

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICENATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

FOR FEDERAL PROPERTIES

FOR NPS USE ONLY

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DATE ENTERED

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS**1 NAME**

HISTORIC

The Lighthouse System of Puerto Rico, 1846-1979.

AND/OR COMMON

2 LOCATION

STREET & NUMBER

CITY, TOWN

NOT FOR PUBLICATION

CONGRESSIONAL DISTRICT

VICINITY OF

STATE

CODE

COUNTY

CODE

The Commonwealth of Puerto Rico

3 CLASSIFICATION

(v. individual entries for "Status" and "Accessibl

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
☐ DISTRICT	☒ PUBLIC	☐ OCCUPIED	☐ AGRICULTURE
☐ BUILDING(S)	☐ PRIVATE	☐ UNOCCUPIED	☐ MUSEUM
☐ STRUCTURE	☐ BOTH	☐ WORK IN PROGRESS	☐ COMMERCIAL
☐ SITE	PUBLIC ACQUISITION	ACCESSIBLE	☐ EDUCATIONAL
☐ OBJECT	☐ IN PROCESS	☐ YES: RESTRICTED	☐ ENTERTAINMENT
Thematic	☐ BEING CONSIDERED	☐ YES: UNRESTRICTED	☐ GOVERNMENT
Group		☐ NO	☐ INDUSTRIAL
			☐ MILITARY
			☐ OTHER

4 AGENCY

REGIONAL HEADQUARTERS: (If applicable)

United States Department of Commerce, U.S. Coast Guard

STREET & NUMBER

CITY, TOWN

STATE

VICINITY OF

5 LOCATION OF LEGAL DESCRIPTION (v. Continuation Sheet)

COURTHOUSE

REGISTRY OF DEEDS, ETC

United States Seventh Coast Guard District

STREET & NUMBER

51 SW 1st Avenue

CITY, TOWN

Miami

STATE

Florida

33130

6 REPRESENTATION IN EXISTING SURVEYS

TITLE (v. individual entries)

DATE

☐ FEDERAL ☐ STATE ☐ COUNTY ☐ LOCALDEPOSITORY FOR
SURVEY RECORDS

CITY, TOWN

STATE

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Certified copies of legal descriptions of nominated areas could also be found at the United States Coast Guard San Juan Base (San Juan, Puerto Rico, Civil Engineer Section, Real Property Files)

7 DESCRIPTION (v. also individual entries)

CONDITION		CHECK ONE	CHECK ONE
☐ EXCELLENT	☐ DETERIORATED	☐ UNALTERED	☐ ORIGINAL SITE
☐ GOOD	☐ RUINS	☐ ALTERED	☐ MOVED DATE _____
☐ FAIR	☐ UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

GENERAL DESCRIPTION: Nineteenth century socio-economic development in Puerto Rico was characterized by a dual process; one where commercial agriculture for exportation purposes (sugar, coffee, and tobacco) increasingly became the core of social production; and another, emerged as a result of the first that led to a growing dependency on the importation of basic and manufactured commodities and goods. As commercial agriculture expanded, it encroached upon these lands dedicated to subsistence crop production (plantain, sweet potato, corn, manioc, etc.). Thus, as the planter class produced more and more of so-called "after dinner crops", Puerto Rican economy generated less of those products which were already traditional dietary staples. However, there was a common element to both processes -trade; for Puerto Rico, an Island, it meant shipping. As the century elapsed, Puerto Rico became more dependent than ever before on international trade as a means of survival. Early in the 19th century, specifically between 1820 and 1840, the Spanish Colonial authorities were concerned with that reality; thus the construction of roads, channels, ports, telegraph lines, and lighthouses was the result of a rational and systematic plan to deal with the serious problem of poor transportation and communications means. Plans, descriptions, and justifications for the different projects clearly suggest a need for faster connections between towns and cities in the Island, and for safer conditions at sea and shore. These plan were fundamentally simple since they were geared to taking maximum advantage of basic elements provided by nature and of economic available resources.

One outstanding example of these designs took place between mid-1820's well into the 1860's. The Colonial Government planned and partially executed a master channel project to connect the fertile and productive Caguas Valley and environs to the northern section of the Island; from Luquillo to the east through Loiza, Trujillo and San Juan Bay, to the west up to Arecibo. The plan called for the connection of wetlands and natural channels, the reorientation of major rivers, and adjacent natural lagoons. The layout took advantage of differing levels in order to construct simple locks with materials gathered from mangroves and nearby sources. Only for extreme cases would iron and brick would be used for sluice gates. The crucial element in this design was that it was a direct response to agricultural production demands: to expediate and facilitate trade, particularly of sugar, molasses, and rum, between the producing areas and the exporting cities located in the northern shore. In other words, it was clear that communication was an instrument of profit maximization for the producers. (1)

It was no accident, then, that in 1840, the Colonial Public Works Office of the Harbor and Port Section, made a concise inventory of all ports of entry existing in the Island fitted for either coastal

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or deep water navigation. According to the report, there were two major ports in the north shore, San Juan and Arecibo. San Juan was the more important and safer while Arecibo was a good bay, yet poorly protected from "the north winds." Besides, there were six minor ports in the area. On the western section of the Island there were three important cities trading heavily in coffee, sugar, and cotton with foreign markets. These were Aguadilla, Mayaguez, and Cabo Rojo. There were also three minor ports in the region. The inventory states that the best and more numerous ports were found in the southern coast: Guánica, Ponce, Jobos (considered the best in the Island), and Guayama, plus several other minor small bays. The southern coast, according to the document, was a very active trading area, particularly in sugar exported to the United States. There were also four major ports in the eastern front: Humacao, Naguabo, Ensenada Honda, and Fajardo. The report stressed the politico-military importance of three ports: Aguadilla and Mayaguez facing the Mona Passage and Hispaniola; and Ensenada Honda, a military port facing Saint Thomas, the Lesser Antilles, Vieques Sound, and Virgin Passage. (2)

Other examples of similar activity took place during the early 1850's as a relatively modern railway plan was presented to the Colonial Government by a group of major sugar planters. The plan called for a line connecting the two port cities of San Juan and Arecibo, but it failed as a result of poor financing from both the public and private sectors of the economy. (3) Meanwhile, the Government was designing a project of its own: the construction of a network of roads, dirtroads, and trails to connect the major coastal trading cities with the smaller towns of the Island. (4)

All the plans and projects pointed towards the crucial problem of developing a systematic, efficient, profitable, and socially useful means of communication in Puerto Rico by mid-19th century. Uppermost in the minds of both the Colonial Government and the planter class was the protection of the ever increasing import and export trade. There was sufficient mounting evidence at the time that several ports were unsafe, outmoded, inadequate, and ill-protected; as for example, Arecibo, a major port for the exportation of sugar and tobacco to foreign markets. Between 1851 and 1858 approximately 15 ships had serious accidents at the port --actually several of them sank-- as a consequence of poor safety measures which made day and night sailing very hazardous. (5)

Under pressure from the planter class, the Government realized it had to protect, not only foreign trade, but also the highly profitable coastal trade which carried minor crops from towns and cities to other areas, and major crops and goods from producing areas to exporting

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cities.

These articulated and interdependent series of economic elements were clear in the minds of the Colonial authorities by early 1860's. In 1861, the Central Lighthouse Commission (Junta Central de Faros) issued a five point questionnaire aimed at collecting and systematizing the information necessary to develop a comprehensive "lighthouse plan." The information was to be compiled by the "sea-shore district inspectors" of Puerto Rico. (6)

According to the Commission, the establishment of a maritime lighthouse system was to depend on factors such as: the relationship between commerce and agriculture, or, as the inspectors were supposed to find, "the relationship between those areas and their respective hydrographic, geologic, atmospheric, and natural environments in order to facilitate the approach and free navigation" of their waters. The inspectors were instructed to consider the entire plan from an "economic and artistic point of view," that is, in terms of economic feasibility such as costs, materials, etc., and of structural and architectural unity. They also had to submit general estimates on maintenance and services.

The general background for both the 1840's survey and the 1860 to early 1880's master lighthouse development plan is found in the period between 1835 to 1845. At this time, the Trade Board of Puerto Rico proposed the construction of a "rotating lantern" atop San Felipe del Morro Castle at the entrance of San Juan Harbor. The recommendation was based on two facts: on the rapid increase of trade taking place in and out San Juan and on San Juan's increased importance as a port-of-entry for European vessels trading with the rest of the Caribbean islands. In early 1845 the Merchant Bulletin (Boletín Mercantil) advertised a bidding for the construction of a "great brick pedestal" to support the lantern. In November 1845, H.R. Dunham Co. of New York shipped to San Juan "one cast iron lighthouse" which was installed immediately. By the end of December the frigate "Habanero" tested the light's visibility from a location 18 miles into the Atlantic. It reported that the light "is of a very good quality." In January 1846, the Colonial Government officially announced that at the highest parapet of the Castle, 187 feet above sea level (18° 20' N - 59° 48' 50" W) a white light had been established with a 15 mile range and that its main characteristics were 114" of eclipse and 8" of light. (7)

By 1862, the five parabolic reflectors, gas lamps, and rotating mechanism of the light were in bad conditions. A new recommendation was made to replace it with a "modern Fresnel lens." About fifteen years elapsed between the recommendation, the drawing of the new light plan, and final construction, which took place in 1876. (8)

The erection of the New San Juan Harbor Light coincided with the first

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studies made by the Government geared at establishing a comprehensive lighthouse system. One of these took place in 1856 when a light was considered for Cabo San Juan (east of San Juan Harbor at the city of Fajardo) to guide the growing trade between Puerto Rico and Saint Thomas "through the dangers of Culebra Passage." At the instance of the Central Lighthouse Commission Spain approved a grand plan in 1869. It called for the construction of 14 lighthouses: San Juan Harbor, Punta Bermeja, Punta Borinquen, Isla Caja de Muertos, Isla de la Culebra, Isla de la Mona, Isla del Desecheo, Cabezas de San Juan, Arecibo, Punta Higuero, Cabo Mala Pascua, Isla de Cabras, Punta Arenas, and Punta Este de Vieques. But as a consequence of colonial budgetary allocations --possibly as a result of the Cuban Ten Year War for Independence which began in 1868-- no monies were provided until 1875 when the studies for Cabezas de San Juan, Isla Caja de Muertos, Cabo Rojo, and Punta Borinquen were approved. (9)

Between 1876 and 1885 the construction of the project was plagued by budgetary shortcomings. Nevertheless, pressured by the planter class, the Public Works Office, and the Military Maritime Command, the Colonial Government with Spain's consent placed the seven most important lighthouses either in operation or under construction. These were: San Juan Harbor, Cabo or Cabezas de San Juan, Isla Culebrita, Punta Borinquen, Cabo Rojo, Isla Caja de Muertos, and Isla Cardona. Isla de la Mona was also considered as another possible site. Nine more locations were under consideration: Arecibo, Desecheo, Punta Higuero, Mayaguez, Guánica, Arroyo, Punta de la Tuna, Punta Mulas, and Puerto Ferro. In 1890 that plan was revised and the lights re-ranked in construction priority: San Juan Harbor, Cabo San Juan, Cabo Rojo, Isla Culebrita, Isla Caja de Muertos, Cayo Cardona, Punta Borinquen, Isla de la Mona, Punta de la Tuna, Punta Higuero, Isla de Desecheo, Mayaguez, Guánica, Arroyo, Arecibo, Punta Mulas, and Puerto Ferro. (10)

From 1894 to 1895, 11 lighthouses were already functioning, one was being built, four were under study, and the last, Mayaguez, was in the first stages of study. (11) Isla Desecheo Light had been dropped as a site, but the evidence does not state any reason why.

To mark the magnitude and importance of the Spanish lighthouse plan and construction in Puerto Rico, the year 1885 is selected as a watershed. In that year, a preliminary inventory of lighthouses was made --based in a 1882 drawing-- and a new general site plan drawn including order of light, characteristics, and location (subsequently revised in 1888 and 1892). (12)

Also, a set of regulations for the instruction of lighthouse keepers (Reglamento para la Instrucción Teórico Práctica de los Alumnos de los Torreros de Faros) was written. Another set of regulations for the or-

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ganization and lighthouses' service (Reglamento Para la Organización y Servicio de los Torreros de Faros de la Isla de Puerto Rico) and a set of instructions for the better understanding and observance of the regulations for the operation of lighthouses (Instucciones para la mejor inteligencia y cumplimiento de lo dispuesto en el reglamento de faros) were established and implemented in Puerto Rico by the Overseas Ministry in Madrid (these were later revised in 1897). Finally, the lighthouse keeper uniforms were standardized. (13)

The 1885 preliminary inventory of lighthouses was apparently authorized by the Central Lighthouse Commission, but this is not clear since there are some differences between the 1888 inventory and the Commission's lighthouse site plan drawing of the same year. These are more obvious in the case of Punta Borinquen, Arecibo, Desecheo, Arroyo, Punta de la Tuna, and Puerto Ferro, where changes in both location and light type were introduced. These can be further identified if the previous plans are compared with the new 1890 plan as issued by the Modified Maritime Light System of the Central Lighthouse Commission. (14)

The changes in the master plan are indicative of a deep concern for the stabilization of a developing plan which, due to its own nature and arrangement, required a systematic and rational organization. The Colonial Government was not dealing with isolated, individual lights, but with an integral plan embracing the construction of major and minor overlapping units which required a constant follow-up.

In general terms, according to the original design, the major lights, as far as possible, were built first, followed by the minor or local lights. The intention was to create a light belt around the entire Island, where every major light was to be as important as any secondary one, regardless of order. All the plans --1882, 1885, 1888, and 1892-- demonstrate that the minor local lights served as intermediate links between the major ones. Thus, a ship sailing towards the Island, around it, or arriving at any trading post anywhere on the Puerto Rican shore, would always have a guiding light in its horizon. Puerto Rico, key to the Caribbean trade, could not be missed; it would sparkle at night.

The Spanish Colonial Government and the Overseas Ministry in Madrid were aware of Puerto Rico's excellent geo-politico strategic position. Since early 16th century the French, British, and Dutch launched attack upon attack on the Island. The last was the disastrous British assault of 1796. The Europeans wanted to extricate Puerto Rico from the Spanish Crown as a means of directing the Spanish Main fabulous wealth to their vaults, and, at the same time, weaken the Spanish Empire for Puerto Rico was the second largest and most fortified

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military stronghold in Hispanic America. On the other hand, Puerto Rico was ideally located at the center of the Caribbean's mouth with navigable sea passages into the heart of the Empire east and west of the Island. Whoever controlled the Island had free access to the Spanish treasures in America. Furthermore, Mother Nature enhanced the Island's position since prevailing winds and currents helped sea navigation entering the Caribbean through Puerto Rico. After Spain lost its colonies in America at the beginning of the 19th century, Cuba and Puerto Rico were retained as its sole possessions. Spain lost forever the gold, silver, precious stones, spices, lumber, hides, exotic goods which the Empire provided; but Cuba and Puerto Rico would provide a new wealth in the form of sugar, coffee, and tobacco. These became the staples of the century; one for which the standard of the last two hundred years, was a relatively peaceful one. The Century gave way to orderly trade and to increasing exchange of Caribbean goods for European and North American manufactured goods and commodities. This distribution became a cornerstone in the development of the new and dynamic economy: the capitalist economy of the 1800's. These elements led two Spanish officials working for the Lighthouse Commission in 1885 to state that the Mona Passage on the western front of the Island was "the natural trading course" of any European vessel going to South America and the "future Panama Canal." One year later, the Public Works Office Chief Engineer wrote the Colonial Governor on the proposed lighthouse plan and once more stressed the importance of the system in its Caribbean context. He argued that a well lighted and protected shoreline would attract to Puerto Rico "the new shipping lines which will be established after the so much aftersought construction of the Panama Canal is completed." In 1888, another report was filed at the Governor's Office by a member of the Commission. It reveals, not only the implications of the light system for the Caribbean but the overall international consequences of the design

One should take into account the routes followed by northern navigation into South America; from the Bahamas' channel, through north of the Islands of Cuba and Saint Domingue they enter the Sea of the Antilles; from there to Puerto Rico, and then Saint Thomas through the eastern Carmen Passage. The illumination of the north coast --from the Yucatan to the Gulf of

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Mexico, could and should be an issue of international interest. But more concretely, it is innegably convenient that all lighthouses built from Punta Maisi, northeast of Cuba, to the northern coast of Saint Domingue, Puerto Rico, and Saint Thomas, be not only clear, and well defined, but of the longest reach possible. Thus, the sailor who reaches these shores after an ocean passage, can, not only avoid danger, but correct his estimates, define his route, and mark his destiny, all through the most convenient channel of access to the Sea of the Antilles

His appreciation of current events was based on quantitative data accessible to him which allowed the conclusion that (15)

According to all statistic and geographic information, the number of European ships South America-bound which use the Mayaguez and Saint Domingue Channel /Mona Passage/ is larger than that which use other channels. And if the opening of the Panama Canal is added to the illumination of these coasts all the aforementioned navigation will follow that route, which is the shortest. It is thus, of utmost international and national interest to light this shore well and promptly.

The internal unity and integrity of the design was envisioned not only to serve local needs, but was interwoven with international interests. Evenmore, it took into consideration the construction of the Panama Canal which was finally built and opened to international navigation in 1914 approximately twenty years after the Island's lighthouse plan was conceived and executed. Undoubtly, the Puerto Rican plan was a masterpiece of design and construction. A similar kind of organization and planning is reflected in the "primer" for lighthouse keepers which, as mentioned, described the

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and set rules for the keeper's technical education. It established the moral qualities, public and private, of the keeper, and especified the nature and limits of the students' curriculum. They were to be instructed in geometry, mechanics, physics, meteorology, and basic engineering. The Instructions demanded of the students a "detailed knowledge" of all lighthouses on the Island in their "different parts and components and in their isolated and combined operation" since the lighthouse design was a working system whose parts played a key role only through interaction.

In other words, the students were taught not to deal with the peculiarities of an isolated object but with the complexities of an articulated master plan in operation. This was further established in the two sets of regulations concerning the organization, operation, and lighthouse service that spelled out, in 102 articles, everything concerning the upkeep of the lighthouse system: from polishing the floors of the keeper's dwellings to the type of nippers used for dirt removal in the lighthouse rotating device and the "chamois or buckskin with which the optics are to be polished."

The same richness of detail is also found in the standardization of the keepers' uniforms. If they were to be worn inside the lighthouse, they had to be of crude drill, with white buttons and white cap; otherwise, the uniforms would be of blue drill with golden buttons, black shoes and blue cap or white casque. The insignia was a band and two gold cords for lighthouse keeper 1st class; band and one gold cord for 2nd class keeper, etc.

The lighthouse system as such was not the only one with internal cohesion; it was a reflection of the Spanish "obsession" with systematic unity in organization, design, and construction. Structurally speaking, it may be argued --superficially though-- that 'after you've seen one lighthouse, you've seen them all.' Yet that would be an unimaginative judgement because, factually, the lighthouses of Puerto Rico are unique variations on a theme.

The basic design for each structure called for a brick, plaster, and stone rectangle internally divided into two equal parts (if the dwelling was for two keepers). Each part of the rectangle was segregated from the other, but had common elements responding to lighthouse service requirements and keepers' domestic needs.

The existing original lighthouses' drawings used to build the actual structures demonstrate this point. Service areas were clearly marked--storage room, engineer's quarters, etc.--and

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did not offer major interpretative problems. The domestic spaces, though, present a remarkable hidden simplicity which fundamental characteristic was a free flow of movement which kept in mind the need for habitable spaces and privacy.

The living quarters were determined by structural needs and primary functions, but were to be ruled by their inhabitants and their life-style. The keeper--one or two, according to the light order--and his family, had liveable private quarters of their own within a same lighthouse which did not interfere with any other fellow keepers'. In other words, each quarter was a home with private living room, bedrooms, kitchen-dining area, bathroom, and a rear exit to a vegetable garden.

The structure did not allow for any communication between keepers' dwellings except at a common space, the vestibule or welcoming hall. This common social space, so to speak, lead to a second common space, the tower, the core-object of the structure, which regardless of position--internal, external, or partially attached--always connected to the living quarters--a reminder of the keepers' common responsibility. Finally, these had another point of social contact, the well or cistern which provided water to the inhabitants of the lighthouse.

The lighthouse system's unity is further emphasized by the lighthouse locations. As a rule, they were established in isolated areas, on high grounds above sea level, with a commanding view of the horizon. These lighthouses, standing alone atop high promontories or naked cliffs, against a background of dark green mountains or ridges, were an example of structural functionalism and a rare counterpoint in scenic dramatism.

The light mechanism provided another element of cohesion: lenses and optic systems, lantern and lantern fixtures, illuminating apparatus and lampburners; and sometimes iron stairs, rails, balusters, and decorative elements were all of French design and manufacture. Available evidence indicates that three Paris-based French firms offered and provided designs to the Spanish Colonial Government: L. Sautter, Lemonier, & Cie., Henry-Lepaute, and Barbier et Fenestre.

The 1885 plan--with or without modifications--fulfilled the 1861 five-point instructions issued to the sea shore inspectors in terms of unity of function and design, construction, and artistic concepts--neo-classic style--which the Spanish Colonial lighthouse system in Puerto Rico subsequently embodied. Moreover, the plan provided a solution to the maritime communication and transportation problems raised by the 1840 port survey of Puerto Rico. The plan was so remarkably well executed that it was later absorbed without modi-

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fications into the United States Lighthouse Service after the 1898 Spanish-American War. And, though transformed by today's needs, the basic system is still in operation, and the structures still stand.

Thus, one hundred years after their construction, the Lighthouses of Puerto Rico--even those that have suffered the effects of vandalism or natural decay and ruin--are extraordinary examples of historical continuity, unity and cohesion. They came into being as a result of an immediate economic necessity. The solution could have been a temporary one. The Spanish Colonial Government chose instead to build a system which for its utilitarian value, proportion, architectural value, and environmental locations, transcended its time and projected itself into the realms of posterity.

* * *

The boundaries for all United States Coast Guard properties in Puerto Rico hereby nominated were chosen firstly on the scientific selection of the sites as originally carried out by the Spanish Colonial Government, and secondly, on the United States Coast proprietary rights--awarded through Presidential Proclamation on 1903--as a result of Puerto Rico's United States possession status after the Spanish American War of 1898.

These nominations, as far as the documentary and surveying evidence goes, attempt to honor the boundary lines' selection of 1903, surveyed in 1904 and or 1905.

Historical continuity and its corresponding associations with past and present time and use, are uppermost elements in the boundary selection. Other elements such as site integrity, natural beauty of the immediate environments, their subsequent dramatic effects, and the necessary surrounding space for enhancing the imposing effects of the site's architectural values are also considered as substantive components for boundary demarcations.

1

Archivo General de Puerto Rico (AGPR), Obras Públicas: Aguas y Canalizaciones, legajos 239-249, expedientes 22, 23, 24, 41, 470, 473, 713, 715, 717, 720, 723, 1489, 1753, and 1768. Also AGPR, Obras Públicas: Caminos Vecinales, legajos 40 and 68, expedientes 39, 155, 172, 174, 176, 205, 579, 1423, and 1459.

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AGPR, Obras Públicas: Puentes y Muelles, legajo 87, expediente 2.

3

AGPR, Obras Públicas: Ferrocarriles, general.

4

AGPR, Obras Públicas: Carreteras y Caminos, general.

5

AGPR, Obras Públicas: Puertos y Muelles, legajo 228.

6

Ibid.

7

National Archives, Washington, D.C. (NA), Record Group (RG) 26, box 3.

8

Archivo Histórico Nacional, Madrid, Spain (AHN), Ultramar: Puerto Rico, legajo 409, expedientes 2-7.

9

AHN, Ultramar: Puerto Rico, legajo 409, expediente 12. NA, RG 26, boxes 3 and 4.

10

NA, RG 26, box 3.

11

AGPR, Obras Públicas: Puertos y Muelles, legajo 228. NA, RG 26, box 4.

12

v. attached 1882, 1885, 1888, and 1892 copies of drawings. Color slides are included from 1888 and 1892 drawings. The 1882 plan is located in AHN, Ultramar: Puerto Rico, legajo 410, expediente 7.
v. attached 1885 and 1890 Lighthouse Inventory charts.

13

AGPR, Obras Públicas: Puertos y Muelles, legajo 228. NA, RG 26, box 4.

14

AGPR, Obras Públicas: Puertos y Muelles, legajo 228.

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NA, RG 26, box 4.

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NAME: Historic: Faro del Morro or
Faro del Castillo del Morro
Common: Puerto San Juan Light

LOCATION: On Port San Juan, on summit San Felipe del Morro Castle
--within San Juan Historic District-- on the North shore of Puerto Rico. On position $18^{\circ}28.4' N - 66^{\circ}07.4' W$.

CLASSIFICATION: Unoccupied. Restricted access.

DESCRIPTION: Deteriorated condition; altered; original site.

The first Puerto San Juan Lighthouse was built in 1846 at location $18^{\circ}20' N - 59^{\circ}48' 50'' W$, 187 feet above water. The light was formed by five parabolic reflectors. The structure deteriorated so badly that a new location was chosen by mid 1860's. The new installation was built at its present location in 1876 as a 3rd order light. It had an exposed brick octagonal base which supported an octagonal tower (cast-iron) painted gray and white. The lantern was also octagonal crowned with a copper cupola. The original lenticular lens was built apparently by Lemonnier Y Cie. The earliest known characteristic was a fixed white light, with eclipses in 1' in 1'. It had no dwelling although it was serviced by three keepers.

During the course of the Spanish American War and the San Juan bombardment by Admiral Simpson, the cast-iron lantern and tower were destroyed. In 1899 The Navy Department rebuilt the tower as an octagonal reinforced concrete structure with a new lenticular lens. By 1905-1906 a crack, through and around the top of the tower, directly under the lantern caused its demolition. In 1908 it was rebuilt as a three-story square brick and masonry tower, with a cast-iron helical bar lantern. It was built around the old Spanish brick octagonal base. The new tower was painted gray.

Part of the old brick work was retained on the first floor which today encloses a vestibule, oil room, and a closet. On the second floor --the square tower-- are found the watchroom, a small alcove, and a small hall. The third floor was actually part of the lantern and lens room. The lantern was of cast-iron and bronze with wrought-iron plates roofing. It had a surrounding cemented gallery enclosed by a parapet. On each corner of the parapet small ornamental Spanish style guard houses were built. The new tower showed new wooden windows and doors following a pseudo-Spanish style.

In 1919 the illuminating apparatus was a 3rd order, lenticular, 1875 French Sautter, Lemonnier & Cie lens installed in 1908. The central drum measured 1m. and had 8 flashing panels, each made up of 6 ring

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elements and one bull's eye. It did not have prisms above or below the central drum. The apparatus revolved on a chariot activated by a clock-work system. The clock cord descended through the center column of the tower cast-iron winding stairway. The cord had a 200 lb. weight. The rotating machinery was protected by a cylindrical cast-iron and glass case. The iron pedestal was set on a concrete base.

In 1932 the original weight driven rotating apparatus was replaced by an electrical driven mechanism. By 1937 the structure's color was changed from gray to cream with brown trimmings. In 1962 the light was outomated and the resident personel discontinued.

The actual light is the same 1908 square brick tower with an octagonal brick base with the 1937 paint characteristics. It shows the same 1875 French lenticular lens.

SIGNIFICANCE: It is the oldest lighthouse still in existence and use in the Island. It was built to guide the entrance into San Juan Bay and Harbor, one of the most important trading centers of the Spanish Empire since early 16th century. By late 1880's and early 1890's it became the central lighthouse of the group formed by Cabo San Juan and Arecibo lights, thus lighting the central northern shore section of the Island.

GEOGRAPHICAL DATA: Area Nominated: 407 sq. ft. Boundary description: beginning at a point S 45°E 8 ft. from corner of parapet thence S 45°E 7.9 ft; thence S 7.9 ft; thence S 5°E 4.3 ft; thence W 10 ft; thence N 45°W 10.8 ft; thence N 7 ft; thence E 5 ft; thence N 3 ft; thence N 45°E 7.9 ft; thence E 7.9 ft to point of beginning.

SUPPORTING MATERIALS: v. attached pocket #1 "Puerto San Juan Light". Enclosures are: Plan area nominated; c. 1898 photo; 1978 photos (6); Blue copies original site drawings (3); and, Alterations' drawings.

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NAME: Historic: Faro de los Morrillos de Arecibo
Common: Arecibo Light

LOCATION: On Punta Morrillos, on the easterly side of the entrance of the Port of Arecibo, on the northerly shore of the western part of Puerto Rico, about 34 miles west of Puerto San Juan. On position 18° 29' N - 66° 41.9' W.

CLASSIFICATION: Unoccupied. Unrestricted access.

REPRESENTATION IN EXISTING SURVEYS: N.R.H.P. and H.A.B.S.

DESCRIPTION: Very deteriorated. Altered. Original site. From seaward, the lighthouse is projected against the Central Mountain Range, and seats on a black sandstone hill. It was built between 1897 and 1898 as a 3rd order lighthouse with an 18 mile range fixed white light.

The basic original structure stands today as erected at the end of the century. It consists of a rectangular building (25.64 mts x 12.30 mts) with an hexagonal tower attached to its north facade (approx. 15 mts high including lantern and cupola). The dwelling has its main entrance on the south facade and once gave way to a 5.6 x 4.9 x 4.5 mts. hall which led to the tower entrance through a 6 x 2 mts. corridor. At both sides of the corridor there were two doors which connected, on the west, to the old engineer's room, and on the east, to the old store room. The door connecting to the tower was located four steps above the corridor's ground level. The tower's interior is cylindrical with a 2.5 mts. diameter. The rest of the structure was divided into two separated units which served as living quarters for a 1st and 3rd class light keepers. The common vestibule or hall led, on both east and west, to a spacious 5 x 4.7 mts. livingroom. Each livingroom opened to two bedrooms approximately 3.28 x 4 x 4.5 mts. Two identical rooms were located on the NE and NW corners of the building that served as kitchen-dining areas. The bathrooms were located at the end of the two corridors.

Each room had wood double-pane leaf-window approximately 1.2 x 2.5 mts., with the exception of the rooms at each corner which had two. Underneath the tower there was a flat-ceiling basement that served as the oil room. Halfway up the tower --by way of a cast-iron winding stairway-- a window opened to the north, and a door to the south opened to the building's roof. The roof was formed by superimposed and alternatively layed layers of brick and mortar sustained by large iron-

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wood beams and lattice. It was divided into four large sections, each one with a different inclination for water collection into a nearby cistern.

The tower ended in a cast-iron, copper, and glass lantern that had a cemented gallery surrounded by a cast-iron balustrade.

The original illuminating apparatus was a 3rd order, lenticular, 1897 Paris' Barbier & Bernard lens, 1 mt. in diameter, with 5 panels. There were 7 panels in the central drum; 11 prisms on each panel above the central drum, and 9 below. It was sustained by an iron pedestal. The tower and dwelling were originally painted white with lead-gray trimmings. The materials used were rubble masonry, brick, stone, and lime mortar. The floor was covered with white and gray Genoa marble slabs, except the the keepers quarters which were floored with wood planks.

In 1930 the light characteristic was changed to Fl. 20s. One year later the IOV system was replaced by an electric lamp which was curiously hooked to a windmill. In 1964 the light was automated and in 1977 the light characteristic was again changed.

In 1959, some major structural changes were made: the walls separating the original bedrooms and kitchens, the engineer's and storeroom's were remodeled to give way to modern bathroom facilities. Also, the old brick roof was replaced by a reinforced-concrete one.

After the lighthouse was automated the structure was abandoned: decay, ruin, and vandalism began to make their way into the structure. Between 29 October 1969 and 28 October 1977 the lighthouse was seriously vandalized 16 times. In 1975 damage was done to the classic lens, and in 1977 almost all of the lantern and the entire French lenticular lens were destroyed.

The building is partially in ruins; nevertheless, some marble slabs remain in the floor and part of the old wooden door hangs on its original hinges. Some decorative elements remain in place: the simple cornice of the main building, the tower cornice "sustained" by rectangular brackets, and the curved main entrance cornice. But windows and doors have been removed, and even chunks of brick and mortar have been torn from walls.

SIGNIFICANCE: One of the last lighthouses built in order to complete the original lighthouse plan as designed. Compared with other lighthouses, it is simple, elegant in its less decorated very proportionate way and reflects very well Spanish colonial neo-classicism. Its craftsmanship is obvious, as particularly shown by its brick work. Arecibo light finally completed the Cabo San Juan-Puerto San Juan

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trilogy which lighted the Island's northern shore.

GEOGRAPHICAL DATA: Area nominated: 5.05 acres. Boundary description: beginning at a point S 18° 30' E 265 ft from SW corner of dwelling; thence S 70° 45' W 199.7 ft to a point; thence N 79° 51' W 152 ft to a point; thence N 41° 00' 23" W 394.65 ft to a point; thence N 57° 43' 37" E 246 ft to a point; thence easterly along high water mark to a point N 19° 15' E 195 ft from NE corner of dwelling; thence 1° 30' W 500 ft to point of beginning.

SUPPORTING MATERIALS: v. attached pocket #2 "Arecibo Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; and; original site drawings photos.

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NAME: Historic: Faro de Punta Borinquen
Common: Punta Borinquen Light

LOCATION: About 1 1/4 mile northeast of Point Borinquen, northwest part of Puerto Rico. On position 18° 30.1' N - 67° 08.7' W.

CLASSIFICATION: Occupied. Restricted access.

DESCRIPTION: Excellent condition. Unaltered. Original site. The original lighthouse was built in 1889 in position 18° 29' 26" N - 67° 09' 43" W very close to the sea in a low sandy point. In 1918 Puerto Rico experienced an earthquake which had its epicenter somewhere on the NW part of the Island, possibly on the Puerto Rico Trench. As a result, two lighthouses were practically demolished on the NW section of Puerto Rico: Punta Borinquen and Punta Higuero (south of Punta Borinquen).

The old structure closely resembled Arecibo Light in design although it was much smaller. As a 4th class light it had a 12 mile range showing a red and white light with alternate flashes 30" in 30". The dwelling --a 13 room unit for a 2nd and 3rd class keepers-- was built around the octagonal tower. Both were built of stone and brick and were painted red with white trimmings. One distinctive element was the tower's brackets-cornice arrangement which had a clear moor-style that sharply contrasted with the building's neo-classic simplicity. The earthquake also destroyed the lens, a major loss, since the flashes were produced by tinted panels in the central drum. It was a 3 1/2 order lens built by Barbier & Bernard, lenticular, 75 cms. in diameter. It had 8 flashing panels; the central drum had 5 panels; 10 prisms formed the upper section of each element above central drum and 4 prisms were located below the central drum. The entire lens rotated on a chariot activated by a clock work system.

The new light was built in 1922 on position 18° 30.1' N - 67° 08.7' W. The new structure differed from the first in two ways: the dwelling is reinforced concrete and the tower is detached from the dwelling. Otherwise, the keepers quarters were built --even in decorative elements-- following the old ones design. A change was introduced as the principal keeper would have 5 rooms and his assistant 4, with a connecting hall between and a common storeroom. The old light design was so closely followed that two four-furnace Spanish charcoal kitchens were built in the keepers quarters.

The dwelling is 56' 4" x 39' 6". The main entrance on the east side leads into a long east-west corridor at the end of which a door leads

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to an uncovered passway to the tower. South of the corridor a door opens to an 11' 10" x 11' 7" principal keeper's living room; two additional doors connect with two identical 11' 9" x 12' 3" rooms. One of these serves as a dining area which opened into the 11' 9" x 12' 3" Spanish kitchen (no longer in existence). The kitchen also opened into the largest room, an 11' 10" x 18' 7" master bedroom. The other west half of the structure is identical to the east section, although the 11' 10" x 18' 7" room serves as a common storeroom. The kitchens, following the Spanish arrangement of spaces, are located in the northeast and southwest corners, respectively. Each room originally had double-leaf windows. The floors are still tiled as in the 1920's. The exterior decorative elements such as cornices, pediment, and parapet follow the Spanish colonial neo-classic style.

The light gray colored reinforced-concrete tower was built 292 ft above water, 60 ft above ground and is earthquake resistant. It has four stories, a watchroom, and the lantern. The tower has a 6 ft deep 25 ft square foundation which is reduced by a series of four superimposed concentric exterior concrete belts into a 15' 2" circular structure that has a 12' 8" internal diameter. Each floor, having a west oriented window, is connected by a cast-iron winding stairway. In 1921 the tower had a 3rd order 7' 1" diameter cast-iron, brass, and glass cylindrical lantern with helical bars. It opened into a concrete balustrade and gallery. The illuminating apparatus was formed by a 40" diameter, 3rd order 1917 lenticular lens built by Macbeth Co. in New York. It had 12 panels of which 8 were flashing ones. The central drum had 12 panels; 11 prisms were located on each panel above central drum and 4 below. The lens was mercury floated, activated by a classic clock work system that had a galvanized iron cord led through the center of the column in the tower stairway. It had a 200 lb. weight. In the 1920's the light characteristics responded to sea navigation. In 1947 the light was changed for an airway beacon for surface and air navigation. As a consequence, the lantern was transformed and the old helical bar structure removed. In its place a 36" double head revolving Crouse-Hinds apparatus was installed. The 1946 tower and light and dwelling are in existence today.

SIGNIFICANCE: The new 1920's dwelling follows the old 1880's geographical location, structural, and architectonic characteristics. Its tower represents the only ever built by the U.S.C.G. showing the above stated specifications. Both the old and new lights, stand in the northwest point of the Island and partially complete the north light trilogy already mentioned. But most important, it is the first eastern light

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in the Island's western front that guides the entrance to the Caribbean thus forming with Mona Island and Cabo Rojo Lights that protects the north-south bound sea navigation into the historically famous Mona Passage.

GEOGRAPHICAL DATA: Area nominated: 2.6 acres. Boundary description: beginning at a point located 150° 64' from the E corner of old Mrs. Castro's hut; thence N 2° W 228 ft to a point; thence S 74° 30' W 160 ft to a tree; thence S 10° 30' E 191 ft to a point; thence N 87° E 130 ft to the point of beginning. Another tract of land beginning at a point located 150° 64' from the E corner of Mrs. Castro's hut, thence N 2° W 228 ft to a point; thence N 74° 30' E 240 ft to the Malazo County Road; thence southerly along said road to a point S 87 °W 234 ft to the point of beginning; thence westerly to the point of beginning.

SUPPORTING MATERIALS: v. attached pocket #3 "Punta Borinquen Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; original site drawings photos; and, alteration's drawings.

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NAME: Historic: Faro de Punta Higuero
Common: Punta Higuero Light

LOCATION: On Point Higuero on the most westerly point of Puerto Rico between Mayaguez and Aguadilla Bays. On position 18° 21' 49 " N - 67° 16' 15" W.

CLASSIFICATION: Unoccupied. Restricted access.

DESCRIPTION: Good condition. Unaltered. Original site. In 1892 the original light was built as a fixed white 6th order station with a 6 mile range light beam. It was a singular piece of design and construction similar to Guánica Light. Its most striking feature was the peculiar use of materials in the facades and tower. The light, as a result of the 1918 quake, was rebuilt in 1921 but demolished by the U.S.C.G. in 1922.

As originally built, it was a brick and stone rectangular dwelling --for one 2nd class keeper-- constructed around an exposed brick octagonal tower. Its Mediterranean appearance came from an elaborate combination of exposed and indented brick work in the facades --around doors and windows-- and corners. The "castle" look was further emphasized by reddish stucco imitating stone-work on all facades and the very elaborate exposed brick cornice topped by a parapet built in lace-like brick-work. The tower followed the same style.

The original illuminating apparatus was a 4th order Bernard & Barbier 1892, lenticular lens with 50 cm. in diameter. The lens had 6 panels; 6 flashing panels in the central drum formed by 5 elements each panel. It also had 6 prisms on each panel above the central drum and 3 below. The flashes were produced by the entire revolving lens activated by a clock work device. The cast-iron, copper, and glass lantern was approximately 2 mts. in diameter.

The evidence suggests that the lens was destroyed by the 1918 quake; nevertheless, the lantern and clock system were apparently moved to the new light in 1922: a reinforced-concrete cylindrical structure. This one is almost identical to Punta Borinquen but varies in dimensions. It has a 21 ft square 4 ft deep foundation reduced by four superimposed concentric belts to a 12 ft tower with an internal 10 ft diameter. It has 3 floors, watchroom, and lantern. A concrete stairway leads to each floor and a railing iron ladder to the lantern. It has a central hollow concrete shaft lined with galvanized iron for the old clock work cord. In 1933 the light was made automatic and left unattended.

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The structures and dwelling which were also built in the 1920's were razed by a fire some years ago and severely damaged.

SIGNIFICANCE: Originally built to connect the intermediate space left by Punta Berinquen and Cabo Rojo Lights. It incorporates some of the old light devices: lantern and sections of the rotating apparatus. The tower is the smallest of the two built by the U.S.C.G. in Puerto Rico.

GEOGRAPHICAL DATA: Area nominated: 2.46 acres. Boundary description: beginning at a point at corner of fence S 44° 8' E 178 ft from SE corner of old dwelling; thence northerly along right-of-way of old American Railroad Co. of Porto Rico 265 ft to a point; thence NW parallel to railroad track 118 ft to a post; thence in a curve along top of slope in northerly direction 178 ft to a point; thence NW 25 ft a point; thence NE 60 ft to high-water-mark; thence along high-water-mark W and S to a point 155 ft S of SW corner of old dwelling; thence N 76° 15' E 150 ft to point of beginning.

SUPPORTING MATERIALS: v. attached pocket #4 "Punta Higuero Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; alteration's drawings.

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NAME: Historic: Faro de la Isla de la Mona
Common: Isla de Mona Light

LOCATION: On East Cape of Mona Island about 37 miles west of Puerto Rico, on western side of Mona Passage. On position 18° 05' 18" N - 67° 50' 48" W.

CLASSIFICATION: Unoccupied. Unrestricted access.

DESCRIPTION: Good condition. Unaltered. Original site. Mona Island Light is the only existing lighthouse for which two entirely different plans were drawn between 1885-1886. The first plan called for a 2nd class light, 22 miles range light beam, 3 keepers, and a structure (37.7 x 24 mts) with 25 rooms. It was to be built around a central courtyard. The octagonal tower (5.5 mts. in diameter) was 16 mts. high excluding the 7 mt. high lantern. The walls generally measured 1 mt. thick. According to the evidence this massive structure was under study in 1885 to be located at the present site. In 1888 a lighthouse was under construction and the illuminating apparatus has been commissioned from a manufacturer. By 1890 it was being built and its characteristics determined as a white light flashing every 2'. But the first reference --1894-- so far found about the actual construction talks of "a metallic lighthouse" not of a brick and masonry structure. This puzzling situation suggests that the long construction project actually refers to the second lighthouse project presented in 1886 to be built of iron and steel. On this respect, late in 1886 a report was filed at the Governor's Office stating that the terrain conditions at Mona --very porous, fragil, and brittle sandstone was better suited for an iron structure than a massive brick and masonry building. The iron project was apparently approved, as it --only partly-- stands today, in early or mid 1887. Its construction might have started sometime in 1888. The reasons for the lengthy construction could have been technical problems, faulty communications with mainland Puerto Rico, or, the difficult terrain conditions on the Island. Nevertheless, according to secondary evidence, the light was finished between 1898 and 1900 but not as originally planned since the tower was located between two identical keeper dwellings of which only ^{one} was built. The main standing structure is an iron tower with a central cylindrical shaft braced laterally with iron lattice work (231 ft above mhw). It has an iron winding stairway into the 3 mts. in diameter, 2.5 mts and 12 sided lantern. The illuminating apparatus was a lenticular, 2nd order, 1.4 mts. in diameter, 1889 Sautter, Lemonnier & Cie. lens. It has 6 panels, 3

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flashing ones. The central drum has 12 elements. In each panel above the central drum there are 16 prisms and 6 below. The flashes were produced by the entire revolving lens mounted on a chariot activated by a clock work system. The clock cord and its 180 lb. weight descended through the tower stairway central column. In 1938 the light was electrified and its characteristics changed. In 1973 it was automated, unmanned, and characteristics changed once more. In 1976 the light was relocated in another position and the lens removed and stored at U.S.C.G. San Juan Base, and the structures abandoned.

The only keeper's dwelling built --one out of two-- still remains as a slightly transformed structure approximately 20 x 10 mts with 7 rooms (approximately identical dimensions), and two outside structures which were the old kitchens. It is built of steel plates and wooden framing. It is connected to the tower by a covered steel passage.

SIGNIFICANCE: It is the largest and most important lighthouse on the Island for it stands in the middle center of the historically famous Mona Passage. Also, it is the only structure --including the keeper's dwelling-- built of iron and steel.

GEOGRAPHICAL DATA: Area Nominated: 209 acres. Boundary description: v. attached map titled "Property Boundary". This nomination entirely honors the 1903 Presidential Proclamation by which the U.S.C.G. got proprietary rights to the abovementioned site.

SUPPORTING MATERIALS: v. attached pocket #5 "Isla de Mona Light". Enclosures are: Quadrangle; plan area nominated; 1978 photos; blue copies original site; and, xerocopy 1885 plan.

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NAME: Historic: Faro de los Morrillos de Cabo Rojo
Common: Cabo Rojo Light

LOCATION: On the south easterly point of Cabo Rojo, on the Morrillos, south west of Puerto Rico. On position 17° 56.1' N - 67° 11.5 W.

CLASSIFICATION: Unoccupied. Unrestricted access.

DESCRIPTION: Fair condition. Altered. Original site.

Cabo Rojo Light was built in 1882 as a 3rd order light with 18 miles range that showed a white light eclipsed every minute. The present structure stands very much as it was back in 1882; although structural alterations have been introduced.

The dwelling's original drawings show a structure very similar to those of Arecibo and Cabo San Juan Lights. It was a 3rd order lighthouse designed for 1st and 3rd class keepers, 27.5 x 11.35 x 6 mts. The main entrance, on the north facade, opened, through a small entry hall, into a 5.15 x 4.84 mts. vestibule. A corridor, 2.18 x 5.2 mts. led from the vestibule to the tower. East and west of the corridor, which divided the structure into two equal sections, the keepers, engineer, and storerooms were found.

Each keeper had a 5 x 4.7 mts. livingroom, two 4.8 x 3.27 mts. dormitories, one kitchen-dining area also 4.8 x 3.27 mts, and a bathroom. The storeroom and the engineer's room were each 5 x 4.7 mts. Each room had a double wood leaf window. The beamed ceilings were 4 mts. high approximately. The floors were covered with white and gray Genoa marble slabs with the exception of the keepers quarters that were covered with wooden planks.

The hexagonal tower is 18.30 mts. high including the lantern. It has 5 mts. in diameter with a 3.2 mts. internal opening which shelters the winding cast-iron stairway. The tower has two windows which open south and a door leading to the roof (used for water collecting). The circular vaulted oil room, 3.2 x 1.8 mts., was originally located under the tower. A brick and stone cylindrical watchroom under the illuminating apparatus was a 4.5 x 2 mts. high and opened to a circular cemented gallery surrounded by a cast-iron balustrade.

The original structure was altered in 1959: the bedrooms located between each bedroom and kitchen were converted to bathrooms, the old kitchens to bedrooms, the old storeroom and engineer room to kitchens, and the old living rooms to living-dining areas. Original walls were slightly altered to give way to new partitions, but no substantial alterations were further introduced. A small entry hall --following original style lines-- was also built apparently during this period.

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The old 2.5 mts. diameter cast-iron, copper, and glass lantern still houses the original 1881 lenticular Sautter, Lemonnier & Cie. lens. The central revolving flashing drum is 1 mt. in diameter. The lens has 8 flashing panels. Also 7 annular rings including bull's eye in each panel of the central drum. In the panels above the central drum there are 11 prisms and 4 on each one below. The lens was mounted on a chariot activated by a clock system. The clock cord descended through a cast-iron drop tube in the tower's stairway. It had a 200 lb. weight. The clock apparatus was protected by a cast-iron and glass case. The supporting pedestal was also made of cast-iron.

In 1960 the weight driven clock work rotating mechanism was removed and replaced by an electric motor. In 1967, the lighthouse was automated, left unmanned, and boarded up. The light characteristics went through multiple changes in 1918, 1962, 1967, and 1974. As the light stands today, the fixed white light has a 15 mile range and the flashing 22 miles.

The dwelling's simple decorative elements consist fundamentally of an unelaborate cornice which theme is repeated in the tower. The structure's severe appearance is enhanced by the massive hexagonal tower crowned by a wide-opening simple cornice.

SIGNIFICANCE: Cabo Rojo is a major light that signals the south west point of the Island since 1882, thus being the third light built according to the master lighthouse plan. It also signals the south east point of the entrance, from the Caribbean Sea through Mona Passage, into the Atlantic Ocean. Its location is on an isolated point in a deserted white lime rocky cliff surrounded by marshes and lagoons, with an opened command of sea and land. The green sugar and pineapple fields of the coastal valleys are seen against the gray-green mountains of the distant Sierra Bermeja Mountain Range. Cabo Rojo's lovely lighthouse serenity and austere character defies the arid, semidesertic coast and equals in beauty the stunning lighted monastical skies of the United States western deserts.

GEOGRAPHICAL DATA: Area nominated: 8.6 acres. Boundary description: Beginning at a point S 44° 33' E 98 ft from SE corner of dwelling; thence N 20° 30' E 128 ft to a point; thence N 60° 45' W 230 ft to a point; thence N 77° W 480 ft to boundary post; thence N 17° 35' W 971.5 ft to a point; thence N 33° 35' E 345 ft to a point; thence along high-water-mark NW 465 ft to a point; thence S 30° 30' E 1520 ft to a point; thence S 74° 30' E 660 ft to a point; thence S 69° 30' E 231 ft to point of beginning.

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SUPPORTING MATERIALS: v. attached pocket #6 "Cabo Rojo Light".
Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978
photos; original site drawings photos; and, alterations' drawings.

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NAME: Historic: Faro del Puerto de Guánica
Common: Guánica Light

LOCATION: On point Meseta on the easterly side of Guánica Bay on the south shore westerly section of Puerto Rico. On position 17° 57.3' N - 66° 54.3' W.

CLASSIFICATION: Unoccupied. Unrestricted access.

REPRESENTATION IN EXISTING SURVEYS: N.R.H.P.

DESCRIPTION: In ruins. Original site.

The lighthouse, completely vandalized and in ruins, is projected against the hills and dry mountains which form the east entrance to Guánica Harbor, one of the most important, busiest, and best of the Island. Similar to Cabo Rojo, the rocky and desertic land is unsuitable for cultivation.

The lighthouse which stands near a cliff, was built in 1892 as a minor or local light (6th order) to guide the entrance to the harbor. In terms of design, use of materials, and decorative elements it was almost identical to Punta Higuero Light.

The 2nd class keeper's dwelling, 15.2 x 8.5 x 4.75 mts., was built for one keeper. The principal entrance is in the north facade which opened into a 4.8 x 2.65 mts. vestibule at both sides of which were two rooms 4.55 x 2.65 mts. each. The bedrooms were located on the west side of the dwelling: one 4.55 x 2.65 mts. and two 4.55 x 2.1 mts., and a bathroom. On the east section of the structure the livinroom was located, 4.55 x 2.65 mts. It was followed by the engineer's room, 4.55 x 2.1 mts. and a kitchen-dining area. A square storeroom, 2.4 x 2.4 mts. was located behind the octagonal tower built in the center of the building. Excluding the lantern, the tower was 10 mts. high and 3.5 mts in diameter. A cast-iron winding stairway, 1.6 mts. diameter, led to the lantern. A door on the north facade on the tower opened to the roof and a window to the south. The octagonal lantern was 1.1 mt. in diameter, had vertical bars and was built of cast-iron, copper, and glass. An outside cemented gallery was surrounded by a cast-iron balustrade. The original illuminating apparatus was a fixed 6th order 1892 lenticular Sautter, Lemonnier & Cie. lens, 30 cm. in diameter. It had 4 panels; 5 elements in each panel of the central drum; 5 prisms on each panel above the central drum and 2 below. It was mounted on a cast-iron pedestal.

Some examples of the best original architectural characteristics are still visible in the crumbling structure: "ausubo" (firewood) beams

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white and gray Genoa marble slabs, part of the old Spanish kitchen, some wood window frames, and the old Spanish cistern and well. Other examples of its decorative elements are also visible: the grayish lime stucco imitating granite, and the excellent exposed brick work in the main cornice. At one point, the building was finished with a parapet of exposed brick lace-type work. Also significant, ^{the} quoined tower. Also visible are parts of the old cast-iron balustrade, part of the lantern, some of its vertical bars, and the cast-iron lens pedestal. Otherwise, the building is increasingly desintegrating: the ceiling has caved in; the cast-iron stairway has been partially torn down, doors and windows are missing from location.

Since 1940 the property has been owned by the Government of Puerto Rico, although the U.S.C.G. retained access to the tower. In 1950 the entire property and structure was released by the U.S.C.G. to the Government of Puerto Rico.

SIGNIFICANCE: The Faro del Puerto de Guánica served as a local light and also as a bridge between Cabo Rojo and Isla Caja de Muertos Lights. Architecturally, it represents the only extant structure of its kind especially in its decorative elements. Historically, it holds a particular position since from its tower the light keeper saw --and possibly signaled, according to uncorroborated verbal sources-- the United States warships that invaded Puerto Rico through Guánica Bay on 25 July 1898.

GEOGRAPHICAL DATA: Area nominated: 1.15 acres. Boundary description: beginning at a point N 43° W 85 ft from NW corner of dwelling; thence S 32° 55' E 245.9 ft to a point; thence S 25° 45' E 232 ft to a point; thence S 3° 35' E 175 ft to a point; thence S 77° 45' W 86.2 ft to a point; thence N 19° 50' W 64.5 ft to a point; thence N 12° 20' E 178.55 ft to a point; thence N 21° 55' W 172 ft to a point; thence N 33° 05' W 256 ft to a point; thence W 109.4 ft to a point; thence N 18° 05' W 128.5 ft to a point; thence S 86° E 173.35 ft to a point; thence S 1° 15' E 110 ft to the point of beginning.

SUPPORTING MATERIALS: v. attached pocket #7 "Guánica Light".

Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; original site drawings photos.

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NAME: Historic: Faro del Puerto de Ponce
Common: Cayo Cardona Light

LOCATION: On Cardona Key on the west side of the entrance to Ponce Harbor on the south shore of Puerto Rico. On position 17° 57' 3" N - 66° 38' 08" W.

CLASSIFICATION: Unoccupied. Unrestricted access.

DESCRIPTION: Fair. Altered. Original site.

Cayo Cardona is located on a small 6 acre key west of Ponce Harbor. The light, built in 1889, guide the entrance to the Port of Ponce, as a 6th order red fixed light.

Structurally, it followed the same construction as three other minor lights on the south shore and south east shore: Punta Figuras, Punta Mulas, and Puerto Ferro. It lacks, though, the distinctive decorative elements of non-existing Punta Higuero or ruinous Guánica. Nevertheless, it possessed a charm of its own: a petit neo-classic symmetrically balanced official design.

Cayo Cardona's dwelling was designed of stone and brick for one 2nd class keeper. A 10 mt. circular tower was attached to its south facade. It is an approximately 16.2 x 10 x 5.5 mts. structure. Its main entrance is on the north facade which opened into a room arrangement similar to the other minor structures which will be described in further detail. The fact that no plans of this structure have been found, and that its interior has been closed off with cement makes it difficult to describe. Only secondary references, a late 19th century photo of the site, and official references to the similar or identical design of the minor lights allows a reserved description of this particular site.

The c. 1898 photo depicts a simple neo-classic building with a rather elaborate cornice and a simple roof parapet. Contrary to other minor lights, the tower is cylindrical, crowned by another cornice less elaborated than the dwelling's. It is mentioned that the structure was painted white and light blue.

The tower cast-iron stairway led to an octagonal glass, copper, and cast-iron lantern with vertical bars and a cast-iron balustrade surrounding an exterior cement gallery.

The original illuminating apparatus, still in use, is an 1888, 6th order fixed red lenticular Sautter, Lemonnier & Cie. lens. It is 30 cm. in diameter. The lens has 4 panels; 5 elements in each panel of the central drum; 5 prisms on each panel above the central drum and 2 below. It was held in place by a cast-iron pedestal. The original light was colored by a red chimney.

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The original light characteristics were modified in 1922 and 1938. In 1962 it was electrified and, apparently, unmanned.

SIGNIFICANCE: Together with Guánica Light it is the western minor light which connects Cabo Rojo and Isla Caja de Muertos Lights and guides the entrance to a port that, during the course of last century, exported millions of pounds of sugar particularly to the United States. Architecturally, it is significant that it is the only 6th order lighthouse with a cylindrical attached tower. Also, the original brick roof and firewood beams are practically intact.

GEOGRAPHICAL DATA: Area nominated: 6 acres (the entire Cardona Key). Boundary description: beginning at a cement monument marked "X" on the north shore of the Island and bearing S 14° 21' W from the center of lighthouse tower 181.9 ft; thence N 14° 21' E 15 ft to a point in the low water mark; thence following said low water line in a westerly, south westerly, south easterly, easterly, north easterly, westerly and S 14° 21' W 15 ft to the point of beginning.

SUPPORTING MATERIALS: v. attached pocket #8 "Cayo Cardona Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; original site drawings photos.

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NAME: Historic: Faro de la Isla de Caja de Muertos
Common: Isla Caja de Muertos Light

LOCATION: On the summit of Isla Caja de Muertos near its center about 5 1/2 miles south of Puerto Rico and about 7 miles east of the entrance to Ponce Harbor. On position 17° 53.7' N - 60° 31.5' W.

CLASSIFICATION: Unoccupied. Unrestricted access.

DESCRIPTION: Fair. Altered. Original site.

The light was built in 1887 as a 3rd order lighthouse. It stands somberly at the highest point of a rocky, desertic island which name describes its natural coffin shape. Even more, the structure has a unique and unusual Lorraine cross double-arm "T" type shape which makes it unique within the system.

The main entrance of the structure, 24.6 x 15.6 x 5.9 mts., opened to a small vestibule, 3.9 x 1.5 mts. The vestibule in itself is a section of a 12 x 1 mt. long corridor which led to the keeper's quarters. The entrance to the tower, which has a 3.9 mts. square base, located in the center of the structure is across the main entrance. On both sides of the tower base there were two 4.74 x 4.55 mts. rooms one which served as the engineer's room and the other as a storeroom. North of the tower base the oil room, 3.6 x 1.5 mts., was located. Therefore, from west to east a structural connection is formed by the storeroom, tower base, oil room, engineer's room, and corridor. This section links the keeper's quarters. These were arranged into two parallel north to south oriented section identical in dimensions. In order of disposition, first, came the living room 4.9 x 3.4 mts., followed by two sleeping rooms 3.5 x 3.5 mts each, and a kitchen-dining area also 3.5 x 3.5 mts. The last three rooms connected to a 8.9 x 1 mt. long corridor which reached the bathrooms. Each living room had three windows; the kitchens two; the dormitories, storeroom, and engineer's quarters one each.

The tower is a massive cylindrical structure, 19 mts. high --including the lantern-- and 2.5 mts. inside diameter. It terminates in rectangular bracket-supporters for the cement circular gallery and cast-iron balustrade that encloses the cast-iron, copper, and glass 3rd order lantern. A cast-iron spiral stairway also led to the lantern that had vertical bars.

The original illuminating apparatus was a 1885, lenticular 3rd order Sautter, Lemonnier & Cie. lens. The central drum had 1 mt. in diameter. It had 6 panels of which 3 were flashing ones. In each panel of the central drum there were 7 elements; each panel above central drum had

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11 prisms and 4 below. The flashes were produced by the central revolving drum mounted on a chariot activated by a clock work system. The clock cord descended through the central column in the stairway. The mechanism was protected by a circular iron and glass case. The original light characteristic showed a white flash every 3 seconds and had an 18 miles range. In 1923 the light characteristics were changed. In 1945 the light was electrified and changed into an automatic unwatched light which exhibited the original characteristics. The structure was abandoned and boarded up. The lens was replaced by a 500 mm. lens. No record has been found which indicates that major structural changes or alterations were introduced in the dwelling. The decorative elements are purely neo-classic especially its cornices and pediment.

SIGNIFICANCE: Faro de la Isla de Caja de Muertos is a major light and a unique architectural structure within the Spanish lighthouse system. It is only slightly similar to Isla Culebrita Light but, in itself, is a major example of a variation within the central theme of utilitarian functions and aesthetical interpretation.

GEOGRAPHICAL DATA: Area nominated: 7.35 acres. Boundary description: beginning at a boundary post S 0° 15' E 18.77 ft from SW corner of dwelling; thence N 73° 45' E 124.8 ft to a point; thence N 27° 15' W 110.5 ft to a point; thence N 34° 15' E 407.5 ft to a point; thence N 60° 30' W 368.5 ft to a point; thence N 61° 15' 760 ft to a point; thence 34° W 140 ft to high water mark; thence along high water mark 45 ft; thence S 43° 30' E 145 ft to a point; thence S 35° E 1148.7 ft to a point; thence S 29° 45' E 72.3 ft to the point of beginning.

SUPPORTING MATERIALS: v. attached pocket #9 "Isla Caja de Muertos Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; original site drawings photo; xerox copies original site drawings.

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NAME: Historic: Faro de Punta de las Figuras
Common: Punta Figuras Light

LOCATION: On Point Figuras, south shore of the easterly part of Puerto Rico, easterly side of Arroyo Port. On position 17° 57' 25" N - 66° 02' 53" W.

CLASSIFICATION: Unoccupied. Unrestricted access.

DESCRIPTION: In ruins. Altered. Original site.

It was built as a local light to aid navigation into Arroyo and Patillas Ports in 1893. Originally it was a 5th order light, one of only two built, and showed a fixed white light with a 12 mile range. The dilapidated building stands surrounded by a swampy, marshy, stagnant, gray sand shore. South of the lighthouse, dark green rolling hills and distant gray-blueish Central Mountain Range cliffs provide a rather surrealistic ambiance to a white painted structure built in a once malaria-infected area. The rectangular and proportioned neo-classic structure vibrates under a hot, deep sky and dramatically counterbalances the entangled, lush tropical vegetation. In spite of its vandalization, it is an excellent example of the lighthouse system's characteristics. It closely followed the officially established arrangement of rooms within an approximate 18 x 8 x 5.7 mts. brick and stone structure built around the tower. The main entrance led to a vestibule of a five room 2nd class keeper's quarters including the engineer's and keeper's assistant room. The Spanish kitchen, remains of which still stands in situ, was located on the SE corner of the dwelling. A back door leads to a near patio where the brick cistern and well, with its original cast-iron work, still are in place. Some examples of its firewood beams, Genoa marble slabs, and original roof are preserved. But, undouted, its most distinctive characteristic is its decorative elements, particularly, the stuccoed high relief frieze formed by alternate circles and rectangles embracing the entire structure and terminating in a simply designed cornice and unadorned parapet. The frieze-cornice arrangement, without the high relief, is repeated at a smaller scale, in the octagonal tower. It had a winding cast-iron stairway that opened into a 5th order lantern: 1.6 mt. in diameter of cast-iron, copper, and glass. This had a cement gallery with a cast-iron balustrade.

The original illuminatin apparatus was a lenticular, 1892, 37.5 cms. diameter Barbier, Benard, & Cie. lens. It had 4 panels; 5 elements in each panel of the central drum; 5 prisms in each panel above the central drum and 3 below. It was held in place by a cast-iron pedestal.

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In 1923 the light characteristics were modified. In 1938 the light was moved to another location and the structure abandoned and boarded. It was reopened during WW II and used as a lookout. After the war it was reboarded. Some years later, surrounding land was leased to the Army until 1963. Since the 1960's the lighthouse has been systematically subjected to devastating vandalism. The lens and lantern were apparently destroyed by vandals in 1969.

SIGNIFICANCE: It was built as an intermediate light to connect Caja de Muertos and Punta Tuna Lights and at the same time guide the entrance to both ports of Arroyo and Patillas. Architecturally, it is one of the best examples of particularly decorative elements not present in major structures.

GEOGRAPHICAL DATA: Area nominated: 1 acre. Boundary description: beginning at a point S 32° 43' E 65 ft from SE corner of dwelling; thence N 7° E 215.4 ft to a point; thence W 167 ft to a point; thence S 5° 40' W 92.4 ft to a point; thence S 85° 15' W 224.5 ft to a point; thence S 44° 45' W 175 ft to high water mark; thence along high water mark 25 ft; thence N 42° 40' E 165 ft to a point; thence S 84° 45' E 211.5 ft to a point; thence S 5° 40' W 51.1 ft to a point; thence S 82° 45' E 160.5 ft to point of beginning.

SUPPORTING MATERIALS: v. attached pocket #10 "Punta Figuras Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos.

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NAME: Historic: Faro de Punta de la Tuna
Common: Punta Tuna Light

LOCATION: On Point Tuna, south easterly point of Puerto Rico, easterly side of Port Maunabo. On position 17° 59.4' N - 65° 53.1' W.

CLASSIFICATION: Occupied. Restricted access.

DESCRIPTION: Very good condition. Altered. Original site. It was constructed in 1893 as a 3rd order lighthouse that showed a white light with a group of two flashes. It served as the most eastern primary light that terminated the Island's southern light belt, and at the same time, was the southern light that formed the Island's eastern light belt. This was formed by another primary light, Cabo San Juan, and 3 minor lights (Puerto Ferro, Punta Mulas, and Isla Culebrita). The structure, built around the tower, was the dwelling for one 1st class and a 3rd class keeper. The main entrance of the brick and stone building, 27.7 x 12.4 x 5.5 mts., faces east. The interior responds to the already described arrangements: originally, it opened directly into a vestibule, 6.2 x 4.65 mts., where the entrance to the tower is found. (A small hall at the entrance was built afterwards, perhaps in the 1950's). At both sides of the vestibule there were two corridors: one led to the storeroom that connected with the oil room behind the tower; another led into the engineer's room. The vestibule also connects both keeper's quarters, which were identical: one 4.65 x 4.65 living room, one 3.6 x 4.65 mts. dorm and another 3.46 x 4.65 mts.; one small 3.2 x 1.9 storeroom; one kitchen-dining area 3.6 x 3 mts, and the bathroom 1.5 x 3.6 mts.

The octagonal tower's base is a square 3.9 mts. It opens to a 2.5 mts in diameter cast-iron winding stairway that goes 14.5 mts. up to a cast-iron, copper, and glass 3rd order lantern. The tower has a cement gallery with a cast-iron balustrade.

The original illuminating lenticular lens, still in use, is a Barbier, Bernard & Cie. 1891 3rd order flashing instrument with 1 mt. in diameter. The lens has 6 flashing panels. Each panel in the central drum has 7 elements. Each panel above the central drum has 11 prisms and 4 below. The flashes are produced by the entire revolving lens.

The original clock work was a revolving mechanism in use until 1939. The original ball bearing mechanism was changed in 1927 for a semicircular groove raceway. The clock cord descended through the iron column in the center of the tower's stairway. It had a 200 lb. weight. Surprisingly, the original lantern and cast-iron balustrade, lens, parts of the revolving mechanism, clock work and cord, clock weight

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are in situ. Furthermore, the clock work is in working condition including the ball and friction governor. Also, most of the original wood work in the interior of structure, excluding beams and windows, are the original ones.

The alterations done to the building are almost identical to those at Cabo Rojo and Cabo San Juan. Changes in light characteristics were made in 1914, 1927, 1935, 1964, and 1970 when light range was increased to 25 miles.

The decorative elements in the gray and white structure once more respond to neo-classicism: proportionate, unelaborate cornice, and a plain pediment. The most striking decoration is the tower's bracketed cornice. The stark building dramatically contrasts with its lush tropical surroundings. The lighthouse is positioned in the tip of a rock which cliffs plunge into the sea from 22 mts. The Caribbean Sea embraces the rock and its structure at west, south, and east.

SIGNIFICANCE: The light signals the most south-eastern point of Puerto Rico. Architecturally and mechanically it almost remains as originally built. And, considering its natural multi-faceted scenario, makes it a unique site within the actual system.

GEOGRAPHICAL DATA: Area nominated: 4.5 acres. Boundary description: beginning at a point N 13° 30' E 100 ft from NE corner of dwelling; thence N 14° W 335 ft to a point; thence N 50° 15' W 144 ft to a point; thence S 66° 30' W 285 ft to a stone; thence S 66° 30' W 125 ft to high water mark; thence along high water mark SE to end of point; thence along high water mark to point of beginning.

SUPPORTING MATERIALS: v. attached pocket #11 "Punta Tuna Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; blue copies original site drawings; alterations' drawings.

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NAME:

Historic: Faro de Puerto Ferro
Common: Puerto Ferro Light

LOCATION: On the outer point on the westerly side of the entrance to Puerto Ferro on the south shore of Vieques Island, east of Puerto Rico. On position 18° 05' 54" N - 65° 25' 26" W.

CLASSIFICATION: Unoccupied. Unrestricted access.

DESCRIPTION: Very deteriorated. Altered. Original site.

It was established in 1896 as an octagonal tower on top of a rectangular dwelling. Its primary characteristics were a 5th order white flashing light every 5 seconds and a 12 mile range. The evidence is not clear as to lens and lantern manufacturer since might have been either a 5th order lenticular Sautter & Cie. (USLHS #510 ?) lens with 37.5 cm. in diameter or a 1899 lenticular Barbier & Bernard 5th order lens also with the same diameter. The available information for each lens differ considerably. The Sautter lens had 4 panels; 2 flashing panels; 4 panels in the central drum and 5 prisms in each panel above the central drum and 3 prisms below. The 1899 Barbier lens had one panel in the apparatus, 3 elements in the central drum and 6 prisms on each panel above the central drum. The light was reflected by a silver plated metallic parabolic reflector. The entire lens revolved on a mercury float. The system was activated by a clock work which clock cord had a 200 lb. weight that dropped through the center column in the tower's cast-iron stairway.

The original structure, abandoned in 1926, is in very poor condition (in a near future it will resemble Guanica and Punta Figuras if protective measures are not taken). The dwelling was identical to Point Mulas on the north shore of Vieques Island. It was 16.2 x 10.6 x 5.7 mts. The principal door opened to both the vestibule and the tower located NW on the center of dwelling. The keeper's quarters were located on the east side of the structure: one 4.9 x 3.2 mts. living room, two dormitories 4.9 x 2.55 mts., and the other 4.9 x 3.4 mts. An approximate 3.7 x 3.5 mts. room behind the tower base used to be the kitchen-dining area. On the west section were located the 4.9 x 3.2 mts. engineer's room, a 4.9 x 2.55 mts office, and, finally, a 2.7 x 3.4 mts. storeroom which led to the 3.4 x 2.1 mts. oil room. The basic structure did not suffer major alterations until 1926 when it was abandoned, boarded up, and, subsequently, vandalized.

The tower had one door to the roof but no windows. The 3rd order lantern made of cast-iron, copper, and glass was circular. It opened to a cement gallery surrounded by a cast-iron balustrade.

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The decorative elements shown in Punta Figuras were repeated in Puerto Ferro: neo-classic facades, the circle-rectangle decorated frieze, and the simple cornice which elements are repeated in the tower. The floors also followed the gray-white checkered marble pattern. Today, the entire lantern and cast-iron balustrade are gone, as well as all the wood work and entire sections of the marble slabs. Although, the original brick Spanish well and cistern are in situ.

SIGNIFICANCE: It is one of the last minor or local lights to be built that connected Punta Tuna and Culebrita Island Lights. The light was of crucial importance either to cross the Vieques Passage or Virgin Passage. It is also, although in poor condition, a good example of official neo-classic minor lighthouse style.

GEOGRAPHICAL DATA: Area nominated: 1.15 acres. Boundary description: beginning at a point on the rocky cliff and bearing S 80° W from SW corner of dwelling a distance of 104 ft; thence N 16° 30' W a distance of 100 ft to a point; thence N 185 ft to a point; thence N 81° 30' E 85 ft to high water mark; thence along high water mark southerly, easterly, southerly, and westerly to the point of beginning.

SUPPORTING MATERIALS: v. attached pocket #12 "Puero Ferro Light".
Enclosures are: Quadrangle; plan area nominated; 1978 photos; original site drawings photos.

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NAME: Historic: Faro de Punta Mulas
Common: Punta Mulas Light

LOCATION: On Point Mulas, easterly side of Isabel II Harbor, westerly shore of Vieques Island, about 10 miles east of Puerto Rico. On position 18° 09.4' N - 65° 30.9' W.

CLASSIFICATION: Occupied (non-U.S.C.G. personel). Restricted access.

DESCRIPTION: Good condition. Altered. Original site.

The structure was built in 1895. Its background is the city-capital of Vieques, Isabel II, and the central hills of the island. The brick and stone lighthouse, originally painted light blue with white trimmings, followed official design. It is a rectangular dwelling built around the tower. Its base, 3 x 2.8 mts. opens to the vestibule, 5 x 3.2 mts. A cast iron winding stairway, 1.6 mt. in diameter, leads to the lantern. A door in the tower opens to the roof. The lantern is cylindrical, 1.6 mt. in diameter, made of cast-iron, copper, and glass. Originally it was lined with teak wood. The outside brick gallery is enclosed by a cast-iron balustrade.

The original illuminating apparatus was a 6th order, lenticular, 1895 fixed red Barbier & Bernard lens with an 8 mile range. It had 30 cm. in diameter and was formed by 4 panels; 5 elements in each panel of the central drum; 5 prisms on each panel above central drum and 2 prisms below. The lens was held in place by a cast-iron pedestal. The keeper's quarters were located north of the vestibule: a 4.95 x 3.25 mts. living room, a 4.95 x 2.55 mts. dormitory and another, 4.95 x 3.40 mts. West of the tower base, opening into the rear patio a 3.75 x 3.40 mts. kitchen-dining area was found. It had a 1.5 x 0.64 mt. pantry room recessed into the tower base. South of the vestibule, the engineer room, 4.95 x 3.2 mts. and the keeper's assistant room (also named office) 4.95 x 3.2 mts. were located. Finally, two more rooms were found in the SW corner: a 3.4 x 2.1 mts. oil room and a 2.7 x 3.4 mts. storeroom connected by a common door. The entire structure was 16.2 x 10.6 x 5.7 mts. The external decorative elements are identical to those of Punta Figuras and Punta Mulas.

The original structure went through several alterations in the 1940's: the brick roof was rebuilt in reinforced concrete; the old north and south kitchen walls were torn down partially and new openings were made for doors; the oil room became the new pantry and the storeroom a dining area; the office room became the storeroom and the engineer's room a bedroom; the old vestibule was transformed into a livingroom

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and the livingroom became the new office. Most of the original interior woodwork was retained, though. In 1944 further alterations were introduced: the 1940 pantry became a power plant; the diningroom a battery room; the storeroom a bathroom and space was made up for a new store-room out of the office. The interior original wood work was again retained. Also retained was the original lantern as well as the old cistern and well.

In 1949 the light was converted into an unattended automatic light and boarded up. Since the 1960's, the lighthouse has been reoccupied and on a relatively permanent basis someone has been taking care of the premises. The light characteristics went also through several changes, at least seven, since 1902.

SIGNIFICANCE: It was established as a minor local light to guide the navigation through a very dangerous passage formed by a chain of reefs, among these, the renowned Caballo Blanco on the Vieques Sound, and the Vieques Passage. It was also of key importance for the sea traffic going through San Juan Passage. Thus, the lighthouse has the unique position to act as a minor light-bridge between Punta Tuna, Culebrita, and Cabo San Juan Lights.

It terms of its altered structure it testifies to its adaptability to modern needs without discarding its basic original elements.

GEOGRAPHICAL DATA: Area nominated: 2.5 acres. Boundary description: beginning at a point S 21° 45' E 153 ft from S corner of dwelling; thence N 60° 30' E 104 ft to a point; thence N 27° E 27 ft to a point; thence N 8° 45' E 266 ft to a point; thence N 46° 15' W 126.9 ft to a point; thence S 75° 30' W 83.4 ft to high water mark; thence along high water mark southerly and easterly to a point N 60° 30' E 40 ft from point of beginning; thence from this point to the point of beginning.

SUPPORTING MATERIALS: v. attached pocket #13 "Punta Mulas Light". Enclosures are: Quadrangle; plan area nominated; 1898 photo; 1978 photos; original site drawings photos; alteration's drawings.

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NAME: Historic: Faro Isla de Culebritas
Common: Isla Culebrita Light

LOCATION: On the summit on the south part of Culebrita Island, westerly side of Virgin Passage, and about 22 miles east of Puerto Rico. On position 18° 18.9' N - 65° 13.7' W.

CLASSIFICATION: Unoccupied. Unrestricted access.

DESCRIPTION: Fair condition. Altered. Original site.
It was built in 1886 on the western side of Virgin Passage. In both design and importance of location the stone structure is unique. In 1888 the 4th order light showed a fixed white light with a 12 mile range. The lenticular illuminating apparatus was manufactured by Sautter, Lemonnier, & Cie. in 1884 or 1885 as a fixed 3 1/2 order lens. It had 75 cms. in diameter. It was formed by 4 panels. The central drum had 9 elements; 9 prisms in each panel above central drum and 4 below. The lantern --in situ-- was also a 3 1/2 order, 2 mts. in diameter made of cast-iron, copper, and glass. A door led from the lantern to the cement gallery surrounded by a cast-iron balustrade. Both, the lens and lantern were severely damaged by the 1932 hurricane (the lens was actually destroyed). The lantern was repaired and a 375 mm. lens was installed.

The original stone structure plan clearly resembles a letter "T" with the tower in its center connected to the dwelling by a covered passage. It was built for 2nd and 3rd class keepers. The main entrance faces SW. The vestibule was a large area approximately 10 x 4 mts. At the NE of the vestibule a door led to a long corridor, approximately 10 x 1.5 mts that led to the keepers quarters and to the tower. The keepers quarters are in a symmetric and identical disposition at both sides of the tower and parallel to each other. From SE to NE there were three rooms, each one approximately 3 x 3.75 mts. and a kitchen dining area approximately 4 x 4.5 mts. A covered passage led to the cylindrical tower 2.5 mts. internal diameter. Another passage --a continuation of the first-- led to the storeroom and to the oil room, approximately 4 x 4 mts, located behind the tower.

It is not possible to describe the interior of the structure, since it was closed off with concrete blocks and cement in 1959. The external stone structure is relatively well preserved although it has been consistently vandalized. As stated before, the lighthouse responds to the official neo-classicism, closely resembling in design Caja de Muertos Light.

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SIGNIFICANCE: It was the fourth light to be built on the Island as part of the lighthouse system. The original arrangement of spaces, the externally exposed materials (brick and stone), and the reddish color makes it unique. Within the system, it is the most eastern light outside mainland Puerto Rico (serves as a counterpoint to Mona Island). It guides navigation through Virgin Passage and Vieques Sound connecting with the light from Cabo San Juan Light.

GEOGRAPHICAL DATA: Area nominated: 1.5 acres. Boundary description: beginning at the finial of Culebrita light tower 18° 19' N - 65° 14' W; thence N 52° 19' E 60 ft to the point of beginning; thence N 37° 41' W 85 ft to a point; thence S 52° 19' W 120 ft to a point; thence S 37° 41' E 150 ft to a point; thence N 52° 19' E 120 ft to a point; thence 37° 41' W 65 ft to the point of beginning.

SUPPORTING MATERIALS: v. attached pocket #14 "Isla Culebrita Light". Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978 photos; blue copies original lens; alterations' drawings.

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NAME: Historic: Faro de las Cabezas de San Juan
Common: Cabo San Juan Light

LOCATION: On the north easterly part of the highest point of Cape San Juan on the north easterly point of Puerto Rico. On position 18° 23' N - 65° 37.1' W.

CLASSIFICATION: Occupied. Restricted access.

DESCRIPTION: Excellent condition. Altered. Original site. In 1782, one hundred years before the final construction of Cabo San Juan Lighthouse, Fray Inigo Abbad y Lasierra, who wrote the first formal history of Puerto Rico, stated that

The mountain peaks of Loquillo and Laivonito ... can be seen from a far off distance in the sea, and through them sailors recognize Cabezas de San Juan, the reference point of those who regularly navigate by these islands /to direct their course/ towards the Honduras and Mexico Gulf.

His "message" began to materialize by mid 1850 when feasibility plans were drawn to build a lighthouse in Cabo San Juan. The location was carefully surveyed and studied in October 1856 concurring with today's light location. In 1876 the first plans were commissioned and construction began in early 1877. The original 1876 plans have not been found yet but subsequent references --particularly in 1881-- clearly indicate that the earliest project was dropped. The reasons are unknown but it was possible that budgetary problems might have been the cause. There are further indications that by 1880 another plan was considered and construction carried out. This second plan apparently served as the basis for the last attempt, 1881, upon which the actual structure was built.

In March 1882, one hundred years after Abbad y Lasierra's remarks, the builder delivered the construction to the Colonial Governor of Puerto Rico. On 2 May 1882 it was officially lighted. The original white building with dark gray trimmings, green doors and windows, became the second lighthouse be built according to the plans ... and remained almost unaltered for another hundred years.

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From seaward, the lighthouse is projected against the distant mountains of Fajardo and the mountain of Loquillo or Luquillo, according to Abbad y Lasierra, "Turcidi" by the Island's blacks meaning "always surrounded by clouds." The magnificent structure sits on top of a rocky hill that is barely covered by a light crust of clay. At foot hill, swamps and marshes isolate the lighthouse from mainland. At a further distance, a phosphorescent lagoon is encircled by mangrove tree. Thus forming the lighthouse south boundary. To the north is the ocean; to the east the San Juan Passage leading to the Vieques Sound. A little further east are Icacos, Wolf's, and Devil's Keys --ghastly names that indicate treacherous waters--; further east is Culebra Island; a little further, the light from Culebritas; and lost in the blueish-gray horizon, the shadow of remote Saint Thomas. South east Vieques Island and Point Mulas Light are found.

The structure 30 x 12.5 x 6.6 mts. was built for one 1st and 3rd class keeper. A portico, 5 x 1.4 x 5 mts., with four rectangular openings acting as windows, leads to the vestibule. The main entrance has an elaborate hood moulding with the inscription "1880". The original vestibule was 5.15 x 3.7 x 5 mts. At both sides, it opened into the keepers' quarters. Facing the main entrance a 4 x 2 mts. corridor led to the 8 step stairway into the tower which is partially built into the north facade. At the end of this corridor a door to the east opened into the 5.7 x 5.15 x 4.5 mts. engineer's room. Another opened to the west to an identical storeroom. Both rooms had one window to the north facade and one window to the vestibule. The storeroom connected through a descending clockwise winding brick stairway to the oilroom which is still a circular vaulted room underneath the tower (3.2 mts. in diameter and 2.4 mts. at the highest point of the vault). A ventilation aperture in the 1.3 mt. thick brick wall opens to the north facade of the tower and two small glass-paned windows to the east and west of the tower.

East of the vestibule was located a 5.2 x 5.15 x 4.5 mts. livingroom. It had a window to the south facade through the 75 cms. thick brick main structural walls. The living room opened to a sleeping room 5.3 x 3.45 x 4.5 mts which had two windows, one facing south and the other west. From the living room, a corridor, 4.3 x 1.2 x 4.5 mts. led on the east to another 5.3 x 3.45 x 4.5 mts. dormitory and a 5.3 x 3.45 x 4.5 mts. kitchen-dining area. Both had windows to the east and the kitchen another to the north. The bathroom was at the end of the corridor. On the west section of the structure an identical space arrangement was found.

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The 4.5 mts. (od) cylindrical tower is 13.35 mts. to the top of the brick and stone circular lantern. An elaborate and richly decorated cast-iron stairway leads to the lantern. The tower has 3.2 mts. internal diameter and opens to the north through a large window opposite the tower's double wooden door opening to the roof. The lantern is formed by an external circular wall 2.5 mts. in diameter which encases a cast-iron circular lantern. A circular corridor separates the cast-iron lantern from the external brick and stone wall.

The original 3rd order lantern, in cast-iron, copper, and glass was severely damaged by the 1932 hurricane. The original illuminating apparatus was apparently changed in the early 1900's. It is known, though that the original light characteristics were not changed until after 1898: it was a 3rd order light with 18 miles range and showed a fixed white light with red flashes every 3 minutes. A 1902 description of the apparatus states that it was a lenticular, 1881, Sautter, Lemonnier & Cie. 3rd order fixed white light varied by red flashes, 1 mt. in diameter lens. It fully revolved every 9 minutes. It had 5 panels in stationary section and 6 panels in the central drum of which three produced the red flashes. In each panel of the central drum there were 7 annular rings including a bull's eye. The lens had 11 prisms on each panel above the central drum and 4 below. The flashes were produced by the revolving central drum. The revolving mechanism was mounted on a chariot activated by a clock work which clock cord passed over 2 sheaves to a drop tube in the east side of tower. The cord had a 254 lb. weight.

The evidence indicates this lens was removed in 1916 and replaced by a 1881 lenticular Barbier & Bernard, Reiver & Cie. 4th order, 50 cms. in diameter flashing white lens. It had 4 panels of which two were flashing. Each panel of the central drum had 5 annular rings. Four prisms were located on each panel above the central drum and 2 below. The original chariot system was apparently replaced by a ball system. The clock system was left in place.

This lens, the lantern, and possibly the clock system were damaged, or totally destroyed, by the hurricane. A new lens was installed: a U.S. Westinghouse four-way revolving beacon with four flashing panels 1 mt. in diameter. The lamp is enclosed in a spherical dioptic lens. This is the light apparatus which today shows Fl. W 15s. with a 26 mile range, the largest in the Island.

The structure went through several alterations. The brick and stone balustrade that surrounded the lantern was replaced, possibly in 1932, by an iron one. The original floor plan was redone possibly in the 1940's or early 1950's. Two of the Bedrooms were transformed into bathrooms. The east and west vestibule walls were torn down and replaced

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by reinforced concrete beams; the north walls of both old livingrooms were also torn down and replaced by concrete beams. Thus, this allowed for the reduction of the old engineer's room and storeroom from which the new kitchens were built.

Nevertheless, the 1880-1881 firewood beams and lattice which formed the old brick roof were totally left intact. The ausubo beams (4" x 9") form a lovely rectangular pattern with the crossing ausubo lattice (2" x 3"). These keep in place 6 superimposed layers of brick (2" x 5 3/4" x 11 1/2") which form a massive (15") roof.

Furthermore, most of the interior woodwork (doors), gray and white Genoa marble slabs, elaborate cast-iron tower stairway are in place. The structure reveals that special attention was given to its harmonious decorative elements: the upper middle section of the portico is adorned by a simple moulding that is at the same height of the main entrance's heavy and elaborate hood moulding. The portico, being higher than the dwelling itself, but showing the same heavy and elaborate cornice, provides a formal presence to the facade that is enhanced by the parapet in the portico's roof built in a balustrade fashion. This parapet is not repeated anywhere else in the structure but in the old parapet of the old lantern which showed --c. 1898 photo-- a brick and mortar balustrade.

This same balustrade rested on simple concave brackets which are the reverse shape of the portico's moulding. All these elements give the lighthouse a certain "castle" appearance, a peculiar counterbalance to the rest of the neo-classic structure which sole decoration is its heavy cornice. The tower has a decoration of its own in its middle section in an embracing rectangular cornice that projects itself, from its own center, to the outside in a convex shape.

SIGNIFICANCE: Is the second oldest lighthouse on the Island and so far the best structurally preserved. It formed the crucially important most north eastern light angle in the north and eastern light belts guiding transportation into the Vieques and Culebra Passages to the Caribbean and Atlantic Ocean.

GEOGRAPHICAL DATA: Area nominated: approximately 1.55 acres. Boundary description: beginning at a point S 62° 50' E 138 ft from NW corner of dwelling; thence N 49° 30' W 373.6 ft to a point; thence S 31° W 265 ft to a point; thence S 41° 40' E 28.07 ft to a point; thence S 75° E 214 ft to a point; thence N 78° 30' E 176 ft to a point; thence N 41° E 35 ft to the point of beginning.

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SUPPORTING MATERIALS: v. attached pocket #15 "Cabo San Juan Light".
Enclosures are: Quadrangle; plan area nominated; c. 1898 photo; 1978
photos; blue copies original site drawings; alterations' drawings,

8 SIGNIFICANCE (v. also individual entries)

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
☐ PREHISTORIC	☐ ARCHEOLOGY-PREHISTORIC	☐ COMMUNITY PLANNING	☐ LANDSCAPE ARCHITECTURE	☐ RELIGION
☐ 1400-1499	☐ ARCHEOLOGY-HISTORIC	☐ CONSERVATION	☐ LAW	☐ SCIENCE
☐ 1500-1599	☐ AGRICULTURE	☐ ECONOMICS	☐ LITERATURE	☐ SCULPTURE
☐ 1600-1699	☒ ARCHITECTURE	☐ EDUCATION	☐ MILITARY	☐ SOCIAL/HUMANITARIAN
☐ 1700-1799	☐ ART	☒ ENGINEERING	☐ MUSIC	☐ THEATER
☒ 1800-1899	☐ COMMERCE	☐ EXPLORATION/SETTLEMENT	☐ PHILOSOPHY	☒ TRANSPORTATION
☒ 1900-	☒ COMMUNICATIONS	☐ INDUSTRY	☐ POLITICS/GOVERNMENT	☐ OTHER (SPECIFY)
		☐ INVENTION		History

SPECIFIC DATES 1846-1979

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

GENERAL SIGNIFICANCE: The Lighthouse System of Puerto Rico, 1846-1979, which is still in operation, is composed of fifteen major and minor structures built during the last quarter of the 19th century. It was a rational engineering and architectural answer to the absence of reliable protective and guiding devices for sea transportation, and to patchy means of local communication. The system, as it stands today, is intimately related to the historic development of Puerto Rico since it successfully coped with safeguarding the distribution and conveyance of raw materials produced in the Island which made it, during the course of more than hundred fifty years, one of the world's leading exporter of sugar, molasses, rum, and coffee, and to a lesser degree, tobacco. In general, the system protected the international exchange trade of those raw materials for foreign manufactured goods and commodities. Furthermore, since Puerto Rico is located at the crossroads between the Atlantic Ocean and the Caribbean Sea, and is an accesible key to the Gulf of México, Central America (the Panama Canal), and South America, the system offered unequal protection to major 19th and 20th centurie Euro-American maritime routes and shipping companies. The light system also served as the completing element in the local development of communications which included national and international telegraph, roads, and railroads.

The system's rationality and uniqueness is predicated in the uniformity and unity of the structures in terms of location, architectural planning (which reflects the current taste for Spanish Colonial neo-classicism), and its engineering construction. Finally, unity was carried out in the selection of lantern fixtures, optics, and fuel for the lights. Nevertheless, within an overall arrangement of major and minor lighthouses, each structure was allowed its own adaptation to prevailing circumstances, geographical locations, terrain, environmental conditions, and order of light and light characteristics.

9

1. Archivo General de Puerto Rico (General Archives of Puerto Rico,

San Juan, Puerto Rico)

10

UTM REFERENCES

B ZONE EASTING NORTHING

D ZONE EASTING NORTHING

VERBAL BOUNDARY DESCRIPTION

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11

NAME / ~~TITLE~~

Dr. Benjamín Nistal-Moret

21 August 1979

ORGANIZATION

for H.A.E.R. and U.S. Coast Guard *

(212) 787-0621

STREET & NUMBER

38 West 75th St., ~~1R~~

TELEPHONE

CITY OR TOWN

New York

STATE

New York

10023

12

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES.

NO_

NONE

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is National State Local.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE

DATE _____

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I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE _____

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE _____

KEEPER OF THE NATIONAL REGISTER

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- (3) Puertos y Muelles; (4) Ferrocarriles and (5) Carreteras y Caminos.
2. United States Coast Guard (San Juan Base, San Juan, Puerto Rico):
- a. Civil Engineer Section Files
 - b. Aids to Navigation Section Files
3. General Archives (Washington, D.C.):
- a. Record Group 26, Boxes 1-7 and 181-184: Records of the Lighthouses in Puerto Rico, 1838-1899
4. Archivo Histórico Nacional (National Historic Archives, Madrid, Spain)
- a. Ultramar: Puerto Rico, Fomento, legajos 409-427

The entire data upon which these nominations are based are primary and unpublished documents.