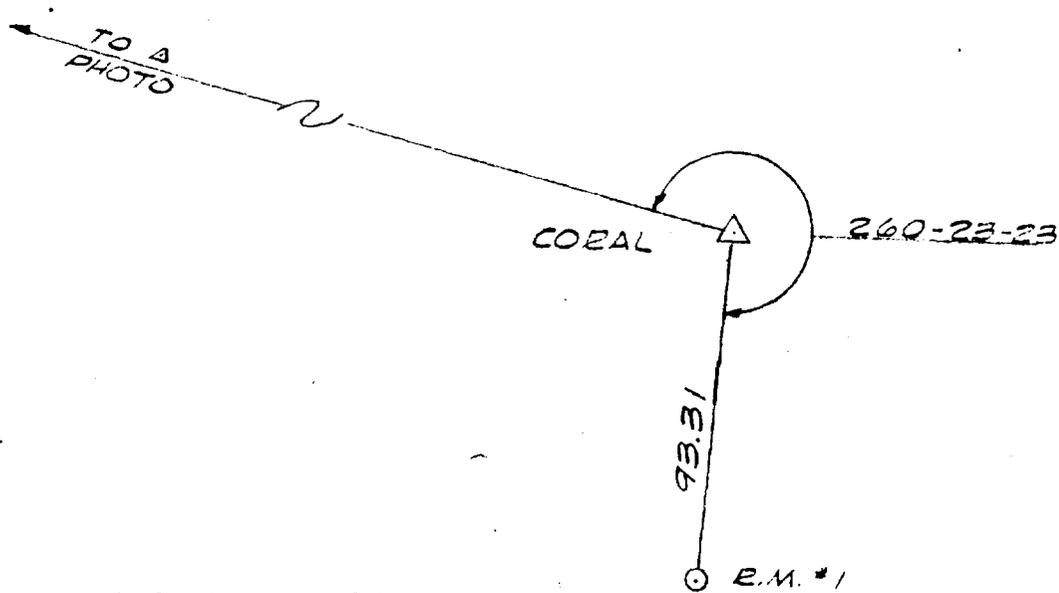
PAGE 2-RECOVERY NOTE - TRIANGULATION STATION

STATION Coral SITE Oscar, Coral Head, Eniwetok Lagoon, M.I.

DETAILED DESCRIPTION OF STATION (CONT'D)

References:

<u>Field Book</u>	<u>Page</u>	<u>Date</u>
162	3	4-3-52
229	3 & 4	6-20-54
280	6	3-12-56
280	15 & 16	8-1-56
289	30	1-31-57



LOCATION SKETCH.