APPENDIX F. CULTURAL RESOURCES

AGENCY CONSULTATION CORRESPONDENCE

INTENSIVE SURVEY REPORT

PHASE I RECONNAISSANCE REPORT

U.S. Department of Homeland Security
Region II – Caribbean Area Division
P.O. Box 70105
San Juan, Puerto Rico 00936-8105

FEMA

March 8, 2016

Mr. Ángel A. Crespo Ortiz
Director
Puerto Rico Emergency Management Agency
Commonwealth of Puerto Rico
P.O. Box 194140
San Juan, Puerto Rico 00919-4140

Attention: Mrs. Carel Velázquez Pola
Commonwealth Hazard Mitigation Officer

Re: FEMA-4017-DR-PR, Project-0030, Ports Authority
Rehabilitation of the Culebra Cargo Terminal
NHPA Section 106 Determination for the
San Ildefonso Alternate Pier

Dear Mr. Crespo:

The Federal Emergency Management Agency (FEMA) has completed the National Historic Preservation Act (NHPA) Section 106 consultation process with the State Historic Preservation Office (SHPO) for the San Ildefonso Alternate Pier, part of the Puerto Rico Ports Authority (Applicant) project for the Rehabilitation of the Culebra Cargo Terminal Project. As previously expressed in our communications dated September 4, 2014 and March 25, 2015, FEMA recommended and SHPO concurred with the need to conduct an intensive survey for the San Ildefonso Alternate Pier (August 22, 2014; SHPO:08-15-14-02).

On the January 25, 2016, FEMA presented to SHPO the final version of the Stage II Cultural Resources Intensive Survey submitted by the Applicant and supporting documentation prepared by FEMA for the San Ildefonso Alternate Pier. FEMA determined that the proposed plan would reuse the wharf area and road leading to it, leaving other important World War II features intact. Therefore, the proposed scope of work will have **no adverse effect on historic properties with the following conditions:**

1. FEMA will insure coordination with the Applicant and contractor to ensure that the buffer zone that exist is adequate to protect the retaining walls and stairs along the access road and the drainage ditch during construction activities.
2. To ensure the avoidance of potential impact to historic elements during the construction phases, FEMA will coordinate with the Applicant and contractor to provide clear construction restrictions, barriers, and modified "means and methods" as considerations in the construction contract.

3. Ensure that there is supervision by a person who meets the relevant Secretary of the Interior Standards in the relevant field to oversee the encapsulation of the wharf bulkhead and the covering of the retaining wall, and to document any unexpected discoveries.

SHPO (February 26, 2016 letter) concurred with FEMA's finding of no adverse effect on eligible properties within the former San Ildefonso/Camp Roosevelt, conditioned to the implementation of the three protection measures enumerated above. These three conditions will be included in the Record of Environmental Consideration for this project. The Applicant must coordinate with FEMA the following: the review of the buffer zone to ensure it is adequate to protect the historic retaining walls, stairs and drainage ditch during construction activities; and the preparation of a detailed list of proposed restrictions, barriers, and modified "means and methods" to be included in the construction contract and plans. The Applicant is responsible for contracting an archaeologist who meets the relevant *Secretary of the Interior's Historic Preservation Professional Qualification Standards* to supervise the encapsulation of the wharf bulkhead and the covering of the retaining wall, and to document any unexpected discoveries. The Applicant will present the report of the archaeological supervision to FEMA within 30 days of the completion of the fieldwork, for review and approval. The level of description and documentation in the report submitted to FEMA for review shall be consistent with the *Secretary of the Interior's Standards and Guidelines for Archaeological Documentation.*

Should you have any question or require additional information, please contact Mr. José Ayala, Environmental Specialist, at (787) 296-3500 or by email at Jose.Ayala3@fema.dhs.gov.

Sincerely,

Alejandro R. De La Campa
Disaster Recovery Manager

Enclosures

c: Mrs. Ingrid Colberg Rodríguez, Executive Director, Port Authority
Mr. Iván R. Orlandi, Alternate Governor's Authorized Representative

MJMM/EHP/4017HMGP/Culebra Cargo Terminal

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Oficina Estatal de Conservación Histórica
State Historic Preservation Office

February 26, 2016

Alejandro R. De La Campa
Disaster Recovery Manager
U.S. Dept. of Homeland Security
FEMA
Region II – Caribbean Area Division
P.O. Box 70105
San Juan, PR 00936-8105

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SHPO 08-15-14-02 RECONSTRUCTION OF THE CULEBRA TERMINAL CARGO RAMP AND CONSTRUCTION OF ALTERNATE PIER AT SAN ILDEFONSO, CULEBRA, PUERTO RICO / FEMA-4017-DR-PR, HMGP PROJECT PR-0030

Dear Mr. De La Campa:

We acknowledge receipt on January 26, 2016 of your letter (dated January 25, 2016) with supporting documentation prepared for the above referenced project. We agree with your finding of **no adverse effect** on eligible properties within the former San Ildefonso/Camp Roosevelt conditioned to the implementation of the three protection measures enumerated in your letter. Implementing the undertaking according to the documented finding fulfills FEMA's responsibilities under Section 106. As for the Stage II Cultural Resources Survey report, page 9 erroneously identifies the Secretary of the Navy as the "Secretary of the Marine" and incorrectly mentions that President Richard Nixon declared the exit of the Navy from Culebra in 1975. Gerald R. Ford succeeded Nixon as President in 1974. In addition, the copy of the Stage IA-IB report included as an appendix contains a corrupted computer scan of Figure 18 (Page 44), which is unintelligible and should be corrected.

If you have any questions regarding this matter, please contact Miguel Bonini at (787) 721-3737 or mbonini@prshpo.pr.gov.

Sincerely,

Diana López Sotomayor

Diana López Sotomayor, Archaeologist
State Historic Preservation Officer

DLS/NPT/BRS/MB

Cuartel de Ballajá (Tercer Piso),
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SHPO
OECH
OFICINA ESTATAL DE CONSERVACIÓN HISTÓRICA
OFICINA DEL GOBERNADOR
STATE HISTORIC PRESERVATION OFFICE
OFFICE OF THE GOVERNOR

U.S. Department of Homeland Security
Region II - Caribbean Area Division
P.O. Box 70105
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FEMA

Oficina Estatal de Conservación Histórica
JAN 26 2016
Área de Recepción
MGC

January 25, 2016

Ms. Diana López Sotomayor
Executive Director / Archaeologist
State Historic Preservation Office
P.O. Box 9023935
San Juan, PR 00902-3935

RE: NHPA Section 106 Determination
FEMA-4017-DR-PR, HMGP Project PR-0030
Puerto Rico Ports Authority: Construction of an Alternate Pier at San Ildefonso, Culebra, as part of the Reconstruction of the Culebra Terminal Cargo Ramp
SHPO: 08-15-14-02

Dear Archaeologist López:

This communication is a follow-up to our Section 106 consultation process for the above referenced project. Enclosed for your review and comments is the Intensive Survey Report, as per your communications of August 22, 2014 and October 9, 2015. Also enclosed, for your review and concurrence, is FEMA's determination for the Alternate Pier at San Ildefonso, Culebra.

As a result of the proposed scope of work, the pier will be demolished. The construction of the alternate pier at San Ildefonso is needed to provide continuity of cargo service to the island of Culebra during the reconstruction of the Dewey cargo platform. This is a critical infrastructure facility. Avoidance is not feasible due to the nature of the project, to establish an alternate cargo pier. Given the deteriorated condition of the pier, seriously impacting its integrity and its safety, rehabilitation according to the Secretary of the Interior Standards is not feasible.

Under the proposed scope of work, the wharf will be encapsulated, which will not seriously impact the existing historic significance of the wharf which has been modified over time to the extent that the present structure is lacking significant features and is not representative of historic building technology.

Under the proposed scope of work a concrete vehicular platform will be installed over the stone retaining wall of the west boat ramp. However the slab will be cantilevered

over the existing retaining wall without directly impacting the historic material. The remaining historic retaining walls will remain visible.

For the majority of the historic retaining walls and associated elements, a one-meter buffer zone (30 cm to each side of the wall) is indicated in the project plans as proposed to avoid potential effects to historic elements (figure 4). The exception is the three-meter buffer zone established for the reconstructed 1908 building (Culebra Foundation), which corresponds to the existing limits for vehicle parking of visitors to the Foundation.

The proposed plan will reuse the wharf area and road leading to it, leaving other important World War II features intact. As a result, FEMA finds that the proposed scope of work will have **no adverse effect on historic properties with the following conditions:**

1. FEMA will insure coordination with the Sub-grantee and contractor to ensure that the buffer zone that exist are adequate to protect the retaining walls and stairs along the access road and the drainage ditch during construction activities.
2. To ensure the avoidance of potential impacts to historic elements during the construction phases, FEMA will coordinate with the Sub-grantee and contractor to provide clear construction restrictions, barriers, and modified "means and methods" as considerations in the construction contract.
3. Ensure that there is supervision by a person who meets the relevant Secretary of the Interior Standards in the relevant field to oversee the encapsulation of the wharf bulkhead and the covering of the retaining wall, and to document any unexpected discoveries.

FEMA appreciates your continued cooperation in the review of federally funded projects. Should you have any questions or require additional information, please contact Mr. José E. Ayala, Environmental Specialist, at (787) 296-3500 or by email at Jose.Ayala3@fema.dhs.gov.

Sincerely,

Alejandro R. De La Campa
Disaster Recovery Manager

Enclosures

MJMM

Re: FEMA: Section 106 Consultation, FEMA-4017-DR-PR
HMGP Project: PR-0030 **SHPO:** 08-15-14-02
Grantee/Sub-grantee: Puerto Rico Emergency Management Agency / P.R. Ports Authority
Undertaking: Construction of new alternate (permanent) pier at San Ildefonso, Ensenada Honda, as part of the Reconstruction of the Culebra Terminal Cargo Ramp at Dewey, Culebra Island, Puerto Rico
Determination: No Adverse Effect to Historic Properties with conditions

Project Background:
The Puerto Rico Ports Authority (Sub-grantee) has applied for financial assistance from the U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA), to reconstruct the Culebra Ferry Terminal Cargo Platform, located in Dewey, Sardinas Bay, Culebra Island. FEMA is proposing to fund the project through the Hazard Mitigation Grant Program (HMGP) under the Presidential disaster declaration FEMA 4017-DR-PR for Hurricane Irene of August 27, 2011. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. This consultation letter serves as continuing consultation regarding the reconstruction of the Culebra Ferry Terminal Cargo Platform which requires the construction of an alternate pier at San Ildefonso, Ensenada Honda, Culebra Island.

All goods and services arrive to the island of Culebra by cargo ferries or airplanes. The cargo platform of the Culebra Ferry terminal at Sardinas Bay is deteriorated due to wave action. The proposed undertaking will prevent a failure of the platform that would otherwise leave the Culebra residents without this crucial service. The existing cargo platform was constructed in 1988. The cargo ramp consists of a reinforced concrete slab 12" thick, placed on top of reinforced concrete beams supported by 40'long HP 14X73 series steel piles in plumb and batter configuration.

The Dewey Cargo Ramp represents the only entry point for goods and services to the island of Culebra. Its reconstruction requires the relocation of the cargo operations to an alternate pier during the estimated 8 month construction period. To ensure goods and services reach the island-municipality residents, the Sub-grantee proposes to construct an alternate cargo pier at San Ildefonso, Ensenada Honda Bay, Culebra Island to be used during the reconstruction of the Culebra Ferry Terminal Cargo Platform. This project is a vital necessity for the inhabitants and visitors of Culebra. It will remain in place and maintained by the Puerto Rico Ports Authority after the Culebra Ferry Terminal Cargo Platform has been reconstructed.

Previous Consultation:
FEMA initiated Section 106 review in accordance with 36 CFR Part 800 and submitted a consultation package to the Puerto Rico State Historic Office (SHPO) on August 11, 2014. FEMA determined that the rehabilitation of the cargo ramp at Dewey had no potential to affect historic properties and that further identification and evaluation efforts were necessary at the San Ildefonso location in order to assess the project effects on historic properties. SHPO concurred with FEMA's determination and recommended that an **intensive survey** be carried out, consistent with the *Secretary of the Interior Standard and Guidelines on Archaeology and Historic Preservation* (SHPO 08-15-14-02, August 22, 2014).

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On July 21, 2015, FEMA submitted to SHPO a Phase I Upland and Underwater Archaeology Survey presented by the Grantee and a work plan for the Intensive Survey, written to complete the information required beyond the archival and underwater research already conducted for the Phase I Survey. SHPO found the proposal adequate (August 25, 2015). Subsequently, the Grantee indicated another archaeologist will conduct the Intensive Survey, information communicated to SHPO on September 15, 2015, receiving SHPO's acknowledgement on October 21, 2015.

Proposed undertaking at the San Ildefonso pier:
The existing pier at San Ildefonso, Ensenada Honda (coordinates 18.306272, -65.283611), must be modified and improved to handle the cargo operations during the reconstruction of the Sardinas Bay cargo platform (figure 1). The proposed project will consist of underwater and upland activities. The scope of work includes the encapsulation of the 1944 Navy wharf bulkhead (seawall), placement of fill and concrete platform over the west boat ramp retaining wall and the demolition of the pedestrian pier. This will require new underwater construction work in an area of 300 feet long by 122 feet wide. The improvement to the upland area of 27,263.56 square feet (2,532.87 meters) include demolition and improvement of existing facilities, new access road, staging and parking areas. The Undertaking in more detail includes:

UNDERWATER CONSTRUCTION ACTIVITIES (figure 2):

- The installation of a pre-fabricated floating aluminum pontoon platform that will match freeboard ferryboat heights and ease loading and unloading activities. This floating pontoon platform will have an approximate length of 40 feet and a width of 56 feet, with a total of approximately 2,240 square feet (208 square meters).
- The floating pontoon platform will be anchored to the seafloor using 6 round concrete piles 30 inches in diameter, drilled into the bottom approximately 35 feet below MSL. These concrete piles will hold the floating platform in place.
- A pile cap and fender measuring approximately 56 feet in length by 6 feet in width (336 square feet) will be supported by approximately eleven round 30 inch diameter concrete piles. The pile cap beam will be located on the seaward side of the pontoon platform at an approximate distance of 64 feet from the existing seawall, at an approximate depth of 17 feet, and will protect the floating pontoon platform from impacts by the cargo ferry during docking maneuvers. The stern of the cargo ferry will be tied to steel bollards on the pile cap.
- Installation of a pre-fabricated aluminum vehicular bridge, measuring approximately 35 feet long by 22 feet wide with a total area of 770 square feet (72 square meter) to connect the floating pontoon platform to land.
- Existing pedestrian pier to be demolished and replaced with a new prefabricated aluminum platform supported by eight 18 inch diameter steel encased concrete piles. The area occupied by this new pier will be the same as the existing one. The existing 14 inch diameter concrete piles will be removed at the mud line, lifted and transported to a predetermined location for disposal, unless dictated by the final coral transplant plan.
- Install an aluminum passenger boarding ramp to connect the replacement pedestrian pier and the floating platform, measuring 20 feet in length by 4 feet in width (80 square feet, or 7.4 square meters). The boarding ramp will allow passengers to board and disembark the cargo ferry without using the vehicular loading and unloading area.

- A pile cap beam measuring approximately 29 feet long by 3 feet wide and supported by six 18 inch diameter concrete piles will be constructed at a distance of approximately 5 feet from the existing seawall.
- Encapsulation of the 1944 Navy historic seawall (bulkhead/wharf) due to its unsafe structural condition.
- Excavations, form work, steel reinforcement and casting of new 18" concrete bulkhead piles and 12" vehicular reinforce concrete pavement. Fill will be deposited to cover and protect the west retaining wall.
- The construction at San Ildefonso is estimated to take 7 months. During this period, one construction barge will use retrievable spuds to secure itself in position, temporarily impacting the sand/mud bottom. Once this auxiliary platform is completed, the scheduled cargo ferry service from Fajardo to Culebra will use the Auxiliary Terminal at San Ildefonso while the existing cargo platform in Sardinas Bay is demolished and rebuilt.
- No dredging works will be necessary to meet the required operational depth for the cargo ferry.

UPLAND-LANDSIDE CONSTRUCTION ACTIVITIES (figure 3):

- Landside improvements related to the development of this facility will include two new cast steel bollards at its ends, construction of ticket booths, upgrading the existing parking area. These upgrades will not impact any wetland areas or existing drainages.
- Determine new right of way with the widening of the existing access road to the required width, 10 feet to each side, to make room for additional parking for trucks and other heavy freight vehicles waiting to board the ferry, with a loop lane that will allow an uninterrupted flow of traffic.
- Removal of existing asphalt pavement, and demolition of curb and gutter.
- The creation of approximately 30 new parking spaces.
- The relocation of electrical poles, palms and trees.
- Installation of perimeter chain-link fence and vehicular gate on: (1) perimeter of cargo area: (2) perimeter of PRASA water pump facilities: and (3) perimeter of parking and staging areas. Core drills at concrete slab for installation steel pipes secure with concrete grout.
- Installation of 42" high aluminum guardrails in the perimeter of the pedestrian pier and bulkhead of passenger waiting area.
- Installation of new illumination for: (1) navigational use at concrete pile cap and fender; (2) nighttime operation at floating pontoon dock; (3) nighttime operation at new concrete pedestrian pier; and (4) nighttime operation at waiting area.
- Installation of new water meters.

Area of Potential Effects (APE):

The APE falls in the south western portion of the San Ildefonso peninsula and includes an underwater area of 300 x 122 feet, and an upland area for improvements to the existing facilities of 27,263.56 square feet (2,532.87 meters) (figure 4).

Standing Structures: The APE for standing structures includes the wharf and the features associated with the access road from the wharf to PR-250 (figure 9). These include:

- Wharf and related pedestrian pier (figures 20 - 21).
- Pair of inward curving brick retaining walls for two boat ramps located on either side of the wharf area (figures 17 to 19),
- Retaining wall on the east side of the road leading to the wharf (figures 10 - 11), and
- Drainage ditch that runs along east side of access road down to the east boat ramp (figures 13 - 14).

The structures are part of the remains of primarily U.S. Navy occupation, and related to other structures and features in the San Ildefonso peninsula (See Table 1 and *Historic Background of San Ildefonso*).

Just outside the APE but within the viewshed of the features mentioned above and discussed in the Intensive Survey are a cistern described in 1906, described as powder magazine in 1920's photo and as storehouse in 1944 plan (figure 10). It is on the east side, set back from the sidewalk and next to stairs that interrupt the retaining wall. On the west side of the road and also within the viewshed of the features along the road is the Navy Storehouse built 1908 and reconstructed after 1996 and used by the Culebra Foundation (figure 13).

Underwater and Upland Area Archaeology: The APE for archeology conforms to the APE for standing structures. The underwater APE is in front of the wharf and outlined in figure 4.

Historic Background of San Ildefonso:

The APE for the proposed San Ildefonso undertaking is located inside an archaeological and historical sensitive area as the totality of the peninsula can be considered a district that has the potential to present remains from at least three different occupations: the Late Cedrosan Saladoid prehistoric occupation as documented in the Lower Camp Site, with radio carbon date A.D. 642 (1350 years ago); the late Spanish Colonial occupation, represented by the town of San Ildefonso (1880-1903); and the U.S.A. Navy occupation represented by Camp Roosevelt (1903 to 1975). There is the potential to encounter archaeological remains of these occupations underneath the green areas, floor slabs, sidewalks and pavement. The Ensenada Honda Bay has been the scenario of navigation and trading activities for hundreds of years, and there is the potential to encounter underwater archaeological resources.

Lower Camp, a prehistoric site, located 130 meters east of the project area, was object of a data recovery plan before the construction of the new Fish and Wildlife Services (FWS) building (Oliver 1992). The archaeological excavations uncovered an undisturbed midden, which yielded an unusually rich cached of faunal remains and a sizable quantity of artifacts made from different materials (ceramics, shell, stone, and coral). Two hearths were documented underneath the midden, suggesting a change in function from food processing to refuse area. The deposit may have been related to a domestic unit. The excavations also recovered historic artifacts. No site boundaries were established (figure 5 and 22).

The documentary and cartographic description for the late 19th century town of San Ildefonso de La Culebra indicates it was organized into a regular grid pattern with six east-west streets and five north-south streets (figure 6). The town centered on the public plaza, and it had a church, a

government house, a public pier, and a large public water tank. By 1894, 24 houses had been constructed in the town. Most of the town buildings were described as being constructed from locally available wood and covered with wooden shingles or straw thatch. The cemetery was located northwest of the town's center. In 1898 San Ildefonso had an area of 18 hectares. The 1902 and 1903 descriptions of town San Ildefonso make reference to the town public buildings like a catholic church built in 1890, a police station, two schoolhouses built in 1892, a tiny wharf, several streets and 62 houses of fair construction (Navy Report 1902; AGS 1903). During the 1985 archaeological survey, stone walls and artifact midden scattered throughout the peninsula were reported (Thomas 1985).

The replacement of the San Ildefonso settlement with the installation of a Navy base is significant in that it was the first established in the Caribbean. On December 17, 1901, President Theodore Roosevelt signed an Executive Order placing all public lands on Culebra under the jurisdiction of the Navy Department, including the lot occupied by San Ildefonso. Besides its good location surrounded by deep water, it had a good stone wharf extending into 12 feet of water (figure 6), sufficient level ground and roads. Thus, as early as 1902, the first large scale naval exercises were conducted in Culebra.

The U.S. Navy established Camp Roosevelt in the center of San Ildefonso in 1903, named after President Theodore Roosevelt. The town's inhabitants were relocated to a narrow strip of mangrove swamp at Dewey, Sardinas Bay. Many of the late 19th century wooden buildings and some masonry buildings were destroyed by the Navy. Between 1904 and 1906, the Navy built a number of permanent masonry buildings. Facilities included barracks hospital, ice house, commissary store, marine barracks, wash house, bakery, guard house, canteen, reading room, commanding officer's office, blacksmith shop, quartermaster's store house, stable, oil house, store shack, boar shed and carpenter's shop, bath house, search light house, cistern, two cisterns (from the Spanish town), existing wharf from Spanish town and a proposed wharf (figure 7). Other facilities of the Navy in Culebra, located outside of San Ildefonso settlement, included a carbon station on peninsula west side of bay entrance (lot 92), a wireless communication installation at Punta Molinos (lot 91), an observation post on a high peak on north side of island (lot 90), a navigation canal for Ensenada Honda, artillery posts along the coasts, and a wall for rifle shooting practice.

Culebra was formally established as a naval reservation in 1917 and at various times during the years between wars was used by the Marine Corps for winter maneuvers. Its two installations, a 2400-foot sod-surfaced airstrip and a camp site, were in a rundown condition when World War II began. In 1941 the Culebra Island Naval Defensive Sea Area and Culebra Island Naval Airspace Reservation were established. Of value chiefly because of a fine sheltered harbor and potentialities as an emergency landing field, a minor construction effort was expended to rehabilitate the camp for immediate use. The sewerage, fresh- and salt-water systems, cold storage, and messing facilities were renovated and improved under the San Juan contract during the summer of 1942. Further maintenance and repair work was undertaken again during February 1944. The actual configuration of the wharf at San Ildefonso is the same as the one depicted in the U.S. Naval

Reservation Map in Culebra, dated June 30, 1944. The camp covered an area of 70 acres (28 hectares) (figure 8).

The Navy facilities were maintained and used until 1971, when the Navy transferred 702 acres on Culebra to the National Wildlife Refuge (FWS). In 1982 an additional 776 acres were transferred and the island was vacated by the Navy.

Underwater and Upland Area Archaeology Assessments

On August 2014 FEMA initiated section 106 consultation process with SHPO, office that concurred with FEMA's recommendation that further identification and evaluation efforts were necessary at the San Ildefonso location in order to assess the project effects on historic properties. SHPO recommended that an intensive survey be carried out, consistent with the *Secretary of the Interior Standard and Guidelines on Archaeology and Historic Preservation*. SHPO requested that the intensive survey work plan be provided for their review and concurrence prior to its implementation (SHPO # 08-15-14-02, August 22, 2014).

Phase 1 reconnaissance survey: terrestrial and underwater

The sub-applicant consultant presented a Phase I reconnaissance survey for the upland and underwater areas of the project, completed in October 2014, but delivered to FEMA on January 2015. The terrestrial archaeology report contained a good historic and cartographic background for the town of San Ildefonso and Camp Roosevelt (Maurás 2014). The subsurface testing consisted of only three units, providing limited information. The report included a brief description and photographs of structures associated with the Navy occupation (1902 -1944). The main structures are the 1944 Navy wharf (with bulkhead, concrete platform, two boat ramps with retaining walls, a drainage ditch along the east retaining wall of the east ramp, and a pedestrian pier); the retaining walls along east side of road, with associated stairs and the storehouse (former cistern); and the former storehouse built in 1908 and reconstructed after 1996, on the west side of road.

The underwater archaeology evaluation covered an area of 300 feet long x 122 feet wide (Fontánez 2014). No archaeological resources were identified in the five test pits excavated. Two magnetic signals were identified during reconnaissance. The inspection of the areas evidenced modern ferrous remains. The sunken section of the pedestrian pier (65 x 10 feet) and four piles are on the east side of the existing one. The remains of a Navy sunken metal ship were identified some 200 feet to the east.

No archaeological surveys were found for two recent constructions which would have provided data for the area in the immediate vicinity: the bathrooms facilities next to the 1908 storehouse and the new Department of Natural and Environmental Resources building, both built between 2006 and 2013 on the west side of the project area.

As Phase I reports, no discussion was provided of the structures significance or eligibility determination. At this time, FEMA did not support the consultant's recommendation for archaeological monitoring of the construction activities. The grantee and sub-grantee were

notified that the Phase I report did not comply with the objectives of an intensive survey, as FEMA had agree with SHPO (letter March 24, 2015).

Intensive Survey

An intensive survey was conducted for the San Ildefonso project area in October 2015 (Pantel 2015). The subsurface testing consisted of the excavation of 10 mechanical trenches of 2x0.5 meters, one trench 3x0.5 meters and one 1x1 meter manual excavation unit. A number of sub-surface elements were identified: a concrete floor slab on the south side of the trenches and two subsurface structural remains were reported in T2-T3; T8 shows a cement layer from 54 to 70 cm below surface; and T9 exposed a cement layer underneath asphalt. Previous interventions for the installation of underground utilities were observed in trenches T1, T2-T3, and T8. Layers of stones, clay and gravel were reported for trenches underneath pavement (T4, T7, T9, T10), as well as trenches in the green areas (T6, T8, T11), but no consistent stratigraphic sequence was identified. The sparse archaeological artifacts recovered were not associated to a cultural stratum. In summary, no significant cultural deposits or structural remains were identified below surface in the APE either terrestrial or underwater.

Standing Structures Assessment:

Wharf Area: The structures/features identified inside the APE are primarily related to the Navy occupation, mostly related to the WW II repair period of the early 1940's. The wharf at San Ildefonso (figure 20) has the same configuration and dimensions as the wharf in the 1944 Navy map. It is made of a bulkhead 140 feet long (to be encapsulated), with piles of ceramic cylinders filled with concrete at intervals of 10 inches, and a reinforced concrete platform along the bulkhead. However it is in poor condition, is not an outstanding feature or representative of historic building technology. The pedestrian pier, which includes a sunken platform (figure 21), is related to the 1940's military constructions as well. There is a pair of inward curving retaining walls related to two boat ramps located on either side of what has always been wharf area. They increase in depth as they approach the water. Large segments of the east ramp wall is covered over with a Portland cement plaster (figures 16-17). Bricks measuring approximately 8" x 4" x 2.5" are visible in this wall and some of the top bricks have been replaced with yellow fire brick stamped with "American No. 1 New York" that are a bit larger. The retaining wall in the west boat ramp is thicker and made of stones (figures 18-19). It will be covered by the new concrete vehicular platform.

Road related features: The retaining wall along the east side of the access road extends the length of the project area. Two construction materials can be clearly distinguished. The section north of the stairs next to the masonry store-house (old cistern) is made of limestone (figure 9). The south section of the retaining wall begins next to the storehouse and extends to the wharf (figure 11). It is comprised of red brick measuring approximately 8" x 4"x 2.5" that are North American in character. There is an additional set of stairs at the southern end of the retaining wall, leading to a walkway that connects to buildings outside the APE (figures 13-14). A drainage ditch, measuring approximately 16" deep by 14" wide, is located in front of the retaining wall (figures 13-14). It begins at the curve of the retaining wall and extends south along the east side of the boat ramp, providing a drain for the inclined slope of the road. The building materials are covered with

Portland cement, but the ditch may be constructed of the brick as the retaining wall as the units under the Portland cement are of similar size. The road and the other structures within the APE are related to the wharf and the military occupation of the island in that they provide access to the wharf. The two sets of stairs maintain the relationship of the access road and the wharf to the upland areas on the east side of the APE, where other Navy structures are located

By themselves, it is questionable, given the condition of the wharf and the relative insignificance of the standalone retaining walls, that the complex of features described above would rise to the level of significance required for eligibility to the National Register. However, the wharf area and the road leading to it are figured in the 1944 Navy map (figure 8). The complex was vital to the military in its function and connection with the outside world and its link to the interior working of the military base on the island and to other WWII related structures. There are no other structures of this type documented in Puerto Rico for the Navy occupation and period of significance associated to WW II. With consideration of the remaining features on the peninsula from this period (see table 1 below), the Navy wharf area - not specifically the existing wharf and pedestrian pier as they have lost integrity - and associated structures along the road are potentially eligible to the National Register of Historic Places as a Navy WW II period of significance under Criteria A and D as a multiple property listing. It should be noted, however, that pedestrian pier and wharf have lost integrity.

Findings:
As a result of the proposed scope of work, the pier will be demolished. The construction of the alternate pier at San Ildefonso is needed to provide continuity of cargo service to the island of Culebra during the reconstruction of the Dewey cargo platform. This is a critical infrastructure facility. Avoidance is not feasible due to the nature of the project, to establish an alternate cargo pier. Given the deteriorated condition of the pier, seriously impacting its integrity and its safety, rehabilitation according to the Secretary of the Interior Standards is not feasible.

Under the proposed scope of work, the wharf will be encapsulated, which will not seriously impact the existing historic significance of the wharf which has been modified over time to the extent that the present structure is lacking significant features and is not representative of historic building technology.

Under the proposed scope of work a concrete vehicular platform will be installed over the stone retaining wall of the west boat ramp. However the slab will be cantilevered over the existing retaining wall without directly impacting the historic material. The remaining historic retaining walls will remain visible**.**

For the majority of the historic retaining walls and associated elements, a one-meter buffer zone (30 cm to each side of the wall) is indicated in the project plans as proposed to avoid potential effects to historic elements (figure 4). The exception is the three-meter buffer zone established for the reconstructed 1908 building (Culebra Foundation), which corresponds to the existing limits for vehicle parking of visitors to the Foundation.

The proposed plan will reuse the wharf area and road leading to it, leaving other important World War II features intact. As a result, FEMA finds that the proposed scope of work will have **no adverse effect on historic properties with the following conditions:**

1. FEMA will insure coordination with the Sub-grantee and contractor to ensure that the buffer zone that exist are adequate to protect the retaining walls and stairs along the access road and the drainage ditch during construction activities.
2. To ensure the avoidance of potential impacts to historic elements during the construction phases, FEMA will coordinate with the Sub-grantee and contractor to provide clear construction restrictions, barriers, and modified "means and methods" as considerations in the construction contract.
3. Ensure that there is supervision by a person who meets the relevant Secretary of the Interior Standards in the relevant field to oversee the encapsulation of the wharf bulkhead and the covering of the retaining wall, and to document any unexpected discoveries.

Prepared by:
Marisol J. Meléndez Maíz
EHP Historic Preservation Specialist
FEMA Region 2, CAD
and
Mary Neustadter
Deputy Regional Environmental Officer
Region 2, New York
January 22, 2016

Table 1. Existing Navy buildings and structures in the San Ildefonso peninsula

	STRUCTURES LOCATED INSIDE PROJECT AREA or within the viewshed	**1906 PLAN**	**1944 PLAN**	**How undertaking will impact resource**
1	Described in 1906 as a cistern with capacity of 4,500 gallons (probably of Spanish construction); described as powder magazine in 1920's photo; and as storehouse (old cistern) in 1944 plan.	34	23	No impact.
2	Navy Storehouse built 1908; reconstructed after 1996 and used by Culebra Foundation (similar to building on the north side of PR-250 used as Museum)	not present	22	No impact. Design plans bring the new parking area to 3 meters from the building
3	Wharf with bulkhead, concrete platform, boat ramps with retaining walls, drainage canal, and pedestrian pier: The 1902 sketch indicates the existing wharf (#32) is similar in shape to the wharf in the San Ildefonso settlement map; an L-shaped proposed wharf (#30); and the proposed line for the seawall (filling to 5 feet). L-shape wharf in 1906 (#15) corresponds in location to the existing wharf in 1902 and 1897. Navy Wharf rebuilt by 1944: bulkhead with ceramic piles filled with concrete, dock platform, two boat ramps, drainage canal along east retaining wall of east ramp, and pedestrian pier.	15	25	1944 map Wharf bulkhead will be encapsulated. The pedestrian pier will be demolished. Construction of new concrete 12" platform over the west side stone retaining wall. Need to ensure adequate buffer zone for the east boat ramp retaining wall to remain and the drainage canal. The drainage canal is 16" deep (inside). Mechanical excavation next to it to a depth of 12" may damage or collapse the walls.
4	Retaining wall along east side of road, north section, made of limestone and cement – *currently presents unstable conditions and needs to be repaired if it is to remain*	not present	Stone-wall	Design plans bring the new pavement of parking area to 1 foot of the wall
5	Retaining wall along east side road, south section, made bricks (American size)	not present	Stone-wall	Design plans bring the new pavement of parking area to 1 foot of the wall
6	Graded road, (with railroad for the wharf in 1903 sketch and 1906 plan)	46	Road extended to PR-205	Demolition of existing pavement and grading 12" from surface for length 375 feet. Access road will be widen 10 feet to each side.

Table 1. Existing Navy buildings and structures in the San Ildefonso peninsula

	STRUCTURES OUTSIDE PROJECT AREA	1906 PLAN	1944 PLAN
	San Ildefonso cemetery built 1890's	no #	no #
	brick and concrete rainwater catchment built in 1905, that connected with pipeline and provided water for the cistern on the south side of the road (#3)	6	1
	former powder magazine building, built in 1905; reconstructed between 1996 and 2008, and used as a Museum (similar to the one farther south, on the west side of access road)	13	2
	Described in 1903 sketch as brick cistern under construction (#27), with capacity of 100,000 gallons, still in use by PRASA in 2002	8	10
	steel water tank	not present	11
	Recreation ground (former Spanish town plaza)	51	no #
	Described in 1903 sketch as the San Ildefonso town plaza cistern (#29) with capacity of 17,500 gallons	11	27
	Four rectangular buildings east of town plaza	not present	26,30,31,32
	Refrigeration plant	not present	17
	Navy Administration Building, now used by the PR DRNA.	10	36
	Described on 1903 sketch as Spanish cistern (#33), with capacity of 10,000 gallons	37	24
	Graded roads	5,42,47,48	Changes in roads
	sidewalks		present

Table 2. Description of Navy wharf and pedestrian pier

The bulkhead of the Navy wharf is composed of a series of concrete filled pipe columns, a concrete deck, and rock and concrete back fill. The round pipe columns are made of clay, with a few of steel, filled with concrete. There is a 10" interval between piles. The clay pipes do not penetrate the mud line, but the steel pipe piles do penetrate. At one location, the backfill is sliding into the water side. There are rocks in front and along length of the bulkhead. As reported by local informants, the Navy used the dock to repair boats (Fontánez 2014).
The pedestrian pier is a reinforced concrete structure measures 17'1" x 44'. It is supported by 28 concrete filled steel pipes, 14" diameter. Steel piles have lost much of their wall thickness at the splash line and in the pile cap connection. The pier has a perimeter concrete beam, 12" x 12". The thickness of the deck is 11". Over the concrete structure there is a wood deck. It is supported by a continuous perimeter steel beam, framed with beams every 30", with considerable corrosion activity. The concrete of the underside of the pier is deteriorated beyond repair. A section of the pedestrian pier measures 10 x 65 feet, is sunken underwater. According to local informants the section of the pier collapsed during hurricane Hugo in 1989. A number of the piles are still standing in place (Fontánez 2014).

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Sketch map. Plan view of the town of San Ildefonso (1881-1902) and U.S. Navy Installations (1902) (copy in Oliver 1992).

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Figure 1. General location of the San Ildefonso pier, north shore of Ensenada Honda, Culebra
Figure 2. Underwater construction activities
Figure 3. Upland-Landside construction activities
Figure 4. Area of potential effects (APE)
Figure 5. Lower Camp Site (Data recovery area for the construction of new Fish and Wildlife Service Building).
Figure 6. San Ildefonso site plan, 1897.
Figure 7. US Navy station site plan, 1906
Figure 8. Map of Naval Reservation, 1944.
Figure 9. Location of historic properties: site plan that identifies features within the APE
Figure 10. Stone retaining wall along east side of access road (north).
Figure 11. Brick retaining wall along east side access road (south).
Figure 12. Navy store house (1944); former Spanish cistern. Stairs and brick retaining wall. Powder Magazine, Camp McCully, Culebra, circa 1922 (San Ildefonso, Culebra, PR)
Figure 13. Drainage canal along east side of access road down to the east boat ramp, and stairs at south end of the brick retaining wall.
Figures 14. Drainage canal and Stairs at the south end of brick retaining wall (stairs lead to walkway that connect with other buildings).
Figure 15. Navy Storehouse (built 1908); reconstructed after 1996, now office of the Culebra Foundation
Figure 16. Navy wharf, east boat ramp
Figure 17. Navy wharf, east boat ramp, brick retaining wall.
Figure 18. Navy wharf, west boat ramp.
Figure 19. Navy wharf, west boat ramp. Stone retaining wall
Figure 20. Navy wharf, west side bulkhead and concrete platform – to be encapsulated
Figure 21. Pedestrian pier to be demolished. Bulkhead on the east side of wharf.
Figure 22. Aerial photos from 1966 and 1996 (After hurricane Hugo - the Culebra Foundation Building lost its roof; a section of the pedestrian pier sank; and the new FWS Building).

Figure 1. General location of the San Ildefonso pier, north shore of Ensenada Honda, Culebra

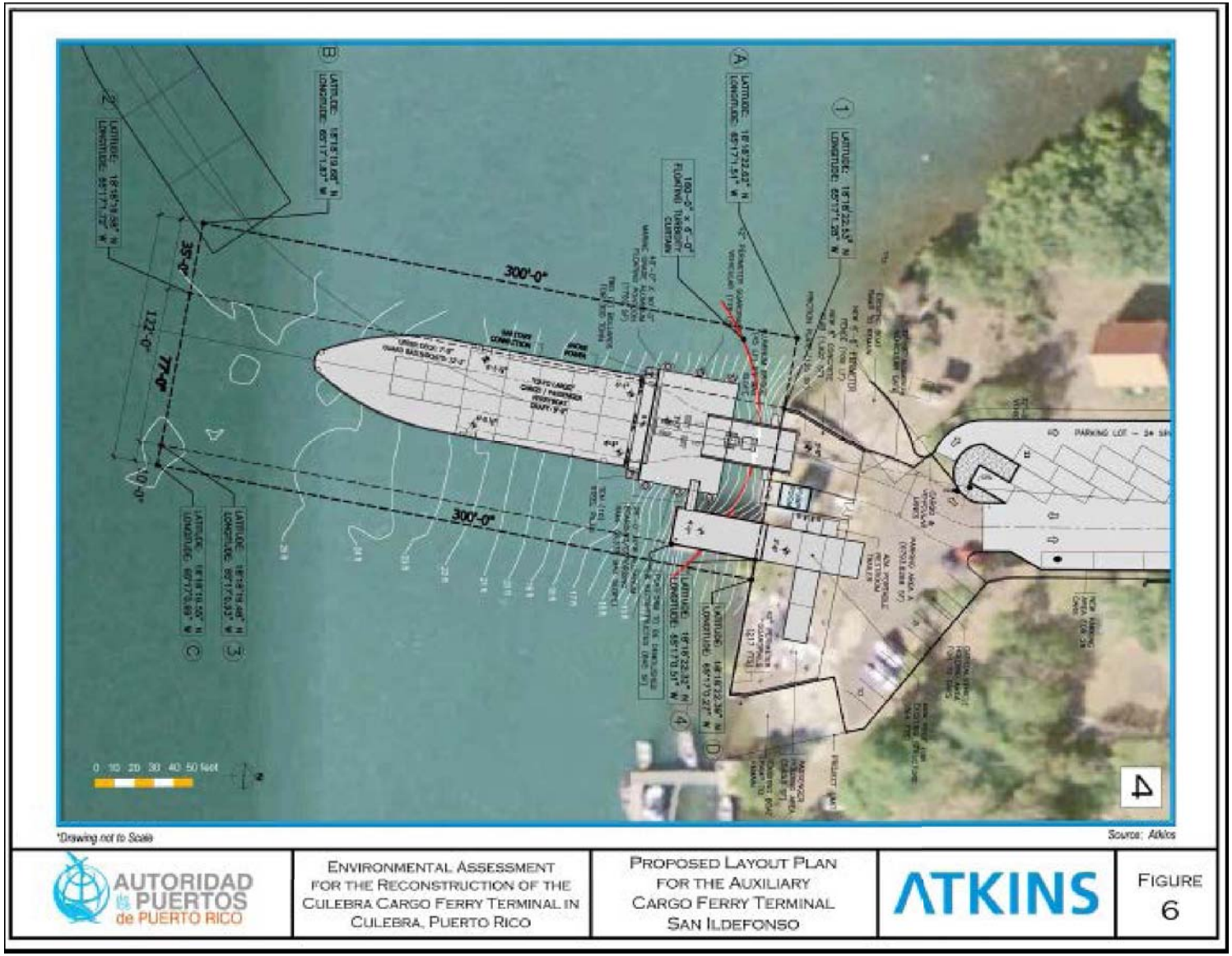


Figure 2. Underwater construction activities

Figure 3. Upland-Landside construction activities

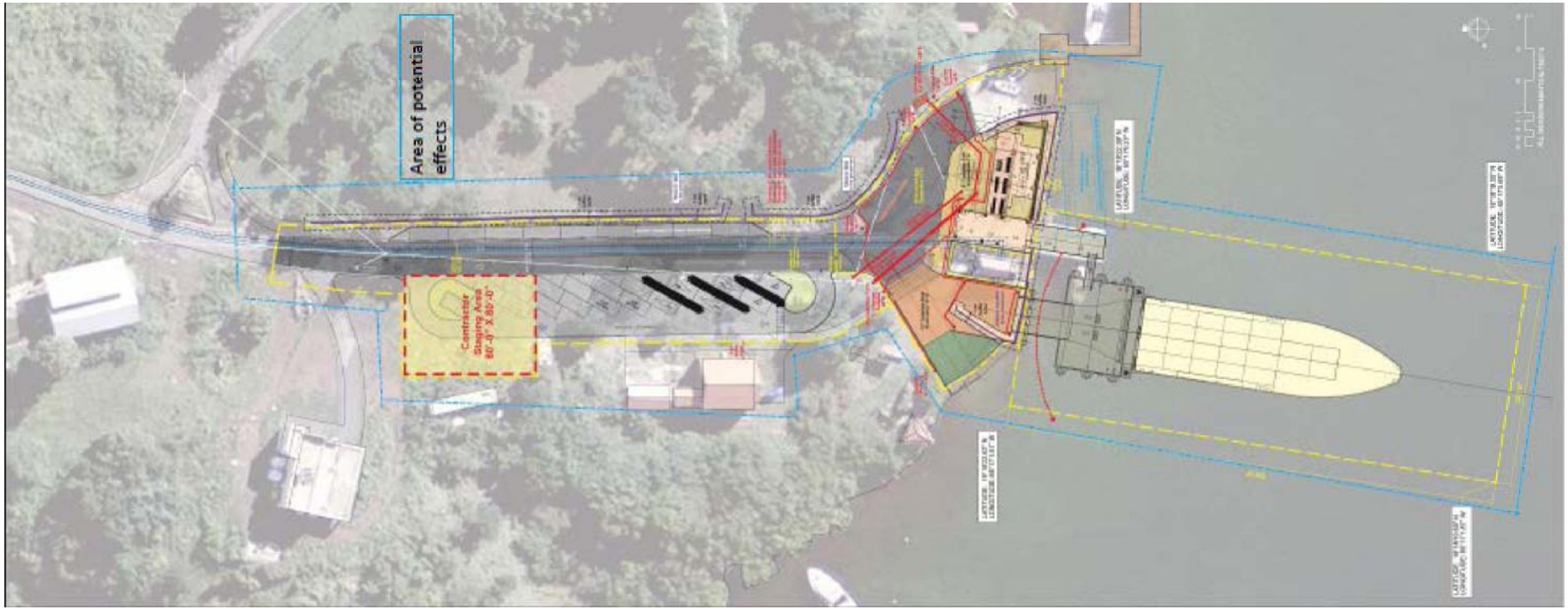


Figure 4. Area of potential effects

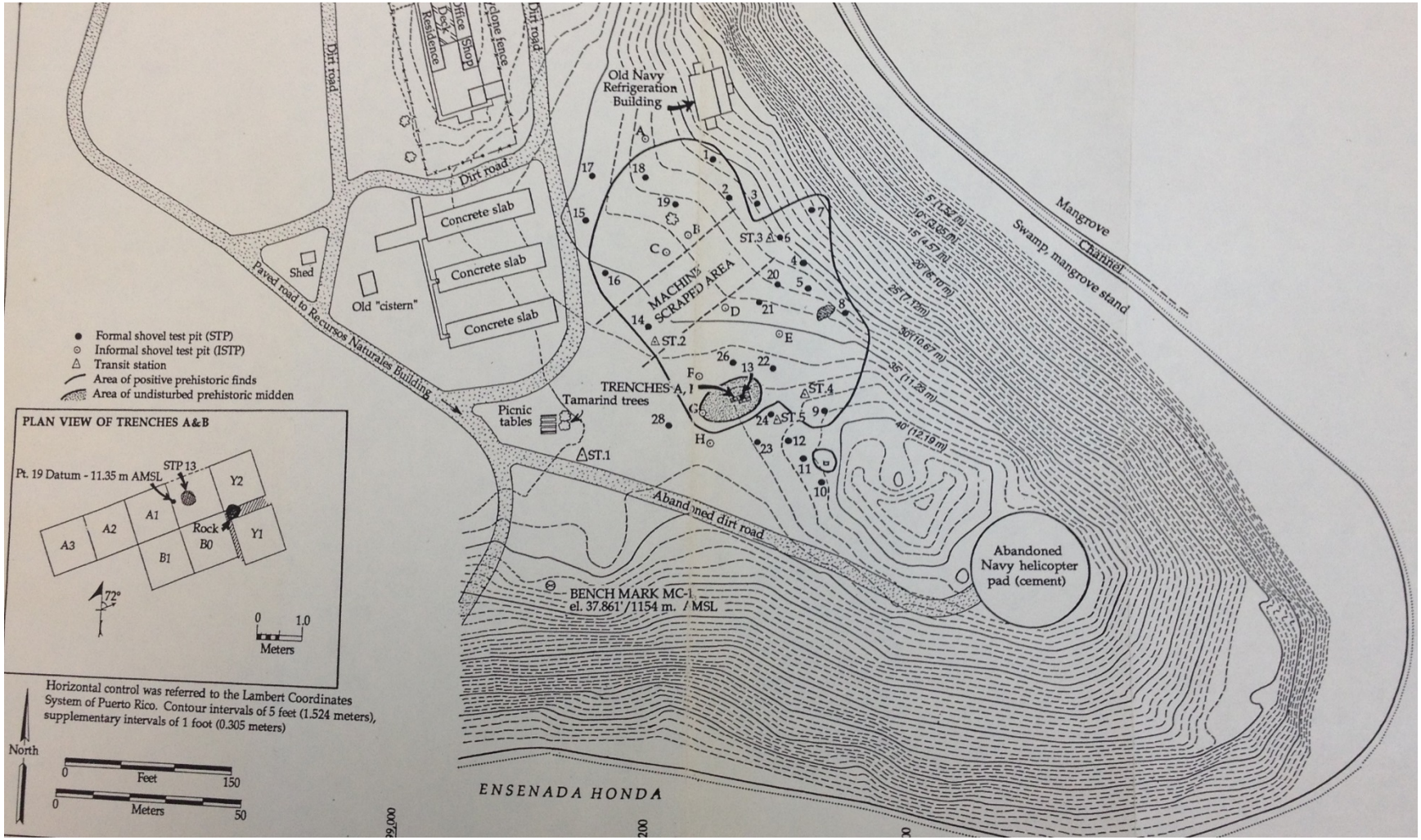


Figure 5. Lower Camp Site (Data recovery area for the construction of new Fish and Wildlife Service (FWS) Building).

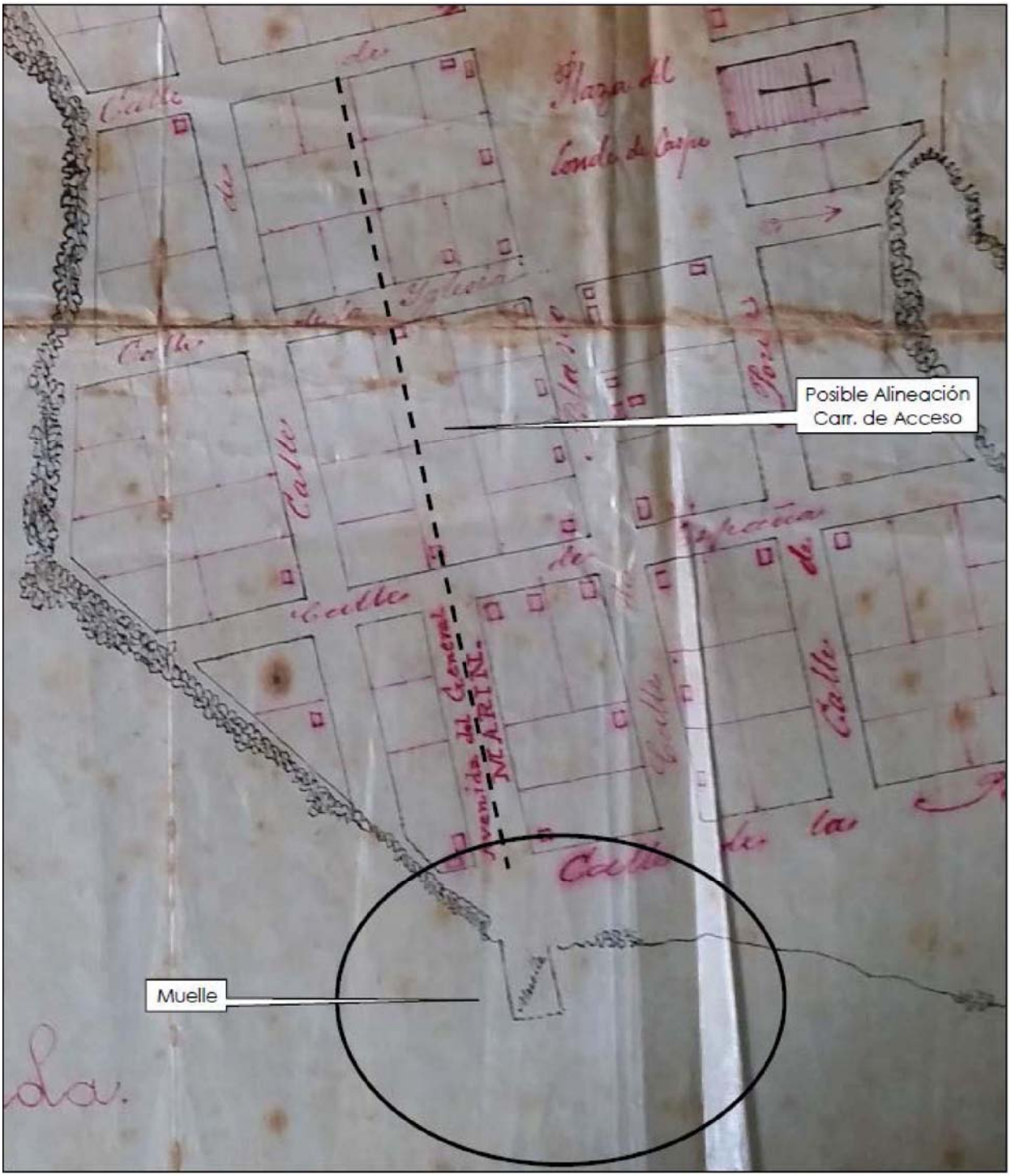


Figure 6. San Ildefonso site plan, 1897.

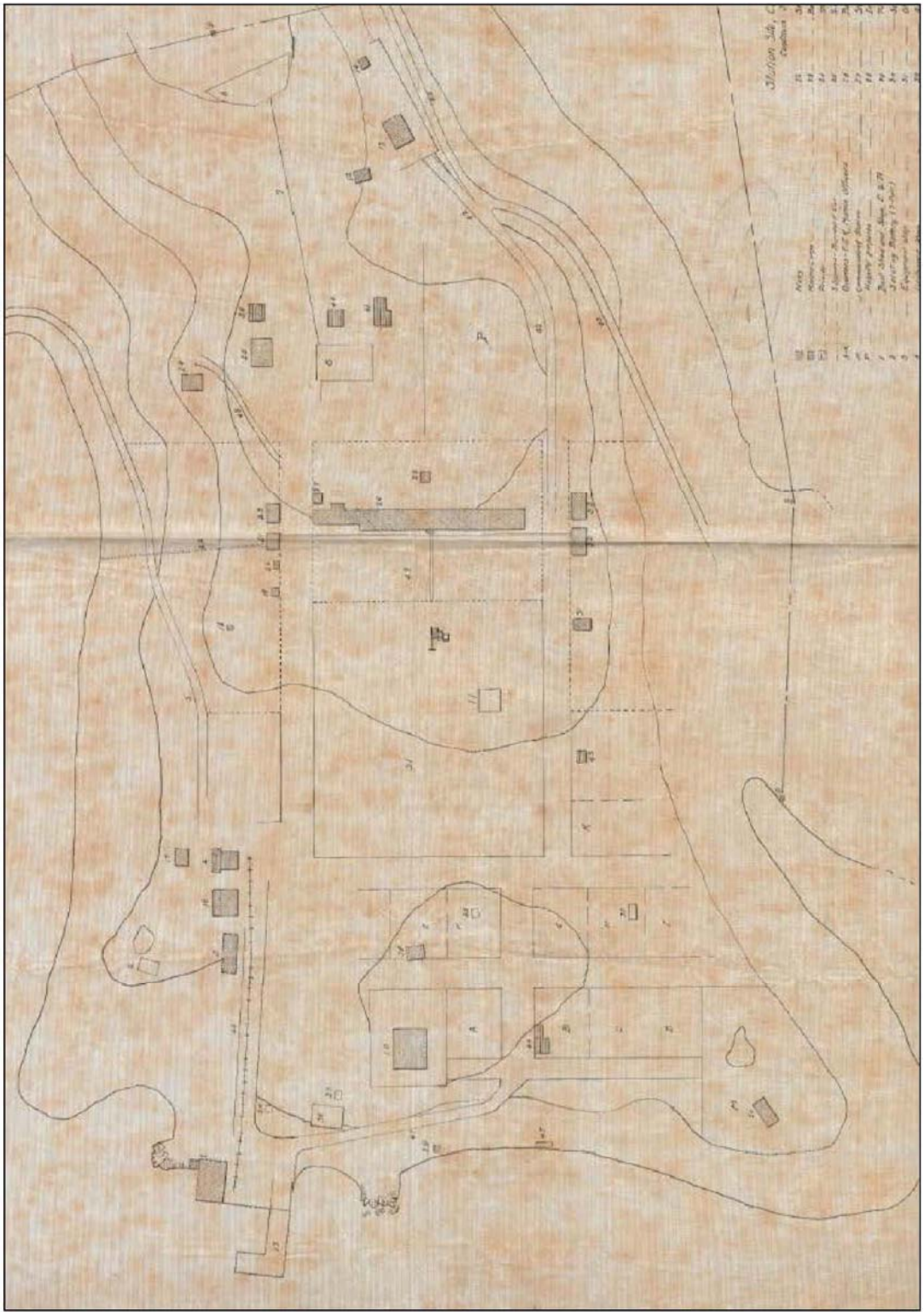


Figure 7. US Navy station site plan, 1906

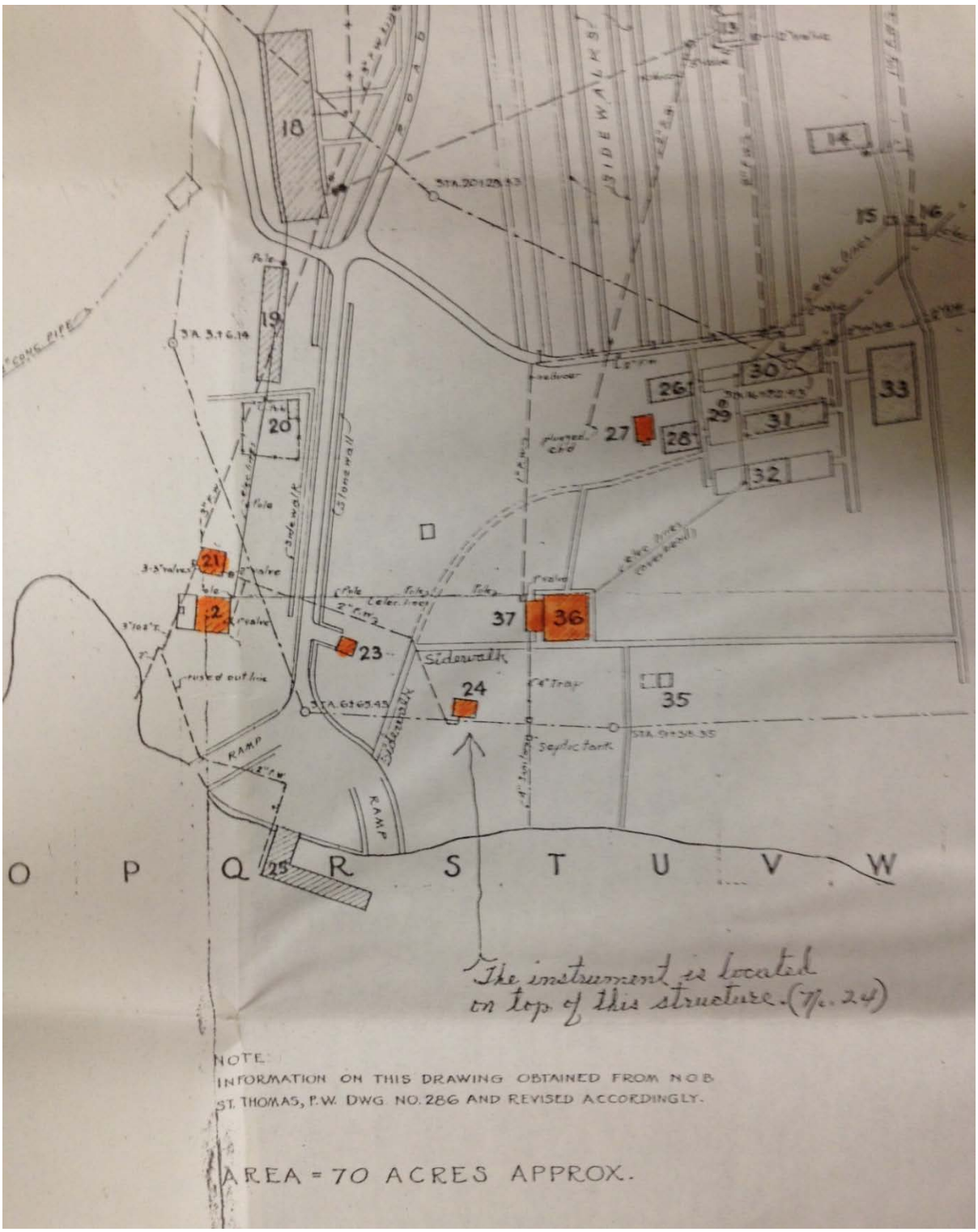


Figure 8. Map of Naval Reservation, 1944.

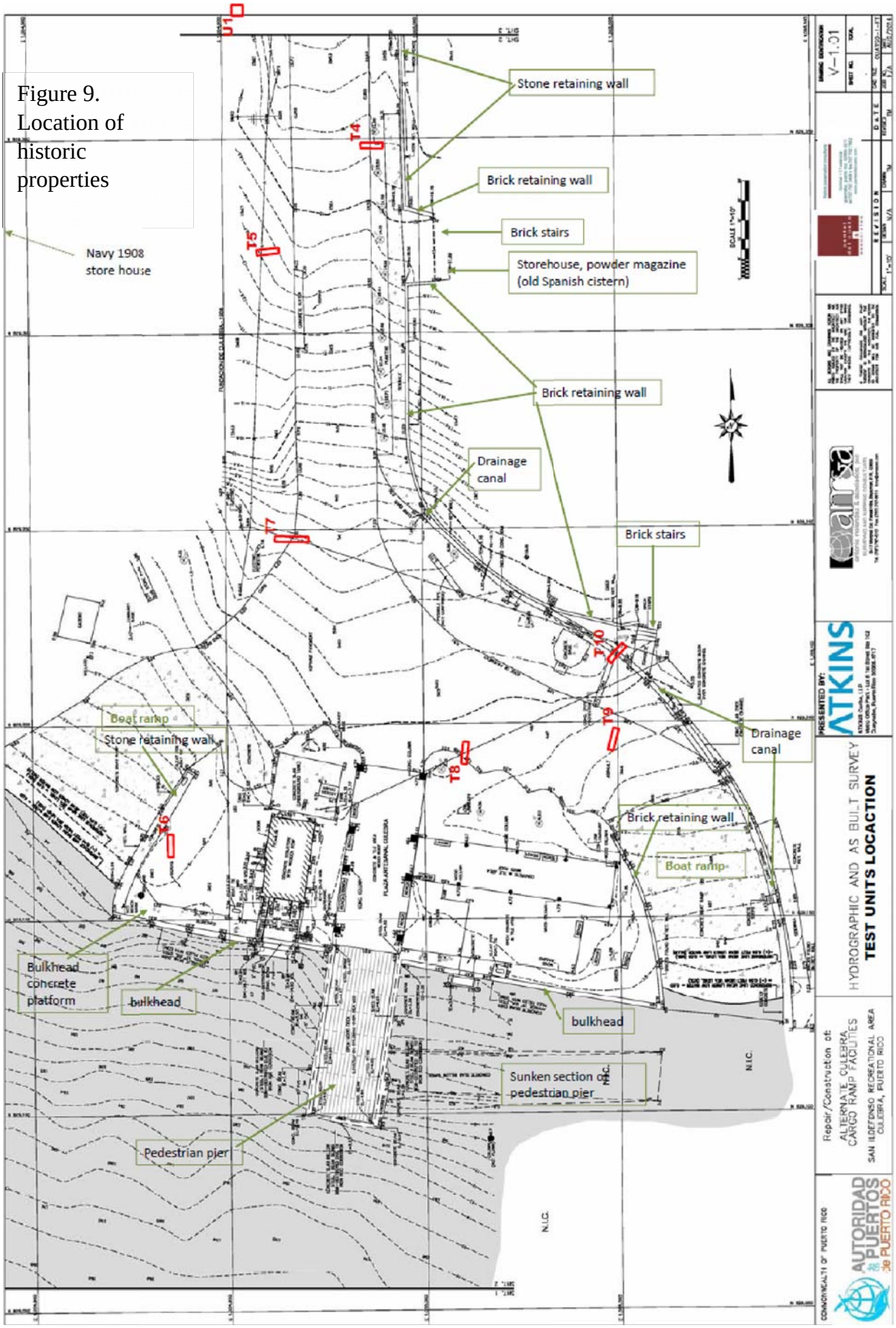
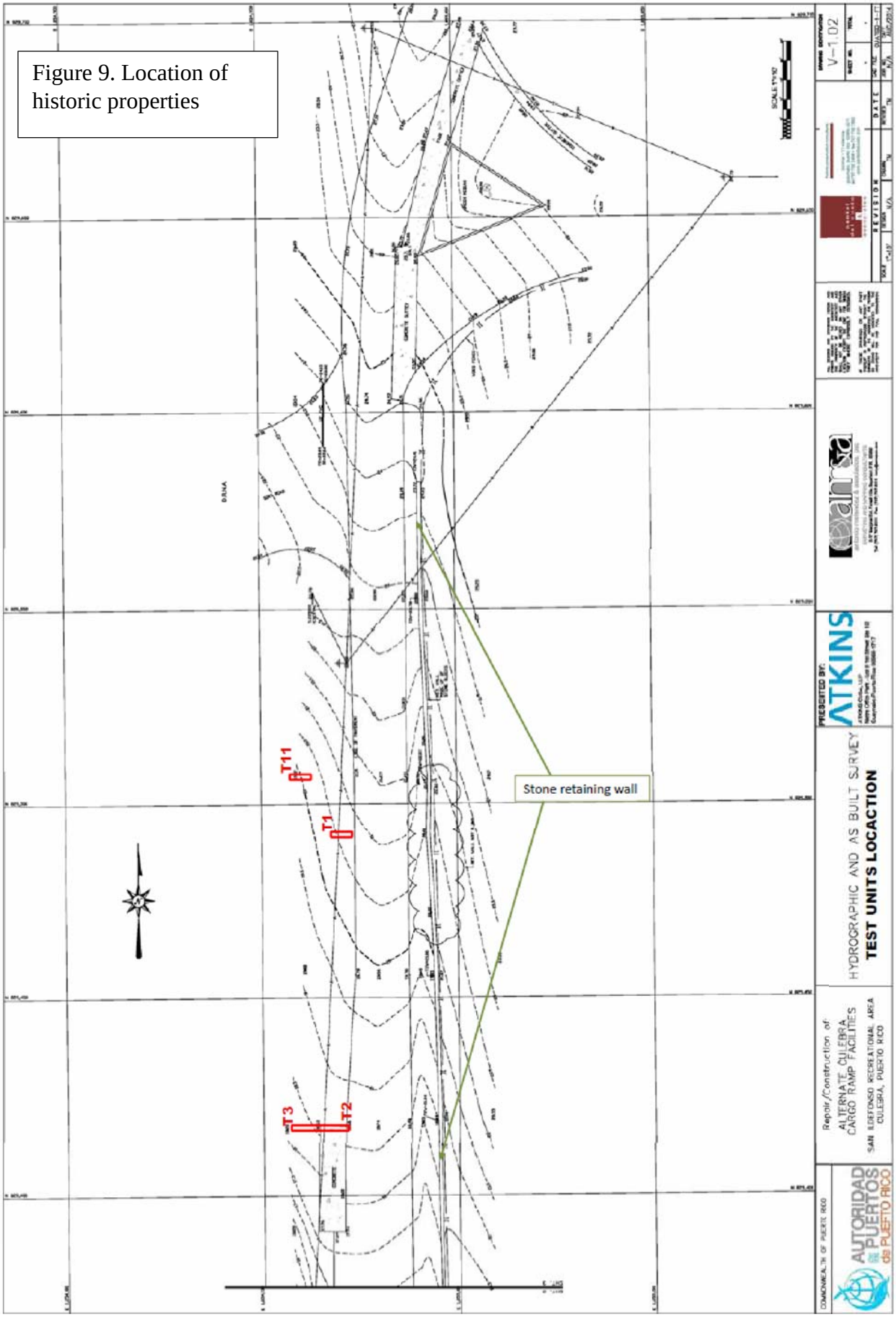


Figure 9. Location of historic properties



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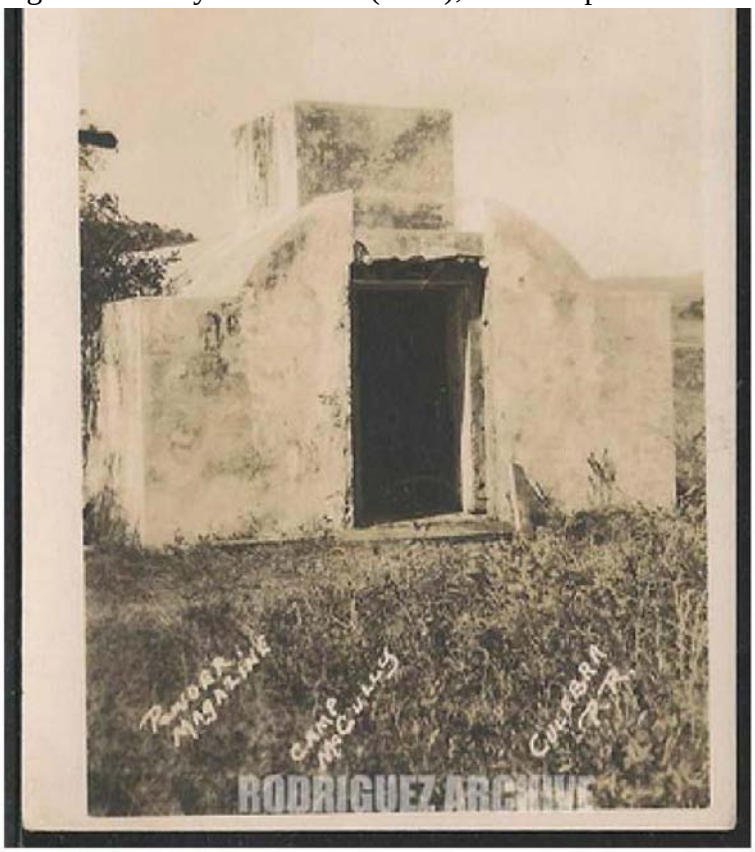

Powder Magazine, Camp McCully, Culebra, circa 1922 (San Ildefonso, Culebra, PR)

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Pedestrian pier to be demolished.

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STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER
San Ildefonso, Culebra, Puerto Rico

prepared for:

ATKINS CARIBE, LLP

for submittal to:

FEMA, Region 2, Caribbean Area Division

prepared by:

pantel del cueto & associates

Oficina Estatal de Conservación Histórica
JAN 26 2016
Área de Recepción
MRC

December 4, 2015

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PUERTO RICO
Oficina Estatal de Conservación Histórica
State Historic Preservation Office

October 9, 2015

Alejandro R. De La Campa
Disaster Recovery Manager
U.S. Dept. of Homeland Security
FEMA
Region II – Caribbean Area Division
P.O. Box 70105
San Juan, PR 00936-8105

21 OCT'15 PM01:09 FEMA

SHPO 08-15-14-02 RECONSTRUCTION OF THE CULEBRA TERMINAL CARGO RAMP AND CONSTRUCTION OF ALTERNATE PIER AT SAN ILDEFONSO, CULEBRA, PUERTO RICO / FEMA-4017-DR-PR, HMGP PROJECT PR-0030

Dear Mr. De La Campa:

We acknowledge receipt on September 18, 2015 of a new intensive survey work plan, (dated September 14, 2015) prepared for the above referenced project. This new plan repeats verbatim many of the passages contained in the previous July 14, 2015 work plan and, therefore, apparently is consistent with the previous plan to evaluate the project area. However, page 12 of the new plan is missing and its contents unknown. Also, in retaining many of the passages from the previous plan, the September 14th version also retained many of its typographical errors, including the ones we had pointed out earlier in our August 25, 2015 letter regarding the National Register of Historic Places and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. We again recommend these be corrected to avoid any ambiguity as to what criteria or standards are to be employed.

If you have any questions regarding this matter, please contact Miguel Bonini at (787) 721-3737 or mbonini@prshpo.pr.gov.

Sincerely,

Diana López Sotomayor

Diana López Sotomayor, Archaeologist
State Historic Preservation Officer

DLS/NPT/BRS/MB

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SHPO
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OFICINA DEL GOBERNADOR
STATE HISTORIC PRESERVATION OFFICE
OFFICE OF THE GOVERNOR

U.S. Department of Homeland Security
Region II - Caribbean Area Division
P.O. Box 70105
San Juan, Puerto Rico 00936-8105

FEMA

September 15, 2015

Ms. Diana López Sotomayor
Executive Director
State Historic Preservation Office
P.O. Box 9023935
San Juan, PR 00902-3935

RE: SHPO # 08-15-14-02
NHPA Section 106 Consultation: FEMA-4017-DR-PR, HMGP Project PR-0030
Puerto Rico Ports Authority: Reconstruction of the Culebra Terminal Cargo Ramp and Construction of Alternate Pier at San Ildefonso, Culebra, Puerto Rico

Dear Archaeologist López:

We acknowledge receipt of your communication dated August 25, 2015, regarding the previously submitted work plan for the intensive survey of the San Ildefonso alternate pier. However, the Applicant just notified the Federal Emergency Management Agency (FEMA) that a different archaeologist will conduct the intensive survey. Please refer to new proposal dated September 14, 2015 (attached).

FEMA appreciates your continued cooperation in the review of federally funded projects. Should you have any questions or require additional information, please contact Mr. José E. Ayala, Environmental Specialist, at (787) 296-3500 or by email at Jose.Ayala3@fema.dhs.gov.

Sincerely,

Alejandro R. De La Campa
Disaster Recovery Manager

c: Mr. Miguel A. Rios, Governor's Authorized Representative
Ms. Ingrid Colberg Rodriguez, Executive Director, Puerto Rico Ports Authority

MJMM/Culebra/HMGP-4017 Project PR-0030

STAGE 2 CULTURAL RESOURCES SURVEY WORK PLAN
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER
San Idelfonso, Culebra, Puerto Rico

prepared for:

ATKINS CARIBE, LLP

for submittal to:

FEMA, Region 2, Caribbean Area Division

prepared by:

pantel
del cueto
&
associates

revised September 14, 2015

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STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY

The enclosed documentation is for the design, execution, and completion of a cultural resources intensive survey for a proposed reconstruction of the Culebra Terminal Cargo Ramp and construction of an alternate pier at San Idelfonso, Culebra based upon the following Scope of Work and APE provided by ATKINS on 07/14/2015 and the synopsis is taken from the SOW provided by ATKINS in conformance with FEMA requisites.

Project Background

Demolition of the existing structures will be performed during two primary phases initiated approximately one month apart. The first (1) phase is the demolition of marine structures (Pedestrian pier and cargo platform concrete bulkhead) and a Second (2) phase will be conducted entirely out-of-water (Improvements to existing access road and removal of roof structure of the existing structure.

Others marine structures to be demolished included (1) beams and deck concrete of existing pedestrian pier; (2) demolition of existing Concrete bulkhead and reinforce concrete pavement. Out- of-water structures to be demolished should include:

- Improvements to existing access road.
- Determine new right of way.
- Relocation of electric poles.
- Removal of roof structure of the existing structure.
- Removal of existing asphalt pavement and demolition of existing curb and gutter.
- Relocation of one (1) palm tree and two (2) small trees.

No dredging works shall be necessary to meet cargo ferryboat operational deep.

The site improvement area is 27,263.56 square feet's (2532.87 square meters). The existing access road is going to be widened 10'-0" at each side for a total length of 365'-00" to make room for additional parking for trucks and other heavy freight vehicles in waiting to boarding the ferries.
Other construction work activities to be performed include:

- excavations, formwork, steel reinforcement and casting of new 18" concrete bulkhead and 8" vehicular reinforce concrete pavement;
- installation of three (3) fenders and two (2) bollards to the concrete pile cap and fender for anchoring and mooring from stern docking of cargo ferry;
- installation of perimeter fence and vehicular gate on perimeter of cargo area. Core drills at concrete slab for installation steel pipes secure with concrete grout, installation of chain-link fence;
- installation of chain-link fence perimeter fence and vehicular gate on perimeter of AAA existing water pump facilities;
- installation of 42" high aluminum guardrails in the perimeter of the pedestrian pier and bulkhead of passenger waiting area;
- installation of perimeter fence and vehicular gate on perimeter of parking and staging area;

- installation of new illumination for navigational use at concrete pile cap and fender;
- installation of new illumination for nighttime operation at floating pontoon dock;
- installation of new illumination for nighttime operation at new concrete pedestrian deck;
- installation of new illumination for nighttime operation at Covered waiting area;
- installation of new Water meter and hose bibs.

Work Plan

The Work Plan will initially revisit documentary, archival and cartographic data specific to the project area to establish the chronological sequence of manmade features, for the three periods of occupation and land formation when possible, to establish the type of resources to be expected thought the areas or potential effect.

Documentary description and cartographic representations evidence the layout of the late 19th century town of San Ildefonso. The southern and coastline sections of the grid pattern, loci of street block, streets, and structures within each block [private houses, government house, public water tank, and the public dock] are to be expected within the confines of the project. Likewise elements of the initial setup, the removal and subsequent destruction of San Ildefonso, as well as subsequent evolution of Camp Roosevelt Naval Reserve, established by the US Navy in the center of San Ildefonso in 1903 can be expected.

Archaeological Intervention

Secction 1 & 2: Accesses Road, Contractors Staging & Parking Area

The Staging Area [60 by 80 feet], will store construction equipment and office trailers with no expected modification to the surface, except razing the vegetation to accesses the space.

Conditioning the Road and Parking Area. The existing Road will be widened to the west, to have a total road width of 24'-0", for adequate movement and to add parking spaces to the east of the road, parallel to a historic wall with a one meter buffer zone.

1- Within the area comprised by Sections 1 and 2, the Parking Area, the Staging Area and the northernmost tip of the Accesses Road, four [4] 0.50 by 2.00m trenches will be excavated placed perpendicular to the access road.

2- A 1.00 x 1.00 meter unit will be placed parallel to the roads' western flank in the vicinity of structures 16 and 4 depicted in Figure 4.

*** These trenches should be as shallow as possible and mechanical excavation detained upon reaching archaeological remains or sterile soil, whichever comes first. If archaeological remains are encounter, the archaeologist should proceed with manual excavation and documentation.

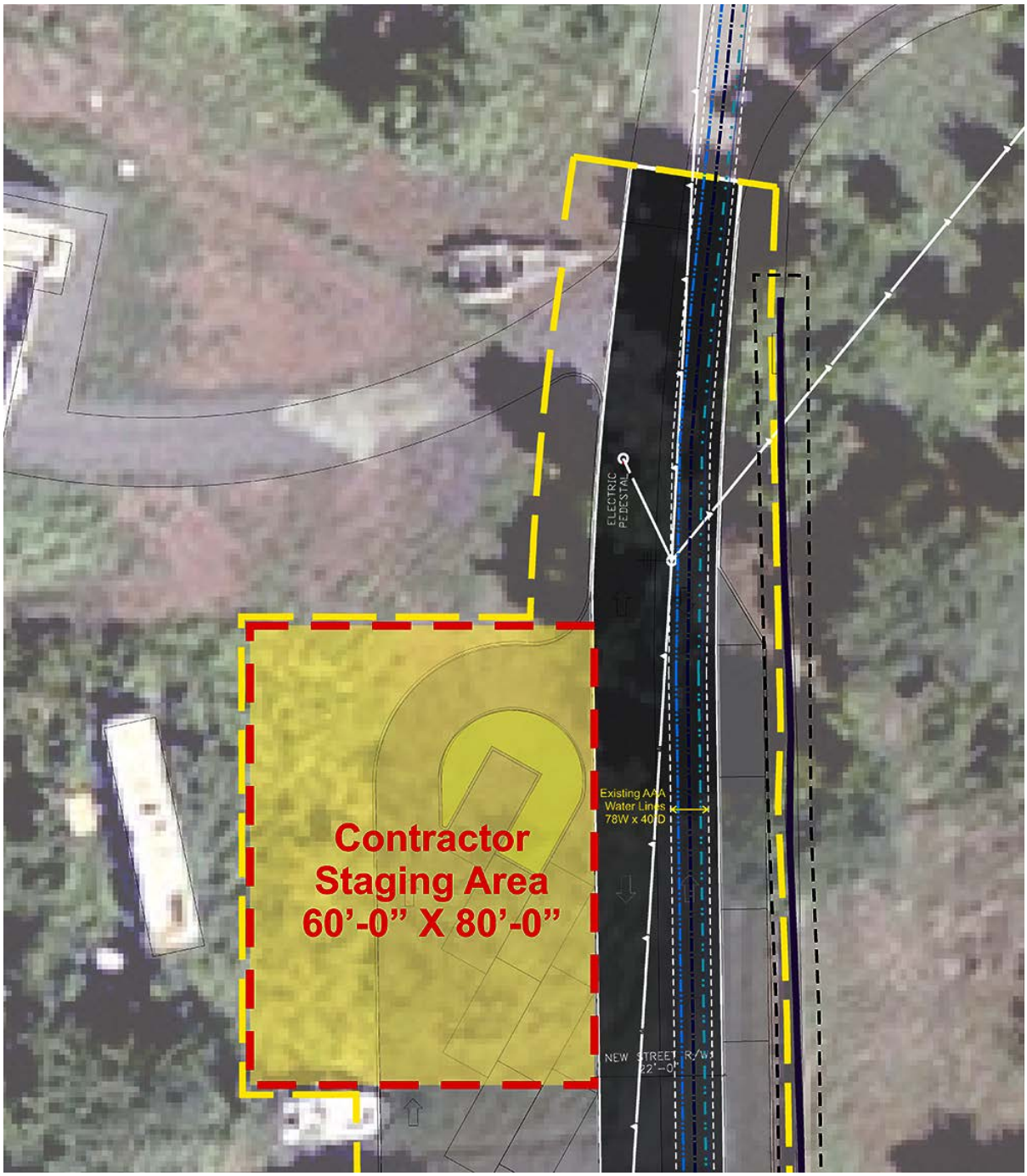

Figure 1. Northernmost section of the Project Area, including the Parking Area (not colored) set along the western flank of the Access Road, the road itself (colored black), and the Contractor's Staging Area (colored yellow). Several trenches will be excavated where possible precolumbian deposits may be encountered and where overlaid historic maps indicate the possible existence of structures and/or railroad tracks.

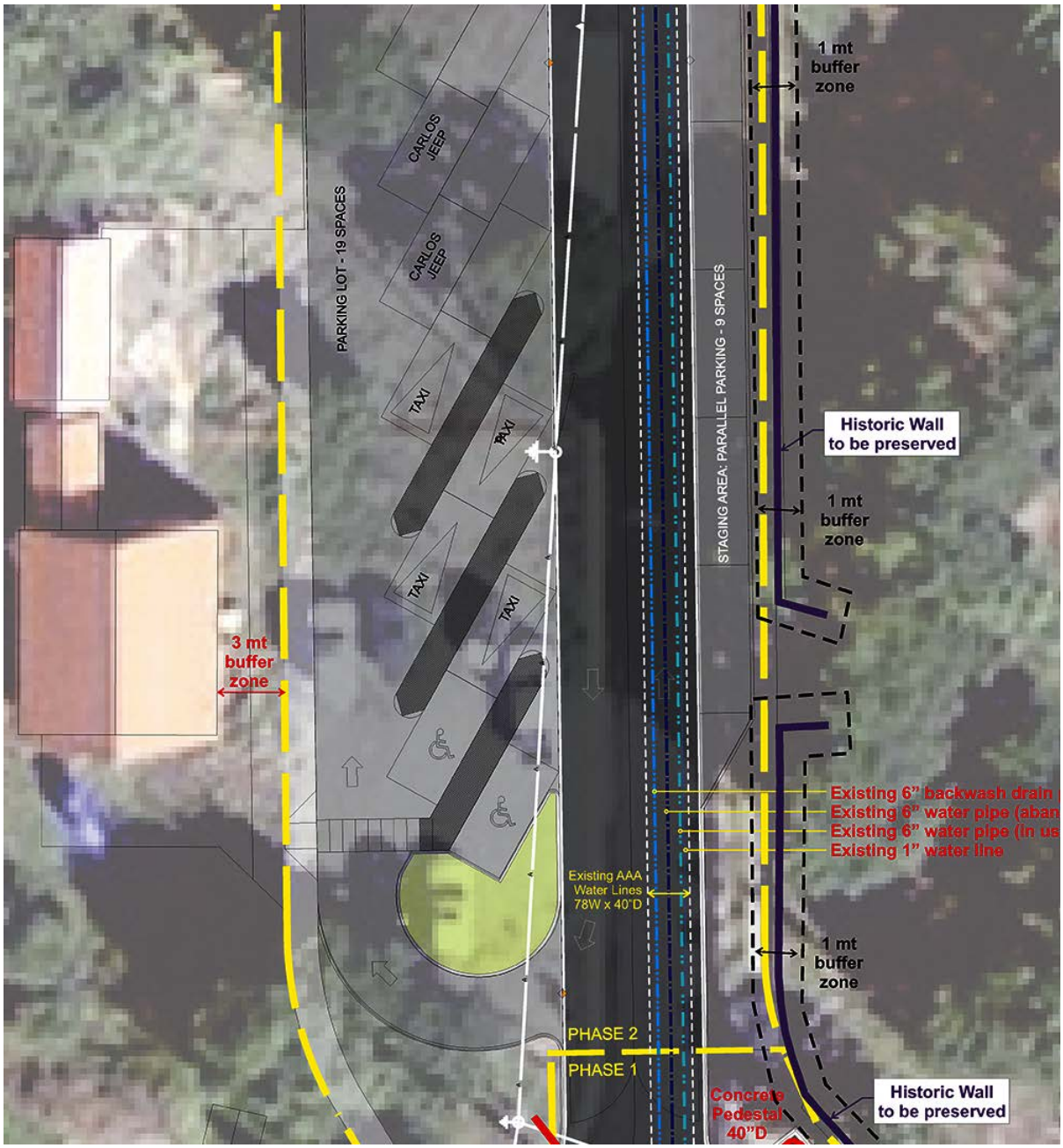

Figure 2. Middle section of the Project Area including the southern section of the Parking Area which is along the western flank of the Access Road. Within the area comprised in Figures 1 and 2, four (4) 0.50 by 2.00m trenches and a 1.00 by 1.00 meter unit will be excavated. One of the four trenches will be excavated from the east side of the road extending west from a subsurface water main related to the Desalinization Plant Intake Line. The trench will provide a cross-section of the area where it is planned to grade 12" for the new road and parking area. The intention of the excavation is to expose the surface underneath the road in order to determine if there are significant historic properties sealed under the pavement. According to historic maps, the Access Road goes over areas occupied by San Idelfonso household lots.

Secction 3 - Orange and Green Construction Area

Archeological Intervention

1- Within the Orange Area a .50 by 2m trenches will be excavated where electrical lines run up to 42" deep, where current grade will be excavated 12" to support a 12" concrete slab next to the ramps seawall, indicate the possible existence previos wharf structures related to the Town of San Ildefonso and Camp Roosevelt remnants of previous wharfs, fills, pilings, watercrafts the construction methos of the ramp wall and an array of seafaring paraphernalia related to the inhabitats of San Ildefonso, military, railway tracks and associated infrastructure related to Camp Roosevelt, along with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

2- A second trench .50 by 3m will be excavated where several electrical lines run 34 to 42" deep across the Accesses Road, north of the Orange Area, indicate the possible existence structures related to the Town of San Ildefonso and Camp Roosevelt foundation remnants of brick, stone, mortar and wooden piles, as railway tracks features and associated infrastructure related to Camp Roosevelt, along with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

> Note: These trenches should be as shallow as possible and mechanical excavation detained upon reaching archaeological remains or sterile soil, whichever comes first. If archaeological remains are encounter, the archaeologist should proceed with manual excavation and documentation.

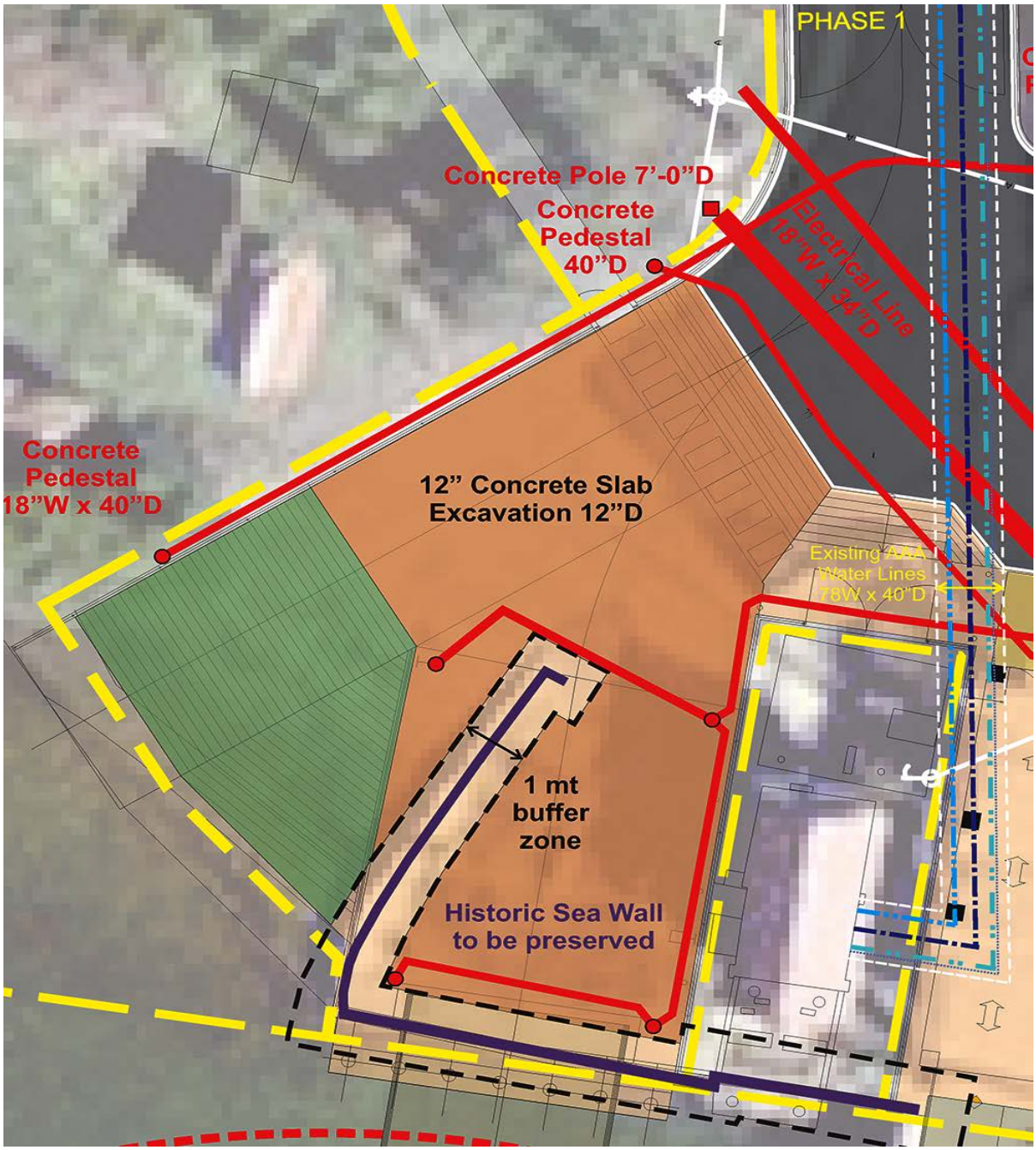

Figure 3. This area comprises the Orange and Green Construction Area of the Wharf, and part of the Access Road. Within the Orange Area a 0.50 by 2.00m trench will be excavated where electrical lines run 42" deep and where the current grade will be excavated 12" to support the concrete slab and bulk of traffic off of the ferry. Possible remnants of previous wharfs, fills, pilings, water craft and an array of seafaring paraphernalia, the natural stratigraphy of the coastline, and evidence of precolumbian activity may be encountered. A second trench measuring 0.50 by 3.00m in size will be excavated where the electrical lines run 34" deep and where overlaid historic maps indicate the possible existence of railroad tracks and associated infrastructure.

Section 4 - Light Green Area

Archeological Intervention

1- Within the Light Green Area a 0.50 by 2.00m trench will be excavated where electrical lines intersect to a depth of 42" remnants of previous wharfs, fills, pilings, watercrafts and an array of seafaring paraphernalia related to the inhabitants of San Ildefonso, military associated to Camp Roosevelt, along with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

2- A second 0.50 by 1.00m trench, following Martinez recomendation, will be relocated to the dry ground area, where overlaid historic maps indicate the possible existence previous wharf structures related to the Town of San Ildefonso and Camp Roosevelt remnants of previous wharfs, fills, pilings, watercrafts and an array of seafaring paraphernalia related to the inhabitants of San Ildefonso, and military associated to Camp Roosevelt, along with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

3- A third 0.50 by 2.00m trench will be excavated where a concrete support slab for an emergency generator cuts grade 18" into the current soil surface, the possible existence of historic structures of both the town and Camp Roosevelt foundation remnants of brick, stone, mortar, wooden piles and related refuse, along with prehistoric Lower Camp, and historic, deposits associated with procurement practices and other coastal activity may be encountered. However, there is the posibility that the platform lays over a causeway leading up to the Office Building [Figure 4], and the subsoil, evidence of the modification of the natural deposition, may be encountered.

> Note: These trenches should be as shallow as possible and mechanical excavation detained upon reaching archaeological remains or sterile soil, whichever comes first. If archaeological remains are encounter, the archaeologist should proceed with manual excavation and documentation.

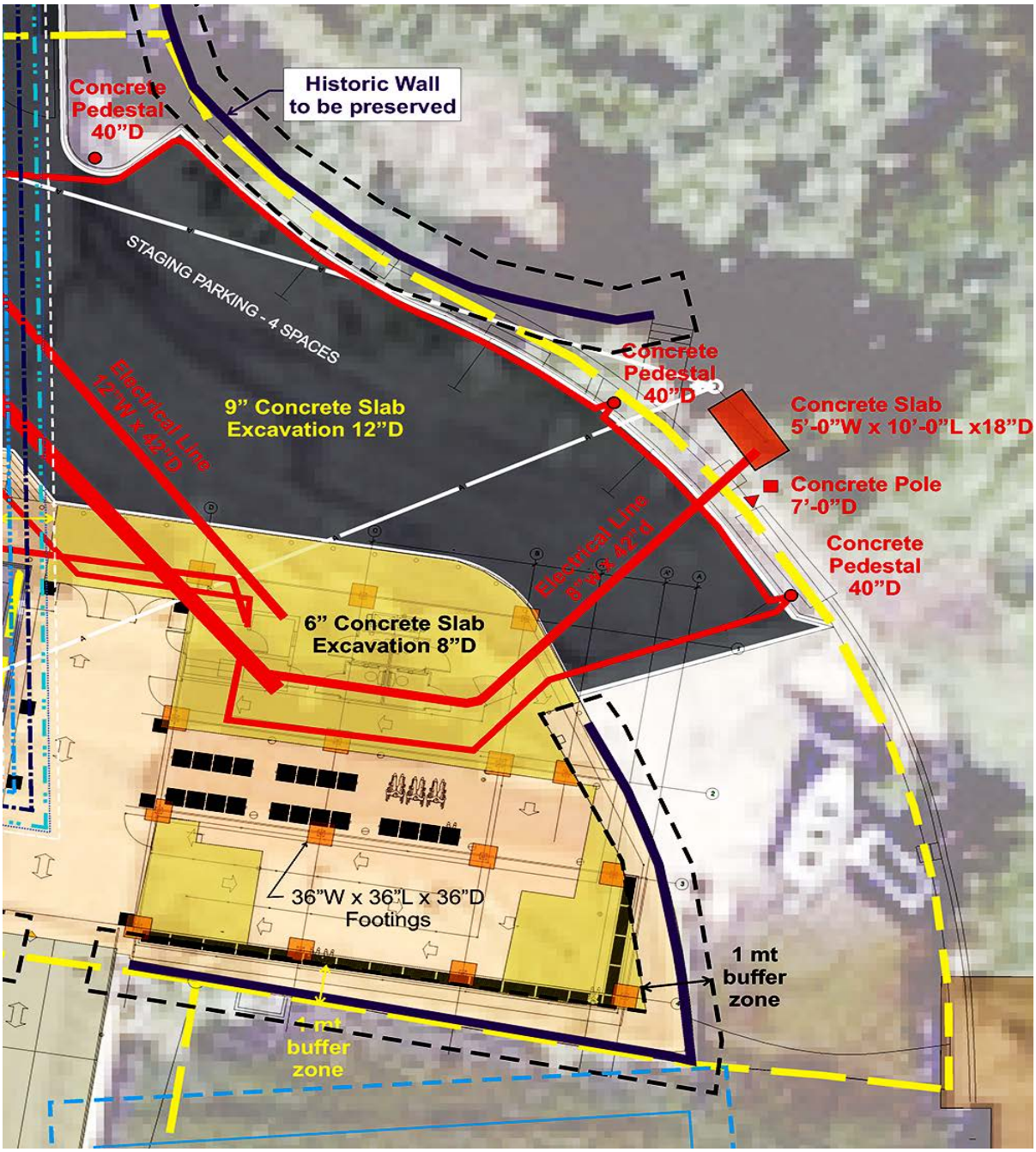

Figure 4. This area comprises the Light Green Construction Area of the Wharf and part of the Access Road Staging Area. Within the Light Green Area two 0.50 by 2.00 meter trenches will be excavated where the electrical lines intersect to a depth of 42" deep and where current grade will be excavated 8" to support a concrete slab. Possible remnants of previous wharfs, fills, pilings, water craft and an array of seafaring paraphernalia may be encountered. A third 0.50 by 2.00 meter trench will be excavated where a concrete support slab for an emergency generator cuts grade 18". Natural stratigraphy of the coastline and remnants of precolombian activity may be encountered and where overlaid historic maps indicate the possible existence of infrastructure.

Interviews

In addition to the aforementioned, the proposed intervention will carryout interview with local informants and established organizations such as the Fundación de Culebra, Inc. (Museo Histórico de Culebra), Autoridad de Conservación y Desarrollo de Culebra and USFWS - Culebra National Wildlife Refuge, to augment historical and lifeways data on San Ildefonso and Camp Roosevelt. It will also carry out a surface survey intentioned on locating and mapping all visible structural remains and artifacts refuse areas within the area of effect.

Standing Structures

Standing Structures will be described in terms of probable date of construction, construction materials and methodology, use or re-use, modifications, and potential contribution to the historic context they belong to and to the historic district in general. This description in required for any historic structure that will be impacted by the project construction activities, the L-shaped pier, the navy pier, bulkhead and boat ramps; and the access road and any structures along it (sidewalks, drainage ditches, stonewalls, etc.).

Excavation Units

The Project Site Plan [PSP], along with an overlay of historic cartographic documentation will be employed to locate sampling units deemed for excavation. Systematic control of the excavations will be obtained following the natural stratigraphy of the soil. Every unit, trench or test pit will be excavated to a depth of 1.00m, as a maximum. If any deposit where to extend itself beyond the established depth, excavation will continue until sterile soil is reached. Trenches will be excavated mechanically, units and test pits manually.

Laboratory Analysis

Initial analysis will focus on artifact type, style, origin and date of manufacture.

Interpretation - End of Field Report & Final Report

The investigation presumes to obtain sufficient data to determine the character and vertical extension of deposits and structures, their integrity and scientific importance and the way in which the proposed project may adversely affects them. Determine under which criteria the site/district is eligibility for inclusion to the National Registry of Historic Sites and put forth recommendations on how to avoid, minimize or mitigate any adverse effect on the cultural resources encountered.

The End of Field Report will include a detailed description of all the procedures employed, a preliminary analysis of the findings and a selection of diagnostic graphics. In addition, to presenting recommendations regarding the determination of need for any further cultural resources compliance measures of the Project Area for construction.

The final report will include a detailed description of all the procedures employed in the field as well as in the analisis of the retrieved artifact assemblage, presenting results, conclusions and recommendation on the handling of the cultural resources encountered. In addition to field notes, drawings, and a photographic documentation of all excavation procedures. All in accord with the guidelines of an "intensive archaeological and historic survey", as defined in the Secretary of the Interior's Standards and Guidelines on Archaeology and Historic Properties.

SYNOPSIS

For the Stage 2 Intensive Cultural Resources Survey, as per the present SOW and APE:

1. Eight (8) trenches measuring 0.50m x 2.00m will be excavated by mechanical means with final excavation being completed manually.

2. One (1) trench measuring 0.50m x 3.00m will be excavated by mechanical means with final excavation being completed manually.

3. One (1) 1.00m x 1.00m survey unit will be excavated manually.

4. A systematic surface survey will be carried out to locate and identify structural elements identifiable as cultural resources.

PROJECT SCHEDULES

The compliance work will begin immediately upon the receipt of an "Order to Proceed".It is understood that the fieldwork would be initiated during the month of October 2015 based upon the feasibility of ferry transport for in-field vehicle and housing logistics. Time frames listed below are calculated upon the SOW provided by ATKINS, however all efforts to comply with the requested schedule of the client will be made should these time frames need adjustment.

Mobilization and Prep .. . . . . 5 workdays
Fieldwork/Subsurface Testing/Structural Survey and Inventory . . . . . 9 workdays
Lab Processing/Structural Evaluations. . . . . 5 workdays
Analysis and Data Processing.. . . . . 4 workdays
Report Preparation, National Register Criteria and Graphics. . . . . 8 workdays

End of Field Report . . . . . 15 workdays
Total estimated project time [exempting weather delays]. . . . . 31 workdays

FEMA Conditions and procedures requested for the implementation of the intensive survey:

1. It is required that a SOI archaeologist be present in the field at all times during the archaeological intervention.

2. Submit a schedule or time-frame for the duration of the different activities of the intensive survey.

3. Notify FEMA of the starting day for the field work.

4. Submit a weekly progress report to FEMA for the duration of the intensive survey.

5. Notify FEMA immediately of any significant findings.

6. The end of field report, as well as the final report, will be submitted to FEMA for review and approval, before it is sent to the State Historic Preservation Office for final review and concurrence.

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PUERTO RICO
Oficina Estatal de Conservación Histórica
State Historic Preservation Office

August 25, 2015

Alejandro R. De La Campa
Disaster Recovery Manager
U.S. Dept. of Homeland Security
FEMA
Region II – Caribbean Area Division
P.O. Box 70105
San Juan, PR 00936 8105

SHPO 08-15-14-02 RECONSTRUCTION OF THE CULEBRA TERMINAL CARGO RAMP AND CONSTRUCTION OF ALTERNATE PIER AT SAN ILDEFONSO, CULEBRA, PUERTO RICO / FEMA-4017-DR-PR, HMGP PROJECT PR-0030

Dear Mr. De La Campa:

We acknowledge receipt on July 28, 2015 of the intensive survey work plan, (dated July 14, 2015) prepared for the above referenced project. Implementation of this survey plan will assist in determining whether properties eligible for listing in the National Register of Historic Places are located within the project's area of potential effects. However, terms, such as "National Registry of Historic Sites" (see page 23) and "Secretary of the Interior's Standards and Guidelines on Archaeology and Historic Properties" (pages 5 and 23) should be corrected to "National Register of Historic Places" and "Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation," respectively, to avoid any ambiguity as to what criteria or standards are to be employed.

If you have any questions regarding this matter, please contact Miguel Bonini at (787) 721-3737 or mbonini@prshpo.pr.gov.

Sincerely,

Diana López Sotomayor

Diana López Sotomayor, Archaeologist
State Historic Preservation Officer

DLS/NPT/BRS/MB

Cuartel de Ballajá (Tercer Piso),
Calle Norzagaray, Esquina Beneficencia, Viejo San Juan, P.R. 00901

PO Box 9023935, San Juan, P.R. 00902-3935
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SHPO
OECH
OFICINA ESTATAL DE CONSERVACIÓN HISTÓRICA
OFICINA DEL GOBERNADOR
STATE HISTORIC PRESERVATION OFFICE
OFFICE OF THE GOVERNOR

U.S. Department of Homeland Security
Region II - Caribbean Area Division
P.O. Box 70105
San Juan, Puerto Rico 00936-8105

FEMA

July 21, 2015

Oficina Estatal de Conservación Histórica
JUL 2015
Área de Recepción

Ms. Diana López Sotomayor
Executive Director
State Historic Preservation Office
P.O. Box 9023935
San Juan, PR 00902-3935

RE: SHPO # 08-15-14-02
NHPA Section 106 Consultation
FEMA-4017-DR-PR, HMGP Project PR-0030
Puerto Rico Ports Authority: Reconstruction of the Culebra Terminal Cargo Ramp and Construction of Alternate Pier at San Ildefonso, Culebra, Puerto Rico

Dear Archaeologist López:

This communication is a follow-up to the Section 106 consultation for the Construction of an Alternate Pier at San Ildefonso, Ensenada Honda Bay, Culebra, Puerto Rico. On your letter dated August 22, 2014, FEMA received concurrence for the implementation of an intensive survey (archaeological and historical assessment) consistent with the *Secretary of the Interior's Standards and Guidelines on Archaeology and Historic Properties.*

In September 4, 2014 the applicant was notified of the State Historic Preservation (SHPO) concurrence with the Federal Emergency Management Agency (FEMA) determination and the request for an intensive survey. A draft work plan for the intensive survey was also provided. The feasibility of the project was under consideration by the proponent for a period of time, until it was decided to go ahead with the San Ildefonso alternate pier.

The applicant submitted a Phase I archaeological survey (Land and Underwater) on January 13, 2015, as an Appendix to the December 2014 *DRAFT Environmental Assessment* prepared by their consultant. This report was reviewed by FEMA's Historic Preservation Specialist, and returned to the applicant with comments and a request for the intensive survey work plan.

Oficina Estatal de Conservación Histórica
JUL 28 2015
Área de Recepción

A work plan for the intensive survey was submitted by the consultant on July 14, 2015. It was written to complete the information required beyond the archival and underwater research already conducted for the Phase I survey. This work plan was reviewed by FEMA and some recommendations were made regarding the location and size of the excavation units.

The document also includes a description of the most recent scope of work (as of May 15, 2015) for the San Ildefonso alternate pier construction project and a conceptual drawing for the totality of the project area. The information provided for the pier and upland area improvements include:

1) Demolition of the existing historic pier concrete platform-bulkhead. Construction of a new platform 18" thick, which extends beyond the limits of the existing one, over the historic sea wall and boat ramp on the west side of the wharf.
2) Excavation 12" depth in the existing parking area in front of the historic wharf for a new concrete slab.
3) Excavations of various trenches for the installation of underground electrical lines to a depth of 42" and footings (36x36x36 inches) in the historic wharf area, and a concrete slab in the grass area on the east side wharf.
4) Excavation to a depth 40" for 4 concrete pedestals and to a depth of 7 feet for 2 concrete poles, located around the wharf area.
5) Rebuild access road for heavy traffic with removal of the existing pavement and grading to 12" in depth, for a length of 375 feet and new width of 22 feet.
6) Widening of the access road by 10 feet on each side, for a length of some 300 feet, with demolition of existing curb and gutter and grading 12" depth. This will provide space to add parallel parking on the east side of the road and extend the road surface on the west side to a new width of 22 feet.
7) Construction of parking lot on the west side of the road, which measures approximately 50 x 300 feet and includes grading 12" from surface. Set up a staging area of 60 x 80 feet at the north end of proposed parking area. No information has been provided about drainage or light poles for the road and parking areas.

The construction scope of work for the underwater area also presents a number of modifications, like the number of piles to be driven in the sea floor: eight piles 18" diameter for the new dock bulkhead; six piles 14" diameter for the pontoon platform; and

ten piles 14" diameter for a pile cap fender. The underwater project area 300 feet long by 122 feet wide was included in the underwater archaeological survey already conducted.

Enclosed for your revision is the proposed work plan for the intensive survey. Also enclosed are copies of the terrestrial and underwater Phase I surveys already conducted and FEMA's comments.

FEMA appreciates your continued cooperation in the review of federally funded projects. Should you have any questions or require additional information, please contact Mr. José E. Ayala, Environmental Specialist, at (787) 296-3500 or by email at Jose.Ayala3@fema.dhs.gov.

Sincerely,

Alejandro R. De La Campa
Disaster Recovery Manager

Enclosures

c: Mr. Miguel A. Rios, Governor's Authorized Representative
Ms. Ingrid Colberg Rodriguez, Executive Director, Puerto Rico Ports Authority

MJMM/Culebra/HMGP-4017 Project PR-0030

ENCLOSURES:

Evaluación Arqueológica Terrestre y Subacuática, Fase IA- IB. Proyecto: "San Ildefonso Proposed New Cargo Facility, Culebra, PR". Sometido a ATKINS. Presentado por Arqueología, Inc.: Adalberto Maurás Casillas, Investigador Principal, Autor; Juan Carlos Acevedo, Investigador, Co-Autor. 28 de octubre de 2014.
This report is to be included as Appendix A of the *Environmental Assessment for the Reconstruction of the Culebra Cargo Ferry Terminal*, Prepared by ATKINS for Puerto Rico Ports Authority, Draft December 2014.

Evaluación Arqueológica Subacuática Fase IA-IB, para el Proyecto "San Ildefonso Proposed New Cargo Facility", Culebra, P.R. by Richard Fontánez Aldea, Arqueólogo Subacuático e Historiador Marítimo, Agosto 2014.

FEMA comments to the Phase I Archaeology Survey, dated March 10, 2015.

San Ildefonso Proposed New Cargo Facility, Culebra, PR
Intensive Survey Work Plan (Archaeological and Historical Assessment)
Prepared by: Adalberto Maurás Casillas, Arqueología, Inc., July 14, 2015
Prepared for: ATKINS

FEMA comments to the Intensive Survey Work Plan, July 16, 2015.

ATKINS: San Ildefonso Green Areas Photo documentation, April 1, 2015.

U.S. Department of Homeland Security
Region II - Caribbean Area Division
P.O. Box 70105
San Juan, Puerto Rico 00936-8105

FEMA

March 24, 2015

Mr. Miguel A. Ríos
Governor's Authorized Representative
Commonwealth of Puerto Rico
P.O. Box 194140
San Juan, PR 00919-4140

Re: National Historic Preservation Act (NHPA)
Section 106 Compliance Review Process
FEMA-4017-DR-PR, Project-0030
Structural Rehabilitation of Culebra's Cargo
Puerto Rico Ports Authority (PRPA)

Dear Mr. Ríos:

On January 13, 2015, we received by email two reports by PRPA regarding the Intensive Archaeological and Historic Survey for the rehabilitation of the Culebra Pier Cargo Ramp at Dewey and rehabilitation of alternate dock at San Ildefonso Cargo Facility.

Based in the process of fulfilling our responsibilities under Section 106 of the NHPA, and after a thorough revision of the submitted information, the Federal Emergency Management Agency (FEMA) has the following comments and recommendations (see enclosures).

We are requesting PRPA to incorporate the suggested changes to the mentioned survey and submit them to us no later than April 15, 2015.

The PRPA must be advised that in accordance with Title 44 of the Code of Federal Regulations (CFR) §206.438(d), if the mitigation measure is not completed on the established date and there is no adequate justification for this non-compliance, no federal funding would be provided for this measure.

Should you have any questions or require additional information, please contact Mr. Sonny F. Beauchamp, HMA Coordinator, at (787) 296-3500.

Sincerely,

Alejandro R. De La Campa
Disaster Recovery Manager

c: Mr. Iván R. Orlandi Cabán, Alternate GAR
Mrs. Ingrid Colberg Rodríguez, Executive Director, Ports Authority
Mrs. Carel Velázquez Pola, SHMO

Hazard Mitigation Grant Program (HMGP) FEMA-4017-DR-PR, Project PR-0030: Puerto Rico Ports Authority, Reconstruction of the Culebra Terminal Cargo Ramp at Dewey and construction of alternate dock at San Ildefonso, Culebra, Puerto Rico.

NHPA Section 106 compliance review process: comments to the intensive archaeological and historical survey for the proposed San Ildefonso Cargo Facility, Culebra, two reports received by email on January 13, 2015.

Evaluación Arqueológica Terrestre y Subacuática, Fase IA- IB. Proyecto: "San Ildefonso Proposed New Cargo Facility, Culebra, PR". Sometido a ATKINS. Presentado por Arqueología, Inc.: Adalberto Maurás Casillas, Investigador Principal, Autor; Juan Carlos Acevedo, Investigador, Co-Autor. 28 de octubre de 2014.

This report is to be included as Appendix A of the *Environmental Assessment for the Reconstruction of the Culebra Cargo Ferry Terminal*, Prepared by ATKINS for Puerto Rico Ports Authority, Draft December 2014.

The area of potential effects for the San Ildefonso pier is located inside an archaeological and historical sensitive area. The totality of the peninsula can be considered a historic district that has the potential to present significant remains from at least three different occupations: the Late Cedrosan Saladoid prehistoric occupation as documented in the Lower Camp Site, with radio carbon date A.D. 642 (1350 years ago); the late Spanish Colonial occupation, represented by the town of San Ildefonso (1880-1903); and the U.S.A. Navy occupation represented by Camp Roosevelt (1903 to 1975). The historic district is eligible for inclusion in the National Register of Historic Places (NRHP). There are standing historic structures and there is the potential to encounter archaeological remains of these occupations underneath the floor platforms, sidewalks, pavement areas and roads. Therefore, FEMA initiated a Section 106 consultation process under the National Historic Preservation Act (NHPA) with the State Historic Preservation Office (SHPO). Following are the review comments made by FEMA's Historic Preservation Specialist. Once a revised report is submitted and accepted by FEMA, it will be forward to SHPO for their review and concurrence.

1. Introduction

FEMA submitted this project to the SHPO as part of the NHPA Section 106 consultation process. In response, SHPO concurred with the recommendation that further identification and evaluation efforts were necessary at the San Ildefonso alternate pier's area of potential effect, in order to assess project effects on historic properties. As such, SHPO recommended an intensive survey (archaeological and historical assessment) consistent with the *Secretary of the Interior's Standards and Guidelines on Archaeology and Historic Properties* (SHPO 08-15-14-02 ,dated 08/22/2014). A statement of compliance with the standards and guidelines should be included in the introduction.

It appears as if the FEMA's determination and section 106 consultation letter, as well as SHPO's response was not provided to the archaeologist, as they are not mentioned in the reports. SHPO

requested that the intensive survey work plan be provided for their review and concurrence prior to its implementation. As this step was not taken, it is now requested that a detailed work plan that complies with the objectives of the intensive archaeological and historic survey, as defined in the standard and guidelines, be included in the report. According to the *Secretary of the Interior's Guidelines for Identification*:
"… Intensive survey is most useful when it is necessary to know precisely what historic properties exist in a given area or when information sufficient for later evaluation and treatment decisions is needed on individual historic properties. Intensive survey describes the distribution of properties in an area; determines the number, location and condition of properties actually present within the area; permits classification of individual properties; and records the physical extent of specific properties. An intensive survey should document:

1. The kinds of properties looked for;
2. The boundaries of the area surveyed;
3. The method of survey, including an estimate of the extent of survey coverage;
4. A record of the precise location of all properties identified; and
5. Information on the appearance, significance, integrity and boundaries of each property…."

2/3. Project Description and Area of potential effects

The area of potential effects needs to be clearly defined and identified in the graphics. The conceptual drawing for the San Ildefonso parking layout and access road improvements presented in the archaeological survey (Figures 1 and 2) is not the same as the one presented in the Draft Environmental Assessment (DEA) Figures 5 and 17. This is an important issue as the project is located inside a significant historic district eligible for inclusion in the National Register and has implications for the area to be covered by the intensive archaeological survey. The scope of work for the field methodology and testing was prepared to address only 10 feet widening of the access road on its west side for a length of 365 feet (on page 10 the narrative indicates widening of 7 meters on the west side) . The DEA points out that the modifications to the upland area "…include the widening of the existing access to the required width with a loop lane that will allow an uninterrupted flow of traffic and the creation of approximately 30 parking spaces". Figures 5 and 17 of DEA show the widening of the existing road to accommodate two traffic lanes; 9 parallel parking spaces on the east side (about 10 feet wide and 300 feet long); a parking lot for 24 cars on west side (about 50 feet wide and 300 feet long); and road improvements up to the intersection with the access road for USFWS facilities, for a total length of 500 feet. It also appears that the northeast limit of the existing parking area in front of the pier will be extended to the north. A new road to access a building on the west side of the road is also portrait (building constructed sometime between 2006 and 2013).

It is required that an accurate conceptual parking and access road improvement drawing is included in the report, in order to properly define the area of potential effects to be considered for the intensive archaeological and historic survey.

5/7. Prehistoric background/Previous archaeology reports

In Figure 4, the location of Lower Camp Site (IC-9) (CU-0100010) is misplaced and the site of San Ildefonso and Camp Roosevelt (IC-13) (CU-0100011) is not indicated.

The prehistoric background section includes a general summary of the prehistory of Puerto Rico (pages 16-22). However, this section does not include a discussion about the prehistoric archaeology of Culebra. The report only includes a list of reported sites on page 23. There is no discussion of the types of prehistoric sites, their location, occupations represented or findings reported for Culebra. The results and findings of previous archaeological reports are not integrated into the discussion. Particularly, there is no discussion of the Lower Camp Site, located in the peninsula just 125 meters east of the project area. The narrative and discussion of the historic context and potential archaeology does not take into consideration the Late Cedrosan Saladoid prehistoric occupation of the peninsula – with radio carbon dates A.D. 642 (1350 years ago), as reported in the Lower Camp Site data recovery investigations (Oliver 1992). This information is relevant to the prehistoric occupation of the peninsula and the potential archaeology of the project area, and needs to be addressed in the discussion.

There is a new building on the west side of the road constructed sometime between 2006 and 2013. Was there any archaeological survey conducted for this construction?

3/10a. Historic background and historic cartography review

The report includes a section in the historic background of the peninsula, covering the late Spanish colonial occupation by the town of San Ildefonso from 1880-1903 and the US Navy Camp Roosevelt occupation during the first three quarters of the 20th century. A number of very useful historic maps and sketches are presented. The section on historic cartographic review provides a chronological sequence of historic maps and sketches of the peninsula, with an overlay of the proposed area of potential effects. However, the report does not demonstrate how this valuable information was used in the design of the field methodology. It is recommended that the report includes a map of expected archaeology as a justification for the field testing and documentation design and methodology. For example, if the access road was built by the Navy as early as 1906, it can be expected that it sealed remains of the previous San Ildefonso occupation or even prehistoric remains.

The investigators should also consider referring to the 1944 "Map of the U.S. Naval Reservation in Culebra Is., P.R., showing conditions on June 30, 1944". It is included in Martinez Garayalde report, where she indicates the historic structures still standing in 2002. It depicts the US Navy facilities at this time, including the pier and boat ramps still standing today, the access road with the same configuration as today, and the existing facilities on both sides of the road (stonewall sidewalk, buildings, etc.).

Martínez Garayalde, Marisol, 2002. Proyecto Rehabilitación a la planta de tratamiento de agua por osmosis reversible en la isla municipio de Culebra (Planta Desalinizadora). Evaluación Arqueológica Fase IA, Revisada. Autoridad de Acueductos y Alcantarillados.

8/9c. Field methodology and results of survey

The field design and methodology must address the area of potential effects, as it needs to be clarified (see item 2/3 above), and must be adequate to the archaeological sensitivity of the project area. It is not justified that the subsurface testing was detained due to the presence of utility lines. The excavations could have been moved to an area outside of the impact from the utility trench, which the report indicates was only 27 cm wide and 50 cm deep. It is recommended that an as built plan of the project area, with existing utilities, be provided to the investigators. Also suggest the use of a small excavator, rather than a digger, for better control of the excavation.

The area of potential effects merits further subsurface testing. At this time FEMA will request that a sketch with the location of the excavations be submitted for review before implementation. The field testing should be directed to the expected archaeology, as observed in the historic cartographic documentation available. For example, since the road is assumed to be in existence since at least 1906, placing a test unit at the edge of the asphalt could determine if there are previous road surfaces, structures, archaeological remains or intact soils underneath the road.

9b. Standing historic structures

The report presents photos of the standing historic structures in the area of potential effects and indicates they all correspond to the Camp Roosevelt or Culebra Naval Reservation occupation. The location of the historic standing structures in the area of potential effects needs to be plotted in an overlay to the project conceptual layout, to determine which ones could be affected by the construction project. For example:

- If the area of potential effects extends to the east side of the access road, will the historic sidewalk and stone wall be affected?
- The drainage canal, where it is located, will it be affected?
- The existing bulkhead, the conceptual drawing indicates it will be reconstructed, will it be affected?
- The wall of the west ramp (figure 37), will it sustain the weight of the traffic and cargo vehicles?

The historic structures need to be briefly described in terms of probable date of construction, construction materials and methodology, use or re-use, modifications, and potential contribution to the historic context they belong to and to the historic district in general. This description in required for any historic structure that will be impacted by the project construction activities, the L-shaped pier, the navy pier, bulkhead and boat ramps; and the access road and any structures along it (sidewalks, drainage ditches, stonewalls, etc.).

As indicated above (see item 3/10a), the investigators should consider referring to the 1944 “Map of the U.S. Naval Reservation in Culebra Is., P.R., showing conditions on June 30, 1944”.

10. Conclusions and recommendations - NRHP Eligibility criteria

The report concludes that: the port facilities are testimony of the integrity of the physical and cultural landscape of the former navy reservation; the project is located inside an area with archaeological sensitivity; the perimeter or footprint of the occupation, terrestrial and marine, can be classified as a cultural district; and the district is eligible for inclusion in the National Register of Historic Places under Criteria A, B, C, and D.

The investigators have to explain the significance and eligibility of the historic district in terms of the three historic contexts represented. The eligibility should be justified under each criterion individually. Please refer to the NPS guidelines available at:
http://www.nps.gov/nr/publications/bulletins/nrb15/Index.htm

At the end, the investigator recommends archaeological monitoring of the excavation activities on land. We do not support this recommendation at this time. As indicated in item 8/9a above, we understand the area needs further evaluation before making a determination. The historic properties inside the area of potential effects most be evaluated according to the parameters of an intensive survey, consistent with the *Secretary of the Interior's Standards and Guidelines on Archaeology and Historic Properties*

11. References
References should follow the citation style indicated in the Guidelines for preparing an environmental assessment for FEMA.

12. Other comments
In the PDF version of the report received by email, some of the pictures were displaced and are not visible, or covered the text (pages 48-49, 59-62).

Attachment 1. Underwater archaeology survey
Evaluación Arqueológica Subacuática Fase IA-IB, para el Proyecto "San Ildefonso Proposed New Cargo Facility", Culebra, P.R. by Richard Fontánez Aldea, Arqueólogo Subacuático e Historiador Marítimo, Agosto 2014.

The underwater archaeology evaluation covered an area of 300 feet long by 122 feet wide, project area as indicated in the proposed layout plan for the auxiliary cargo ferry terminal at San Ildefonso (ATKINS). The methodology implemented for the underwater archaeology survey provides an adequate evaluation of the proposed project area.

1.1. Muelle San Ildefonso: the bulkhead and sunken pier (pages 22-26; 41-43)
The archaeologist indicates they do not have a construction date for the "L" shaped concrete dock, which according to historic cartographic data already existed in the 1944 Navy Map.

The interpretations about the previous docks, changes of the wharf area, and changes in the coastline should be revised using the historic cartography available: 1887 map, 1897 map, 1903 sketch, 1906 map, and 1944 station site plan. The configuration in the 1944 plan is similar to the one observed in the 1964 aerial photo.

The proposed project includes the reconstruction of the existing bulkhead in the west side, where the new dock will be attached to the wharf. An evaluation of this historic structure, as part of the historic district, should be provided (included existing dock and submerged section; bulkhead and boat ramps) – as indicated in the review of the terrestrial archaeology report.

1.2. Recommendation of underwater archaeology

1. Conduct archaeological monitoring during the installation of the steel piles and in the case that the following activities are planned: dredging, modification of the coast line, modification of the bulkhead or the removal of the section of the "L" shaped dock that is submerged.
2. Establish a 100-feet wide buffer zone between the construction area and the shipwreck on the east side. If the buffer zone cannot be established, a Phase II archaeological evaluation is recommended.
3. Recommend a phase IB survey for the designated turning area, as this area was not included in this evaluation and the ferry propeller washer can cause damage to the marine floor and impact cultural resources.

We recommend that the investigator reviews these recommendations in accordance with the revised scope of work presented by ATKINS since this survey was undertaken.

Draft environmental Assessment (December 2014)

The comments about cultural resources (section 5.5; summary table 5.7; section 6.2) should be considered tentative until the review of the archaeological report is completed and approved by FEMA and SHPO. Section 7.2: should include correspondence and comments from SHPO.

The archaeology reports most comply with SHPO's request for an intensive survey (archaeological and historic assessment). A list of comments is provided. The subsurface testing conducted in the upland area of potential effects is not adequate. It is necessary to know precisely what historic properties are inside the project area. Each of the historic properties identified in the area of potential effects needs to be evaluated in order to accurately determine any effects on historic properties.

Prepared by:
Marisol J. Meléndez Maíz
EHP Historic Preservation Specialist
FEMA, Region 2, Caribbean Area Division
March 10, 2015

U.S. Department of Homeland Security
Region II- Caribbean Area Division
P.O. Box 70105
San Juan, Puerto Rico 00936-8105

FEMA

September 4, 2014

Mr. Miguel A. Ríos
Governor's Authorized Representative
Commonwealth of Puerto Rico
P.O. Box 194140
San Juan, PR 00919-4140

Re: Hazard Mitigation Grant Program
FEMA-4017-DR-PR, Project-0030
First Phase of the Structural Rehabilitation of Culebra's Cargo Ports Authority

Dear Mr. Ríos:

On August 26, 2014, we received correspondence from Archaeologist Diana López Sotomayor, State Historic Preservation Officer (SHPO), requesting the comprehensive performance of an Archaeological and Historical Assessment to confirm any potential effects of the above mentioned project, on the San Ildefonso Pier area in the Municipality of Culebra.

This study identifies the presence or absence of cultural resources of architectural, archaeological and/or historic significance on projects to be performed as required by the National Historic Preservation Act of 1966, as amended, and Title 36 of the Code of Federal Regulations (CFR) Part 800.

The SHPO emphasizes that any earth movements or construction shall not commence in the project area until the Section106-review process, as codified in 36 CFR Part 800, has concluded. To this effect, we are requesting a certification from the Puerto Rico Ports Authority establishing the strong commitment to perform the Archaeological and Historical Assessment. Moreover, a modification of the project's budget should be submitted in which the cost of the required study must be included for our review.

Attached please find copy of SHPO letter and the Scope of Work for the Archaeological and Historical Assessment. Should you have any questions or require additional information, please contact Mr. Sonny F. Beauchamp, HMA Coordinator, at (787) 296-3500.

Sincerely,

Alejandro R. De La Campa
Disaster Recovery Manager

c: Mr. Iván R. Orlandi Cabán, Alternate GAR
Mrs. Carel Velázquez Pola, SHMO
Mr. Víctor A. Suárez Meléndez, Executive Director, Ports Authority
Mrs. Diana López Sotomayor, Archaeologist, SHPO

4531

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PUERTO RICO
Oficina Estatal de Conservacion Histórica
State Historic Preservation Office

August 22, 2014

Alejandro R. De La Campa
Disaster Recovery Manager
U.S. Dept. of Homeland Security
FEMA
Region II – Caribbean Area Division
P.O. Box 70105
San Juan, PR 00936-8105

26 AUG 14 PM 01:48 FEMA

SHPO 08-15-14-02 RECONSTRUCTION OF THE CULEBRA TERMINAL CARGO RAMP AND CONSTRUCTION OF ALTERNATE PIER AT SAN ILDEFONSO, CULEBRA, PUERTO RICO / FEMA-4017-DR-PR, HMGP PROJECT PR-0030

Dear mister De La Campa:

Our Office received correspondence on August 15, 2014 regarding the above referenced project. We concur with your recommendation that further identification and evaluation efforts are necessary at the San Ildefonso location in order the assess project effects on historic properties. The Secretary of the Interior's Standards and Guidelines on Archeology and Historic Preservation provide standards and guidelines regarding identification and evaluation of historic properties. Consistent with these standards and guidelines we recommend that an **intensive survey** (identified in your letter as an **archaeological and historical** assessment) be carried out within the San Ildefonso pier's area of potential effects.

If you have any questions regarding this matter, please contact Miguel Bonini at (787) 721-3737 or mbonini@prshpo.gobierno.pr.

Sincerely,

Diana López Sotomayor

Diana López Sotomayor, Archaeologist
State Historic Preservation Officer

DLS/NPT/BRS/MB

Cuartel de Ballajá (Tercer Piso),
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SHPO
OECH
OFICINA ESTATAL DE CONSERVACIÓN HISTÓRICA
OFICINA DEL GOBERNADOR
STATE HISTORIC PRESERVATION OFFICE
OFFICE OF THE GOVERNOR

NHPA Section 106 compliance: Scope of work for intensive archaeological/historical survey
Hazard Mitigation Grant Program (HMGP) FEMA-4017-DR-PR, Project PR-0030
Reconstruction of the Culebra Terminal Cargo Ramp at Dewey; and
construction of new alternate – permanent dock at San Ildefonso, Culebra, Puerto Rico

Project description:
The Puerto Rico Ports Authority has applied for financial assistance from the U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA), to reconstruct the Culebra Ferry Terminal Cargo Platform, located in Dewey, Culebra, Puerto Rico. FEMA is proposing to fund the project through the Hazard Mitigation Grant Program (HMGP) under the Presidential disaster declaration FEMA 4017-DR-PR for Hurricane Irene, of August 27, 2011. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

The reconstruction of the Dewey, Sardinas Bay Cargo Ramp is estimated to take 8 months. To maintain the operations during construction, the Ports Authority proposes to habilitate an alternate cargo pier at San Ildefonso, Ensenada Honda Bay, at the wharf previously used by the Department of Natural and Environmental Resources (DNER).

Location and resource:
The construction of an alternate (permanent) dock at **San Ildefonso**, Ensenada Honda, which will be utilized during the reconstruction of the existing cargo ramp and kept as a permanent facility. The San Ildefonso project is within an area of reported historic and archaeological resources from at least three different occupation periods. Coordinates 18.306272, -65.283611

Existing conditions:
The small existing pier at San Ildefonso, Ensenada Honda, needs to be modified and improved to handle the cargo operations during the reconstruction of the Sardinas Bay cargo platform. The configuration and proportions of the existing pier at San Ildefonso are the same as the 1944 Map of U.S. Naval Reservation in Culebra. The San Ildefonso pier has two existing boat ramps, located at either side of the 145 feet long bulkhead. The pier is about 50 feet wide. The Puerto Rico Aqueduct and Sewer Authority (PRASA) intake for the Culebra water desalinization plant is located at the center of the dock. The existing platform measures some 45 x 20 feet.

Proposed undertaking at the San Ildefonso pier:
The proposed construction project for the new alternate dock at San Ildefonso is still in its planning stages and the design plan has not been finalized. An Environmental Assessment will be conducted by the applicant in order to determine final design decisions. The proposed scope of work for the San Ildefonso pier construction will include a large variety of tasks:

1) Construction of new access and parking facilities: 24 meter parking spaces, 24 car holding spaces, 5 passenger bus spaces, drop off areas, etc.
2) Reconstruction of the access road from the pier to road PR-250, approximately 400 meters long.
3) Rehabilitation of existing pier and facilities (area of about 50 x 50 meters):
    a) new bulkhead 50’ long

   b) new 8” concrete slab (1922 SF)
   c) asphalt or concrete area 6664SF for cargo and vehicular lanes
   d) 6’6” perimeter fence (105 FTS) with 32”0” gate
   e) 42” perimeter guardrails (217 FTS)
   f) Platform to be demolished and reconstructed (845 SF)
   g) New aluminum boarding/de-boarding ramp 15’ long
   h) Reinforced concrete floating pontoon 30’ x 50’, anchored by four to six concrete anchor piles
   i) Ramp from floating pontoon to the pier (865 SF)
   j) ADA portable restroom trailer
   k) Ticket booth
   l) New covered passenger drop-off area
   m) Passenger holding area (3653 SF)
   n) new roof for existing structure (864 FTS)
4) Underwater work
   a) Installation of a new bulkhead 50’ long
   b) Installation of four to six concrete piles needed to anchor the floating pontoon
   c) A bathymetric survey will be conducted to determine if it is necessary to dredge the navigation channel and turning basin for the cargo ferry
   d) Additional buoy placement and anchorage to mark the navigation channel
   e) Activities related to the compensatory mitigation of impacts to endangered species, critical habitats, sea grass beds, mangroves
5) Evaluation of the capacity of road PR-250 and bridges to handle the traffic generated by the relocation of the cargo pier to San Ildefonso
6) Selection and habilitation of the staging areas

Area of Potential Effects (APE):
The area of potential effects for the San Ildefonso pier is located inside an archaeological and historical sensitive area. The totality of the peninsula can be considered a historic district that has the potential to present significant remains from at least three different occupations.
The San Ildefonso alternate pier is a complicated construction project with diverse areas of potential effects, including land and underwater areas. The areas of potential effects can be described as: the pier and facilities construction area; the new parking area and improved access road to PR-250; the underwater work in front of the pier for installation of new bulk head and piles; possible underwater work for the placement of buoy anchorage along navigation channel in Ensenada Bay; possible underwater work to dredge the navigation channel and turning basin for the cargo ferry; possible underwater work in areas to be determined for activities related to mitigation of impacts to endangered species, sea grass beds, critical habitats, etc.; and location of the project staging areas during construction.

Besides the area of potential effects for this project, consideration should be given to the future effects that the construction of a permanent pier and the improvements to the access road and parking facilities could have in attracting future development to the San Ildefonso area. It is

necessary to carefully consider the impacts of the proposed project, not just on individual elements or features of the district and their immediate area, but on the district as a whole.

Archaeology:
The area of potential effects for the San Ildefonso pier is located inside an archaeological and historical sensitive area. The totality of the peninsula can be considered a historic district that has the potential to present significant remains from at least three different occupations: the Late Cedrosan Saladoid prehistoric occupation as documented in the Lower Camp Site, with radio carbon date A.D. 642 (1350 years ago); the late Spanish Colonial occupation, represented by the town of San Ildefonso (1880-1903); and the U.S.A. Navy occupation represented by Camp Roosevelt (1903 to 1975). The historic district is eligible for inclusion in the National Register of Historic Places (NRHP). There is the potential to encounter archaeological remains of these occupations underneath the floor platforms, sidewalks, pavement areas and roads.

The archaeological excavations at Lower Camp Site (Oliver1992) uncovered an undisturbed midden, which yielded an unusually rich cached of faunal remains and a sizable quantity of artifacts made from different materials (ceramics, shell, stone, and coral). Two hearths were documented underneath the midden, suggesting a change in function from food processing to refuse area. The deposit may have been related to a domestic unit. The excavations also recovered historic artifacts.

The documentary and cartographic description for the late 19th century town of San Ildefonso de La Culebra indicates it was organized into a regular grid pattern with six east-west streets and five north-south streets. The town centered on the public plaza, and it had a church, a government house, a public dock, and a large public water tank. By 1894, 24 houses had been constructed in the town. Most of the town buildings were described as being constructed from locally available wood and covered with wooden shingles or straw thatch. The cemetery was located north of the town's center. In 1898 San Ildefonso had an area of 18 hectares. The 1902 and 1903 descriptions of town San Ildefonso make reference to the town public buildings like a catholic church built in 1890, a police station, two schoolhouses built in 1892, a tiny wharf, several streets and 62 houses of fair construction (Navy Report 1902; AGS 1903). During the 1985 archaeological survey, stone walls and artifact midden scattered throughout the peninsula were reported (Thomas 1985).

The US Navy established Camp Roosevelt in the center of San Ildefonso in 1903. The town's inhabitants were relocated to a narrow strip of mangrove swamp at Dewey, Sardinas Bay. Many of the late 19th century wooden buildings and some masonry buildings were destroyed by the Navy. Between 1904 and 1906, the Navy built a number of permanent masonry buildings. Facilities included barracks hospital, ice house, commissary store, marine barracks, wash house-bakery, guard house-canteen-reading room, commanding officer's office, blacksmith shop, quartermaster's store house, stable, oil house, store shack, boar shed and carpenter's shop, bath house, search light house, cistern, two cisterns (from Spanish town), existing wharf, proposed wharf, etc. The Navy modified the docking facilities in 1936. The actual configuration of the pier

at San Ildefonso is the same as the one depicted in the Map of U.S. Naval Reservation, Culebra, P.R., dated June 30, 1944.

The Ensenada Honda Bay has been the scenario of navigation and trading activities for hundreds of years. There is the potential to encounter underwater archaeological resources during the replacement of the bulkhead and installation of concrete piles to secure the floating pontoon. If it is necessary to dredge the navigation channel and turning basin for the cargo ferry, underwater archaeological reconnaissance is needed. The navigation channel and buoy anchorage placement has the potential to present underwater archaeological resources and remains of sunken boats.

Standing Structures:
The area of potential effects includes a number of historic standing structures, remains of the San Ildefonso town and the Camp Roosevelt facilities. The access road from the pier to road 250 appears to follow the same alignment as the road in the 1994 Navy map. There are a number of historic structures located along this road: stonewall, sidewalks, stone storehouses, cisterns, etc. The pier at San Ildefonso has the same configuration and dimensions as the pier in the 1944 Navy map, with a bulkhead 145 feet long, two boat ramps and a platform projection from the center of the pier. The addition of the intake for the PRASA desalinization plant appears to be the main alteration to the historic pier.

Determination:
The area of potential effects for the San Ildefonso pier is located inside an archaeological and historical sensitive area. The totality of the peninsula can be considered a historic district that is eligible for inclusion in the NRHP. The historic district has the potential to present significant remains from at least three different occupations: the Late Cedrosan Saladoid prehistoric occupation (AD 650); the town of San Ildefonso (1880-1903); and Camp Roosevelt, U.S. Navy (1903 to 1975). There is the potential to encounter archaeological remains of these occupations underneath the floor platforms, sidewalks, pavement areas and roads.

The pier at San Ildefonso has the same configuration and dimensions as the pier in the 1944 Navy map and is a contributing element to the historic district. A section of the pier will be affected by the proposed project.

The Ensenada Honda Bay has been the scenario of navigation and trading activities for hundreds of years. There is the potential to encounter underwater archaeological resources.

FEMA findings are that the scope of work for the construction of the San Ildefonso cargo pier and its related activities have the potential to affect historic properties and has initiated consulting with PR-SHPO as required under 36CFR800. In order to resolve this potential adverse effect, FEMA recommended that an archaeological and historical assessment be conducted for all the areas of potential effects (APE) on land and underwater.

SHPO has concurred with FEMA's recommendation that further identification and evaluation efforts are necessary at the San Ildefonso alternate pier's area of potential effect, in order to

assess project effects on historic properties (SHPO 08-15-14-02 dated 08/22/2014). SHPO recommends an intensive survey consistent with the *Secretary of the Interior's Standards and Guidelines on Archaeology and Historic Preservation,* be carried out within the San Ildefonso pier's area of potential effects.

Intensive archaeological and historical survey:
The intensive archaeological and historical survey for the San Ildefonso pier's area of potential effects must be consistent with the *Secretary of the Interior's Standards and Guidelines for Identification*. The investigator must meet the *Secretary of the Interior Professional Qualification Standards for Archaeology and Historic Preservation.*

According to the *Secretary of the Interior's Guidelines for Identification*:
"… Intensive survey is most useful when it is necessary to know precisely what historic properties exist in a given area or when information sufficient for later evaluation and treatment decisions is needed on individual historic properties. Intensive survey describes the distribution of properties in an area; determines the number, location and condition of properties actually present within the area; permits classification of individual properties; and records the physical extent of specific properties. An intensive survey should document:

1. The kinds of properties looked for;
2. The boundaries of the area surveyed;
3. The method of survey, including an estimate of the extent of survey coverage;
4. A record of the precise location of all properties identified; and
5. Information on the appearance, significance, integrity and boundaries of each property…."

The intensive archaeological and historical survey for the San Ildefonso pier should start with a clear statement of the project's area of potential effects. The survey should include the following:

(1) Archival and cartographic research directed at the specific cultural context of the project area and the three possible periods of occupation (including underwater);
(2) Interviews with local informants;
(3) Intensive systematic surface reconnaissance, with mapping of visible structural remains and artifacts refuse areas;
(4) A statement of what type of resources can be expected and their location – expected archaeology;
(5) Selection of areas for exploratory excavations, with reference to expected archaeology;
(6) Exploratory excavations to determine the integrity of archaeological resources;
(7) Documentation of features, remains and structures identified;
(8) Classification of artifacts;
(9) Analysis of the results: determination of integrity, research potential;
(10) Presentation of written technical report with the result of the investigation, with pertinent photos, maps and drawings.

The underwater intensive archaeological and historical survey should also include: reconnaissance of areas to be impacted by construction new bulkhead and installation of concrete piles; and any other underwater area to be impacted once the project draft design is available.

References:

Annual Report of Navy Department for the Year 1902. Report of the Secretary of the Navy. Miscellaneous Reports. Congressional Edition, Volume 4455, pp. 975-979 (http://books.goggle.com).

Haeselbarth, A.C., 1903. Culebra Island. *Bulletin of the American Geographical Society* (AGS), Vol. 35, No. 2, pp. 125-130 (http://www.jstor.org/stable/198753).

Map of U.S. Naval Reservation, Culebra Is., P.R., showing conditions on June 30, 1944 (copy in Martinez Garayalde 2002)

Martínez Garayalde, Marisol, 2002. Proyecto Rehabilitación a la planta de tratamiento de agua por osmosis reversible en la isla municipio de Culebra (Planta Desalinizadora). Evaluación Arqueológica Fase IA, Revisada. Autoridad de Acueductos y Alcantarillados.

Oliver, José R., 1992. Results of the Archaeological Testing and Data Recovery Investigations at the Lower Camp Site, Culebra Island National Wildlife Refuge, Puerto Rico. Garrow & Associates, Inc.

Sketch map. Plan view of the town of San Ildefonso (1881-1902) and U.S. Navy Installations (1902) (copy in Oliver 1992).

Thomas, Ronald A., 1985. A Stage IA Culture Resource Survey: Culebra Wastewater Facilities Project, Culebra Island, Puerto Rico. MAAR Associates Inc., Newark, Delaware.

U.S.F.W.S. Section 106 Consultation Letter to PR-SHPO dated August 10, 2006, for the proposed Administrative Office, Culebra, (1344-square foot building), within the footprint of the Refugee's former Office and staff quarters (copy on file at PR-SHPO).

Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (as amended and annotated). http://www.nps.gov/history/local-law/arch_stnds_0.htm

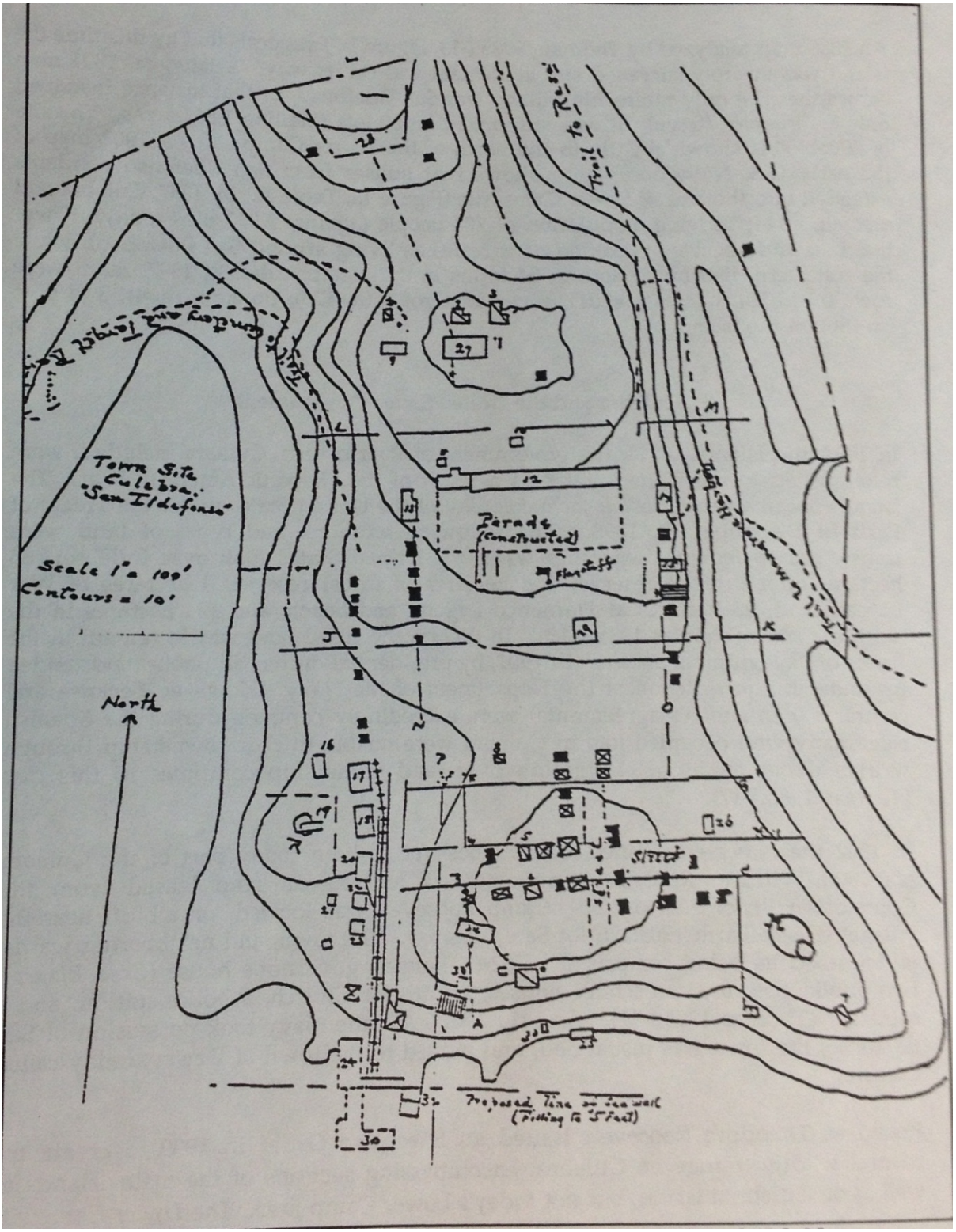
Maps:

1881. Emplazamiento del pueblo de San Ildefonso.
1902. Sketch map of Navy facilities in San Ildefonso
1944. Map of Navy facilities in San Ildefonso

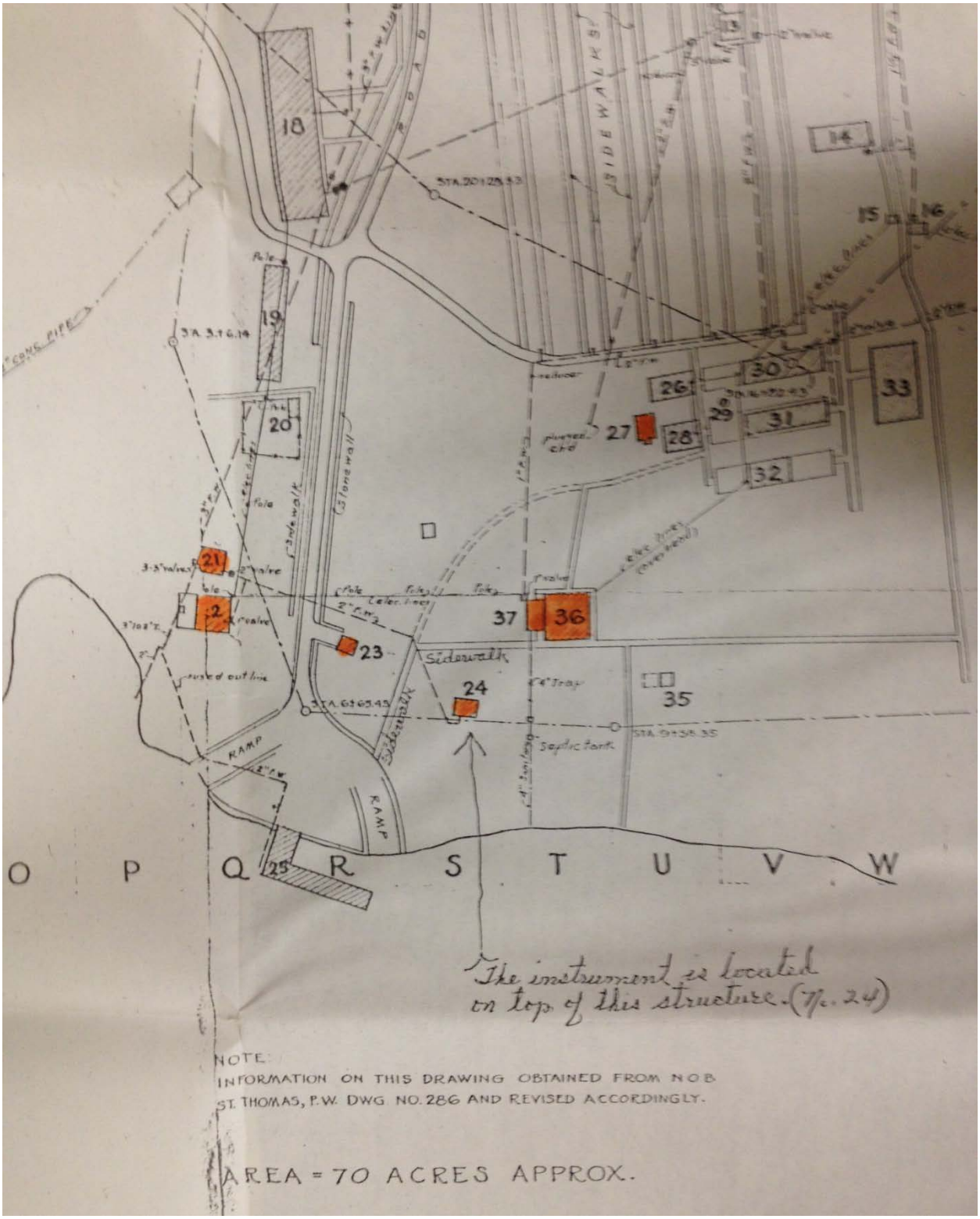
Prepared by:

Marisol J. Meléndez Maíz
Historic Preservation Specialist
FEMA Region 2, CAD
September 8, 2014

Map of the town of San Ildefonso, Culebra, 1881



Sketch of the USA Navy Camp Roosevelt facilities under construction, in the area of the town of San Ildefonso (1903).



Map of the south section Camp Roosevelt in 1944. The dock is similar in dimensions and configuration to the existing one.

4531

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Oficina Estatal de Conservacion Histórica
State Historic Preservation Office

August 22, 2014

Alejandro R. De La Campa
Disaster Recovery Manager
U.S. Dept. of Homeland Security
FEMA
Region II – Caribbean Area Division
P.O. Box 70105
San Juan, PR 00936-8105

26 AUG 14 PM01:48 FEMA

SHPO 08-15-14-02 RECONSTRUCTION OF THE CULEBRA TERMINAL CARGO RAMP AND CONSTRUCTION OF ALTERNATE PIER AT SAN ILDEFONSO, CULEBRA, PUERTO RICO / FEMA-4017-DR-PR, HMGP PROJECT PR-0030

Dear mister De La Campa:

Our Office received correspondence on August 15, 2014 regarding the above referenced project. We concur with your recommendation that further identification and evaluation efforts are necessary at the San Ildefonso location in order the assess project effects on historic properties. The Secretary of the Interior's Standards and Guidelines on Archeology and Historic Preservation provide standards and guidelines regarding identification and evaluation of historic properties. Consistent with these standards and guidelines we recommend that an **intensive survey** (identified in your letter as an **archaeological and historical** assessment) be carried out within the San Ildefonso pier's area of potential effects.

Please provide us with an intensive survey work plan for review and concurrence prior to its implementation.

If you have any questions regarding this matter, please contact Miguel Bonini at (787) 721-3737 or mbonini@prshpo.gobierno.pr.

Sincerely,

Diana López Sotomayor

Diana López Sotomayor, Archaeologist
State Historic Preservation Officer

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FEMA

August 11, 2014

Ms. Diana López Sotomayor, Archaeologist
Executive Director
State Historic Preservation Office
P.O. Box 9023935
San Juan, PR 00902-3935

RE: NHPA Section 106 Determination
FEMA-4017-DR-PR, HMGP Project PR-0030
Puerto Rico Ports Authority: Reconstruction of the Culebra Terminal Cargo Ramp and Construction of Alternate Pier at San Ildefonso, Culebra, Puerto Rico

Dear Archaeologist López:

The Puerto Rico Ports Authority has applied for financial assistance from the U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA), to reconstruct the Culebra Ferry Terminal Cargo Platform, located in Dewey, Culebra, Puerto Rico. FEMA is proposing to fund the project through the Hazard Mitigation Grant Program (HMGP) under the Presidential disaster declaration FEMA 4017-DR-PR for Hurricane Irene, of August 27, 2011. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

All goods and services arrive to the island of Culebra by cargo ferries or airplanes. The cargo platform of the Culebra Ferry terminal at Sardinas Bay is deteriorated due to wave action. The proposed undertaking will prevent a failure of the platform that can leave the Culebra residents without this crucial service. The existing cargo platform was constructed in 1988. The cargo ramp consists of a reinforced concrete slab 12" thick, placed on top of reinforced concrete beams supported by 40'long HP 14X73 series steel piles in plumb and batter configuration.

The reconstruction of the Sardinas Bay Cargo Ramp is estimated to take 8 months. To maintain the operations during construction, the Ports Authority proposes to habilitate an alternate cargo pier at San Ildefonso, Ensenada Honda Bay, at the wharf previously used by the Department of Natural and Environmental Resources (DNER). The proposed project at San Ildefonso includes the reconstruction or rehabilitation of the existing pier facilities, construction of parking facilities and improvements to the access road. A barge will be anchored and fixed away from the existing dock and a steel ramp will be used as a connection between the barge and the reconstructed dock.

FEMA has conducted an evaluation of the area of potential effects (APE) for the San Ildefonso pier construction project (see enclosure). The APE is located inside an archaeological sensitive area. The totality of the peninsula can be considered a historic district that has the potential to present significant remains from at least three different occupations: the Late Cedrosan Saladoid prehistoric occupation as documented in the Lower Camp Site, with radio carbon date A.D. 642 (1350 years ago); the late Spanish Colonial occupation, represented by the town of San Ildefonso (1880-1903); and the U.S.A. Navy occupation represented by Camp Roosevelt (1903 to 1975). The historic district is eligible for inclusion in the National Register of Historic Places (NRHP). There is the potential to encounter archaeological remains of these occupations underneath the floor platforms, sidewalks, pavement areas and roads. The actual configuration of the pier at San Ildefonso is the same as the one depicted in the Map of U.S. Naval Reservation in Culebra, dated June 30, 1944. The Ensenada Honda Bay has been the scenario of navigation and trading activities for hundreds of years and there is the potential to encounter underwater archaeological resources.

FEMA finds that the scope of work for the construction of the San Ildefonso cargo pier and its related activities has the potential to affect historic properties and is initiating consulting with PR-SHPO as required under 36CFR800. In order to resolve this potential adverse effect, FEMA recommends that an **archaeological and historical assessment** be conducted for all the areas of potential effects (APE) on land and underwater.

FEMA appreciates your continued cooperation in the review of federally funded projects. Should you have any questions or require additional information, please contact Mr. José E. Ayala, Environmental Specialist, at (787) 296-3500 or by email at Jose.Ayala3@fema.dhs.gov.

Sincerely,

Alejandro R. De La Campa
Disaster Recovery Manager

Enclosure

MJMM

NHPA Section 106 Determination, Archaeological/Historical Review
Hazard Mitigation Grant Program (HMGP) FEMA-4017-DR-PR, Project PR-0030
Reconstruction of the Culebra Terminal Cargo Ramp at Dewey; and construction of new alternate – permanent dock at San Ildefonso, Culebra, Puerto Rico

Project description:
The Puerto Rico Ports Authority has applied for financial assistance from the U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA), to reconstruct the Culebra Ferry Terminal Cargo Platform, located in Dewey, Culebra, Puerto Rico. FEMA is proposing to fund the project through the Hazard Mitigation Grant Program (HMGP) under the Presidential disaster declaration FEMA 4017-DR-PR for Hurricane Irene, of August 27, 2011. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

The reconstruction of the Dewey, Sardinas Bay Cargo Ramp is estimated to take 8 months. To maintain the operations during construction, the Ports Authority proposes to habilitate an alternate cargo pier at San Ildefonso, Ensenada Honda Bay, at the wharf previously used by the Department of Natural and Environmental Resources (DNER).

Location and resource:
The proposed project to reconstruct the Culebra Terminal Cargo Ramp has been modified to include **two separate locations**:

1. The full rehabilitation of the existing cargo ramp at **Dewey**, Sardinas Bay, (coordinates 18.301509, -65.302641) including the removal of old piles and installation of new HP piles, is within the footprint of the existing facilities and has no potential to affect historic properties.
2. The construction of an alternate (permanent) dock at **San Ildefonso**, Ensenada Honda, (coordinates 18.306272, -65.823611), to be utilized during the reconstruction of the existing cargo ramp. The San Ildefonso project is within an area of reported historic and archaeological resources from at least three different occupation periods.

Existing conditions:
The existing Culebra cargo platform at Sardinas Bay, built in 1988, is considerably deteriorated and needs to be replaced. The cargo ramp consists of a reinforced concrete slab 12” thick, placed on top of reinforced concrete beams. Pile foundations consist of HP 14 x 73 x 40’ steel piles in plumb and batter configuration. This cargo ramp represents the only entry point for goods and services to the island. Its reconstruction requires the relocation of the cargo operations to an alternate pier during the estimated 8 month construction period.

The small existing pier at San Ildefonso, Ensenada Honda, needs to be modified and improved to handle the cargo operations during the reconstruction of the Sardinas Bay cargo platform. The configuration and proportions of the existing pier at San Ildefonso are the same as the 1944 Map of U.S. Naval Reservation in Culebra. The San Ildefonso pier has two existing boat ramps, located at either side of the 145 feet long bulkhead. The pier is about 50 feet wide. The Puerto

Rico Aqueduct and Sewer Authority (PRASA) intake for the Culebra water desalinization plant is located at the center of the dock. The existing platform measures some 45 x 20 feet.

Proposed undertaking at the San Ildefonso pier:
The proposed construction project for the new alternate dock at San Ildefonso is still in its planning stages and the design plan has not been finalized. An Environmental Assessment will be conducted by the applicant in order to determine final design decisions.
The proposed scope of work for the San Ildefonso pier construction will include a large variety of tasks:

1) Construction of new access and parking facilities: 24 meter parking spaces, 24 car holding spaces, 5 passenger bus spaces, drop off areas, etc.
2) Reconstruction of the access road from the pier to road PR-250, approximately 400 meters long.
3) Rehabilitation of existing pier and facilities (area of about 50 x 50 meters):
   a) new bulkhead 50’ long;
   b) new 8” concrete slab (1922 SF);
   c) asphalt or concrete area 6664SF for cargo and vehicular lanes;
   d) 6’6” perimeter fence (105 FTS) with 32”0” gate;
   e) 42” perimeter guardrails (217 FTS)
   f) Platform to be demolished and reconstructed (845 SF)
   g) New aluminum boarding/de-boarding ramp 15’ long
   h) Reinforced concrete floating pontoon 30’ x 50’, anchored by four to six concrete anchor piles
   i) Ramp from floating pontoon to the pier (865 SF)
   j) ADA portable restroom trailer
   k) Ticket booth
   l) New covered passenger drop-off area
   m) Passenger holding area (3653 SF)
   n) new roof for existing structure (864 FTS)
4) Underwater work
   a) Installation of a new bulkhead 50’ long.
   b) Installation of four to six concrete piles needed to anchor the floating pontoon.
   c) A bathymetric survey will be conducted to determine if it is necessary to dredge the navigation channel and turning basin for the cargo ferry.
   d) Additional buoy placement and anchorage to mark the navigation channel.
   e) Activities related to the compensatory mitigation of impacts to endangered species, critical habitats, sea grass beds, mangroves.
5) Evaluation of the capacity of road PR-250 and bridges to handle the traffic generated by the relocation of the cargo pier to San Ildefonso.

Area of Potential Effects (APE):
The area of potential effects for the San Ildefonso pier is located inside an archaeological and historical sensitive area. The totality of the peninsula can be considered a historic district that has the potential to present significant remains from at least three different occupations.

The San Ildefonso alternate pier is a complicated construction project with diverse areas of potential effects, including land and underwater areas. The areas of potential effects can be described as: the pier and facilities construction area; the new parking area and improved access road to PR-250; the underwater work in front of the pier for installation of new bulk head and piles; possible underwater work for the placement of buoy anchorage along navigation channel in Ensenada Bay; possible underwater work to dredge the navigation channel and turning basin for the cargo ferry; possible underwater work in areas to be determined for activities related to mitigation of impacts to endangered species, sea grass beds, critical habitats, etc.; and location of the project staging area during construction.

Besides the area of potential effects for this project, consideration should be given to the future effects that the construction of a permanent pier and the improvements to the access road and parking facilities could have in attracting future development to the San Ildefonso area. It is necessary to carefully consider the impacts of the proposed project, not just on individual elements or features of the district and their immediate area, but on the district as a whole.

Archaeology:
The area of potential effects for the San Ildefonso pier is located inside an archaeological and historical sensitive area. The totality of the peninsula can be considered a historic district that has the potential to present significant remains from at least three different occupations: the Late Cedrosan Saladoid prehistoric occupation as documented in the Lower Camp Site, with radio carbon date A.D. 642 (1350 years ago); the late Spanish Colonial occupation, represented by the town of San Ildefonso (1880-1903); and the U.S.A. Navy occupation represented by Camp Roosevelt (1903 to 1975). The historic district is eligible for inclusion in the National Register of Historic Places (NRHP). There is the potential to encounter archaeological remains of these occupations underneath the floor platforms, sidewalks, pavement areas and roads.

The archaeological excavations at Lower Camp Site (Oliver1992) uncovered an undisturbed midden, which yielded an unusually rich cached of faunal remains and a sizable quantity of artifacts made from different materials (ceramics, shell, stone, and coral). Two hearths were documented underneath the midden, suggesting a change in function from food processing to refuse area. The deposit may have been related to a domestic unit. The excavations also recovered historic artifacts.

The documentary and cartographic description for the late 19th century town of San Ildefonso de La Culebra indicates it was organized into a regular grid pattern with six east-west streets and five north-south streets. The town centered on the public plaza, and it had a church, a government house, a public dock, and a large public water tank. By 1894, 24 houses had been constructed in the town. Most of the town buildings were described as being constructed from locally available wood and covered with wooden shingles or straw thatch. The cemetery was located north of the town's center. In 1898 San Ildefonso had an area of 18 hectares. The 1902 and 1903 descriptions of town San Ildefonso make reference to the town public buildings like a catholic church built in 1890, a police station, two schoolhouses built in 1892, a tiny wharf, several streets and 62 houses of fair construction (Navy Report 1902; AGS 1903). During the

1985 archaeological survey, stone walls and artifact midden scattered throughout the peninsula were reported (Thomas 1985).

The US Navy established Camp Roosevelt in the center of San Ildefonso in 1903. The town's inhabitants were relocated to a narrow strip of mangrove swamp at Dewey, Sardinas Bay. Many of the late 19th century wooden buildings and some masonry buildings were destroyed by the Navy. Between 1904 and 1906, the Navy built a number of permanent masonry buildings. Facilities included barracks hospital, ice house, commissary store, marine barracks, wash house-bakery, guard house-canteen-reading room, commanding officer's office, blacksmith shop, quartermaster's store house, stable, oil house, store shack, boar shed and carpenter's shop, bath house, search light house, cistern, two cisterns (from Spanish town), existing wharf, proposed wharf, etc. The Navy modified the docking facilities in 1936. The actual configuration of the pier at San Ildefonso is the same as the one depicted in the Map of U.S. Naval Reservation, Culebra, P.R., dated June 30, 1944.

The Ensenada Honda Bay has been the scenario of navigation and trading activities for hundreds of years. There is the potential to encounter underwater archaeological resources during the replacement of the bulkhead and installation of concrete piles to secure the floating pontoon. If it is necessary to dredge the navigation channel and turning basin for the cargo ferry, underwater archaeological reconnaissance is needed. The navigation channel and buoy anchorage placement has the potential to present underwater archaeological resources and remains of sunken boats.

Standing Structures:
The area of potential effects includes a number of historic standing structures, remains of the San Ildefonso town and the Camp Roosevelt facilities. The access road from the pier to road 250 appears to follow the same alignment as the road in the 1994 Navy map. There are a number of historic structures located along this road: stonewall, sidewalks, stone storehouses, cisterns, etc. The pier at San Ildefonso has the same configuration and dimensions as the pier in the 1944 Navy map, with a bulkhead 145 feet long, two boat ramps and a platform projection from the center of the pier. The addition of the intake for the PRASA desalinization plant appears to be the main alteration to the historic pier.

Findings:
The area of potential effects for the San Ildefonso pier is located inside an archaeological/historical sensitive area. The totality of the peninsula can be considered a historic district that is eligible for inclusion in the NRHP. The historic district has the potential to present significant remains from at least three different occupations: the Late Cedrosan Saladoid prehistoric occupation (AD 650); the town of San Ildefonso (1880-1903); and Camp Roosevelt, U.S. Navy (1903 to 1975). There is the potential to encounter archaeological remains of these occupations underneath the floor platforms, sidewalks, pavement areas and roads.

The pier at San Ildefonso has the same configuration and dimensions as the pier in the 1944 Navy map and is a contributing element to the historic district. A section of the pier will be affected by the proposed project.

The Ensenada Honda Bay has been the scenario of navigation and trading activities for hundreds of years. There is the potential to encounter underwater archaeological resources.

FEMA findings are that the scope of work for the construction of the San Ildefonso cargo pier and its related activities have the potential to affect historic properties and has initiated consulting with PR-SHPO as required under 36CFR800. In order to resolve this potential adverse effect, FEMA recommends that an **archaeological and historical assessment** be conducted for all the areas of potential effects (APE) on land and underwater.

The land archaeological and historical assessment should include the following:
(1) archival and cartographic research directed at the specific cultural context of the project area and the three possible periods of occupation (including underwater); (2) interviews with local informants; (3) intensive systematic surface reconnaissance, with mapping of visible structural remains and artifacts refuse areas; (4) present a statement of what type of resources can be expected and their location – expected archaeology; (5) selection of areas for exploratory excavations, with reference to expected archaeology; (6) exploratory excavations to determine the integrity of archaeological resources; (7) documentation of features, remains and structures identified; (8) classification of artifacts; (9) analysis of the results: determination of integrity, research potential; (10) presentation of written report, with pertinent photos, maps and drawings. The underwater archaeological and historical assessment should also include: reconnaissance of areas to be impacted by construction new bulkhead and installation of concrete piles; and any other area to be impacted once the project draft design is available.

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Annual Report of Navy Department for the Year 1902. Report of the Secretary of the Navy. Miscellaneous Reports. Congressional Edition, Volume 4455, pp. 975-979 (http://books.goggle.com).

Haeselbarth, A.C., 1903. Culebra Island. *Bulletin of the American Geographical Society* (AGS), Vol. 35, No. 2, pp. 125-130 (http://www.jstor.org/stable/198753).

Map of U.S. Naval Reservation, Culebra Is., P.R., showing conditions on June 30, 1944 (copy in Martinez Garayalde 2002)

Martínez Garayalde, Marisol, 2002. Proyecto Rehabilitación a la planta de tratamiento de agua por osmosis reversible en la isla municipio de Culebra (Planta Desalinizadora). Evaluación Arqueológica Fase IA, Revisada. Autoridad de Acueductos y Alcantarillados.

Oliver, José R., 1992. Results of the Archaeological Testing and Data Recovery Investigations at the Lower Camp Site, Culebra Island National Wildlife Refuge, Puerto Rico. Garrow & Associates, Inc.

Sketch map. Plan view of the town of San Ildefonso (1881-1902) and U.S. Navy Installations (1902) (copy in Oliver 1992).

Thomas, Ronald A., 1985. A Stage IA Culture Resource Survey: Culebra Wastewater Facilities Project, Culebra Island, Puerto Rico. MAAR Associates Inc., Newark, Delaware.

U.S.F.W.S. Section 106 Consultation Letter to PR-SHPO dated August 10, 2006, for the proposed Administrative Office, Culebra, (1344-square foot building), within the footprint of the Refugee's former Office and staff quarters (copy on file at PR-SHPO).

Maps:

1881. Emplazamiento del pueblo de San Ildefonso.
1902. Sketch map of Navy facilities in San Ildefonso
1944. Map of Navy facilities in San Ildefonso

Interested parties to be contacted:

Fundación de Culebra, Inc. (Museo Histórico de Culebra)
Autoridad de Conservación y Desarrollo de Culebra
USFWS – Culebra National Wildlife Refugee

Prepared by:

Marisol J. Meléndez Maíz
Historic Preservation Specialist
FEMA Region 2, CAD
July 16, 2014

Figure 1. General location of the San Ildefonso pier, north shore of Ensenada Honda, Culebra

Figure 2. Present conditions at the San Ildefonso pier.

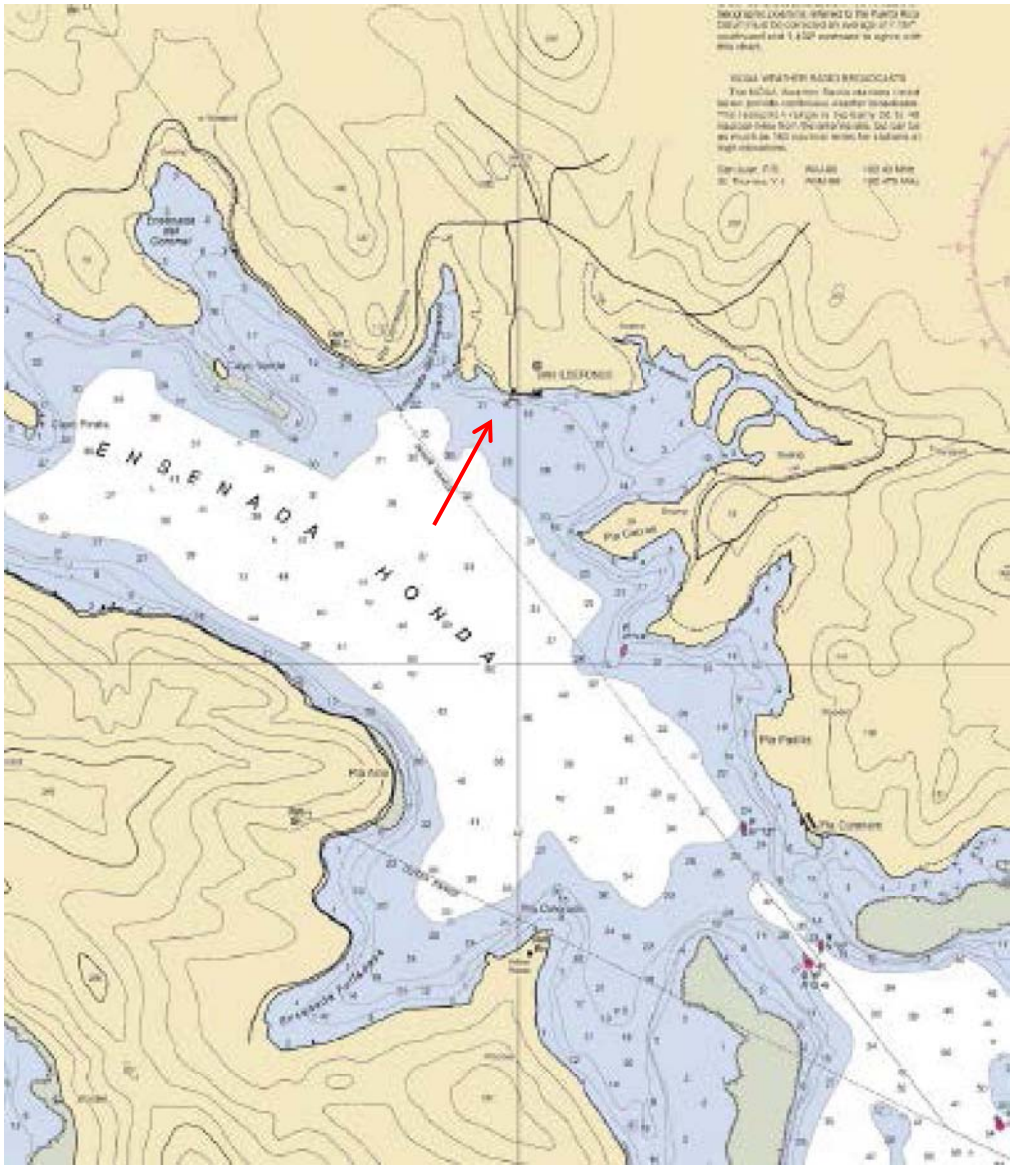


Figure 3. Nautical chart for Ensenada Honda, with location San Ildefonso pier.

Figure 4. San Ildefonso pier, section of the existing bulkhead to be reconstructed. PRASA desalinization plant water intake on the right side.

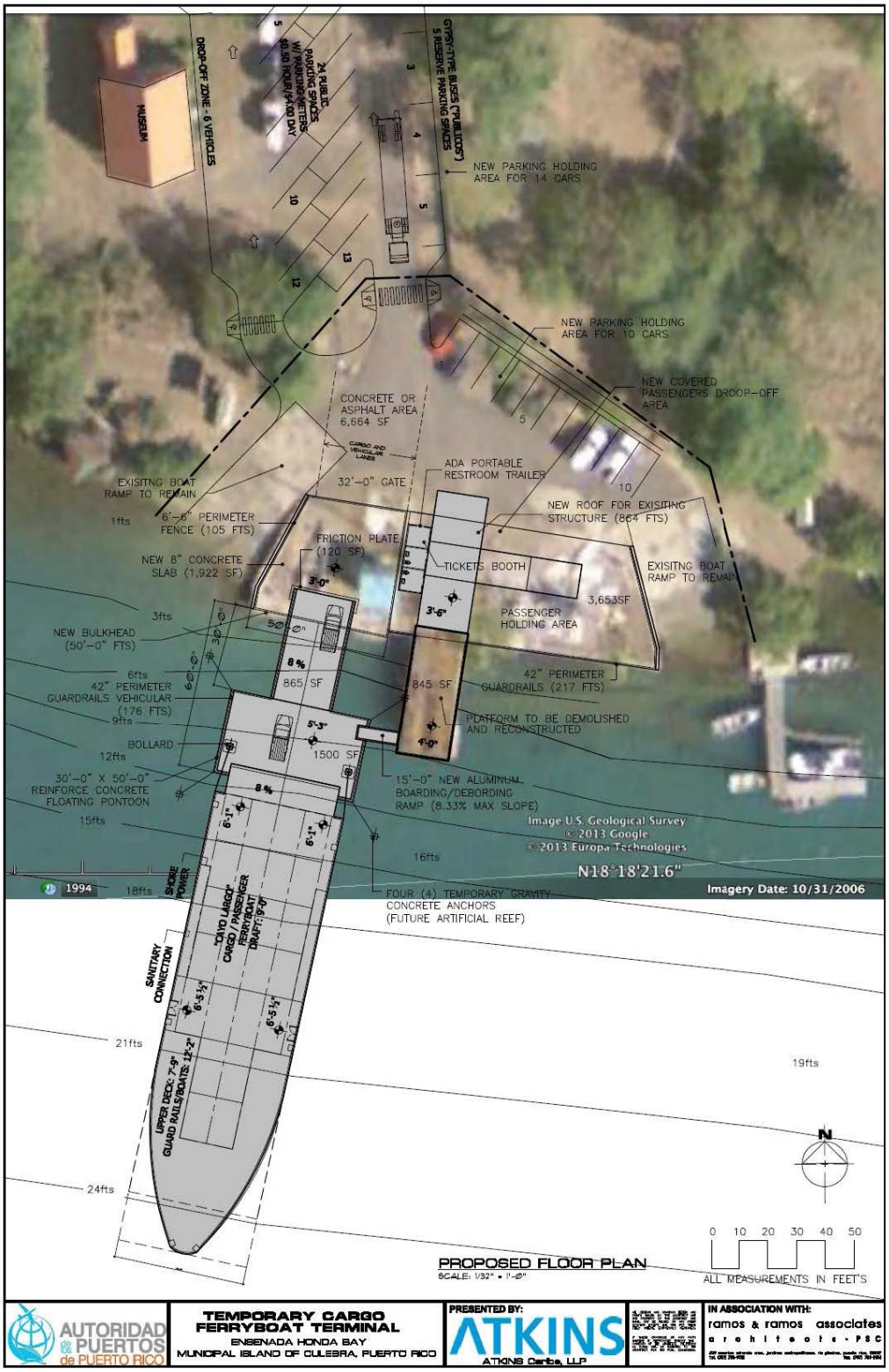


Figure 5. Proposed facilities and improvements for the San Ildefonso pier. Design will also include improvements of the access road to PR-205.

Figure 6. Plan for the town of San Ildefonso in 1881.

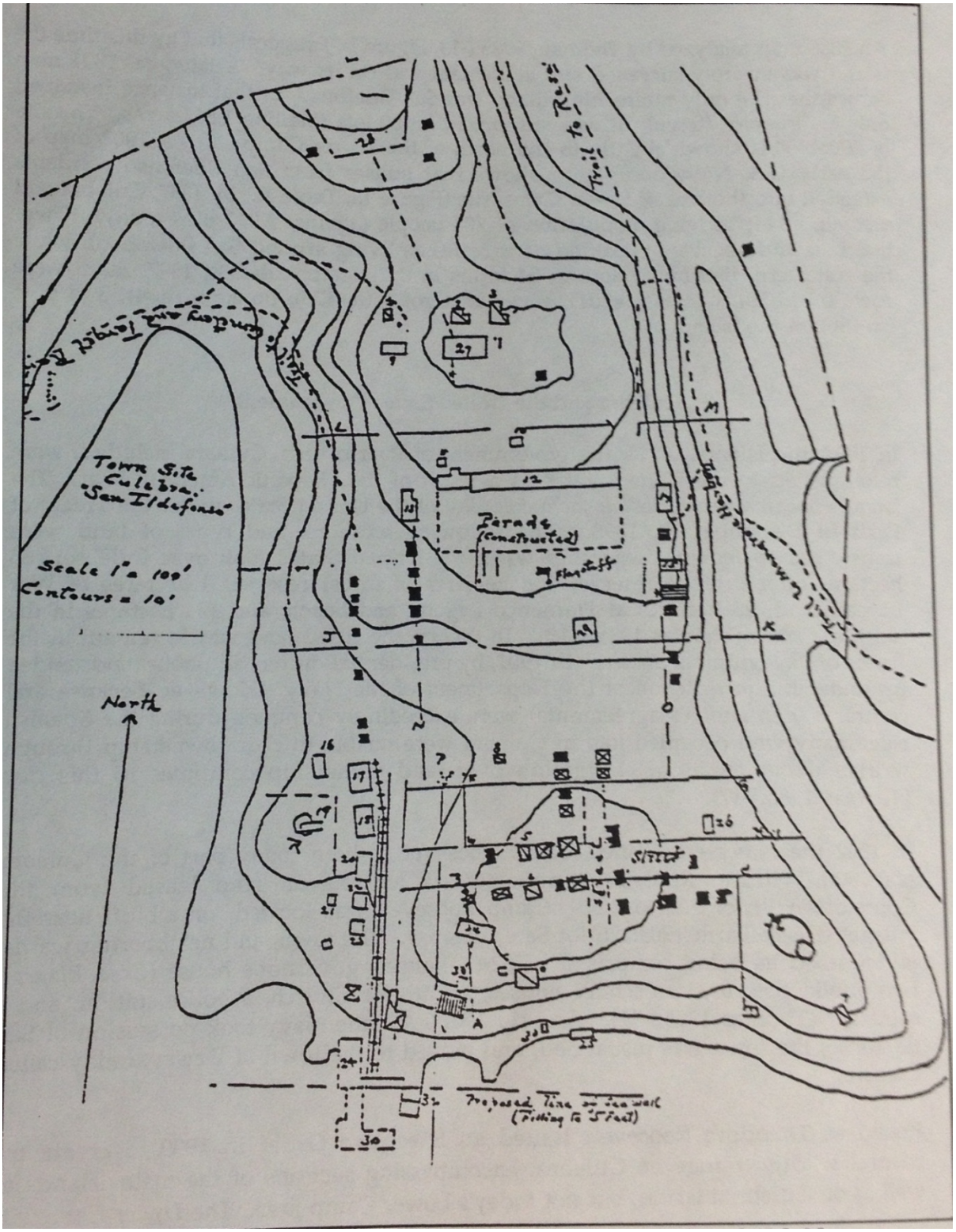


Figure 7a. Sketch of the USA Navy facilities under construction, as it took over San Ildefonso to establish Camp Roosevelt (1903).

Table 2. Accompanying Key for San Ildefonso and U.S. Navy Building Structures.

To be removed from Town site on or before April 1, 1905.

Owners may have legal rights to a lot in the Town under Spanish grant Nov 8, 1888.

Private owners

Church and two School Houses claimed by the Insular Government of Porto Rico

Delegation House

1	Actg Bodn Kenny	
2	Francisco Amador	
3	Bosn O'Connell	
4	Ricardo Romero	
5	Ricardo Romero	
6	Doctor McMurdo (USN)	
7	Woman Mulero, claiming to be widow of the late Dr. Hanes, USN	
8	Pedro Santiago	
9	Barracks Hospital	USMC
10	Ice House	"
11	Commissary Stores	"
12	Marine Barracks	"
13	Wash House and Bakery	"
14	Guard House, Canteen, Reading Room	"
15	Commanding Officer's Office	"
16	Blacksmith Shop	"
17	Temporary Shack	Ordnance
18	Quartermaster's Store House	USMC
19	Stable	"
20	Portable House	Equipment
21	Oil House	USMC
22	Store Shack	Gen storekeeper, Ord property
23	Shed	Temporary
24	Boat Shed and Carpenter's Shop (constructing)	C & R
25	Bath House	
26	Search Light House	USMC
27	Cistern (100,000 gal) (constructing)	Secretary's Office
28	Water shed for same	" "
29	Plaza cistern (now full) 17,500 gal	Repaired by USMC
30	Proposed wharf	Yards & Docks
31	Fresh water pump	USMC
32	Wharf	
33	Public Cistern (10,000 gal) built by former Spanish government	
34	Corrugated iron water shed for Wharf	

Compound A,B,C,D location for all Quarters, Administration Bldg at western end. Street about 30' wide to cut through to the northward about the center of the length of the compound a walk about 30' wide to extend along South front.

Compound E, F, G, H for the homes of Warrant Officers and Married Enlisted Men.

The boundary J, K, L, M for Marine Corps compound, R for bowling alley reading room and club for enlisted men.

Compound H for hospital use.

Figure 7b. Legend for the sketch of the USA Navy facilities and construction of Camp Roosevelt at San Ildefonso in 1903.

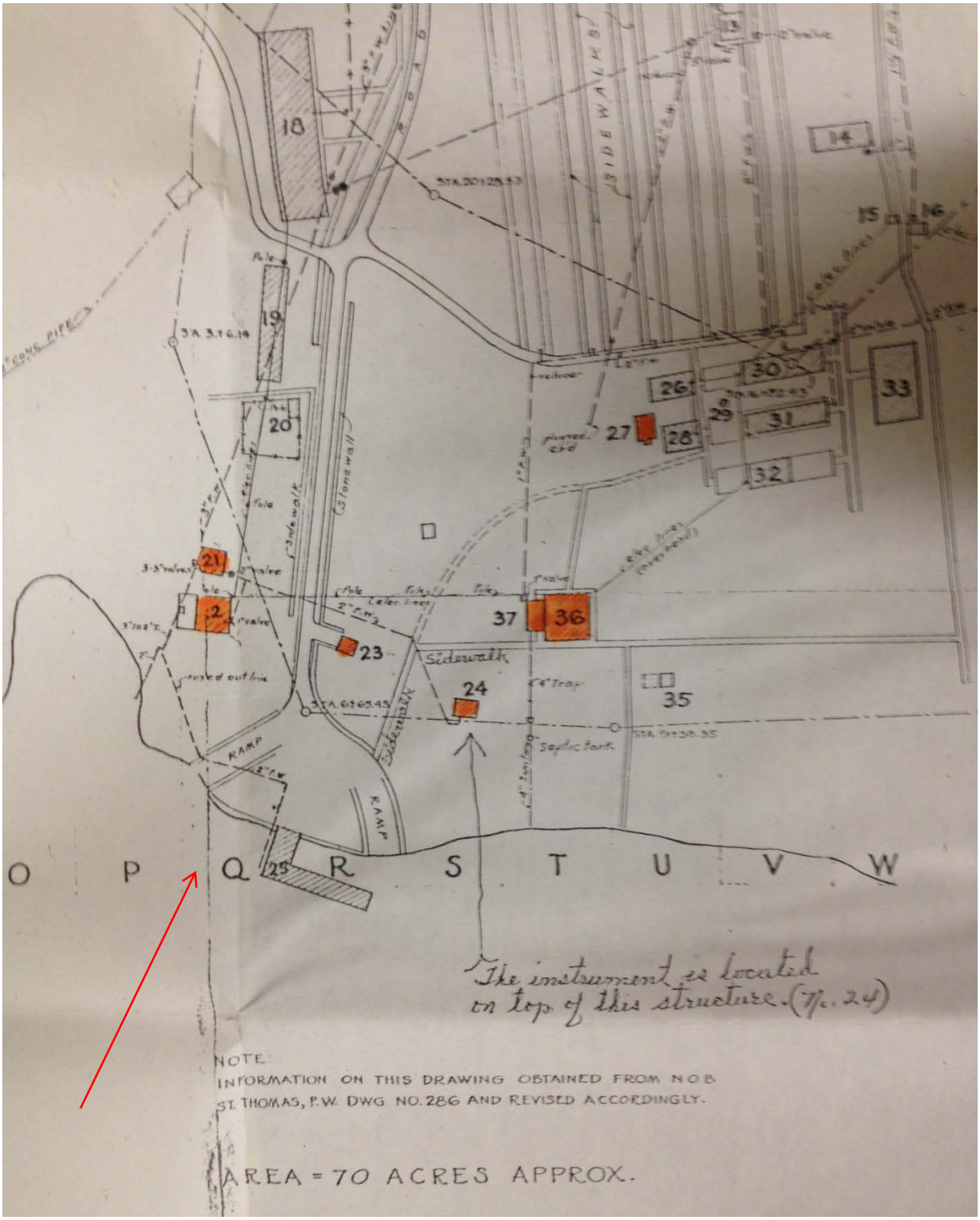


Figure 8a. Map of the south section Camp Roosevelt in 1944. The dock is similar in dimensions and configuration to the existing one.

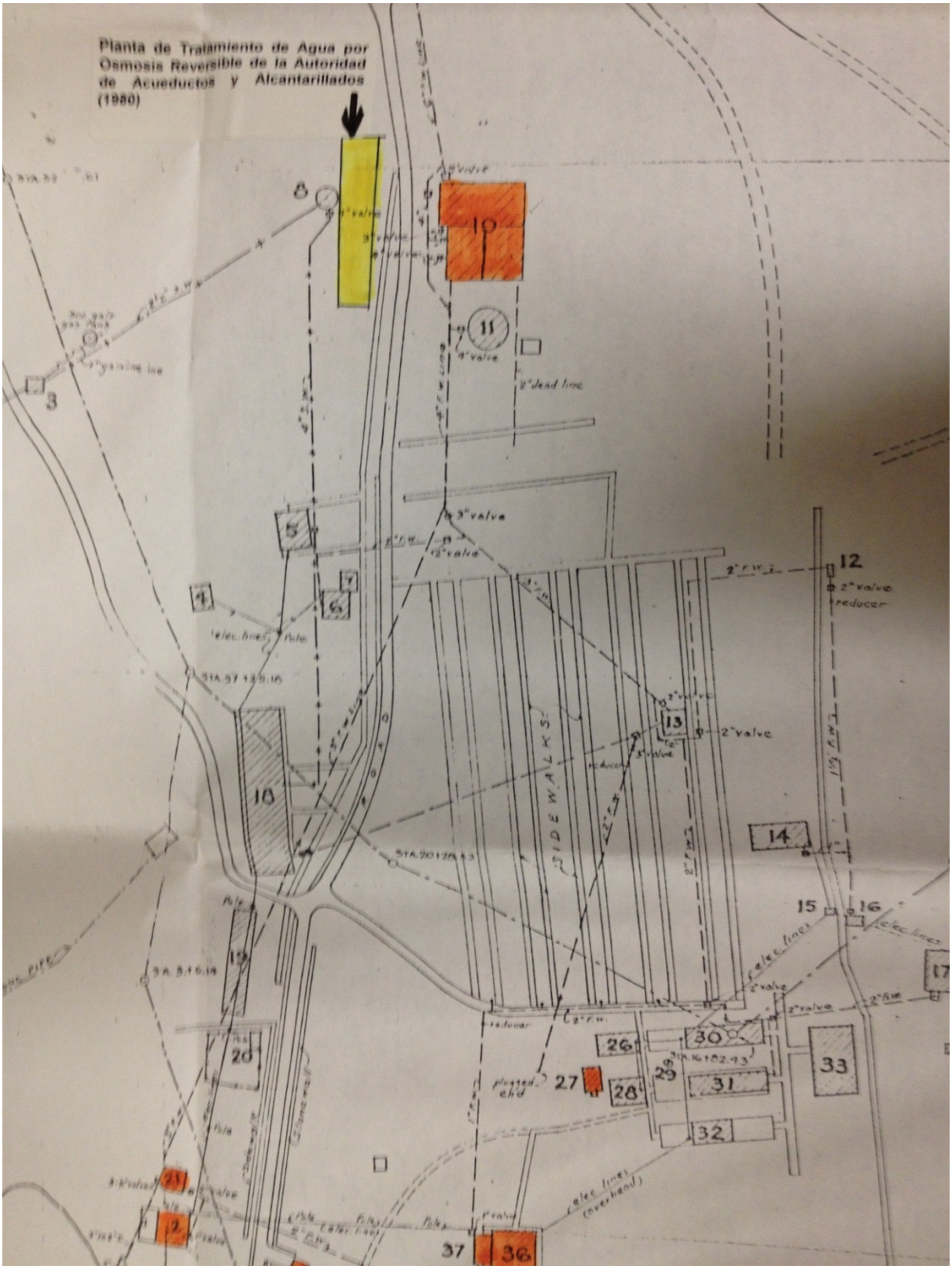
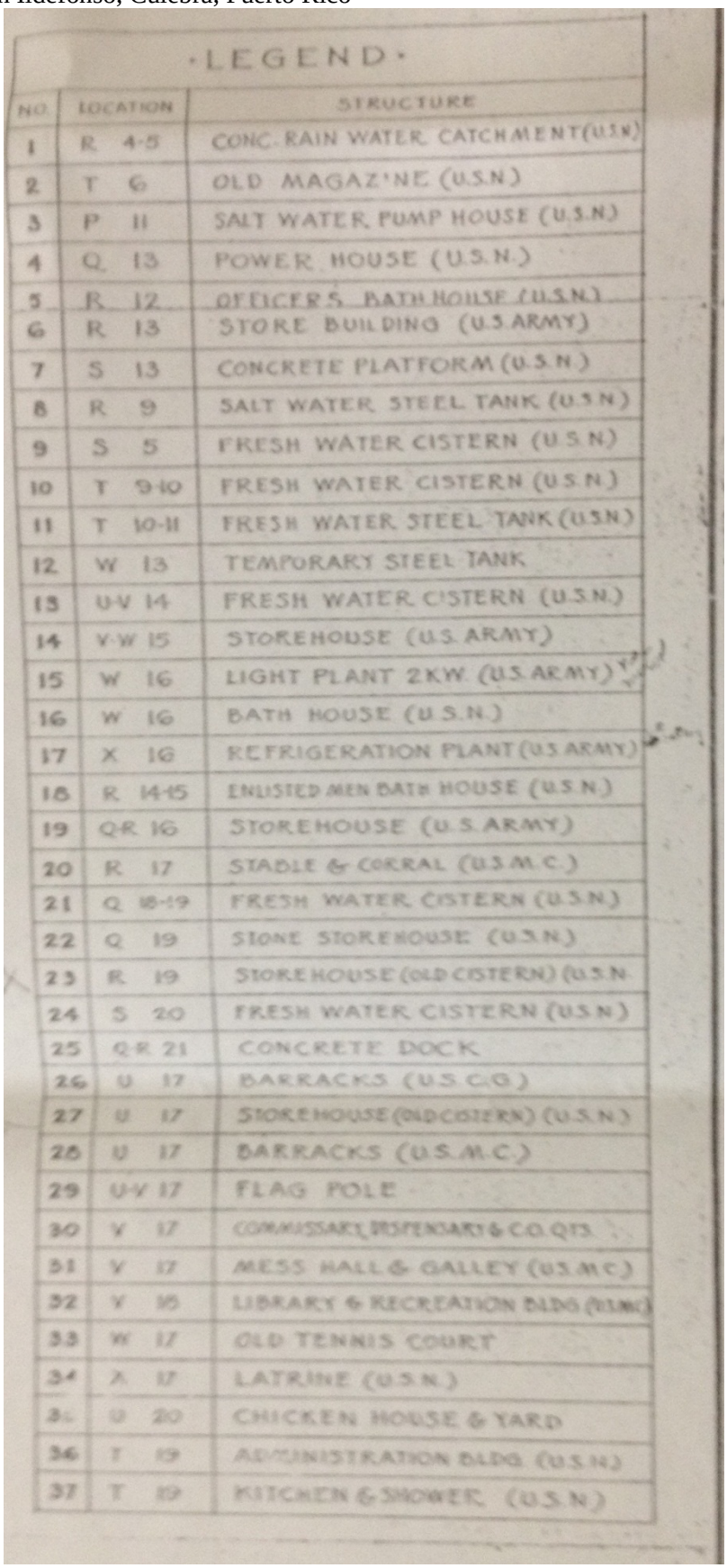


Figure 8b. Map of the north section of Camp Roosevelt in 1944.

Figure 8c. Legend for the 1944 map of Camp Roosevelt.



·LEGEND·

NO.	LOCATION	STRUCTURE
1	R 4-5	CONC. RAIN WATER CATCHMENT (U.S.N.)
2	T 6	OLD MAGAZINE (U.S.N.)
3	P 11	SALT WATER PUMP HOUSE (U.S.N.)
4	Q 13	POWER HOUSE (U.S.N.)
5	R 12	OFFICERS BATH HOUSE (U.S.N.)
6	R 13	STORE BUILDING (U.S. ARMY)
7	S 13	CONCRETE PLATFORM (U.S.N.)
8	R 9	SALT WATER STEEL TANK (U.S.N.)
9	S 5	FRESH WATER CISTERN (U.S.N.)
10	T 9-10	FRESH WATER CISTERN (U.S.N.)
11	T 10-11	FRESH WATER STEEL TANK (U.S.N.)
12	W 13	TEMPORARY STEEL TANK
13	U-V 14	FRESH WATER CISTERN (U.S.N.)
14	V-W 15	STOREHOUSE (U.S. ARMY)
15	W 16	LIGHT PLANT 2KW. (U.S. ARMY)
16	W 16	BATH HOUSE (U.S.N.)
17	X 16	REFRIGERATION PLANT (U.S. ARMY)
18	R 14-15	ENLISTED MEN BATH HOUSE (U.S.N.)
19	Q-R 16	STOREHOUSE (U.S. ARMY)
20	R 17	STABLE & CORRAL (U.S.M.C.)
21	Q 18-19	FRESH WATER CISTERN (U.S.N.)
22	Q 19	STONE STOREHOUSE (U.S.N.)
23	R 19	STOREHOUSE (OLD CISTERN) (U.S.N.
24	S 20	FRESH WATER CISTERN (U.S.N.)
25	Q-R 21	CONCRETE DOCK
26	U 17	BARRACKS (U.S.C.G.)
27	U 17	STOREHOUSE (OLD CISTERN) (U.S.N.)
28	U 17	BARRACKS (U.S.M.C.)
29	U-V 17	FLAG POLE
30	V 17	COMMISSARY, DISPENSARY & C.O. QTS.
31	V 17	MESS HALL & GALLEY (U.S.M.C.)
32	V 18	LIBRARY & RECREATION BLDG. (U.S.M.C.)
33	W 17	OLD TENNIS COURT
34	X 17	LATRINE (U.S.N.)
35	U 20	CHICKEN HOUSE & YARD
36	T 19	ADMINISTRATION BLDG. (U.S.N.)
37	T 19	KITCHEN & SHOWER (U.S.N.)

STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER
San Ildefonso, Culebra, Puerto Rico

prepared for:

ATKINS CARIBE, LLP

for submittal to:

FEMA, Region 2, Caribbean Area Division

prepared by:

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December 4, 2015

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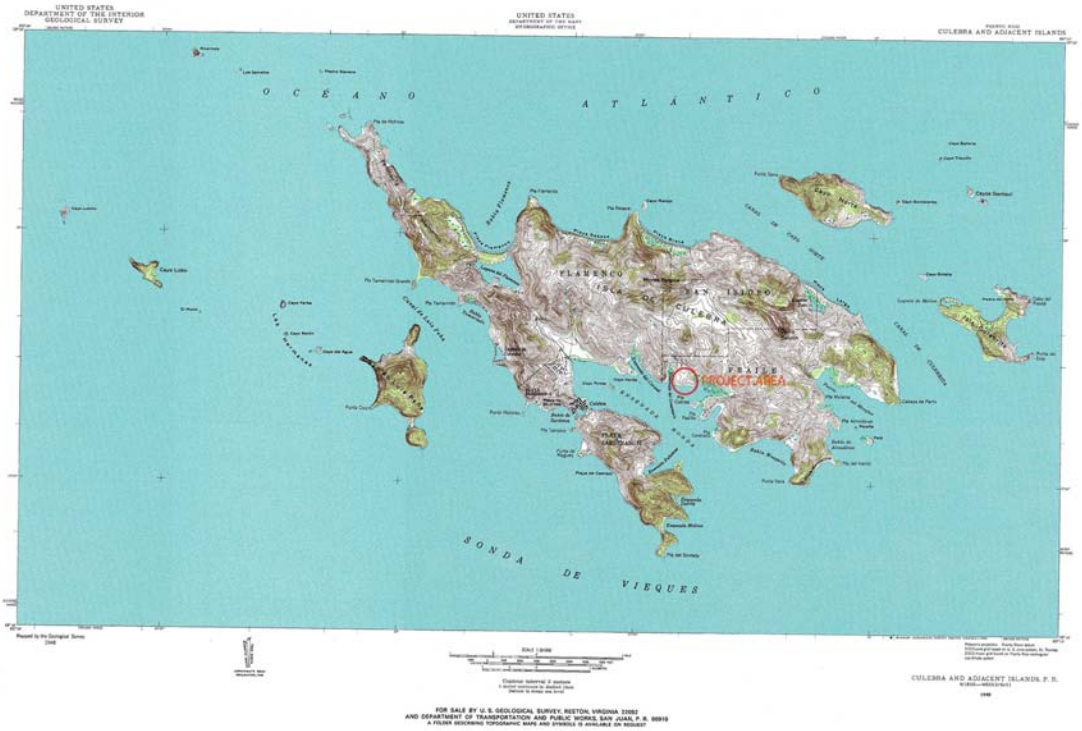
INTRODUCTION

Legal Authority

The Stage 2 Cultural Resources Intensive Level Survey is being carried out as a requisite of the Federal Emergency Management Agency (FEMA) as the lead federal agency under the National Historic Preservation Act and the procedures of 36 CFR Part 800 in consultation with the Puerto Rico State Historic Preservation Office. The Puerto Rico Ports Authority has applied for financial assistance from the U.S. Department of Homeland Security, FEMA, to reconstruct the Culebra Ferry Terminal Cargo Platform, located in Dewey Culebra, Puerto Rico. FEMA is proposing to fund the project through the Hazard Mitigation Grant Program (HMGP) under the Presidential disaster declaration FEMA 4017-DR-PR for Hurricane Irene, of August 27, 2011. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act.



USGS Topographic map with site location.

Project Background

Cultural Resources Compliance work was carried out on the island of Culebra in the Barrio known as San ILdefonso on the southeast area of the island. The government of Puerto Rico, through the Ports Authority, has proposed a rehabilitation of the terminal cargo dock area previously established within this area. The proposed project has been identified as "Culebra Terminal Cargo Ramp and Auxiliary Pier", and the Area of Potential Effect (APE), as defined by the proposed project at present (see project plan graphic), is formally described as follows:

Demolition of the existing structures will be performed during two primary phases initiated approximately one month apart. The first (1) phase is the demolition of marine structures (Pedestrian pier) and a Second (2) phase will be conducted entirely out-of-water (Improvements to existing access road and removal of roof structure of the existing structure.

Others marine structures to be demolished included (1) beams and deck concrete of existing pedestrian pier; (2) demolition of existing reinforce concrete pavement. Out- of-water structures to be demolished should include:

- Improvements to existing access road.
- Determine new right of way.
- Relocation of electric poles.
- Removal of roof structure of the existing structure.
- Removal of existing asphalt pavement and demolition of existing curb and gutter.
- Relocation of one (1) palm tree and two (2) small trees.

No dredging works shall be necessary to meet cargo ferryboat operational deep.

The site improvement area is 27,263.56 square feet's (2532.87 square meters). The existing access road is going to be widened 10'-0" at each side for a total length of 365'-00" to make room for additional parking for trucks and other heavy freight vehicles in waiting to boarding the ferries.

Other construction work activities to be performed include:

- excavations, form work, steel reinforcement and casting of new 18" concrete bulkhead and 8" vehicular reinforce concrete pavement;
- installation of three (3) fenders and two (2) bollards to the concrete pile cap and fender for anchoring and mooring from stern docking of cargo ferry;
- installation of perimeter fence and vehicular gate on perimeter of cargo area. Core drills at concrete slab for installation steel pipes secure with concrete grout, installation of chain-link fence;
- installation of chain-link fence perimeter fence and vehicular gate on perimeter of AAA existing water pump facilities;
- installation of 42" high aluminum guardrails in the perimeter of the pedestrian pier and bulkhead of passenger waiting area;
- installation of perimeter fence and vehicular gate on perimeter of parking and staging area;
- installation of new illumination for navigational use at concrete pile cap and fender;
- installation of new illumination for nighttime operation at floating pontoon dock;
- installation of new illumination for nighttime operation at new concrete pedestrian deck;
- installation of new illumination for nighttime operation at Covered waiting area;
- installation of new Water meter and hose bibs.

Area of Potential Effects

Although consideration is to be given to long-term potential for future effects that the construction of a permanent pier and the improvements to the access road and parking facilities could have on the cultural resources of the peninsula itself, FEMA has stated in the attachment to the August 11, 2014 letter to the State Historic Preservation Office [on page 3, Marisol J. Meléndez Maiz, Historic Preservation Specialist, FEMA Region 2, CAD, July 6, 2014] that the area of potential effects is:

> ***NHPA Section 106 Determination, Archaeological/Historical Review***
> *Hazard Mitigation Grant Program (HMGP) FEMA-4017-DR-PR, Project PR-0030*
> *Reconstruction of the Culebra Terminal Cargo Ramp at Dewey; and construction of new*
> *alternate – permanent dock at San Ildefonso, Culebra, Puerto Rico*
>
> ***Area of Potential Effects (APE):***
> *....The areas of potential effects can be described as: the pier and facilities construction area; the new parking area and improved access road to PR-250; the underwater work in front of the pier for installation of new bulk head and piles; possible underwater work for the placement of buoy anchorage along navigation channel in Ensenada Bay; possible underwater work to dredge the navigation channel and turning basin for the cargo ferry; possible underwater work in areas to be determined for activities related to mitigation of impacts to endangered species, sea grass beds, critical habitats, etc.; and location of the project staging area during construction.*

Area of Potential Effect (APE)

Stage 2 Survey Team

Principal Investigator. . . . . Agamemnon G. Pantel, Ph.D.
Conservation Architect. . . . . Beatriz del Cueto, FAIA, FAAR
Laboratory Identification and Analysis . . . . . Paola Schiappacasse, Ph.D.
Field Supervisor. . . . . Marisol Martinez Garayalde
Graphics. . . . . Yaritza Hernández, AIT
Field Crew.. . . . . José Ernesto Suárez
Field Crew.. . . . . Luis A. Serrano
Field Crew.. . . . . José A. Ramos
Field Crew.. . . . . Hector Díaz
Backhoe Operator.. . . . . Eby Vázquez

A Stage 1 Cultural Resources Survey was carried out by Arqueología Inc. and reported in a document dated October 28, 2014 and titled "Evaluación Arqueológica: Fase 1A-1B, Terrestre & Sub-Acuatica". The document's title sheet identifies the project as "San Ildefonso Proposed New Cargo Facility, Culebra, P.R.". The present Stage 2 Survey was entirely land-based. The relevant historical contexts as well as additional cultural and archaeological data provided in the Stage 1 report have been incorporated into this Stage 2 survey report.

A synopsis of the Stage 1 report is as follows:

> *Archaeological evidence at the Bahia Ensenada Honda has been reported as being culturally associated to Monserrate and Santa Elena ceramic styles on the sites denominated Cayo Pirata and Punta Carenero, while pre-Columbian evidence has also been recovered from Ensenada Santiago, Bahía Mosquito and east of Punta Carenero. The Lower Camp is an important site that was thoroughly investigated by Oliver et al. Spanish colonial evidence from the late 19th century was identified at Punta Padilla and the 20th military camp known as Culebra Naval Station or Camp Roosevelt is nearby.*
>
> *Land-based archaeological investigations conducted by Thomas, 1985, Rodriguez 1997a, 1997b, Medina 1998, Oliver 1992 have reported cultural evidence both pre and post Columbian. The cultural components have been identified as Monserrate, Santa Elena, Ostiones and Esperanza, as well as 19th century structural evidence of the San Ildefonso settlement, and the 20th century naval compound. From a total of four subaquatic studies in the immediate surroundings, one by Jesús Vega (1988) by Richard Fontanez (1993, 1998 and 1999, only three have yielded cultural evidence: and anchor and metal ring, and a concentration of timber. A Stage II study of the latter was associated to the timber industry of Culebra, and it was determined that it did not meet the criterion for inclusion to the National Register of Historic Places.*
>
> *Although sporadic references to Culebra are scattered on the historic documentation pertaining to the spanish colonial period, it is not until the late 19th century that the settlement of San Ildefonso is oficially incorporated. During the 1870s a group of people from the British colonies settled on the island for a priod of five years. The 1878 study by Manuel Delgado y Ubeda titled Isla de Puerto Rico Estudio Historico, Geografico y Estadistico de la Misma does not mention the island. It is at the beginning of the 1880s that the Spanish Crown decides to invest*

money on the construction of the lighthouse on the Culebrita Islet, and authorized the Plan de Colonizacion which encouraged settlements of farmers. In 1891 Vázquez Alayón records the following description:

> *"unas cuarenta casitas, de ellas muchas de paja y lluma. Hay una iglesia, una cisterna de la cual e surte de agua el pueblo, una casa de Gobierno y por los campos mucho bohíos y ranchos" (Delgado Cintrón 1970:1-2)*

In 1903, Carrel indicates that cattle activities included horses, donkeys, cows, pigs, goats, and sheep while Feliciano Padrón cites a population of 704 and 54 farms.

After the United States invasion, the Secretary of the Marine requests the establishment of a naval base in Culebra in 1901, and was officially declared by President Theodore Roosevelt in 1903. Residents of the San Ildefonso settlement were evicted, resulting on them moving to Playa Sardinas, to an area named Dewey. Between 1902 and 1911 the facilities of the naval station were constructed consisting of:

> *"un largo cuartel de madera techado de tabla y cartón embreado con capacidad para alojar 90 soldados, dos cisternas de ladrillos con una plataforma de hormigón para recoger agua de lluvia, un edificio de madera y zinc para la administración de la base, un edificio de madera y zinc para tienda y cantina de la base, un hangar con techo y setos de zinc para talleres de carpinterías y herrerías, un edificio de mampostería para planta de hielo y frigorífico, un hangar de ladrillo y zinc para baño y lavandería, un edificio de hormigón y zinc para panadería, un hangar de gran tamaño de madera y zinc para pesebre de los caballos y muías de la base, un edificio de madera y zinc para almacén, de mampostería para armería de la base, un amplio edificio de madera techado de tabla y cartón embreado para hospital, el que estaba equipado con 20 camas, quirófano y farmacia". (Garayalde 2004:21)*

The naval station was in use until 1975 when President Richard Nixon officially declared their exit from the island. The structures remaining from the naval reservation period were reported by Maurás Casilla in 2014 as:

1) The dock built by using ceramic steel piles filled with concrete, two ramps, and a section of the old pier that is still standing, a rectangular piece of concrete on steel piles.
2) The headquarters building of the Foundation of Culebra, built in 1908, a cistern and walls, stairways and drains constructed of brick, stone and concrete.

METHODOLOGY

The proposed field methodology for the terrestrial part of the project consisted of the mechanical excavation of three trenches and the excavation of shovel test pits within the 7 meter zone. Trench 1 was located 73m north of the datum, near the equipment shop, and a water line was detected at 50cm below the surface. Trench 2 was aligned on the ordenance shop while Trench 3 was on the structure identified as quartermaster. Shovel test pits were excavated at 18m intervals to a final depth of a meter when the deposition and soil characteristics made it possible

Shovel test (P1) unearthed charcoal and metal fragments probably associated the transportation of charcoal during the first years of operation of Camp Roosevelt. Shovel test 2 (P2) detected an electrical line at 50cm below surface. Due to the presence of underground utility lines all excavations were halted.

The underwater prospection was carried out within a rectangle measuring 300 feet in length by 122 feet wide. The prospection interval allowed to establish 3 transects at intervals of 33 feet and 300 feet long. Remote sensing equipment, specifically a magnetometer "Shark Marine Technology SDM-4000" was employed to detect anomalies. Two previously reported anomalies were registered, which are the result of mooring artifacts related to the maritime activities that took place around the embarcadero de San Ildefonso. Five test pits were randomly placed and excavated, no cultural evidence was recovered.

CONCLUSIONS

The Stage IA established that study area is located within the perimeter of where the first formal settlement, San Ildefonso, was locates. The facilities of Camp Roosevelt was established on the foundations of San Ildefonso. The activities associated to the settlement and campo are evidence of the use and modification of both terrestrial and aquatic areas. The terrestrial prospection of the subsurface was halted due to the presence of electric and water lines, but identified various

structures above surface: a stone wall, ramps, a drain, stairs, a cistern, and a stone building.

During the underwater Stage IB two anomalies were identified using a magnetometer and upon their inspection it was determined that were the result of the presence of recent ferrous metals. The shovel test pits did not yield evidence of archaeological materials from any cultural period. The study carried out underwater between coordinates N18º18'22.53 W065º17'01.28, N18º18'22.39 W065º17'00.27, N18º18'19.68 W065º17'01.87, N18º18'19.55 W065º17'00.69 only yielded evidence of a sunken dock and the foundations of a berth (atracadero), on the northern limit of the project. Outside the coastal line, no evidence of a possible impact to underwater archaeological resources was found.

The study area can be considered as archaeologically sensitive. The entire perimeter or the terrestrial and aquatic footprint could be classified as a cultural district. This is the site where the first formal settlement was established during the Spanish colonial period. In addition there is a concentration of structures, some in use other are in ruins that are associated to the first naval base of the United States in the Caribbean. Therefore the district could be considered under Criteria A, B, C and D of the National Register of Historic Places.

The recommendations include:

1) An archaeological monitoring during the installation of the stilts, grudging, and any activities that might modify the current coastal line. A Stage IB to design a turning circle zone outside the study area limits. Establish a buffer zone of 100 meters between the construction area and the sunken vessel East of the San Ildefonso port facilities. If the buffer zone cannot be established then a Stage II should be carried out.
2) Due to the impossibility of completing a subsurface prospection because of the electric and water lines, monitoring during the excavation is recommended.

[Evaluación Arqueológica: Fase 1A-1B Terreste & Sub-Acuatica; San Idelfonso Proposed New Cargo Facility. Arqueología Inc. 28 de octubre de 2014]

WORK PLAN

The Work Plan initially revisited the documentary, archival and cartographic data germane to the project area to establish the chronological sequence of manmade features, for the three periods of known occupation and land formation so as to anticipate the type of cultural resources to be expected within the area of potential effect.

From the previous Stage 1 report, documentary descriptions and cartographic representations provided the layout of the late 19th century town of San Ildefonso, including the southern and coastline sections of the grid pattern, loci of street blocks, the streets themselves, and structures within each block (private residences, government structures, a public water tank, and the public dock). Documentation also existed regarding aspects of the initial setup of the San Ildefonso settlement, the subsequent removal and destruction of San Ildefonso community, and the evolution of Camp Roosevelt Naval Reserve, established by the US Navy in the center of San Ildefonso from 1903 onward.

The Stage 2 Cultural Resources Intensive Survey has been accomplished following the parameters and procedures established in **The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716).** An “intensive” level survey is defined as one that permits the identification and description of specific historic properties in an area.

The following synopsis from the Secretary’s Standards are germane to the present Survey:

> Intensive survey is most useful when it is necessary to know precisely what historic properties exist in a given area or when information sufficient for later evaluation and treatment decisions is needed on individual historic properties. Intensive survey describes the distribution of properties in an area; determines the number, location and condition of properties; determines the types of properties actually present within the area; permits classification of individual properties; and records the physical extent of specific properties.
>
> An intensive survey should document:
> The kinds of properties looked for;
> The boundaries of the area surveyed;
> The method of survey, including an estimate of the extent of survey coverage;
> A record of the precise location of all properties identified; and

Information on the appearance, significance, integrity and boundaries of each property sufficient to permit an evaluation of its significance.

Integrating Identification Results

The results of identification efforts must be integrated into the planning process so that planning decisions are based on the best available information. The new information is first assessed against the objectives of the identification efforts to determine whether the gathered information meets the defined identification goals for the historic context(s); then the goals are adjusted accordingly. In addition, the historic context narrative, the definition of property types and the planning goals for evaluation and treatment are all adjusted as necessary to accommodate the new data.

Reporting Identification Results

Reporting of the results of identification activities should begin with the statement of objectives prepared before undertaking the survey. The report should respond to each of the major points documenting:

- Objectives;
- Area researched or surveyed;
- Research design or statement of objectives;
- Methods used, including the intensity of coverage. If the methods differ from those outlined in the statement of objectives, the reasons should be explained.

Results: how the results met the objectives; result analysis, implications and recommendations; where the compiled information is located.

A summary of the survey results should be available for examination and distribution. Identified properties should then be evaluated for possible inclusion in appropriate inventories.

Protection of information about archeological sites or other properties that may be threatened by dissemination of that information is necessary. These may include fragile archeological properties or properties such as religious sites, structures, or objects, whose cultural value would be compromised by public knowledge of the property's location.

Archeological Documentation Objectives

The term "archeological documentation" is used here to refer specifically to any operation that is performed using archeological techniques as a means to obtain and record evidence about past human activity that is of importance to documenting history and prehistory in the United States. Historic and prehistoric properties may be important for the data they contain, or because of their association with important persons, events, or processes, or because they represent architectural or artistic values, or for other reasons. Archeological documentation may be an appropriate option for application not only to archeological properties, but to aboveground structures as well, and may be used in collaboration with a wide range of other treatment activities.

If a property contains artifacts, features, and other materials that can be studied using archeological techniques, then archeological documentation may be selected to achieve particular goals of the planning process, such as to address a specified information need, or to illustrate significant associative values. Within the overall goals and priorities established by the planning process, particular methods of investigation are chosen that best suit the types of study to be performed.

Relationship of archeological documentation to other types of documentation or other treatments: Archeological documentation is appropriate for achieving any of various goals, including:

Documentation Plan

Research Design: Archeological documentation can be carried out only after defining explicit goals and a methodology for reaching them. The goals of the documentation effort directly reflect the goals of the preservation plan and the specific needs identified for the relevant historic contexts. In the case of problem oriented archeological research, the plan usually takes the form of a formal research design, and includes, in addition to the items below, explicit statements of the problem to be addressed and the methods or tests to be applied. The purpose of the statement of objectives is to explain the rationale behind the documentation effort; to define the scope of the investigation; to identify the methods, techniques, and procedures to be used; to provide a schedule for the activities; and to permit comparison of the proposed research with the results. The research design for an archeological documentation effort follows the same guidelines as those for

identification (see the Guidelines for Identification) but has a more property-specific orientation.

The research design should draw upon the preservation plan to identify:

1.Evaluated significance of the property(ies) to be studied;

2. Research problems or other issues relevant to the significance of the property,

3. Prior research on the topic and property type; and how the proposed documentation objectives are related to previous research and existing knowledge;

4. The amount and kinds of information (data) required to address the documentation objectives and to make reliable statements including at what point information is redundant and documentation efforts have reached a point of diminishing returns;

5. Methods to be used to find the information; and

6. Relationship of the proposed archeological investigation to anticipated historical or structural documentation, or other treatments.

The primary focus of archeological documentation is on the data classes that are required to address the specified documentation objectives. This may mean that other data classes are deliberately neglected. If so, the reasons for such a decision should be carefully justified in terms of the preservation plan.

Archeological investigations seldom are able to collect and record all possible data. It is essential to determine the point at which further data recovery and documentation fail to improve the usefulness of the archeological information being recovered. One purpose of the research design is to estimate those limits in advance and to suggest at what point information becomes duplicative. Investigation strategies should be selected based on these general principles, considering the following factors:

1. Specific data needs;
2. Time and funds available to secure the data; and
3. Relative cost efficiency of various strategies.

Responsiveness to the concerns of local groups that was built into survey and evaluation phases of the preservation plan, should be maintained in archeological investigation, since such activity usually involve, site disturbance. The research design, in addition to providing for appropriate ethnographic research and

consultation, should consider concerns voiced in previous phases. In the absence of previous efforts to coordinate with local or other interested groups, the research design should anticipate the need to initiate appropriate contracts and provide a mechanism for responding to sensitive issues, such as the possible uncovering of human remains or discovery of sacred areas.

The research design facilitates an orderly, goal directed and economical project. However, the research design must be flexible enough to allow for examination of unanticipated but important research opportunities that arise during the investigation.

Documentation Methods

Background Review: Archeological documentation usually is preceded by, or integrated with historical research (i.e. that intensive background information gathering including identification of previous archeological work and inspection of museum collections; gathering relevant data on geology, botany, urban geography and other related disciplines; archival research; informant interviews, or recording of oral tradition, etc.).

Depending on the goals of the archeological documentation, the background historical and archeological research may exceed the level of research accomplished for development of the relevant historic contexts or for identification and evaluation, and focuses on the unique aspects of the property to be treated. This assists in directing the investigation and locates a broader base of information than that contained in the property itself for response to the documentation goals.

Field Studies: The implementation of the research design in the field must be flexible enough to accommodate the discovery of new or unexpected data classes or properties, or changing field conditions.

Explicit descriptive statements of and justification for field study techniques are important to provide a means of evaluating results.

An important consideration in choosing methods to be used in the field studies should be assuring full, clear, and accurate descriptions of all field operations and observations, including excavation and recording techniques and stratigraphic or inter-site relationships.

To the extent feasible, chosen methodologies and techniques should take into account the possibility that future researchers will need to use the recovered data to address problems not recognized at the time the data were recovered. The field operation may recover data that may not be fully analyzed; this data, as well as the data analyzed, should be recorded and preserved in a way to facilitate future research.

A variety of methodologies may be used. Choices must be explained, including a measure of cost-effectiveness relative to other potential choices. Actual results can then be measured against expectations, and the information applied later in similar cases.

Destructive methods should not be applied to portions or elements of the property if nondestructive methods are practical. If portions or elements of the property being documented are to be preserved in place, the archeological investigation should employ methods that will leave the property as undisturbed as possible.

Logistics in the field, including the deployment of personnel and materials and the execution of sampling strategies, should consider site significant, anticipated location of most important data, cost effectiveness, potential time limitations and possible adverse environmental conditions.

The choice of methods for recording data gathered in the field should be based on the research design. Based on that statement, it is known in advance of field work what kinds of information are needed for analysis; record-keeping techniques should focus on these data. Field records should be maintained in a manner that permits independent interpretation in so far as possible. Record-keeping should be standardized in format and level of detail.

Analysis: Archeological documentation is not completed with field work; analysis of the collected

Secretary of the Interior's Guidelines for Archeological Documentation

1. Description of the study area;
2. Relevant historical documentation/background research;
3. The research design;
4. The field studies as actually implemented, including any deviation from the research design and the reason for the changes;

5. All field observations;
6. Analyses and results, illustrated as appropriate with tables, charts, and graphs;
7. Evaluation of the investigation in terms of the goals and objectives of the investigation, including discussion of how well the needs dictated by the planning process were served;
8. Recommendations for updating the relevant historic contexts and planning goals and priorities, and generation of new or revised information needs;
9. Reference to related on-going or proposed treatment activities, such as structural documentation, stabilization, etc.; and
10. Information on the location of original data in the form of field notes, photographs, and other materials.

[Taken from - http://www.nps.gov/history/local-law/arch_stnds_0.htm]

The Stage 2 Proposed Work Plan

Secction 1 & 2: Accesses Road, Contractors Staging & Parking Area

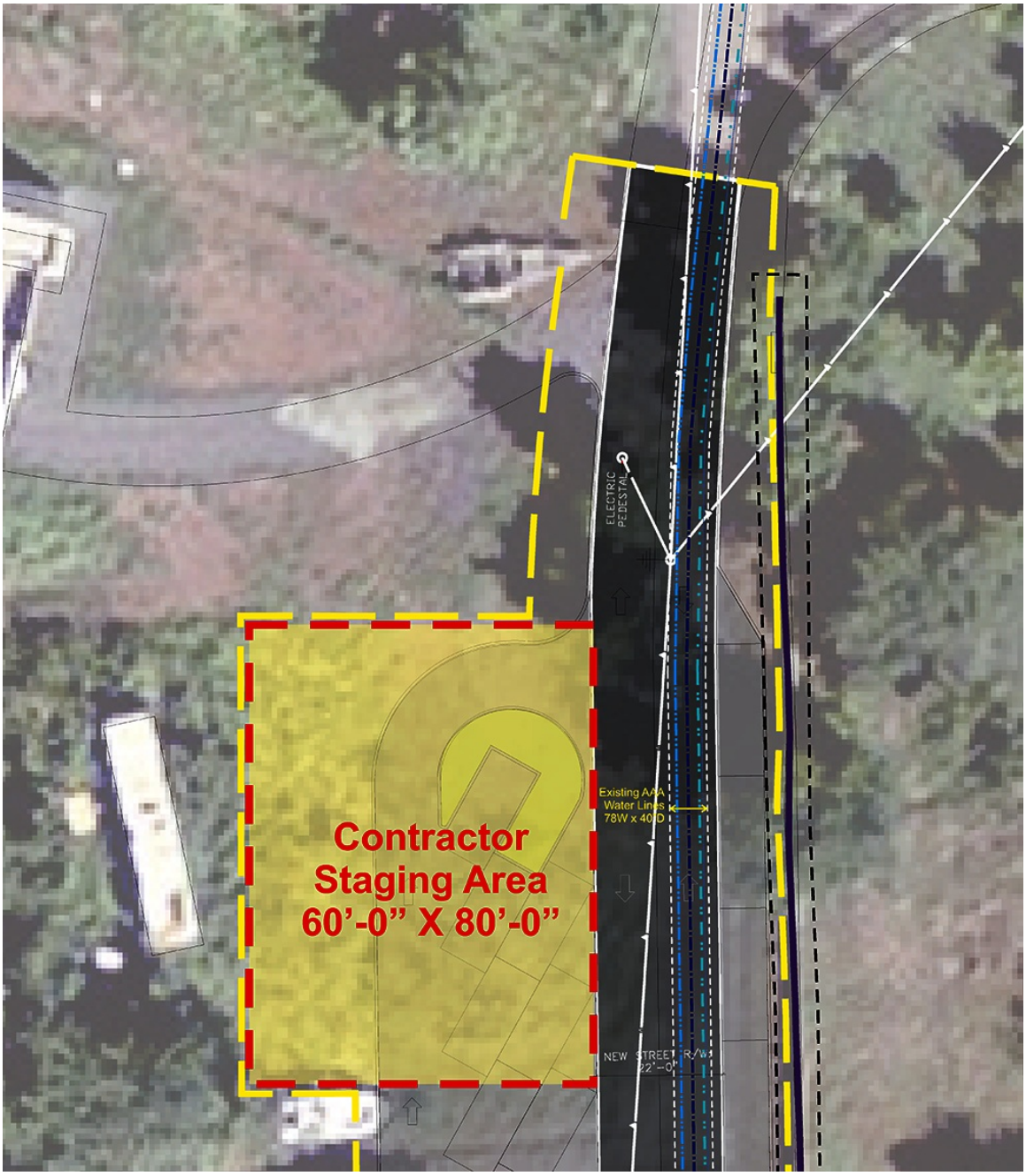
The Staging Area [60 by 80 feet], will store construction equipment and office trailers with no expected modification to the surface, except razing the vegetation to accesses the space.

Conditioning the Road and Parking Area. The existing Road will be widened to the west, to have a total road width of 24'-0", for adequate movement and to add parking spaces to the east of the road, parallel to a historic wall with a one meter buffer zone.

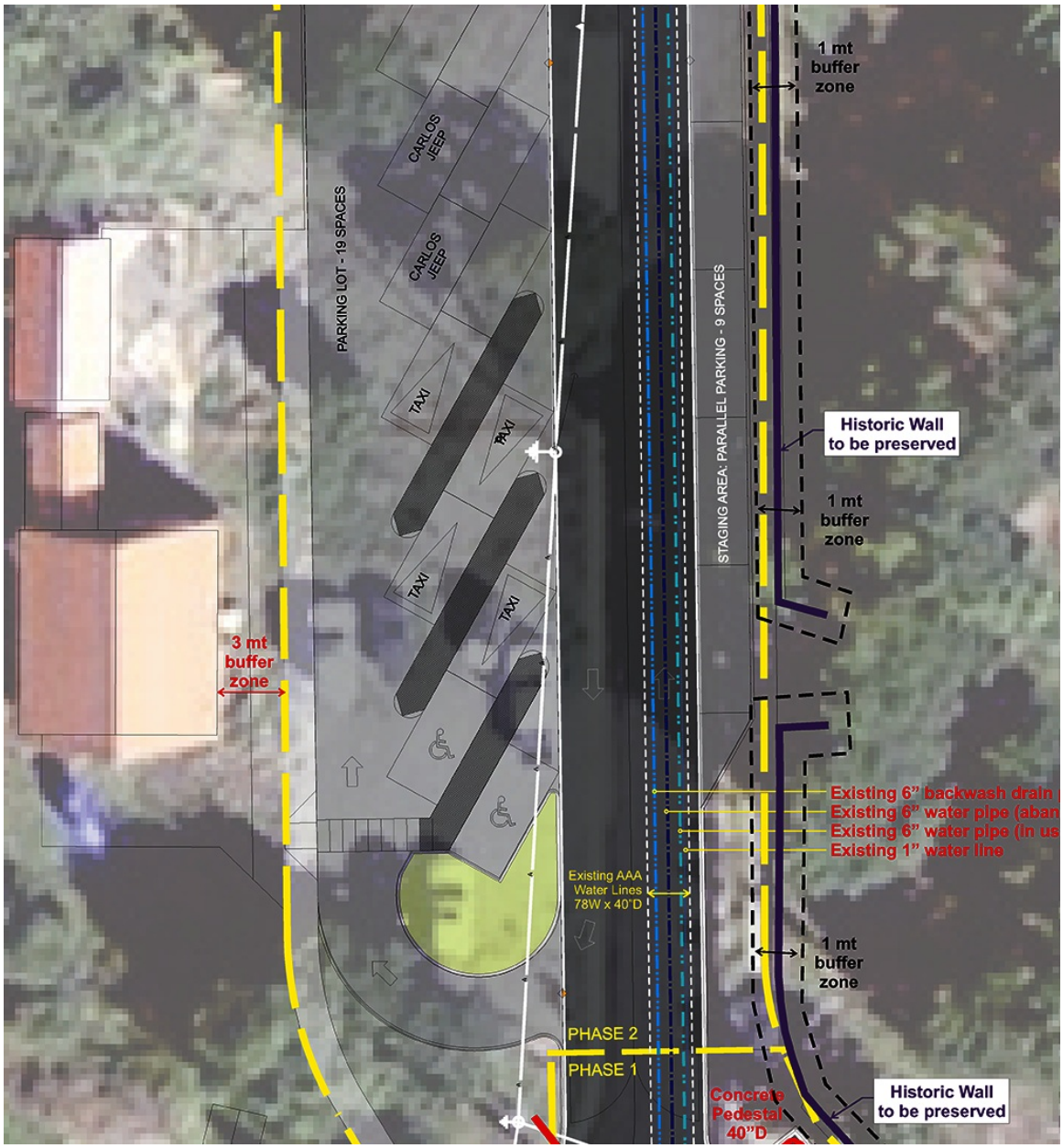
1. Within the area comprised by Sections 1 and 2, the Parking Area, the Staging Area and the northernmost tip of the Accesses Road, four [4] 0.50 by 2.00 m. trenches were to be excavated placed perpendicular to the access road.

2. A 1.00 x 1.00 meter unit was to be placed parallel to the roads' western flank in the vicinity of structures 16 and 4 depicted in the historic documents.

These trenches were to be as shallow as possible and mechanical excavation detained upon reaching archaeological remains or sterile soil, whichever came first. If archaeological remains were encountered, the archaeologist would proceed with manual excavation and documentation.



Northernmost section of the Project Area, including the Parking Area set along the western flank of the Access Road, the road itself, and the Contractor's Staging Area. Trenches were to be excavated where possible precolumbian deposits could have been encountered and where overlaid historic maps indicate the possible existence of structures and/or railroad tracks.



Middle section of the Project Area including the southern section of the Parking Area which is along the western flank of the Access Road. One trench was to be excavated from the east side of the road extending west from a subsurface water main related to the Desalinization Plant Intake Line. This trench provided a cross-section of the area where it is planned to grade 12" for the new road and parking area. The intention of the excavation was to expose the surface underneath the road in order to determine if were significant historic properties sealed under the pavement. According to historic maps, the Access Road goes over areas occupied by San Ildefonso household lots.

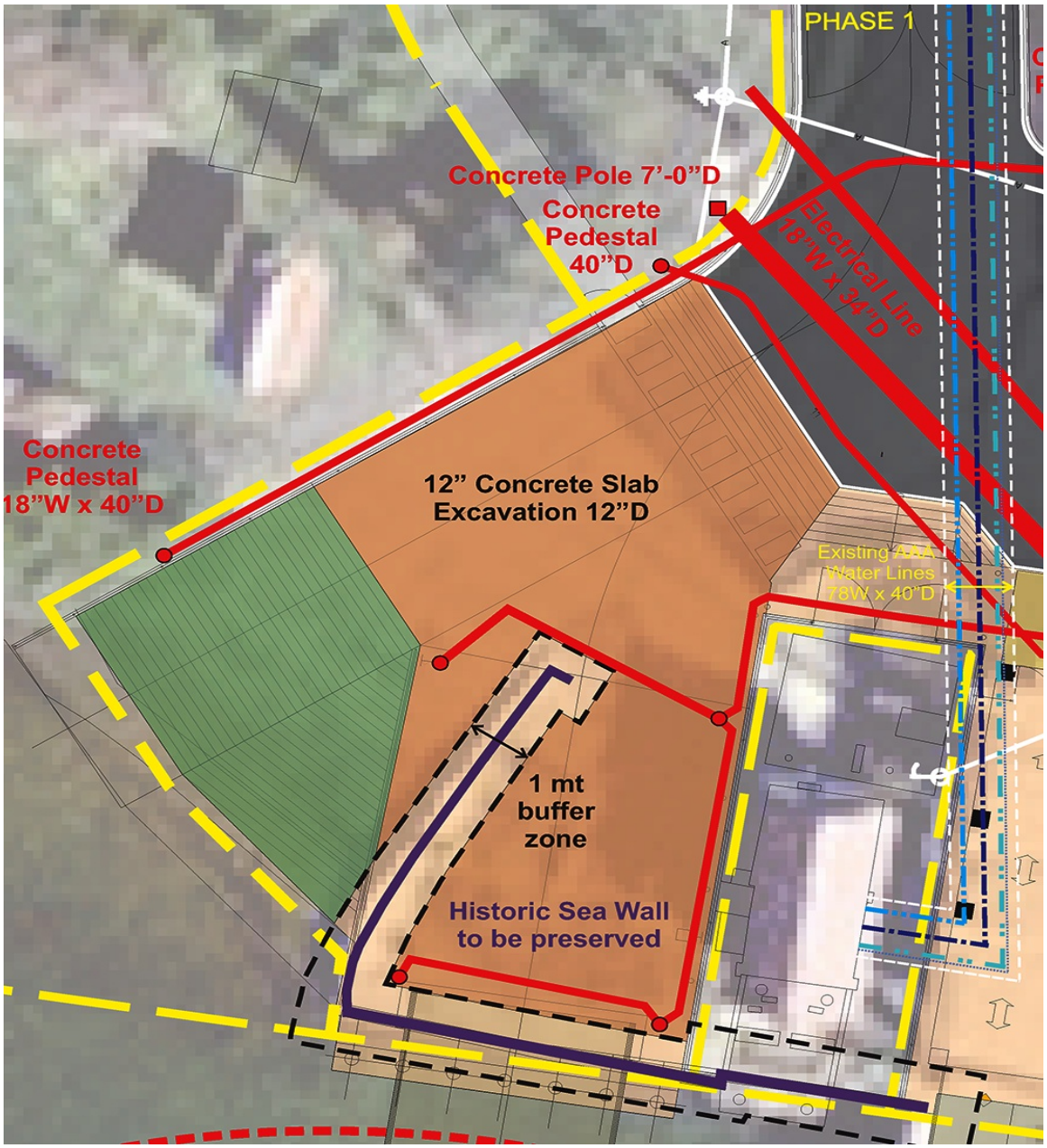
Section 3 - Orange and Green Construction Area

Archeological Intervention

1. Within the Orange Area a 0.50 by 2.00 m. trench was to be excavated where electrical lines are 42" deep, where the current grade will be excavated 12" to support a 12" concrete slab next to the ramps seawall to indicate the possible existence of previous wharf structures related to the Town of San Ildefonso and Camp Roosevelt. Remnants of previous wharfs, fills, pilings, water craft, the construction methods of the ramp wall and an array of seafaring paraphernalia related to the inhabitants of San Ildefonso, as well as military evidence, railway tracks and associated infrastructure related to Camp Roosevelt, together with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

2. A second trench 0.50 by 3.00 m was to be excavated where several electrical lines run 34 to 42" deep across the Access Road, north of the Orange Area, where there is the possible existence of structures related to the Town of San Ildefonso and Camp Roosevelt. Foundation remnants of brick, stone, mortar and wooden piles, railway tracks, features and associated infrastructure related to Camp Roosevelt, along with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

These trenches were to be excavated as shallow as possible and mechanical excavation detained upon reaching archaeological remains or sterile soil, whichever came first. When archaeological remains were encountered, the excavation was to be continued by manual methods.



This area comprises the Orange and Green Construction Area of the Wharf, and part of the Access Road. Within the Orange Area a 0.50 by 2.00 m. trench was to be excavated where electrical lines ran 42" deep and where the current grade will be excavated 12" to support the concrete slab and bulk of traffic off of the ferry. Possible remnants of previous wharfs, fills, pilings, water craft and an array of seafaring paraphernalia, the natural stratigraphy of the coastline, and evidence of precolumbian activity were potential evidence to be encountered. A trench measuring 0.50 by 3.00 m. in size was to be excavated where the electrical lines run 34" deep and where overlaid historic maps indicated the possible existence of railroad tracks and associated infrastructure.

Section 4 - Light Green Area

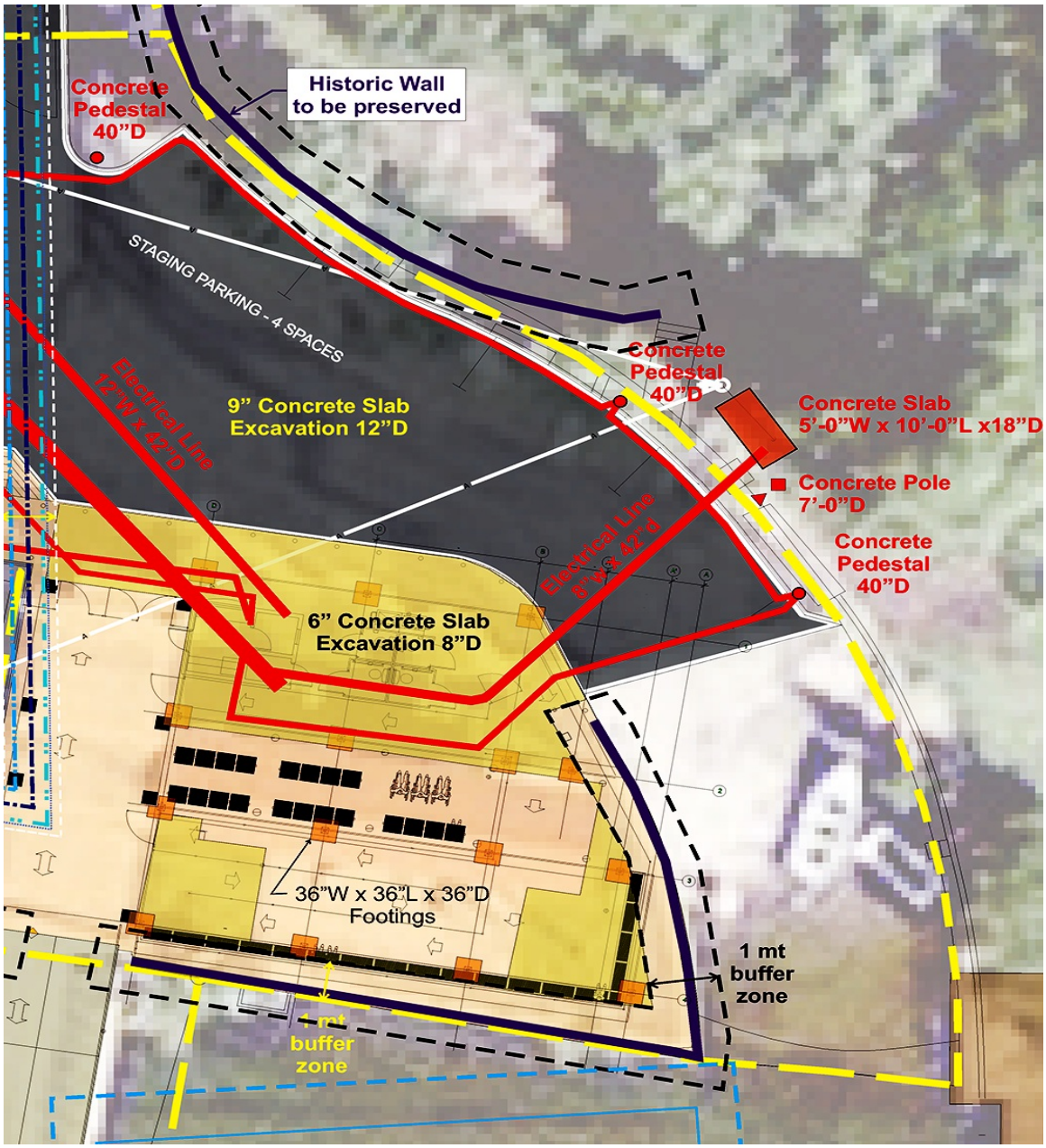
Archeological Intervention

1. Within the Light Green Area a 0.50 by 2.00 m. trench was to be excavated where electrical lines intersect to a depth of 42". Remnants of previous wharfs, fills, pilings, water craft and an array of seafaring paraphernalia related to the inhabitants of San Ildefonso, as well as military evidence associated with Camp Roosevelt, together with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

2. A second 0.50 by 1.00 m. trench, following Martinez's recommendation, was to be relocated to the dry ground area, where overlaid historic maps indicate the possible existence previous wharf structures related to the Town of San Ildefonso and Camp Roosevelt remnants of previous wharfs, fills, pilings, water craft and an array of seafaring paraphernalia related to the inhabitants of San Ildefonso, and military associated to Camp Roosevelt, along with deposits associated with coastal activity of the prehistoric inhabitants of Lower Camp, may be encountered.

3. A third 0.50 by 2.00 m. trench was to be excavated where a concrete support slab for an emergency generator cuts grade 18" into the current soil surface, where the possible existence of historic structures of both the town and Camp Roosevelt foundation remnants of brick, stone, mortar, wooden piles and related refuse, along with prehistoric Lower Camp, and historic, deposits associated with procurement practices and other coastal activity may be encountered. However, there was the possibility that the platform lays over a causeway leading up to the Office Building, and the subsoil, evidence of the modification of the natural deposition, may be encountered.

   Note: These trenches were to be as shallow as possible and mechanical excavation detained upon reaching archaeological remains or sterile soil, whichever came first. If archaeological remains were encountered, the archaeologist would proceed with manual excavation and documentation.



This area comprises the Light Green Construction Area of the Wharf and part of the Access Road Staging Area. Within the Light Green Area two 0.50 by 2.00 meter trenches were to be excavated where the electrical lines intersect to a depth of 42" deep and where current grade will be excavated 8" to support a concrete slab. Possible remnants of previous wharfs, fills, pilings, water craft and an array of seafaring paraphernalia were potentials to be encountered. A third 0.50 by 2.00 meter trench was to be excavated where a concrete support slab for an emergency generator cuts grade to 18". Natural stratigraphy of the coastline and remnants of precolombian activity were potentials to be encountered and where overlaid historic maps indicated the possible existence of infrastructure.

Interviews

In addition to the aforementioned, the Stage 2 Survey would carry out interviews with local informants and established organizations such as the Fundación de Culebra, Inc. (Museo Histórico de Culebra), Autoridad de Conservación y Desarrollo de Culebra and USFWS - Culebra National Wildlife Refuge, to augment historical and lifeways data on San Ildefonso and Camp Roosevelt.

Standing Structures

Standing Structures were tol be described in terms of probable date of construction, construction materials and methodology, use or re-use, modifications, and their potential contribution to the historic context and to the historic district in general. This description was required for any historic structure that will be impacted by the project construction activities, the L-shaped pier, the navy pier, bulkhead and boat ramps; and the access road and any structures along it (sidewalks, drainage ditches, stonewalls, etc.).

Excavation Units

The Project Site Plan [PSP], along with an overlay of historic cartographic documentation was to be employed to locate sampling units deemed for excavation. Systematic control of the excavations was to follow the natural stratigraphy of the soil. Each unit, trench or test pit was to be excavated to a depth of 1.00 meters, as a maximum. If any deposits where to extend beyond the established depth, excavation was to continue until sterile soil was reached. Trenches were to be excavated mechanically, units and test pits manually.

Laboratory Analysis

Initial analysis was to focus on artifact type, style, origin and date of manufacture.

Interpretation - End of Field Report & Final Report

The investigation focused on obtaining sufficient data to determine the character and vertical extension of deposits and structures, their integrity and scientific importance and the way in which the proposed project may adversely affect them. Determine under which criteria the site/district is eligibility for inclusion to the National Register of Historic Properties and put forth recommendations on how to avoid, minimize or mitigate any adverse effect on the cultural resources encountered.

The End of Field Report will include a detailed description of all the procedures employed, a preliminary analysis of the findings and a selection of diagnostic graphics. In addition, to presenting recommendations regarding the determination of need for any further cultural resources compliance measures of the Project Area for construction.

The final report will include a detailed description of all the procedures employed in the field as well as in the analisis of the retrieved artifact assemblage, presenting results, conclusions and recommendation on the handling of the cultural resources encountered. In addition to field notes, drawings, and a photographic documentation of all excavation procedures. All in accord with the guidelines of an "intensive archaeological and historic survey", as defined in the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

Work plan synopsis

For the Stage 2 Intensive Cultural Resources Survey, as per the present SOW and APE:

1. Eight (8) trenches measuring 0.50m x 2.00m would be excavated by mechanical means with final excavation being completed manually.

2. One (1) trench measuring 0.50m x 3.00m would be excavated by mechanical means with final excavation being completed manually.

3. One (1) 1.00m x 1.00m survey unit would be excavated manually.

4. A systematic surface survey would be carried out to locate and identify structural elements identifiable as cultural resources.

FEMA Conditions and procedures requested for the implementation of the intensive survey:

1. It was required that a SOI archaeologist be present in the field at all times during the archaeological intervention.

2. Submit a schedule or time-frame for the duration of the different activities of the intensive survey.

3. Notify FEMA of the starting day for the field work.

4. Submit a weekly progress report to FEMA for the duration of the intensive survey.

5. Notify FEMA immediately of any significant findings.

6. The end of field report, as well as the final report, would be submitted to FEMA for review and approval, before it is sent to the State Historic Preservation Office for final review and concurrence.

FIELD METHODOLOGY AND IMPLEMENTATION

The Stage 2 methodology was implemented using the parameters established in the approved Work Plan.

Interviews were done with the local residents and organizations regarding their knowledge of the area.

The systematic surface survey was carried out within the proposed project parameters to detect and document the existence of any surface evidence beyond that already indicated in the maps and photo-documentation available for the site.

Subsurface archaeological excavations were located following the parameters indicated in the Stage 1 Survey, utilizing historic maps and graphics to place these excavations on, or within the area, indicating historic resources within the project limits. Excavations were carried out utilizing a mechanical back-hoe which loosened the soil in controlled scrapes, after which the soil was extracted by manual and/or mechanical means. In those strata which indicated a potentially non-natural context or a rock/clay construction fill, excavated soil was screened through a standardized 1/4" metal mesh.

All excavations were done following stratigraphic contours rather than artificial levels. Excavation levels were taken down to sterile substrata, or, in the case of utility lines, to depths which exceeded the proposed impact levels of the project.

All fieldwork was documented using standardized field forms for stratigraphic documentation, plan and profile views, and unit location. Field sketches, as well as photographic documentation of the excavations and the completed units was systematically carried out.

All excavated units were backfilled to original grade, and those units which were excavated within the public roadway were backfilled with soil and topped with a finished 4" thick cement layer to return the roadway to serviceable condition.

The architectural documentation of the project area was carried out using photo-documentation, scalar measurements, and examination of the construction methodologies, materials, and interventions.

Implementation of mechanical and manual methodologies.

Backfilling and surface finishing of excavated areas.

FIELD RESULTS

Interviews

Interviews were done with the following individuals:
Santiago Prieto, Municipality of Culebra, Culture Program
Luz Rivera-Cantwell, President Culebra Foundation
Luis Angel Albert, local resident 55 years old
Antonio Serrano, local resident 55 years old

Other than the President of the Culebra Foundation, Ms. Luz Rivera-Cantwell, no specific information regarding the previous conditions of the site or its evolution was provided by local informants. The documentation on file at the Culebra Foundation and Museum, as well as the members of these two entities, are the more significant resources for information regarding the site and its evolution.

Surface survey

No further cultural resources evidence was visible in the systematic surface survey of the proposed project area beyond that previously documented in the Stage 1 report and the project site plans.

Subsurface excavation units

A total of ten (10) 0.50 x 2.00 meters units were excavated within the proposed project area.

One (1) 0.50 x 3.00 meter unit was excavated within the proposed project area.

One (1) 1.00 x 1.00 meter unit was excavated within the proposed project area.

All units were located in conjunction with the historical documentation and following the approved Work Plan. Mechanical excavation, combined with manual excavation was done for all of the trench units (identified as “T”). The controlled one meter square unit (identified as “U”) was excavated entirely by manual methods.

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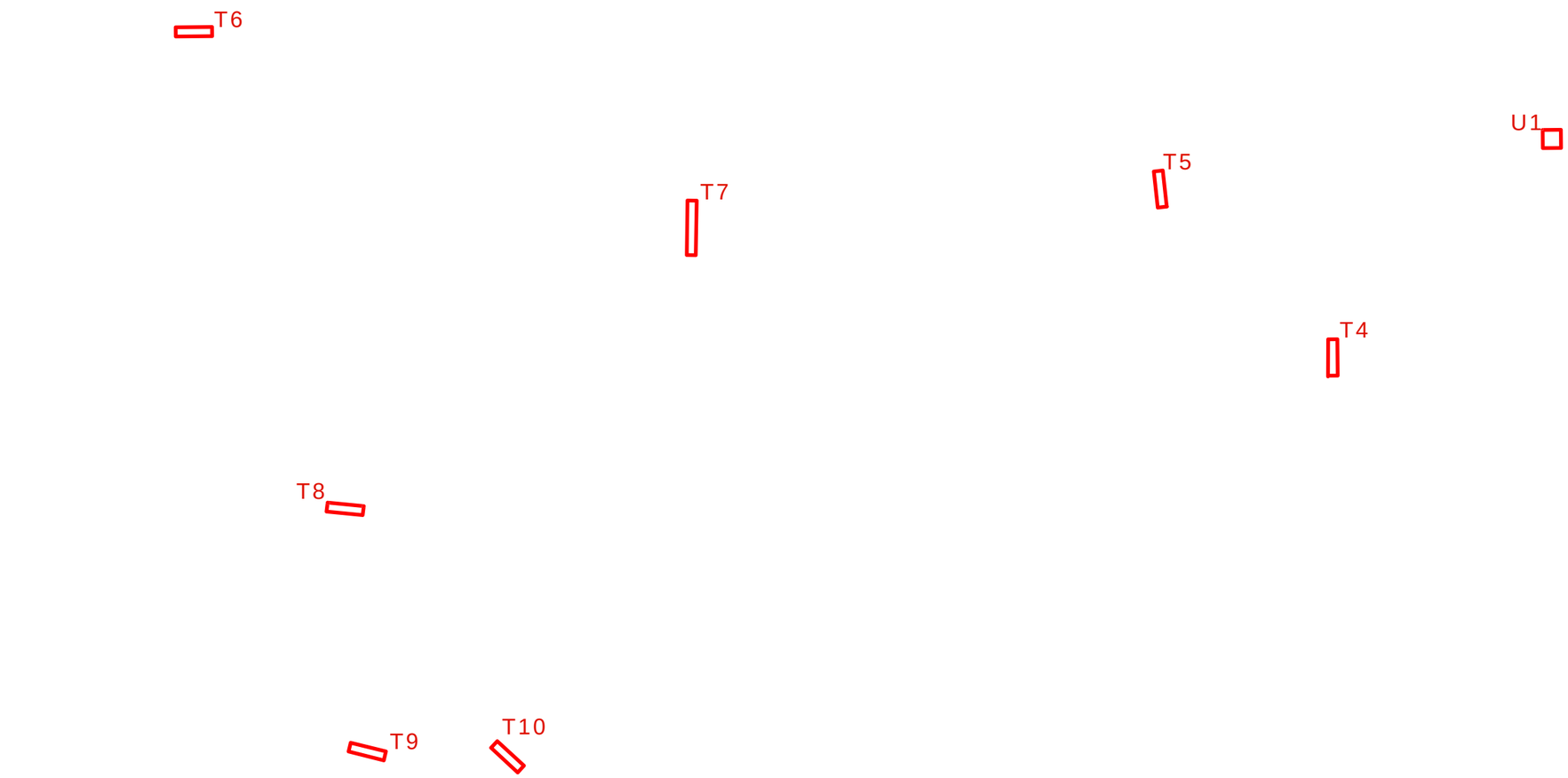
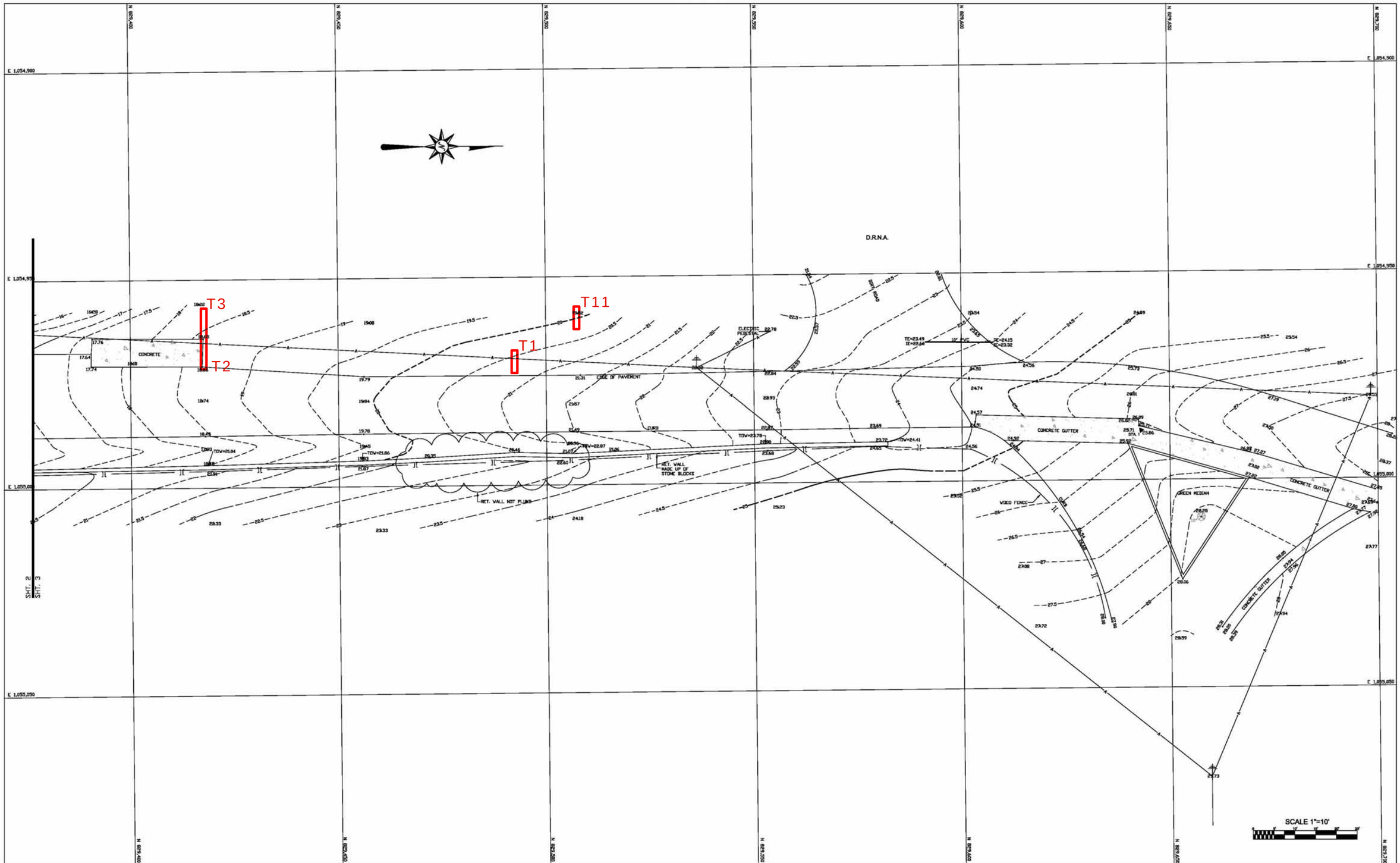


TEST UNITS LOCACTION



COMMONWEALTH OF PUERTO RICO

AUTORIDAD de los PUERTOS de PUERTO RICO

Repair/Construction of:

ALTERNATE CULEBRA CARGO RAMP FACILITIES

SAN ILDEFONSO RECREATIONAL AREA
CULEBRA, PUERTO RICO

HYDROGRAPHIC AND AS BUILT SURVEY
TEST UNITS LOCACTION

PRESENTED BY:

ATKINS

ATKINS Caribe, LLP
Metro Office Park - Lot 8 1st Street Ste 102
Guaynabo, Puerto Rico 00968-1717

amsa
antonio melendez & asociados, psc
SURVEYING AND MAPPING CONSULTANTS
B-17 Marginal Ext. Forest Hills, Bayamon, P.R., 00959
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REVISION			DATE

SCALE	DESIGN	DRAWN	REVISED
1"=10'	N/A	TM	TM

DRAWING IDENTIFICATION: V-1.02

SHEET NO.	TOTAL
.	.

CAD FILE: CUATSO-1-FT

JOB NO.	DATE
N/A	AUG/2014

Excavation unit T1
0.50m x 2.00m

North profile

0 - 5cms.b.s.
10YR 3/3
Dry, Loose, Fine
Humus
No Cultural Resources

West profile

05 - 30cms.b.s.
10YR 4/3
Humid, Loose, Granulated
Clay
No Cultural Resources
1" dia Water pipe
Electric line

Surface area of unit T1 and site context.

Unit T1 left after electrical and water utilities found in close proximity, to be substituted with another location out of the utility routes.

Excavation unit T2 -T3
0.50m x 4.00m

West profile

0 - 13cms.b.s.
10YR 4/2
Dry, Loose, Fine
Humus
No Cultural Resources

13 - 42cms.b.s.
7.5 YR 4/4
Dry, Compact, Granulated
Rocky
No Cultural Resources

42 - 80cms.b.s.
10 YR 3/1
Dry, Compact, Coarse
Clay
No Cultural Resources

80 - 100cms.b.s.
10 YR 3/2
Humid, Compact, Granulated
Gravel
No Cultural Resources

North profile

0-18cms.b.s.
10YR 4/2
Dry, Loose, Fine
Humus
No Cultural Resources

18 - 46cms.b.s.
7.5 YR 4/4
Dry, Compact, Granulated
Rocky
No Cultural Resources

46- 80cms.b.s.
10 YR 3/1
Dry, Compact, Coarse
Clay
Cultural Resources - glass

80 - 100cms.b.s.
10 YR 3/2
Humid, Compact, Granulated Clay
Cultural Resources - glass

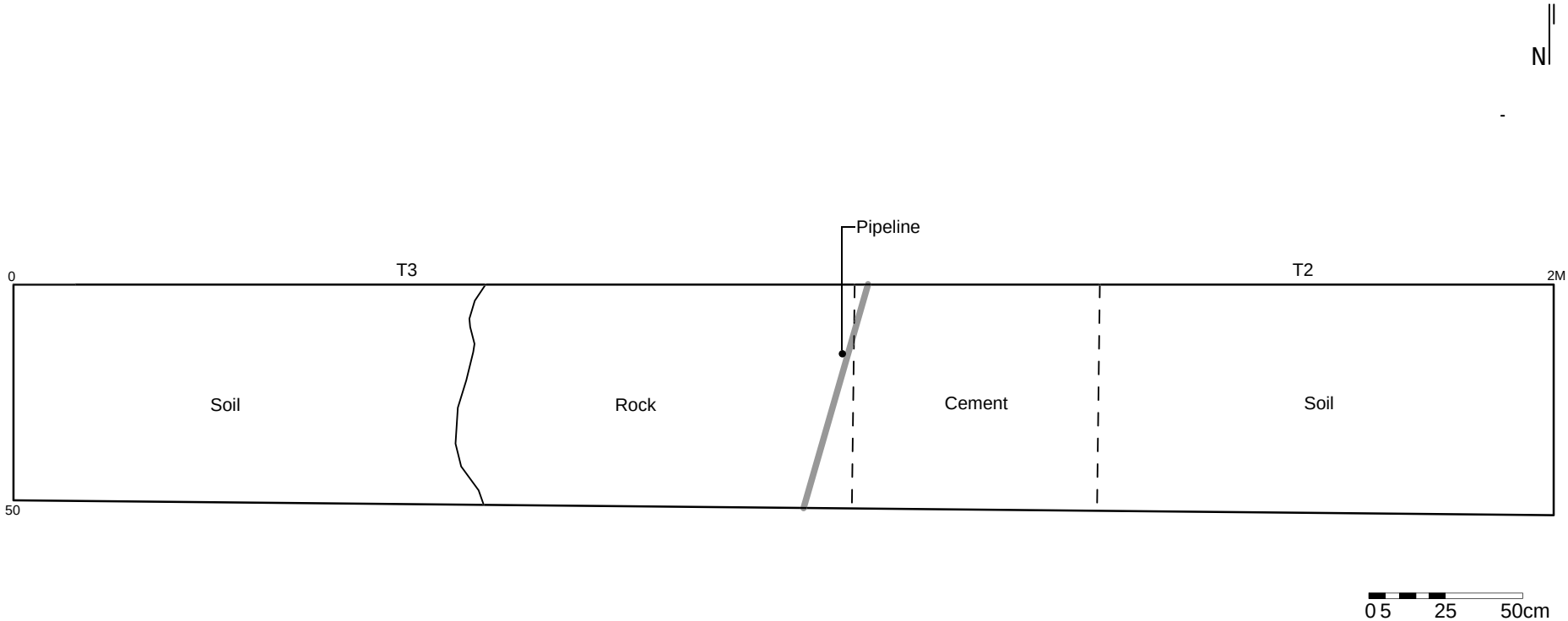
Unit T2 surface and site context.

Initiation of unit T2 excavation.

Extension of unit T2 to unit T3.

Units T2-T3 site context.

Subsurface cement elements at interface of units T2 and T3.



STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Plan View T2-T3

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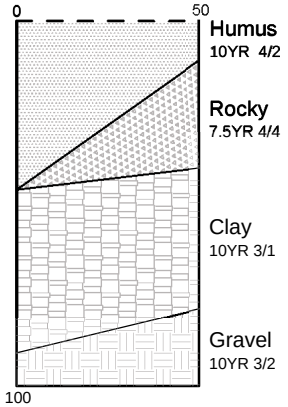
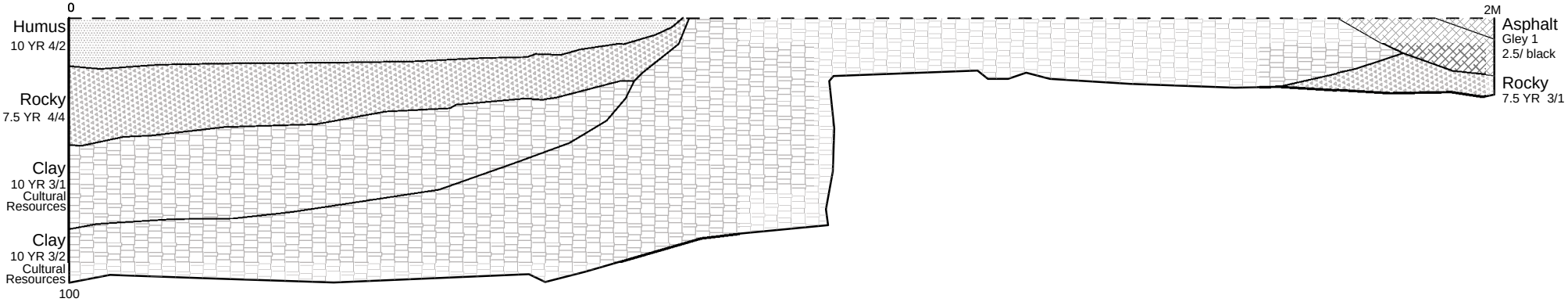


WEST



NORTH

0 5 25 50cm

STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T2-T3

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Excavation unit T4

0.50m x 2.00m

East profile

0 - 10cms.b.s.
10 YR 8/1 Cement
Dry, Compact
No Cultural Resources

10 - 23cms.b.s.
2.5Y5/3
Dry, Loose
Stones
No Cultural Resources

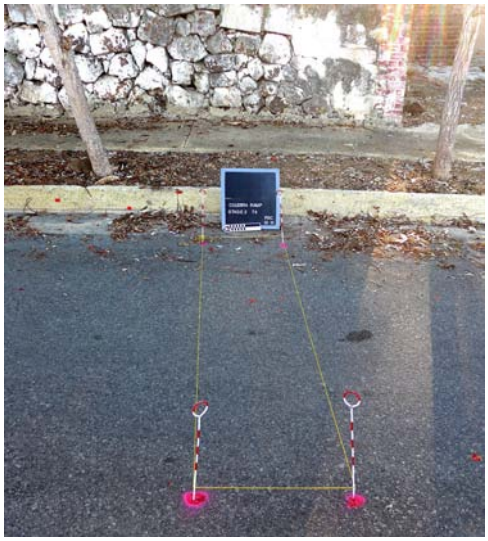
23 - 50cms.b.s.
2.5Y6/2
Humid, Granulated
Gravel
No Cultural Resources

North profile

0 - 7cms.b.s.
Gley 2.5/1 Asphalt
Dry, Compact
No Cultural Resources

7 - 21cms.b.s.
2.5 Y 5/3
Dry, Loose
Stones
No Cultural Resources

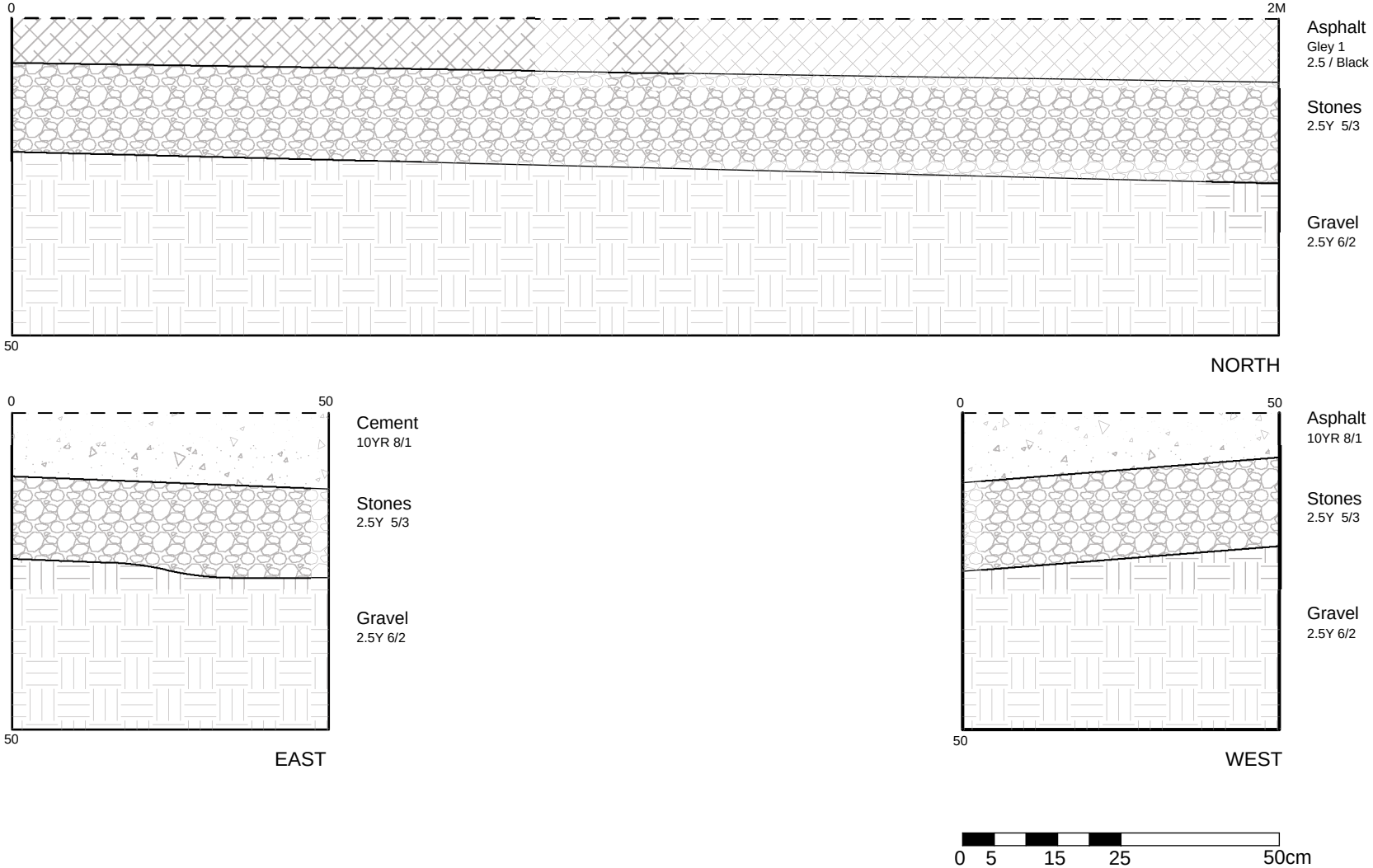
21 - 50cms.b.s.
2.5 Y 6/2
Humid, Granulated
Gravel
No Cultural Resources



Surface layout of unit T4 and relation to roadway/sidewalk/wall.

View westward of unit T4 and relation to standing historic structure.

Representative profile of unit T4. Blue flagging tape at bottom of unit is a construction marker of an extant buried pipeline.



STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T4

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Excavation unit T5
0.50m x 2.00m

East profile

0 - 11cms.b.s.
2.5 Y 5/3
Humid, Compact, Granulated
Gravel
No Cultural Resources

11- 21cms.b.s.
2.5 Y 2.5/1
Humid, Compact, Granulated
Stones
No Cultural Resources

21 - 42cms.b.s.
2.5Y4/3
Humid, Compact, Granulated
Clay
No Cultural Resources

North profile

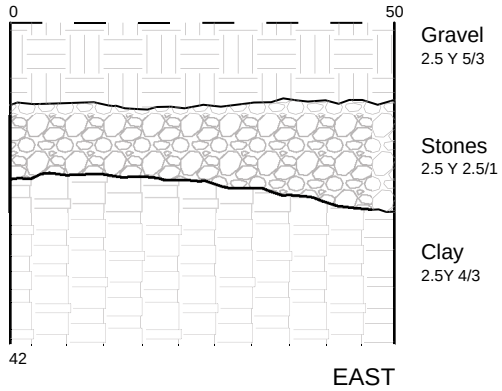
0 - 11cms.b.s.
2.5 Y 5/3
Humid, Compact, Granulated
Stones
No Cultural Resources

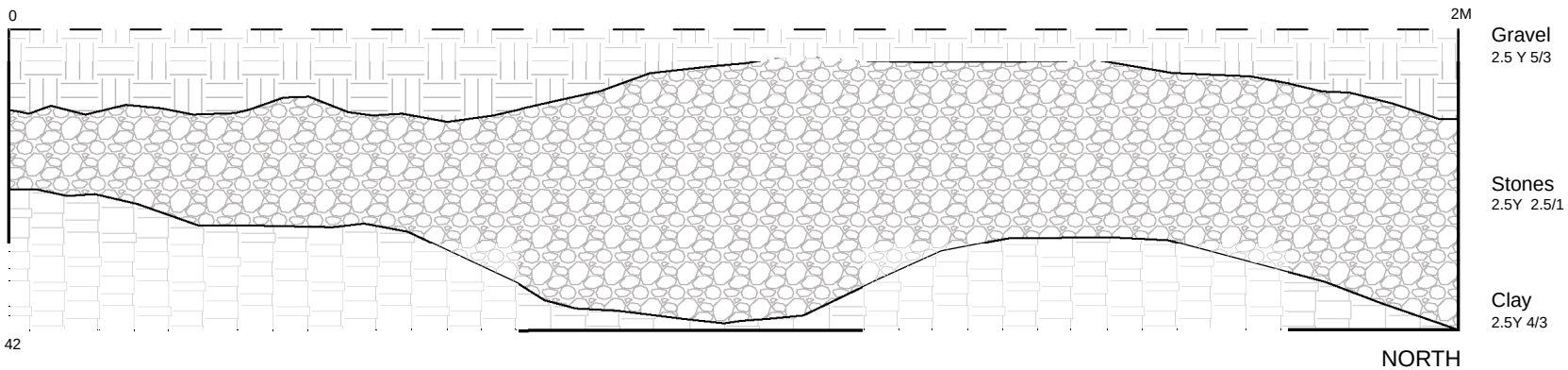
11 - 30cms.b.s.
2.5 Y 2.5/1
Humid, Compact, Granulated
Stones
No Cultural Resources

30 - 42cms.b.s.
2.5Y 4/3
Humid, Compact, Granulated
Clay
No Cultural Resources

Surface layout of unit T5 and site context, including relationship to historic structure to west.

Representative profile of unit T5 and site context to east.





0 5 15 25 50cm

STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T5

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Excavation unit T6
0.50m x 2.00m

North profile

0 - 7cms.b.s.
2.Y5/4
Dry, Loose, Fine
Sand
No Cultural Resources

7 - 22cms.b.s.
2.5 Y 6/1
Dry, Loose, Granulated
Sand
No Cultural Resources

22 - 51cms.b.s.
2.5 Y 4/2
Dry, Loose, Coarse
Stones
No Cultural Resources

51 - 70cms.b.s.
7.5 YR 5/8
Humid, Compact, Granulated
Clay
No Cultural Resources
Phreatic Level

East profile

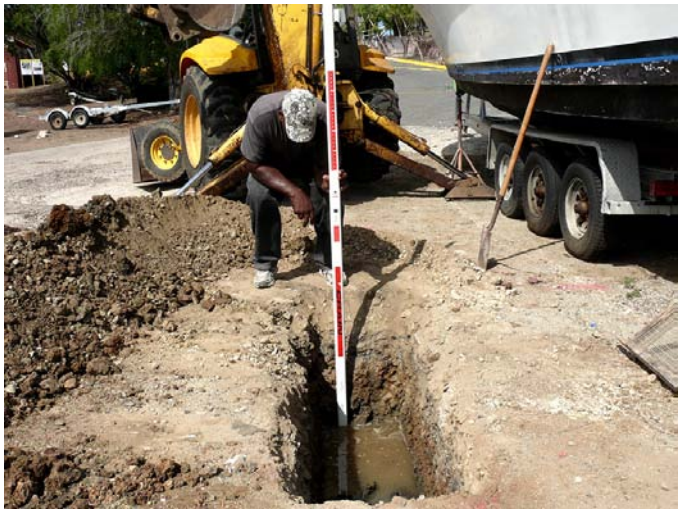
0 - 5cms.b.s.
2.5 Y 5/4
Dry, Loose, Fine
Sand
No Cultural Resources

5 - 27cms.b.s.
2.5 Y 6/1
Dry, Loose, Granulated
Sand
No Cultural Resources

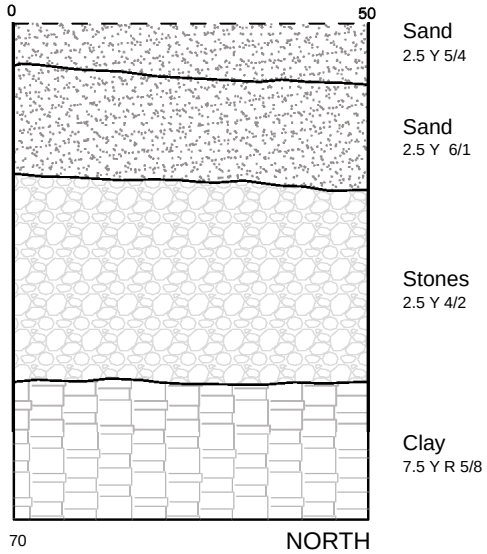
27 - 57cms.b.s.
2.5 Y 4/2
Dry, Loose, Coarse
Stones
No Cultural Resources

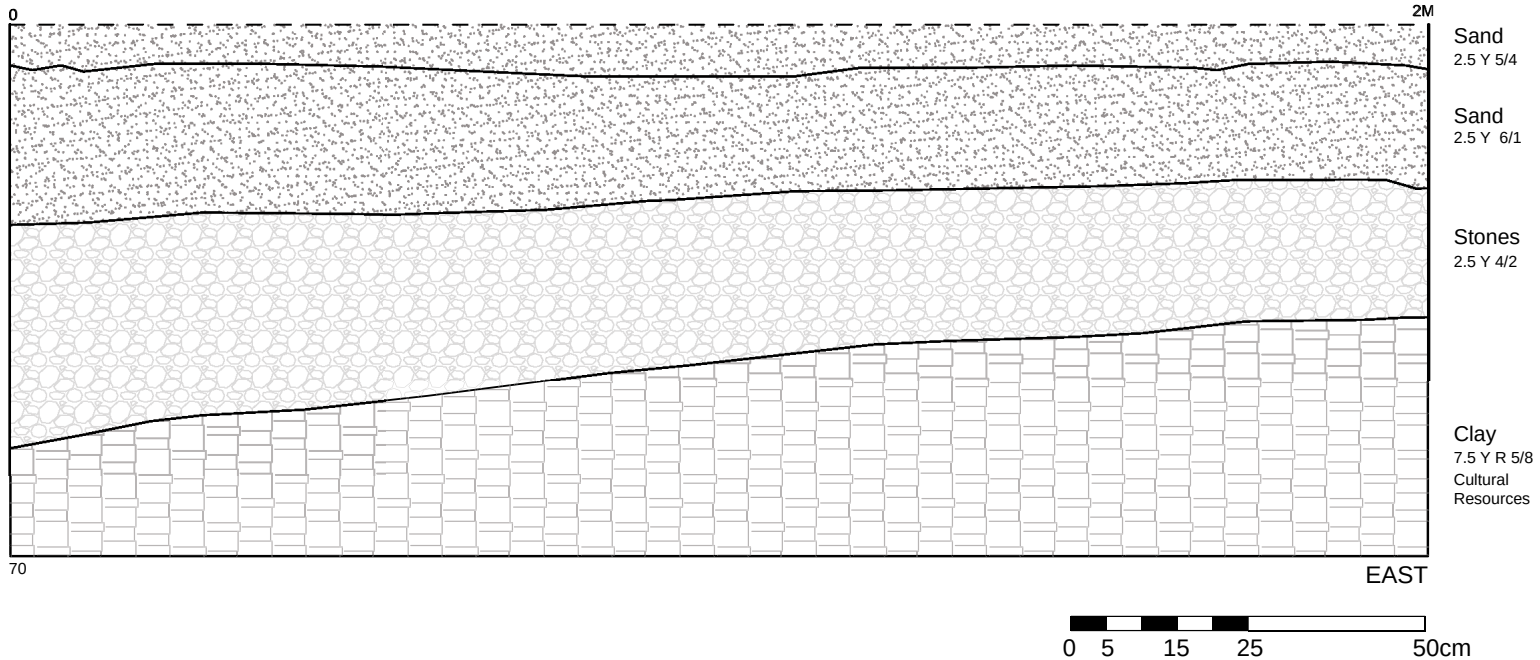
57 - 70cms.b.s.
7.5 YR 5/8
Humid, Compact, Granulated
Clay
Cultural Resources - shell
Phreatic Level

Surface layout of unit T6 and site context in relation to wharf edge.



Representative profile of unit T6 indicating phreatic level.





STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T6

Excavation unit T7
0.50m x 3.00m

East profile

0 - 10cms.b.s.
Gley 1 2.5/1 Asphalt
Dry, Compact, Granulated
No Cultural Resources

10 - 23cms.b.s.
2.5 Y 5/4
Dry, Compact, Granulated
Stones
No Cultural Resources

23 - 40cms.b.s.
7.5 YR5/4
Dry, Compact, Granulated
Gravel
No Cultural Resources

40 - 60cms.b.s.
10 YR 3/2
Dry, Compact, Granulated
Sand
No Cultural Resources

60 - 88cms.b.s.
10YR 4/2 Humid
Compact, Fine, Clay
No Cultural Resources

88 - 100cms.b.s.
2.5 Y 4/2
Humid, Loose, Granulated
Sand
Positive: bone, shell

100-114cms.b.s.
2.5 Y 4/2
Humid, Loose, Granulated
Sand
No Cultural Resources

North profile

0 - 12cms.b.s.
Gley 1 2.5 /1 Asphalt
Dry, Compact, Granulated
No Cultural Resources

12 - 23cms.b.s.
2.5 Y 3/2
Humid, Loose, Granulated
Gravel
No Cultural Resources

23 - 35cms.b.s.
2.5 Y 5/3
Dry, Compact, Granulated
Gavel
No Cultural Resources

35 - 56cms.b.s.
10 YR 3/2
Dry, Compact, Fine
Sand
No Cultural Resources

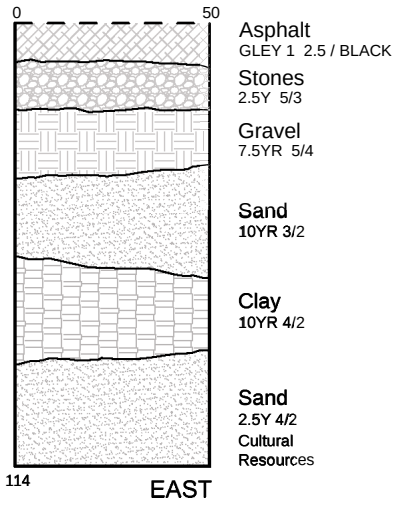
56 - 87cms.b.s.
10YR 4/2
Humid, Compact, Granulated
Clay
No Cultural Resources

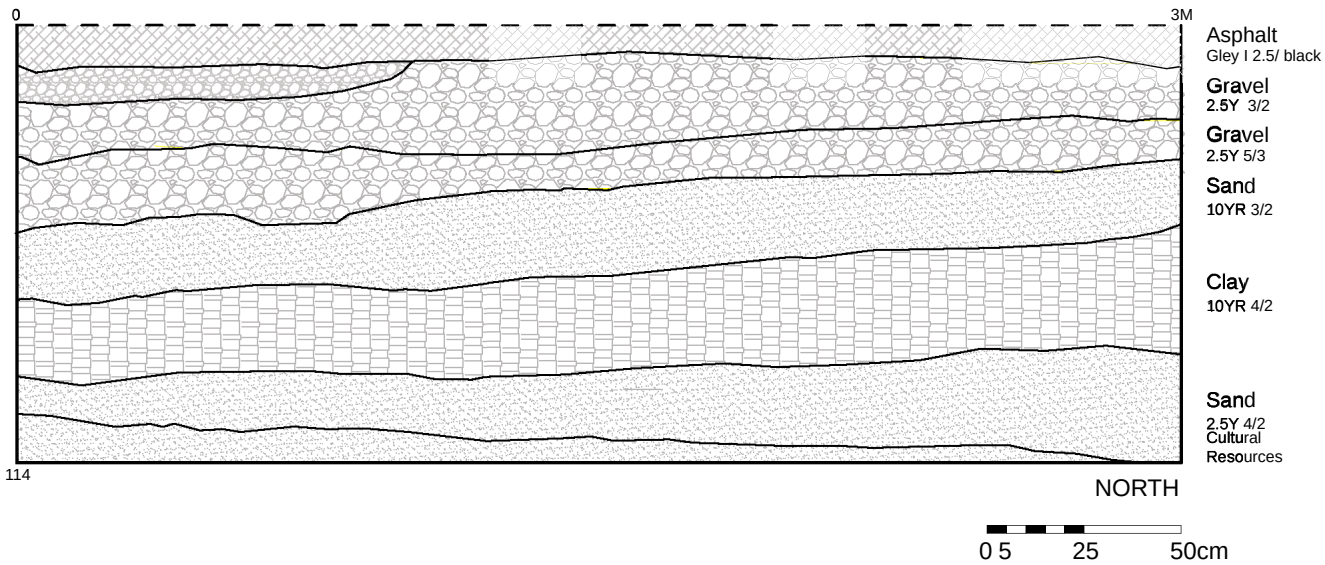
87 - 100cms.b.s.
2.5 Y 4/2
Humid, Loose, Granulated
Sand
Cultural Resources: bone, glass, metal

100 - 114cms.b.s.
2.5 Y 4/2
Humid, Loose, Granulated
Sand
No Cultural Resources

Representative view of T7 and site context in relation to western boat ramp.

View eastwards of unit T7 showing site context.





STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T7

Excavation unit T8
0.50m x 2.00m

East profile

0-16cms.b.s.
10 YR 4/2
Dry, Loose, Granulated
Clay
No Cultural Resources

16 - 23cms.b.s.
Gley 1 2.5 /1 Asphalt
Dry, Compact
No Cultural Resources

23 - 37cms.b.s.
2.5 Y 3/3
Dry, Compact, Fine
Clay
No Cultural Resources

37 - 54cms.b.s.
10 YR 3/3
Dry, Compact, Granulated
Rocky
Cultural Resources: brick, glass

54 - 70cms.b.s.
2.5 Y 8/1 Cement
Dry, Compact, Coarse
No Cultural Resources

70 - 100cms.b.s.
2.5 Y 3/3
Dry, Compact, Fine
Clay
No Cultural Resources

North profile

0 -13cms.b.s.
10 YR 4/2
Dry, Loose, Granulated
Clay
No Cultural Resources

13 - 18cms.b.s.
Gley 1 2.5 /1 Asphalt
Dry, Compact , Granulated
No Cultural Resources

18 - 30cms.b.s.
2.5 Y 3/3
Dry, Compact, Fine
Clay
No Cultural Resources

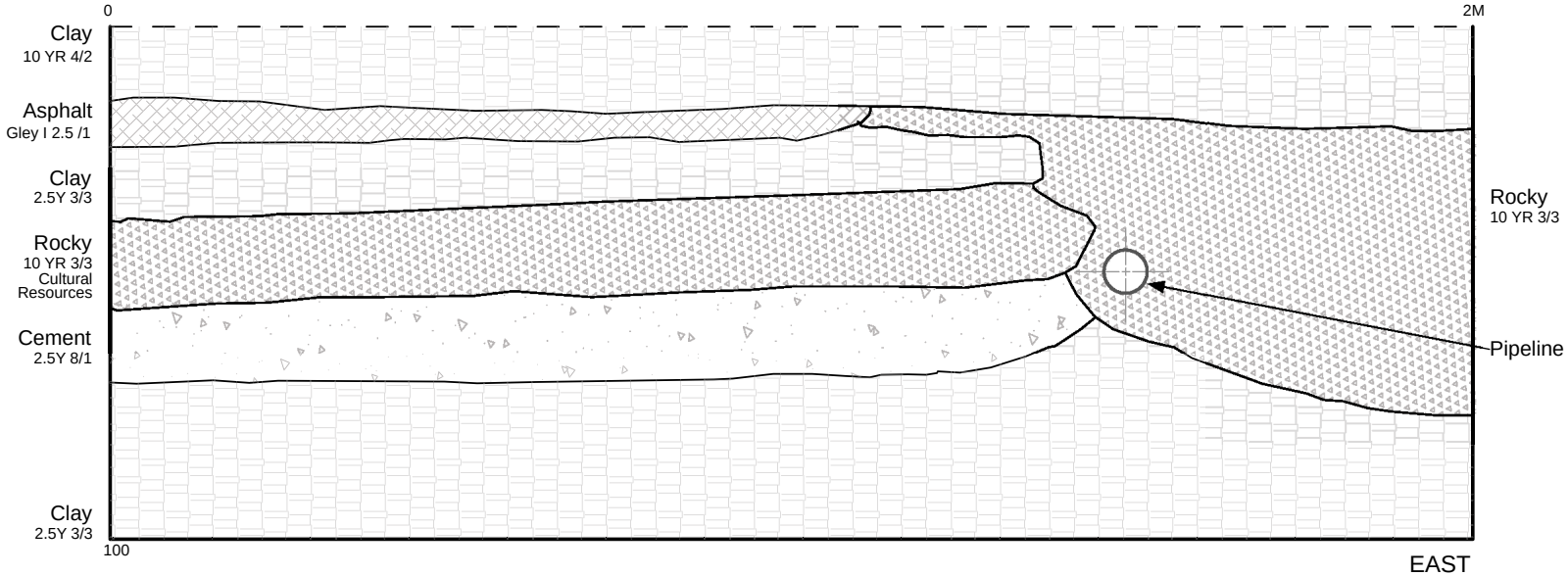
30 - 38cms.b.s.
10 YR 3/3
Dry, Compact, Granulated
Rocky
No Cultural Resources

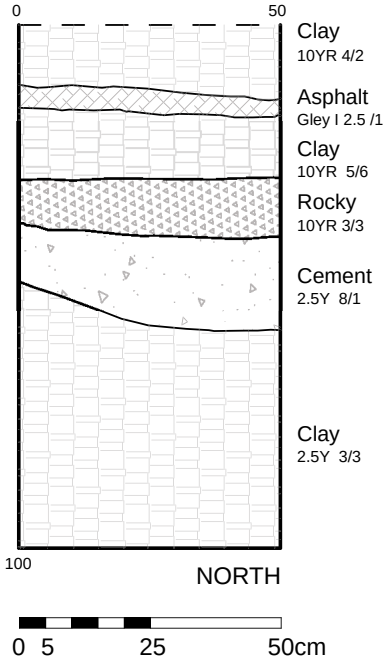
38 - 50cms.b.s.
2.5 Y 8/1 Cement
Dry, Compact, Coarse
No Cultural Resources

50 - 100cms.b.s.
2.5 Y 3/3
Dry, Compact, Fine
Clay
No Cultural Resources

Surface layout of unit T8 and site context.

Representative profile of unit T8.





STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T8

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Excavation unit T9
0.50m x 2.00m

West profile

0 - 10cms.b.s.
Gley 1 2.5 /1 Asphalt
Dry, Compact, Granulated
No Cultural Resources

10 - 20cms.b.s.
10 YR 2/1
Dry, Compact ,Coarse Gravel
No Cultural Resources

20 - 40cms.b.s.
10 YR 5/6
Humid, Compact, Fine Clay
No Cultural Resources

40 - 54cms.b.s.
10 YR 3/3
Humid, Compact, Fine Clay
No Cultural Resources

54 - 100cms.b.s.
2.5 Y 3/3
Humid, Loose, Fine Sand
No Cultural Resources

North profile

0 - 15cms.b.s.
Gley 1 2.5 /1 Asphalt
Dry, Compact, Granulated
No Cultural Resources

15 - 27cms.b.s.
10 YR 2/1
Dry, Compact, Coarse Gravel
No Cultural Resources

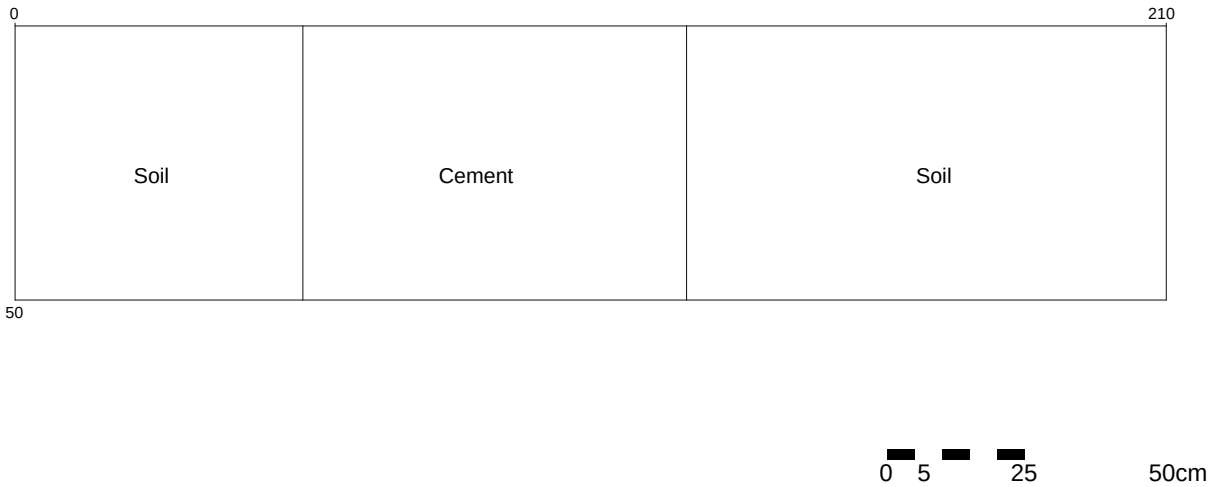
27 - 60cms.b.s.
10 YR 5/6
Humid, Compact, Fine
Clay
No Cultural Resources

60 - 76cms.b.s.
10 YR 3/3
Humid, Compact, Fine
Clay
No Cultural Resources

76 - 100cms.b.s.
2.5 Y 3/3
Humid, Loose, Fine
Sand
Cultural Resources - glass

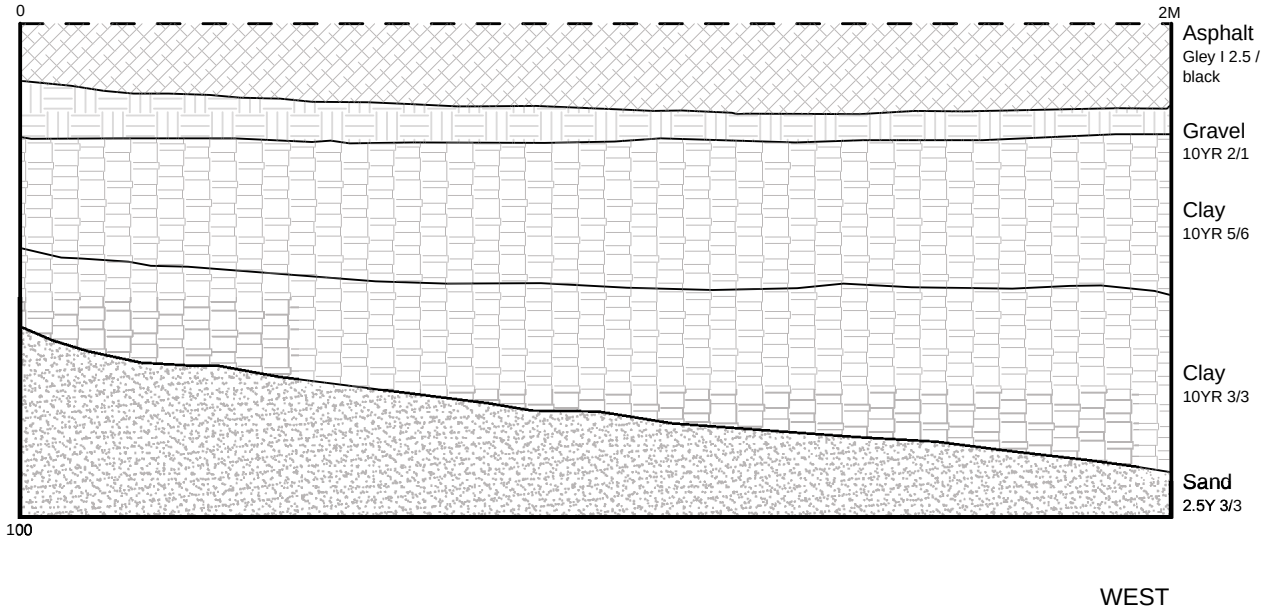
Surface layout of unit T9 and site context.

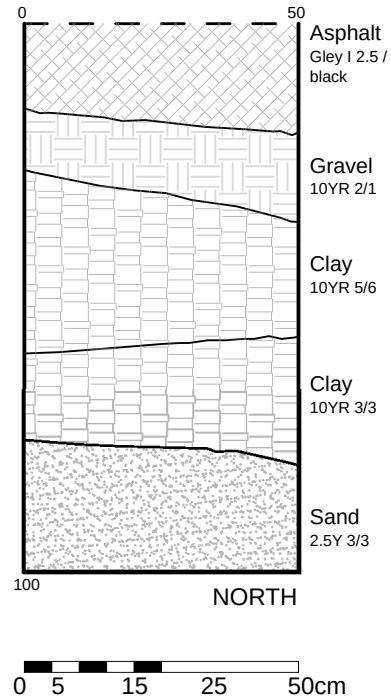
Representative view of unit T9 extended northward from original placement due to substantive concrete subsurface immediately below asphalt.



STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Plan View **T9**





STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T9

Excavation unit T10
0.50m x 2.00m

West profile

0 - 10cms.b.s.
Gley 1 2.5/1 Asphalt
Dry, Loose, Granulated
Gravel
No Cultural Resources

10 - 26cms.b.s.
2.5 Y 2.5 /1
Dry, Compact, Granulated
Gravel
No Cultural Resources

26 - 38cms.b.s.
2.5 Y 4/3
Dry, Compact, Coarse
Clay
No Cultural Resources

38 - 47cms.b.s.
2.5 Y 3/2
Dry, Compact, Granulated
Gravel
No Cultural Resources

47 - 82cms.b.s.
10 YR 6/4
Dry, Loose, Coarse
Sand
Cultural Resources: shell, ceramic

82 - 100cms.b.s.
2.5 Y 3 /3
Humid, Loose, Coarse
Sand
Cultural Resources: shell

South profile

0 - 12cms.b.s.
Gley 1 2.5 /1 Asphalt
Dry, Loose, Granulated
Gravel
No Cultural Resources

12 - 26cms.b.s.
2.5 Y 2.5 /1
Dry, Compact, Granulated
Gravel
No Cultural Resources

26 - 30cms.b.s.
2.5 Y 4/3
Dry, Compact, Coarse
Clay
No Cultural Resources

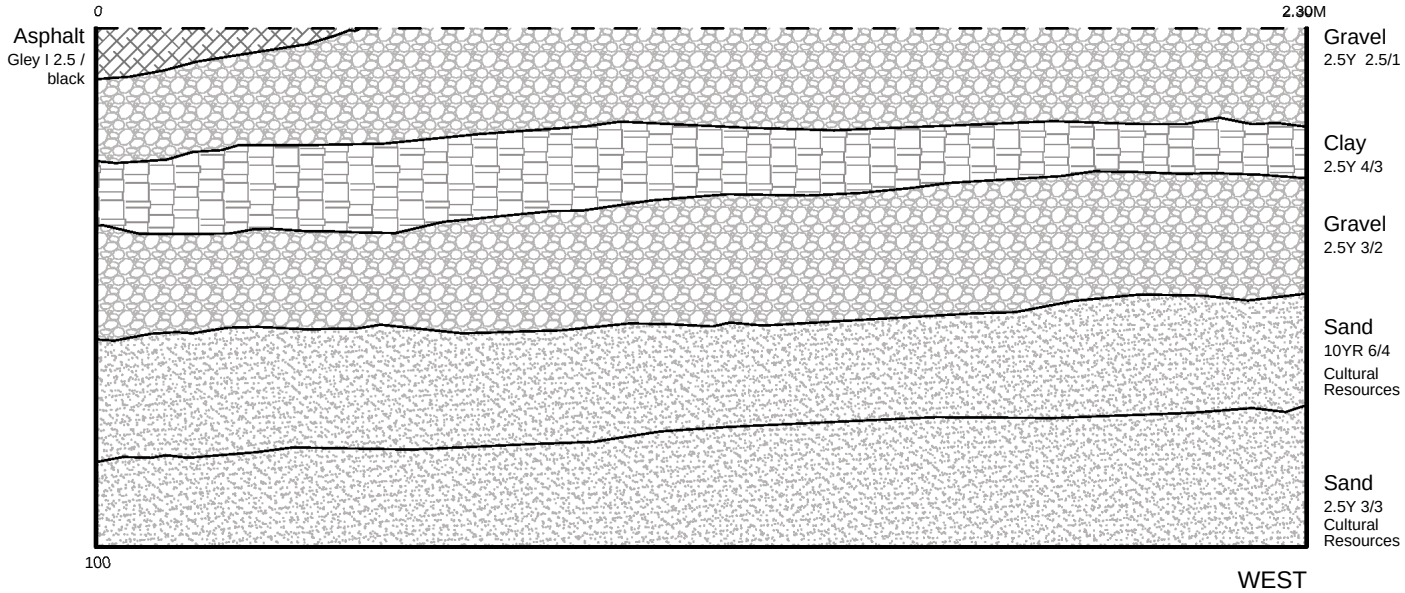
30 - 44cms.b.s.
2.5 Y 3/2
Dry, Compact, Granulated
Gravel
No Cultural Resources

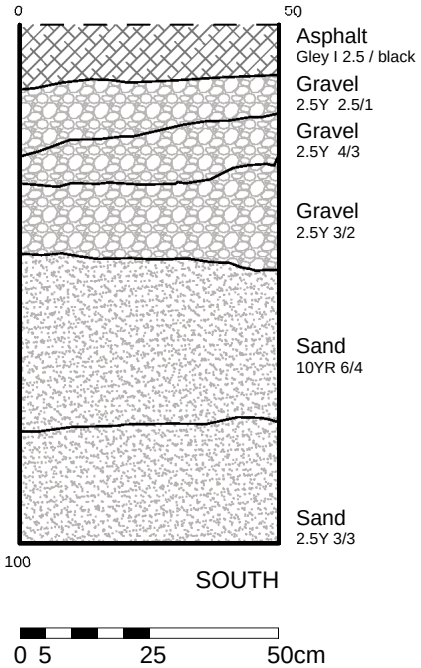
44 - 79cms.b.s.
10 YR 6/4
Dry, Loose, Coarse
Sand
No Cultural Resources

79 - 100cms.b.s.
2.5 Y 3 /3
Humid, Loose, Coarse
Sand
No Cultural Resources

Surface layout of unit T10 and site context in relation to easternmost stairway.

Representative view of profiles for unit T10.





STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T10

Excavation unit T11
0.50m x 2.00m

North profile

0 - 10cms.b.s.
10 YR 3/2
Humid, Loose, Fine
Humus
No Cultural Resources

10 - 26cms.b.s.
2.5 Y 4/2
Dry, Compact, Granulated
Clay
No Cultural Resources

26 - 57cms.b.s.
10 YR 4/3
Dry, Compact, Coarse
Rocky
No Cultural Resources

57 - 86cms.b.s.
10 YR 5/8
Dry, Compact, Coarse
Rocky
No Cultural Resources

East profile

0 - 21cms.b.s.
10 YR 3/2
Humid, Loose, Fine
Humus
No Cultural Resources

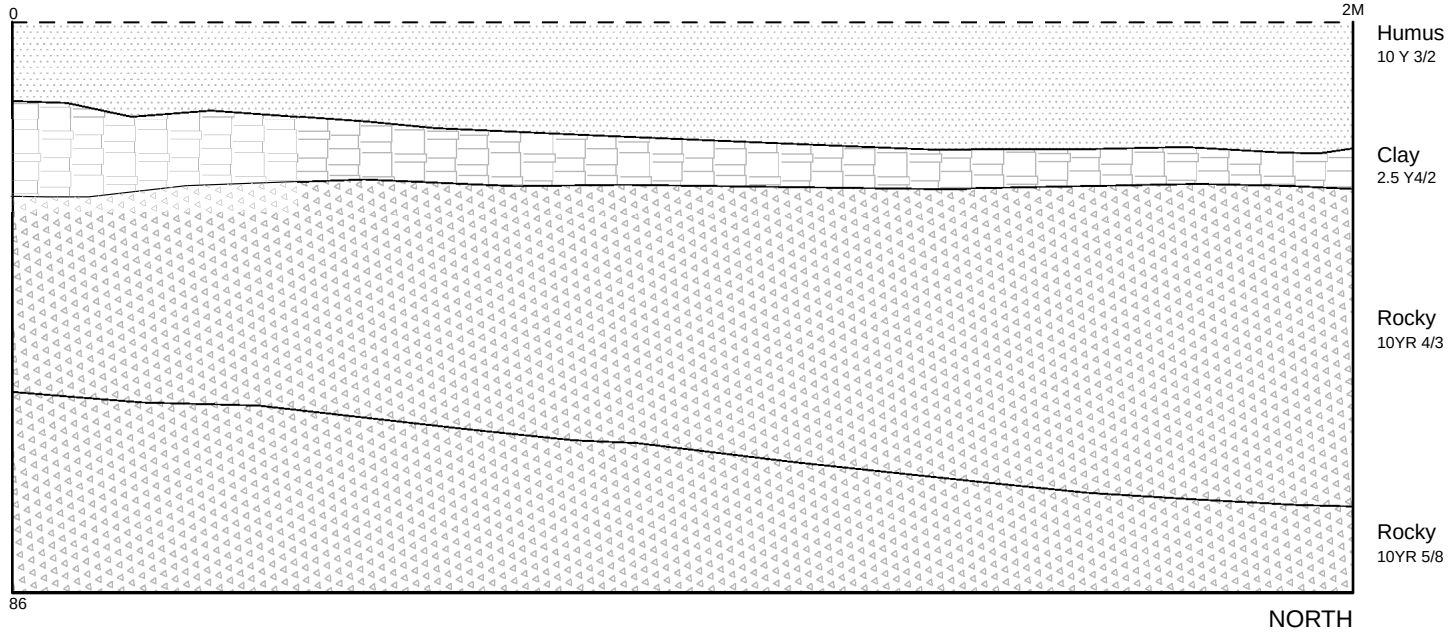
21 - 26cms.b.s.
2.5 Y 4/2
Dry, Compact, Granulated
Clay
No Cultural Resources

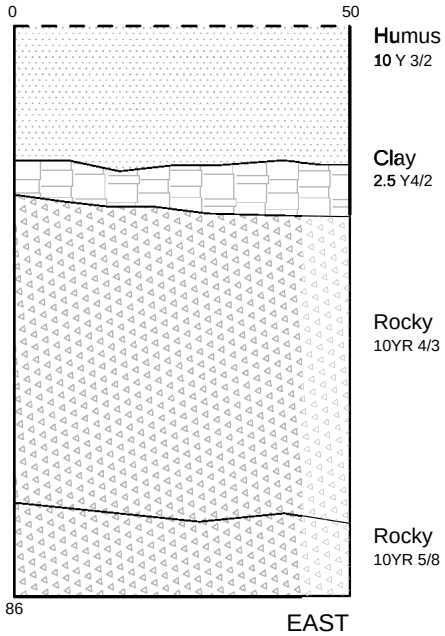
26 - 72cms.b.s.
10 YR 4/3
Dry, Compact, Coarse
Rocky
No Cultural Resources

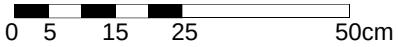
72 - 86cms.b.s.
10 YR 5/8
Dry, Compact, Coarse
Rocky
No Cultural Resources

Surface layout of unit T11 used to substitute abandonded unit T1.

Representative view of profile for unit T11.







STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit T11

Pantel, del Cueto & Associates | Historic Preservation Consultants | Archaeology, Traditional Architecture & History • Guaynabo, Puerto Rico • October 2015

Excavation unit U1
1.00m x 1.00m

North profile

0 - 7cms.b.s.
10 YR 2/2
Humid, Loose, Fine
Humus
No Cultural Resources

7 - 17cms.b.s.
2.5 Y 5/2
Humid, Compact, Coarse
Rocky
No Cultural Resources

17 - 50cms.b.s.
2.5 Y 3/2
Dry, Loose, Granulated
Nodules
No Cultural Resources

East profile

0 - 7cms.b.s.
10 YR 2/2
Humid, Loose, Fine
Humus
No Cultural Resources

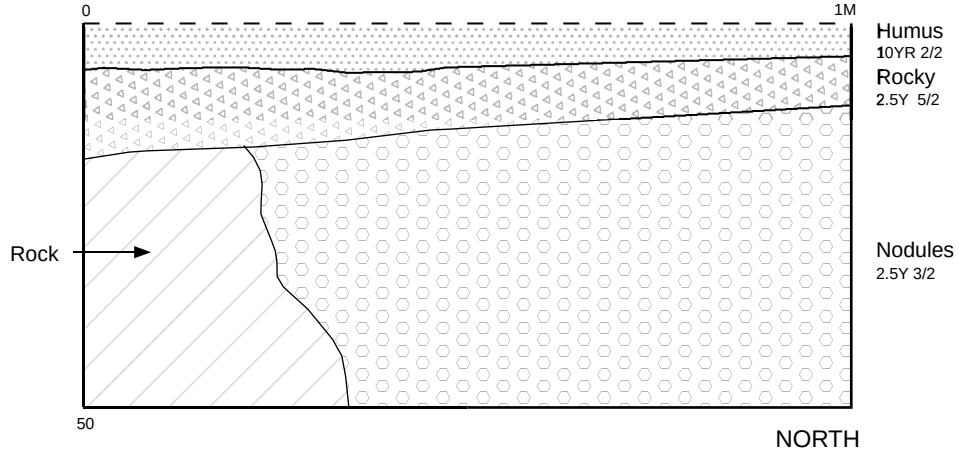
7 - 14cms.b.s.
2.5 Y 5/2
Humid, Compact, Coarse
Rocky
No Cultural Resources

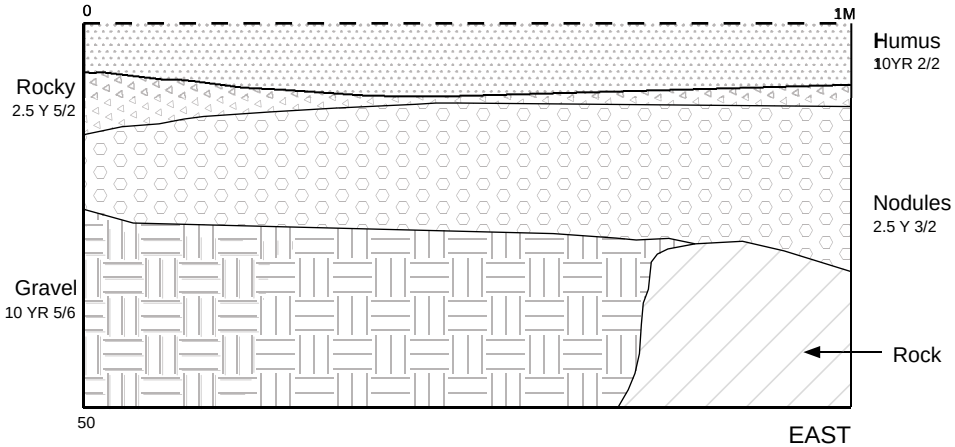
14 - 26cms.b.s.
2.5 Y 3/2
Dry, Loose, Granulated
Nodules
No Cultural Resources

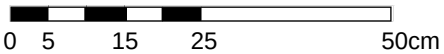
26 - 50cms.b.s.
10YR 5/6
Dry, Compact, Coarse
Stone
No Cultural Resources

Initial placement of manual excavation of 1x1 meter unit and site context.

Representative view of profiles for unit U1 showing rock outcroppings near surface.







STAGE 2 CULTURAL RESOURCES INTENSIVE SURVEY
CULEBRA TERMINAL CARGO RAMP & ALTERNATE PIER

Profile - Unit U1

Discussion of Excavation Results

Although the original Stage 2 design and approved plan only contemplated 8 test trenches, site conditions and the on-site interpretation of site stratigraphy merited the excavation of 3 additional test trenches not contemplated in the initial design.

Based on the historical background data of the site and the historical graphics, it was anticipated that there was a relatively high potential of encountering a clear set of construction sequences in the stratigraphic record of the project area. The lack of clear and precise documentation on the late 20th century interventions in the project area was confirmed within several of the test units where utility lines were encountered in those areas purportedly having buried utilities and the absence of utilities in other areas reported to have underground alignments. The number of late 20th century interventions within, and adjacent to the roadway, as well as the upgrading and possible variation of the main access road alignment have significantly impacted the potential subsurface integrity of any cultural resources evidence which may have existed related to the settlement site of San Ildefonso and/or the early 20th century military installation.

Stratigraphic evidence, such as the stone layers found in several units, and the significant variations of north/south/east/west profiles in most of the units [such as T9 and U1] is clearly attributable to the innate rocky nature of the northern portion and the numerous modifications and interventions into the entire site area comprising the proposed project.

Test units T1-T5 and T11 located in the northern portion of the proposed project indicate a haphazard and erratic stratigraphic record similar to those often found in developed or urban contexts, where partial and disjunctive interventions result in “pockets” of stratigraphy which only reveal their historical inter-relationship through large areal exposures. That is to say that mechanical leveling, grading, excavations for utilities, and other construction activities that most likely occurred when the military installations were built, demolished, re-built, demolished, and the area subsequently converted into a “surplus” area of the federal government left to fallow.

The stratigraphies of the southernmost test units T6-T10 show indications of previous shorelines, which in the general dock area have also been impacted by the late 20th century constructions of the recreational facilities.

The existence of random concrete elements, such as those in units T2-T3 can not be clearly assigned to any historic element, either in the graphic records, which are imprecise in their northern areas, nor through the construction material or method itself.

LABORATORY ANALYSIS

The laboratory activities included: 1) washing and air-drying the materials, 2) re-bagging and re-labeling, 3) sorting and classification of materials, and 4) analysis of materials.

The washing and air-drying of the materials was done on-site while the rebagging and relabeling was done after the fieldwork was completed. The materials were sorted and classified into the following categories: construction materials, ceramic, glass, shell, faunal remains, and metal and rocks. The following attributes were taken into consideration to further sort the sample.

ceramic - the initial sorting consisted of identifying the ceramic group or type based on the paste and manufacturing techniques. Further categories were created according to the decorative technique, pattern, part, and grade. The ceramic groups include: *coarse ceramics* (orange paste), *semi-refined* (whiteware and ironstone), and *refined (*porcelain).

glass - the analysis consisted of dividing the sample according to color and shape, attributes and function.

metal - the sample recovered was for the most part heavily corroded, divisions were made by shape and/or function when possible, or listed as unidentifiable.

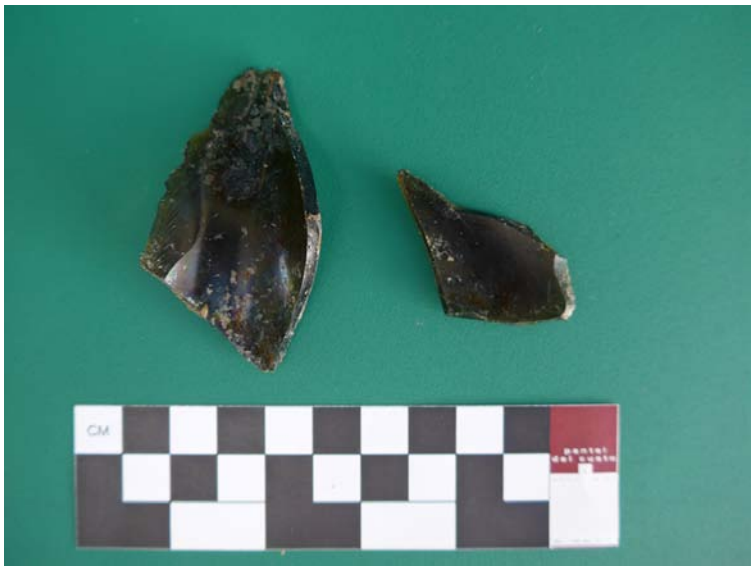
shell - the sample was identified by species.

faunal remains - the sample was identified by species, or listed as unidentifiable

other materials - the sample includes coral, and concretions

The following pages present a description of the artefacts and ecofacts, according to their provenance, along with representative photographs.

T3
42cms.b.s.
2 fragments of green glass



90cms.b.s.
Fragmented green glass bottle

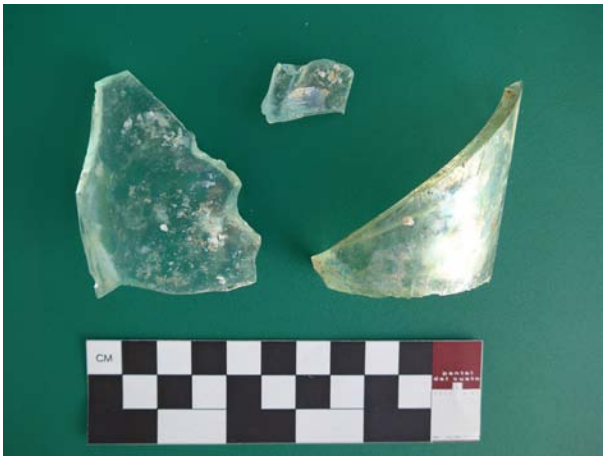
T6

54cms.b.s.
5 fragments of *Cittarium pica*

T7
88-100 cms.b.s.
2 fragments of orange paste, glazed rims
1 fragment of glazed ceramic pipe
1 fragment of unglazed orange paste shoulder
3 fragments of undecorated porcelain bodies
2 fragments of undecorated ironstone bodies
2 *Cittarium pica*
2 ferrous nails
2 ferrous unidentifiable
1 nonferrous nail
1 concretion
1 brick fragment
1 ferrous nail

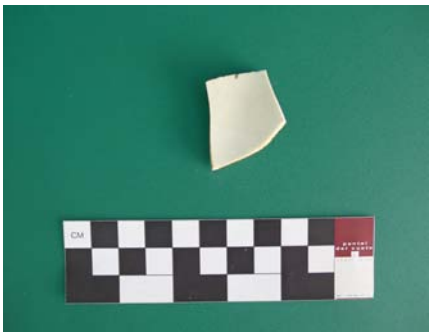
T7
100 cms.b.s
2 *Cittarium pica*
5 unidentifiable bone fragments
1 coral fragment
1 shell fragment
5 concretions
1 amber colored glass base
5 green colored glass bottle fragments: 4 neck/finish and 1neck

T8
37-54cms,b.s.
2 aqua colored glass fragments: 1 lip and 1 body
2 light green colored glass fragments: bodies
1 colorless glass fragment: base
2 *Cittarium pica* fragments



T9
76 - 100cms.b.s.
Fragmented green glass bottle base
1operculum fragment, *Crassostrea rhizophorae*
1 coral fragment

T10
60cms.b.s.)
1 undecorated ironstone fragment: body



100cms.b.s.
1 *Strombus sp.* fragment

68cms.b.s
2 undecorated whiteware fragments: base+1 body
1 *Strombus sp.* fragment

The cultural materials recovered can be attributed to late 19th century activities. The presence of shell, (*Citarium pica, Crassostrea rhizophorae* and *Strombus sp.)* as well as the faunal remains are associated with dietary uses. In terms of construction materials, the only evidence consists of a brick fragment and various nails.

ARCHITECTURAL EVALUATION

Standing Structures:

There are several standing structures in the designated project area of which some of its segments or possibly more than anything, footings, might date to the original settlement of San Ildefonso (ca. 1896) before the United State's Navy designated Culebra as an important "centro de maniobras" (command post), but it was not until 1936 that the US Navy installed itself on the island and particularly within the limits of the original town of San Ildefonso located on the island's northern shore of the great bay of Ensenada Honda, and specifically within an area known as the "ensenada del cementerio" or Cemetery Cove, due to its proximity to the island's cemetery towards the west of the original San Ildefonso settlement.

The original settlement of San Ildefonso was primarily one of wooden structures. With the exception of the historic cistern located on the hill west of the project area, and the two rubble masonry structures ("cisterns"), the majority of the settlement material was most likely dismantled and transferred to the resettlement areas. The replacement of the San Ildefonso settlement with the installation of a U.S. military base is significant in that it was the first U.S. military base established in the Caribbean.

The early periods shown in various maps of the area (1902-1911) of the military base of Culebra consisted of a carbon station, wireless communication installation, a navigation canal between Ensenada Honda and Bahía, officers quarters, barracks, artillery posts along the coasts, a hospital, and walls for rifle shooting practice, as well as a cistern (1906 map). Settlers had to abandon their lands then for lack of appropriate property deeds, to allow for these naval military buildings.

San Ildefonso Wharf and Dock Area:

Previous studies of the area have limited information regarding this specific area of the earliest settlement established in Culebra. Of particular note are the historic, ca. 1944 inward curving brick walls of two boat ramps located to either side of what has always been a dock or wharf located at the center. Both curved retaining walls, which clearly appear on the 1944 Camp Roosevelt map within the report titled: "Evaluación Arqueológica Subacuática Fase IA-IB para el Proyecto - San Ildefonso Proposed New Cargo Facility, Culebra, Puerto Rico" done in August 2014 by Richard Fontánez Aldea, decrease in height as they approach the water and even though large segments have been covered over

through time with a Portland cement plaster, still have areas where the historic brick units are clearly visible. The typical bricks measure approximately 8" long by 4" wide by 2.5" high. On the eastern side of the ramp some of the top bricks were replaced by yellow fire brick clearly identified with the seal “American No. 1 New York”. These measure approximately 9" long by 4.5" wide by 2.5" high. They present a stable state of preservation and contribute to the historic integrity of the area and its relationship to the waterfronts of Cemetery Cove and Ensenada Honda. The present state of these walls seem to be relatively stable and would require detailed inspection in order to determine the extent of structural stabilization if needed.

The wharf area also contains an existing pier as part of the 1940's military constructions and a sunken platform. These elements are covered in the marine survey done in the previous studies which is included as an Appendix in this document. Further evaluations of these elements was also carried out for the proposed project by Underwater Engineering & Research Corporation in May 13, 2015 and reported in a document titled “Structural Evaluation of San Idelfonso Pier, Culebra, Puerto Rico”.

General view of curving brick wall area at original boat ramp on eastern edge of dock and details of construction materials, including yellow American brick.

The wharf area itself is described as ceramic cylinders filled with concrete, and metal cylinders and reinforced concrete for the piers. A thick reinforced concrete slab covered over with wooden decking completes the materials on this area. This is the area in poor condition. According to historic maps presented in the above-mentioned study, the docks and wharfs have been consistently modified or substituted through time and the present

structure does not represent any outstanding features or building technology which if lost would detract or diminsh the historic value of the area.

General view of dock piers showing ceramic cylinders and reinforced concrete construction.

A distinguishing road water ditch (approximately 16" deep by 14" wide) runs along the western side of the East ramp and was apparently a drain for the inclined slope of the road. It was not evident what building material could have been used to build it even though it could have been brick due to the dimensions of the units documented for other site structures. It was fully covered by a Portland cement plaster or stucco. The same-size brick (8" X 4" X 2.5") stairs, as well as a curved retaining wall follow the road's curvature upwards until it reaches what is identified as a historic cistern in various documents. This semi-buried curved-top structure could have been a cistern at one point (seems to have been built of rubble-masonry even though not visible because it is fully covered with cement plaster), but its west-facing, full-size door opening and top cover simulating a rifle shooting station, resemble more a mini-bunker for the storage of explosive material than a water-storage structure. This top segment is not built of brick but rather of reinforced concrete with a cement plaster made to look like brick. A stone-paved walkway accesses the structure. Its location with regards to the road and its west-facing orientation do not correspond to a typical historic cistern which would have been buried underground as much as possible to keep the water cool for drinking. If it was originally so, and built for the town of San Ildefonso during the Spanish occupation of the site at the end of the 19th century, during the North-American occupation its West facade was excavated and exposed in order to use it as a bunker or for another military purpose. Also, there were no visible canals that would have served to bring rain water from higher areas to the site into this structure if it were a cistern. To corroborate this, areas surrounding the structure would have to be excavated to see if in fact this had been the case. This "cistern" structure seems to have been built of rubble-masonry due to the extreme cracks and their diagonal trajectories on

its top and side areas. This historic structure requires preservation, and even though it does contribute to the historic integrity of the area, would need to be stabilized, its cracks repaired and its exterior and interior be covered with a compatible hydraulic brick dust mortar instead of the Portland cement plaster which has helped accelerate its deterioration.

Architect Beatriz del Cueto documenting road water ditch.

General view of adjacent retaining walls, stairs and entry to rubble masonry structure along east side of main access road.

Documentation of stairs and rubble masonry structure facade showing degree of structural deterioration.

The cement sidewalk along the eastern southern portion of the roadway (and in front of the rubble masonry structure) is a contemporary sidewalk built during the late 20th century.

From the cistern structure upwards to the hilltop, the site enclosure or retaining wall changes from brick construction to what appears to be a limestone construction technology, even though it is not evident wether there was a reinforced concrete wall beneath these stones, and the stones were just surface covering. The wall presents an unstable condition and needs to be repaired if it is to remain, since it partially serves as a structural retaining wall for the surrounding hilltop.

Limestone and cement retaining wall along eastern flank of main access road and north of the masonry structure above.

Across the road from the “cistern structure” or towards the West, a stone and cement structure with what appear to be some brick segments (corner columns, pediment and window and door surrounds) and a two-way wooden roof boast the date 1908. According to the Culebra Historic Foundation these structures were abandoned and remained in ruins until the 1980s when these were reconstructed using the above-described techniques. The grey stone or rock used for the structure is the rock found on site as was usually the case during these periods. What appears to be brick pillars on the sides and some of the building segments described above, are reinforced concrete elements stuccoed over with cement plaster in order to simulate brick construction.

Reconstructed 1908 building presently housing the Culebra Foundation.

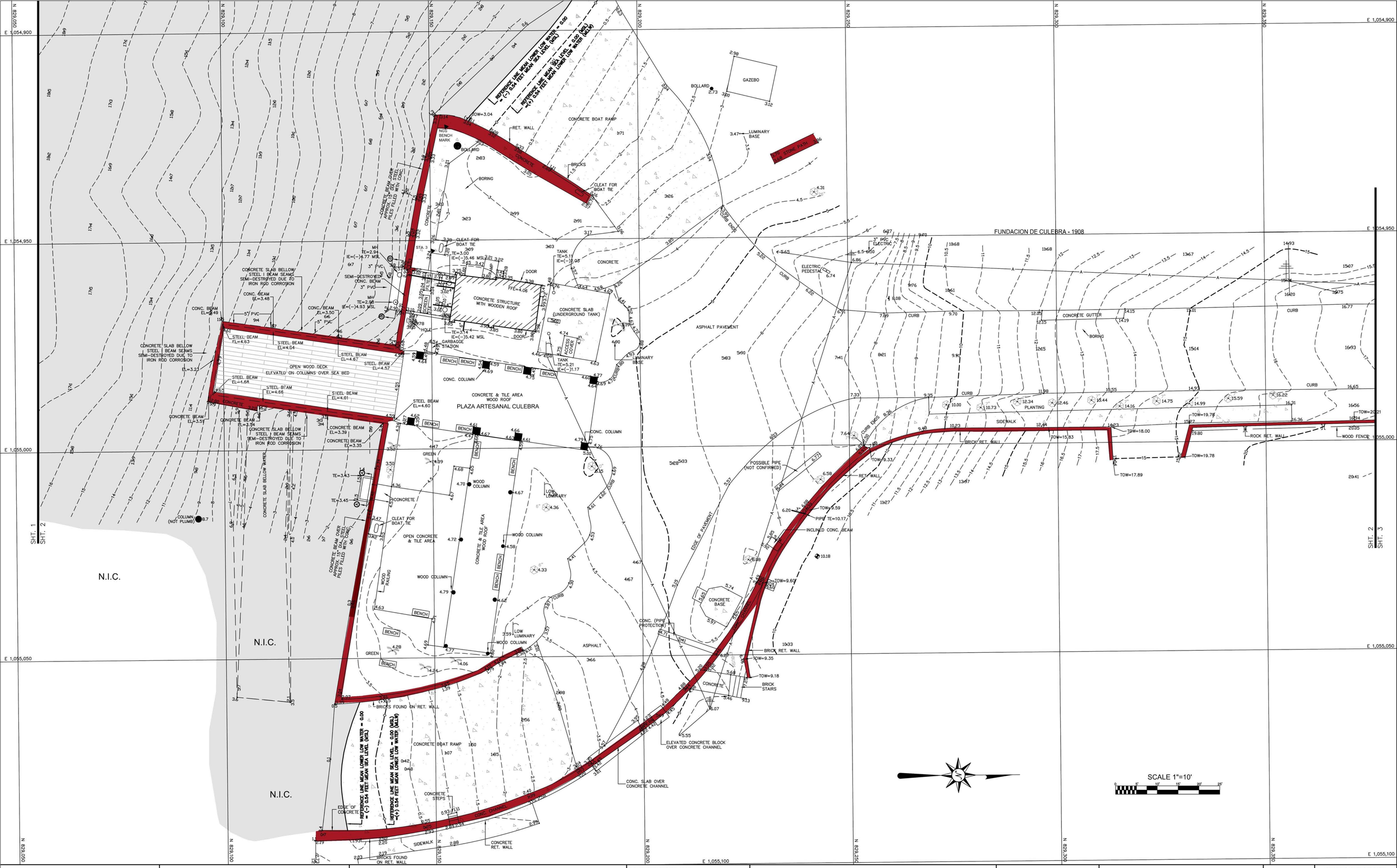
Having had the opportunity to look at the present-day Museum building which is almost exactly the same as this one in size, shape, and use of materials, before reconstruction/rehabilitation during the 1980s, demonstrates that both these structures were almost fully built utilizing a grey granite-like rock found on site surrounding the buildings. Where definition for an building opening was needed, brick was used, which was the case for flat cornices, corner columns as well as window and door surrounds. Even the pediment was built of grey rock or stone and cement. The interior surfaces of the walls were plastered with cement mortar to make these smooth. Even though the present-day Museum “El Polvorín” boasts a different date of 1905, these two buildings are so similar that they could have been built at the same time and designed by the same person using the same building materials and technology. Since both have been re-built and rehabilitated,

they do not need any immediate intervention to maintain their integrity or present good state. A walkway made of river stones paves the way from the building to the ramp area.

Stone pavement from entrance of Culebra Foundation building to wharf.

Two new structures towards the north of the Foundation building are contemporary constructions simulating historic motifs but do not contribute to the historic integrity of the area.

Addition to the northern facade of the 1908 building and the adjacent contemporary restroom building.



COMMONWEALTH OF PUERTO RICO

AUTORIDAD de los PUERTOS de PUERTO RICO

Repair/Construction of:

ALTERNATE CULEBRA CARGO RAMP FACILITIES

SAN ILDEFONSO RECREATIONAL AREA
CULEBRA, PUERTO RICO

HYDROGRAPHIC AND AS BUILT SURVEY

PRESENTED BY:

ATKINS

ATKINS Caribe, LLP
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SCALE	DESIGN	DRAWN	REVISED	JOB NO.	DATE
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DRAWING IDENTIFICATION: V-1.01

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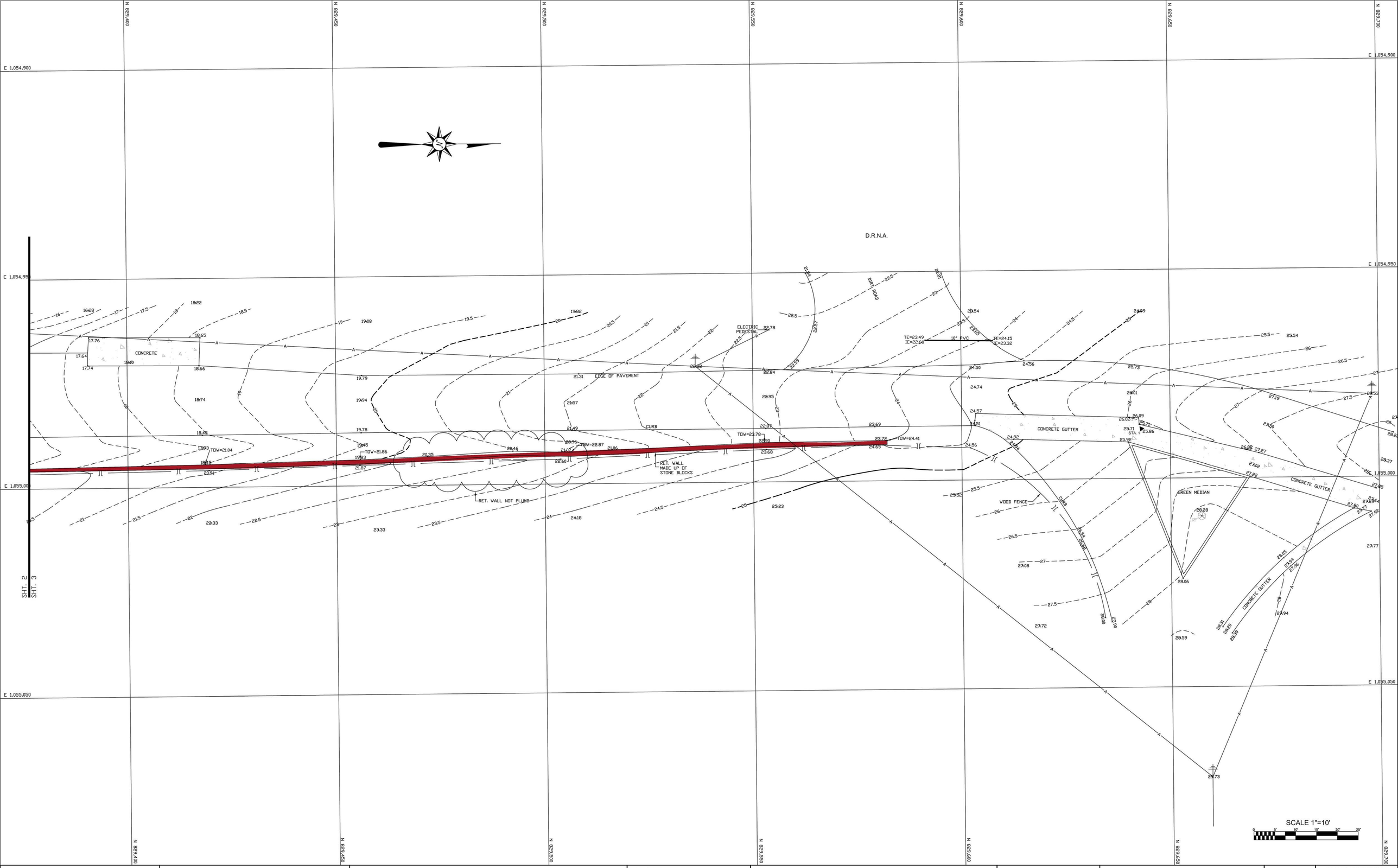

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Potential Project Impacts to Standing Structures

For the majority of the historic retaining walls and associated elements, a one-meter buffer zone is indicated in the project plans as proposed to avoid potential effects to historic elements. The exception to this case is the three-meter buffer zone established for the reconstructed 1908 building (Culebra Foundation). This three-meter buffer zone corresponds to the existing limits for vehicle parking of visitors to the Foundation.

The inward curving retaining brick walls of both boat ramps in the wharf area will be covered by a 12 inch vehicular concrete slab which is required for the proposed use of the terminal. The slab will be installed over the inner incurving brick wall of the west boat ramp, however the slab will be cantilevered over this portion of the existing retaining wall without directly impacting the historic material (cf. page 23). The remaining portions of the historic retaining walls, will remain visible.

The buffer zones established by the proposed project would provide adequate protection to the historic elements, and the nature of traffic in the area) both pedestrian and vehicular is limited in potential impact in large part, due to the fact that it is not a thoroughfare.

Greater consideration should be given to potential impact to historic elements during the construction phases of the proposed FEMA project. Clear construction restrictions, barriers, modified “means and methods” should all be considerations in the construction contract to assure the avoidance of potential impacts to historic elements during the construction phases.

CONCLUSIONS

The results of the Stage 2 Survey did not produce any significant cultural strata in any of the subsurface excavation units, nor in the systematic surface survey. Cultural material was found primarily between trenches T6 through T10 which were located near the present shoreline. The depths of the deposits are indicative of either site dynamics (in which the material from upper topographic elevations has drifted downslope) or a possible change in the shoreline itself. Therein the vertical parameters of the limited cultural resources evidence is between approximately 42 cms. b.s. and 1.00 meter below surface with the most material appearing at the lowest levels. The horizontal extension of the cultural resources evidence is primarily in the area where the access road expands towards the two boat ramps at the southern edge of the project between T6 through T10 (an area approximately 30 x 50 meters). In all cases, the density of cultural materials is very low and there was no evidence of subsurface features (with the exception of the cement pad-like element in T2-T3) or clearly delineated cultural levels.

Possible precolumbian material, limited to a few fortuitous fragments of shell and bone at a depth of over one meter below the surface near the shoreline, does not constitute a significant amount of evidence to extend the limits of the known Lower Camp precolumbian site located to the west. However, the presence of post-columbian materials within the same strata also suggest that the bone and shell fragments may also be post-columbian in nature. Given the fact, however, that the Lower Camp site lies to the west of the project area, there always exists the potential for fortuitous material from this precolumbian deposit occurring within the entire peninsula.

Although the historical record indicates the project area lies on the original site of the San Ildefonso settlement, this settlement has been reported as being composed primarily of wooden structures covered with corrugated metal sheets and/or palm leaves. Historical documentation further states that when the United States military took over the area for the establishment of a military base, the residents dismantled their structures and moved them to other settlements sites on the island.

The U.S. military constructions, Camp Roosevelt Naval Facilites, appear to have most likely removed, displaced or depleted any evidence of the late 19th century settlement of San Ildefonso, during both the first and second development of the base on the peninsula. The only evidence of a subsurface cement pad-like element in T2-T3 does not appear to be associated with any significant structure or historic element, and it's location could be attributed to more contemporary interventions in the zone.

A final consideration for the lack of significant historical evidence is the continued contemporary interventions from the second half of the 20th century onwards including the installation of underground utilities, road re-pavements, and the pier shelter constructions done, most likely with the assistance of heavy mechanical equipment. The reconstruction and contemporary additions made to the structure presently housing the Culebra Foundation, have reduced the integrity of the historic potential of the area. The only exceptions to these interventions are the two curved concrete ramps at both sides of the dock and brick retaining walls which appear to date to the early U.S. occupational periods.

The historic retaining walls along the eastern side of the main access road, from the northern edge of the project appear to be of a different period of construction from to the south of the structure identified as a “cistern”. From the “cistern” south, the retaining wall is brick in construction and the bricks for this retaining wall, the stairs, and drainage culvert are North American in character and not Spanish. Likewise, the partial sidewalk along this portion of the project is contemporary in nature and does not contribute to any potential historic significance.

The only other potentially significant element within the project area is the structure, which to date has been identified as a cistern along the eastern side of the main access road. The construction materials and methods are most likely Spanish in nature, and not North American, however, the configuration of the structure does not conform to a cistern. It’s lack of entry canals for water, its exposure substantially above ground, the existence of a doorway, and the ventilation shaft in the central roof, all suggest something other than a water retaining structure. An identical structure (outside the project limits), in exposed ruins to the northeast of the access road, clearly shows the internal construction of rubble masonry with exposed Spanish dimension bricks. It is highly probable that rather than cisterns (of which there is a clearly identifiable one adjacent to the southwest corner of the present Autoridad de Conservación building dated 1889 - outside the project limits) these two structures were storm shelters. The modifications to the one within the project area also seem to suggest the possibility that at some point in time it was modified as a mini-bunker.

Although there are elements within the project area which retain a degree of historic character, the National Register significance of the area is extremely limited in that the integrity of the area has been highly modified and impacted by contemporary constructions and interventions which have, in effect, diminished, rather than enhanced the historic value of the area. As stated in the National Park Service National Register Criteria for Evaluation:

> *The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and ...[one or more of the four criteria A-D]*

The NPS defines an historic district as:

> *District — a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.*

The identification of an historic district could be potentially attributed to the peninsula as an area, in similar fashion to the designations given to Caparra on the main island as the first settlement of Puerto Rico, however the elements (either for the 19th century civilian settlement, or the 20th century military installations) lack a degree of cohesion to be able to identify a "district'. Constructions such as the bathrooms alongside the Culebra Foundation building, the Department of Natural Resources Building, the Recycling Center, the reconstructed wharf area, the Fish and Wildlife building, and other 20th century constructions are clearly non-contributing interventions to the historic potential of the area. This, coupled with the apparent lack of significant subsurface cultural resources evidence regarding the multiple occupations of the area, makes the denomination of an "historic zone" tenuous at best.

This, however, does not diminish the fact that there are several elements, including the historic retaining walls, the drainage culvert, the historic shelter along the eastern edge of the access road, and the Culebra Foundation building which maintain sufficient integrity and significance under Criteria A and C for potential National Register listing and should be protected (and eventually given proper conservation treatments).

The proposed project as presently designed does not appear to have an adverse effect to the historic nature of the elements within its limits beyond those which have already affected the integrity and significance of their original condition and correlations. In terms of integrity of site, building and feeling, the Autoridad de Conservación building and adjacent historic cistern (located on the hill outside of the project area and within the peninsula) are the most significant historic elements to be identified with the post-columbian cultural resources of the peninsula.

RECOMMENDATIONS

The Stage 2 Intensive Survey results indicate that the proposed project area lacks sufficient National Register integrity for an historic zone, although there are elements within the project area that may be eligible for National Register listing only under Criteria A and C, and would require design as well as “means and methods” measures detailed in the construction documents to avoid impact during and after construction of the proposed project.

It is further recommended that consideration should be given to expanding the historic documentation of not only the San Ildefonso settlement, but also that of the military installations. Questions such as why did a railroad line for coal exist through the main access road of the military installation? To what purpose or purposes was coal needed in such large quantities as to necessitate a railroad line? Investigations should be made at U.S. National Archives, and NARA and the Library of Congress in the United States to find construction documents and specifications for both military installations, which should, in military fashion, exist. Archival research as to the founding families of the early settlement periods of San Ildefonso and their eventual diaspora should also be investigated. These, and other historical questions, can serve to enhance the historic character of the area, and potentially serve as a catalyst to make better use of the lands upon which both the earliest settlement on Culebra, as well the earliest U.S. military installation in the Caribbean were founded, in accordance with the Cooperative Management Agreement signed in 1982 between the U.S. Department of the Interior and the Commonwealth of Puerto Rico, in which it was mutually agreed to use these lands for the conservation and development of the natural and cultural resources.

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National Park Service

1983 Secretary of the Interior Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716) [as amended and annotated].

1966 National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places.

Underwater Engineering & Research Corporation

2015 Structural Evaluation of San Ildefonso Pier, Culebra, Puerto Rico.

APPENDIX

Stage 1 Survey Report (in original Spanish)

EVALUACIÓN ARQUEOLÓGICA: FASE IA-IB
TERRESTE & SUB-ACUATICA

Proyecto:

San Ildefonso Proposed New Cargo Facility Culebra, P.R.

Sometido a:

ATKINS

Presentado por:

Arqueología Inc.

28 de octubre de 2014

Proyecto: EVALUACIÓN ARQUEOLÓGICA: FASE IA-IB
TERRESTRE & SUB-ACUATICA

San Ildefonso Proposed New Cargo Facility Culebra, P.R.

Sometido a: Atkins

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A todos gracias…

Resumen Ejecutivo

Atkins Caribe LLP. ha contratado a la firma Arqueología Inc. para realizar una Evaluación Arqueológica Fase IA-IB Terrestre & Sub-Acuática para el proyecto "San Ildefonso Proposed New Cargo Facility", Culebra, P.R. El proyecto se desarrolla en el sector de San Ildefonso, donde la Autoridad de los Puertos de Puerto Rico interesa proceder con la construcción de una Rampa de Carga Auxiliar para el Ferry de Culebra. Luego de considerar varias localidades, se sugirió que la ubicación más viable está situada en la zona de San Ildefonso en Bahía Ensenada Honda. Fue seleccionado teniendo en consideración su accesibilidad por mar y tierra, la existencia de utilidades en el sitio; como caminos, servicio de agua, electricidad y la existencia de estructuras e instalaciones proveyendo un impacto mínimo al medioambiente a causa de nueva construcción y una inversión mínima de capital en infraestructura y modernización de las instalaciones existentes.

La facilidad auxiliar consiste de la ubicación de una plataforma prefabricada flotante en aluminio como zona de transbordo y atraque. El muelle pontón flotante tendrá una dimensión física de 40' - 0" largo por ancho 50' - 0". El uso de un muelle flotante minimiza el impacto al fondo marino.

Este informe ha sido desarrollado de manera que integra la Evaluación Arqueológica Fase IA-IB Sub-Acuática, realizada por el Dr. Richard Fontánez Aldea (Anejo 1), y la Evaluación Arqueológica Fase IA-IB Terrestre, realizada por Adalberto Maurás y Juan Carlos Acevedo; generando un documento comprensivo de ambas intervenciones. Este informe cumple con el Reglamento para la Radicación y Evaluación Arqueológica de Proyectos de Construcción y Desarrollo del Consejo para la Protección del Patrimonio Arqueológico Terrestre de Puerto Rico (1992), y con la Guía para Hacer Investigaciones Arqueológicas, Fase I, II y III de la Oficina Estatal de Conservación Histórica (1993), y con la ley número 10 de 1987, que crea al Consejo de Arqueología Subacuática.

El área donde localiza el proyecto es considerada una arqueológicamente sensitiva, según lo demuestra el asentamiento pretérito del Pueblo de San Ildefonso, fundado en 1880, y el complejo de estructuras de "Camp Roosevelt o Culebra Naval Reservation" establecida por el Presidente de los Estados Unidos, Theodore Roosevelt en 1902. La prospección sub-acuática identificó en las inmediaciones del muelle de San Ildefonso construido por la Marina de Guerra, la sección colapsada de éste y los pilotes que en un momento la apoyaban. La prospección terrestre se detuvo por la presencia de infraestructura soterrada.

Dado a que el área fue el sitio del primer asentamiento reconocido por la Corona en la isla de Culebra y donde también se estableció la primera base naval de los Estados unidos en el Mar Caribe, por orden presidencial como consecuencia de la política externa que hacia legitimó el uso de la fuerza como medio para defender los intereses asumidos de todo el continente, señalando el comienzo del imperialismo estadounidense en América, el área se puede considerar como distrito cultural bajo el Criterio A, B, C y D del "National Register Criteria for Evaluation" del "National Register of Historic Places".

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I. Introducción

Atkins Caribe LLP. ha contratado a la firma Arqueología Inc. para realizar una Evaluación Arqueológica Fase IA-IB Terrestre & Sub-Acuática para el proyecto "San Idelfonso Proposed New Cargo Facility", Culebra, P.R. Este informe ha sido desarrollado de manera que integra la Evaluación Arqueológica Fase IA-IB Sub-Acuática, realizada por el Dr. Richard Fontánez Aldea (Anejo 1), y la Evaluación Arqueológica Fase IA-IB Terrestre, realizada por Adalberto Mauras, MA y Juan Carlos Acevedo; generando un documento comprensivo de ambas intervenciones. Este estudio ha sido desarrollado de manera que cumple con el Reglamento para la Radicación y Evaluación Arqueológica de Proyectos de Construcción y Desarrollo del Consejo para la Protección del Patrimonio Arqueológico Terrestre de Puerto Rico (1992), y con la Guía para Hacer Investigaciones Arqueológicas, Fase I, II y III de la Oficina Estatal de Conservación Histórica (1993).

II. Descripción del Proyecto

El proyecto se desarrolla en el sector de San Ildefonso, donde la Autoridad de los Puertos de Puerto Rico interesa proceder con la construcción de una Rampa de Carga Auxiliar para el Ferry de Culebra. Luego de considerar varias, se sugirió que la ubicación más viable está situada en la zona de San Ildefonso en Bahía Ensenada Honda. Fue seleccionado teniendo en consideración su accesibilidad por mar y tierra, la existencia de utilidades en el sitio; como caminos, servicio de agua, electricidad y la existencia de estructuras e instalaciones proveyendo un impacto mínimo al medioambiente a causa de nueva construcción y una inversión mínima de capital en infraestructura y modernización de las instalaciones existentes.

La facilidad auxiliar propuesta en el área de San Ildefonso consisten en la rehabilitación de un edificio cobertizo, y un muelle recreacional existente para uso peatonal como centro de espera para los viajeros y la ubicación de una plataforma prefabricada flotante en aluminio como zona de transbordo y atraque. El muelle pontón flotante tendrá una dimensión física de 40' - 0" largo por ancho 50' - 0" y una superficie bruta de 2000 pies cuadrados (185.87 metros cuadrados). El uso de un muelle flotante minimiza el impacto al fondo marino. Trabajos de dragado no serán

necesarios para cumplir con la profundidad operativa del ferry de carga. Esta plataforma flotante pre-fabricada en aluminio se fijara al sitio por medio de un mínimo de cuatro (4) pilotes de acero o un máximo de ocho (8), en dependencia a los datos del informe geotécnico y sus recomendaciones se adoptaran en el diseño estructural final.

Conexión desde esta plataforma al sitio y terminal se logrará mediante el uso de un puente de aluminio prefabricado para la circulación vehicular. El puente tendrá una dimensión física de 35' - 0" largo por ancho 20' - 0" y una superficie bruta de 700 pies cuadrados (65.06 metros cuadrados). La circulación vehicular y la circulación peatonal están segregados por razones de seguridad. La circulación peatonal será desde el área de espera cubierta a través del Muelle Existente conectado con una pasarela de aluminio de veinticinco 25 pies largo hasta el muelle de pontón flotante. El área de mejora es de 27.263,56 pies cuadrados (2532,87 metros cuadrados).

El camino de acceso existente y estacionamiento existente en el frente de esta facilidad van a ser reutilizados y reacondicionados para el tráfico pesado (camiones y camiones semi-remolque) como las instalaciones de carga auxiliar, van a ser repavimentados con 2" asfalto de rodadura nuevo y la carretera en adición a esta repavimentación será ensanchada 10' - 0" a su lado oeste para una longitud total de 365' - 00", para hacer espacio para estacionamiento para camiones y otros vehículos de carga pesada en espera a embarcar. Se instalaran servicios sanitarios portátiles ADA, con áreas separadas para mujeres y hombres, en adición a un área de oficina / boletería. Toda área de operaciones de carga será protegida y asegurada conforme a los requisitos mínimos de la Guardia Costera Estadounidense. Se estima un plazo de construcción de seis 6 meses para las mejoras del sitio y construcción de la facilidad auxiliar de carga de San Ildefonso, en Bahía Ensenada Honda. Durante las obras de construcción se utilizará una cortina de turbidez flotante como parte del plan CES aprobado por la Junta de Calidad.

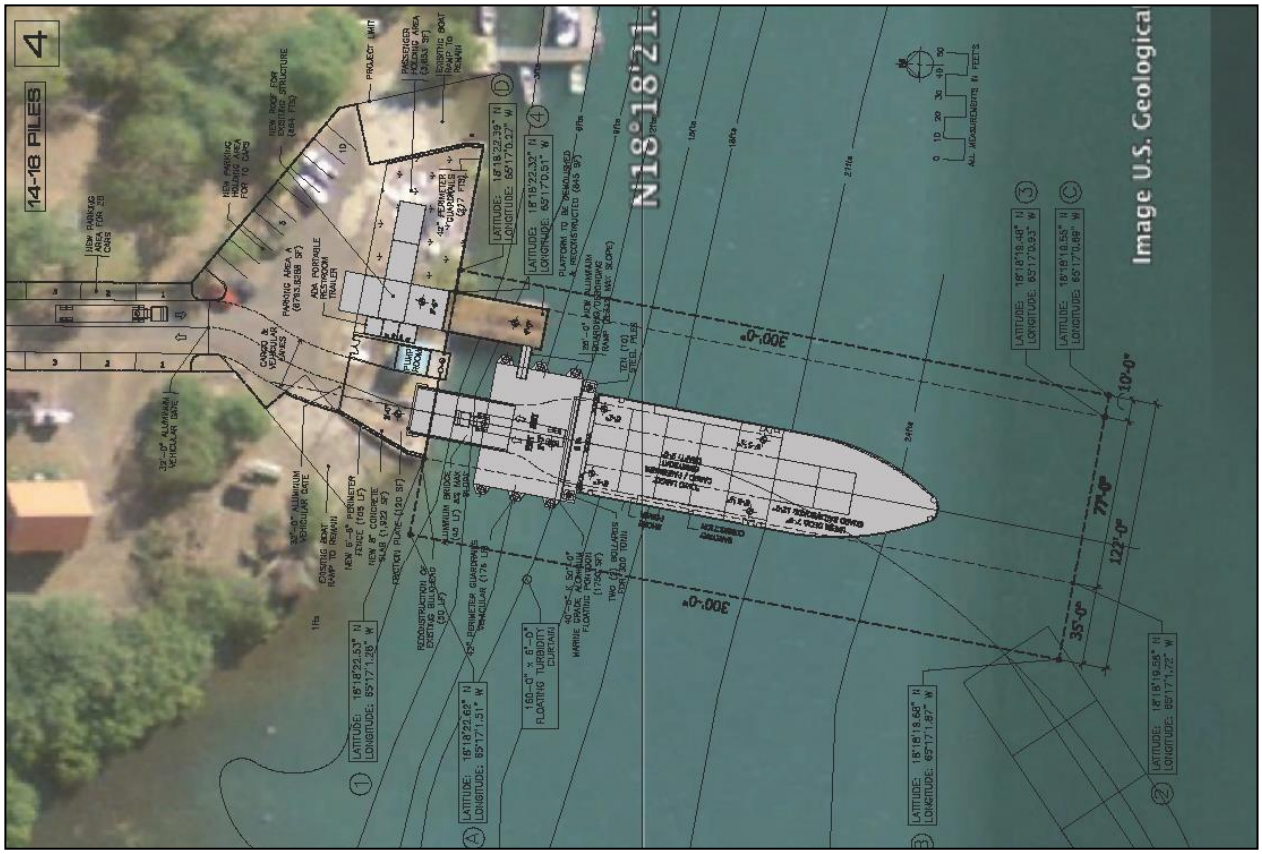

Figura 1: San Idelfonso – Proyecto Propuesto [Atkins 2014].

III. Localización y Descripción del Área de Estudio

El área de estudio localiza en los terrenos donde ubico el primer pueblo y puerto de la Isla de Culebra, San Ildefonso [1880]; y donde posteriormente la Marina de Guerra de los Estados Unidos establece la primera Base Naval en el Caribe, "Culebra Naval Reservation" [1902]. En un llano en la costa Norte de Bahía de Ensenada Honda, en la Isla de Culebra. El área de estudio comprende una sección en tierra: el área de estacionamiento y atracadero, y la sección de la carretera de acceso hasta las oficinas del Departamento de Recursos Naturales y Ambientales de Puerto Rico [DRNA], incluyendo una brecha de 7m a lo largo del margen Oeste de la carretera. Y otra sección subacuática abarcando un rectángulo de 300 pies de largo x 122 pies de ancho partiendo hacia el Sur desde atracadero. Dentro de este espacio ubica un muelle que posiblemente data de 1906 [Figura 2, 3 y19]. Actualmente el área del muelle se emplea para actividades recreativas pasivas.

Figura 2: San Ildefonso - Limites del Proyecto Propuesto [Atkins 2014].

Figura 3: Condición Actual - Facilidades del Muelle & Atracadero, San Ildefonso (Fontánez 2014:10).

IV. Marco Geográfico

Localización

La Isla de Culebra localiza diecisiete millas Este de Puerto Rico, doce millas Oeste de St. Thomas y nueve millas Norte de la Isla de Vieques. Su área territorial, unos 28km², se divide en los siguientes barrios: Flamenco, Fraile, Playa Sardinas I, Playa Sardinas II, San Isidoro, los Cayos Luis Pena, Norte y Pirata, y el Islote de Culebrita.

Topografía

La topografía de la Isla es mayormente montañosa, compuesta de rocas areniscas, tuffáceas y conglomerados proyectándose irregularmente en colinas de pendientes abruptas y valles estrechos. A lo largo de su costa se abren bahías en forma de U, en arena o/y manglares; se forman playas pedregosas, extensión del piémonte de las

colinas que llegan al agua; como también se proyecta en puntas, rezago del tope de otra colina submarina. Monte Reseca es su punto más alto con 190m y Cerro Balcón con 160m de elevación sobre el nivel del mar. Bahía Ensenada Honda es la más grande de la Isla (DIA Culebra 2006:5; Pico 1969).

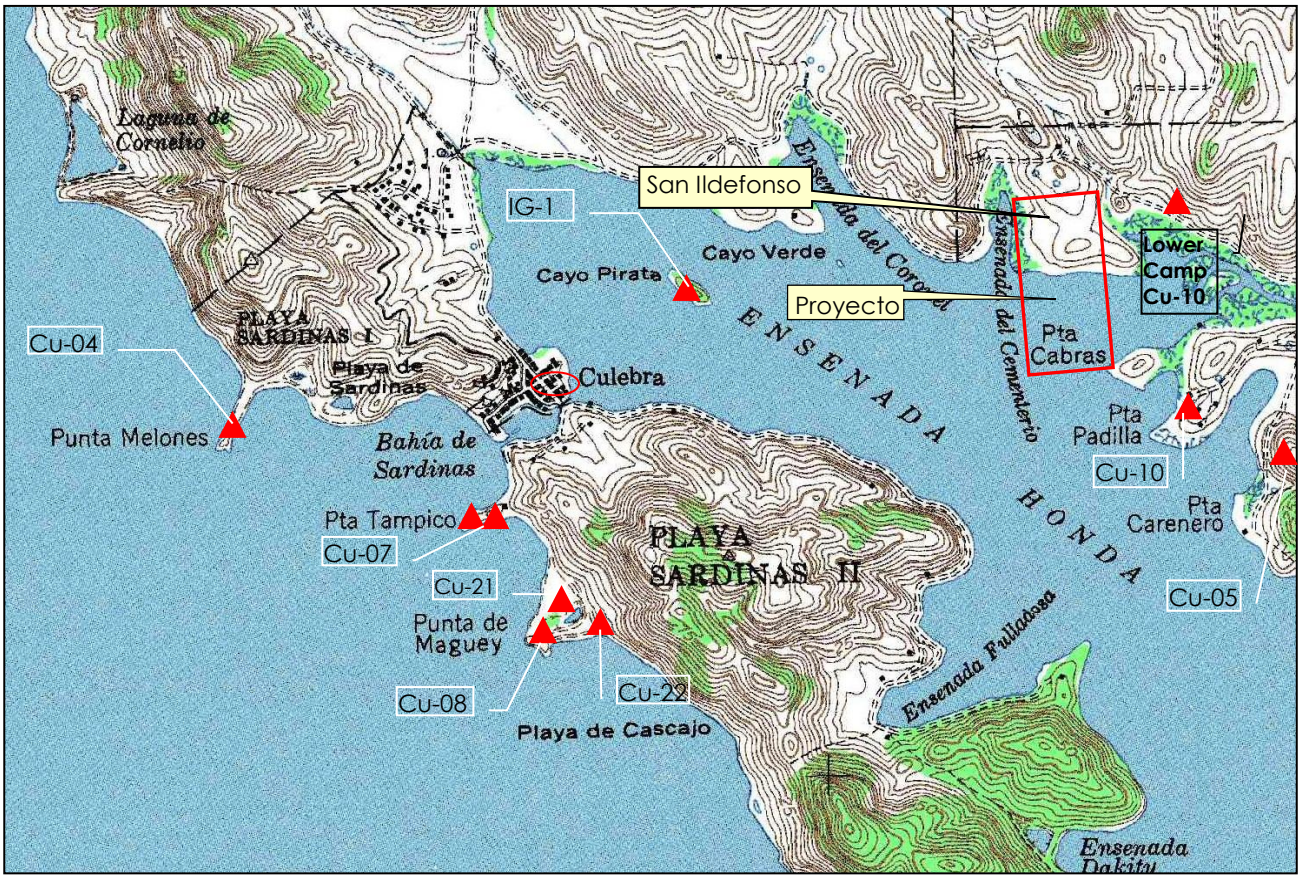

Figura 4: Localización del Proyecto y Yacimientos [USGS 1982].

Geología

Los grupos de rocas que constituyen la base sobre la cual descansa la Isla de Culebra consisten mayormente de rocas que datan del Cretáceo Tardío, donde lava y tuffa dominan el substrato (Briggs 1965).

TKs / TKsl - Piedras Volcánicas, no divididas: Piedra arenisca, cienosa, conglomerado, lava, tuffa, y breccia tuffácea depositadas mayormente en un ambiente marino…

Figura 5: Hidrogeológico Municipio de Culebra.

Suelos

Son poco profundos, bien drenados, de inclinación marcada a inclinaciones severas en las alturas volcánicas. La cubierta de suelo rara vez tiene más de 30 a 60cm de profundidad y solo el 5% tiene potencial moderado para cultivo (DIA Culebra 2006:6). Los suelos "Rs" presentes en el área del proyecto son descritos en el "Soil Survey of the Humacao Area " (Boccheciamp 1977):

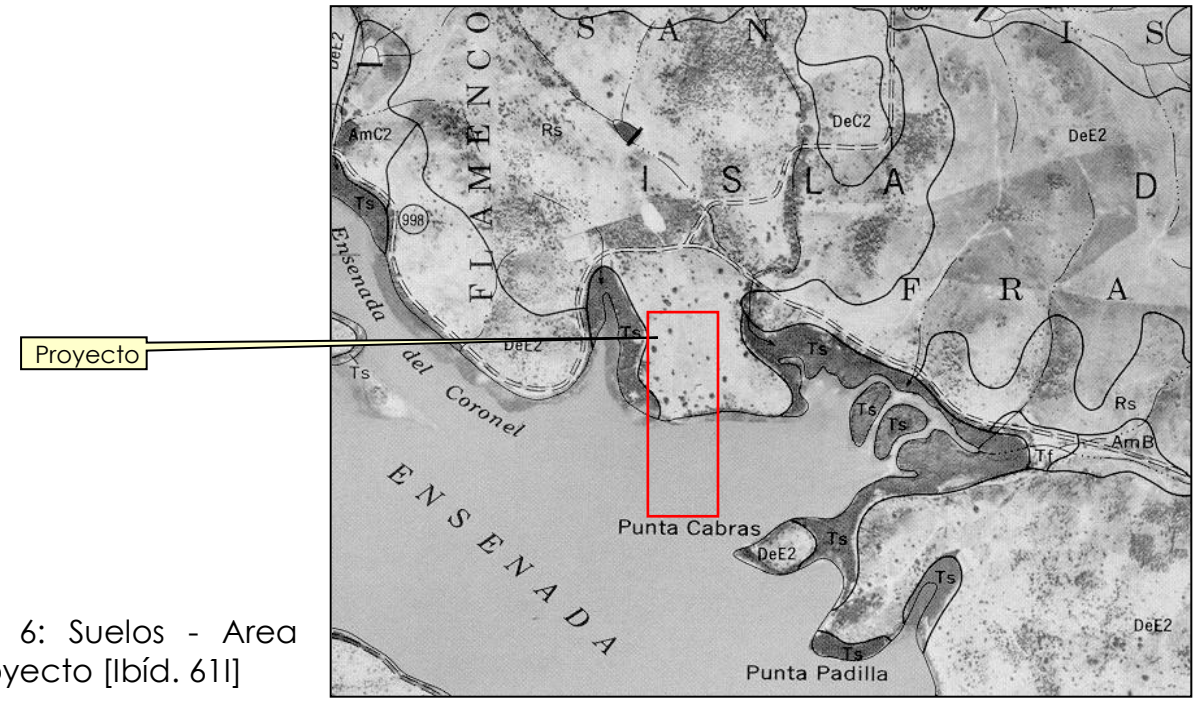

Figura 6: Suelos - Area de Proyecto [Ibíd. 61I]

Rs - roca tierra, se compone de tierra donde se evidencia afloramiento de roca en 50 a 70% de la superficie y piedras sueltas, material de tierra de poca profundidad yace entre los afloramientos y piedras, la pendiente es de 60 a 70%, y tiene poco valor agrícola (Ibíd.:40)

Climatología

El clima de Isla es uno marino, influenciado por los vientos alisios que soplan del Este / Noreste la mayoría del tiempo. La orografía y configuración de su costa se asemejan más a las Islas Vírgenes que a Puerto Rico. Su prevalerte condición semiárida mantiene una temperatura promedio de 79°F. La precipitación es por temporada, en agosto y noviembre se registra mayor precipitación (Morán y Diez 1990: 201 en línea).

Hidrología

En la Isla no existen ríos de mayor caudal, sin embargo, existe varios riachuelos permanentes, y varios intermitentes. Estos últimos se forman cuando llueve o durante la temporada de lluvia, entre el mes de agosto y noviembre (U.S. Fish & Wildlife Live Service 2014, en línea). El acceso a agua en estas islas semiáridas fue factor determinante en la localización de asentamientos prehistóricos, como históricos tempranos.

Flora & Fauna

No hay duda que el uso y manejo de las tierras durante los últimos 300 años, alteró extensamente la ecología del área bajo estudio. La explotación de bosques para madera, combustible, la agricultura y ganadería, el desarrollo urbano y la base naval destruyó la vegetación original de tal manera, que se hace difícil determinar fronteras de asociación vegetal (Abbad y Lasierra 1979; Little y Wadsworth1977). Little (et al. 1977) y Picó (1969:193) agrupan a la Isla de Vieques y de Culebra dentro del área denominada Bosque de la Costa Húmeda, aunque la vegetación en ambas islas es hoy característicamente xerofítica.

El mar es generalmente claro y poco profundo, de abundantes arrecifes de coral, playas de arena, mangles y lagunas, ecosistemas de gran diversidad de aves, peces, mamíferos, quelonios, crustáceos e invertebrados (gasterópodos y bivalvos).

V. Trasfondo Cultural Precolombinos

Economía de Apropiación: Cazadores Recolectores

Las Antillas forman un archipiélago de islas que fueron ruta de navegación y migración de culturas amerindias procedentes de Norte, Centro y Sur América. Este período migratorio abarca el período paleo-indio, unos 10,000 años antes del presente (8,000 antes de Cristo) y se extiende hasta el período del contacto europeo, alrededor del año 1,500 AD. Las primeras migraciones arriban en gran medida por la relativa cercanía entre islas. Estos, conocidos culturalmente como Arcaicos, seleccionaban zonas costeras, en particular estuarios en las desembocaduras de los ríos, localidades que constituyeron áreas de asentamiento, donde practicaban la pesca, caza y recolección, régimen de subsistencia que los caracteriza.

El período pre/cerámico se divide en dos. El más antiguo se denomina la Edad Lítica y corresponde al lapso de ocupación entre el año 4,000 al 2,000 a.C. El más reciente se denomina Arcaico y corresponde al lapso entre el año 2,000 a.C. al 200 d.C. Los artefactos producidos en lítica durante estas dos épocas se encuentran diferenciados por los procesos empleados en su manufactura. Durante la Edad Lítica, los grupos humanos fabricaron utensilios empleando la técnica de la piedra tallada. En la Arcaica, en adición a emplear la técnica de la piedra tallada, también se utiliza la técnica de piedra pulida como modo de manufactura (Rouse 1992).

Siguiendo la clasificación de Rouse (Ibíd.), en Puerto Rico los yacimientos que corresponden a la Edad Lítica son Cerrillos, Angostura, Hato Viejo y Maruca. Los correspondientes a la Edad Arcaica son Puerto Ferro, María la Cruz, Loma Jalova, Cayo Cofresí, Los Gemelos, Caño Hondo, Verdiales 1 y Paso del Indio. En Paso, Vega baja, se excava un fogón a cinco metros de profundidad, este fecho 2580a.C. En Maruca, Ponce, se documentan huellas de socos, evidenciando construcción de estructuras. Maruca fecho 2,500 a.C. (Rodríguez 1997). En el Este de Puerto Rico y en la Isla de Vieques se han identificado varios yacimientos pertenecientes a estos primeros habitantes. En Vieques Verdiales, Loma Jalova, Caña Honda y Puerto Ferro; en el Municipio de Fajardo se han documentado dos yacimientos en el área de la Laguna de Aguas Prietas y Laguna Grande, en la península denominada Las Cabezas

de San Juan, y en el Municipio de Loíza, el Dr. Ricardo Alegría en 1948 descubre el primer yacimiento Arcaico identificado en Puerto Rico, localizado en la Cueva de María la Cruz (Alegría 1955, 1983; 1990 con Rouse). Con la excepción del yacimiento Hato Viejo localizado en el Municipio de Ciales, estos yacimientos demarcan una amplia zona de desplazamiento habitacional a lo largo de las áreas costeras de la Isla de Puerto Rico.

En términos generales, los yacimientos arqueológicos pertenecientes a las culturas pre-cerámicas que poblaron las Antillas y la Isla de Puerto Rico presentan poca extensión horizontal. Los depósitos se caracterizan por la abundancia de conchas marinas, resultado de una dieta basada en la recolección de moluscos, por la presencia de utensilios en lítica reflejando la técnica de lasqueado como método de manufactura y la ausencia de cerámica.

Economía de Producción: Agroalfareros

Estilo	Serie
Hacienda Grande	Saladoide
La Hueca	
Cuevas	
Monserrate	Elenoide
Santa Elena	
Ostiones Puro	Ostionoide
Ostiones Modificado	
Boca Chica	Chicoide
Esperanza	
Capá	

Figura 7: Estilos y Series de Cerámica Prehistórica [Rodríguez 1989].

Varios investigadores se han dado a la tarea de establecer tipologías cerámicas y desarrollar los conceptos de series asociándolos a determinados grupos culturales. Los arqueólogos Ricardo Alegría (1983), Antonio Curet (1992), Miguel Rodríguez (1989), Irving Rouse (1952, 1986, 1992) y José Oliver (1989 en Grossman & Assoc., Inc.) han contribuido en la identificación y clasificación de la cerámica precolombina en la Isla de Puerto Rico. El arqueólogo Miguel Rodríguez ha preparado un esquema práctico para definir e identificar los grupos culturales precolombinos a partir de las Series de Cerámica [Figura 6]. Según este esquema, el período agro alfarero se divide en cuatro grupos culturales; el Saladoide, el Elenoide, el Ostionoide y el Chicoide.

Los Saladoides: 400 a. C. al 600 d.C.

Los primeros grupos de agricultores que emigraron hasta las Antillas Mayores procedentes del continente sudamericano se asentaron en las áreas costeras de Puerto Rico. La evidencia arqueológica señala la llegada de estos grupos a la Isla de Vieques para el año 400 al 300 antes del nacimiento de Cristo (Chanlatte y Narganes 1979, 1980). Chanlatte y Narganes afirman la coexistencia de grupos agro/alfareros y grupos arcaicos. Los fechados más antiguos para los grupos arcaicos en Puerto Rico se remontan al 3,000 y 4,000 años antes de Cristo, y su presencia cultural se extiende cronológicamente hasta el 100 o 200 después de Cristo. En su movimiento migratorio los grupos Saladoides llegan a Puerto Rico tres o cuatro siglos antes del nacimiento de Cristo. Entre el año 400 antes de Cristo y el 300 después de Cristo, ambos grupos compartieron el litoral costero isleño.

Rouse (1986:139), dentro de su Periodo II, divide la Serie Saladoide en las Subseries "Ronquian", "Sombran", "Cedrosan" y "Huecan". Pondera que estos grupos evolucionaron unos de otros siguiendo este orden. Y considera que hacia el 250 a.C., los "Cedrosan Saladoid" irradiaron de las Guyanas, extendiéndose a las costas de Venezuela y Trinidad, y más tarde al Caribe hasta alcanzar la Sonda de Vieques y el Pasaje de la Mona. Ésta migración se pudo completar en uno o dos siglos y concluye que el avance "Cedrosan" se detuvo en la punta oriental de La Española por la inhabilidad de estos adaptarse a un territorio terrestre extenso o tal vez por su inhabilidad para conquistar las poblaciones residentes arcaicas.

Similar a los Arcaicos, los Saladoides preferían el litoral costero, cercano a la desembocadura de ríos, manglares y estuarios. Los yacimientos más importantes asociados con esta cultura se encuentran en los municipios de Vieques, Loíza, Ponce, Guayanilla, Cabo Rojo, Aguadilla, Isabela y Rincón. Síntesis cronológicas de este período cerámico inicial lo dividen en tres sub-períodos; temprano, intermedio y tardío. En el sub-período temprano ubican los estilos cerámicos de La Hueca (Vieques) y Hacienda Grande (Loíza). En el intermedio se colocan los ceramios de los yacimientos de Canas (Ponce), Tecla (Guayanilla), Las Flores (Coamo), Hernández Colón (Ponce), Candelero (Humacao) y Aguacate (Yabucoa). En el tardío ubican los ceramios estilos Cuevas (Trujillo Alto) y Punta Borinquén (Aguadilla).

Son los grupos asociados a la sub-serie "Cedrosan Saladoid", los cuales introducen por primera vez en las Antillas Menores, Puerto Rico y Santo Domingo, la vida sedentaria, la agricultura y la cerámica. Esta sub-serie es considerada la representación agroalfarera más temprana de las Antillas (Rouse 1986:139). La Sub-serie se origina en el Orinoco Medio, se desplaza hacia el Bajo Orinoco, la costa nororiental de Venezuela y de Guyana, las Antillas Menores, Puerto Rico y se detiene en Este de la República Dominicana. La ocupación Saladoide se extiende desde el 400 a.C. a 600 d.C. aproximadamente. Los Saladoides fueron portadores de una excelente tradición ceramista, destacada por el pintado blanco sobre rojo, incisiones rellenas con pintura y el entrecruzado en zona. Los grupos "Cedrosan Saladoid" introducen en las Antillas el cemiísmo (Rouse 1982:52).

Los Elenoides & Ostionoides: 600 a. C. al 1200 d.C.

El proceso de desarrollo de las culturas agroalfareras evidencia un cambio significativo alrededor del año 600 d. C., a partir del estilo Cuevas de la sub-serie "Cedrosan Saladoid" (Rouse 1986:143). La producción de artefactos líticos incorpora pequeños trigonolitos, cuentas tubulares y hachas petaloides, acompañado además con un cambio correspondiente en la dieta y una disminución significativa en la decoración de la cerámica.

Los cambios registrados en la en la cultura material y en la dieta, vienen acompañados por un cambio, de igual forma distintivo, en el patrón de asentamientos hacia los valles del interior y la montaña. Este proceso de

transformación, de la cultura Saladoide hacia la cultura Ostionoide, se explica a causa de la llegada a las Antillas de nuevos grupos culturales suramericanos y la interacción de estos con los Saladoides, como una consecuencia de la propia evolución y adaptación de los grupos Saladoides a los contextos de las Antillas Mayores, o, el producto de la combinación de las anteriores. Durante este periodo ocurre el desarrollo y proliferación de las plazas/bateyes para el juego de pelota, y petroglifos.

"At the beginning of period IV, about 1200 A.D.; the Ostionan Ostionoids in the Eastern half of the Dominican Republic transformed themselves into Chican Ostionoids by developing a new form of pottery, which was the most advanced of it's time in the Caribbean area...It constitutes a second climax of ceramic art...Following the decline during period III…During the course of period IV, the manufacture of Chican Ostionoids pottery spread west into the Windward Passage Area and East ward thought Puerto Rico into the Vieques Sound Area…Ball courts and dance plazas originated in the Mona Passage area during Period III and accompanied Chican Ostionoids pottery in its spread from that area during period IV…Chican Ostionoid pottery and associated ball courts and ceremonial paraphernalia can be ascribed to the classic Taino Indians. These remains are stylistically similar to artifacts obtained by the conquistadors from the Taino Indians and finds in sites where the Spanish settlers first interacted with the Indians, at La Navidad in Northern Haiti and Isabela on the North coast of the Dominican Republic "(Rouse 1986:146-149).

Rouse (1986:143) ubica las manifestaciones estilísticas post-Saladoides en las Antillas Mayores bajo la serie llamada "Ostionoid" y la subdivide en cuatro sub-series: "Elenan Ostionoid", "Meillacan Ostionoid", "Ostionan Ostionoid" y "Chican Ostionoid". Durante el Periodo III (600 d.C. -1200 d.C.), en Puerto Rico se desarrollan dos grupos culturales, el "Elenan Ostionoid" en el área del Pasaje de Vieques, y el "Ostionan Ostionoid" en el área del Pasaje de la Mona. Ambas sub-series se desarrollan a partir del estilo de cerámica Cuevas [Periodo IIb - "Cedrosan Saladoid"]. Rouse (Ibíd.) define las diferencias estilísticas entre ambas sub-series de la siguiente manera:

"Both new sub-series retained the technology and shapes of the final Cedrosan Pottery as well as its tabular lugs, on which modeled-incised figures has previously been placed, and its red- painted areas, on which the earlier potters has pointed white designs.
The Elenan Ostionoid artisan gradually made their pottery thicker, coarser, and rougher and simplified its shape. The Ostionoid potters were more conservative. They continued to produce relatively thin, fine, and smooth pottery and retained all the previous shaped".

Oliver (1989) y Rodríguez (1989) concuerdan en que la sub-serie Elenoide es representativa de un período cultural de transición entre la Cultura Saladoide y la Cultura Ostionoide. La serie Elenoide tiene su expresión en dos variaciones estilística, Monserrate Santa Elena. El yacimiento cabecera donde se define el estilo Santa Elena localiza en el municipio de Toa Baja y se encuentra registrado como PR-TB-007. Oliver (Grossman1990: 119-120), en su análisis de la cerámica recuperada en el yacimiento Loíza–23, logró definir una secuencia de tres fases estilísticas pertenecientes al estilo Santa Elena. Cada fase presenta diferencias en la confección y en los elementos de diseño. La fase más antigua la denomina Santa Elena Temprana, con un fechado anterior al 650 d.C. La fase intermedia la denomina Santa Elena Media 650 d. C. Y la tercera fase la denomina Santa Elena Tardío, con un fechado que se extiende hasta el 1,200 d. C.

En la región este de Puerto Rico la cerámica Elenoide evoluciona al Estilo Esperanza durante el período Chicoide. La Sub Serie Ostionoide tiene su manifestación y presencia en el contexto Antillano igualmente, entre los años 600 al 1,200 d.C. en los estilos Ostiones Puro y Ostiones Modificado. En la región central y oeste de Puerto Rico la cerámica Ostionoide evoluciona al Estilo Capá durante el período Chicoide.

Los Chicoides: 1,200 al 1,500 d.C.

Hacia el 1,200 d.C., grupos relacionados a las culturas Elenoide "Elenan Ostionoids" y Ostionoide "Ostionan Ostionoids", evidencian un cambio socio/político sustancial con el desarrollo del cacicazgo. La estructura social y política se mueve hacia el desarrollo o etapa formativa del Estado Teocrático, donde el poder político y religioso converge en la figura del cacique. En estas sociedades, el estrato o nivel más alto lo ocupa el cacique, seguido por un grupo de nobles denominados “nitaínos” y por la clase servil denominada “naborías”. Se evidencia en un incremento dramático en la producción de artefactos líticos, cemís o trigonolitos aumentan dramáticamente en tamaño y número, al igual que la complejidad de sus tallas y decoraciones. Artefactos ceremoniales dagas y aros líticos se encuentran con mayor frecuencia. Se desarrollan y proliferan la talla de petroglifos y plazas/bateyes para el juego de pelota. Los estilos cerámicos del Período Ostionoide evolucionan durante el Período

Chicoide a los estilos Esperanza y Capá. La cerámica Esperanza se asocia a grupos que habitaron al Este de Puerto Rico, en la zona de influencia llamada Sonda de Vieques. Mientras, la cerámica estilo Capá se asocia a los Chicoides que habitaron el área Central y Oeste de la Isla, en la zona de influencia del Canal de la Mona (Rouse 1992). Rouse (1986) identifica el espacio de tiempo entre 1,200–1,500 d.C. como periodo IV, lapso donde se desarrolla la sub-serie "Chican Ostionoid", asociada con la cultura Taína.

Desde los 1970 investigaciones en Vieques y la costa Sur de Puerto Rico han producido evidencia que entra en conflicto con el esquema presentado. El trabajo de Chanlatte y Narganes (1980) en Vieques los lleva a plantear no una, sino dos migraciones agro alfareras originarias en Venezuela llegando a Puerto Rico durante el período Saladoide. La evidencia indica que estas culturas sufrieron modificaciones a través del proceso de integración y aculturación entre sí, y con la ocupación arcaica previa, tanto en Venezuela como en las Antillas. La cerámica de la migración Saladoide más temprana, en el sitio Sorcé, barrio La Hueca de Vieques, no está pintada y su decoración consiste en diseños entrecruzados finos, rellenos de pasta blanca. Chanlatte (1983:14), relaciona este grupo, al que llama Huecoide, con el estilo Guapoide en Venezuela, donde se observa una decoración similar y postula una segunda, Este esquema propone una relación muy distinta entre las culturas y las series de cerámicas estudiadas a aquella propuesta por Rouse, lo que ha atraído la atención de especialistas a nivel internacional.

Yacimientos en Culebra y Pecios en la Sonda de Vieques

CODIGO – Nombre Común	LOCALIZACIÓN	ASOCIACIÓN CULTURAL
Pta. Tamarindo Grande	Al Sur Cayo Luis Peña	Cerámica Estilo Santa Elena y Esperanza
Cayo Luis Peña	Costa Sur	Conchas, cerámica Santa Elena y Esperanza
Bahía Tamarindo	Costa Sur	Sin datos.
Playa Flamenco	Costa Norte	Cerámica
Pta. Tampico	Costa Sur	Petroglifo, sin confirmar, Rodríguez 1997.
Pta. Melones	Costa Sur	Sin datos
Pta. de Maguey 1	Costa Sur	Cerámica Santa Elena, conchas;
Pta. de Maguey 2	Costa Sur	Residuario; conchas y lítica
Cayo Pirata	Bahía Ensenada Honda	Cerámica Santa Elena, Esperanza, artefactos en concha
Ensenada Santiago	Dentro de la Bahía	Sin datos
Pta. Carenero	Bahía Ensenada Honda	Cerámica Monserrate, Cuevas, Santa Elena y Esperanza
Este de Carenero	Bahía Ensenada Honda	Sin datos
Bahía Mosquito	Bahía Ensenada Honda	Conchas, instrumentos líticos y cerámica
Lobina	Pueblo	Conchas
Cerro Balcón	Interior	Residuario Santa Elena
Cerro Tórtolo	Sur de la Playa Tórtolo	Cerámica Ostiones y Santa Elena
Playa Tórtolo	Costa Norte	Cerámica Ostiones y Taino
Playa Larga	Costa Norte	Cerámica
Isla Culebrita	Cayo Afuera	Sin Datos
Casa Rosa	Interior	Siglo XX y cerámica
San Ildefonso	Bahía Ensenada Honda	"Culebra Naval Reservation - Camp Roosevelt"
"Lower Camp",	Bahía Ensenada Honda	
Pta. Padilla	Ensenada Honda	Ruinas - Residuario de vidrios, botellas, loza, metates, conchas y cisterna

Figura 8: Yacimientos en el Municipio de Culebra [ICP].

*** El Faro del Islote de Culebrita, construido en 1886, es el único recurso en el Archipiélago de la Isla de Culebra en el Registro Nacional de Sitios Históricos, inclusión 1981.

Nombre	Año	Tipo	Lugar	Fuente
?	1553	Carabela	Vieques	Cardona
?	1619	Urca	Costa Este	Cardona
?	1807	Cúter	Vieques	Vega
?	1822	Balandra	Vieques	Vega
?	1825	Balandra	Vieques	Vega
?	1830	Bote	Vieques	Vega
?	1830	Balandra	Vieques	Vega
?	1835	Bergantín	Vieques	Vega
Loppa	1841	Goleta	Vieques	C.A.S.
?	1842	Buque?	Vieques	Vega
?	1866	Barca	Vieques	Vega
?	1876	Balandro	Vieques	Vega
?	1876	Goleta	Vieques	Vega
?	1890	Bergantín	Vieques	Vega
?	1890	Buque?	Vieques	Vega
?	1890	Goleta	Vieques	Vega
Helen Atwood	1907	Goleta	Vieques	C.A.S.
?	1910	Goleta	Vieques	Vega
?	1911	Buque?	Vieques	Vega
?	1920	Balandro	Vieques	Vega
India	1921	Goleta	Fajardo	C.A.S.
Fred C Stebbens	1945	Liberty Ship	Fajardo	C.A.S.
Tiny Lou	?	Goleta	Fajardo	C.A.S.
Julia	?	?	Fajardo	C.A.S.

Figura 9: Pecios Naufragados - Sonda de Vieques (C.A.S. = Consejo de Arqueología Subacuática, Vega 1988, en Fontánez Aldea 2014:31).

VI. Proceso Histórico del Centro Urbano

La fundación de la mayoría de los pueblos de Puerto Rico difiere en sus motivos a la creación de los pueblos de San Juan y San Germán, como al del pueblo de la Isla de Culebra. Estos dos primeros trazados urbanos fueron creados en función de las necesidades inherentes al proceso de colonización. Fue así como conquistadores, mercaderes, mineros, artesanos, sacerdotes y frailes peninsulares, entre otros, se sirvieron de la mano de obra indígena para establecer estas comunidades, cuya razón de ser era, al mismo tiempo, comercial, burocrática y simbólica. Desde allí se realizarían los intercambios con España, a la vez que se articularía un centro desde el cual los territorios recién adquiridos podrían ser administrados eclesiástica, económica y militarmente. Más importante aún, la urbe americana representaría el nuevo orden y validaría ante el territorio y sus habitantes la transferencia de la cultura europea a la América indígena.[1]

Contrario a estas primeras experiencias, la mayoría de los trazados tradicionales fueron erigidos entre los siglos XVIII o principios del XIX por criollos o extranjeros domiciliados que veían en su fundación la oportunidad de acercar las actividades vitales a su área de residencia en los campos, y mejorar con ello su situación económica y social.[2] Este proceso se aceleró entre los años 1750 y 1850, cuando se crearon casi todos los pueblos que conocemos en el presente, a excepción de los ya creados: Coamo, San Germán, Guayama y Arecibo.[3]

La selección del sitio donde fundar era cosa de importancia por lo cual se establecieron criterios reales, para evitar los errores de Capara y San Germán. La legislación decreta entre otras cosas establecer el ayuntamiento cerca de un cuerpo de agua, fácil acceso a fuentes de materiales de construcción y a tierras saludables.[4]

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[1] Ángel Rama, *La ciudad letrada*. Introducción de Mario Vargas Llosa. Prólogo de Hugo Achugar. Hannover, New Hampshire, 1984, p. 14.

[2] Fernando Picó, *Libertad y servidumbre en el Puerto Rico del siglo XIX: los jornaleros utuadeños en vísperas del auge del café*. Río Piedras: Huracán, 1979; o *Amargo Café: los pequeños y medianos caficultores de Utuado en la segunda mitad del siglo XIX*. Río Piedras: Huracán, 1981.

[3] Aníbal Sepúlveda Rivera, *San Juan: historia ilustrada de su desarrollo urbano, 1508-1898*. San Juan: Carimar, 1989, p. 98.

[4] Tomas s. Marvel & María Luisa Moreno, *La Arquitectura de los Templos Parroquiales de Puerto Rico.* Univ. PR 1994.

Tirado a regla y cordel prevaleció la retícula, forma comprobada por siglos, eficaz en la repartición equitativa de terreno. En el centro de esta se establece la plaza, eje de la expansión de bloques rectangulares y calles que parten paralelas de los cuatro lados de esta.[5] Los documentos fundacionales señalan invariablemente la necesidad de la feligresía de tener su propia parroquia, una plaza en torno a la misma, un cementerio, una alcaldía donde dilucidar los conflictos de los vecinos, una cárcel, una carnicería y un poblado en donde se establecieran los comerciantes, artesanos, labradores sin tierra y propietarios del partido. En otras palabras, la solicitud de incorporación como pueblo respondía al deseo de crear un espacio común para satisfacer las necesidades "que exige la vida social y cristiana".[6]

Cabe además subrayar que, si bien no se debe subestimar el deseo de tener iglesias y cementerios cercanos a la población, también es cierto que los principales propietarios agrícolas de cada partido entendieron que sería útil contar con un estilo de asentamiento alterno a la entonces habitual dispersión, justo en el momento en que las actividades agrícolas de la Isla despertaban a la economía de mercado.

El trazado de un pueblo les permitiría, consolidar un eje social y económico de carácter regional para barrios que, aunque eran colindantes, al mismo tiempo distaban demasiado de otros poblados que sirvieran a sus intereses.[7] Una vez "reunidos en pueblo", las autoridades del "partido" empleaban los recursos colectivos para construir y mejorar las comunicaciones con el exterior para así acudir como cuerpo jurídico a las autoridades centrales, para que éstas llevaran a cabo las obras públicas que garantizarían un mejor vínculo con la capital. Del mismo modo, el acto de la fundación permitía conformar un ayuntamiento que tenía la potestad de disponer de las tierras aún sin dueño o "realengas" y de atender asuntos menores de justicia.[8] Fernando Picó añade que los propietarios de una región, al incorporarse

[5] Aníbal Sepúlveda Rivera, *Puerto Rico Urbano: atlas histórico de la ciudad puertorriqueña.* Vol 1. 1508´s-1820´s. San Juan: Carimar, 2004, p.10.

[6] Rafael J. Mirabal Linares, *Entre fotos y palabras (crónica de Adjuntas)*. S.l.: Imprenta Lloréns, 2004 [circa], p. 108.

[7] Fernando Picó, *San Fernando de la Carolina: identidades y representaciones*. Carolina: Gobierno Municipal Autónomo de Carolina, 2003.

[8] Aida Caro Costas, *Legislación municipal puertorriqueña del siglo XVIII*. San Juan: Instituto de Cultura Puertorriqueña, 1971.

como pueblo, evitaban que ciertos beneficios fuesen a parar a otras poblaciones más importantes, en donde residían hacendados más pudientes.[9] Más aún, esa incorporación exigía una representación que se traducía en el trazado urbano y en el establecimiento de las concebidas estructuras que representaban a las autoridades: cabildo o casa del Rey, compartido por los líderes locales y los oficiales reales, e iglesia, que encarnaría a las espirituales y morales.

Esta generalizada oleada de fundaciones tuvo el apoyo de las autoridades españolas, aunque por intereses disímiles. Desde el siglo XVIII, emisarios de la Corona, como el mariscal de campo Alejandro O´Reilly (1765) y el historiador Fray Iñigo Abad y Lasierra (1776), recomendaron que la población fuese reorganizada en torno a los pueblos, para una administración más eficiente de "las almas".[10] Estas recomendaciones fueron acogidas de manera entusiasta por gobernadores como Miguel de Muesas (1777) y Juan Dabán y Nogueras, aunque tuvo su mejor momento con Miguel de La Torre (1823-1837). De la Torre vio en los pueblos una herramienta útil para cerrar la brecha que entonces existía entre la débil autoridad de la Corona y la población, acostumbrada más a seguir sus reglas que a seguir las oficiales. Así, pensaba De la Torre, sería posible combatir el contrabando, tan arraigado en las poblaciones dispersas, reorganizar la producción agrícola en función de los intereses de la Corona, fortalecer la lealtad de los habitantes de la Isla - en especial la de los propietarios- y controlar eficientemente cualquier indicio de sedición. En adelante, la extensión sistemática del poder colonial se valdría de las autoridades municipales para aplicar "bandos de buen gobierno" y cobrar con mayor eficiencia los impuestos sobre la riqueza agrícola.[11] Y la naturaleza de este interés explica, además, la facilidad con la cual las autoridades aprobaban la fundación de los nuevos municipios.

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[9] Picó, *San Fernando de la Carolina*, capítulo I, "Antes de Carolina".

[10] "Memoria del Mariscal de Campo D. Alejandro O´Reilly sobre la isla de Puerto Rico, junio de 1765" en *Antología de lecturas de historia de Puerto Rico*. Edición de Aída R. Caro Costas. Río Piedras: Editorial Universitaria, 1980, pp. 450-494; Bibiano Torres Ramírez, *Alejandro O´Reilly en las Indias.* Sevilla: Escuela de Estudios Hispano-Americanos de Sevilla, 1969; Fray Iñigo Abbad y Lasierra, *Historia geográfica, civil y natural de la isla de San Juan Bautista de Puerto Rico*. Estudio preliminar por Isabel Gutiérrez del Arroyo. Río Piedras: Ediciones de la Universidad de Puerto Rico, 1959, p. 169 (Publicado originalmente en México en 1782).

[11] Véase Carlos Altagracia, *La utopía del territorio perfectamente gobernado: miedo y poder en la época de Miguel de la Torre, 1823-1837*. Tesis de Maestría en Historia. Río Piedras: Universidad de Puerto Rico, Departamento de Historia, 1997.

Culebra

En el momento en que los españoles desembarcan en Boriquén se encuentran con aborígenes viviendo en asentamientos nucleados, organizados en sociedades complejas de cacicazgos hereditarios conocidos como Tainos, y con los indios Caribe migrantes recién llegados a las costas del Archipiélago Borinqueño. Estos, como todas las culturas aborígenes que los presidieron llegaron navegando los estrechos entre islas en embarcaciones echas de troncos, canoas (Fontánez Aldea 2014).

Nicholson (1976, en Fontánez Aldea 2014:14) proponen que los aborígenes continentales navegaron el Mar Caribe hace unos 6.000 años en balsas de madera guiados por las corrientes y vientos. Robiou Lamache (1993, en Fontánez Aldea 2014:14) cree que la navegación propiamente dicha no sucedió hasta hace unos 3,000 años, cuando era ya común el uso de herramientas tales como el hacha de piedra y la gubia de concha empleadas en la construcción de canoas. Haciéndose habitual entonces la navegación entre las islas del Mar Caribe lo que con el tiempo aumentó la población de estas.

Cristóbal Colón llega a Boriquen en 1493, en su segundo viaje navegando de la Isla de Sto. Tomas hacia la de Vieques, que llamó a Sta. Úrsula. Costeando el sur, éste hace agua en la costa Oeste de la Isla (Morrales Carrión 1983:6; Morrison 1942:412-421 en Oliver 1992: Tió 1966:115, 332-333). En 1508 Juan Ponce de León, autorizado por Fernández de Ovando y Valdés, en recompensa por su participación heroica en la sublevación indígena de La Española, desembarca en el "paraje de Agueybaná", cacique principal de la Isla (Coll y Toste 1921: Tomo #1:119: Scarano 1993:153, 178-179). Ponce de León motivado por la noticia de oro visita la aldea, le pide al cacique sembrar un conuco y Agueybana provee guías para la exploración de los lugares donde se extraía el metal (Rivera Fontán 1995:28).

Durante este periodo Ponce de León funda el poblado de Caparra, próximo a la Bahía, hoy día llamada de San Juan, cerca de los yacimientos auríferos del Toa y Cibuco, y de varios poblados indígenas (Anderson Córdova 1980: B-19/20; Scarano 1993:180-181). Caparra incluía varias casas en piedra, una plaza, una iglesia, un pequeño hospital, decenas de bohíos, almacenes, un horno en ladrillo para fundir

oro, terrenos para el cultivo, pozos, etc. (Sepúlveda 1989:33-51). Ese primer año, Ponce de León despacha a Juan González para conquistar el área de Naguabo. Mientras Ponce de León establecía a Caparra, finalizando el 1509, llega a la isla Cristóbal de Sotomayor, con una real orden por la cual se le concedía en encomienda al cacique principal de la isla:

"…En el repartimiento de indios, que hizo Juan Cerón, en 1509, adjudicó Agueybaná con su ranchería y trescientos súbditos a Cristóbal de Sotomayor..." (Coll y Tosté 1921:89).

Sotomayor, nombrado Alguacil Mayor de la isla, fue encomendando a poblar la costa Sur donde, cercano al poblado de Agueybana, fundó la villa de Tavara (Tió 1966:70). Dos años después, en el 1511, inicia la rebelión indígena.

Mientras tanto, entre 1511-1512, Juan González construye una pequeña estructura fortificada cercana a la desembocadura del Río Daguao. Empleado el puerto natural de Naguabo como aguada, de donde partían las mercancías hacia las Minas de la Sierra de Luquillo. Destruida por los indios Caribe, la fortificación fue abandonada en 1513 (Brau 1969:231; Scarano 1993:206). Ese mismo año, Juan Enríquez por encomienda de Diego Colón funda al poblado de Santiago del Daguao.

En septiembre de 1514 se recibió un mensaje del Rey de España a efectos de que llegaría pronto una armada para usarse en contra de los indios Caribe, y que recomendaba que el poblado de "Santiago de Daguao" no se fundara hasta que no llegara la misma (Alegría 1981a:52). El poblado se abandona en 1514 debido a los ataques Caribe. La secuela de ataques venideros logro marginal la colonización de la Zona Este de la Isla durante las primeras décadas de la colonización de Boriquen (Scarano 1993:206). En el 1529 otra ofensiva indígena sorprende a Cristóbal Guzmán en su hacienda del Daguao dedicada a la minería y la siembra (Ibíd.:231).

Durante esta época Isla de Vieques se convierte en una zona fronteriza, donde diferentes grupos étnicos formaron alianza para lanzar ataques (Alegría 1981: Tió 1966:56). En respuesta se crea una armada para proteger los asentamientos y a su vez apresar los nativos y Caribe sublevados tomándolos como esclavos. Bajo el gobierno de Ponce de León y Cerón numerosas fueron las incursiones contra los rebeldes en la

Isla de Vieques e Islas Vírgenes. En 1509, 1511 y 1515 se lanzan las batallas más importantes (Tió 1966:208-09).

López Canto (1975:29) menciona que en Vieques había dos caciques los hermanos Cacimar y Yahureibo. Fernández de Oviedo y Valdés (1959: 219-220) señala que Cristóbal de Mendoza da muerte Yahureibo en Vieques, tomando cautivos y canoas, descritas como grandes y hermosas. Las carabelas continúan haciendo la guerra contra los Caribe de las Antillas Menores y para 1530, dada la merma de mano de obra indígena, se lanzan tan lejos como a las costas de Panuco y Yucatán para traer indios como esclavos a las minas (Fernández Méndez 1984:15).

Dado el contexto histórico es probable que la Isla de Culebra formo parte de los territorios donde acontecieron los mismos procesos que caracterizaron a la Isla de Vieques y las Islas Virgen durante el siglo XVI. Las crónicas no hacen mención de la Isla de Culebra durante este tiempo.

Durante el Siglo XVII la hegemonía de España en el Caribe rescinde con la colonización de la mayoría de las Antillas Menores por ingleses, holandeses y franceses. A estos efectos aumenta el tráfico marítimo por las aguas del Mar Caribe y también las que rodean las Islas de Vieques y de Culebra (Brau 1966:Cap. XI-XII, 123-142). Brau (1912:5), López Cantos (1975:308) y Thomas (1985:12) mencionan que al no haber asentamientos formales y por su cercana a las Antillas Menores estas Islas se prestaban para refugio de piratas, cimarrones y para el contrabando, actividad que se hizo parte del diario vivir del archipiélago puertorriqueño y del Mar Caribe durante los siglos XVII, XVII y XIX.

Entre las mercaderías figuraba café, pieles, ganado, frutas y madera, a cambio de vino, telas y vestimentas, herramientas, cerámicas, armas, pólvora y esclavos. Po otro lado, esclavos fugados de las Antillas Menores hacían parada en las Islas de Vieques y de Culebra en su ruta de huida a Puerto Rico, donde el gobierno español los declaraba libres (Brau 1966:Cap. XI-XII, 123-142). En 1617 los ingleses establecen un asiento la Isla de Vieques, su expulsión el mismo año termina trágicamente para casi todos los que hallaron en la Isla. En el 1672 y 1673 se registraron otros desalojos (Ibíd.:161-167,177; Bonnet Benítez 1976:24).

Concurrentemente durante los siglos XVII y XVIII también se registra gran número en el tráfico de galeones españoles procedentes de Cuba, México, Panamá y Colombia. Presas que, transportando cargamentos de oro, plata, monedas, y valiosas manufacturas piratas y corsarios ingleses, franceses, holandeses y hasta suecos, se disponían capturar (Labat 1979, en Fontánez Aldea 2014:18). Durante el Siglo XVIII se registra un incremento significativo en el tráfico de embarcaciones dedicadas al contrabando y piratería, y Francia, Inglaterra y Holanda continúan fundando nuevas colonias a lo largo del Archipiélago Antillano (Labat 1979 y Pastor Ruíz 1947, en Fontánez Aldea 2014:18).

En 1718 el armador de corso puertorriqueño Don Miguel Enríquez toma acción armada destruyendo la colonia inglesa en la Isla de Vieques con una flotilla compuesta por un barco grande y tres goletas (Brau 1912 y Pastor Ruíz 1947, en Fontánez Aldea 2014:18). Aunque europeos de otros países continuaron haciendo aguadas, cazando, pescando y disponiendo de las maderas, ya no sería viable el asentamiento dado al aumento de la población de la Isla de Puerto Rico, la constante utilización de las islas e islotes por numerosos pescadores mulatos y por el incremento en el tráfico de embarcaciones dedicadas al corso, que a la larga también acabarían con la piratería (Labat 1979, en Fontánez Aldea 2014:19).

En 1783 Abbad y Lasierra (1966:110) menciona que no existían asentamientos reconocidos por la Corona en las pequeñas islas, que continuaban siendo paraje de pescadores, cimarrones y aquellos dedicados a la extracción de madera y carbón de leña (Thomas 1985:1-12, en Oliver 1990: 64).

La Cedula de Gracia de 1812 abre los puertos y aduanas de Aguadilla, Cabo Rojo, Fajardo, Ponce y Mayagüez a la migración y al comercio extranjero. El asentamiento formal de la Isla de Vieques comienza en el 1810 por colonos ganaderos de Santa Cruz y Santo Tomás, estableciéndose formalmente como pueblo en 1843 (Bonnet Benítez 1976:24). Para el 1875, le sigue la Isla de Culebra por la Orden Real. Para entonces la isla se identificaba en los mapas ingleses como "Passaje Island" (Bonnet Benítez 1976:24: Brau 1966:161-167,177; Col & Toste 1899:364).

Mientras se gestionaba el futuro de la Isla de Culebra, la Corona Española construye un faro en ladrillo y piedra, sobre un islote al Oeste de la isla. Construido entre el 1882-

1886, queda un edificio rojo con torre al centro, aljibe y dos espacios de vivienda (Feliciano Padrón 1981:11-13).

"El faro de Isla Culebrita en Culebra fue construido en 1886 en el lado oeste del Pasaje de la Virgen. Esta estructura, de estilo neoclásico, forma parte del sistema de faros de segunda y tercera clase…es un recurso histórico y arquitectónico importante por su localización y diseño…construida por el cuerpo de ingenieros español en piedra y alumbrado, con luz blanca, un radio de doce millas. Los lentes del aparato de iluminación fueron fabricados entre 1884 y 1885 por la firma Sautter, Lemonnier y Cia". "La planta de la estructura original tiene forma de "T" con una torre en el centro, conectada a la vivienda por un pasillo cubierto. El exterior de la estructura se mantiene en relativo estado a pesar de que ha sido vandalizada" (Nistal-Moret en García Goyco 2006:44).

Figura 10: OECH - Faro Isla de Culebrita 1886.

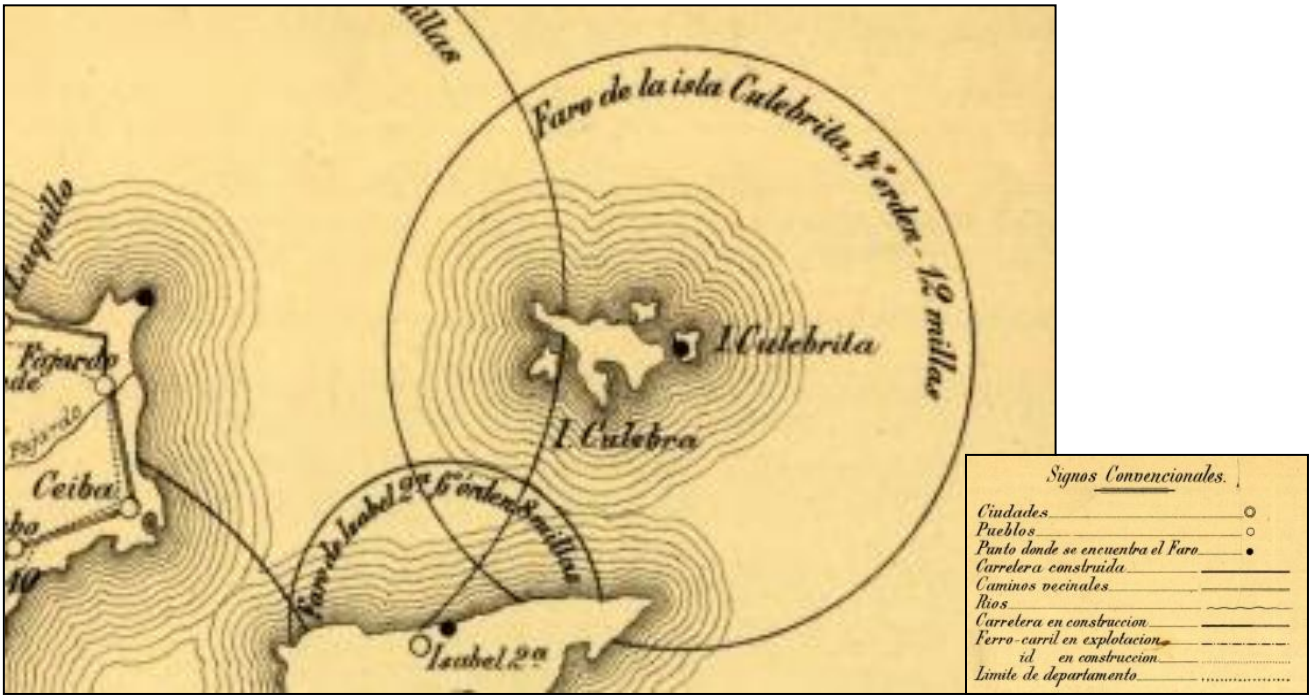


Figura 11: Plano de la isla de Puerto-Rico, con el alumbrado marítimo, [19--?]. Library of Congress: G4971.P5 19-- .P5 TIL [en línea].

En 1870 la Isla de Culebra fue habitada por un grupo de afro-antillanos bajo la tutela de Stiven, originario de Tortola colonia británica, bajo los auspicios del gobierno de Vieques. Entre 1871 y 1874 las autoridades españolas en San Juan dan permiso a varios empresarios de la Isla Grande para explotar los recursos naturales de la Isla. Unos de estos intentaron arrendar la isla para explotar sus foresta e instalar un astillero. Sin embargo, una investigación gubernamental determino de mucha importancia los recursos de la Isla de Culebra y no procedió su venta o arrendamiento, sino que se fomentó la migración de agricultores y fundación de un pueblo. En 1876 asesinan a Stiven, dando fin a la ocupación británica de la Isla de Culebra. En 1880 mediante el Plan de Colonización por Real Decreto, se autoriza colonizar la Isla, lotificando su territorio insular y sus cayos en 92 segmentos [Figura 16]. El Plan ofrecía un lote en la ciudad y tierra en el campo gratuita, exención de impuestos y material de ayuda a colonos que decidieran residir indefinidamente en la Isla. Estos debían ser agricultores de profesión, tener dinero para invertir, limpiar el solar, construir una vivienda, ser leal a la Corona y tener buena reputación entre sus pares. En 1880 llega a Bahía Ensenada Honda un crucero de guerra español trayendo 10 soldados y a Don Cayetano Escudero, nombrado delegado especial de la Isla de Culebra, iniciando el proceso de colonización. El resto de los solicitantes, particularmente de Vieques y la costa este de Puerto Rico, se trasladaron posteriormente. Para 1889 se había terminado de construir la Iglesia y se habían designado 83 lotes (Tomas 1985:1-17, en Oliver 1992: 64-65; Feliciano 1981:2-3; Feliciano Padrón 2001:16).

El pueblo ubicado en un llano, en la orilla norte de Bahía Ensenada Honda, se llamó San Ildefonso.

> "unas cuarenta casitas, de ellas muchas de paja y lluma. Hay una iglesia, una cisterna de la cual se surte de agua el pueblo, una casa de Gobierno y por los campos muchos bohíos y ranchos" (Vázquez Alayón 1891: 44, en Delgado Cintrón 1970:1-12).

Durante los primeros años los vecinos lucharon por conseguir; la construcción de un depósito de agua ya que su escasez obligaba se traía desde la Isla de Vieques, como también por la asignación de un médico y guardias civiles, un botiquín público, una vía marítima con Fajardo y la creación de un Jurado de Paz., Inicialmente el agua se

traía en un el vapor que trajo a la guarnición y a Don Escudero. Luego como Delegado Especial éste organiza el acareo de agua empleando frágiles embarcaciones de vela entre las dos Islas. En tiempos de sequía la situación se tornaba agravante (Feliciano Padrón 1981:58). Desde el comienzo de la colonización hasta el cambio de soberanía con la llegada de los Estados Unidos, los culebrences continuaron con las disposiciones legales para obtener título de propiedad de sus lotes (Vázquez Alayón 1891: 48-60, en Delgado Cintrón 1970:13).

Figura 12: AGPR [1] - Plano sin título de la Lotificación de la Isla de Culebra, 1878.

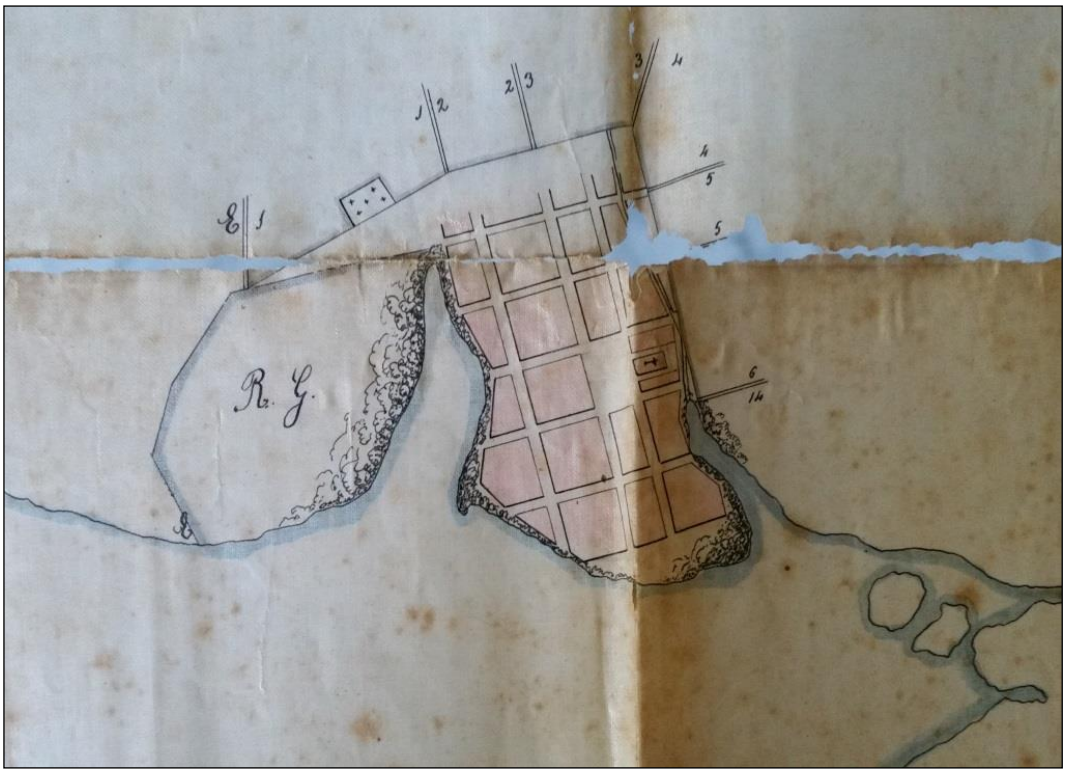


Figura 13: AGPR [2] - Plano Puerto de Ensenada Honda con los lotes de pueblo ocupando la totalidad de la península, 1880-1887.

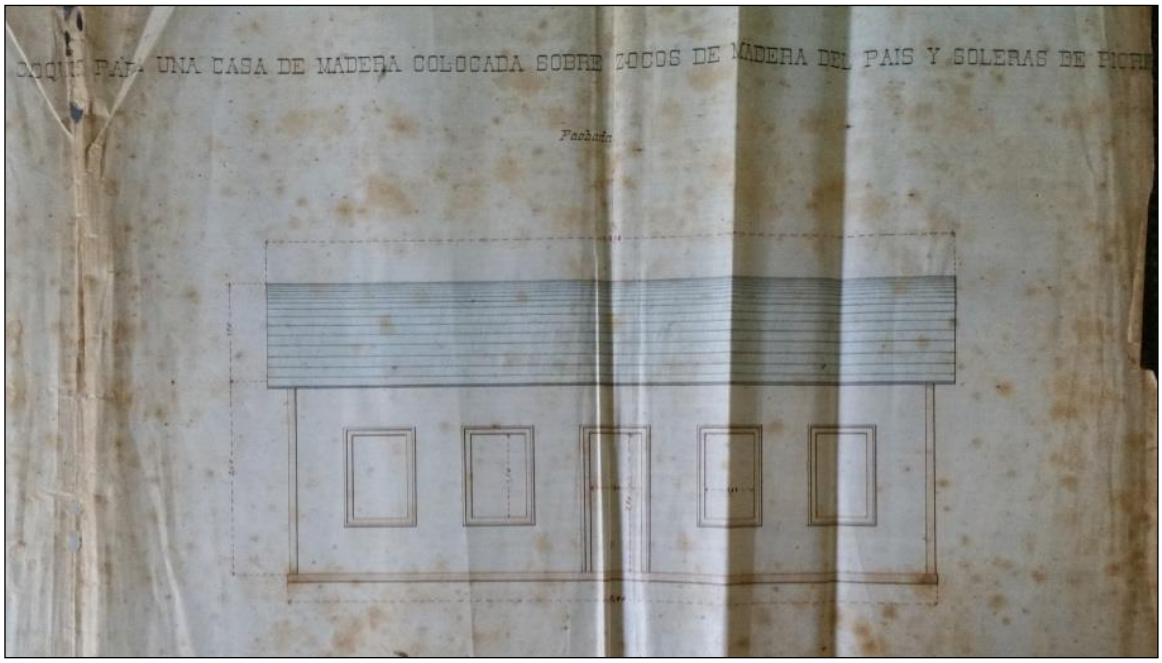


Figura 14: AGPR [3] - Casa Para el Delegado de la Isla de "Culebra"...1887.

Para el 1889 termina la construcción, "en madera y zinc", de la capilla católica en San Ildefonso. Para el 1896 muchos vecinos de la Isla de Vieques que obtuvieron terrenos se dedicaron a importar cabras, ovejas, aves de corral y ganado embarcándolos en balandros y goletas (Feliciano Padrón 1981:104). En 1897 había 1,335 vacas, 201 caballos, 325 cabras, 180 cerdos, 150 ovejas, y 4 asnos (Carrel 1903:18). El pueblo lo ocupaban 206 personas y el campo 498, existían 54 fincas para un total de 23 cuerdas cultivadas y 863 en bosque (Feliciano Padrón 1981:157).

Por ser un paso de mar abierto los nuevos pobladores de la Isla enfrentaron gran dificultad para comunicarse y abastecer sus necesidades cotidianas. En respuesta la Capitanía General de Puertos reconoce los puertos de la Isla de Vieques y de Culebra y emite una concesión para realizar el tráfico de pasajeros y carga fletando veleros particulares. Para 1884 se realizaban dos viajes semanales entre Isabel Segunda y San Ildefonso (Ibíd.).

Luego de la Guerra Hispanoamericana, todas las posesiones de la Corona Española pasan a manos de los Estados Unidos bajo el Tratado de Paris de 10 de diciembre de 1898 y la Ley Orgánica de Puerto Rico de 12 de abril de 1900 (Ley Foraker). Desde antes de la guerra sin embargo, ya los Estados Unidos interesaba tener un enclave estratégico desde el cual proteger las rutas marítimas que se planificaban establecer a través del nuevo Canal de Panamá. El estratega naval Alfred T. Mahan (1899) menciona en *Lessons of the War with Spain and others Articles*) la importancia de establecer una base en la parte este de Puerto Rico.

Para el año 1899, residían en la Isla de Culebra un total de 704 personas, 206 vivían en el pueblo de San Ildefonso en 24 casas, y 498 en el campo. Nunca declarado municipio, su administración se regía a través de un Delegado Especial residente (Delgado Cintrón 1989:37-41).

Figura 15: AGPR [4] - Plano emplazamiento del pueblo…en la Isla de Culebra...1897.

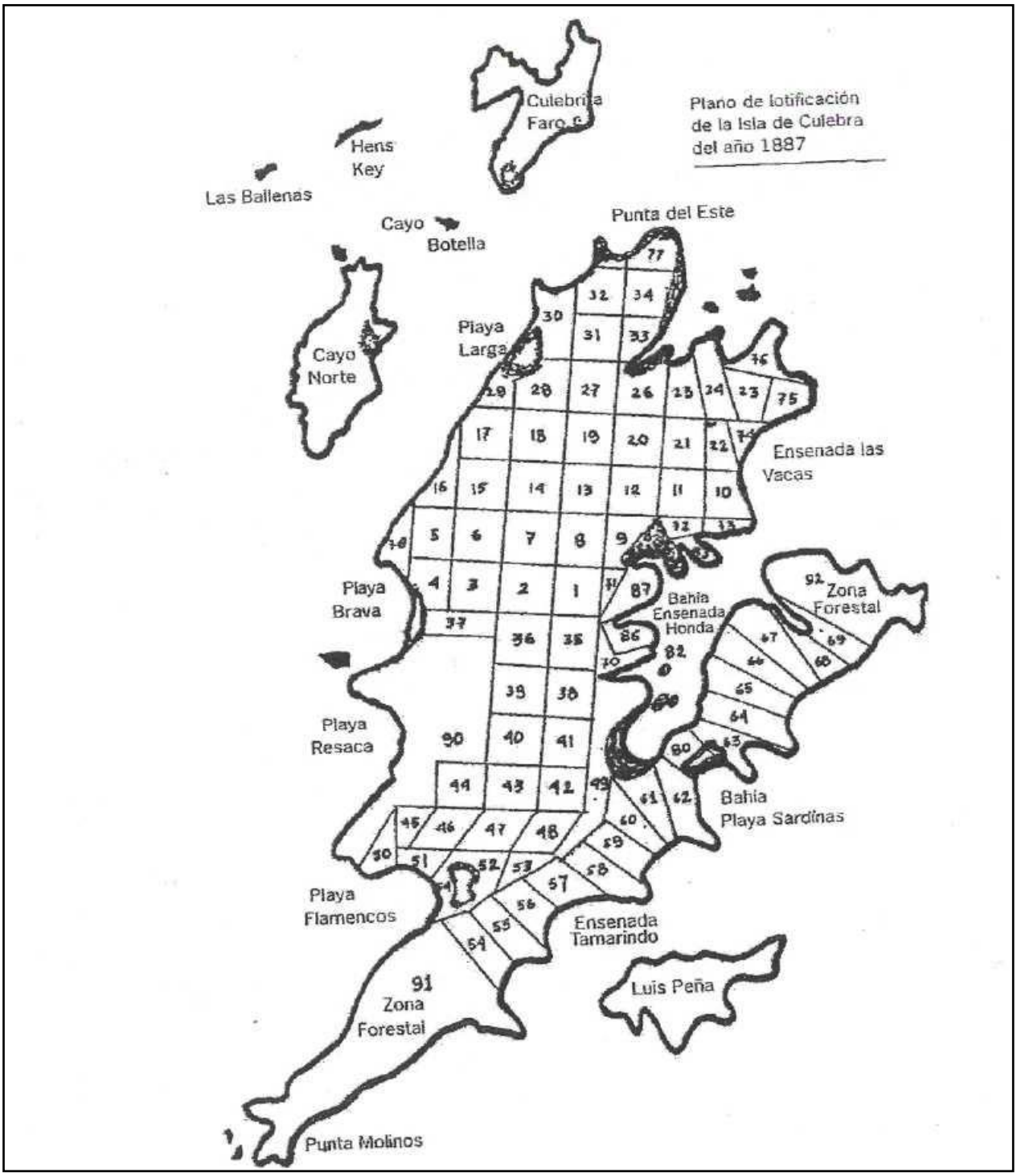


Figura 16: AGPR [5] - Plano División de lotes en la Isla de Culebra, 1887.

En 1901 el Secretario de la Marina solicita el establecimiento de una base naval en la Isla de Culebra y el Secretario de Justicia de los Estados Unidos emite la Opinión de 25 de octubre de 1901:

"In view of the forgoing principals and laws, therefore, if or so far as the proposed naval base on Culebra Island is not included in existing defense, barracks, or other national property and Works ceded by Spain, or in such harbor control as has been reserved to the United States; and since it does not appear that among the reservations to General Government, expressed or implied, is embrace some zone or strip of harbor shore formerly belonging to the Crown of Spain and taken over by this Government, and not intended to be surrendered to the local by the Porto Rican Act, it seems to me that the Unites States should obtain, in accordance with the usual methods of authorization by Congress, a transfer of such individual property rights as may be involved and a retrocession *por tanto* from the Government of Porto Rico Congress may see fit by some new law, that the grant of local control and administration is subject to such exceptions for Nation purposes as this case suggests, an d may thereupon define the field generally or by special location, establishing appropriate methods and rules and procedures in making Federal reservation in public lands of Porto Rico" (Delgado Cintrón 1989: 40).

De esta manera el Presidente hace traspaso de las tierras públicas.

"White House
December 17, 1901
Such lands as may exist on Culebra Island between parallels 18° 15' and 18° 23' North latitude, and between meridians 65° 10' and 65° 25' West latitude, are hereby placed under the jurisdiction and control of the Navy department" " (Ibíd.:68).

Seguida por la Proclama 4, de 26 de junio de 1903:

"Now, therefore, I Theodore Roosevelt, President of the United States…in pursuance of said Act of Congress, July 1, 1902, do here by declare, proclaim and make here known that the following lands be, and the same are hereby reserved for military purposes, to wit…
5. All public lands and buildings thereon, belonging to the United States on the Island of Culebra and adjacent keys lying between parallels 18° 15' and 18° 23' North latitude, and between meridians 65° 10' and 65° 25' West latitude" (Ibíd.:73)

Según los cálculos, los lotes de terreno dentro de las latitudes mencionadas son los numero 85, 86, 87, 88, 89 – Manglares 90, 9, 92 - Zona forestal, terrenos del Ramo de Guerra, lagunas Flamenco y los Patos, y Zona Marítima. San Ildefonso ubicaba cerca del lote 87 con un territorio de 18 hectáreas y 50 areas y la Marina procedió a desalojar a los vecinos del pueblo (Ibíd.: 80, 84).

En el 1902 entra el comandante Henry C. Haines, nombrado oficial encargado de la

propiedad pública en la isla por el Departamento de la Marina, en un crucero de guerra a Bahía de Ensenada Honda desembarcando en compañía de dos tenientes ingenieros y media docena de soldados en San Ildefonso. Habiendo decidido ya por los terrenos donde estaba ubicado el Pueblo, este le informa al Delegado Especial, don Leopoldo Padrón, los planes de la Marina Americana para establecer una base naval en la Isla (Garayalde 2004:19).

> "Para aumentar los sinsabores del gobernante local, en…marzo del año 1902, entraba al edificio de la Delegación acompañado de su ayudantes, el comandante Haines para informarle al Delegado Especial el sitio seleccionado por el Departamento de Marina para la construcción de la proyectada base naval.
> Extendiendo sobre la mesa el plano de lotificación de la isla y con la ayuda de un intérprete…el comandante Haines informaba que…la Marina se había decidido por los terrenos donde estaba ubicado el pueblo de San Ildefonso. Como parte de ese mismo proyecto la Marina construiría una carbonera en el lote No. 92, sitio conocido luego por Colorado, una vigía o puesto de observación en la cumbre de la montaña del lote No. 90, una estación inalámbrica en la península del noreste cerca de punta de Molinos y un canal entre los lotes Nos. 62 y 63 para intercomunicar las bahías" (Feliciano Padrón 1981:137-138).

Así comienza la desmantelamiento y remoción de viviendas del asentamiento San Ildefonso, ante la imposibilidad de mudarse por tierra, muchos de los vecinos recurrieron a colocar todos sus muebles, junto a las maderas y el zinc de las casas en balsas improvisadas, yolas y velero tradicional cruzando Bahía Ensenada Honda hacia Playa Sardinas, hoy "Dewey" como se conoce al pueblo en la Isla de Culebra. Nombre designado en honor al Almirante George Dewey, héroe de la Guerra en Filipinas. Los vecinos de otras áreas rurales también fueron desplazados y las familias más pobres tuvieron que establecerse en áreas de mangle (Delgado Cintrón 1989:15: Feliciano Padrón 1981:151; Garayalde 2004:20).

Como consecuencia de la intervención de Inglaterra y Alemania en el Bloqueo Naval a Venezuela de 1902-1903. El Presidente Theodore Roosevelt emite el "Corolario Roosevelt a la Doctrina Monroe" en 1904, donde se estipula que Estados Unidos actuará a fin de evitar intervenciones provenientes de fuera del continente americano, haciendo legitimó el uso de la fuerza como medio para defender los

intereses asumidos de todo el continente. Doctrina conocida como la "Big Stick Doctrine" impulsando el imperialismo norteamericano de principios de siglo XX.

Entre el 1902 y 1911 se construye "Camp Roosevelt", donde antes yacía San Ildefonso, nombrado en honor al Presidente Theodore Roosevelt quien en 1903 establece la base por decreto del Congreso como "Culebra Naval Reservation". "Las primeras obras militares construidas por la Marina fueron dos muelles de tablones montados sobre pilotes de pino creosotado, uno en el puerto de San Idelfonso en punta Colorado en donde se comenzaba a construir la estación carbonera", facilidad obligatoria al ser el carbón combustible de los barcos para la época (Feliciano Padrón 1981:161). La estación conllevo la "construcción de un muelle para atracar los barcos cargados de carbón y una torre de hierro de considerable altura para unirlas entre sí por medio de rampas, sobre las cuales se instalarían vías paralelas de rieles" para transportar el carbón (Ibíd.). Además, se construye una estación de comunicación, cuarteles, residencias de oficiales, enclaves de artillería, hospital, y murallas para prácticas de tiros. Garayalde (2004:21) añade describiendo las obras:

> "un largo cuartel de madera techado de tabla y cartón embreado con capacidad para alojar 90 soldados, dos cisternas de ladrillos con una plataforma de hormigón para recoger agua de lluvia, un edificio de madera y zinc para la administración de la base, un edificio de madera y zinc para tienda y cantina de la base, un hangar con techo y setos de zinc para talleres de carpinterías y herrerías, un edificio de mampostería para planta de hielo y frigorífico, un hangar de ladrillo y zinc para baño y lavandería, un edificio de hormigón y zinc para panadería, un hangar de gran tamaño de madera y zinc para pesebre de los caballos y muías de la base, un edificio de madera y zinc para almacén, de mampostería para armería de la base, un amplio edificio de madera techado de tabla y cartón embreado para hospital, el que estaba equipado con 20 camas, quirófano y farmacia".

También se excava un canal para facilitar la navegación entre Bahía de Ensenada Honda y Sardinas, sobre el cual tendieron un puente levadizo de madera (Delgado Cintrón 1989:137-138). Al nuevo poblado de Playa Sardinas ahora podían llegar con más facilidad "los balandros…procedentes de San Juan abarrotados de mercancías…y descargaban…al lado del puente" (Feliciano Padrón 1981:164).

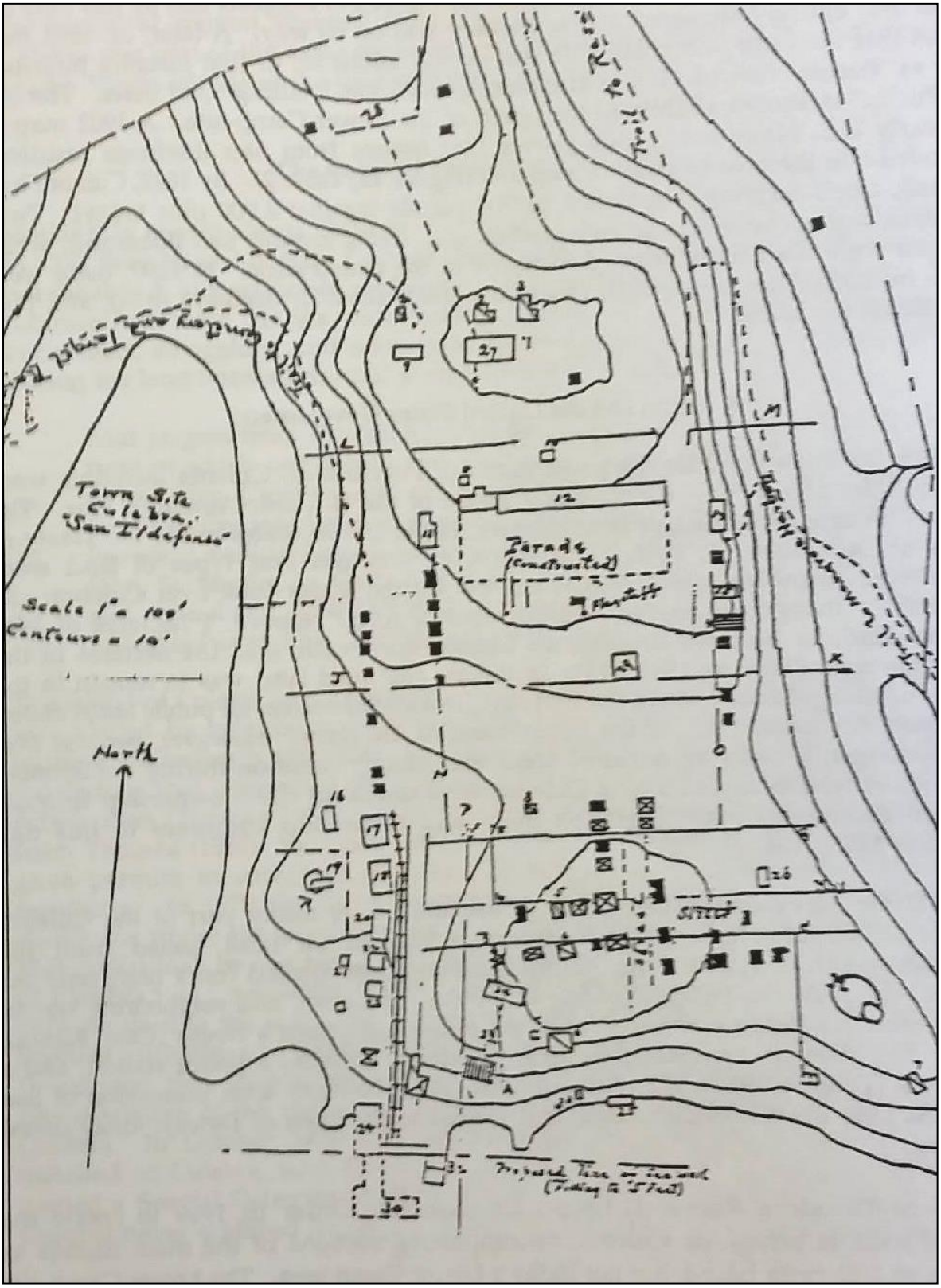


Figura 17: "Plan View Town of San Ildefonso" (1881-1902) and the U, S. Navy Instalation -1902 (Oliver 1992:66, Figura 13).

To be removed from Town site on or before April 1, 1905.

Owners may have legal rights to a lot in the Town under Spanish grant Nov 8, 1888.

Private owners

Church and two School Houses claimed by the Insular Government of Porto Rico

Delegation House

1 Actg Bodn Kenny
2 Francisco Amador
3 Boan O'Connell
4 Ricardo Romero
5 Ricardo Romero
6 Doctor McMurdo (USN)
7 Woman Mulero, claimfng to be widow of the late Dr. Ranes, USN
8 Pedro Santiago
9 Barracks Hospital . . . . . USMC
10 Ice House . . . . . "
11 Commissary Stores . . . . . "
12 Marine Barracks . . . . . "
13 Wash House and Bakery . . . . . "
14 Guard House, Canteen, Reading Room . . . . . "
15 Commanding Officer's Office . . . . . "
16 Blacksmith Shop . . . . . "
17 Temporary Shack . . . . . Ordnance
18 Quartermaster's Store House . . . . . USMC
19 Stable . . . . . "
20 Portable House . . . . . Equipment
21 Oil House . . . . . USMC
22 Store Shack . . . . . Gen storekeeper, Ord property
23 Shed . . . . . Temporary
24 Boat Shed and Carpenter's Shop (constructing) . . C & R
25 Bath House . . . . . .
26 Search Light House . . . . . USMC
27 Cistern (100,000 gal) (constructing) . . . . . Secretary's Office
28 Water shed for same . . . . . " "
29 Plaza cistern (now full) 17,500 gal . . . . . Repaired by USMC
30 Proposed wharf . . . . . Yards & Docks
31 Fresh water pump . . . . . USMC
32 Wharf
33 Public Cistern (10,000 gal) built by former Spanish government
34 Corrugated iron water shed for Wharf

Compound A,B,C,D location for all Quarters, Administration Bldg at western end. Street about 30' wide to cut through to the northward about the center of the length of the compound a walk about 30' wide to extend along South front.

Compound E, F, G, H for the homes of Warrant Officers and Married Enlisted Men.

The boundary J, K, L, M for Marine Corps compound, X for bowling alley reading room and club for enlisted men.

Compound N for hospital use.

Figura 18: "Accompanying Key for San Ildefonso and U, S. Navy Building Structures" (Oliver 1992:67, Figura 14).

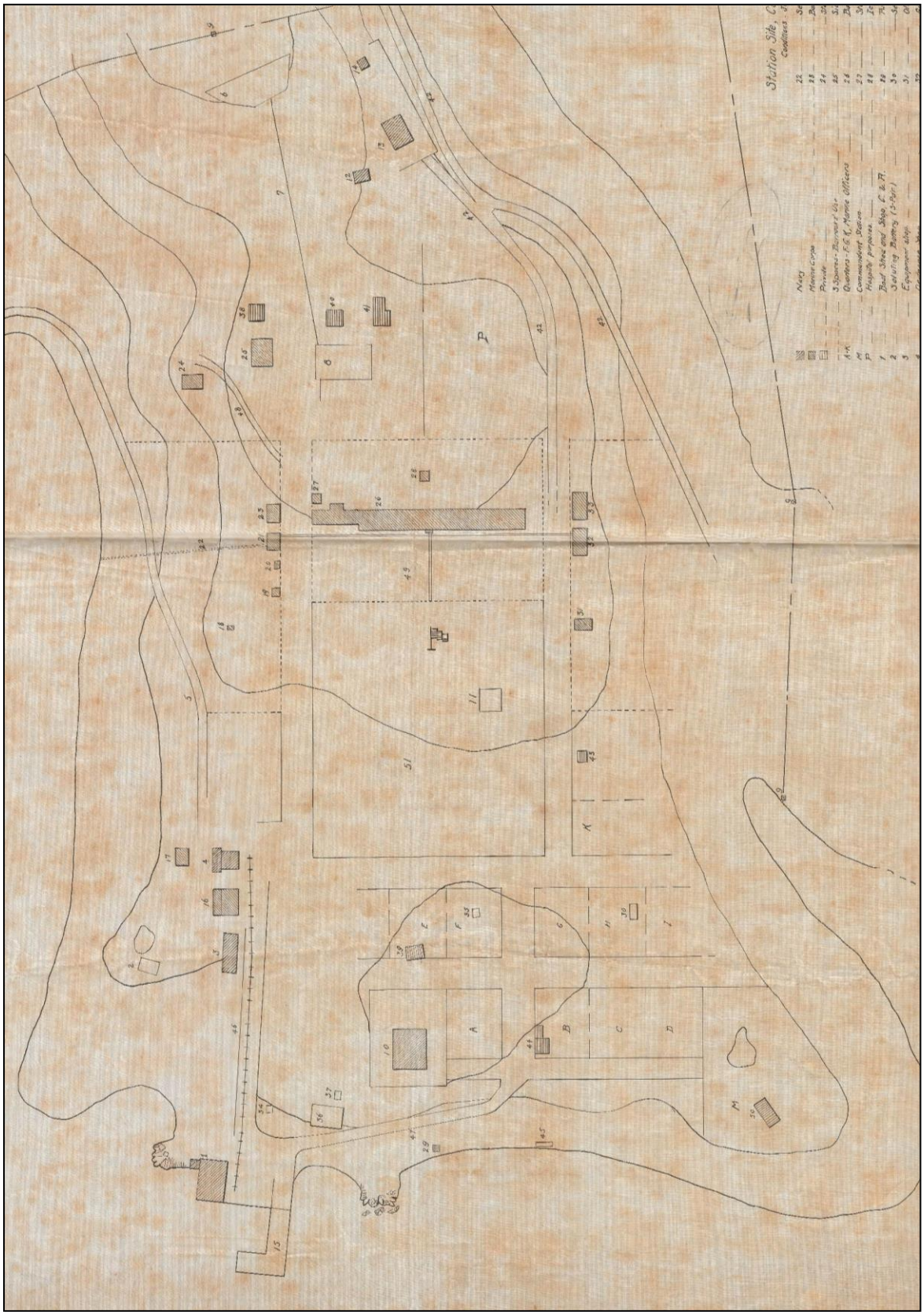


Figura 19: AGPR [6] "Station Site Culebra, VI June 1st 1906, signed B. T. Walling".

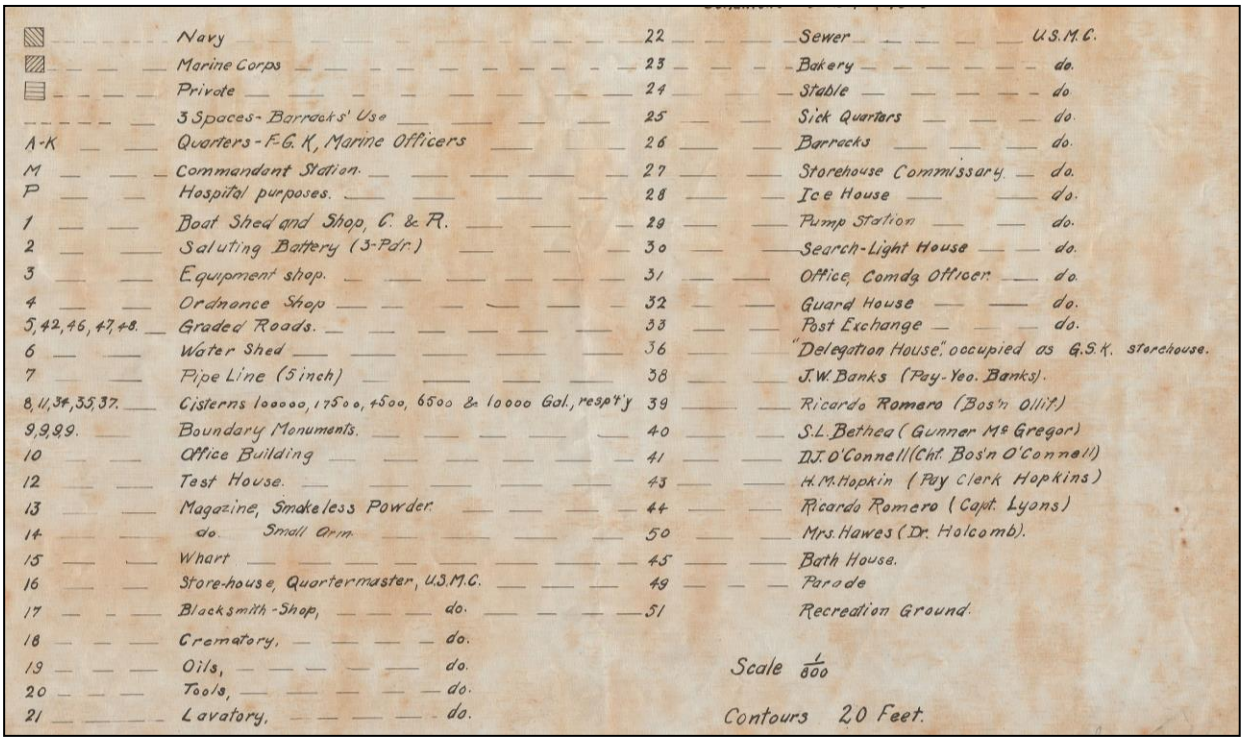


Figura 20: AGP [8] Station Site Culebra, VI June 1st 1906, signed B. T. Walling.

En 1904 el *Peoría,* un pequeño remolcador brindaba servicio exclusivo a la instalación militar conectándola a San Juan (Feliciano 1981:157). En 1905 la Isla de Culebra se constituye en Distrito Municipal Especial, y se nombra un Alcalde confiriéndole poderes de Juez de Paz (Delgado Cintrón 1989:37-41). En febrero de 1914, cinco meses antes del inicio de la Primera Guerra Mundial [PGM], unidades de la Marina de Guerra Americana arribaban a la Isla para realizar maniobras conjuntas de aire, tierra y mar, creando el precedente en el formato de hacer guerra. En 1919 y 1926 se realizarían maniobras excavando trincheras en distintos nichos geográficos imitando la guerra de trinchera caracterizada en los campos de Francia durante la PGM (Martínez Garayalde 2004:22).

Figura 21: "Target Bay, Culebra Island, P.R." Richards, Harry D. c1914. Library of Congress: PAN US MILITARY - Navy no. 28 (E size) [P&P].

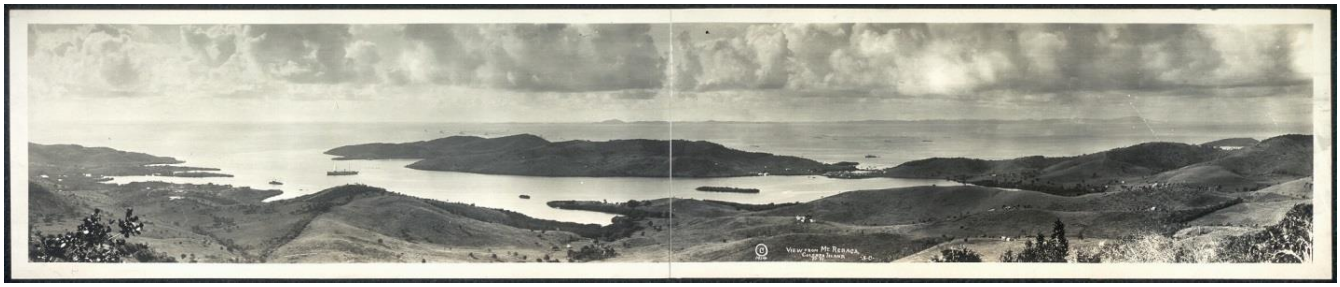


Figura 22: "View from Mt. Resaca, Culebra Island, P.R." Richards, Harry D. c1914. Library of Congress Call Number: PAN FOR GEOG - Puerto Rico no. 3 (E size) [P&P].

Establecida en 1903, "Culebra Naval Reservation" o el Archipiélago de la Isla de Culebra se convierten en el centro principal de maniobras de la Marina de los Estados Unidos al comienzo de la Segunda Guerra Mundial en 1939(Delgado Cintrón 1989: 92). El Archipiélago se empleó con este propósito hasta 1975.

"Executive Order 8684 - ESTABLISHING CULEBRA ISLAND NAVAL DEFENSIVE SEA AREA AND CULEBRA ISLAND NAVAL AIRSPACE RESERVATION
February 14, 1941
By virtue of the authority vested in me by the provisions of section 44 of the Criminal Code, as amended (U.S.C., title 18, sec. 96), and section 4 of the Air Commerce Act approved May 20, 1926 (44 Stat. 570, U.S.C., title 49, sec. 174), the territorial waters between the extreme high-water mark and the three-mile marine boundary surrounding the island of Culebra, Puerto Rico, are hereby established and reserved as a naval defensive sea area for purposes of national defense, such area to be known as 'Culebra Island Naval Defensive Sea Area'; and the airspace over the said territorial waters and island is hereby set apart and reserved as a naval airspace reservation for purposes of national defense, such reservation to be known as 'Culebra Island Naval Airspace Reservation'.
At no time shall any person, other than persons on public vessels of the United States, enter Culebra Island Naval Defensive Sea Area, nor shall any vessel or other craft, other than public vessels of the United States, be navigated into said area, unless authorized by the Secretary of the Navy.

At no time shall any aircraft, other than public aircraft of the United States, be navigated into Culebra Island Naval Airspace Reservation, unless authorized by the Secretary of the Navy.

The provisions of the preceding paragraphs shall be enforced by the Secretary of the Navy, with the cooperation of the local law enforcement officers of the United States and of the Government of Puerto Rico, and the Secretary of the Navy is hereby authorized to prescribe such regulations as may be necessary to carry out such provisions.

Any person violating any of the provisions of this order relating to Culebra Island Naval Defensive Sea Area shall be subject to the penalties provided by section 44 of the Criminal Code as amended (U.S.C., title 18, sec. 96), and any person violating any of the provisions of this order relating to Culebra Island Naval Airspace Reservation shall be subject to the penalties prescribed by the Civil Aeronautics Act of 1938 (52 Stat. 973).

This order shall take effect ninety days after date hereof.

FRANKLIN D. ROOSEVELT THE WHITE HOUSE, February 14, 1941.

Exec. Order No. 8684, 6 FR 1016, 1941 WL 3851 (Pres.)".

Marine Corps Historical Collection
Camp Lejeune on Culebra in 1924. It was customary at the time to name temporary camps after contemporary officers, usually the commander, but in this case the Commandant of the Marine Corps.

Figura 23: U.S. Marine Corps History and Museum Division Headquarters 1881.

Figura 24: U.S. Marine Corps History and Museum Division Headquarters 1881.

En 1940 se construye una base militar en la Isla de Vieques, esta opero hasta el 2000. Tanto en Isla de Culebra como la de Vieques se desarrollaron ejercicios de desembarco de tropas empleados en la guerra del Pacifico, contra los Japoneses y en las intervenciones de Republica Dominicana y Panamá (Delgado Cintrón 1989, Feliciano 1981& Pastor Ruíz 1947, en Fontánez Aldea 2014: 23).

En el 1968, la Marina "solicita la cooperación del Gobierno Estatal para desalojar los habitantes de la pequeña isla, ofreciendo hasta $10,000.00 a cada jefe de familia y de $5,000.00 a personas solteras que poseyeran hogar propio". En respuesta los residentes establecen el Comité Pro Rescate de Culebra para dar fin a las operaciones de maniobras, y sacar la Marina de la Isla. En 1973 el Secretario de la Defensa anuncia el cese de bombardeos y maniobras, y en1975 el Presidente Richard Nixon hace efectivo, por ley, la salida de la Marina de la Isla de Culebra. En 1978 parte de las tierras ocupadas por la Marina pasan al Estado Libre Asociado de Puerto Rico, otros tractos considerables se retuvieron en poder del Departamento del Interior delegando su administración al Servicio Federal de Pesca y Vida Silvestre (Martínez Garayalde 2004:23).

Durante los siglos XIX y principios del XX las aguas entre la Isla de Vieques y de Culebra fueron frecuentadas por vapores de gran tonelaje que transportaban carga y pasajeros (Dávila Cox 1996 & Feliciano 1976, en Fontánez 2014:17). Sin embargo,

desde 1903 la frecuencia de estos cargueros privados disminuyó, siendo substituidos por todo tipo de embarcaciones militares [acorazados, cruceros, fragatas, torpederas, lanchas rápidas y submarinos], y aeronaves empleadas como parte de las maniobras de la armada estadounidense, como de otros países que alquilaban las bases (Delgado Cintrón 1989; Feliciano Padrón 1981; Pastor Ruíz 1947: en Fontánez 2014:23). Creando un triángulo operacional entre la Isla de Vieques, la de Culebra y la Base de Roosevelt Roads en Ceiba, conocido como "Culebra Island Naval Airspace Reservation" [Executive Order 8684].

VII. Informes Positivos

Terrestres

Seguidamente se detallan los informes de evaluaciones arqueológicas terrestres con resultados positivos a la presencia de recursos culturales en Culebra [CAT];

A Stage IA Cultural Resource Survey: Culebra Wastewater Facilities Project, Culebra Island PR. Por Ronald Thomas, 1985 [en Oliver 1992]. Resultados: Cayo Pirata, ubicado en medio de Bahía Ensenada Honda, caracoles y cerámica de diferentes culturas; Pta. Tamarindo, entre 2 colinas en península, múltiples ocupaciones posible Elenoides, parcialmente destruido; Pta. Carenero, sitio pequeño en pie de colina, cerámica Elenoide: Cayo Luis Peña, artefactos encontrados por informante; Pta. Tamarindo Grande, ocupación Elenoide posible componente pre taino & artefactos S-18 tardío; San Ildefonso, sitio donde se fundó Culebra, cisterna en mampostería y verja de piedra y ladrillo; Remanentes restaurados almacén la marina de piedra y ladrillo actual Museo.

Estudio Arqueológico Fase IA IB – Plan de facilidades para el Municipio de Culebra. Por Miguel Rodríguez, 1997. Resultados: En la Zona I, al NO de la Isla, en Cerro Balcón, restos estructurales Casa Rosas, todo el Segmento A se encuentra dentro del área de Pta. Padilla (sitio#9) donde se encuentra las ruinas del antiguo San Ildefonso y Camp Roosevelt, cual debe considerarse como un extenso yacimiento o distrito cultural.

Estudio Arqueológico Fase IA – Rehabilitación a la Planta de Tratamiento de agua por osmosis reversible en la isla Municipio de Culebra. Planta Desalinadora. Por Miguel Rodríguez, 1997. Resultados: presencia tanque en ladrillo y otras estructuras relacionadas a la marina SXX, complejo elegible RNLH Criterio A.

Rescate Arqueológico en Playa Tortolo, Culebra. Por Norma Medina Carrillo, 1998. Resultados: depósito multicomponente Monserrate, Santa Elena, Ostiones y Esperanza.

Results of the Archeological testing and data recovery Investigation at the Lower Camp Site, Culebra Island national wildlife Refuge, Puerto Rico. Por José Oliver 1992,

Garrow & Associates. Resultados: pequeño campamento cuyo material argumentan una adaptación marítima costera acompañada por suplementos agrícolas y cerámica del estilo Cuevas, ocupado entre 600/650 d.C. a 700/750 d.C. - Periodo IIb.

Sub-Acuáticos

Seguidamente se detallan los informes de evaluaciones arqueológicas terrestres con resultados positivos a la presencia de recursos culturales en las aguas circundante a la Isla de Culebra [CAS];

Prospección de arqueología subacuática en la sonda de Vieques DIA tubería Vieques –Culebra. Hato Rey, Puerto Rico. Por Jesús Vega, 1988. Resultados: la investigación documental referencia 17 naufragios, entre 1807 y 1920, se empleando prospección visual y electrónica en un corredor de 10 millas náuticas por 250 pies de ancho, aparte de no de un ancla tipo almirantazgo la prospección resulto negativa a la parecencia de sitios arqueológicos sumergidos.

Oficina del Consejo para la Protección y Estudios de Sitios y Recursos Arqueológicos Subacuáticos. Por Richard Fontánez Aldea 1993. Resultados: se identifica un ancla, una anilla de hierro y otros materiales en concreción a formación roca a una milla al este de Puerto Mulas de la Isla de Vieques.

Evaluación Arqueológica Subacuática Fase IA-IB, Reemplazo del cable eléctrico que lleva energía a los municipios de la Isla de Vieques y de Culebra. Por Richard Fontánez Aldea 1998. Resultados: empleando prospección visual y electrónica en un corredor de 12 millas de largo por 100 metros de ancho se identifica un cumulo de maderas que produjo señales características de ser un recurso cultural, Isla de Vieques. Recomienda: Fase II.

Evaluación Arqueológica Subacuática Fase II, Reemplazo del cable eléctrico que lleva energía a los municipios de la Isla de Vieques y de Culebra. Por Richard Fontánez Aldea 1999. Resultados: "aunque las maderas tenían cierta elaboración y podían pertenecer a la industria maderera que se desarrolló en la Isla de Vieques por varios siglos, las mismas no formaban parte de un barco o sitio articulado por lo que carecían de los criterios para ser nominado al Registro Nacional de Lugares Históricos y no había que realizar más estudios. Recomendación: "que el cable fuera instalado dejando una zona de amortiguamiento de 100 pies alejado de las maderas."

Evaluación Arqueológica Subacuática Fase IA-IB, Reconstrucción del Terminar de Lanchas de la Autoridad de los Puertos en la Ensenada Sardinas, Isla de Culebra. Por Richard Fontánez Aldea 2010. Resultados: se registran 3 señales magnéticas que podían corresponder a recursos culturales inspección del fondo evidenció que las anomalías provenían de materiales ferrosos recientes, pozos de prueba resultaron negativos a la presencia de materiales pretéritos, el sonar de barrido lateral no produjo señales correspondientes a que podían corresponder a recursos culturales. La inspección visual identifico materiales en las depresiones del suelo creadas por las hélices del ferri de carga; piedras de lastre dispersas, una botella de principios del siglo XX y otros rastros de ocupación reciente. De igual manera los pozos de prueba resultaron negativos. Recomienda: el endoso al proyecto y la implementación de monitoreo arqueológico si se planifica operaciones de dragado.

VIII. Metodología Fase IB

Terrestre

Al establecer las características de deposición, se determinó que la utilización de excavación mecánica en aquellas áreas donde la documentación gráfica identifico la presencia de estructuras seria el método más apropiado para determina la presencia de estas. También se realizaron pozos de prueba a lo largo del costado Oeste de la carretera de acceso dentro de la franja de 7m, extensión del proyecto, para identificar depósitos relacionados. Se hizo anotación de las características físicas de cada estrato en cada intervención, incluyendo su color, composición, integridad y asociación cultural. Esta información fue anotada en hojas de campo y luego codificada. Además, se mantuvo un registro fotográfico de todo el proceso de prospección y excavación.

Un poste de la Autoridad de Energía Eléctrica, la final de la carretera de acceso, donde el pavimento se abre a las facilidades del atracadero, se empleó como Datum [Figura 25]. Partiendo del Datum el pozo P1 ubica 3m Oeste. El intervalo de prospección se estableció a 18m dada la sensitividad del área, fracción equidistante entre el Datum y el final del proyecto a lo largo de la carretera de acceso. Los sondeos se excavaron hasta una profundidad máxima de 1m, donde la deposición así lo permitió.

Figura 25: Rampa Oeste & poste empleado como Datum.

Sub-Acuática (Fontánez Aldea 2014:32-34)

"Los naufragios no ocurren de forma aleatoria o incidental…forman parte de una cultura y por consecuencia son componentes de los patrones de comportamiento que la definen. La pérdida…sucede dentro de un contexto histórico…formado por las condiciones políticas, económicas y sociales…donde naufraga la nave…Los fenómenos naturales, fuegos, batallas, errores de navegación,…condiciones de la embarcación, abandono,…hundimiento intencional, y muchos otros más han sido responsables del hundimiento de naves" (Ibid.:26-27).

El área de prospección comprende las aguas frente al atracadero de San Ildefonso, localizado entre la Ensenada del Cementerio y del Caño Quebrado en Bahía Ensenada Honda (NOAA 1983: Náutica Charts 25654). Consiste de un rectángulo de 300 pies de largo x 122 pies de ancho partiendo hacia el Sur desde atracadero. Dentro de este ubica un muelle que posiblemente data de 1906 [Figura 30]. El intervalo de prospección estableció 3 transectos de 300 pies de largo con 33 pies de separación desde el área más profunda al Sur hasta la cara del atracadero en su extremo Norte [Figura 26],

Se emplearon equipos magnéticos de prospección remota, inspección visual y excavación de pozos de sondeos. La evaluación de cada objetivo (*target*) identificado requirió confirmar la naturaleza y la significancia de los materiales que generaron la anomalía, para luego evaluarlos en contra de características que

previamente han demostrado ser indicativo de recursos culturales sumergidos. El censor fue arrastrado justo bajo la superficie del agua a lo largo de los transectos cuya posición se mantuvo con un sistema de navegación computarizado y los datos generados fueron georreferenciados por el mismo sistema. Los pozos de prueba se realizan con el la intención de detectar material prehistórico ya que el rastreo con magnetómetro no perciben materiales que carecer masa ferrosa. Se excavan 5 pozos con una sonda de agua, posicionados de forma aleatoria. Para una descripción detallada de la metodología empleada, favor referirse al Anejo 1: Evaluación Arqueológica Subacuática Fase I-A y I-B (Fontánez Aldea 2014: 33-36).

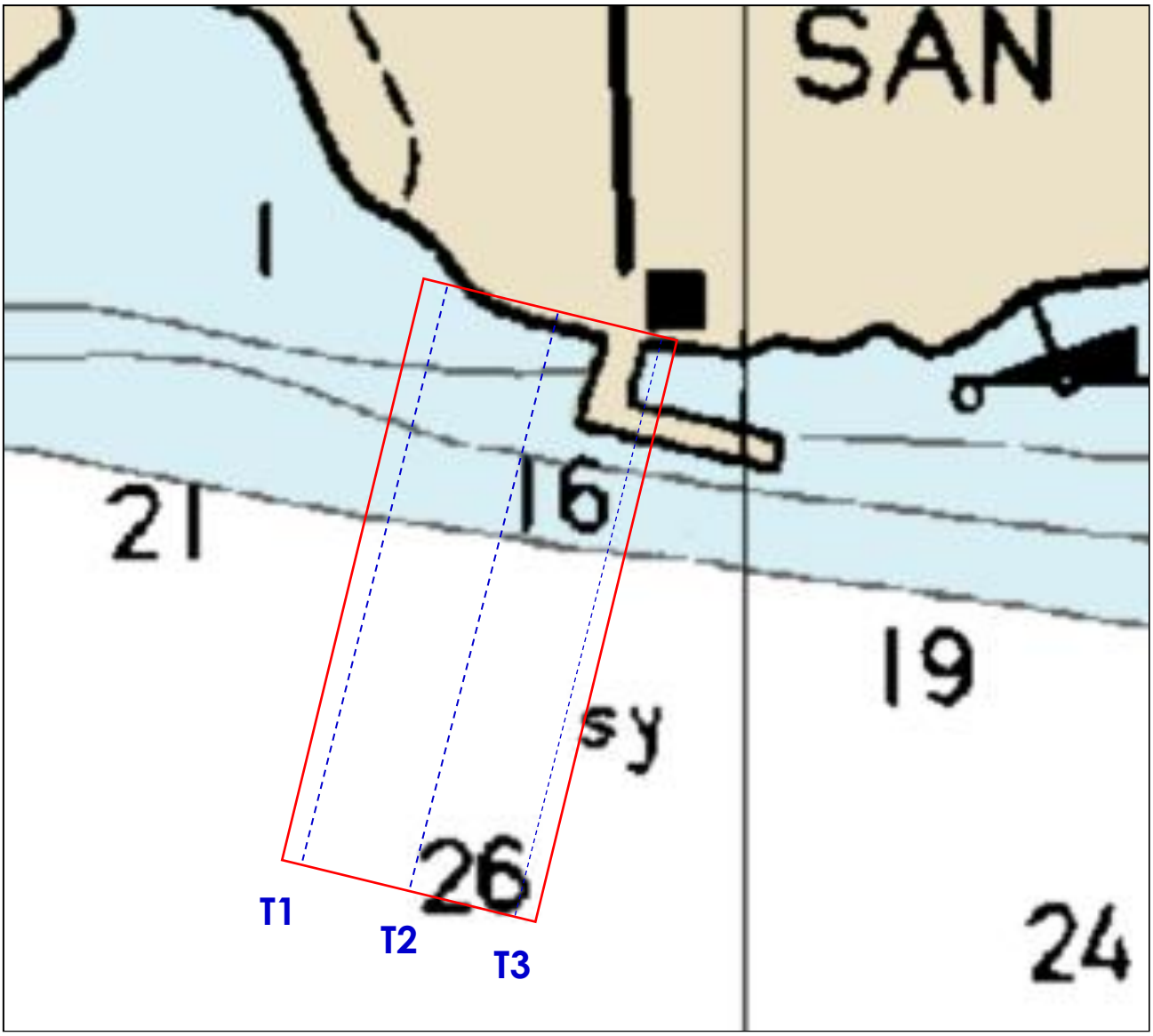


Figura 26: Ubicación de Transectos (Fontánez Aldea 2014:37, Figura 1).

IX. Resultados

Análisis de Graficas

A continuación se presentan una serie de graficas presentando las alteraciones del área de estudio a través del tiempo.

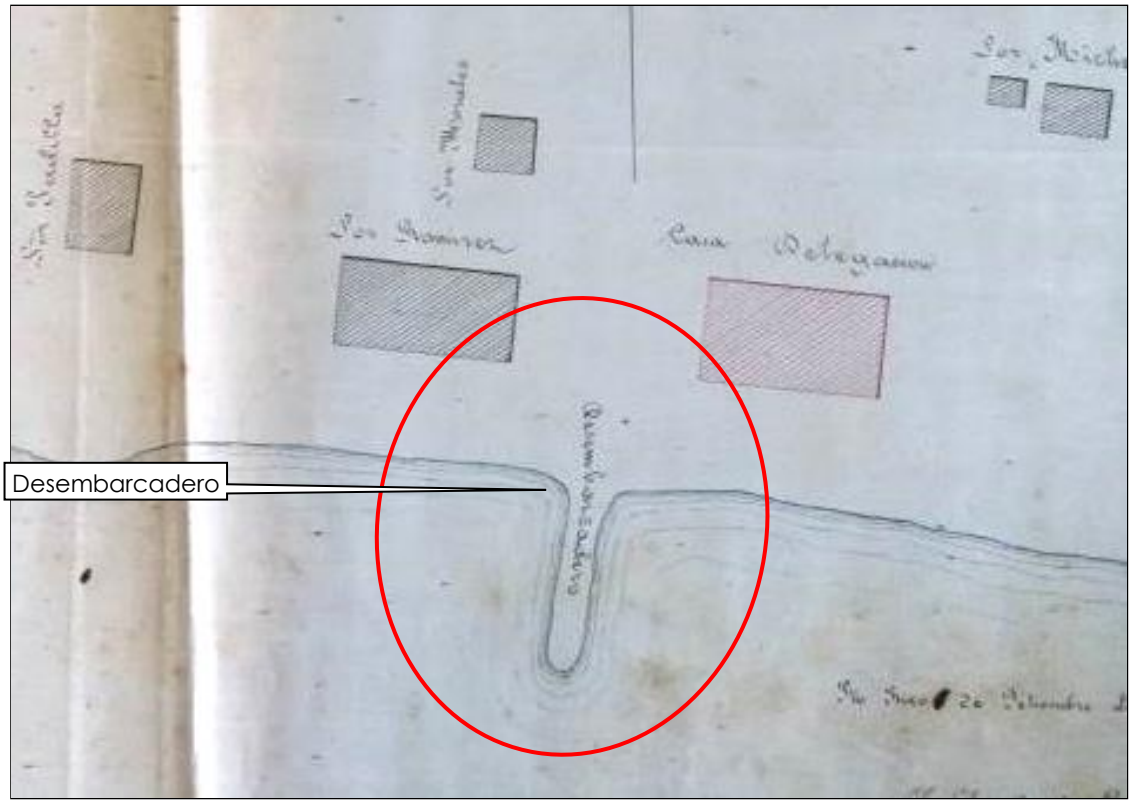


Figura 27: AGPR [3] Detalle - Croquis del Enclavamiento de la Casa Delegación…1887.

La Figura 27 detalla el primer conjunto de estructuras documentado en San Ildefonso [1887]. Aunque no a escala, se observa próximo a la costa la "Casa Delegación", a su izquierda las casas de "Los Ramírez y Los Padillas" y al Norte de "Los Ramírez y Los Morales". De importancia aparece una proyección fina de tierra que se adentra en el agua denominada como "Desembarcadero".

Figura 28: AGPR [5] Detalle Plano emplazamiento del pueblo…1897.

La Figura 28 detalla el desplazamiento o cuadricula de calles, lotes y casas en San Ildefonso [1897]. Ya se observa, a diferencia del desembarcadero de la Figura 27, un área rectangular denominada "Muelle" adentrándose al agua. Entendiendo que la calle que parte del muelle, "Avenida del General Marín" en plano, corresponde a la posible alineación de carretera de acceso en uso hoy día. Esta, cuando fue construida, atravesó varios lotes residenciales del pueblo.

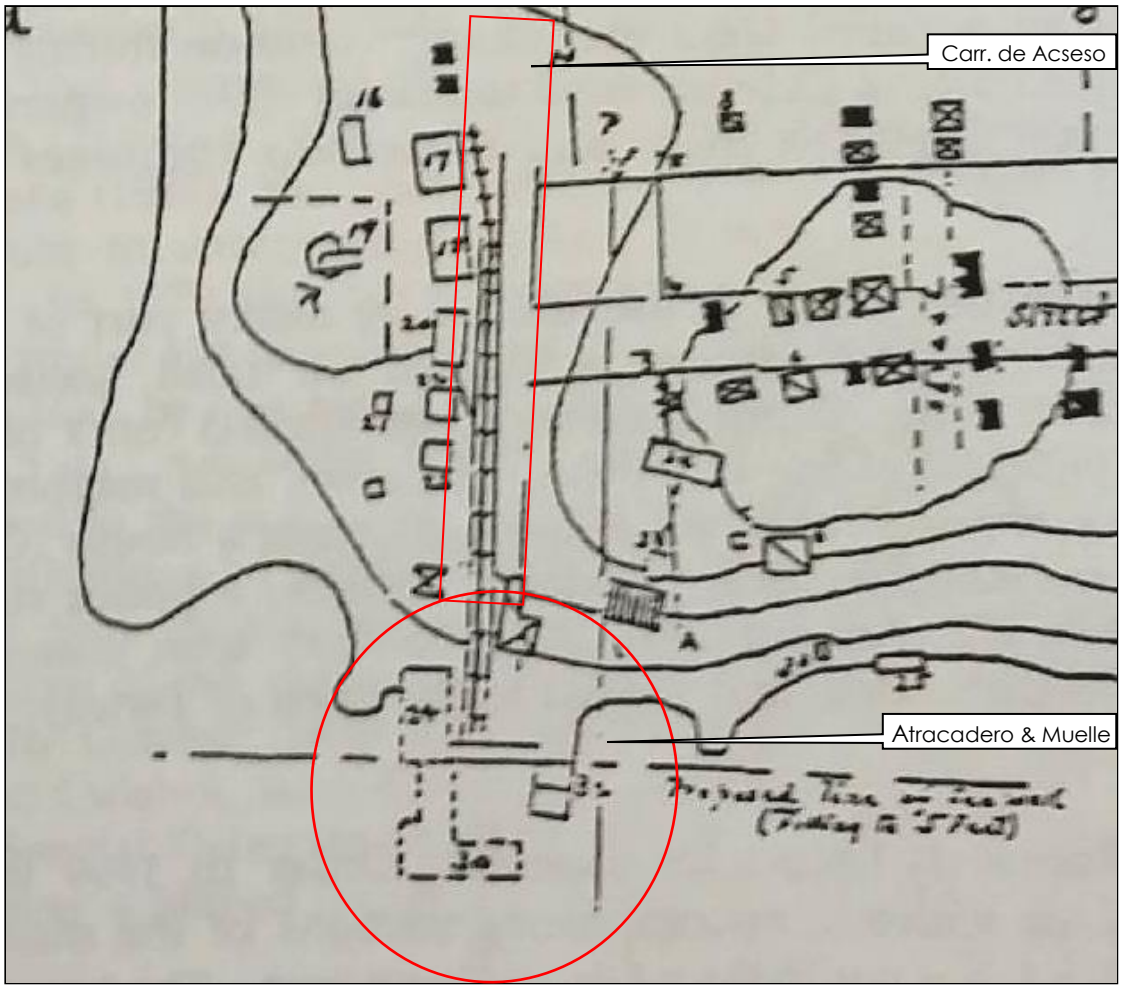


Figura 29: Detalle "Plan…San Ildefonso and…Navy Instalation -1902 (Oliver 1992:66, Figura 13).

El detalle del Plano de 1902 [Figura 17] muestra el Area del Pueblo de San Ildefonso en transición a convertirse en la base naval, evidenciando elementos estructurales residenciales, y militares recién construidos y por construir. En el área de estudio, dentro del perímetro aproximado en rojo, se encuentra un muelle en forma de "L" [30] en línea entrecortada por construir, un pequeño muelle en cuadrado [32], y la carretera de acceso a lo largo de la cual se identifica un tramo de riel ferroviario extendiéndose desde el muelle hasta la estructura [17], entendiendo que este riel esta relacionado a la carga y descarga de carbón de la estación carbonera de la base. También se encuentra el "Boat Shed and Carpenter's Shop" [24] por construir, una estructura cuadrada con apéndice fino rectangular paralela a riel a su lado este demarcada con una [/] "Private Owner" y otra demarcada al lado oeste con una [X] "Owner's may have legal rights to a lot in the Town under Spanish grants…1888. Paralelo al costado Oeste del riel se encuentra el "Bath House" [25], "Store Shack" [22], "Portable House" [20], "Quartermaster's Store House" [18], y un "Shack" [17], en las inmediaciones del área de estudio (Leyenda - Figura 18: 43).

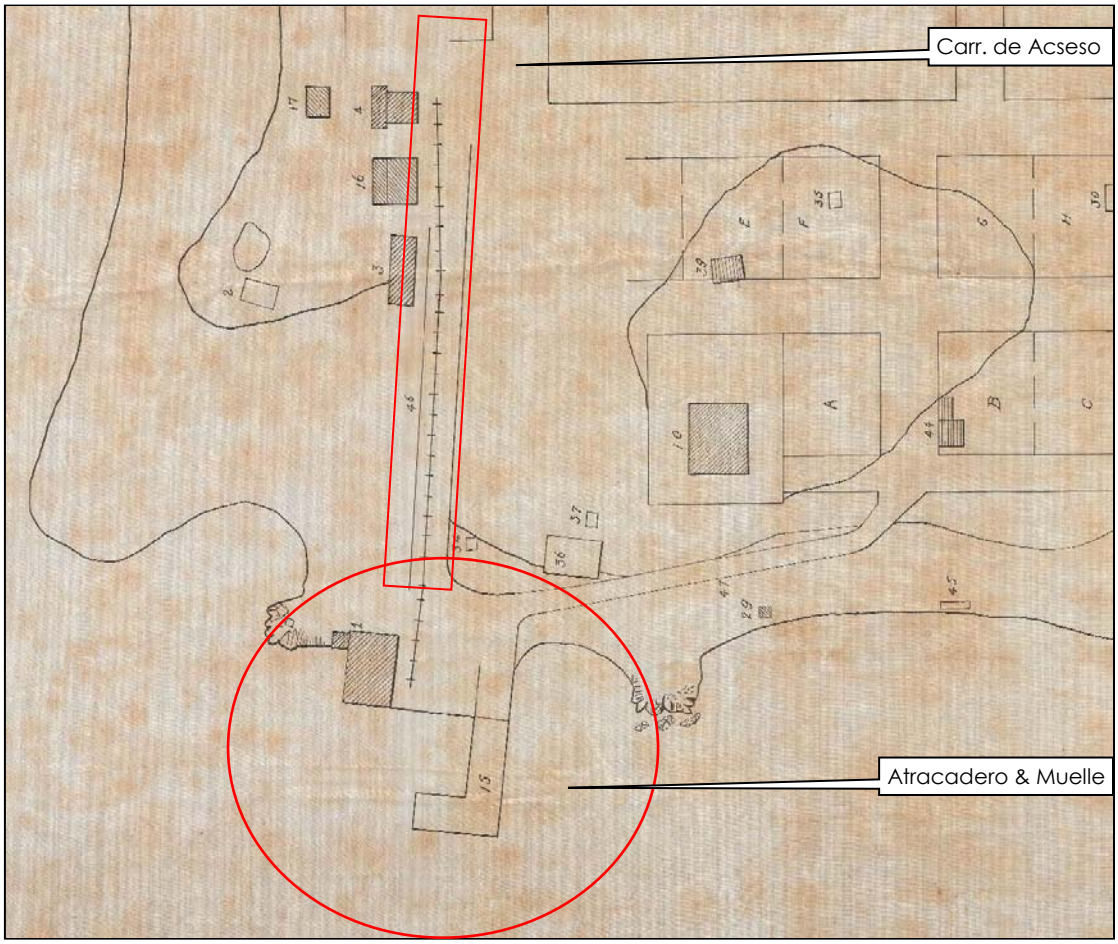
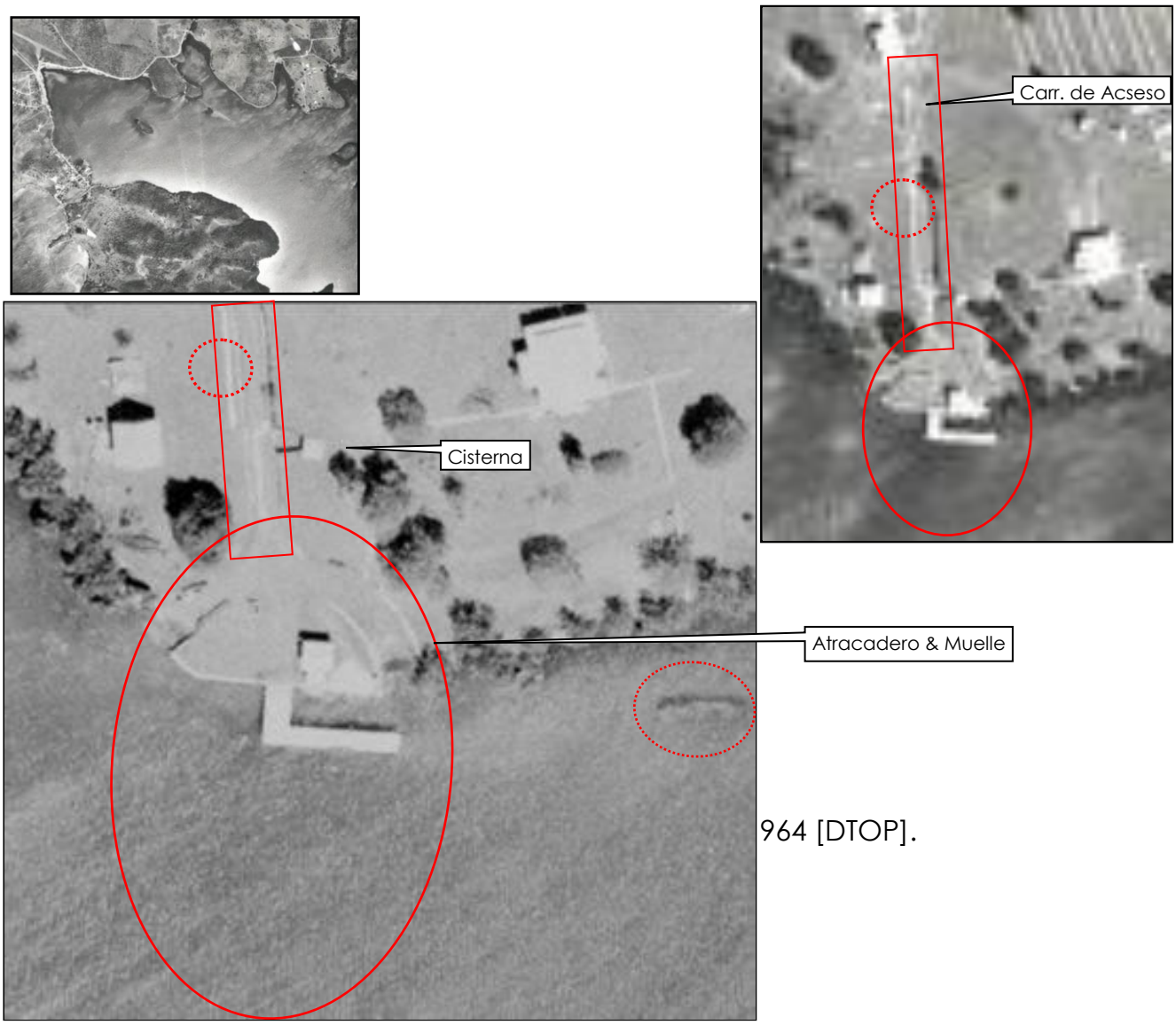


Figura 30: AGPR [7] "Satation Site Culebra, VI June 1st 1906, signed B. T. Walling".

El detalle del Plano de 1906 [Figura 19] muestra la incipiente "Culebra Naval Reserve" o "Camp Roosevelt". El área se ve despejada y la leyenda del plano [Figura 20] denomina todas las estructuras con propósitos militares. En el área de estudio, dentro del perímetro en rojo, aparece un muelle en forma de "┘" [15] donde ubicaba un pequeño muelle cuadrado [32] en la figura anterior. Se identifican las estructuras del "Boat Shed and shop" [1] ya en uso por el "Marine Corps", [24] en la figura anterior, y la carretera bien definida termina en un área abierta frente al muelle. El riel ferroviario de la estación carbonera corre Norte desde el atracadero hasta la estructura [4] "Ordnance Shop", previamente "Shack" [17], almacén de municiones. Esta junto a la estructura [16] "Store-house Quartermaster" previamente "Quartermaster's Store House" [18], y el "Equipment shop" [3] previamente "Portable House" [20], ubican paralelo al costado oeste del riel en las inmediaciones del área de estudio. La carretera de acceso se denomina "Graded Road" [46], también se encuentra denominada la cisterna [34], todavía en pie hoy día. La estructura [10] se denomina "Office Building", hoy las oficinas de OPEG Municipales.

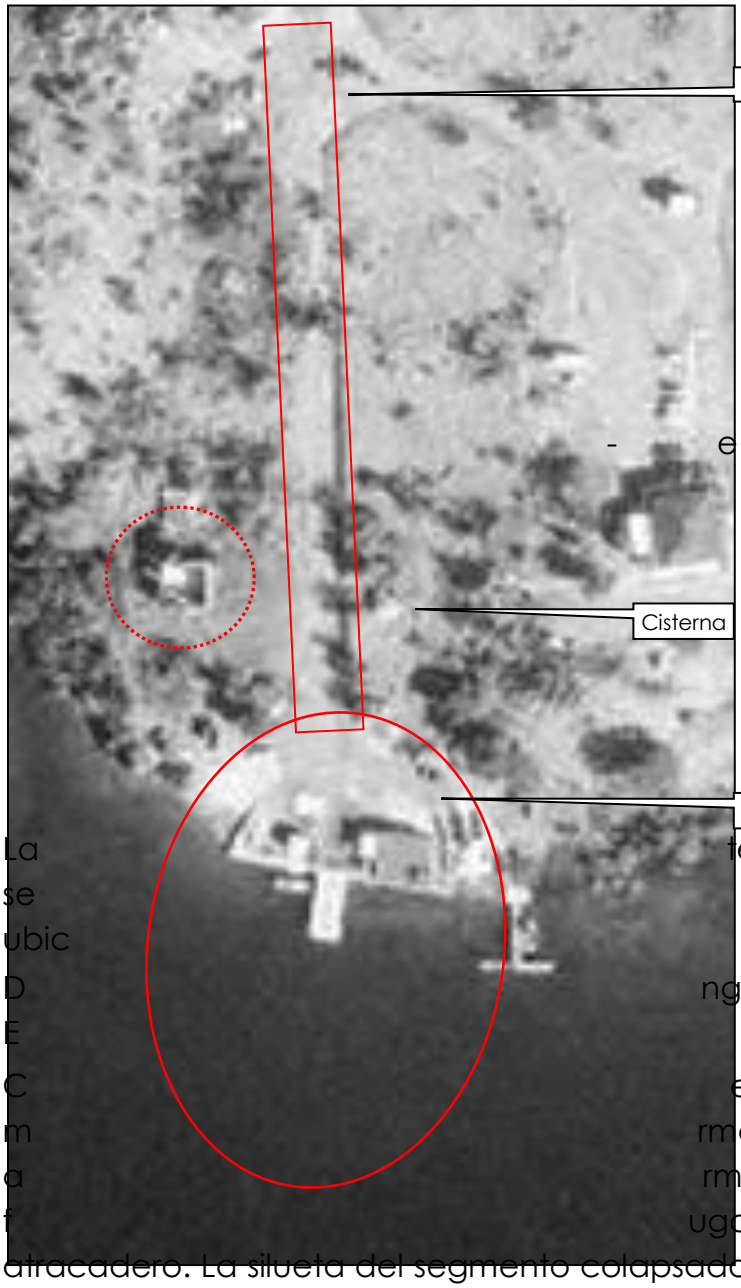


964 [DTOP].

La próxima grafica identificada para el área bajo estudio es la foto aérea del 1964. Esto en dependencia a que el área fue una base militar activa hasta la década de los 1980. El recinto se muestra limpio despejado, el atracadero posee dos rampas de varado y botado, y un muelle modificado en forma de "L", con la parte que hoy día se encuentra colapsada bajo agua, ilesa. Se observa una estructura cuadrada en la plataforma del atracadero. Subiendo por la carretera de acceso a lo largo del costado Este se identifica la cisterna, [34] en la figura anterior. A lo largo del costado Oeste se observa lo que parece ser un segmento de acera. Similar a las aceras alrededor de la estructura [10], denominada "Office Building" en la figura anterior. La Sede de la Fundación de Culebra, Inc., estructura en piedra y ladrillo construida en 1908, ubicada un tanto retirada de la carretera, y a 200 pies Este del muelle, se aprecia los restos de una embarcación naufragada perteneciente la Marina de Guerra de Los Estados Unidos (Fontánez Aldea 2014:25).

a 1981 [DTOP].

La foto aérea de 1981 muestra el recinto un poco desatendido en comparación a su condición en la foto del 1961. La plataforma del atracadero se ve concurrida por varias estructuras, se observan las dos rampas de varado y botado, y el muelle en forma de "L", ileso aun, aparenta tener algún tipo de techo o estructura en la sección o eje N/S que hoy día esta en pie. Subiendo por la carretera de acceso a lo largo del costado Este se identifica la cisterna. A lo largo del costado Oeste se observa una pequeña estructura en la carretera del tramo Norte del proyecto. La Sede de la Fundación de Culebra, Inc., estructura en piedra y ladrillo con techo a dos aguas, ubicada un tanto retirada de la carretera. La estructura [10] denominada "Office Building" continua en pie, y a 200 pies este del muelle, se aprecia los restos de una embarcación naufragada.

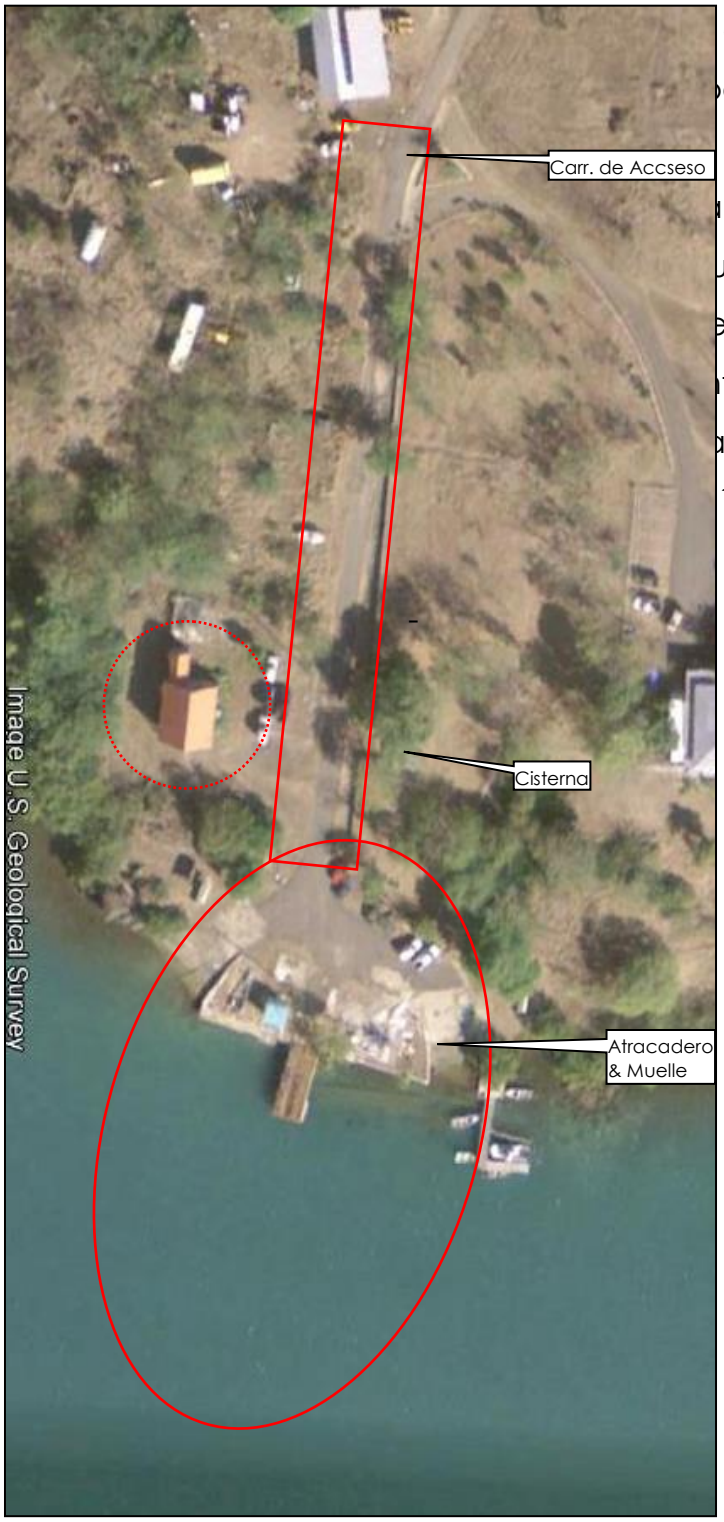


- e Aérea 1996 [DTOP].

La tendido. La plataforma del atracadero se pequeña estructura donde hoy día ubic

D ngular ocupando gran parte de sección E

C estructuras relacionadas a un pequeño m rma se observa un muelle rectangular a rma la parte sobreviviente de muelle en f ugo en 1989, pierde la sección paralela al atracadero. La silueta del segmento colapsado, se observa bajo agua. Subiendo por la carretera de acceso a lo largo del costado Este se identifica la cisterna. A lo largo del costado Oeste un tanto retirada de la carretera se observa la estructura donde ubica la Sede de la Fundación de Culebra, sin techo, en ruinas [circulo punteado]. La estructura [10] denomina "Office Building" continua en pie.



en uso. En la plataforma se observa
as de la Planta Desalinizadora se define
pequeño muelle en forma de "L", y el
al este fuera del marco de la foto. Se
un muelle rectangular adentrándose al
observa, bajo agua. Subiendo por la
tifica la cisterna. A lo largo del costado
la Sede de la Fundación de Culebra,
10] denomina "Office Building" continua

Estructuras en Pie "Culebra Naval Reserve"

A continuación una sinopsis gráfica de elementos estructurales relacionados a "Camp Roosevelt" o "Culebra Naval Reservation" en las inmediaciones del área de estudio. El atracadero construido por un tablestacado empleando pilotes en acero cerámica rellenados con hormigón, dos rampas de varado y botado, y a la sección del antiguo muelle todavía en pie, una pieza de hormigón rectangular sobre pilotes en acero. El edificio de la Sede de la Fundación de Culebra, construido en 1908, una cisterna y paredes, escaleras y drenajes construidos en ladrillo, piedra y hormigón.

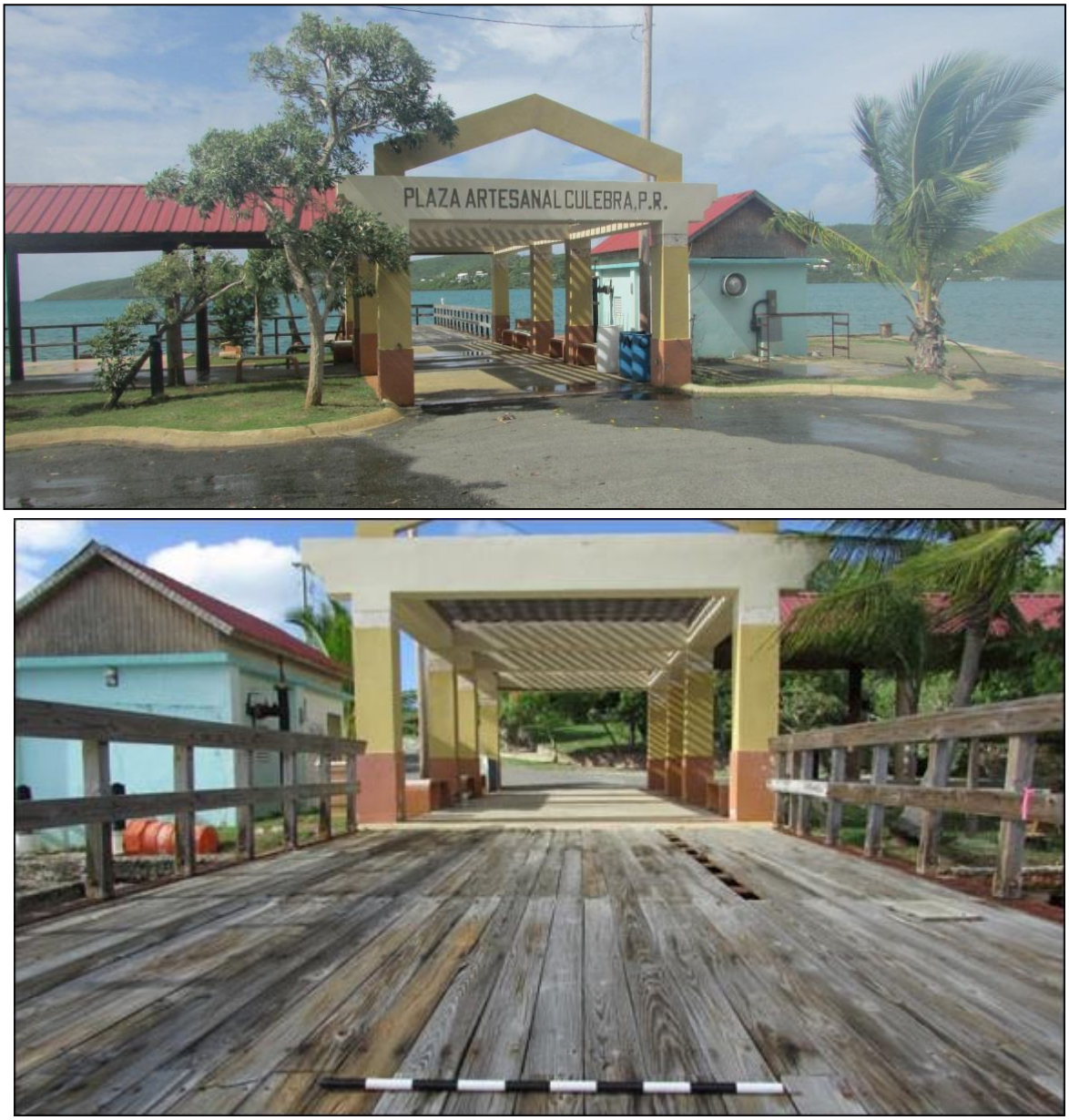


Figura 35: Facilidades recreativas en el puerto – sección del muelle sobreviviente.

Figura 36: Rampa Este - varado y botado de embarcaciones.

Figura 37: Rampa Oeste - varado y botado de embarcaciones.

Figura 38: Atracadero – tablestacado pilotes en cerámica y acero.

Figura 39: Sección sobreviviente del Antiguo Muelle en forma de "L".

Figura 40: Caseta de Bomba – Planta Desalinizadora [AAA].

Figura 41: Sede Fundación de Culebra, Inc. [1908].

Figura 42: Canal de desagüe en ladrillo empañetado, escalera y pared en ladrillo.

Figura 43: Cisterna – [34] en Plano de 1906 [Figura 19].

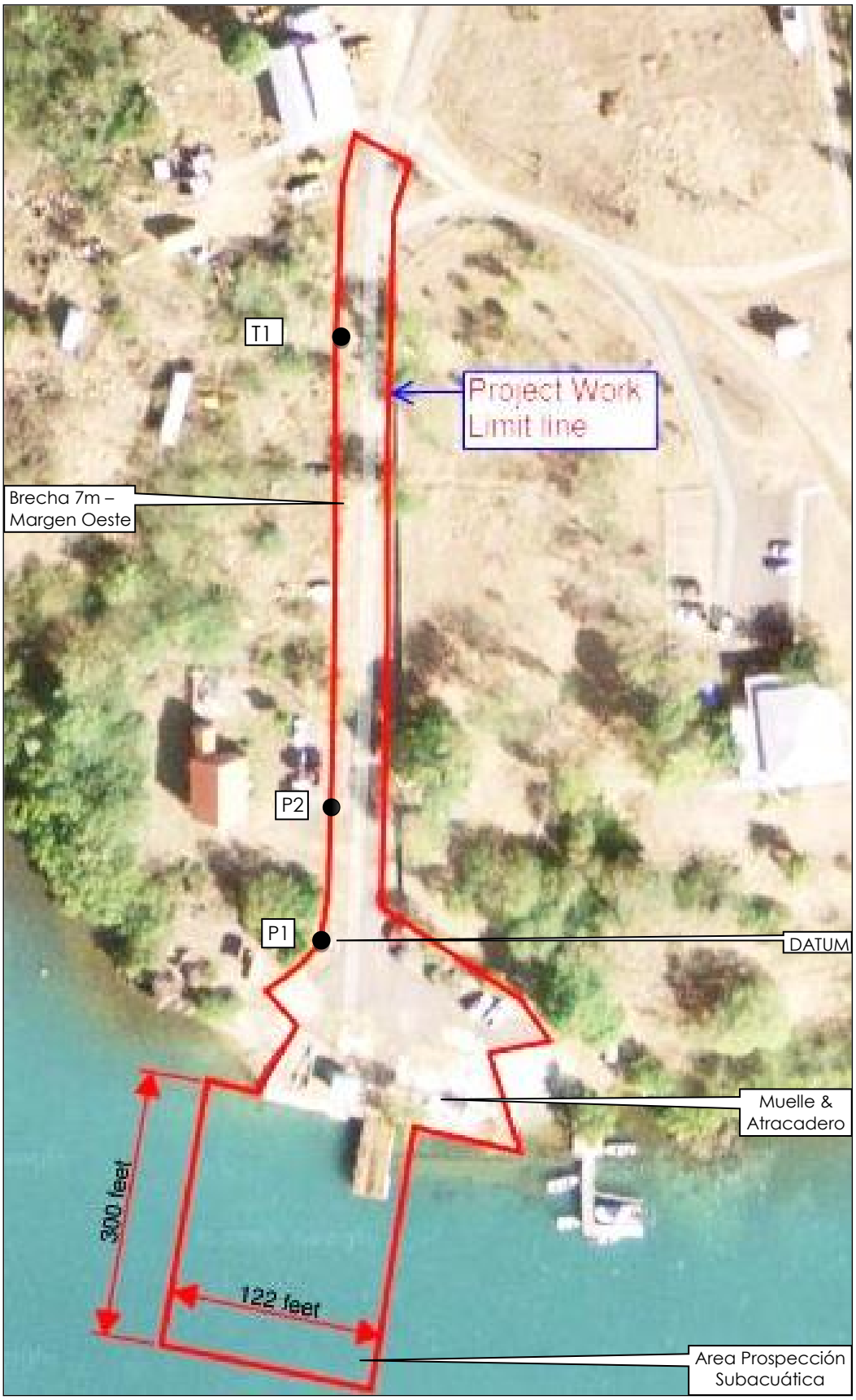
Figura 44: Pared en piedra colindancia este Carretera de Acceso.

Figura 45: Panorámica Sur - Carretera de Acceso.

Prospección Terrestre

Figura 46: Plano Ubicación Trincheras & Sondeos

Leyenda:
- Limites
- Positivos
- Negativos



A lo largo del costado Oeste de la carretera de acceso, brecha 7m de ancho, la prospección del subsuelo empleo tanto trincheras mecánicas como pozos de sondeos con la intención de identificar estructuras y depósitos aledaños. La Trinchera T1 fue ubicada a 73m Norte del Datum, donde la Figura 47 sitúa el "Equipment shop" [3]. Esta sería la primera de tres trincheras propuestas a excavar, la segunda sobre el "Ordnance Shop" [4] almacén de municiones y la tercera sobre el "Store-house Quartermaster" estructura [16], Figura 47. La ubicación se realiza triangulando desde el muro de piedra y la esquina norte de la entrada a la cisterna donde comienza el muro. Esto bajo esta presunción que la línea identificada en la Figura 47 representa en muro observado hoy día a lo largo del costado Este de la carretera de acceso. Bajo la misma presunción, el riel de la carbonera yace bajo la carretera de acceso.

Sin embargo, la Trinchera T1 expone una línea de agua potable a los 50cm de profundidad, deteniendo la excavación de ésta como de las otras trincheras. Inicialmente la excavación para la ubicar la línea eléctrica se identifica como un elemento. De 27cm de ancho, ésta reveló rocas con cortes rectos, fragmentos de ladrillos y loza de fabricación moderna [Figura 48]. De igual manera, el Pozo P2 identifica una línea eléctrica a 50cm, en el relleno del estacionamiento de la Fundación de Culebra [Figura 49]. El Pozo P1 identifica carbón y fragmentos de metal oxidado, en el segundo estrato posiblemente relacionados al trasporte de carbón de la carbonera durante las primeras décadas de "Camp Roosevelt". Dado la presencia de infraestructura soterrada se decidió no continuar con la prospección, evitando así cualquier tipo de accidente.

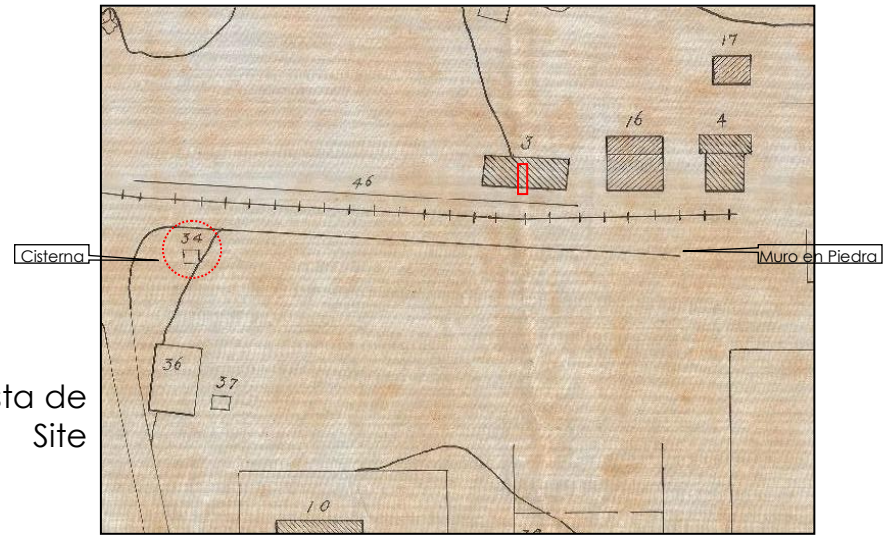
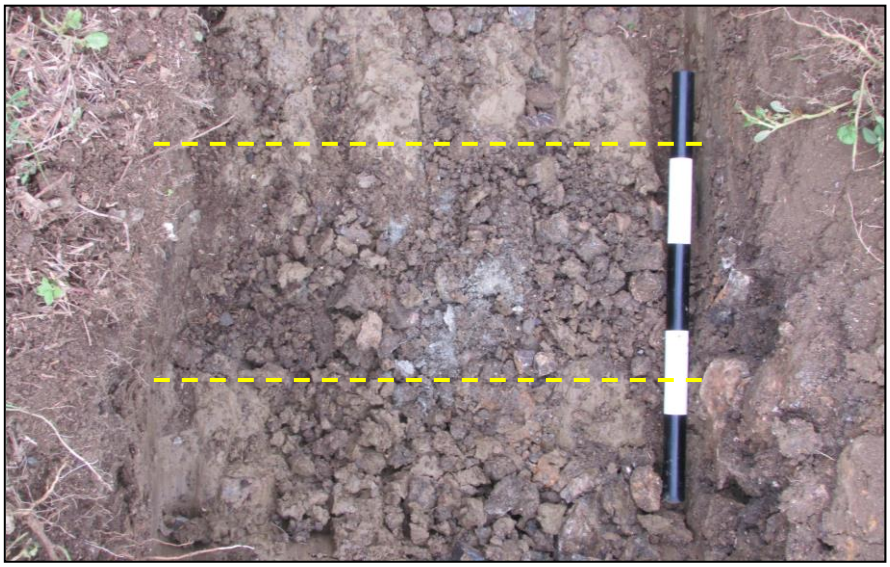
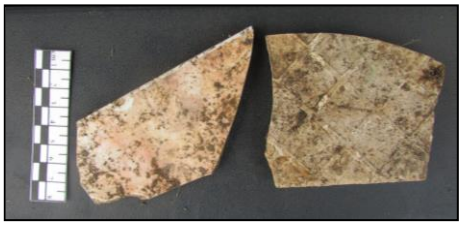


Figura 47: Ubicación propuesta de Trincheras "Station Site Culebra…1906.





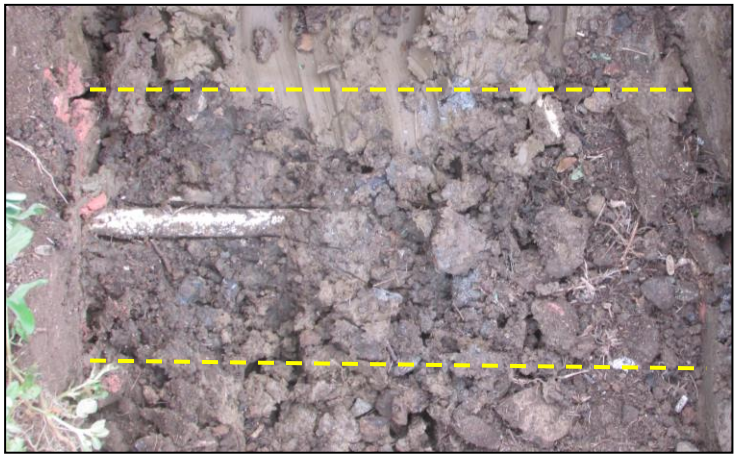


Figura 48: T1 – tubería agua potable ¾, loza de piso y ladrillo.

Figura 49: P2 – tubería eléctrica 1".

Pozo	Estrato	Composición	# Munsell	Prof. - cm	Asociación Cultural
P1	A	arcilla	10YR3/2	0-28	NEG.
	B	arcilla	10YR2/1	28-50	carbón, y frag. de metal oxidado
	C	arcilla rocas	10YR4/4	50-58	NEG.
P2	A	relleno mogolla estacionamiento		0-32	NEG.
	B	arcilla arenosa grava/rocas	10YR4/4	32-50	NEG.
		TUBERIA ELECTRICA	-	50	
T1	A	arcilla - raíces	10YR3/2	0-7	NEG.
	B	arcilla	10YR4/4	07-50	NEG.
		TUBERIA ELECTRICA	-	50	

Figura 50: Tabla de Sondeos & Trinchera.

Prospección Sub-Acuática

A continuación se presenta una sinopsis de los resultados de la Prospección Sub-Acuática Electrónica, Visual y los Pozos de Prueba realizados en el área de estudio marina. Para una descripción detallada favor referirse al Anejo 1: Evaluación Arqueológica Subacuática Fase I-A y I-B (Fontánez Aldea 2014: 35-45).

Se registran dos anomalías con características que previamente han demostrado ser indicativo de recursos culturales sumergidos. Su análisis evidenció que estas fueron producidas por artefactos modernos, metal pesadas usadas como "mooring" o ancla para el amarre de embarcaciones pequeñas, resultado de la actividad marítima alrededor del muelle de San Ildefonso.

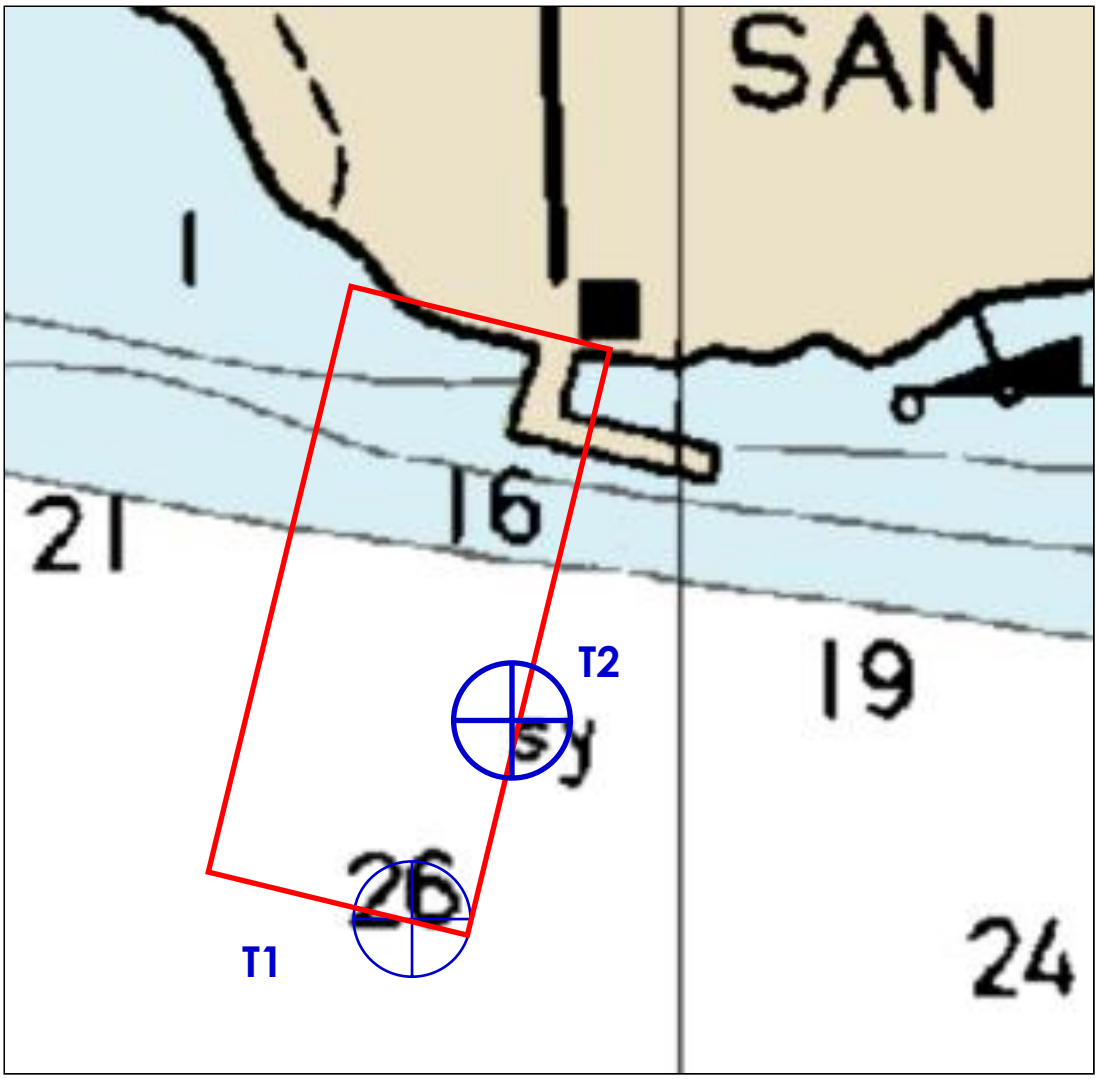


Figura 51: Localización de Anomalías (NOAA 1983, Carta 25654, Fontánez Aldea 2014:37, Figura 2).

Anomalía 1: N 18°18'19.42 W 65°17'01.25 - señal producida por un bloque de motor en hierro usado como *ancla*, acompañado de basura moderna (Ibid.:37, Tabla 2).

Anomalía 2: N 18°18'20.52 W 65°17'00.82 - señal producida por objeto de hierro pesado usado como *ancla*, acompañado de basura moderna (Ibid.:37, Tabla 3).

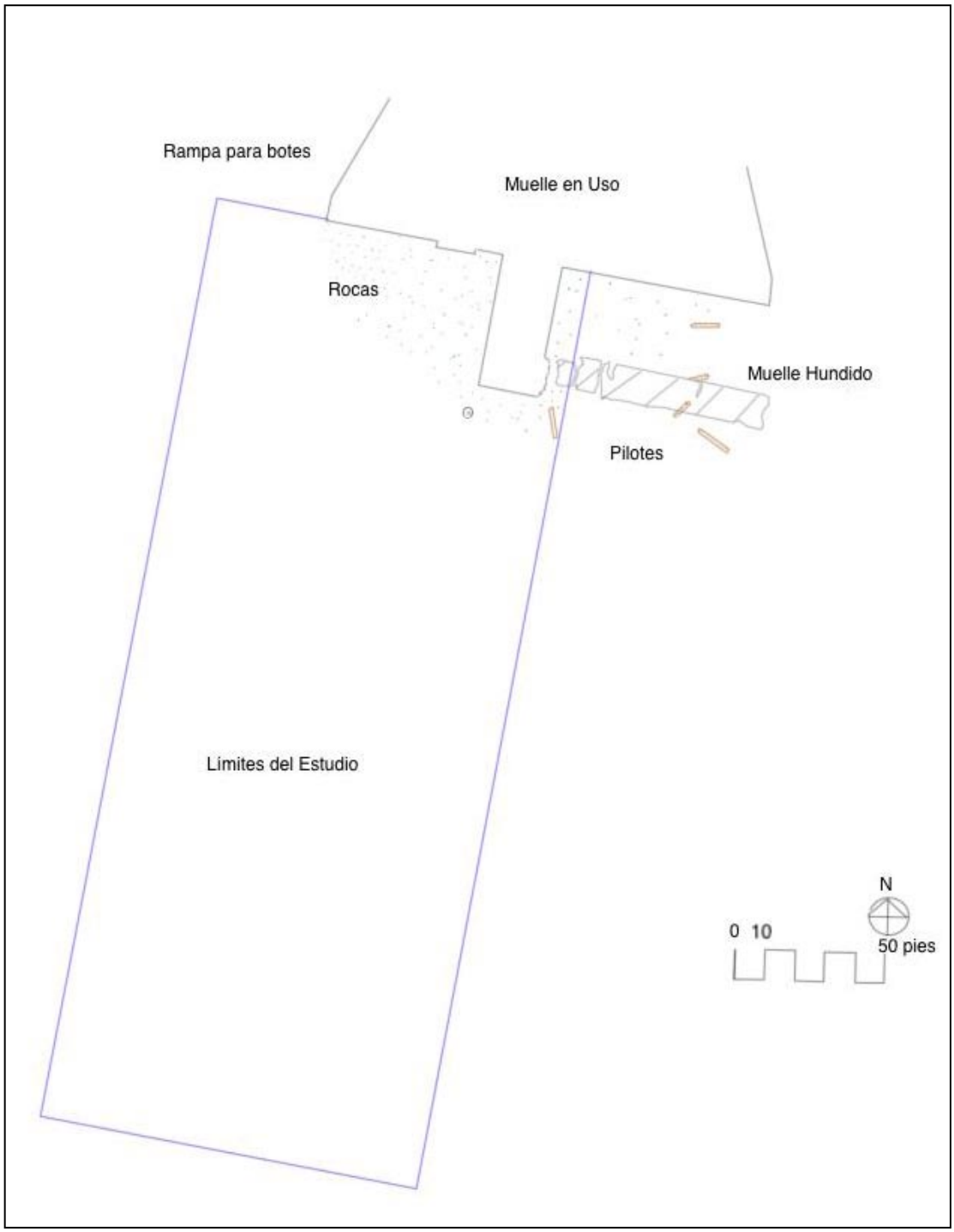


Figura 52: Plano General Del Área de Estudio y el Muelle Hundido (Ibid.:37, Figura 5).

En el área al Este del muelle actual se identificó, a 7.6m del tablestacado la sección del muelle colapsado, una loza en concreto fracturada de unos 3m de ancho por unos 20m de largo por .38cm de grosor. En asociación a "dos pilotes erguidos y dos sobre el fondo…No se encontraron otros materiales o elementos de construcción que dieran información sobre el período de fabricación" (Ibíd.: 48).

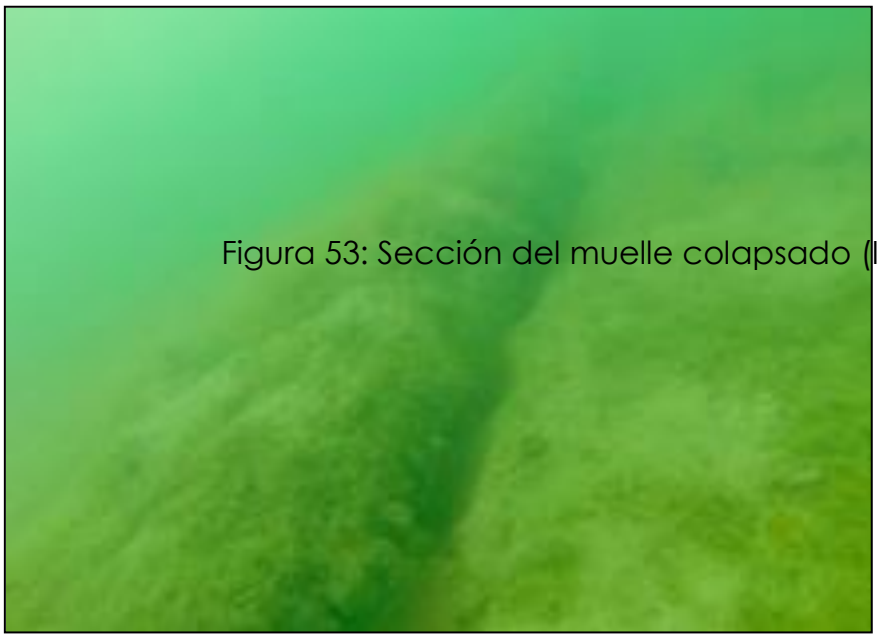


Figura 53: Sección del muelle colapsado (Ibíd.:49, Foto 21).

Figura 54: Pilote sección del muelle colapsado (Ibid.:49, Foto 22).

Figura 55: Pilote del muelle en uso (Ibíd.:50, Foto 25).

Figura 56: Neumático - materiales modernos (Ibíd.:50, Foto 26).

A continuación se presentan los resultados de los pozos de prueba.

Prueba # 1: N18°18'19.64 W65°17'01.01, 0-200cm, no se identifica material en superficie o en subsuelo marino (Ibíd.: 51, Tabla 4).

Prueba # 2: N18°18'20.45 W65°17'01.32, 0-210cm, no se identifica material en superficie o en subsuelo marino (Ibíd.: 52, Tabla 5).

Prueba # 3: N18°18'21.38 W65°17'01.32, 0-200cm, no se identifica material en superficie o en subsuelo marino (Ibíd.: 52, Tabla 6).

Prueba # 4: N18°18'20.25 W65°17'00.97, 0-200cm, no se identifica material en superficie o en subsuelo marino (Ibíd.:52, Tabla 7).

Prueba # 5: N18°18'21.69 W65°17'00.66, 0-200cm, no se identifica material en superficie o en subsuelo marino (Ibíd.:53, Tabla 8).

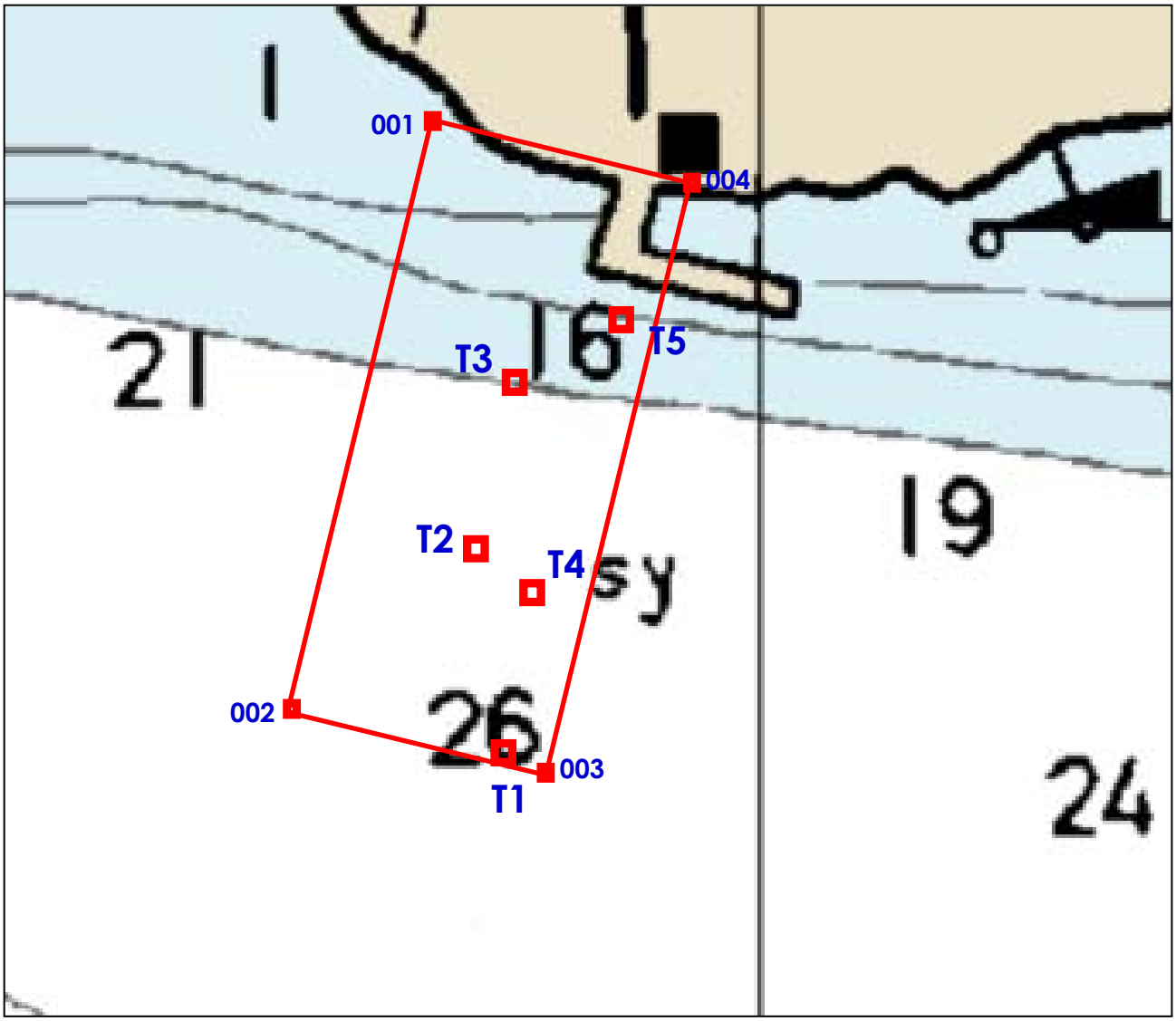


Figura 57: Localización Pozos de Prueba - NOAA 1983 - Carta Náutica 25654 (Ibíd.: 51, Figura 6).

X. Conclusiones & Recomendaciones

La investigación histórica presentada evidencia que el área de estudio localiza dentro del perímetro donde existió el primer poblado reconocido formalmente por el gobierno Español en la Isla de Culebra, San Ildefonso fundado en 1880. Donde también, el Presidente de los Estados Unidos Theodore Roosevelt en cumplimiento con la Proclama 4 del Congreso establece la base "Culebra Naval Reserve" o "Camp Roosevelt", sobre los cimientos del pueblo, desplazando a los residentes de sus hogares (Delgado Cintrón 1989:73). "Camp Roosevelt", en memoria al Presidente, se convierte en la primera base militar de la Marina de Guerra de los Estados Unidos en el Mar Caribe. Al comienzo de la Segunda Guerra Mundial en 1939, por la Orden Ejecutiva 8684 [14 de febrero de 1941], se establece "CULEBRA ISLAND NAVAL DEFENSIVE SEA AREA AND CULEBRA ISLAND NAVAL AIRSPACE RESERVATION" (Delgado Cintrón 1989: 92).

Las actividades de estas dos empresas dan testimonio del uso y modificación de la tierra como del mar.

El contexto de fundación de San Ildefonso se da en dependencia a los intereses de la Corona, determinando la importancia de la Isla. De manera que ofreciendo generosos tractos de tierra gratuita a colonos que residieran a perpetuidad se crear un espacio común, se fortalecer la lealtad de los habitantes, y posteriormente se organizar la producción agrícola a través de las autoridades municipales que cobrarían los impuestos sobre la riqueza agrícola.[12] Así se crea el Pueblo de San Ildefonso, una Plaza como eje de expansión, bloques y calles que parten paralelas a sus cuatro lados, y la iglesia.

La pequeña península fue sujeta a limpieza de la capa vegetal y posible nivelación para construir las calles, la plaza y el área donde se construyó la iglesia. Se construyeron ranchos, talleres, embarcaciones, se trajeron cerdos, gallinas, cabros, caballos, y todo tipo de utensilio para el desarrollo de un poblado rural agrícola. Se realizaron excavaciones para postes, socos, letrinas, desagües, guardarrayas,

[12] Véase Carlos Altagracia, *La utopía del territorio perfectamente gobernado: miedo y poder en la época de Miguel de la Torre, 1823-1837*. Tesis de Maestría en Historia. Río Piedras: Universidad de Puerto Rico, Departamento de Historia, 1997.

cimientos, cisternas, carreteras y en el cementerio, tumbas. Como también se modificó el litoral costero con la creación de un "Desembarcadero" representado en la Figura 27, para el 1887. Proyección de forma longitudinal posiblemente construido por la acumulación de piedras. Para el 1897 se denomina como "Muelle" en la Figura 28, una proyección a la Bahía de forma rectangular bien definida.

Por otro lado, la modificación de San Ildefonso por la Marina comienza desde que el comandante Henry C. Haines, en 1902, le informa al Delegado Especial, don Leopoldo Padrón, la decisión de establecer una base naval en los terrenos donde ubica el Pueblo. Seguidamente comienza el desmantelamiento y el transporte de todo tipo de pertenencia, incluyendo las planchas de zinc de los techos de las casa al nuevo pueblo de Dewey, próximo a Bahía de Sardinas.

La Marina comienza a construir barracas, una carbonera, puesto de observación, rieles para transportar el carbón, cuarteles, residencias de oficiales, enclaves de artillería, murallas para prácticas de tiros, cisternas en ladrillo, un hangar, talleres de carpinterías y herrerías, un edificio de mampostería para planta de hielo y frigorífico, un hangar de ladrillo y zinc para baño y lavandería, un edificio de hormigón y zinc para panadería, un hangar de gran tamaño de madera y zinc para pesebre de los caballos y mulas, un edificio de madera y zinc para almacén, otro de mampostería para la armería, un amplio edificio de madera techado de tabla y cartón embreado para el hospital, el que estaba equipado con 20 camas, quirófano y farmacia, calles cunetas postes, entre otros.

Estos construyen también un muelle de tablones sobre pilotes de pino creosotado, y un muelle para atracar los barcos cargados de carbón en forma de "┘", numero [15] en la Figura 30, donde ubicaba un pequeño muelle cuadrado numero [32], en la Figura 29. Para el 1964 el muelle posee forma de "L" con la parte extendiéndose hacia el Este, más estrecha y el doble de largo que la parte que conecta a tierra [Figura 31].

La prospección subacuática de las aguas entre las coordenadas N18°18'22.53 W065°17'01.28, N18°18'22.39 W065°17'00.27, N18°18'19.68 W065°17'01.87, N18°18'19.55 W065°17'00.69 [300 x 122 pies], no identifico embarcaciones sumergidas, aunque las costas de la Isla de Culebra fueron empleadas por embarcaciones indígenas, el yacimiento CU-10 "Lower Camp" ubica unos 150m al Este de San Ildefonso, como todo tipo de embarcación colonial española en particular, e inglesas, holandesas,

francesa y suecas del siglo XV al XIX. O de vapores de carga privados y todo tipo de nave y munición empleada por las maniobras militares de la Marina de Guerra de los Estados Unidos. A unos 60m Este del segmento de muelle todavía en pie, fuera del área de estudio, se identificó en la foto aérea de 1964 los restos de una embarcación de metal, que de acuerdo a un residente de la Isla perteneció a la Marina [Figura 31]. La prospección registró 2 señales magnéticas características de recursos culturales sumergidos. La inspección del fondo evidenció que estas provenían de materiales ferrosos recientes, y los pozos de prueba resultaron negativos a la presencia de material artefactual. La inspección visual identificó en las inmediaciones del muelle en pie, la sección colapsada de éste y los pilotes que en un momento la apoyaban [Figura 50-52]. De acuerdo a los residentes esta sección colapso durante el embate del huracán Hugo en 1989. Dado el lapso en la documentación gráfica no se pudo precisar el año de construcción del inmueble.

La prospección terrestre identifico varias de estructuras aun en pie y en uso, construidas por la Marina para "Camp Roosevelt": el muro de piedra a lo largo del costado este de la carretera de acceso, las rampas varado y botado de embarcaciones, el drenaje, las escaleras, el aljibe, el edificio de piedra hoy cede de e la Fundación de Culebra, y el edificio en la cima de la loma, dominando las facilidades del puerto, atestiguan a la integridad del entorno físico/cultural de la antigua base naval. La prospección del subsuelo a lo largo de la carreta de acceso fue tronchada por la existencia de líneas eléctricas y de agua potable relacionada a la Fundación y de la Oficina de DRNA.

El área donde localiza el proyecto es considerada arqueológicamente sensitividad, según demostrado. Basado en esto, el perímetro completo o la huella de ocupación tanto terrestre como marina puede ser clasifica como distrito cultural. Este fue el sitio donde se desarrolló el Pueblo de San Ildefonso, primer poblado reconocido formalmente por el gobierno Español en la Isla de Culebra. Donde se encuentra una concentración de estructuras en uso y otras en ruinas de la primera base de los Estados Unidos en el Mar Caribe "Campo Roosevelt o Culebra Naval Reservation". EL establecimiento de esta por el Presidente Theodore Roosevelt, forma parte de su "Big Stick Doctrine" de principios de siglo XX, a consecuencia de la intervención del

Bloqueo Naval a Venezuela de 1902-1903 por Inglaterra y Alemania. Roosevelt emite el "Corolario Roosevelt a la Doctrina Monroe" en 1904, cual estipula que Estados Unidos actuará a fin de evitar intervenciones provenientes de fuera del continente americano, haciendo legitimó el uso de la fuerza como medio para defender los intereses asumidos de todo el continente. Con la encomienda de dominar el hemisferio Americano, esta política se implementó particularmente en los países alrededor del Mar Caribe señalando el comienzo del imperialismo estadounidense. La Reserva Naval de Culebra fue el primer paso de esta encomienda. Por tanto el distrito tendría valor asociativo bajo el Criterio A, B, C y D del "National Register Criteria for Evaluation" del "National Register of Historic Places".

Por otro lado, se recomienda: 1) en las aguas entre las coordenadas antes mencionadas, realizar un monitoreo arqueológicos durante la instalación de pilotes, operaciones de dragado, actividades que modifiquen la actual línea costera, que modifiquen el tablestacado o impacten la sección del muelle en pie o la sección del muelle sumergida. Una Fase I-B de designar un área de maniobras (*turning circle*), zona no considerada dentro de los límites del presente estudio. Establecer una zona de protección (amortiguamiento) de 100 pies entre el área de construcción y la embarcación naufragada al Este de las facilidades portuarias de San Ildefonso. De no ser posible establecer esta zona se debe una Fase II sobre el recurso: 2) Dado a la imposibilidad de realizar la prospección del subsuelo en el área de estudio por la presencia infra estructura soterrada, se recomienda una monitoria durante los trabajos de apertura y excavación.

XI. Bibliografía

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Anejo 1
Evaluación Arqueológica Subacuática Fase IA - IB Para el Proyecto
"San Ildefonso Proposed New Cargo Facility", Culebra, P.R.

Richard Fontánez Aldea
Arqueólogo Subacuático
Historiador Marítimo

Evaluación Arqueológica Subacuática Fase IA - IB Para el Proyecto

"<u>San Ildefonso Proposed New Cargo Facility</u>", Culebra, P.R.

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RESUMEN

El presente informe muestra los resultados de la investigación documental y prospección arqueológica realizada en el lecho marino del proyecto "San Ildefonso Proposed New Cargo Facility", Culebra, P.R. El estudio se hace a petición de la firma Arqueología (Maurás), Inc. La Autoridad de los Puertos de Puerto Rico interesa proceder con la construcción de una Rampa de Carga Auxiliar para el Ferry de Culebra. Luego de considerar varias localidades para la ubicación de una rampa auxiliar de carga, se sugirió que la ubicación más viable está situada en la zona de San Ildefonso en la Bahía Ensenada Honda. Fue seleccionado teniendo en consideración su accesibilidad por mar y tierra, la existencia de utilidades en el sitio; como caminos, servicio de agua, electricidad y la existencia de estructuras e instalaciones proveyendo un impacto mínimo al medioambiente a causa de nueva construcción y una inversión mínima de capital en infraestructura y modernización de las instalaciones existentes.

Las agencias culturales del país consideran el área de la Sonda de Vieques como una de alta sensitividad arqueológica. Las actividades de construcción impactarán el fondo marino y pueden afectar la integridad de cualquier recurso arqueológico en el lugar. El estudio constó de tres partes: la Fase I-A investigación documental, Fase I-B investigación de campo y la producción del informe.

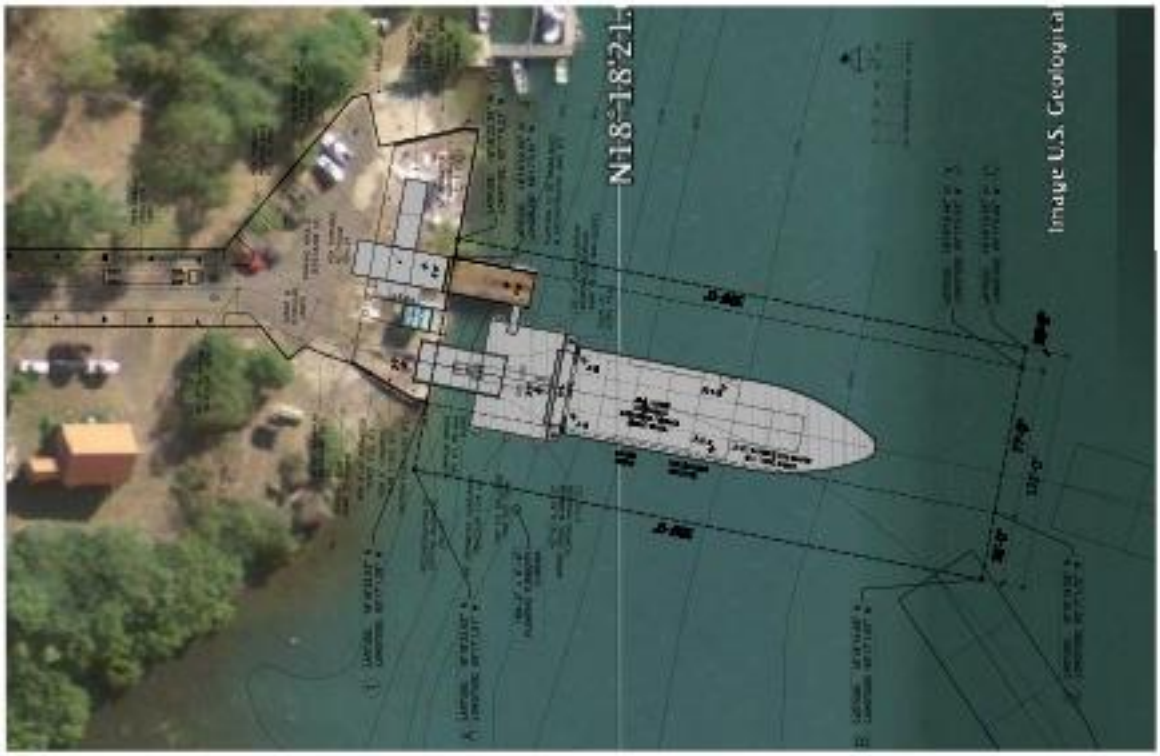


Foto 1, Plan Propuesto Rampa de Carga Auxiliar de San Ildefonso
(Atkins Conseptual Design, 2014).

De la investigación documental se desprende que la Sonda de Vieques era una navegada desde tiempos precolombinos. La habitación de las Islas de Culebra y de Vieques puede remontarse a más de 2,000 años con el arribo de los primeros grupos aborígenes. Luego de la llegada de los europeos a Puerto Rico la colonización de las dos islas se vio rezagada por varios siglos. La investigación documental no arrojó información sobre la localización específica de sitios arqueológicos subacuáticos en la Isla de Culebra sin embargo los restos de una embarcación de metal se aprecian en las fotos aéreas de 1964 de la Autoridad de Carreteras (DTOP). De acuerdo a los relatos de un residente de la Isla este buque es una barcaza que fue usada como muelle flotante en San Ildefonso y perteneció a la Marina de Guerra de los Estados Unidos. Este se

encuentra a unos 200 pies al este del área de estudio. Como no se proyecta impacto sobre este recurso durante el desarrollo del proyecto no se realizó investigación documental o investigación de campo de este pecio.

Se sabe que el área del atracadero a sido un lugar de gran actividad marítima por largo tiempo, usada como muelle, anclaje y posiblemente como carenero para reparar embarcaciones. Este lugar corresponde al litoral del pueblo antiguo de la Isla de Culebra conocido como San Ildefonso. Los documentos mencionan unos 24 naufragios ocurridos en aguas de la Sonda de Vieques, ninguno dentro de Bahía Ensenada Honda.

La prospección arqueológica de Fase I-B fue dividida en tres actividades. Prospección con censor remoto realizada con un magnetómetro, excavación de pozos de prueba e inspecciones visuales. En el estudio con magnetómetro se encontraron 2 señales magnéticas con características que podían corresponder a recursos culturales sumergidos en las coordenadas N18 18 19.42 W65 17 01.25. y N18 18 20.52 W65 17 00.72. La inspección del fondo en la vecindad donde se generaron estas anomalías evidenció que provenían de materiales ferrosos recientes. En la excavación de pozos de prueba no se encontraron materiales arqueológicos pertenecientes a culturas indígenas, de actividad hispánica o de la época de la ocupación militar de la Isla. Solo las inspecciones visuales identificaron materiales que son el resultado de un largo período de actividad marítima en el puerto de San Ildefonso. Entre los materiales, destacan los restos de un muelle en forma de "L" en concreto al este del área de estudio. De acuerdo a los residentes de la Isla, esta sección del muelle se hundió durante el huracán Hugo en 1989. En la investigación documental no ha podido precisar el año de construcción del inmueble pero las fotos aéreas muestran que para el 1964 ya había una estructura similar en este lugar. En la investigación de campo no se identificaron características constructivas de este muelle que ayudaran apreciar la fecha de construcción de la

estructura. Sin embargo, de acuerdo a la ley número 10 de 1987 para la protección de los recursos culturales sumergidos de Puerto Rico, los restos de construcciones bajo el agua que tengan 50 años o mas de antigüedad se consideran recursos arqueológicos subacuáticos.

En la prospección arqueológica de las aguas entre las coordenadas N18º18'22.53 W065º17'01.28, N18º18'22.39 W065º17'00.27, N18º18'19.68 W065º17'01.87, N18º18'19.55 W065º17'00.69 los únicos materiales con posibilidad de ser un recurso arqueológico sumergido son el fragmento de muelle hundido y los cimientos del atracadero existente en el límite norte del área de estudios. Fuera de la línea costera no se encontró evidencia que sugiera que los trabajos de construcción vayan a impactar recursos arqueológicos subacuáticos. A base de los resultados se recomienda que se de el endoso al proyecto de construcción llevando a cabo monitoreo arqueológicos durante la instalación de pilotes o en el caso que se planifiquen operaciones de dragado en el lugar, actividades que modifiquen la actual línea costera, modificación del tablestacado actual o la remoción del muelle sumergido. Recomendamos estudios adicionales de Fase I-B si se va a designar un área de maniobras (*turning circle*). Esta zona no se consideró en los limites del presente estudio y puede haber impacto a recursos culturales sumergidos por el lavado de las hélices (*propeler washer*) de embarcaciones. Se recomienda también una zona de protección (amortiguamiento) de por lo menos 100 pies entre el área de construcción del muelle y pecio al este de las actuales facilidades portuarias de San Ildefonso. De no ser posible establecer una zona de amortiguamiento para proteger este recurso se debe llevar a cabo estudios arqueológicos de Fase II.

EVALUACION ARQUEOLOGICA DE LA FASE - IA

Las fuentes documentales revisadas para la realización de la Fase IA fueron: cartas náuticas del área Este, informes arqueológicos previos, el Inventario de Sitios Arqueológicos del Consejo de Arqueología Subacuática, fotos aéreas de Isla de Culebra, colecciones de fotos antiguas y la literatura histórica concerniente.

Localización y Descripción del Área de Estudio

El proyecto arqueológico se realizó en las aguas frente a las facilidades del atracadero que se encuentran en el sector de San Ildefonso en la orilla norte de Bahía Ensenada Honda de la Isla de Culebra. El área de prospección comprende un sector de 300 pies de extensión por 122 pies de ancho en las coordenadas N18º18'22.53 W065º17'01.28, N18º18'22.39 W065º17'00.27, N18º18'19.68 W065º17'01.87, N18º18'19.55 W065º17'00.69.

Foto 2, Imagen Satélite de la Isla de Culebra (Google Image, 2014).

Las profundidades del mar en el área de estudio comienzan a 4 pies y llegan hasta 23 pies a 300 pies sur del tablestacado. El sustrato estaba compuesto de cienos finos. No se percibieron corrientes durante los días de inspecciones visuales. La poca visibilidad por la suspensión de sedimentos afectó la toma de fotos. La visibilidad no sobrepasó los 3-4 pies en toda la prospección.

Foto 3, Facilidades Actuales del Muelle de San Idelfonso.

Geografía General de la Isla de Culebra

La Isla de Culebra es un archipiélago con una isla mayor y 23 islas pequeñas. Entre las pequeñas islas las de mayor tamaño son Isla Culebrita, donde se encuentra el faro de 1886, Cayo Norte, Cayo Luís Peña, y Cayo Lobos. La Isla de Culebra se encuentra a unas 17 millas al este de Puerto Rico, a 12 millas de Saint Thomas y a 9

millas de la Isla de Vieques. La Isla de Culebra tiene topografía irregular. Sus medidas son 7x5 millas, siendo Monte Reseca su punto más alto con 650 pies sobre el nivel del mar. Bahía Ensenada Honda es la más grande de la Isla.

Clima y Mar

El clima de Isla de Culebra es uno marítimo, influenciado por los vientos alisios que soplan del este prácticamente durante todo el año. En general, el mar es esencialmente claro y poco profundo, abundante en arrecifes de coral, playas de arena y mangles, hábitat respectivo de gran variedad de peces de arrecife y moluscos. En determinadas épocas del año varias especies de tortugas marinas también habitan y desovan en sus playas.

Agua Fresca

La Isla de Culebra carece de ríos, el agua potable es transportada desde Puerto Rico a través de una tubería que llega a la Isla de Vieques y de ahí a la de Culebra.

Árboles y Vegetación

Mayormente vegetación de lugares secos y manglares que bordean las lagunas y ensenadas. En el pasado pudieron existir algunos lugares de la Isla con árboles como úcar y almácigo pero la vegetación arbórea alta fue removida casi en su totalidad durante el siglo XIX y siglo XX.

Estudios Arqueológicos Previos

Como en la mayor parte de las costas de Puerto Rico el corredor submarino entre

las Islas de Vieques y de Culebra ha sido poco estudiado en relación a investigaciones arqueológicas subacuáticas. El primer estudio es una prospección subacuática realizada por Jesús Vega en 1988 para la instalación de una tubería de agua entre las dos islas municipios. Vega utilizó métodos de prospección visual y electrónica en la inspección de un corredor submarino de 10 millas náuticas de largo por 250 pies de ancho. Su investigación documental demostró la sensitividad del área a recursos arqueológicos y señala la ocurrencia de 17 naufragios entre 1807 a 1920 en esas aguas. En la prospección de campo no encontraron sitios arqueológicos sumergidos aunque localizaron un ancla tipo almirantazgo bajo el cable eléctrico existente (Vega 1988). Además de la prospección de Vega, la Oficina del Consejo para la Protección y Estudios de Sitios y Recursos Arqueológicos Subacuáticos realizó una inspección de campo en 1993 localizando un sitio arqueológico a una milla al este de Puerto Mulas de la Isla de Vieques. Bajo el agua fueron encontrados un ancla, una anilla de hierro y otros materiales en concreción en la roca del fondo (Fontánez 1993). En 1998 Fontánez realizó una Fase I-A y I-B para el reemplazo del cable eléctrico que lleva energía a los municipios de la Isla de Vieques y de Culebra. Por métodos de inspección visual y electrónica, con magnetómetro, se revisó un corredor de 12 millas de largo por 100 metros de ancho. Se encontró que en la Isla de Vieques en las coordenadas N18º09′40.6″, W065º25′18.2″ había una acumulación de maderas que produjeron dos señales del magnetómetro con las características de ser un recurso cultural. Se

recomendó un estudio de Fase II que fue realizado por el mismo autor en 1999. En este estudio concluyó que aunque las maderas tenían cierta elaboración y podían pertenecer a la industria maderera que se desarrolló en la Isla de Vieques por varios siglos las mismas no formaban parte de un barco o sitio articulado por lo que carecían de los criterios para ser nominado al Registro Nacional de Lugares Históricos y no había que realizar más estudios. Fontánez recomendó que el cable fuera instalado dejando una zona de amortiguamiento de 100 pies alejado de las maderas. En el 2004 Fontánez llevo a cabo una evaluación arqueológica de Fase I-A y I-B para la reconstrucción de un embarcadero para el ferry de carga en el muelle Mosquito de la Isla de Vieques. En el estudio no se encontró evidencia arqueológica que pudiera ser impactada en la construcción.

En el 2010 Fontánez llevó a cabo una evaluación arqueológica subacuática de Fase I-A y I-B para la reconstrucción del terminar de lanchas de la Autoridad de los Puertos en Ensenada Sardinas para la firma Ramos y Ramos Associates Architechs Csp. En el estudio de campo se encontraron 3 señales magnéticas con características que podían corresponder a recursos culturales sumergidos. La inspección del fondo en la vecindada donde se generaron estas anomalías evidenció que las anomalías 1, 2 y 3 provenían de materiales ferrosos recientes. En la excavación de pozos de prueba no se encontraron materiales arqueológicos pertenecientes a culturas indígenas, de actividad hispánica o de la época de la ocupación militar de la Isla. El sonar de barrido lateral no

produjo señales acústicas que pertenecieran a evidencia cultural alguna. Solo las inspecciones visuales identificaron materiales en las depresiones del suelo creadas por las hélices del ferri de carga acumulados durante muchos años de actividad marítima en el puerto de la Isla de Culebra. Entre los materiales se vieron algunas piedras de lastre dispersas, una botella de principios del siglo XX cercana a botellas modernas, materiales plásticos y otros rastros de ocupación reciente. No se encontró ningún sitio articulado, estructura, o material cultural en contexto sobre la arena o bajo esta cuando se realizaron los pozos de prueba. A base de los resultados se recomendó el endoso al proyecto de reconstrucción del muelle en Ensenada Sardinas tomando en cuenta que si se planificaban operaciones de dragado en el lugar, debía ser implementado un monitoreo arqueológico.

Trasfondo Histórico de la Isla de Culebra y de Vieques

Los movimientos migratorios que terminaron por poblar las islas del caribe por necesidad suponen el desplazamiento en embarcaciones desde cualquier punto de la masa continental americana y por consiguiente la construcción de algún tipo de nave para moverse. Algunos como Nicholson (1976) proponen que los aborígenes americanos viajaron al caribe con la ayuda de balsas de madera hace unos 6,000 años guiados por las corrientes y vientos. Otros autores como Robiou Lamache (1993) creen que la navegación propiamente dicha no sucedió hasta hace unos 3,000 años, cuando ya era común el uso de herramientas tales como el hacha de piedra y la gubia de concha empleadas para la construcción de canoas. Fue entonces que se hicieron habituales las navegaciones entre las islas del Caribe lo que con el tiempo aumentó la población de

estas (Robiou Lamache 1993).

A juzgar por las teorías arqueológicas sobre el poblamiento del arco Caribeño por grupos aborígenes, las Islas de Vieques y de Culebra representaron territorios estratégicos para el paso de las migraciones desde Sur América rumbo a las Antillas Mayores. Los descubrimientos arqueológicos en los sectores de la Hueca y Sorcé en la Isla de Vieques señalan que esta isla estuvo habitada por lo menos 2,200 años atrás (Chanlatte Baik 1984). Tras sucesivas migraciones y desarrollo de las culturas existentes afloró en la Isla de Vieques y de Culebra al igual que en Puerto Rico y la República Dominicana, la cultura Taína. Por esto, justo antes de la colonización de Puerto Rico por España, en el mar entre estas islas navegaban exclusivamente embarcaciones indígenas, tanto taínas como caribes. Estas embarcaciones construidas con troncos eran el único transporte de los habitantes del Caribe, en el que indistintamente se desplazaban para viajar o para hacer la guerra (Labat 1979).

En el 1493 Cristóbal Colón descubrió a Puerto Rico durante su segundo viaje y su trayectoria lo ubica entrando por las islas de Barlovento, explorando la Sonda de Vieques y navegando por el sur de Puerto Rico. Luego la Isla de San Juan Bautista permaneció deshabitada por varios años hasta que en 1508 Juan Ponce de León, autorizado por Ovando, comenzó su colonización motivado por la noticia de minas de oro en Boriquén (Scarano 1993:153, 178-179). En esos primeros años la población europea se estableció en dos asentamientos próximos a los yacimientos auríferos: uno en Caparra cercano a la Bahía de San Juan (Ibíd.:180-181) y el otro en 1509 en Guánica por Cristóbal de Sotomayor en la costa Sur de la Isla (Ibíd.:185). Luego también se descubrieron yacimientos en la región de Otoao (Ibíd.:186) y en el área oriental de Daguao cerca al pueblo de Naguabo actual, lo que impulsó la fundación del primer asentamiento en 1513 en la porción Este, llamado Santiago del Daguao (Ibíd.:206). Este

poblado fue destruido por indios al poco tiempo de su fundación, quienes dieron muerte a casi todos los habitantes. El altercado fue el principio de una secuela de ataques que marginó la colonización en el sector Este de la Isla (Ibíd.:206). En el 1529 otra ofensiva indígena sorprendió a Cristóbal Guzmán en su hacienda del Daguao dedicada a la minería y la siembra (Ibíd.:231). Se sabe que los aborígenes utilizaban como base la isla de Vieques. Esto demostró a los colonizadores que para llevar a buen término su empresa de conquista, debían primero someter a los aborígenes que poblaban las islas al Este de Puerto Rico.

Durante la colonización, los españoles, en un intento por apresar los nativos sublevados y eliminar la peligrosa presencia de los Caribes en el área, formaron flotillas dedicadas a atacar y tomar como esclavos a los rebeldes (Ibíd.:208-09). Fueron numerosas las incursiones que bajo el gobierno de Juan Ponce de León y Cerón se realizaron contra los Caribes que se establecieron en la Isla de Vieques. Las flotillas españolas realizaron batallas de importancia contra la Isla Vieques en los años de 1509, 1511 y 1515. Desde entonces desaparece la amenaza que suponía este establecimiento indígena para la nueva colonia de Puerto Rico (Ibíd.:208-09).

Continuarían en cambio las carabelas de los colonos de Puerto Rico viajando entre la Isla de Vieques y de Culebra, pero esta vez haciendo la guerra contra los Caribes de las Antillas Menores y, más tarde en 1530, para traer indios como esclavos a las minas desde tan lejos como las costas de Panuco y Yucatán (Fernández Méndez 1984:15).

La hegemonía de España en el Caribe terminó entre el 1624-1655 con la colonización de la mayoría de las Antillas Menores por los ingleses, holandeses y franceses. Esto indudablemente tuvo el efecto de aumentar el tráfico marítimo por las aguas que rodean las Islas de Vieques y de Culebra (Brau 1966: Cap XI-XII, 123-142). A pesar de la protesta de España por la usurpación de sus islas, la colonización de estas

continuó a lo largo de todo el siglo. La presencia de otros europeos en la región fomentó el contrabando, actividad que se hizo parte del diario vivir puertorriqueño por los tiempos venideros. Por su posición geográfica, cercana a las Antillas Menores, el área Este fue particularmente activa en el contrabando de mercaderías y esclavos. Durante siglos hubo un flujo de esclavos fugados desde las Antillas Menores hacia las dos pequeñas islas en su ruta de huida a Puerto Rico, donde el gobierno español los declaraba hombres libres (Ibíd.). Durante los Siglos XVII y XVIII la constante preocupación para el gobierno colonial de Puerto Rico fueron los ingleses, franceses, holandeses y hasta suecos. Estos navegaban en calidad de piratas, corsarios, pescadores o colonos las aguas entre las Islas de Vieques y de Culebra, disponiendo del agua, maderas y demás recursos de estas islas. El imperio español no estaba dispuesto a compartir el territorio colonizado con sus enemigos, por lo que procedió al desalojo, aunque en ocasiones con retrasos de años (Brau 1912).

En 1617 una colonia inglesa se alojó en la Isla de Vieques. Los españoles los expulsaron el mismo año, matando a casi todos los ingleses que hallaron en la Isla. En el 1672 y 1673 se registraron otros desalojos (Brau 1966: Cap XI-XII 161-167,177; Bonnet Benítez 1976:24)

Otros habituales navegantes en las aguas de las Islas de Vieques y de Culebra fueron los pescadores. Los hubo franceses, ingleses y holandeses pero también de las islas menores, en especial procedentes de la Isla de Santo Tomás. Muchos pescaban en estas aguas careyes cuya concha vendían a las compañías establecidas en Santo Tomás, quienes a su vez exportaban la concha a Alemania donde se elaboraron costosos productos (Fernández Méndez 1984).

Durante los siglos XVII y XVIII también hubo un tráfico itinerante de galeones españoles por la Sonda de Vieques. Procedían de puertos como México, Panamá y

Colombia. Estos transportaban cargamentos importantes de oro, plata, monedas, valiosas manufacturas y productos americanos (Labat 1979).

Pero es durante el siglo XVIII que aumenta el problema con los colonos en el área de la Isla de Vieques y de Culebra, así también el tráfico de embarcaciones dedicadas al contrabando. Esto no es de extrañar, pues tanto Francia, Inglaterra y Holanda continuaban fundando nuevas colonias a lo largo del arco de las islas del Caribe hasta Venezuela (Labat 1979; Pastor Ruíz 1947).

En el siglo XVIII, como consecuencia de la Guerra de Sucesión, la rivalidad entre España e Inglaterra se desplazó hasta Puerto Rico. Uno de los motivos que exaltaron la animosidad fue la disputa entre británicos, daneses y españoles por la posesión de Isla de Vieques, que los Ingleses llamaban *Crab Island.* En 1718 se registra una acción armada para el desalojo de la isla de Vieques por una flotilla compuesta por un barco grande y tres goletas armadas. Las tres goletas eran propiedad del armador de corso puertorriqueño Don Miguel Enríquez. La ofensiva destruyó la colonia inglesa establecida allí desde hacía algún tiempo (Brau 1912; Pastor Ruíz 1947).

Aunque los navegantes de otras naciones continuarían, como siempre, haciendo aguadas, cazando, pescando y disponiendo de las maderas en las dos islas; no sería ya tan fácil establecer allí colonias. Esto se debió al aumento de la población de la isla de Puerto Rico, la constante utilización de las demás islas e islotes por los ahora numerosos pescadores mulatos, quienes darían aviso de las ocupaciones a las autoridades coloniales y por último debido al incremento de las embarcaciones dedicadas al corso, que a la larga también acabarían con la piratería (Labat 1979).

En el siglo XIX se funda oficialmente la colonia en la Isla de Vieques. La Isla es poblada en sus inicios por colonos ganaderos de Santa Cruz y Santo Tomás bajo la vigencia de la Cédula de Gracia de 1816.

La Isla de Culebra por su parte vio postergada su colonización hasta finales del siglo XIX. Fuera de algunos intentos, no se pensó hasta 1880 en un plan serio para colonizar la Isla. En ese año llegó a Bahía Ensenada Honda un crucero de guerra español trayendo 10 soldados y a Don Cayetano Escudero, subdelegado de la Isla de Vieques, encargado de iniciar la colonización de la Isla de Culebra. Sus primeras obras públicas constituyeron la construcción de un fuerte y almacén (Feliciano Padrón 1981:2-3).

Debido a la escases de agua potable en la Isla de Culebra era necesario traerla desde la cisterna pública del pueblo de Isabel Segunda, en la Isla de Vieques. Primero el vapor que trajo a la guarnición suplía el agua, pero una vez se marcha la embarcación, Don Escudero en su papel de gobernador de la colonia se vio obligado a cargarla en barriles de más de 300 libras en las bodegas de frágiles embarcaciones de vela hasta el poblado de San Ildefonso en la Isla de Culebra. Esta era una tarea ardua y lenta que, aún luego de la construcción de la cisterna pública en la Isla de Culebra en 1887, sería necesario repetir en tiempos de sequía. En ocasiones los pobladores también obtuvieron el agua potable del puerto de Fajardo que tenía mejor calidad que la de Isla de Vieques (Feliciano Padrón 1981:58).

Para el 1896 muchos vecinos de la Isla de Vieques obtuvieron terrenos en la Isla de Culebra. Estos pronto comenzaron a exportar cabras, ovejas, aves de corral y ganado

embarcándolos en balandros y goletas desde los puertos de Mosquitos, Mulas y Puerto Negro en la Isla de Vieques hasta desembarcarlos en la Isla de Culebra por las playas de Tamarindo, Sardinas y Ensenada Honda (Feliciano Padrón 1981:104).

La Isla de Culebra tuvo siempre problemas para comunicarse con los demás territorios de Puerto Rico debido a que es un paso de mar abierto. El problema fue solucionado de varias formas de acuerdo a las necesidades del momento. Gracias a una concesión de la capitanía general de puertos que reconocía como delegaciones suyas a los puertos de la Isla de Vieques y de Culebra era posible fletar veleros particulares para realizar el tráfico de pasajeros y carga en general, principalmente entre las dos islas. Ya para 1884 existía un bote de velas que hacía dos viajes por semana entre la Isla de Vieques y de Culebra. En 1904 un pequeño buque remolcador conectaba San Juan con la base militar establecida en la Isla. Este buque fue el *Peoría*, sucesor del *Arethusa*, ocupados ambos en dar servicios exclusivos a la instalación militar de la Isla. En 1917 el balandro *Pedrito* viajaba tres veces por semana hasta la Isla de Vieques y si se quería viajar otro puerto debía tomarse allí otra embarcación (Feliciano Padrón 1981:157).

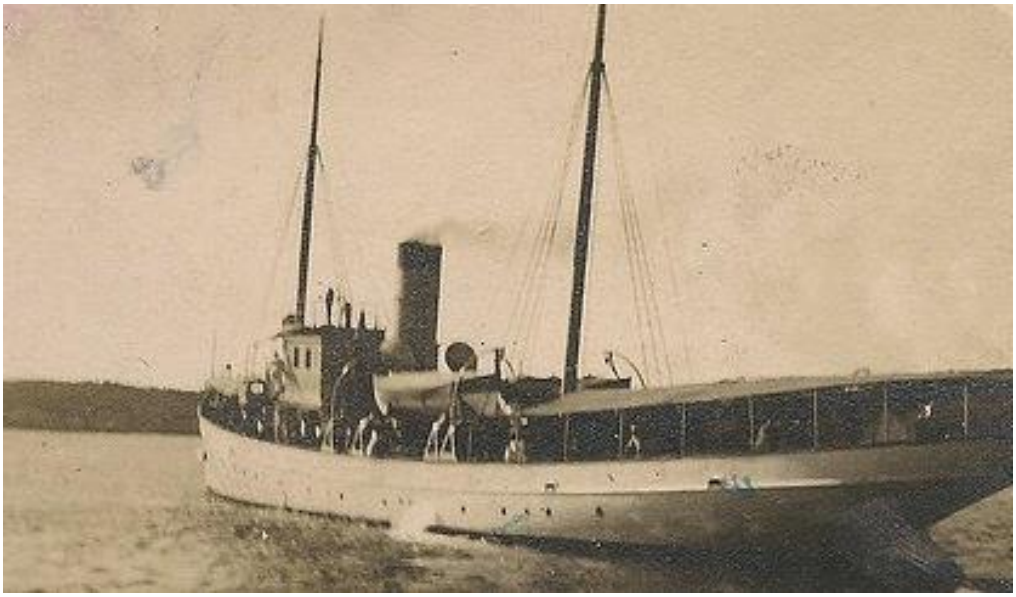


Foto 4, Buque *Peoria, Culebra, P. R. – Real Foto Post Card unused c. 1910-1920's* (Archivo histórico y fotográfico de Puerto Rico - Colección Rodríguez, Culebra: archivofotogrficodepuertorico.com).

Debe tomarse en cuenta la navegación de estas aguas el tráfico constante de vapores de gran tonelaje que bien transportaban carga o pasajeros entre las aguas de la Isla de Vieques y de Culebra. Muchos eran de casas navieras y consignatarias extranjeras que durante el siglo XIX y parte del XX se establecieron en Puerto Rico atraídas por las ventajas comerciales, el prestigio del seguro puerto de San Juan en Puerto Rico y las buenas condiciones que ofrecieron a la navegación los nuevos faros y las obras de abalizamiento en todos sus puertos importantes (Dávila Cox 1996; Feliciano Padrón 1976). Obedece a estas obras el faro construido en el islote de Culebrita entre el 1882-1886. Cual corresponde a la única estructura de fabricación española que permanece en el archipiélago de la Isla de Culebra.

Foto 5, OECH - Faro Isla de Culebrita 1886.

Mientras se gestionaba el futuro de Culebra que aún no tenía un nombre oficial, la Corona Española se dispone a construir un faro de ladrillo y piedra, sobre un islote al oeste de la isla. Este debería servir de puesto de vigilancia y rumbo a los barcos entre el islote y la isla de Sain Thomas. Estando listo para servicio en 1874, queda un imponente edificio rojizo con torre al centro, aljibe y dos espacios de vivienda. Entre las tareas de los torreros estaba mantener una observación del litoral conocido como el Bergantín haciendo uso de un potente telescopio. Esto por los incidentes previos a la construcción con los buques de guerra ingleses (Feliciano 1981:11-13).

Luego de la invasión norteamericana la Marina hace su aparición en las aguas de la Isla de Vieques y de Culebra. Desde antes de la guerra Hispano-Americana, Estados Unidos interesaba tener un enclave estratégico desde el cual proteger las rutas marítimas que se planificaban establecer a través del nuevo Canal de Panamá. El estratega naval Alfred T. Mahan (1899) menciona en *Lessons of the War with Spain and others Articles*) la importancia de establecer una base en la parte Este de Puerto Rico. A partir del 1902 se designó en la Isla de Culebras un centro de maniobras, pero no fue hasta 1936 que se hace permanente su presencia que durará hasta 1975.

Foto 6, CULEBRA – Culebra Island 1924 (Landing Point No. 3) (Archivo histórico y fotográfico de Puerto Rico - Colección Rodríguez, Culebra: archivofotogrficodepuertorico.com).

Las obras de la base militar en la Isla de Culebra de la Marina de Guerra Americana consistían entre el 1902 a 1911 de una estación carbonera, una estación inalámbrica de comunicación, un canal de navegación entre Bahía Ensenada Honda y la Bahía, cuarteles, residencias de oficiales, enclaves de artillería en las costas, hospital y murallas para prácticas de tiro de rifles (Delgado Cintrón 1989:137-138).

Foto 7, Battle fleet at Culebra P. R. *Real Foto Post Card unused c. 1910-1920's* (Archivo histórico y fotográfico de Puerto Rico - Colección Rodríguez, Culebra: archivofotogrficodepuertorico.com).

Durante este tiempo los habitantes tuvieron que abandonar muchos de los terrenos antes otorgados por el gobierno español de Puerto Rico al no poseer la mayoría los debidos documentos. Ante la imposibilidad de mudarse por tierra los pobladores no

tenían más opción que hacerlo por mar colocando todos sus muebles junto a las maderas y el zinc de las casas en balsas improvisadas, yolas o veleros tradicionales en las que se desplazaron por Bahía Ensenada Honda hasta el nuevo terreno. Como es de suponer algunas zozobraron en el intento (Feliciano Padrón 1981:151; Delgado Cintrón 1989:15). Más tarde se establece la Marina de Guerra en el territorio de la Isla de Vieques y se construye la base militar en 1940, la cual continúo operando hasta el 2000. En la Isla de Vieques la Marina instaló un observatorio magnético y sismológico ubicado en el fortín del pueblo de Isabel II en 1903 (Bonnet Benítez 1976:175). Además de los amplios campos de tiro, la Marina construyó en 1941 un gran rompeolas que crea una ensenada capaz de albergar las flotas inglesa y americana en prevención de cualquier plan ofensivo contra los enemigos durante la Segunda Guerra Mundial (Pastor Ruíz 1947; Bonnet Benítez 1976).

Navegaron desde 1902 hasta 1949 en las aguas entre la Isla de Vieques y de Culebra todo tipo de embarcaciones militares de la armada estadounidense; acorazados, cruceros, fragatas, torpederas, lanchas rápidas y submarinos. Además sobrevolaron estas aguas todo tipo de aviones militares pertenecientes a la armada que como parte de las maniobras constantes realizaban intensas operaciones de bombardeo y tiro vivo en las dos islas (Delgado Cintrón 1989; Feliciano Padrón 1981; Pastor Ruíz 1947).

El presente fue un resumen de los eventos generales que determinaron a través de los siglos el variado tráfico en las aguas de la Isla de Culebra y de Vieques, y a los que

sin dudas pueden obedecer los sitios arqueológicos del área, todos importantes para el entendimiento de la historia del desarrollo del archipiélago puertorriqueño.

Muelle de San Ildefonso

En la presente investigación no se ha encontrado información específica de las facilidades portuarias que están en uso en San Ildefonso. La documentación es escasa debido a que el lugar fue parte de una base militar y hay que buscar en archivos especializados si existe algún plano o proyecto de construcción de esta estructura. Solo se encontraron 3 fotos aéreas en la división de Sistemas de Información Geográfica del Departamento de Carreteras.

La foto más antigua corresponde al 1964. Se puede ver un muelle en forma de "L" con una porción de Norte a Sur y una parte más larga de Este a Oeste. Parte del tablestacado con dos rampas en el lado Este y Oeste. Tiene una estructura cuadrada en su plataforma. Se aprecia también los restos de una embarcación naufragada que según Isablelo Santos Díaz, residente de la Isla y buzo pescador, perteneció a la Marina de Guerra de Los Estados Unidos a unos 200 pies al Este del muelle.

Foto 8, Detalle Foto Aérea de San Ildefonso Isla de Culebra, 1964 (DTOP).

La segunda foto aérea corresponde al 1981. La configuración del muelle es muy similar a la observada en 1964 con la excepción que hay más estructuras sobre la plataforma y más vegetación.

Foto 9, Detalle de San Ildefonso Foto Aérea Isla de Culebra, 1981 (DTOP).

La tercera foto en propiedad del Departamento de Carreteras es de 1996. En esta se ve una estructura muy similar a la configuración actual, con un muelle de Norte a Sur y un tablestacado con dos rampas para tirar botes al Este y el Oeste. Al lado Este del

muelle de concreto se puede ver un muelle de madera en forma de “T” y los restos de la embarcación hundida que se observó en la foto de 1964.

Foto 10, Detalle de San Ildefonso Foto Aérea Isla de Culebra, 1996 (DTOP).

Foto 11, Foto Aérea Actual San Ildefonso Area de Prospección Subacuática (Atkins 2014).

La foto aérea actual presenta el área del proyecto designada por una línea roja. Al lado Este del muelle de concreto se ven los restos sumergidos del muelle en forma de "L". El muelle de madera y se aprecia con claridad con la embarcación hundida al Este.

En comunicación personal con el señor Santos Díaz este nos indicó que el muelle de San Ildefonso fue por mucho tiempo usado como carenero para la reparación de embarcaciones. Según el residente la porción del muelle hundida sucumbió durante el huracán Hugo de 1989. También mencionó que la embarcación hundida era usada por la Marina de Estados Unidos como muelle flotante. De acuerdo a esta información cabe la posibilidad que el muelle que la Marina de Guerra uso por los primeros 60 años del siglo 20 estuviera más al Este donde se encuentra la embarcación hundida.

Naufragios

Los barcos siempre han estado entre los artefactos más complejos y sofisticados inventados por los seres humanos a través del tiempo. Su estudio es el estudio de la historia y de la tecnología mediante un punto de vista particular. Pero este es también el estudio de los contextos económicos, políticos y sociales, en los cuales las personas concibieron, construyeron y navegaron estas formidables máquinas. La historia del ser humano no se puede escribir sin la existencia de barcos. Por miles de años el ser humano ha desarrollado la forma de surcar los cuerpos de agua de manera más rápida, segura y eficiente. Desde las primeras embarcaciones registradas en los anales de la historia se ha visto la evolución de estas como naves de comercio o como maquinas indispensables en las acciones armadas decidiendo el balance de poder desde los tiempos de los pueblos egipcios hasta el presente.

La palabra isla que define los límites geográficos del archipiélago de Puerto Rico por necesidad implica que nuestros primeros pobladores requirieron de algún medio de transportación para cruzar el océano hace 4,000 años o más. Ya desde ese momento y hasta nuestros días podemos contar con la pérdida de embarcaciones en las aguas que rodean a Puerto Rico.

Los naufragios no ocurren de forma aleatoria o incidental. Ellos forman parte de una cultura y por consecuencia son componentes de los patrones de comportamiento que la definen. La pérdida de una embarcación sucede dentro de un contexto histórico

marítimo formado por las condiciones políticas, económicas y sociales del momento donde naufraga la nave. Se entiende entonces que la pérdida de una embarcación es causada o influenciada por una compleja interacción de factores culturales y naturales que pueden ser identificados y estudiados (Fontánez 1999). Como se mencionó, la incidencia de naufragios se debe a una serie de factores naturales y humanos que finalizan en la pérdida de una embarcación. De acuerdo a la ley número 10 de 1987, que crea al Consejo de Arqueología Subacuática, los pecios son considerado de valor histórico si tienen 50 años o más de antigüedad. Esto deja para estudio una amplia gama de posibilidades que pueden ser consideradas recursos arqueológicos sumergidos y que cabe la posibilidad que estén representados en el área de estudio. Los fenómenos naturales, fuegos, batallas, errores de navegación, malas condiciones de la embarcación, abandono, el hundimiento intencional, y muchos otros más han sido responsables del hundimiento de naves en nuestras aguas. Un listado sacado de documentos de naufragios en las aguas de la Sonda de Vieques se presenta en la siguiente tabla.

Foto 12, Vista Amplia de la Bahía de Sardinas, Isla de Culebra 1920 (Colección Rodríguez 2011).

Tabla 1

Listado de Pecios Naufragados Relacionados a la Historia de la Sonda de Vieques.

Nombre	Año	Tipo	Lugar	Fuente
?	1553	Carabela	Vieques	Cardona 1998:292 Num.33
?	1619	Urca	Costa Este	Cardona 1998:307 Num.78
?	1807	Cuter	Vieques	Vega
?	1822	Balandra	Vieques	Vega
?	1825	Balandra	Vieques	Vega
?	1830	Bote	Vieques	Vega
?	1830	Balandra	Vieques	Vega
?	1835	Bergantín	Vieques	Vega
Loppa	1841	Goleta	Vieques	C.A.S.
?	1842	Buque?	Vieques	Vega
?	1866	Barca	Vieques	Vega
?	1876	Balandro	Vieques	Vega
?	1876	Goleta	Vieques	Vega
?	1890	Bergantín	Vieques	Vega
?	1890	Buque?	Vieques	Vega
?	1890	Goleta	Vieques	Vega
Helen Atwood	1907	Goleta	Vieques	C.A.S.
?	1910	Goleta	Vieques	Vega
?	1911	Buque?	Vieques	Vega
?	1920	Balandro	Vieques	Vega
India	1921	Goleta	Fajardo	C.A.S.
Fred C Stebbens	1945	Liberty Ship	Fajardo	C.A.S.
Tiny Lou	?	Goelta	Fajardo	C.A.S.
Julia	?	?	Fajardo	C.A.S.

(C.A.S.= Consejo de Arqueología Subacuática, Vega 1988, Cardona 1988).

El acontecer histórico que ha tenido lugar en las aguas de la Sonda de Vieques hace de esta porción de mar un área sensitiva a la presencia de recursos arqueológicos sumergidos. Esta posibilidad se extiende también a recursos culturales pertenecientes a grupos aborígenes. A base a los resultados de la Fase I-A se procedió con el estudio de verificación en campo de Fase I-B.

EVALUACION ARQUEOLOGICA DE FASE - IB

METODOLOGIA

Prospección con Censor Remoto

El área de prospección comprende las aguas frente al mulle de San Ildefonso en Bahía Ensenada Honda de la Isla de Culebra. De acuerdo a la carta náutica (NOAA, 1983) el muelle queda entre la Ensenada del Cementerio y el Caño Quebrado. El área total de prospección fue un rectángulo de 300 pies de largo x 122 pies de ancho, equivalentes a 36,600 pies cuadrados.

Para asegurar data suficiente que permitiera localizar cualquier objetivo potencialmente significativo en el estudio se hicieron 3 transectos de 300 pies de largo y 33 pies de separación que corrían en dirección Norte a Sur y terminaban en el tablestacado del muelle.

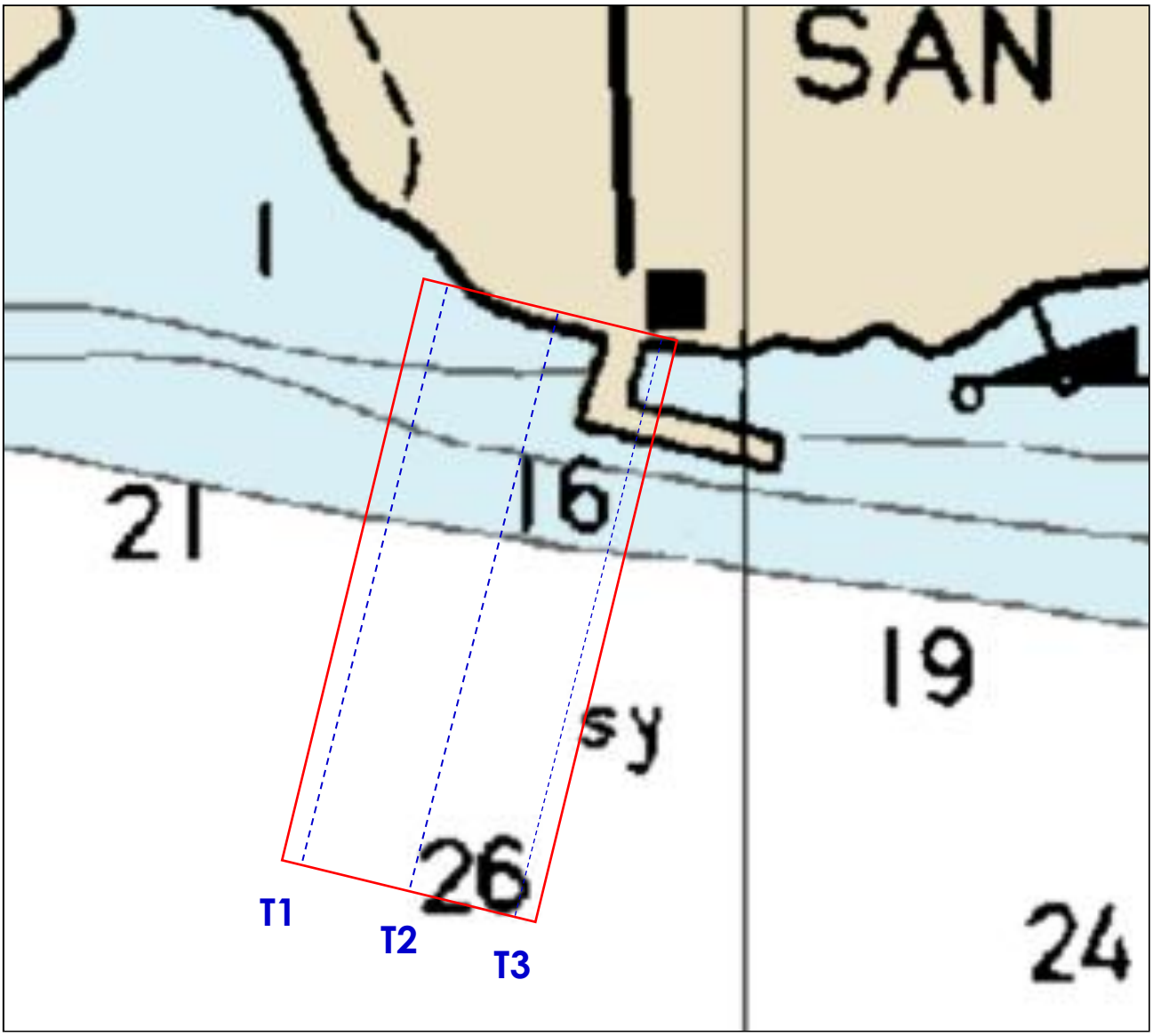


Figura 1, Ubicación de los Transectos (NOAA 1983: Nautical Charts 25654).

La investigación arqueológica de censores remoto fue diseñada para cumplir con dos metas principales. La primera fue el emplear equipos magnéticos de prospección remota para identificar anomalías con características similares a las que previamente se ha demostrado que están asociadas con recursos culturales sumergidos de significancia

histórica. La segunda fue la evaluación de cada objetivo (*target*) e identificar cuales requerían investigación subacuática para confirmar la naturaleza y la significancia de los materiales que generaron la anomalía y las señales que pertenecían a materiales modernos.

Para cumplir con estos objetivos un magnetómetro de la firma "SHARK MARINE TECHNOLOGY SDM-4000" capaz de una resolución de +-1 gamma fue empleado para coleccionar la data magnética en la prospección. Debido a las aguas llanas el censor del magnetómetro fue arrastrado justo bajo la superficie del agua a una velocidad de aproximadamente 3-4 nudos. Los datos magnéticos fueron recolectados como un archivo digital por el programa "MAGPLOT" y referenciados a su posición geográfica por medio del sistema de navegación computarizado.

Durante la prospección la posición y la distancia entre las líneas de transecto fueron mantenidas con "*GPS RAYMING Tripnav TN-204 differential system*" en interfase con una computadora portátil "Panasonic Toughbook". La navegación fue controlada por el programa "*Fungawi Global Navigator*". Este sistema de navegación permitió una precisión que rondó entre 5 metros y menos de 1 metro de error. Todas las posiciones fueron almacenadas como latitud/longitud usando el datum NAD83.

Foto 13, Magnetómetro Digital

Análisis de los Datos

Para asegurar una identificación confiable de las anomalías y su evaluación, el análisis de la data se hizo a la par que esta iba generándose. La señal de las anomalías o *targets* era aislada y evaluada en torno a las características que previamente se ha demostrado que son indicativo de recursos culturales sumergidos. El análisis se basó en factores tales como intensidad de la anomalía, duración extensión del área que esta cubría y características de la señal. Cada "*target*" fue seleccionado de acuerdo a su potencial como parte de materiales asociados a pecios o a otros recursos culturales sumergidos. Los "*targets*" clasificados como de moderado a alta prioridad fueron seleccionados para inspección subacuática. Todos los "*targets*" fueron localizados en un plano que muestra su ubicación.

Prospección Visual

La prospección con métodos visuales fue la segunda actividad de búsqueda que se realizo. La prospección visual se hizo luego de terminar el rastreo con

magnetómetro. La búsqueda visual de recursos arqueológicos sumergidos en aguas claras puede ser un método muy efectivo, su eficacia ha sido probada en proyectos arqueológicos hechos en la Florida, las Islas Caimán, Cuba, México, Bermuda y Puerto Rico. En la Isla de Culebra la visibilidad en el día de la prospección fue entre 3-4 pies por lo que no se hicieron inspecciones visuales por arrastre. La poca visibilidad también afectó la calidad de las fotos subacuáticas.

Foto 14, Buzos Realizando las Inspecciones Visuales en la Embarcación *Diana.*

Se realizaron inspecciones visuales por medio de patrones de buceo en los lugares con anomalías magnéticas con posibilidad de pertenecer a recursos arqueológicos. El buceo en patrones ha sido descrito ampliamente en publicaciones como *Nautical Archaeology* de Hill St. John Wilkes (David & Clark 1971) y *Archaeology*

Underwater the N.A.S. Guide por Dean Martin et al (Archetype Publication Ltd, quinta edición, 2000). El patrón utilizado de buceo fue circular con tres buzos cubriendo un área de 120 metros de diámetro. Se hizo inspección visual del tablestacado y el muelle.

Documentación del Estudio

La documentación se llevó a cabo mediante fotos, videos y notas. Se empleo equipo SCUBA, cámaras submarinas, papel *maylar*, lápices mecánicos cintas métricas y compás para los esquemas.

Excavaciones de Pruebas

Se realizaron excavaciones de prueba con el objetivo de saber si existían materiales arqueológicos en el subsuelo. Los métodos convencionales de prospección arqueológica subacuática como el rastreo con magnetómetro no perciben materiales indígenas por carecer de masa ferrosa. Se realizaron 5 pozos de pruebas con una sonda de agua. La posición de los pozos se escogió al azar.

Los pozos de prueba se excavaron por medio de una sonda de agua a presión de 2.3m de largo. Este equipo produce calas de 12 cm. de diámetro. Se utilizaron técnicas para excavación en cero visibilidad. Una bolsa plástica "*ziplock*" llena de agua limpia servía como lente para poder ver la estratigrafía de las calas ya que la visibilidad era nula o no sobrepasaba 1 pie de distancia.

Foto 15, Excavación de Pozos de Prueba (Fontánez 2010).

Foto 16, Excavación de Pozos de Prueba (Fontánez 2010).

RESULTADOS

Prospección Electrónica y Visual

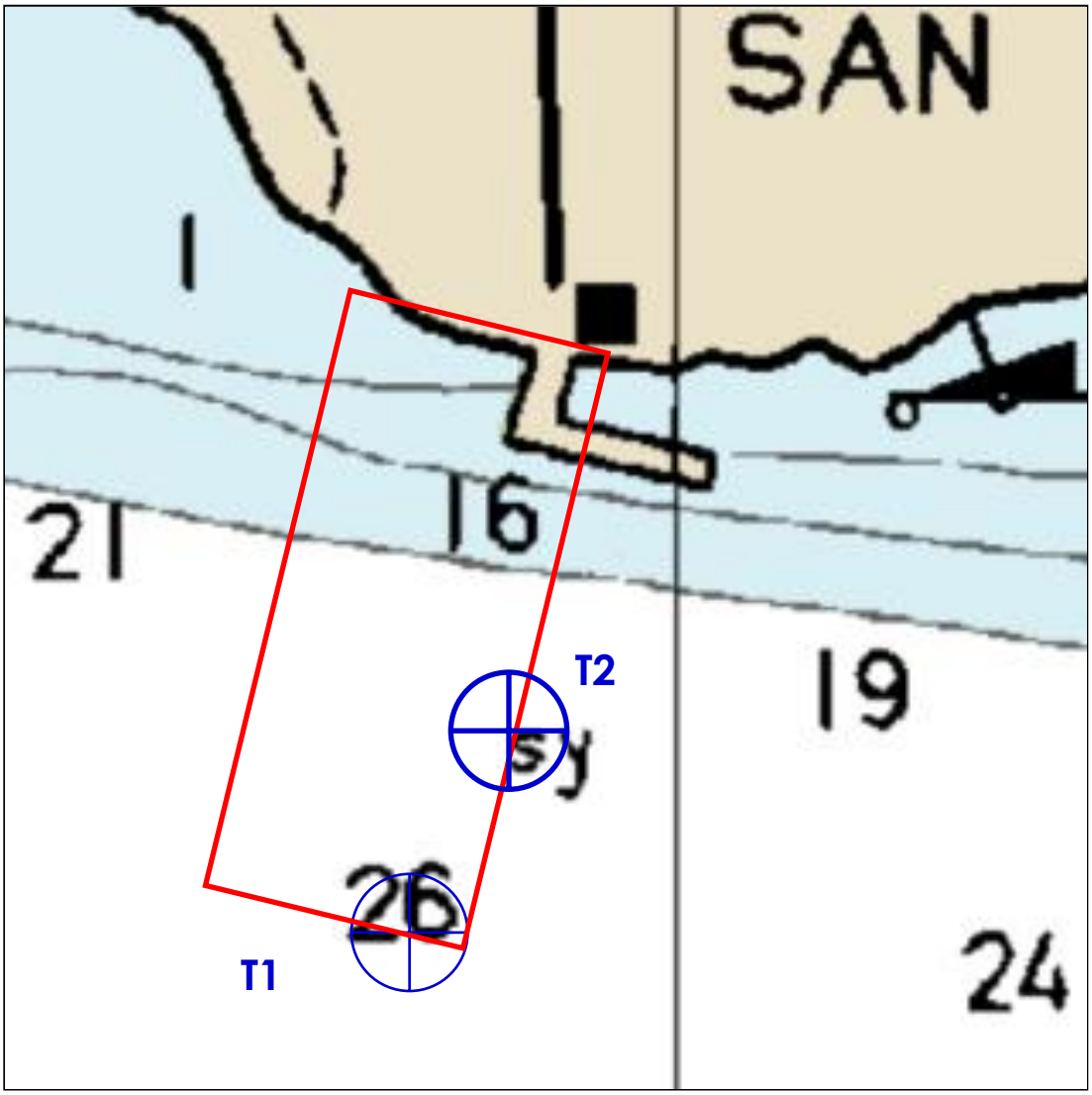


Figura 2, Localización de las Anomalías (NOAA 1983, Carta 25654).

Se encontraron dos anomalías con características de pertenecer a material arqueológico. El análisis de estas evidenció que las señales fueron producidas por artefactos modernos dejados allí como parte de la actividad marítima del muelle de San

Ildefonso. Ambas son piezas de metal pesadas usadas como anclas o *mooring* para el amarre de embarcaciones pequeñas.

Tabla 2, Anomalía 1

Localización	Tipo	Intensidad	Duración
N 18°18'19.42	Bipolar	Gammas 1527	15 pies
W 65°17'01.25			

Esta señal fue producida por un bloque de motor usado como *mooring*. La inspección visual evidenció basura moderna. No se hicieron fotos por las condiciones de cero visibilidad.

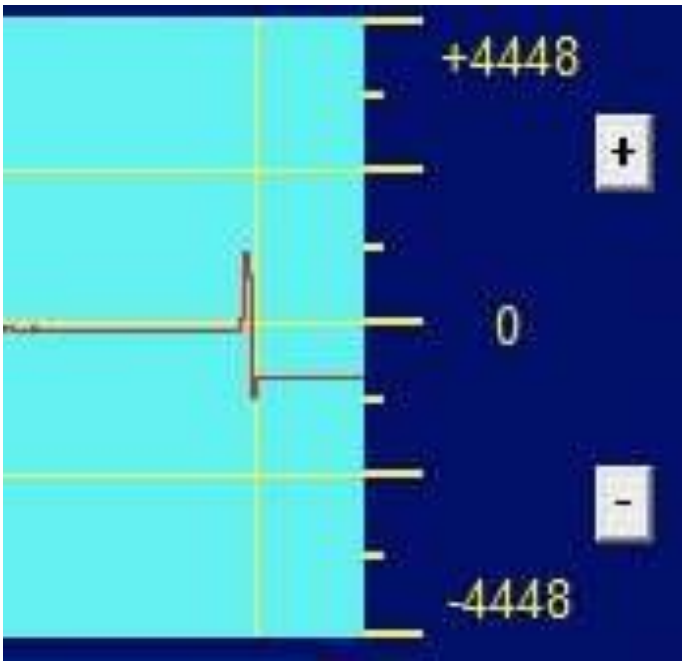


Figura 3, Gráfica de la Anomalía 1.

Tabla 3, Anomalía 2

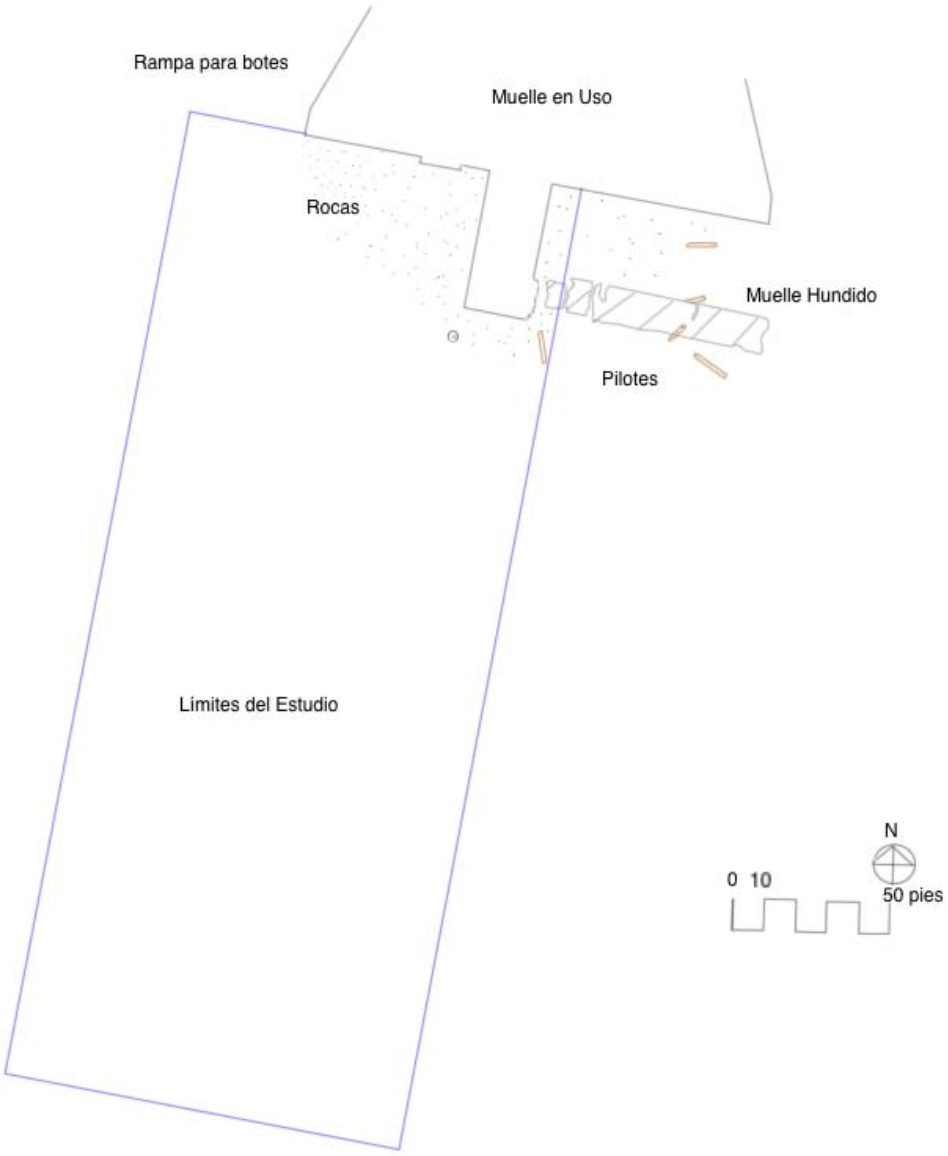
Localización	Tipo	Intensidad	Duración
N 18°18′20.52	Monopolar	Gammas 1814	50 pies
W 65°17′00.82			

Esta señal fue producida por un objeto de hierro pesado usado como *mooring*. La inspección visual evidenció basura moderna. No se hicieron fotos por las condiciones de cero visibilidad.

Figura 4, Gráfica de la Anomalía 2.

Inspecciones Visuales

Figura 5, Plano General Del Área de Estudio y el Muelle Hundido.



El tablestacado está construido por rocas, planchas de metal, pilotes de acero y cerámica llenos de concreto y un piso de concreto. Próximo al muelle los pilotes son acero y loa flancos del tablestacado en cerámica. La distancia entre los pilotes es de alrededor de 10 pulgadas (Fotos 17 y 18).

Foto 17 y 18, Pilotes de Acero y Pilotes de Cerámica.

Las fotos bajo el agua de la sección Este del muelle presentan parte de la loza de concreto del muelle hundido y uno de sus pilotes. En el extremo sur se aprecia un fragmento del muelle que se hundió todavía unido a la estructura. Frente al tablestacado hay una base de rocas a lo largo de toda la estructura (Figura 5). La loza del muelle hundido tiene medidas aproximadas de 10 pies de ancho por 65 pies de largo, está fracturado en varias partes, se encuentran dos pilotes erguidos y dos pilotes sobre el fondo (Figura 5). La distancia de estos restos al tablestacado es de aproximadamente 25 pies. La loza es de alrededor 15 pulgadas de espesor (Foto 21). No se encontraron otros materiales o elementos de construcción que dieran información sobre período de fabricación.

Fotos 19, Tablestacado Lado Este. Foto 20, Muelle del Lado Este.

Foto 21, Loza de Concreto del Muelle Hundido. Foto 22, Pilote del Mulle Hundido.

En el lado Oeste se ve la loza de cemento del muelle en uso y parte del tablestacado (Foto 23). Bajo el agua había mejor visibilidad en este lado de la estructura y se pudo hacer una toma de los pilotes y parte de los materiales modernos que se encuentran en el fondo (Foto 25 y 26).

Fotos 23 y 24, Muelle Lado Oeste.

Foto 25, Pilote del Muelle.

Foto 26, Neumático y Otros Materiales Modernos.

Pozos de Prueba

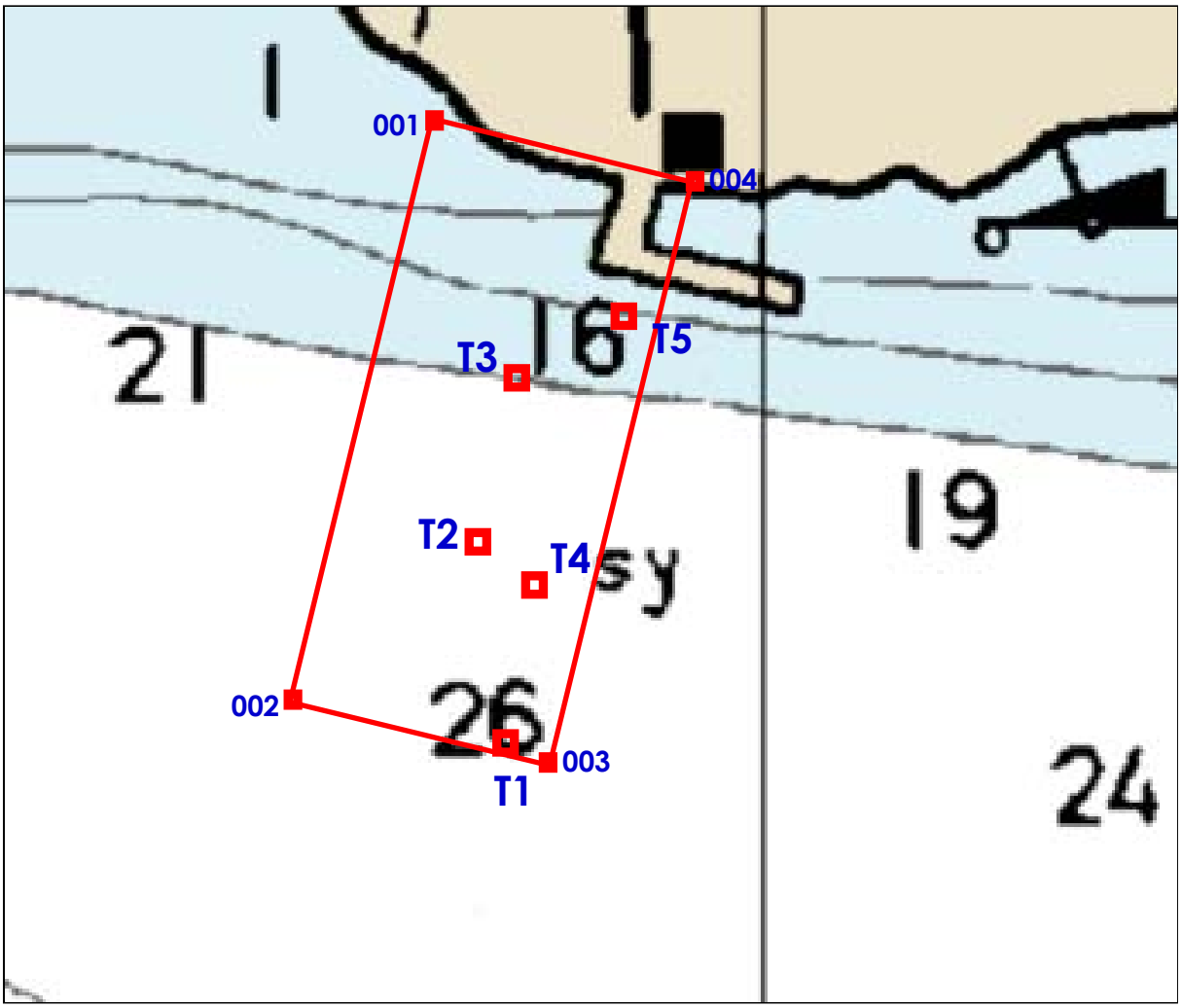


Figura 6, Localización de los Pozos de Prueba (NOAA 1983, Carta 25654).

Inspección Visual	Inspección Subsuperficial			
No hay Materiales arqueológicos en la superficie.	**Dimensión**	**Profundidad**	**Capas**	**Materiales**
	12x12 cm	0-200cm	Capa I cieno y arena	No aparecieron materiales

Tabla 4, Prueba # 1 coordenadas N18°18'19.64 W65°17'01.01.

Inspección Visual	Inspección Subsuperficial			
No hay Materiales arqueológicos en la superficie.	**Dimensión**	**Profundidad**	**Capas**	**Materiales**
	12x12 cm	0-210cm	Capa I cieno y arena	No aparecieron materiales

Tabla 5, Prueba # 2 coordenadas N18°18′20.45 W65°17′01.32

Inspección Visual	Inspección Subsuperficial			
No hay Materiales arqueológicos en la superficie. Embace plástico	**Dimensión**	**Profundidad**	**Capas**	**Materiales**
	12x12 cm	0-200cm	Capa I cieno y arena	No aparecieron materiales

Tabla 6, Prueba # 3 coordenadas N18°18′21.38 W65°17′01.32

Inspección Visual	Inspección Subsuperficial			
No hay Materiales arqueológicos en la superficie.	**Dimensión**	**Profundidad**	**Capas**	**Materiales**
	12x12 cm	0-200cm	Capa I cieno y arena	No aparecieron materiales

Tabla 7, Prueba # 4 coordenadas N18°18′20.25 W65°17′00.97

Inspección Visual	Inspección Subsuperficial			
No hay Materiales arqueológicos en la superficie. Carrete de hilo de pescar	**Dimensión**	**Profundidad**	**Capas**	**Materiales**
	12x12 cm	0-200cm	Capa I cieno y arena	No aparecieron materiales

Tabla 8, Prueba # 5 coordenadas N18°18'21.69 W65°17'00.66

CONCLUSIONES

La investigación histórica de la Fase I-A demostró que las costas de la Isla de Culebra son altamente sensitivas a la presencia de recursos arqueológicos sumergidos tanto de culturas precolombinas así como de todos los períodos de la dominación española y por último de los esfuerzos de guerra de la Armada de Estados Unidos. Se sabe que el área del atracadero a sido un lugar de gran actividad marítima por largo tiempo, usada como muelle, anclaje y posiblemente como carenero para reparar embarcaciones. Este lugar corresponde al litoral del pueblo antiguo de la Isla de Culebra conocido como San Ildefonso. Los documentos mencionan unos 24 naufragios ocurridos en aguas de la Sonda de Vieques. La investigación documental no arrojó información sobre la localización específica de sitios arqueológicos subacuáticos en la Isla de Culebra sin embargo los restos de una embarcación de metal se aprecian en las fotos aéreas de la Autoridad de Carreteras de 1964 que de acuerdo a los relatos de un residente de la Isla perteneció a la Marina de Guerra de los Estados Unidos. Esta se encuentra fuera del área de estudio a 200 pies hacia el Este.

En la prospección arqueológica de Fase I-B se encontraron 2 señales magnéticas

con características que podían corresponder a recursos culturales sumergidos en las coordenadas N18 18 19.42 W65 17 01.25. y N18 18 20.52 W65 17 00.72. La inspección del fondo en la vecindad donde se generaron estas anomalías evidenció que provenían de materiales ferrosos recientes. En la excavación de pozos de prueba no se encontraron materiales arqueológicos pertenecientes a culturas indígenas, de actividad hispánica o de la época de la ocupación militar de la Isla. Solo las inspecciones visuales identificaron materiales que evidencia un largo período de actividad marítima en el puerto de San Ildefonso. Entre los materiales destacan los restos de un muelle en forma de "L" de concreto, al Este del área de estudio. De acuerdo a los residentes de Culebra esta sección del muelle se hundió durante el huracán Hugo en 1989. En la investigación documental no se ha podido precisar el año de construcción del inmueble pero las fotos aéreas muestran que para el 1964 ya había una estructura similar en este lugar. En la investigación en campo no se identificaron características constructivas de este muelle que ayudaran en conocer la fecha de construcción de la estructura. Sin embargo de acuerdo a la ley número 10 de 1987, para la Protección y Estudio de los Sitios y Recursos Arqueológicos Subacuáticos de Puerto Rico los restos de construcciones bajo el agua que tengan 50 años o mas de antigüedad se consideran recursos arqueológicos.

En la prospección arqueológica de las aguas entre las coordenadas N18º18'22.53 W065º17'01.28, N18º18'22.39 W065º17'00.27, N18º18'19.68 W065º17'01.87, N18º18'19.55 W065º17'00.69 los únicos materiales con posibilidad de ser un recurso arqueológico sumergido son el fragmento de muelle hundido y los cimientos del atracadero existente en el límite norte del área de estudios. Fuera de la línea costera no se encontró evidencia que sugiera que los trabajos de construcción vayan a impactar recursos arqueológicos subacuáticos.

RECOMENDACIONES

A base de los resultados se recomienda que se dé el endoso al proyecto de construcción llevando a cabo monitoreo arqueológico durante la instalación de pilotes o en el caso que se planifiquen operaciones de dragado en el lugar, actividades que modifiquen la actual línea costera, modificación de la tablestacado actual o la remoción del muelle sumergido. Recomendamos estudios adicionales de Fase I-B si se va a designar un área de maniobras (*turning circle*). Esta zona no se consideró en los limites del presente estudio y puede haber impacto a recursos culturales sumergidos por el lavado de las hélices (*prop. washer*) de embarcaciones. Se recomienda también una zona de protección (amortiguamiento) de por lo menos 100 pies entre el área de construcción del muelle y la embarcación antigua al este de las actuales facilidades portuarias de San Ildefonso. De no ser posible establecer una zona de amortiguamiento para proteger este recurso se debe llevar a cabo estudios arqueológicos de Fase II.

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