

LORAN SITE SURVEY REPORT

8 August 1955

AUTO 3 - CAPE SAN JUAN P.R.

CONFIDENTIAL

PART III CIVIL ENGINEERING

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A. Site and Antenna Location:

1. Local name for site

Cape San Juan P.R.

2. Geographic position of loran antenna

18° - 23' - 14" N Scaled from P.R. Geological Survey
67° - 37' - 33" W Quadrangle "CAYO ICACOS" edition of 1947.

3. Antenna location monument

Standard USCG survey mark stamped "AUTO 3 - 1955" set in concrete flush with the ground. Ties to other fixed reference points are shown on drawing 2166.

4. Chart showing site location

C&GS charts 920, and 904
World aeronautical chart #649 (Virgin Islands)
Puerto Rico department of Interior Quadrangle "CAYO ICACOS"

5. Boundary description

Beginning at a point located 180° - 00', 225.0 feet from USCG Monument B; thence West 290.0 feet to a corner; thence North 720 feet more or less to the shoreline; thence West and Northwest to a point on the shoreline; thence South 1250 feet more or less to a corner; thence West 360.0 feet to the point of beginning, containing 14.55 acres more or less; together with a road right-of-way 30 feet wide whose centerline is described as follows: Beginning at the gate on the Southwest side of the Cape San Juan lighthouse reservation; thence 295° - 30', 20 feet to a point; thence 331° - 45', 210 feet to a point; thence 345° - 00', 60 feet to a point; thence 337° - 00', 120 feet to a point; thence 311° - 00', 100 feet to a point; thence 324° - 00', 230 feet to a point; thence 344° - 15', 180 feet to a point; thence 7° - 00', 295 feet more or less to a point on the South boundary of the foregoing tract.

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6. Photographs

Ground photos taken during the survey are enclosed.

7. Aerial Photos

Aerial photos taken during the aerial reconnaissance are enclosed.

B. Conditions Affecting Movement of Gear to Actual Site:

1. Nearest harbor or anchorage

Nearest harbor is Roosevelt Roads 18 miles by road or San Juan about 45 miles by road. See Part I for detailed information.

2. Beaches for landing

A beach for small boats exists Southwest of the lighthouse at the foot of the approach road.

3. Mobile equipment required

Over-the-road equipment only.

4. Existing transportation facilities

Steamship, railroad, motor trucks, and buses. See Part I for details.

5. Landing craft required

None

6. Availability of stevedoring, drayage, and local labor

All classes of labor, stevedores, and drayage available.

7. Road construction necessary

Paving the road connecting the lighthouse site and the loran site as shown on drawing 2167.

8. Air transportation facilities

Puerto Rico is served by numerous airlines. The nearest airfield is at Roosevelt Roads Naval Station, 18 miles away.

C. Actual Site Conditions:

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1. Topography of site

The site is the top of a rounded rocky hill with a crest elevation of 138 feet, sloping sharply to sea level all around.

2. Vegetation and tree cover

Cactus and low brush cover most of the site with some low grassy areas.

3. Ground conditions and geology of the site

The site is mostly weathered volcanic (igneous) rock with a thin cover of brown humus soil.

4. Earthwork required

Very little except excavation and fill to level building sites.

5. Foundations for structures, engines, etc.

Excellent - rock foundation attainable every where.

6. Termite proofing

Required.

7. Local sources of construction materials

All construction materials except specialties are available in P. R.

8. Pier or wharf

Not required

D. Utility Report:

1. Potable water supply and sewage disposal

The present water supply for all purposes is rainwater caught on the roof of the lighthouse dwelling and stored in cisterns. Rain-fall is not adequate for all purpose use at present and must be augmented by water hauled from the nearest village. All building roofs should be used as rain catchments at this site, and, in addition, an evaporator as well as water tank truck are recommended. A salt water sanitary system should be provided. The present septic tank appears adequate to handle sewage for the additional facility.

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2. External electric power supply

Cape San Juan lighthouse is furnished electric power at 115/230 volts 1ø 60 cycles from the end of a 4160 volt primary line at the lighthouse. This primary line should be extended to the loran site. In addition, two emergency engine generators should be provided at the loran building. The lighthouse already has a small Kohler emergency plant.

3. Garbage disposal

Incineration or dumping.

4. Heating and air conditioning requirements

Not required.

E. Climatology and Sea Conditions:

1. Precipitation and temperatures

While rainfall over the island of Puerto Rico generally is ample, Cape San Juan receives little rainfall except in the late summer and fall during the hurricane season. Extreme temperature range is about 60° to 92° with the prevailing easterly winds making the climate generally very comfortable.

2. Winds, storms and earthquakes

Both earthquakes and hurricanes are common. All structures should have them taken into consideration in their design.

3. Atmospheric, dust, and humidity conditions

Not abnormal.

4. Sea conditions affecting landing

Not applicable.

5. Construction season

Any season is practicable.

F. Conditions Affecting Construction Force:

1. Nearest habitation

Fajardo about 5 miles away offers accommodations for construction forces. See Part I for additional information.

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2. Endemic diseases

None known

3. Transportation, communications, and postal facilities

Ample - See Part I for details.

4. Construction camp

Not required.

G. Miscellaneous:

1. Recommended types of construction

Tropical masonry; earthquake, and hurricane resisting buildings.

2. Recommended storage requirements

Perishables	3 months
Dry stores	1 month
Others	3 months

3. Fuel delivery and storage

Commercial fuel delivery is available. Not less than one months requirements of the emergency generators is recommended to assure continued operation should acts of God or shipping strikes occur.

4. Prospective contractors

No list obtained; however, Puerto Rico has a large number of capable and qualified contractors.

5. Antenna obstruction lighting

Not required

6. Drawings and sketches

Drawing 2166 shows the loran site in detail. Drawing 2167 shows the relation between the loran site and the lighthouse reservation, as well as a plan of the lighthouse reservation and connecting road. Drawing 2168 shows the floor plan of the lighthouse dwelling.

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7. Conclusion

No unusual construction problems exists at this site. Construction of a new signal-emergency generator building and a combination garage-storage and CO'S quarters will be required. The connecting road between the loran building and the quarters area at the lighthouse should be surfaced. This road is hazardous and almost impassable to two wheel drive vehicles due to slippery conditions and steep grades during heavy rains. The conversion of the lighthouse quarters should include provisions for improving the roof support in the lighthouse quarters. The present method consists of shoring up the decayed ends of the joists at the walls with 4 by 4 timbers, both horizontally and vertically. A new roof covering has just been applied and no further roof leaks have been experienced. All work appears within the capacity of contractors already in Puerto Rico.

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Encl. C7CGD drawing No. 2166 AUTO 3 Site Plan and Plot Plan
C7CGD drawing No. 2167 AUTO 3 Road Control Survey & L.H. Reservation
C7CGD drawing No. 2168 AUTO 3 Plan of Dwelling
Chart: C&GS No. 920 Puerto Rico and Virgin Islands
Departamento de la Interior "Cayo Icacos"
Army Map Service Sheet 1422-1 SE Cayo Icacos
Army Map Service Sheet 1422-1 SW Fajardo
Army Map Service Sheet No. 3, AMS Series E631, San Juan
Aeronautical Chart 649 Virgin Islands
Photographs per attached list:
1 through 14 panorama
15, 16
C7CGD Cape San Juan No. 2, 3, 6
NOTE: Charts enclosed with original only

References not enclosed:
C&GS Chart 904

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