National Park Service
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Olmsted Center
for Landscape Preservation

Cultural Landscape Report for The San Cristóbal Outworks

San Juan National Historic Site

Site History, Existing Conditions, Analysis & Evaluation, and Treatment



"It is also my belief...that every effort should be made to maintain these walls in good condition as an interesting and valuable relic of the past
Capt. E.J. Dent, April 20, 1914

Cultural Landscape Report for the San Cristóbal Outworks

San Juan National Historic Site

San Juan, Puerto Rico

Introduction

Site History

Existing Conditions

Analysis and evaluation

Treatment Tasks

Prepared by
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Olmsted Center for Landscape Preservation
National Park Service, Boston, Massachusetts

2015

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Cover Photo: View east across the San Cristóbal Outworks, 2012 (SAJU).

Title Page: Aerial photo of the San Cristóbal Outworks at San Juan National Historic Site, c. 1924, (San Juan NHS Collection).

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FOREWORD

In 2009, San Juan National Historic Site opened the area known as the San Cristóbal Outworks to self-guided visitation. This momentous effort was meant to provide improved access to the important features that made San Cristóbal one of the best defensive outposts in the Western Hemisphere. The San Cristobal Outworks are part of a defensive system that rested in the ability of having different structures supporting each other. This system of fortification construction is known as "defense in depth". In having the area accessible for visitation, the park knew that the interpretation of the site as well as its maintenance and security was going to be a challenge if it was not planned and articulated using an integral approach. This *Cultural Landscape Plan for the San Cristóbal Outworks*, completed in conjunction with the Olmsted Center for Landscape Preservation, is the end result of years of research and consultation that will guide the park's efforts in maintaining and interpreting this important feature of the fortification system.

The treatment recommendations included within this plan will allow the site to preserve the structures in the area, facilitate visitor use, and interpretation, create a welcoming environment, and improve visitor circulation patterns. The recommendations for circulation will enable us to provide a safe and secure experience to our visitors. They will also help us in future planning efforts around the area such as the extension of the Paseo del Morro National Recreation Trail which is expected to connect to this area in the future. The improvements in infrastructure recommended in the plan (replacement of gates, doors, gates, etc.) will not affect visitor and resource safety and security while enhancing the appearance of the site making it more welcoming and educational for our visitors. Lastly, visitors in the Outworks will benefit from a better understanding of the concept of "defense in depth", as the plan recommends the "recreation" of the defensive lines with the placement of sandstone where the "líneas de retirada" would have been.

This plan is an important step in "rediscovering" the Outworks. For over 30 years, these important resources were "hidden" and closed from public view making it difficult for park staff to explain and for visitors to understand the importance of this area in the defensive system of San Juan. It is our goal that in implementing the recommendations contained in it, understanding of the site and its preservation are enhanced for this and future generations.

Walter J. Chavez

Superintendent
San Juan National Historic Site

ACKNOWLEDGMENTS

Many hands have contributed to the report before you. Hard work, persistence and a collaborative spirit enjoyed between staff of the San Juan National Historic Site, the National Park Service's Southeast Regional Office, the Northeast Regional Office and the Northeast Region's Olmsted Center for Landscape Preservation have brought this project to its successful conclusion.

Undertaken and scoped to resolve site planning details consistent with the broad direction for park management articulated in the *General Management Plan for San Juan National Historic Site* (1984), the historic research for this effort is grounded in the research and documentation presented in *The Fortifications of San Juan National Historic Site*, *Volume I, II, and III* (1991). Acknowledging the valuable work of those who have come before us, we are further grateful for our current circumstances, especially to have our work completed in time to coincide with the advent of the National Park Service "Urban Agenda," and the promise that this holds for the well-being of our nation's cities.

The Urban Agenda arose from the 2012 NPS Urban Caucus held in New York City when the National Park Service and its partners were challenged to develop important roles to better serve urban areas; and to re-connect the relevance of the agency's one-hundred year old mission with the contemporary lives of urban residents. Introducing the new effort, Director Jarvis borrowed from Frederick Law Olmsted's 1858 justification for New York City's iconic "Central Park":

> It is one great purpose of the Park to supply to the hundreds of thousands of tired workers, who have no opportunity to spend their summers in the country, a specimen of God's handiwork that shall be to them, inexpensively, what a month or two in the White Mountains or the Adirondacks is, at great cost, to those in easier circumstances.

"Relevance," "unity," and "collaboration" are the three keywords of the new initiative. Indeed, implementing the recommendations found within this report will require close collaboration with the Commonwealth and municipal partners toward bringing about stronger physical connections between the park and the city, measures described in the following pages will help to unify the role of this monumental landscape with other nearby civic buildings to create a stronger ceremonial gateway. Improved public access to the San Cristóbal Outworks will furthermore make scarce open space accessible and more relevant to the everyday lives of local citizens.

Regarding successful collaboration, this report would have yet to be completed if not for the assistance of San Juan NHS Historian, Eric López. For this we

extend special thanks to Eric for his encouragement and patience as the project team completed drafts and revisions to the report. Eric was also instrumental in collecting and making available to us current existing conditions photography, and serving as the project point of contact, coordinating and compiling review comments. We will miss Eric's periodic phone calls checking in with us regarding our progress.

We also wish to acknowledge the assistance San Juan NHS Cultural Resources Program Manager, Félix López, who worked with former Southeast Region Cultural Landscape Program lead Tracy Stakely to initiate the project and arrange for the involvement of the Northeast Region's Olmsted Center for Landscape Preservation. Prior to the involvement of Eric López, Félix helped the project team develop the project scope, resolve travel questions, and coordinate access to park archives. Félix took the lead in organizing a meeting with park leadership that helped to clarify management issues facing the area. During our research visits to examine park archives, we were cheerfully assisted by former Cultural Resources Division staff members Maritza Acevedo, Marisol Diaz, Carlos Almodovar, and Doris Diaz. More recent park management records identified for duplication out of the ominous-sounding park "dead-files" were fearlessly photocopied by Archives Technician Maritza Acevedo.

Former San Juan NHS Historian Ms. Milagros Flores was generous in sharing her knowledge gained from ten years of experience working with San Juan's history, including her involvement in an extensive overseas research project, traveling to various state repositories in Spain for copies of documents relating to the colonial history of Puerto Rico.

We thank Superintendent Walter J. Chavez for his support for this project as well as his careful review, his thoughtful insights and revisions. Olmsted Center for Landscape Preservation Director Bob Page provided ongoing program support that routinely makes the work of the Olmsted Center possible.

Others at the Olmsted Center contributing to this report include Senior Project Manager Eliot Foulds, who authored the introduction and site history chapters. Charlie Pepper, Senior Project Manager, Preservation Maintenance and Education, during service as Acting Director of the Olmsted Center, traveled to the site and met with park leadership regarding management issues. Former Olmsted Center Budget Analyst Amy McDermott and current Budget Analyst Kim Ramos made all the pieces of the administrative puzzle come together. Alexandra von Bieberstein, Historical Landscape Architect, authored the existing conditions chapter and prepared the period plans, existing conditions plan, and treatment plans. Former Olmsted Center Historical Landscape Architect Lisa Novak made significant contributions to the narrative evaluation of characteristics and features as well as in the development of treatment tasks.

1. INTRODUCTION

PURPOSE OF THIS REPORT

For nearly thirty years, park planners and managers have perennially posed the question, "what is to be done with the Castillo San Cristóbal's Outworks?" The purpose of this report is to answer specific questions and offer a range of appropriate choices that park administration and resource managers need to consider in order to fulfill park plans to open the San Cristóbal Outworks to visitors and to offer expanded interpretive opportunities connected to the globally significant Spanish fortifications at San Juan, Puerto Rico (Figure 1.1)

The subject of this report is an approximately seven acre parcel of urban real estate, found immediately east of Castillo San Cristóbal's mortared stone fortifications, which has been closed to the public for decades. Being roughly analogous to Castillo El Morro's larger and more well-known Esplanade to the west, the San Cristóbal Outworks represent precious open space in a city as densely populated as San Juan, Puerto Rico. In an effort to help the park discover and design practical solutions to longstanding preservation issues, this report will focus on the San Cristóbal Outworks landscape.

The preparation of a Cultural Landscape Report for San Cristóbal Outworks (PMIS 40311) has been authorized with the intention to fulfill both park-wide and site-specific goals developed as part of the *San Juan NHS General Management Plan* (1984). Among the broader of these stated goals is the development of a comprehensive cultural resource information base to benefit management,



Figure 1.1: Regional Context, from 1984 General Management Plan for San Juan National Historic Site, (Denver Service Center, Drawing 393/20061).

preservation, and interpretation of these internationally significant resources. While many capable and informative histories have been prepared documenting the design and construction of the fortifications during San Cristóbal's early period up until acquisition by the United States in 1898, more recent history is less well understood. Information gaps include knowledge of the modifications made to San Cristóbal during the early 20th century by the U.S. Army, and changes initiated by the National Park Service after 1966.

Relating to the contemporary management of the San Cristóbal landscape, the 1984 GMP for San Juan National Historic Site identified specific actions necessary prior to opening extensive "Outworks" area to the public. These actions have included the rehabilitation of the El Abanico guardhouse for use as a visitor contact station and restroom, the design and installation of interpretive wayside exhibits, the redesign of roads and parking at the El Abanico gate, relocation of security fencing, and the removal of select paved surfaces. While many of these actions listed above have been accomplished, access to the San Cristóbal Outworks remains limited. As more than thirty years has elapsed since the completion of the 1984 GMP, the preparation of the Cultural Landscape Report for the San Cristóbal Outworks is well timed to inform a new GMP planning effort, identify landscape preservation issues remaining at San Cristóbal and suggest appropriate treatments guiding future use, and informing expanded interpretation.

The Cultural Landscape Report project will also help guide preservation decision-making and facilitate cultural resource compliance for programmed repair and rehabilitation projects. These projects appear in the NPS Project Management Information System (PMIS) and include: *Replace Electrical Gates Parkwide* (PMIS 205825/ 20K), *Replace Park Wayside Exhibit Panels* (PMIS 188998/ 26K), *Assess Potential Impacts of Green Iguana On Park Cultural Resources* (PMIS 216950/ 28K), *Perform an Archeological Assessment at San Juan NHS* (PMIS 216953/30K), *Conduct Cultural Landscape Inventory for the San Cristóbal Outworks* (PMIS 215419/ 45K), *Fabricate and Install Parkwide Wayside Exhibits* (PMIS 207120/ 256K), *Replace Perimeter Fence at the Outer Defenses of Castillo San Cristóbal* (PMIS 173548/ 305K), *Implement Recommendations of CLR for Castillo San Cristóbal Outworks* (PMIS 208485/ 541K), *Repair San Cristóbal Outworks Retaining Wall* (PMIS 217955/ 614K), *Construct New Access and Visitor Service Structures at the Outer Defense Area (PMIS 177032/ 1.15M)*.

METHODOLOGY AND FORMAT

According the 1998 *Guide to Cultural Landscape Reports: Contents, Process and Techniques*, prepared by Park Historic Structures and Cultural Landscape Program of the National Park Service, a Cultural Landscape Report serves two important functions. The cultural landscape report serves as the principle treatment docu-

ment for cultural landscape; and it also informs long-term management planning for landscape resources.[1] Cristóbal's historic resources are predominantly architectural and have been documented with scholarship and depth. Beginning in 1965, park historian Ricardo Torres-Reyes completed his excellent report documenting the, "Construction History of San Cristóbal: 1634-1800." Also during the early 1960s, the military architecture of Castillo San Cristóbal was documented through the preparation of measured drawings as part of a multi-year effort on the part of the Historic American Architectural Program (HABS). In 1984, Edwin C. Bearss of the National Park Service completed the "Historic Structure Report for the San Juan Fortification 1898-1958." The 1984 Bearss HSR reviewed and reported on many of the records held in the National Archives dealing with the Army's management of the historic walls and fortifications during the 20th century. In 1991 the National Park Service, in collaboration with the Columbia University's Historic Preservation Program, completed another Historic Structure Report devoted to documenting the architectural features of San Cristóbal and its Outworks.

The methodology of the following cultural landscape report has been to review these prior research efforts and to conduct sufficient additional research in an effort to inform decision making on treatment choices available for the interstitial land laying at the center of the San Cristóbal Outworks. This area, of approximately five acres in size, was the site of ten officers' quarters built there by the Army in 1930, and demolished by the National Park Service in 1980.

This report is not intended to serve as a technical treatise on the history of the Spanish fortifications and their components and features. The history of the Outworks structures is well developed and accompanied with sound treatment recommendations in the 1991 *Historic Structure Report: The Fortifications of San Juan National Historic Site*. Instead, this cultural landscape report explores the history of the Outworks parcel in sufficient depth so as to understand the characteristics of the military landform, along with its most important features, that the United States acquired from Spain, and to make reasonable recommendations for treatment of the landscape based on that understanding.

HISTORICAL OVERVIEW

The 400 year old fortifications that encircle Old San Juan are protected as part of San Juan National Historic Site. Begun by the Spanish in the 16th century, these massive masonry defenses are the oldest European-style fortifications within United States territory. *Castillo San Cristóbal*, literally translated as "St. Christopher Castle," was named during the 17th century for the local name for the hill on which it was built. Rising nearly 150 feet above sea level on the northeast edge of old San Juan and about a mile east of El Morro, San Cristóbal is the largest of San

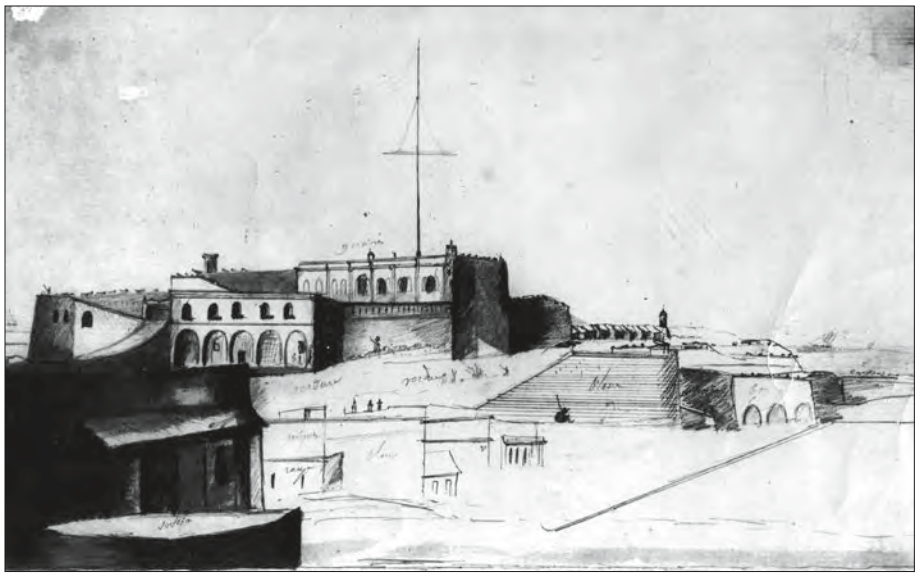


Figure 1.2: Drawing of Castillo San Cristóbal, c. 1821-1823 by French naturalist Auguste Plée. View is oriented toward the north. The San Cristóbal Outworks can be seen at image right, (Los dibujos puertorriqueños del naturalista francés Augusto Plée (1821-1823), Revista del Instituto de Cultura Puertorriqueña, Número 68/ JULIO-SEPTIEMBRE 1975, San Juan NHS Collection).

Juan's historic fortresses (Figure 1.2*)*. San Cristóbal's purpose was to defend the approach from the land to the east, and was tested in 1797 when the British unsuccessfully attacked the city. One-hundred years later, Spanish troops fired on U.S. warships from one of San Cristóbal's north-facing gun batteries.

San Cristóbal assumed its present configuration after 1765 when Chief Engineer Thomas O'Daly began work that would make the fortress the backbone of an improved and enlarged defense system for San Juan defending against the approach over land. O'Daly's project was completed 20 years later by Juan Francisco Mestre, in time to repel the British invasion of 1797. By that time, San Cristóbal had evolved into a network of interdependent fortifications covering about 27 acres of land. These fortifications are preserved as an excellent example of the "defense-in-depth" principle, where each component of a fortress is supported by a system including one or more other components.

Following the expression of the Monroe Doctrine in 1823, Spain's colonies in Cuba and Puerto Rico were less exposed to threats from European powers, as it became understood that hostility toward remaining Spanish possessions would also attract a military response from the United States. In this environment of relative protection, trouble instead came from within. As early as 1855, artilleryman at San Cristóbal, protesting an extension to their military service, mutinied and turned their guns to face the city, and in 1868, a revolutionary spirit against Spanish political and economic rule began to foment, centered in western Puerto Rico. Spain's feeble hold over its colonies was growing ever weaker when A.T. Mahan published *The Influence of Seapower Upon History* in 1890. At that time, the French had been busily at work constructing a canal through the Central American isthmus for ten years. Mahan's book, eagerly read by both William McKinley and Theodore Roosevelt, argued that, "… the United States will have to obtain in the Caribbean stations fit for contingent, or secondary, bases of operations; which

by their natural advantages, susceptibility of defense, and nearness to the central strategic issue [the canal], will enable her fleets to remain as near the scene as any opponent."[2] As Mahan explained it, with the advent of a transoceanic canal on the horizon, the United States military domination over the Caribbean basin was vital to national interests, and his book, published eight years prior to the war with Spain, predicted the conflict with "mathematical certainty."[3]

Aware of its vulnerabilities even prior to the publication of Mahan's book, the Spanish military made plans to modernize San Juan's harbor defenses in response to technological improvements in naval gunnery that made masonry coastal fortifications obsolete. In 1888, plans were prepared for emplacing a 30.5 cm (12 inch) German-made breech loading rifle at the eastern La Princesa outwork of San Cristóbal, although it is unclear if these plans were carried out (Figure 1.3). By 1897, two modern Ordoñez 15 cm (5.9 inch) breech-loading rifled guns were emplaced in a refurbished battery named for Saint Teresa, facing north toward the ocean. These were accompanied to the immediate east by four modern seacoast rifles mounted at the La Princesa Battery.

The modernization of the Santa Teresa and La Princesa batteries in 1897 coincided with the implementation of a new urban plan for San Juan that had been under development since 1881.[4] Between 1855 and 1880, the population of the walled city had doubled, resulting in extremely close living among the city's inhabitants. The proposed expansion of the city eastward into the outlying Puerta de Tierra district required the demolition of portions of the walls and fortifications encircling the city (Figure 1.4). Reluctance on the part of military authorities delayed the city's expansion until just before the Spanish-American War, when approval was given to demolish the Santiago Bastion, which served as the gate into San Juan from the land (Figures 1.5 and 1.6) [5]

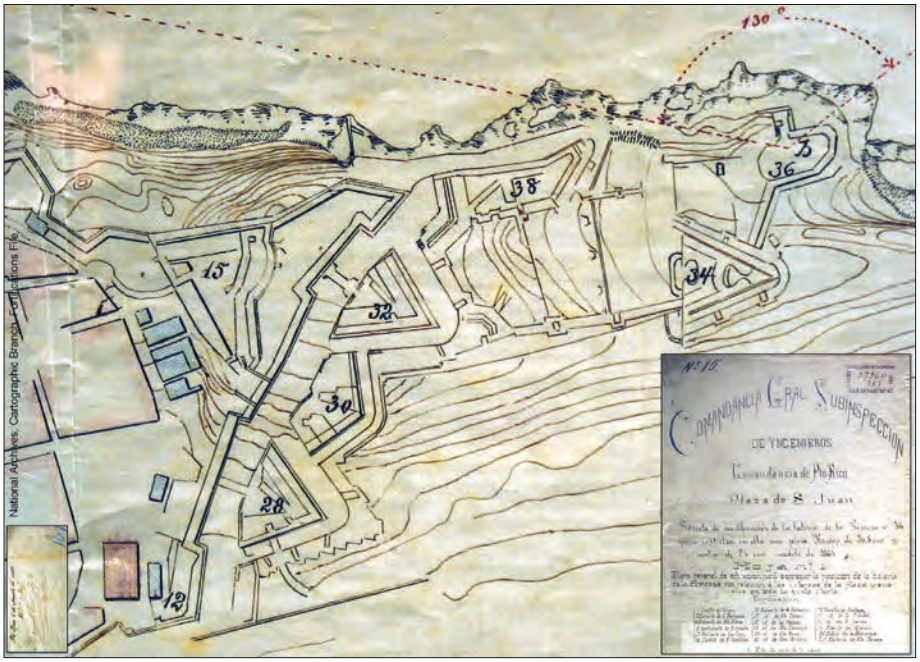


Figure 1.3: Detail, Spanish plan for modernizing armaments, c. 1897. "15," marks the central Castillo of San Cristóbal; "28" marks the Santiago Bastion and Gate (demolished in 1897); "30" marks the La Trinidad Counterguard (partially demolished in 1897); "32" marks the San Carlos Ravelin; "38" marks the Santa Teresa battery; "36" marks the La Princesa battery, and "34" marks the El Abanico Fort. Two slender lines bisecting the Outworks parcel are the Spanish 1st and 2nd Retirada, or retreat lines, (National Archives II, Cartographic Branch, Fortification File).

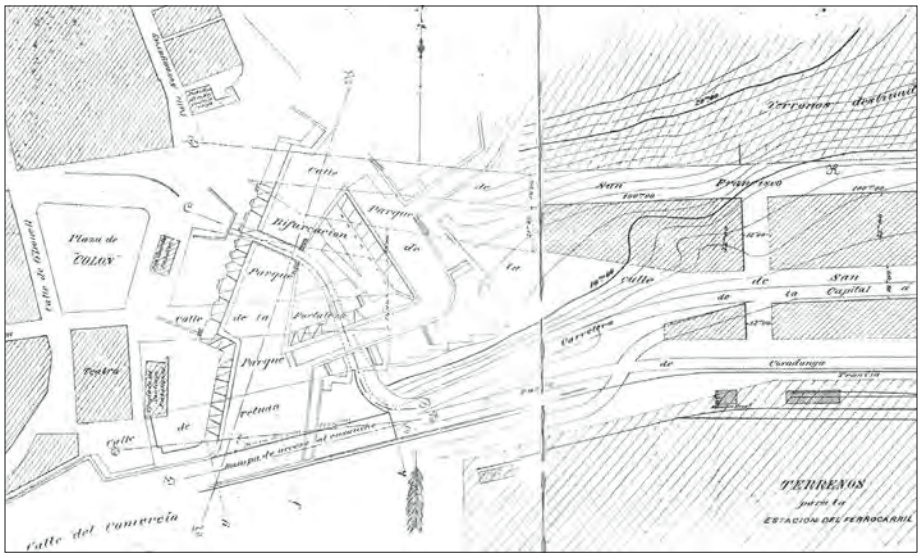


Figure 1.4: Detail from 1897 demolition plan to allow the city to expand eastward requiring the demolition of portions of walls and fortifications surrounding the city, (San Juan NHS Collection).

During June and early July of 1898, the Spanish-American War was well underway; the United States had already destroyed the Spanish fleet lying in Cuban waters and U.S. ground forces had prompted the evacuation of Spanish forces from Cuba. The United States Navy had tested San Juan's defenses earlier that May with a four-hour long bombardment. With victory certain in Cuba, President McKinley further demanded the transfer of Puerto Rico to the United States without compensation. On July 25, 1898, General Nelson A. Miles and 15,000 United States troops landed on the town of Guánica on the southwest coast of Puerto Rico. However, on August 13th, before United States ground forces could reach San Juan, an armistice was agreed upon, ending the brief hostilities. The Treaty of Paris was signed on December 10, 1898, giving the United States control over Spain's former military reservations and also 120,000 acres of land owned by the Spanish government in Puerto Rico. This included Castillo San Cristóbal, and its extensive outworks.

Although rating the design and quality of the Spanish defenses below those found in the continental United States constructed during the so-called Endicott Era



Figure 1.5: Santiago Gate, c. 1890s, demolished in 1897. Of interest is the proportions and design of the fencing near the gate, and serving as a handrail for the stairs at right. Note condition of the stucco coating on the masonry walls, (San Juan NHS Collection).



Figure 1.6: Demolition of Santiago Bastion, 1897. The demolition of this portion of the walls surrounding San Juan permitted the expansion of the city eastward, (San Juan NHS Collection).

of coastal defenses under construction during the late 19th century, the Army was slow to rearm the ancient Spanish fortifications, and did not turn over the armaments to the Spanish as provided for in the 1898 treaty until 1904. Following World War I, San Juan ceased to be an active Coast Artillery post, having no seacoast guns mounted or operational. Militarily, the United States Navy valued San Juan for its protected harbor, offering a safe refuge and fueling station for warships guarding the approach to the Panama Canal. Naval vessels anchored in San Juan's harbor typically carried more powerful and modern weaponry than the Army could hope to mount in its peacetime status. The improved range and destructive power of modern weapons even called into question the wisdom of placing new guns inside the urban limits of San Juan. The primary mission for the Army's San Juan post during the inter-war period was the induction and training of native Puerto Rican infantry troops. Annual post inspection reports during the 1920s regularly complained of the poor quality of housing provided to the officer's corps and endorsements of those reports lobbied for building additional barracks and quarters. While the military leadership of the Army's Department of the East had long been appreciative of the high aesthetic expression of military architecture and depth of history reflected in the Spanish fortifications, as the 20th century matured the historic structures became less central to the mission and their upkeep as artifacts grew financially demanding. After nearly thirty years of discussing improved officers' quarters, ten new residences were completed in 1931 within the area circumscribed by San Cristóbal's Outworks (Figure 1.7). In preparation for the construction of the new officers' quarters, dynamite was liberally used to demolish the 1st and 2nd Spanish "Retirada," the fortified masonry and countermined ditches designed to shelter troops in the event of a retreat from the El Abanico and La Princesa outworks.

In spite of the maintenance burden imposed by the obsolete Spanish fortifications, the Army was reluctant to transfer their real estate to civilian control when



Figure 1.7: Photograph of the La Princessa [sic] Housing Area, 1931. This project required demolition of the 1st and 2nd "Retirada" lines of retreat, present when the United States acquired the property in 1898. This housing was demolished in 1980, (National Archives RG77 Office of the Chief of Engineers. Construction Completion Reports, 1917-1943, Entry 393 Box 276).

it was suggested in 1934 as part of President Franklin Roosevelt's Depression-Era economic relief measures. By 1939 there was even less enthusiasm for the land transfer as the Army's covert plans for rearming Puerto Rico's coastal defenses began to cross in the mail with National Park Service correspondence directing the ways and means of preserving the crumbling walls.

In designing new coastal defenses prior to the United States involvement in World War II, the larger of the permanent gun emplacements were moved west and east of San Juan's harbor entrance, taking advantage of the extended range of modern weapons (Figure 1.8). This was done in part to protect the civilian inhabitants of the city from the effects of a naval or aerial bombardment, but also because new gun emplacements could be more easily concealed outside of the historic masonry fortification, which would have only drawn attention to the gun positions from aerial reconnaissance. Nevertheless, owing to its relative concealment due to its distance from the citadel of San Cristóbal, the former Spanish "La Princesa" battery was rearmed during World War II with four new 155 mm (6.1 -inch) guns mounted within temporary sandbag filled emplacements. Greater protection was designed into the new concrete and steel Joint Operations Center built in San Cristóbal's dry moat, protecting leadership and communications directing the combined operations of Fort Brooke, the post of San Juan's new wartime designation as part of the Headquarters facilities for the United States Army's Antilles Command.

During World War II, repairs and preservation to historic stone masonry were understandably deferred to the global war effort. However, with the arrival of Allied victory in 1945, historic preservation and discussion regarding the transfer of the fortifications to the National Park Service began anew. On February 14, 1949, San Juan National Historic Site was officially designated. The details of the agreement leading the establishment of the national historic site provided that the National Park Service provide visitor services, interpretive and preservation planning, and

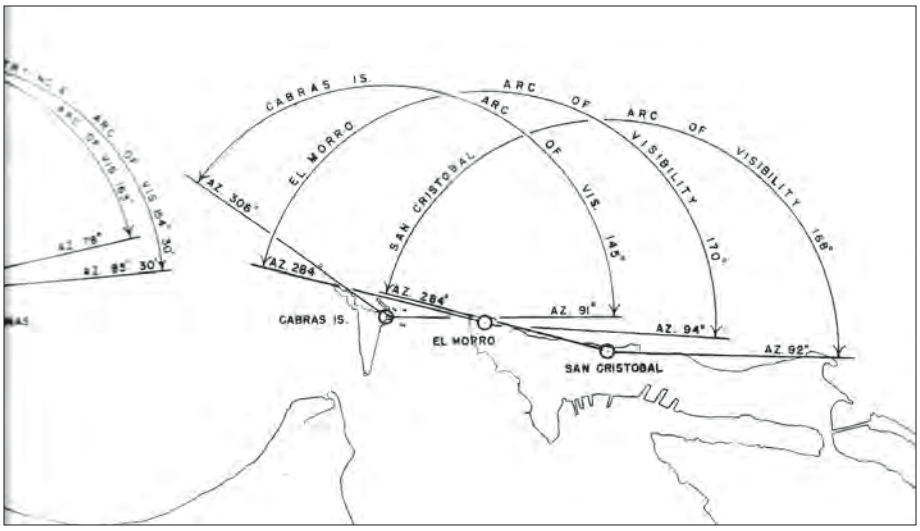


Figure 1.8: Field of Fire Diagram, General Plan of Harbor Defenses of San Juan, Puerto Rico, 26 December 1941. During World War II, a battery of 155mm coastal artillery emplaced at the La Princesa battery, was an important component of San Juan's coastal and harbor defenses, (National Archives II, College Park MD).

the Army providing for maintenance and repairs. The outbreak of war on the Korean peninsula must have further frustrated National Park Service efforts to effect protection and preservation of the historic fortifications.

Following the Korean armistice of 1953, and appreciating the rapidly failing structural conditions of the historic walls, the Army had reconciled its future mission in Puerto Rico as being elsewhere. In 1955, the Spanish fortifications were declared in excess of the Army's needs. The action of the surf at the base of many sections of wall was dangerously undercutting the foundations, and the Army leadership was aware that costly repairs would soon be necessary in order to prevent widespread collapse of the walls. Still, the Army made a piecemeal withdrawal from San Juan. Divesting itself of maintenance liability by transferring the deteriorating fortifications into the care of the National Park Service and the local Puerto Rican government, the Army continued to prescribe visiting hours for the San Juan National Historic Site, requiring the public to cross the Army-controlled El Morro Esplanade, with visitors gaining access via Army checkpoints.

In 1963, funding equivalent to 2.93 million dollars (adjusted for inflation) was obtained through President Kennedy's Accelerated Public Works Program (APW), employing as many as 878 men on San Juan's walls and fortifications that were managed by the National Park Service. This work, hiring day labor in order to promote economic relief, focused on general cleanup, and unskilled and semi-skilled maintenance and repairs (Figure 1.9). The APW program of the early 1960s did little to address the serious engineering issues relating to the foundations of walls. Furthermore, the removal of debris from the San Cristóbal Outworks parcel apparently helped make the area attractive to illegal activities. As early as 1964, despite the continued presence of active military housing quite nearby, National Park Service management reports cite the use of the La Princesa and El Abanico outworks as discrete hiding places for illicit activities.

In 1966, the National Park Service received yet more Army real estate and nearly complete control over access to the fortresses and surrounding landscape. Yet it was not until 1973 that the five acre La Princesa housing area within the San Cristóbal Outworks was transferred to the National Park Service. Prior to the 1973 transfer of the La Princesa housing area, the San Cristóbal Outworks remained closed to the public, with tours offered only on appointment or by special arrangement. In 1980, following the demolition of the ten officers' quarters that were constructed there nearly sixty years earlier, San Cristóbal's Outworks were briefly left open to the public. During the months between 1980 and 1981, the discovery of graffiti, vandalism and continued use of the area for unsavory activities caused the National Park Service to reestablish a perimeter fence and post a guard inside, effectively closing San Cristóbal's Outworks to the public.

The 1984 General Management Plan and Environmental Assessment rejected the idea that San Cristóbal and its Outworks should be restored to evoke an earlier period, calling for the property to be preserved in its existing (post World War II) form. Ironically, the National Park Service had only recently razed the La Princesa officers' housing development that was clearly part of the World War II setting. Nevertheless, pursuing a preservation approach toward all things unrelated to the officer housing, would allow the park to offer interpretive opportunities explaining how the system of fortifications at San Cristóbal was designed in horizontal and vertical layers to defend the eastern land approach. The GMP planning team's proposals for the San Cristóbal Outworks were hopeful, declaring that the parcel would be open to the public in 1984. Access was to be via a shuttle bus routed around to all of the interpretive attractions of San Juan National Historic Site, dropping off and picking up visitors to the Outworks at the south-eastern El Abanico gate. Recognizing the inherent danger of the sheer northern ocean-front escarpment, the plan was for the oceanfront La Princesa and Saint Teresa batteries to remain closed to visitors, with interpretation of these northern batteries offered



Figure 1.9: The El Abanico Fort, San Cristóbal Outworks in 1963. The Accelerated Public Works (APW) program of 1963 directed over $400,000 to the repair of San Juan's historic fortifications. This was the first maintenance accomplished since 1939, and the first directed by the National Park Service, (San Juan NHS Collection, 4095).

from a distance, from behind a fence or otherwise from the redan (north covered way) of the San Carlos Ravelin. Planners hoped that visitors would explore the Outworks parcel and its features on the improved footing of a paved accessibility trail designed to have stopping places at interpretive waysides furnished with weatherproof graphic panels, and served by restroom retrofitted into the El Abanico guardhouse. The 1984 General Management Plan remained silent as how the features of the Outworks, including the 1st and 2nd Retirada, traverses, covered ways and gun emplacements present 1898 at the time of acquisition by the United State Army and subsequently destroyed in 1930, would be interpreted or otherwise explained to visitors. Since the planning effort of 1984 much has been accomplished. The El Abanico guardhouse was retrofitted for use as a comfort station, wayside exhibits were installed, and asphalt pavement that comprised the road serving the La Princesa officers' quarters was removed. The San Cristóbal Outworks were opened to the public in 2009 (Figure 1.10).

OVERVIEW OF PROJECT FINDINGS

The San Cristóbal Outworks parcel is an important component of an internationally significant system of colonial fortifications. These outlying fortifications well illustrate the Spanish application of "defense in depth," surviving in a greater state of preservation and being more visible than many surviving works within San Juan's highly commercialized Puerta de Tierra district. The recommendations presented in this report have been developed for consistency with the park's rigorous preservation standards and resource management objectives.

The San Cristóbal Outworks lay along the formal and ceremonial approach into Old San Juan. Its neoclassical neighbors lining the south side of Avenida Munoz Rivera are listed on the National Register of Historic Places and include the Casa



Figure 1.10: San Cristóbal Outworks, looking east from the La Princesa battery, 2004. Following the demolition of officers' housing in this area in 1980, public access has been limited, (OCLP).

de España (1914), the Carnegie Library (1916), YMCA (1913), Escuela de Medicina Tropical (1920), Ateno Puertorriqueño (1923), and the insular Capitolio (1929). The historic fortress is arrayed in composition with these remarkable buildings to grand effect, serving as the civic gateway into Old San Juan. Yet this effect is diminished by the continued presence of utilitarian security fencing originating with the 1930s construction of officer's quarters removed more than thirty years ago. Presenting a decidedly unwelcoming appearance, the existing security fencing also physically isolates this scarce parcel of open space from visitors and residents of the city. Recognizing and respecting the ongoing history of security concerns at this location, this report recommends a careful redesign and reconfiguration of both security fencing and pedestrian safety barriers in order to accommodate public visitation and to establish stronger connections with the City of San Juan.

The San Cristóbal Outworks is an outdoor space tremendously useful to the park's masonry preservation program. Like the historic resources which they serve, the scope of the masonry program is correspondingly large, requiring generous outdoor work and storage space. Stockpiles of stone, sand, hardware, storage for tools and equipment are well suited and compatible with the historic character of the property. It is difficult to conceive of an alternative location within park boundaries better suited to support this important effort. Yet the Outworks parcel has accommodated the requirements of the masonry program over time, evolving in response to circumstances, without the benefit of an overarching plan. This report has identified opportunities whereby storage infrastructure and masonry supplies may be reconfigured for greater visual appeal, and to even help educate and interpret the site to park visitors.

Construction of the La Princesa officer's housing development in 1931 greatly destroyed the 1st and 2nd Retirada defensive lines bisecting the Outworks parcel. The demolition of the housing development in 1980 likely caused additional damage to subsurface features. However there has not been sufficient archeological investigation to know if any fragments of these historical features survive below grade. With the improvement of non-destructive geophysical testing technologies, answering this question may have become both possible and cost-effective. Until such investigations have been completed, this report presents landscape treatment measures designed so that soil disturbance is limited to the top 12 inches of the existing surface so as to preserve archeological resources.

ENDNOTES

1. Robert Page, Cathy Gilbert, and Susan Dolan, *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*, National Park Service, Park Historic Structures and Cultural Landscapes Program (Washington, D.C.: U.S. Government Printing Office, 1998):3.

2. A. T. Mahan, *The Influence of Seapower Upon History, 1660-1783*, American Century Series (New York: Hill and Wang,) 30.

3. Ibid

4. Anibal Sepúlveda-Rivera, "San Juan de Puerto Rico: Growth of a Caribbean Capital City," Ph.D. dissertation, (Cornell University, January 1986) 341.

5. "Plan de Ensanche de San Juan de Puerto Rico," September 19, 1897, as reproduced in Supulveda-Rivera, p 348.

2. SITE HISTORY

War planning against Spain had been in development for four years when Lt. Henry H. Whitney of the United States Army's Fourth Artillery was sent to Puerto Rico as a spy.[1] On February 15, 1898 the United States battleship *Maine* mysteriously exploded inside the harbor at Havana and conveniently escalated the conflict between the two nations. On April 21, President McKinley asked Congress to declare war, and soon thereafter Whitney embarked for San Juan, posing as a crew member of a merchant ship. Much of what Whitney learned during his visit was forwarded to his superiors and was probably included in "Military Notes on Puerto Rico," prepared in 1898 for the Adjutant-General's Office.

> Northeast of the city is the well-constructed castle of San Cristóbal, facing the ocean. It defends the city on the land side, occupying the whole width of the islet from the bay to the outer sea, pointing its fire in all directions. Its structure is accommodated to the nature of the ground, which is uneven, sloping from the northern or outer sea part to the bay. On the highest part of the hill is the ramp, through which the castle is entered. It has two large bombproof barracks and everything necessary in the way of office and storeroom. Upon these barracks is erected the Caballero Fort, with 22 cannon, whose fire dominates the city and its vicinity, on land and sea. Below the castle is the drill ground, with batteries directed toward the sea, the land, and the drawbridge of the interior fosse… The construction of these fortifications [of San Juan] was begun in 1630 and they were finished about 1641, but not until 1771 were the San Cristóbal Castle and the outworks built. These later consist of a redan resting on the highest part of the glacis of San Cristóbal and called Fort Abanico (fan), on account of having this form. Between the town and the San Antonio Bridge are three advanced lines…San Juan is a perfect specimen of a walled town, with portcullis, moat, gates, and battlements. The wall surrounding this town is defended by several batteries. Facing the harbor are those of San Fernando, Santa Catalina, and Santa Toribio. Looking toward the land side is Fort Abanico, and toward the ocean the batteries of San Antonio, San Jose, and Santa Teresa, and Fort Princesa. The land part has two ditches, or cuts, which are easy to inundate… Built over two hundred and fifty years ago, the city is still in good condition and repair. The walls are picturesque, and represent a stupendous work and cost in themselves.[2]

Upon a map accompanying the publication, a "New Battery" was identified as an outwork to Castillo San Cristóbal, and this would be a valuable piece of intelligence. A newly constructed battery would surely be understood to feature modern armaments posing more of a danger to hostile warships (Figure 2.1). On May 12, 1898 San Juan was bombarded for a period of four hours by a fleet of the United States Navy, and on July 25th the United States Army landed in Guanica to the south intending to march over land toward San Juan. However, the United

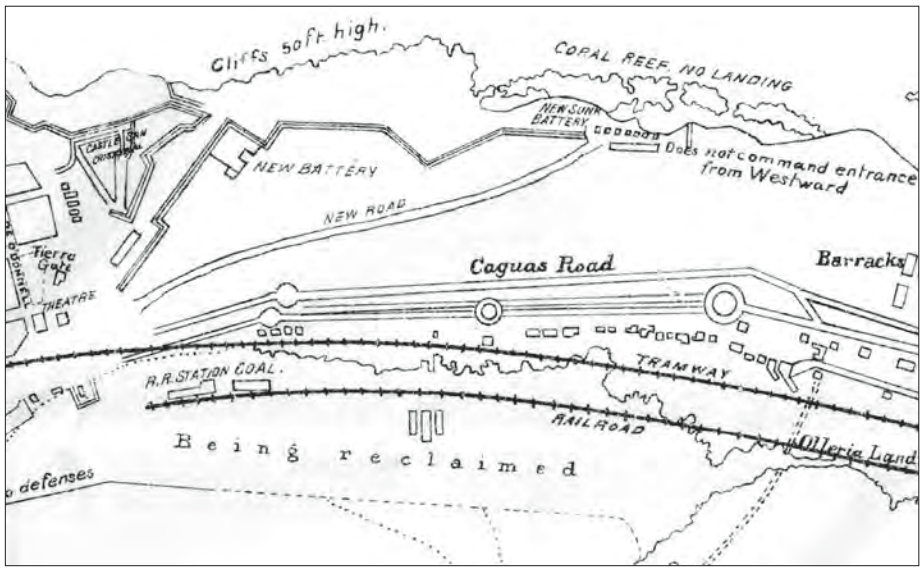


Figure 2.1: Detail from Map of San Juan, "Military Notes on Puerto Rico," War Department, Adjutant General's Office, Military Information Division, 1898. This map accompanied an intelligence report on Puerto Rico's defenses. The Santa Teresa battery and the La Princesa battery, were updated by the Spanish in 1897 prior to war with the United States. These two batteries were diagramed on this map as "New Battery," of interest as their modern armaments potentially threatened U.S. warships, (Library of Congress Call No. F1961.U58).

States military was never required to test the formidable works guarding the land approach to San Juan. As the soldiers marched, the French company struggling to build the Panama Canal offered itself for sale to the United States. An armistice with Spain was reached within weeks, with Spanish and United States commissions meeting in San Juan on September 9th to work out preliminary details for a treaty. The United States control of the Caribbean basin was accomplished.

San Juan's fortifications were ceded to United States military authorities on October 18th. That morning, cannon inside El Morro, and San Cristóbal, together with United States warships off-shore, fired a forty-five gun salute to the United States flag, raised above the ancient La Fortaleza.[3] The subsequent "Treaty of Paris" signed in the French capital on December 10, 1898 formally ceded Spanish control of the island of Puerto Rico, along with Cuba, Guam and the Philippines to the United States.

When United States Army commanders made their first inspection of San Juan's fortifications that fall, they were able to obtain copies of Spanish drawings of the system of fortifications. Complaining of the brevity of their three-day tour of San Juan's forts by a member of the Spanish Engineering Corps, they expressed surprise at learning that the city's defenses had not been in the least weakened by the May 12th bombardment. In the report describing his inspection, Captain George W. Goethals of the Corps of Engineers listed San Cristóbal's Outworks batteries of Santa Teresa and the La Princesa together under the same heading, describing them as "two modern sea coast defenses," with Santa Teresa armed with two 15 cm Ordoñez rifles, and La Princesa with two 24 cm Ordoñez Howitzers and two 15 cm Ordoñez rifles. The Santa Teresa and the La Princesa batteries were considered together as the "New Battery" earlier identified by United State military intelligence. The rifles in both cases being mounted on front pintle carriages, and the batteries otherwise "equipped with magazines, bombproof and all necessary con-



Figure 2.2: View of San Cristóbal Outworks area c. 1896, looking eastward from central San Cristóbal Castillo, overlooking the San Carlos Ravelin in the middle ground at right and El Abanico at left. The Spanish 1st and 2nd Retirada, or retreat lines, are in view indicating the presence of these landscape features including their associated landforms at the time of the 1898 Spanish-American War, (San Juan NHS Collection, 2897).

veniences for the garrison."[4] El Abanico, as well as the La Trinidad Counterguard, having no guns mounted, escaped mention in the report of Goethals inspection (Figure 2.2). In discussion of Santa Teresa, mention is made of the year 1897 being cast into the concrete south face of the battery, linking this construction to a larger program of Spanish improvements to coastal defenses within the San Cristóbal Castillo and throughout San Juan as the Spanish had prepared for war.

Even before the formal transfer of authority, the United States Army began to plan its own program of improvements to San Juan's system of coastal and harbor defenses. This was necessary because, as provided for in the treaty with Spain, the arms within the forts remained the property of the Spanish government and their return or compensation was required. However, the first serious study towards rearming Puerto Rico's coastal defenses began when Brigadier General John M. Wilson, the Chief of Engineers for the U.S. Army, ordered Captain H. F. Hodges to conduct research and field investigation toward designing a project for improvements. Captain Hodges' lengthy report, describing the entire Spanish seacoast defenses of Puerto Rico, are said to go into great detail describing the existing works of San Juan, accompanied with numerous drawings and photographs. This valuable document would be extremely valuable in documenting the San Juan fortifications at the time of their transfer to the United States; however a copy has yet to be located.[5]

Nevertheless, because General Wilson wrote a lengthy endorsement of Hodges report upon the correspondence wrapper outlining the proposal, it is understood that the Army deemed the defense of the entire Puerto Rican coastline impractical, despite there being many locations, such as Guanica, where a hostile landing could certainly be accomplished. Hodges' proposal, as approved by Wilson, was to rather focus resources on the defense of San Juan owing to its tactical value as the finest and most sheltered harbor on Puerto Rico, outlining a $1,000,000

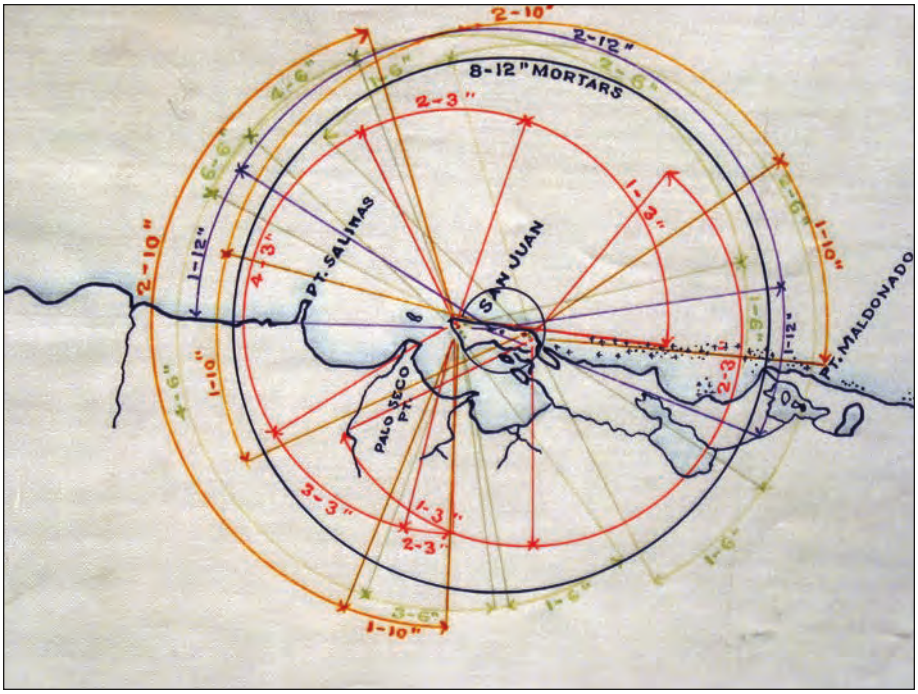


Figure 2.3: **Field of fire diagram for ambitious 1899 plan of defenses prepared by Captain H. F. Hodges. Soon after the United States acquired Puerto Rico, a $1,000,000 program of defenses was planned for San Juan as the new territory's principal harbor. Appropriations for the program were never granted, (National Archives II, Cartographic Branch, Fortifications File, Dr.107, Sht. 3-36).**

program*($27.6M in 2015 dollars)* for new artillery and submarine mine defenses (Figure 2.3). Arranging for such a sum of money through a Congressional appropriation is a lengthy and involved process, and before such generous funding could be secured, Hodges' highest priority for quick improvements to the defensive system centered on mounting a battery of light rapid-fire guns - to cover the

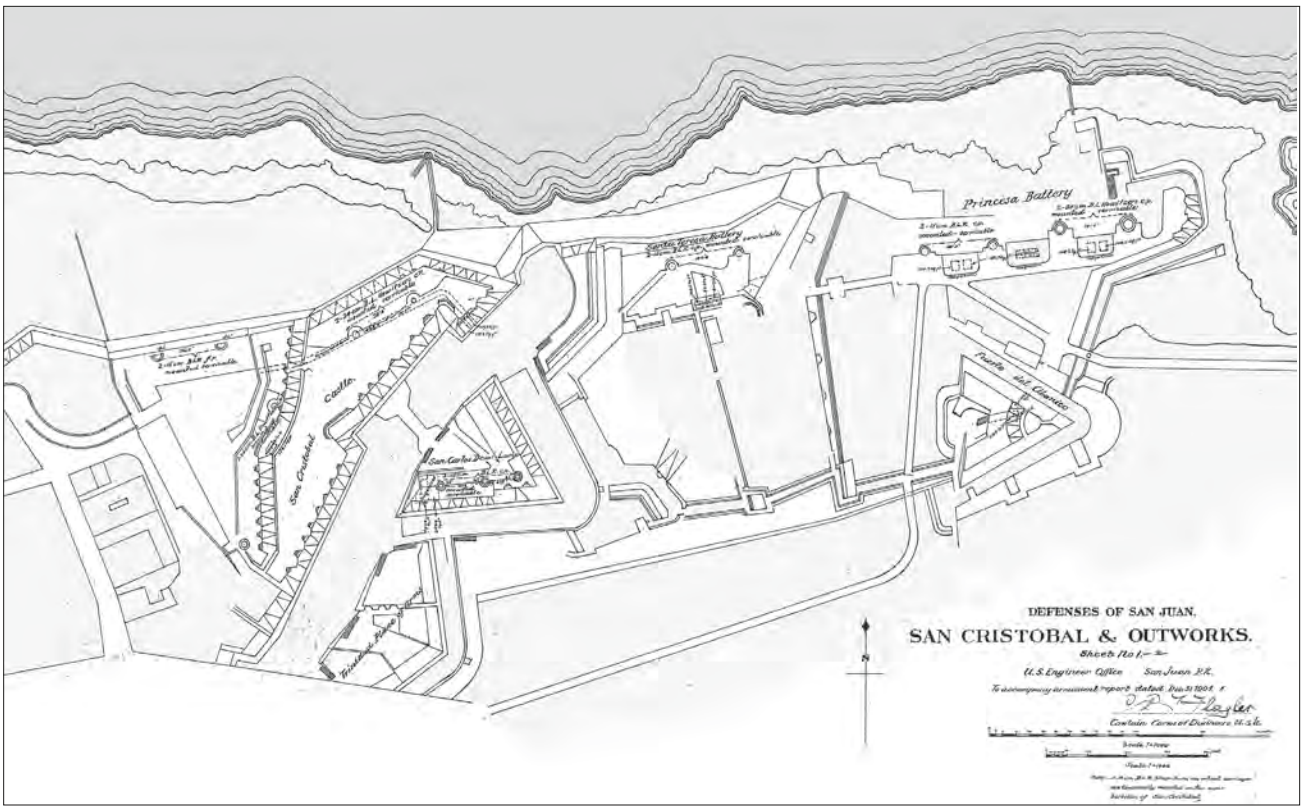


Figure 2.4: Detail of the 1901 Flagler Plan for San Cristóbal & Outworks, (National Archives II, Cartographic Branch, Fortifications File).

vulnerable land approach to the east. General Wilson suggested funds for such a rapid-fire battery could be diverted from funds appropriated for the preservation and repair of San Juan's fortifications, judging that repairs to damaged fortifications resulting from the 1898 bombardment "served no useful purpose."[6]

During this time period, General Wilson was also being briefed by Captain Flagler, also with the Corps of Engineers, Department of the East, bearing responsibility for the San Juan fortifications. Captain Flagler's armament report dated December 31, 1901 was accompanied by an excellent and detailed drawing of "San Cristóbal & Outworks" (Figure 2.4). In correspondence, Flagler routinely outlined the maintenance and repairs needed for San Juan's fortifications, including repair and replacement of hardware, and woodwork, patching and whitewashing of masonry surfaces, and the construction of a barbed wire fence at San Cristóbal to exclude squatters and those dumping garbage. Elsewhere, west of San Cristóbal and immediately south of El Morro, Flagler judged that the expense of repairing the curtain wall between the Santa Elena and San Agustin Bastions was unjustified, and that the wall be permitted to fall.[7]

Others in the Army leadership were more appreciative of the depth of military history and the art and science of engineering reflected in the Spanish fortifications. A thoughtless proposal to remove the counterscarp wall and embankment forming the dry moat on the south side of El Morro, and to use the resulting fill to regrade the Esplanade, elicited a passionate negative response from Department of the East headquarters on Governor's Island. In response to the proposal to deface San Juan's fortifications, both Brig. General Gillespie and Major General Arthur MacArthur wrote of their reverence for these historic military structures. General MacArthur, relating his recent experience in the Philippines, wrote of the particular value of the preserved fortifications in beautifying the city of San Juan [8]



Figure 2.5: **Detail of 1899 Hodges Plan for San Juan Defense Project. This plan proposed to locate a mortar battery emplacing eight mortars east of the San Carlos Ravelin. Doing so would use the existing masonry fortifications of San Cristóbal and the topography of its outworks as defensive cover for the new battery which would lob projectiles in a high vertical arc, (National Archives II, Cartographic Branch, Fortification File, Dr. 107) .**

From one particular drawing accompanying Captain Hodges' missing report, it is understood that the plan with reference to the San Cristóbal Outworks was to construct a mortar battery immediately east of the San Carlos Ravelin on government owned land (Figure 2.5). Such placement would allow the battery to lob projectiles in a high vertical arc, using rising topography and existing Spanish fortifications immediately to the north as cover. Further to the east, between the advanced glacis of El Abanico and the first line of defenses at El Escambrón, Hodges proposed a new battery of coastal artillery featuring emplacements for two breech-loading seacoast rifles on disappearing carriages. Judging by further endorsements on the wrapper bearing Hodges plan, the proposal was still being actively pursued with revisions, as late as 1902. However, following the initial draft of the 1899 plan, the Foraker Act was passed in April of 1900, establishing civilian government in Puerto Rico. With the military ceding a measure of control to civilian authorities, Captain Hodges' plan for an expanded system of fortifications soon came up against as yet unrealized 1897 plans to expand the city beyond its ancient walls.

Perhaps the implications of the passage of the Foraker Act caught the military leadership unprepared, because in November of 1900 the War Department, in accordance with instructions from the President, dispatched a commission of three Army officers and one Navy officer to report on those public lands required for the use of the military. The commission's report, following two weeks of deliberation included the provision that:

> I (a) That Cabras and Canuelo Islands in San Juan harbor and all lands and buildings on San Juan Island, belonging to the United States, indicated in blue on enclosure be retained by the War Department for military uses. (b) That all buildings, fortifications and other structures on any of these lands shall be retained by the War Department for military uses (e). That the following pieces of land and the buildings thereon are <u>not</u> required for military or naval purposes: 1). All the land on the Island of San Juan situated south and west of the Military Road from its origin in the city of San Juan to San Antonio Bridge, excepting the plat of same where are now situated the military ovens, but including the narrow strip of same east of the Military Road from the point where it passes through the first or eastern line of defense and the shore of Condado Bay east of Fort San Antonio, to and including the said fort. . .. 12). All the land lying north of the Military Road, from Cristóbal Colon Plaza in the city of San Juan, including the present quartermaster's corral and stables, bounded on the north and east by the land set aside for military uses as per recommendation (a), with right of removal of the temporary shops, sheds and stables erected on this land by the United States.[9]

The commission's report recognized the need for San Juan to expand beyond its walls, making favorable reference to the Spanish Royal Order of April 27, 1897 promoting urban expansion through demolition of the Santiago Bastion and Gate. Yet despite what appeared to be a thoughtful and civic-minded recom-

mendations on the part of the commission, the civilian officials of the new Puerto Rican government complained in earnest to the U.S. House of Representatives Committee on Insular Affairs at their April 12, 1902 meeting. The Puerto Rican Insular Government considered the commission's recommendations less than generous, reserving lands south and east of the Castillo San Cristóbal Outworks that frustrated the city's plans for expansion. The delegation of local officials to Washington, D.C. contended that at least a portion of lands retained for military use north of the military road, had earlier been ceded to local control by the Spanish government in 1897, when the Santiago Bastion was demolished to permit the expansion of the city. The civilian government argued that since these disputed lands in question were no longer Crown Land in 1898 when Puerto Rico was acquired by the United States, that these parcels were not subject to transfer to the United States under provisions of the 1898 Treaty of Paris. Mr. W. H. Elliott, Commissioner of the Interior for Puerto Rico, related that Andrew Carnagie had offered $100,000 for the construction of a library, and that there was no vacant land on which to build it other than the disputed area south of the San Cristóbal Outworks. Mr. Elliott further expressed the pressing need for an adequate site for a capitol building hosting the political work of the new territory.[10]

Less than three months after the meeting in Washington, D.C. with the delegation of Insular Government officials, an Act of Congress was passed directing the President of the United States to establish definite boundaries to the military reservation at San Juan. On February 16, 1903, the Legislative Assembly of Puerto Rico authorized the Governor to release, or quit, any claim to lands within a negotiated boundary of the San Juan military reservation. These more constrained boundaries were subsequently established by President Theodore Roosevelt's Executive Order of June 30, 1903.[11]

The lengthy report of 1900 to the Secretary of War recommending the military relinquishment of lands south of San Cristóbal Outworks to the Insular Government offers additional insight beyond the disposition of under-utilized real estate. The commission of officers considered their purpose very carefully, and their commentary accompanying their recommendations is in understanding the larger role of the post at San Juan given the increasingly expansionist posture of the United States. It should be remembered that the time of the commission's report, Oklahoma, Arizona, and New Mexico were not yet States.

> Regarding the military situation generally, the board remarks that it seems to be certain that for some years a considerable force must be maintained in Porto Rico. The Island has just been released from arbitrary control, and while measures have been initiated for the establishment of a government that offers a very large extension of local self-control, yet the people are unused to the exercise of local autonomy. The development and building of a State with the materials here found must be slow, and the continued presence of troops will greatly aid the inhabitants here in coalescing and developing into a government

> of and by the people as the troops have aided our own people in accomplishing the same result throughout the vast region west of the Mississippi River, and are now aiding the people in Alaska in the same direction… To now withdraw the troops would, it is feared, encourage the lawless and retard industrial and social development…

In anticipation of the return or purchase of Spanish armaments stipulated in the 1898 Treaty of Paris, several proposals were put forward as to the best way to modernize San Juan's seacoast and harbor defenses. The most original proposal submitted came from 2nd Lieutenant J. S. Oakes who, out of concern for life and property in Old San Juan in the event of a naval bombardment, recommended the outright abandonment of fortifications in San Juan, and construction of modern fortifications mounting powerful guns to the east at El Escambrón and to the west at Punta Salinas.[12] Grand plans for an elaborate system of defenses for San Juan were almost certainly motivated by the German and British adventures off the coast of Venezuela in December of 1902 which nearly brought the United States into war over enforcement of the Monroe Doctrine.[13]

When the less generous reservation boundaries were established 1903, Hodges 1899 proposal to construct a mortar battery south-east of the San Carlos Ravelin fell out of consideration. There soon occurred an interesting transposition of relative power over the development of the city, when new Army proposals in 1903 for additional quarters in the area instead required the acquisition of additional lands from the Insular Government. Captain W. V. Judson of the Corps of Engineers commented on "Fort Cristóbal and its appurtenances" in a report just weeks prior to the President's 1903 Executive Order that definitively established the reservation boundary.

> The plot recommended for reservation includes an area contiguous to the Military Road, on the land side of the Fort, and protected from hostile fire by the ramparts thereof. This protected area is particularly useful for military

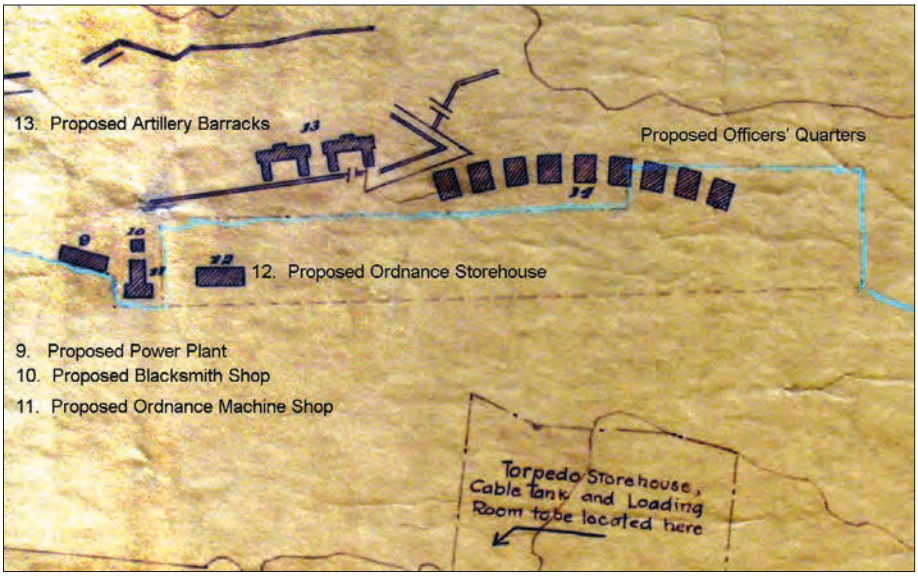


Figure 2.6: Detail of 1903 proposal for two artillery barracks immediately west of El Abanico, and an "officers' row" of nine dwellings on the El Abanico advanced glacis. This proposal required the purchase of lands from the Insular Government that had only recently been transferred to local control. Detail of blueprint (reversed for legibility) bearing proposal of Judson to Adj. Gen. 1903, (National Archives II, Cartographic Branch, Fortifications File).

> purposes, and upon it may be located a central electric plant for illumination, search light and power purposes; an ordnance depot, and perhaps store-houses for other staff corps and departments. Within the outworks of the fort barracks may be constructed for several companies of coast artillery. To the east of the fort, upon the glacis is the most favorable location in San Juan for the construction of officers' quarters[14] (Figure 2.6).

Upon evaluation of the foreign arms, the United States elected to have the Spanish government sail to Puerto Rico and retrieve their equipment. The range of the Spanish guns was estimated to have been no greater than three miles. Such range would permit warships with more powerful weapons to lay beyond the reach of San Juan's old guns and freely bombard the city. On November 3, 1903, *The Washington Star* published a brief article entitled "Defense of San Juan: Plan for Principal Fortifications of Porto Rico." Reporting on the recommendations of a board of inquiry composed of Lieut. Colonel Livermore, Major Birnie, Major Reed and Captain Crabbs, the plan reported in the newspaper had apparently dismissed the earlier proposal made by 2nd Lieut. Oakes to abandon defensive sites in Old San Juan, favoring instead rearming both El Morro and San Cristóbal with modern heavy guns. The article reported that Castillo San Cristóbal was to be rearmed with four ten-inch and two twelve -inch breech-loading rifles, mounted on disappearing carriages. El Morro was to be rearmed with the same number and type of guns.[15]

For all the thought that went into their various reports over a period of five years, very little became of the plans to rearm San Juan's coastal and harbor defenses. Congressional appropriations for the expensive modernization project had not been funded. After Spain had reclaimed her guns in March of 1904, Coast Artillery troops were no longer needed on site, and its two companies of artillery troops were deployed elsewhere.[16] Since the Army's acquisition of the fortresses, besides the minor repairs and maintenance undertaken under Captain Flagler's supervision, the buildings, fortifications and landscape making up the military reservation remained largely as it was in 1898 under Spanish management (Figure 2.7).

THE ARMY'S GRADUAL DIVESTMENT

In 1904, the United States was more than agreeable to have Spain call and collect its obsolete weaponry. At the same time, two brothers in Ohio continued their experiments with powered flight that would soon make even the latest developments in coastal artillery obsolete. As Spain was preparing to reclaim its guns the United States acquired the assets of the French company that had been struggling to build an interoceanic canal through the Panamanian isthmus. The prospects of the Compagnie Nouvelle de Canal de Panama were controlled by its prospects for financial profits or losses; for the United States, profits were secondary. A nation

might easily justify the multimillion dollar investment in the Canal if its national interests and expansionist ambitions are at stake. The United States had earlier supported Panama's pursuit of independence from Colombia. With friendly United States warships anchored just offshore, in both the Atlantic and Pacific Oceans, the upstart province was emboldened, declaring itself independent on November 3, 1903. The United States eagerly entered into a mutually beneficial treaty with Panama, creating a "Canal Zone" as sovereign territory of the United States inside the new nation. With a lurch, the focus of political and military planning moved away from the Antilles and into Central America. Control of the waters in approach to the nascent Canal had been a primary objective compelling development of Naval and Army bases in Spain's former colonies since the publication of Mahan's *The Influence of Seapower Upon History* in 1890. With the United States now in control of the Canal itself, the role of military facilities in Cuba and Puerto Rico became less than primary, and more supportive of first line installations in the Canal Zone.

In the absence of an active corps of Coast Artillery, the mission of the Post at San Juan turned to the recruitment, induction and training of native Puerto Rican infantry troops that were rotated between service in Panama, and in the civil mission of maintaining civil order in Puerto Rico. Because of the constrained boundaries of the San Juan military reservation, much of this mission took place at its "sub-post" at Henry Barracks in Cayey (now the site of a campus of the University of Puerto Rico) and after 1923, Fort Miles (Buchanan).

The archival record detailing activities at the military reservation at San Juan reports little in the way of new developments or reconfiguration of the military facilities. The San Cristóbal Outworks landscape may be understood to have remained much the same as it was after its transfer from the Spanish. Rather than documenting programs of change, records instead focus on the increasing need for the repair and maintenance of the ancient works. An outbreak of bubonic plague in Puerto Rico, beginning about 1912, created a clamor that the military walls be made "rat-proof."[17] It was believed that the crumbling and porous masonry of the walls served as a haven for rodents.

Apparently, based on their deteriorating condition, an impression had taken hold among the citizens of San Juan that the Army had abandoned the city walls and outworks. Barbed wire fencing surrounding San Cristóbal's Outworks began to rust and fence posts rotted away and was eventually replaced using the fatigue labor of the Puerto Rican Regiment.[18] But landscape conditions inside the fence had declined to such a point by 1908 that a local man unsuccessfully appealed to Secretary of War William Howard Taft to lease the "abandoned" La Princesa battery from the government, claiming that it had become overgrown with weeds and vines, and subsequently vandalized.[19] One thing is fairly certain, that the barbed wire fence did not prevent the gentleman from inspecting the battery. Help-



Cultural Landscape Report

San Cristóbal Outworks
San Juan National Historic Site
San Juan, Puerto Rico

Period Plan c. 1903

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. As-built plan, 1949
2. Orthographic Photo, 2004
3. Positions of Modern Batteries Sketch, 1899
4. Defences of San Juan, San Cristobal & Outworks, 1901

DRAWN BY

Alexandra von Bieberstein, AutoCAD 2013 & Illustrator CS5

LEGEND

- National Historic Site Boundary
- Canopy Vegetation
- Beach
- Turf
- Building
- Paved Surface
- Fortification

NOTES

1. Projection: UTM Zone 19N, NAD 83, International Feet
2. All features shown in approximate scale and location
3. Context shown for illustrative purposes only

0′ 35′ 70′ 140′

Drawing 2.1

ing to establish the dire need for repairs, that same year, the post Quartermaster proposed a $1,598 program *($40K in 2015 dollars*) to rehabilitate quarters at El Morro and San Cristóbal only to have $97 of his request (*$2.4K in 2015 dollars*), approved. Operating with such austerity in the care of buildings actually housing troops, it is reasonable to surmise that the Army extended significantly less resources to the crumbling city walls and outlying unused parcels such as San Cristóbal's Outworks. Allegations of abandonment on the part of the Army were reasonable.

Entering the second decade of the 20th century, the Army appears to have lost a measure of interest in San Juan and its fortifications. Public outcry that the Army make the walls rat-proof following the outbreak of plague were denied, and the request only served to raise the question as to the military value of the walls in the first place. Of especially questionable value to the Army was the north facing seawall between the Santo Domingo Bastion and Castillo San Cristóbal, which was said to have, "no value whatever for military purposes, but serves only as a retaining wall for the land on the north side of the city."[20] In response to the city's plea that the Army look after the sanitation of the failing walls, the Army responded by considering the possibility of turning the most troublesome walls, and the walls of questionable military value to the Insular Government. Such a move could be justified under a 1910 Act of Congress directing the President to convey to Puerto Rico lands and buildings reserved earlier in 1902 that were no longer needed by the federal government.

Different branches of the Army could not agree on the transfer. The Commander of the San Juan Post was interested in ridding himself of the maintenance burden, but the Office of the Chief of Engineers in New York City, bearing responsibility for nationwide coastal fortifications, would not concur with the transfer. After considering the question for over one year, outright transfer to Puerto Rico was dismissed in 1914 in favor of closer cooperation with Insular authorities on their



Figure 2.7: Detail view of central San Cristóbal Castillo taken from near the former site of Santiago bastion, 1898. While not a view of the San Cristóbal Outworks, note the picket fence supported between masonry piers at the Norzagaray Street residence at left. Architectural renderings part of the 1861 Manuel Castro set of plans indicate that during the mid to late 19th century, such picket fencing was painted green, (San Juan NHS Collection, 2358).

maintenance and sanitation. There was still the possibility that modern system of seacoast defenses would someday be constructed in San Juan. If this ever came to be, then "the narrow strip of military reservation at the top of the [northern] walls would be of great value in connection with the land defenses of the fortifications."[21] The Army was also concerned that urban development between fire control stations at El Morro and San Cristóbal might obstruct the horizontal base line between rangefinding instruments. However, given the Army's demonstrated inability to care for the walls within the limits of its authorized funding, it instead welcomed the involvement, and expenditures, of the local government. Captain E. J. Dent of the Corp of Engineers Porto Rico District reported of the direction provided earlier by the Secretary of War, through whom had requested an appropriation of $10,000 for the 1913 fiscal year (*$237K in 2015 dollars*) for the preservation of the old defensive works of San Juan:[22]

> It is believed that the matter is of sufficient importance to justify the return of these papers to Porto Rico for a conference between the Governor of Porto Rico, the Commanding Officer, District of Porto Rico, and the Local Assistant to the District Engineer Officer, as recommended by the Chief of Engineers and the District Engineer Officer, and a new recommendations made. It is also my belief, as expressed in 2nd indorsement, Dec. 13, 1913, on the report, that every effort should be made to maintain these walls in good condition as an interesting and valuable relic of the past.[23]

A detailed map of San Juan and its walls was prepared to help facilitate an answer to the question of who should care for which walls (Figure 2.8). This map of San Juan's fortifications was prepared under the direction of Colonel W. M. Black of the Corps of Engineers, who claimed that it had "been prepared from the best data obtainable, although it is probably not entirely correct."[24] This map would later be reused time and time again, copies of it marked with annotations and notes concerning various repair and preservation projects. Annotations on one of the early copies of this map indicate that the Secretary of War instructed that after June 11th, the city walls beginning at a point marked as "F" of the map at San Justo Bastion, extending to the west and north to the point marked "D" on the map be kept in repair by the Insular Government. The troublesome section of northern seawall, beginning west of San Domingo Bastion at a point marked "'A," and extending to Castillo San Cristóbal to a point marked B' would also be cared for by the Insular Government.

The remainder of the walls were left to the care of the Army, including those below the Santa Teresa Battery and the La Princesa Battery which are part of the San Cristóbal Outworks. Close examination of Colonel Black's 1914 map regarding the San Cristóbal Outworks reveal that the drawing was indeed not a mere retracing of Flagler's map of 1901. Part of the southern covered way of the Outworks parcel that Flagler's draftsman had incorrectly drawn at an angle canted to the north, was corrected in Colonel Black's 1914 edition, more accurately

reflecting true conditions. What is most interesting about the 1914 map regarding the San Cristóbal Outworks is the apparent survival of the Spanish 1st and 2nd retreat lines, or Retirada, well into the second decade of the 20th century. Follow up correspondence helps to confirm this, documented the Army's pursuit of a repair and sanitation program, directing the "filling up of ditches at the east end of the island."[25] This order explicitly related to the filling of ditches well east of San Cristóbal's Outworks that were part of the First Line of Defense at El Escambrón near Castillo San Gerónimo, and the Second Line of Defense, near the developed portion of Puerta de Tierra. It is reasonable to surmise that the surviving ditches and declivities remaining as part of the 1st and 2nd Retirada bisecting San Cristóbal's Outworks were filled as part of the same effort. In his report to Colonel Black, Lieut. Colonel C.H. McKinstry noted:

> The filling up of ditches at the east end of the island mentioned both in the joint report and in the indorsement of the Commanding General, Eastern Department, is needed for sanitary reasons. It cannot be described as "repair or restoration of the walls" and in fact it will largely destroy the military appearance of those outworks.[26]

By the time that this work had been accomplished, Europe was at war, the Panama Canal had been completed, and a German U-Boat had sunk the *RMS Lusitania*.

THE SAN JUAN COASTAL DEFENSES ARE BRIEFLY REARMED

The United States managed to avoid direct involvement in "The Great War" from its Serbian beginnings in 1914, through the loss of American life on the *Lusitania* in 1915. President Wilson's reelection campaign of 1916 employed the isolationist slogan, "He Kept Us Out Of War." However, after it became understood that

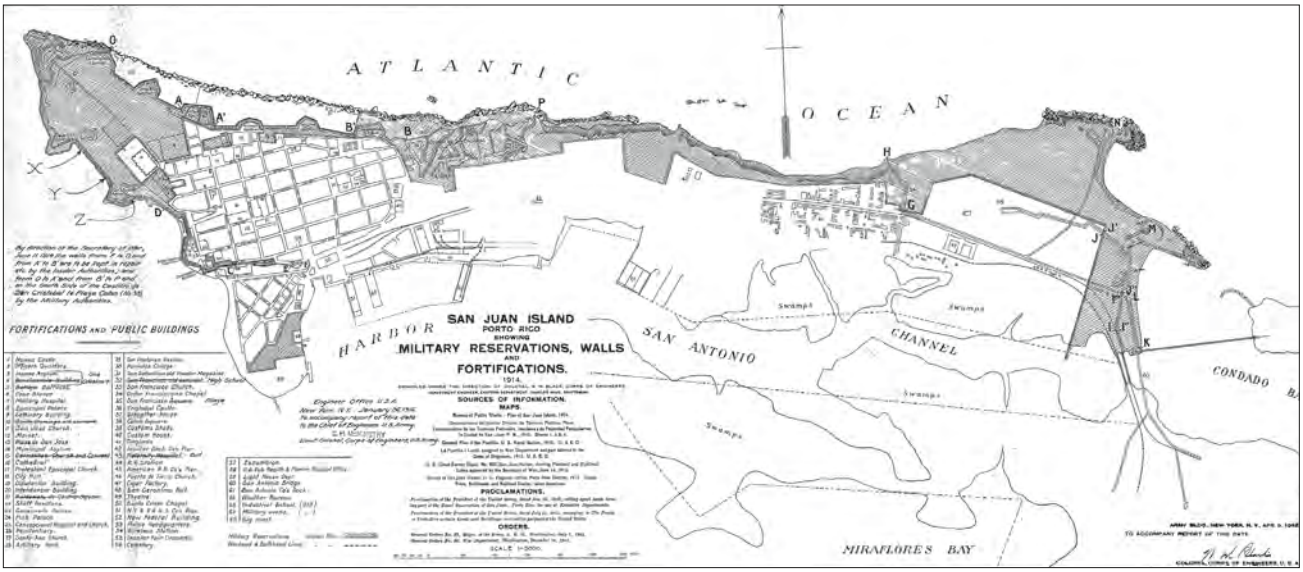


Figure 2.8: Detail of 1914 base map of the San Juan system of fortifications prepared by the Army Corps of Engineers, (National Archives).

Germany had approached Mexico in January of 1917 offering military assistance in reclaiming its former territory in Texas, New Mexico and Arizona, isolationist neutrality was no longer an option. In April, the President asked Congress to declare war on Germany, and one month later, the United States began military conscription. In May 1917 the Puerto Rican Infantry Regiment was sent to Panama to guard the Canal Zone, leaving the post to the caretaking of a limited number of officers and enlisted men, made up in part by those belonging to the Quartermaster Corps.[27] In July 1917, the first United States Expeditionary forces arrived in Europe. For the United States, the war would be mercifully short; by November 1918 an armistice would end the fighting.

Following the departure of the 65th Puerto Rico Infantry for Panama, a detachment of Coast Artillery forces from Florida was transferred to San Juan, accompanied by three dismounted rapid-fire 4.7" Armstrong guns from an arsenal in Georgia.[28] These forces and their leadership were headquartered at Castillo San Cristóbal. By this time in the global war, Germany's large naval vessels had either been destroyed or were well contained by the British Navy. However, smaller and lighter German ships and submarines were occasionally successful in running the British blockade and threatened unprotected ports along the United States eastern seaboard.[29]

Locations for two of the three Armstrong guns were quickly agreed upon. One gun would be located at the La Princesa Battery in the San Cristóbal Outworks, and a second gun would be located inside the mouth of the harbor at the Santa Elena Bastion (Figure 2.9). There was more discussion offered as to a suitable location for the third gun. Locating the third gun at El Morro was discouraged by the Assistant Engineer in San Juan, who favored installing two guns at La Princesa. El Morro was considered an inferior site because it was seen as "…the most prominent object visible when approaching San Juan by water from any direction

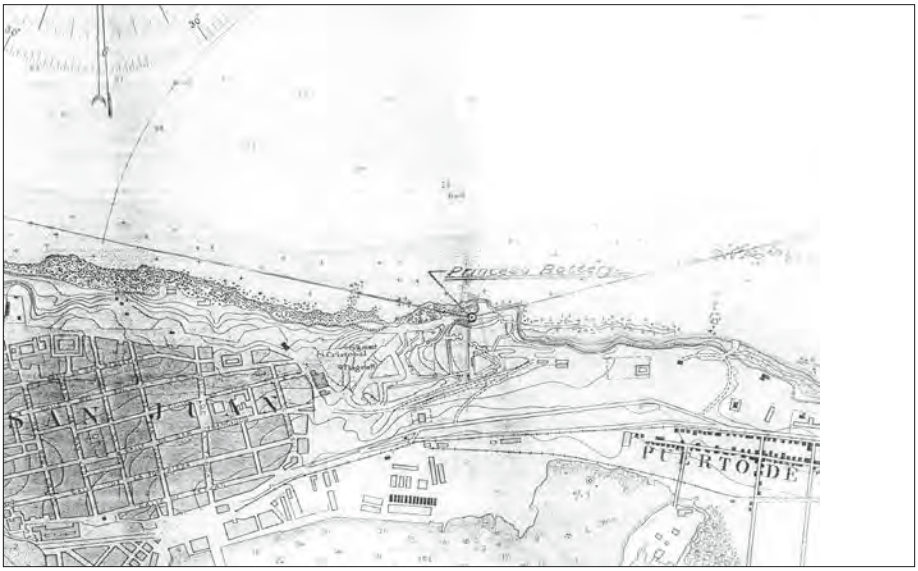


Figure 2.9: Detail of U.S. Coast and Geodetic Survey Chart, bearing markings locating two of three 4.7 inch Armstrong Seacoast Guns for emplacement during World War I, 1917, (USGS).

and it would be impossible to build an emplacement at this point with any degree of protection without going to a greater expense than our allotment justifies."[30] The La Princesa battery was argued as a superior and more economical position for modern armaments because the existing four emplacements there were only recently constructed by the Spanish, being of similar modern construction to those built elsewhere in the United States. The Assistant Engineer's justification for two guns at La Princesa also recognized the covert location of this outworks battery in comparison to the monumental masonry defenses built by the Spanish during the 17th and 18th centuries.

> This battery [La Princesa] is entirely invisible from points in San Juan not on the Military Reservation, and I particularly noted when leaving San Juan a few days ago, that this battery cannot be picked up with the eye by a person on a steamer after she had once cleared the entrance to the harbor.[31]

Nevertheless, in spite of these reasonable justifications, the third Armstrong gun was mounted at El Morro as originally directed, with the gun at the La Princesa battery occupying the number three position, that being the third from the easternmost former Spanish emplacement. By June 18, 1918, all three of the guns were in place and ready for service. It was impossible to know it at the time, but Armistice Day was only five months away. On July 22, 1919, less than one month after the signing of the Treaty of Versailles, formally ending the "World War," the Adjutant General's Office approved the scrapping of the three guns defending San Juan.[32]

During the winter months following the November 1918 Armistice, the members of the Puerto Rico Infantry Regiment serving in Panama were demobilized and returned to Puerto Rico. This created a housing shortage as members of the Coast Artillery were still in residence. Based on aerial photographs of San Cristóbal's Outworks, it is likely that demobilized troops, their numbers surely swollen due to war-time enlistments, were housed in temporary cantonment built within the San Cristóbal Outworks parcel. Alternately, the San Cristóbal Outworks may have been used as a post World War 1, C.M.T. or C.M.T.C. camp (*Civilian Military Training Camp*), providing civilian military training.[33]

Oblique aerial photographs of the San Cristóbal and its Outworks taken in 1924 bear the telltale signature of there having been such a temporary tent-city, with squareish patches of bare compacted soil arranged in two blocks of orderly rows (Figures 2.10 through 2.14). These are the first aerial photographs of the San Cristóbal Outworks, taken on March 29, 1924 from the Aircraft Squadrons Scouting Fleet operating from the *USS Wright* (AZ-1), named in honor of the pioneer inventors of the airplane. Ironically, the *USS Wright*, commissioned in 1921, served as a "lighter-than-air" aircraft tender, and it is likely that these photographs were taken from a Signal Corps balloon tethered to the ship.[34] The *USS Wright* was commissioned in December of 1921; only months after Brigadier General Billy



Figure 2.10: Oblique aerial photograph of San Cristóbal and Outworks, 29 March 1924. Image indicates survival of the Spanish "Covered Way" following World War I, as well as remnants of the 1st and 2nd Retirada, appearing to have been filled in, or covered with soil in this photograph. This image also shows the geometric markings of there having been a recent encampment in the area, (National Archives, RG126, PG Box 7 of 9, folder 7a).



Figure 2.11: Enlargement of a portion of Figure 2.8 above. This better shows wood-frame workshops or storehouses next to a Spanish building designed with proportions and roof geometry similar to the El Abanico guardhouse. Also note the earthen berms shielding the gun emplacements at the Santa Teresa battery.



Figure 2.12: Oblique aerial photograph of San Cristóbal and Outworks, 29 March 1924. This image documents the presence of a mound of earth immediately east of El Abanico, possibly indicating a storage place for explosives. Also note the extent of the earth shielding covering the Santa Teresa and La Princesa batteries, and the erosion of the oceanfront slope above the so-called "haunted guardhouse," (National Archives, RG126, PG Box 7 of 9, folder 7a).

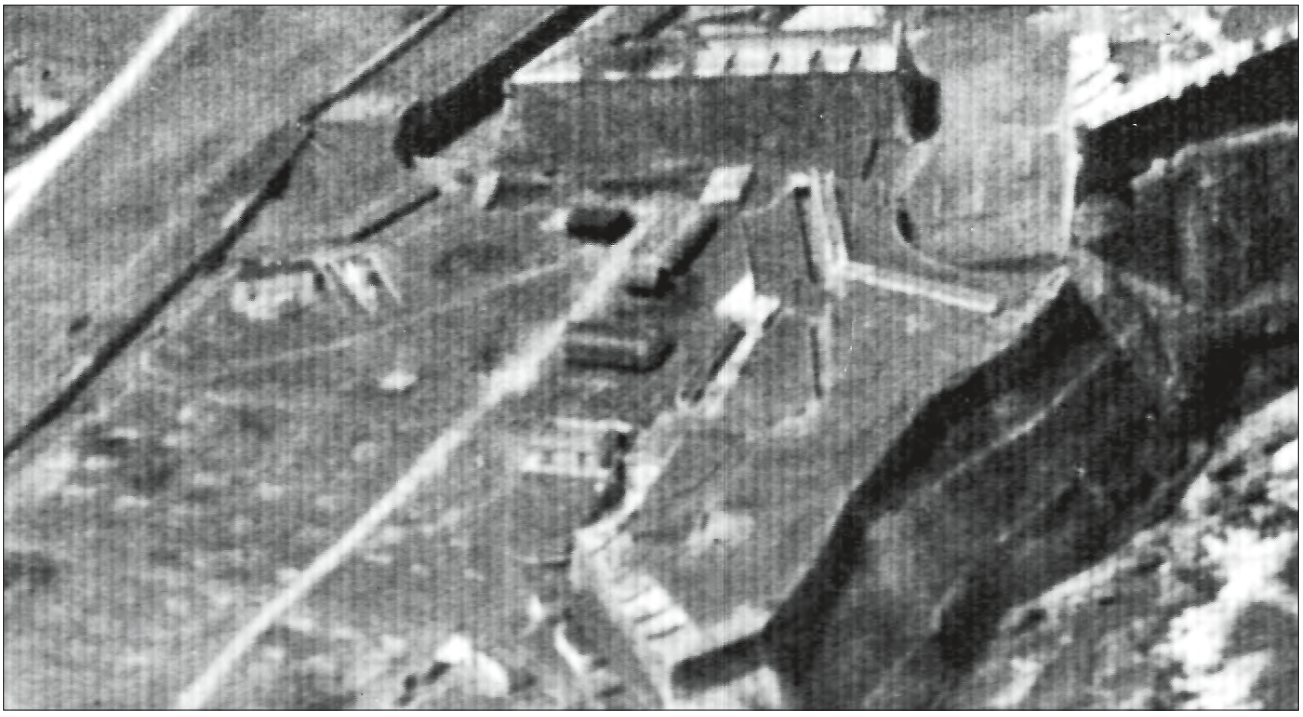


Figure 2.13: This image is an enlargement of a portion of the photograph appearing as Figure 2.10 above. This close-up shows the geometric pattern appearing to be evidence indicating a prior encampment, or cantonment, on this site.

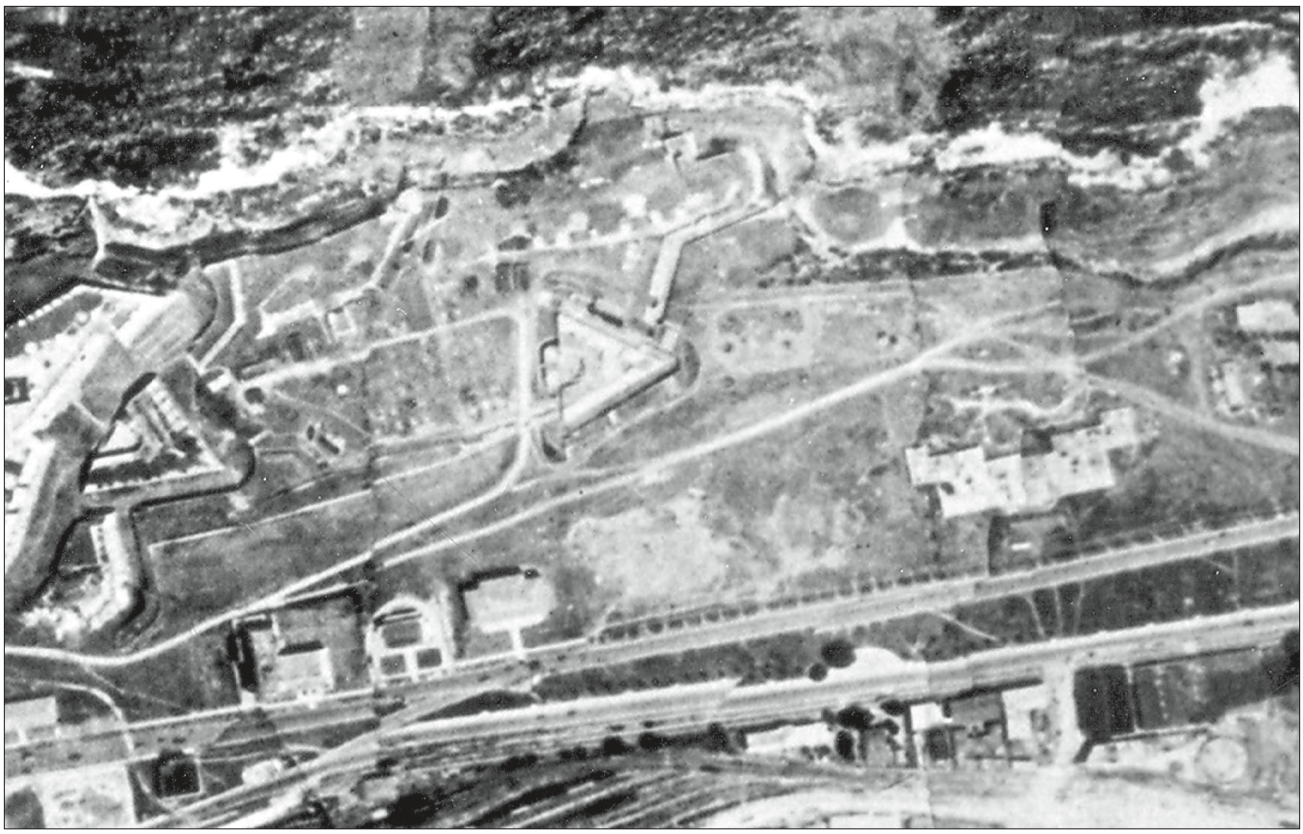


Figure 2.14: Aerial photograph, San Cristóbal and Outworks, 29 May 1924. Note the circulation patterns created by unpaved roads and footpaths within the Outworks area, also note the Puerto Rico Capitol building under construction. Taken from the U.S.S. Wright Aircraft Scouting Fleet, from 4,000 feet elevation, (National Archives, RG77, Entry 393, box 227).

Mitchell successfully demonstrated the effectiveness of aerial bombardment by economically sinking a captured German warship. General Mitchell, at some cost to his military career, argued against conventional wisdom that the airplane would soon render naval gunnery, as well as coastal artillery, obsolete.

No memoranda or correspondence have been located to definitively confirm the construction of a World War I encampment inside the San Cristóbal Outworks, but briefly locating the incoming soldiers there would certainly have been the most direct solution to the immediate housing crisis. During this time, the Army was arguing to recover property in the waterfront Marina district and land in El Escambrón in Puerta de Tierra that had early been granted under license for use by the Insular Government.[35]

One further clue that the San Cristóbal Outworks were considered as the location to house the influx of military personnel is a June 1919 memorandum from Colonel Jarvis of the Puerto Rico Infantry to Colonel Hartmen of the Quartermaster Corps. In this memorandum, Jarvis explores the possibility of constructing ten duplex housing units with materials salvaged from an inland post.[36] It is unlikely that the ten 40' x 40 structures recommended by Jarvis were constructed. If they had been, the foundations required for such structures would have left a very different imprint than that documented on the 1924 aerial photographs. Despite

this, Col. Jarvis's memo appears to have been a very early expression of the idea that officers' quarters should be constructed in this location.

Aside from the question of the use of the Outworks to house returning troops in 1919, the two 1924 aerial photographs of the San Cristóbal Outworks are important because they document the physical layout of the outworks parcel prior to the construction of permanent officers' housing later in 1930-31. Close examination of these two post World War I photographs reveals that the Spanish fortifications within the San Cristóbal Outworks remained in a high state of preservation at this late date. The 1st and 2nd Retirada lines traversing the parcel in a north-south orientation are seen filled with soil, rather than entirely obliterated. The east-west profile of the outworks slope conforms to gentle sweeping arcs between these two buried masonry features. The photographs also picture the south covered way intact, running along the southern counterscarp of the outworks parcel, leading from a low defensive redan in view southeast of the San Carlos Ravelin, eastward to the El Abanico Fort.

Given the scarcity of narrative records, it is impossible to state definitively what purposes various buildings shown in the two 1924 photographs may have served. However it is reasonable to speculate that two large buildings seen perched on the precipice of the 1st Retirada at its northern outlet, might have served well as convenient latrines or washhouses for a large number of soldiers, the remnant of the 1st Retirada acting as a primitive sewer emptying into the ocean.[37] To the northwest of the outworks parcel, wood-frame buildings, that are perhaps workshops or storehouses are seen immediately south of the Santa Teresa battery. Immediately south of Santa Teresa, a Spanish building is seen intact, constructed with similar proportions and roofline geometry to that of the guardhouse along the northern ramparts of El Abanico. South of the La Princesa battery, two more wood-frame buildings are in view. It is possible that these buildings perhaps served as barracks, housing the Coast Artillery troops manning San Juan's defenses.

With the arrival of peace, the Army leadership in San Juan soon resumed its quibble with the Insular Government of Puerto Rico over who was to pay for maintenance and repairs to the deteriorating Spanish walls. During the war, in October of 1918, a powerful earthquake struck Puerto Rico and an eighty-five foot section of wall near Casa Blanca at the western end of Sol Street broke away and fell into the harbor; the earthquake most certainly inflicting damage to the walls elsewhere. Between 1925 and 1929, the Army entered into a number of contracts with local construction companies to effect repairs adding to over $66,000 ($895K, in 2015 dollars).[38] These contracts generally targeted the walls fronting on the harbor, south of El Morro. None of the mid 1920's program of repairs attended to the walls surrounding the San Cristóbal Outworks, although by 1929, repairs to the Haunted Sentry Box on the shore below the San Cristóbal were identified as the next priority for preservation.

Beginning in the early 1920's, inspection reports of the post began to complain of the crowding and incapacity of the San Juan post and the inconvenience of its urban setting. Recommendations of the Office of the Inspector General alternated between closing the post and turning it over to the Insular Government, and retaining the post, modernizing it with the construction of new quarters, and utility systems. The need for greater numbers and higher quality officers' quarters is an oft repeated theme in reports during the 1920's, emotional and sanitary objections raised against housing the officers corps in the Marina district and in Puerta de Tierra, alongside the poorest inhabitants of San Juan. In 1925, as ground was broken for construction of Puerto Rico's Capitol building, a report on the inspection of the post noted that there were no operational seacoast defenses remaining in San Juan, the few guns left on hand being classified as "Special Armament" largely for historical and ceremonial purposes consisting of: "One 4.7" Armstrong gun on a fixed mount (El Morro), four 5" siege guns on wheeled mounts, and four 7" howitzers on wheeled mounts." However, it was reported that, "there is no ammunition on hand for the Armstrong Gun. There are 279 complete charges for the 5 inch guns and 280 for the 7 inch howitzers, including both shell and shrapnel."[39] As the land to the south of San Cristóbal and its Outworks became increasingly urbanized, all of the armament, both at El Morro and San Cristóbal was said to be obsolete and unserviceable, with the Army having no plans to furnish San Juan's defenses with modern arms.[40]

HOUSING DEVELOPMENT WITHIN THE SAN CRISTÓBAL OUTWORKS

As deficient as officers' housing was in San Juan, the quarters were recognized as being no worse than those generally found in the continental United States. Nationwide, apparently, demand and deteriorating conditions were affecting supply. The ambitious housing program subsequently developed by the Army in 1926 would by 1933 expend over $24,000,000 for the construction of officers' quarters alone. An additional $61,000,000 would be spent on noncommissioned officers' housing, enlisted mens' barracks, and miscellaneous construction.[41]

At San Juan, after year upon year of inspection reports recommending new infrastructure, a fundamental redesign of the post was approved during the summer of 1929 under the auspices of this worldwide construction program. This plan for San Juan included provisions for ten sets of officers' quarters inside the parcel surrounded by the San Cristóbal Outworks, the new development being named the "La Princesa [sic] Area" (Figure 2.15). This plan was developed by the Quartermaster Corps Construction Services, acting as the Army's in-house architectural/engineering service provider for real estate, design and construction projects world-wide. [42] The Army engaged two civilian consultants to guide the Army's

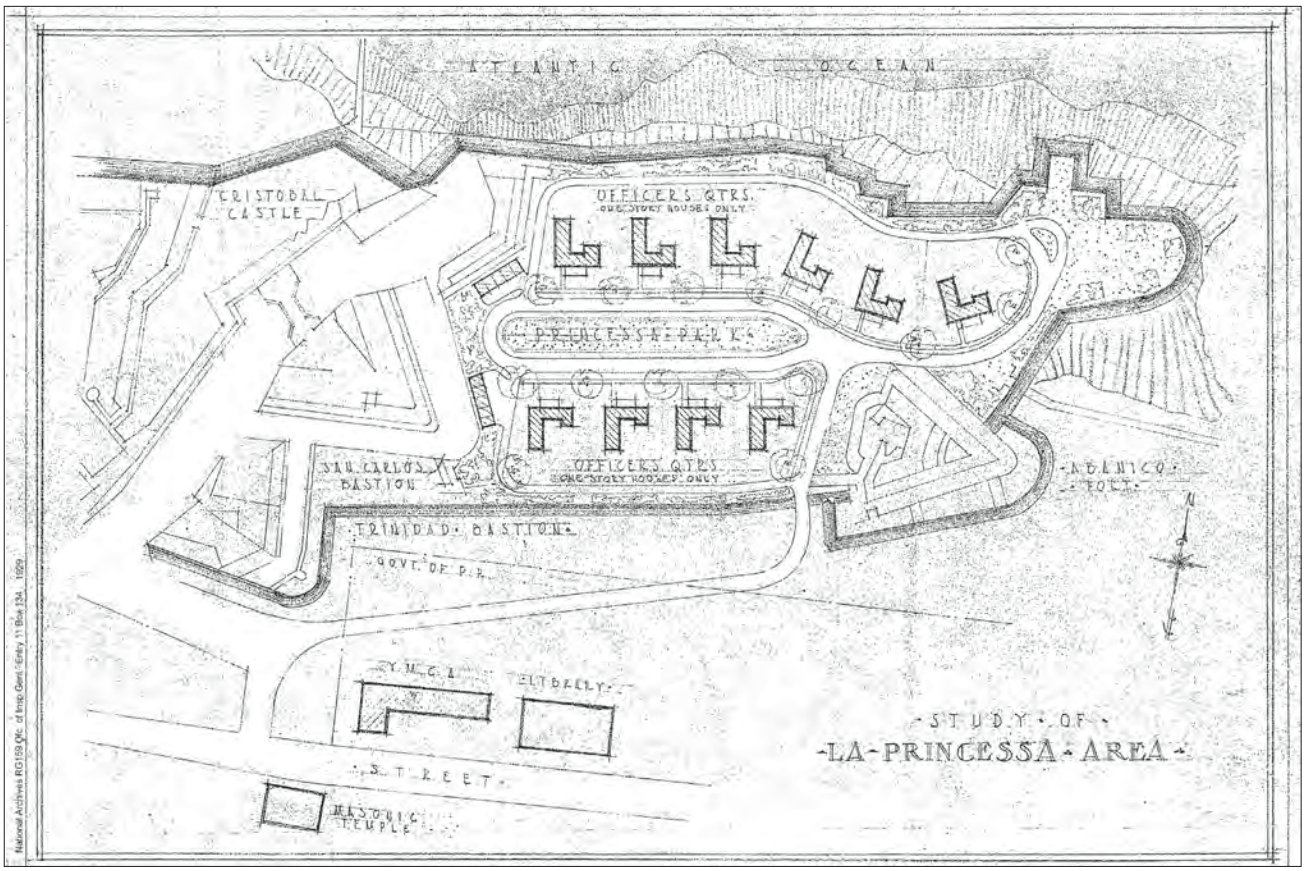


Figure 2.15: **Detail 1929 Post Development Plan, Study for La Princessa [sic] Area, (National Archives, RG 159, Office of the Inspector General, Entry 11, box 134).**



Figure 2.16: **Oblique aerial photograph c 1930, with La Princesa Housing Area shown under construction, (San Juan NHS Collection, 11960).**

in-house design talent to make certain that new construction would represent the best values in architecture and city planning. George B. Ford, A.I.A., an architect and city planner approved all new layouts or site plans, and William A. Delano of Delano and Aldrich of New York City, consulted with the Construction Division regarding architectural design. [43] The approval of George B. Ford is found on the title block of the Quartermaster Corps drawing entitled" "Studies for Proposed New Construction: San Juan Puerto Rico."[44]

According to the biographical information found in a description of the George B. Ford Collection, held at Harvard University's Francis Loeb Library, Mr. Ford was educated at Harvard College (A.B. 1899), acquiring additional degrees at MIT (S.B. 1900, M.S. 1901), and also studied at the famed Ecole des Beaux-Arts in Paris, France. Ford joined the New York firm of George S. Post in 1907, working for the next ten years as an architect, consulting engineer, and planning consultant. In 1917, he was appointed Deputy Commissioner of the American Red Cross in France and later became involved in post-war reconstruction efforts. During the 1920s, Ford was a consultant to the Russell Sage Foundation, working on developing the Regional Plan of New York, was advisor to numerous planning bodies, and founded the professional journal *City Planning*. His other publications include, *Out of the Ruins* (1919), and *Urbanisme en Pratique* (1920), and more to the point of the post of San Juan, "New Army Posts for Old - A New Design and Layout for Army Posts and Fields" published in the periodical *Quartermaster Review,* November/December 1929.

Construction of the ten officers' quarters at the La Princesa Area (outworks), along with roads, walks, and utility systems, began in January of 1930, six months following the plan approved by George B. Ford. This project was intended to provide housing necessary to relocate officers of the 65th Infantry and their families crowding into the Infantry (Ballaja) Barracks. Rather than contracting the La Princesa work, the Army accomplished the project with the assistance of Construction Quartermaster Lieut. Clifford Smith, using the "purchase and hire" method, buying the materials and hiring the labor as needed in order to reduce expenses. As many as 146 workmen were employed on the project at any one time. Preparation of the site required approximately 40,000 cubic yards of excavation of soils comprised of sand and clay. However, there were, "many old foundations which had to be dynamited before they could be removed."[45] Of course, the foundations were in fact the 1st and 2nd Spanish Retirada lines of retreat that traversed the parcel north-south as well as components of the covered way connecting the San Carlos Ravelin with the El Abanico Fort.

Although the inspection report for the San Juan post made in April of 1930 forecast that the project would be completed that July, the work was not complete until January of 1931.[46] The site was described in the project completion report as "Some little distance from the Post Proper, is a very desirable location" while the



Figure 2.17: The Army's "La Princessa Housing Area" was completed in January of 1931 under the supervision of the Quartermaster Corps Construction Services. As part of a worldwide program of post improvements, developments such as this one were designed in consultation with leading architects and planners, (San Juan NHS Collection, 2881).

buildings themselves were described as "of the one story bungalow type, constructed of reinforced concrete with tile roof and tile floors" (Figures 2.16-2.17). The site plan for the development was completed without materially departing from the preliminary "study" for the project approved by George Ford and the military leadership in the summer of 1929. Perhaps this is because the 1929 study bore the note: "No changes will be made on this plan and no additional buildings constructed without the personal approval of the Secretary of War." The characteristics of the site plan appear to have been well suited to the needs of military families. The single family dwellings were arranged around a central greenspace identified on the plan as "Princessa Park" and featured street lighting and street trees. Gates and wire mesh fencing provided a measure of security against intruders, and as a safety measure to the north lining the cliffs above the ocean.

"NEW DEAL" PRESERVATION EFFORTS

Between July 1929 when approval was granted for the La Princesa officers' housing development and the time when the construction project was completed, the world had moved from the speculative excess of the "Roaring Twenties," into the austerity of the "Great Depression." In response to the global crisis, nations found new leaders. In 1933, the United States chose to elect another member of the Roosevelt family to office, while that same year, Adolph Hitler rose to the Chancellorship of an economically devastated Germany.

President Franklin Delano Roosevelt's first 100 days in office following his March 4th inauguration were a blur of activity, sending bill after bill to Capitol Hill in the creation of an "alphabet soup" of new government agencies. FDR's strategy was to create immediate economic relief through a wave of public spending on federal investment in rural rehabilitation and civic infrastructure such as roads, parks, and public buildings. As a further measure toward the reorganization of Execu-

tive Departments, on August 1933, the President's Executive Order 6166 realigned responsibility for historic military properties, such as Fort McHenry in Baltimore and the Gettysburg National Military Park, away from the War Department, placing them in the portfolio of historic properties managed by the National Park Service. The following year, Harold Bryant and George Wright of the National Park Service traveled to Puerto Rico, surveying natural and historical properties of potential national significance. El Morro, San Cristóbal, and other harbor fortification were of great interest to the two men and became a highlight of their report.[47]

A matter of weeks after Bryant and Wright's 1934 trip, the President himself traveled to San Juan. During his address to the citizens of Puerto Rico, he conveyed his intention to pursue the same course of economic relief in Puerto Rico as the program begun the year before within the mainland United States.

> I was here thirty years ago and it seems to me that in these years a great deal of progress has been made but I believe, also, that the progress that you have made in the past is very small compared with the progress that you are going to make in the future. One thing seems to be very clear was that your problems here on the island are very much the same kind of problems that we have in many other parts of the United States. They are social problems and economic problems, and the same methods that we use to solve them in other parts of the country will be applied here in Puerto Rico.[48]

That September, two leading officials from the Department of the Interior paid a visit to Roosevelt's estate on the Hudson River. The men, discussing the development of a tourist program for Puerto Rico, got a word of presidential encouragement when FDR said to them, "Let's not merely develop one more hotel on one more beach," instead directing that they consider that most of San Juan's historic defenses, from Casa Blanca to El Morro and eastward to San Cristóbal be converted to serve a program of tourism and economic development.[49]

The President subsequently drafted a memorandum calling for a meeting between representatives of the War Department and Department of Interior for discussion of the matter. In response to the meeting which followed, the Secretary of War George H. Dern raised serious objections to the Department of the Interior's proposed transfer of property, citing the great expense only recently made in upgrading post infrastructure. The Secretary's letter to the President also reveals that at this time the Army still considered its military mission to be part of the political assimilation of the territory and Puerto Rican peoples, rather than merely that of coastal and harbor defense.

> There is an additional phase of this question which merits careful consideration. This reservation is the traditional station of troops garrisoning Puerto Rico. When the island came into the possession of the United States it became the natural station for American troops. These troops represent the sovereign power of the United States and their removal to some inferior or more or less

> isolated location would, in my opinion, have an adverse effect on our National prestige. This is an important factor.[50]

Secretary Dern closed his message to the President by recommending instead that the Army continue to occupy the post, yet offer greater access to tourists. Dern offered his opinion that the presence of the Porto Rico Regiment of the 65th Infantry would actually enhance the historical interest of visitors.

A lengthy feasibility report prepared by an NPS architect followed the President's and the Secretary of War's correspondence. The report was predictably affirmative towards the President's own proposal, raising the issue of the questionable contemporary military value of the historic fortification. A number of reasonable, as well as farfetched, recommendations were offered, including the transfer of jurisdiction of the post of San Juan from the War Department to the Department of the Interior, the conversion of the Infantry Barracks south of the El Morro Esplanade to a tourist hotel, the condemnation and clearance of the La Perla neighborhood and the municipal cemetery for a waterfront park, and the creation of a Puerto Rico Park and Planning Commission to undertake a comprehensive urban plan for the city. [51]

In subsequent hearings held in 1935 to consider of a bill creating a national monument from the San Juan military reservation, testimony from the National Park Service, the Department of the Interior, and Puerto Rico's Governor Winship equivocated on the initial proposal that the Army vacate the post.[52] Perhaps Secretary Dern's letter to the President suggesting more openness and cooperation brought a greater spirit of cooperation, with park proponents suggesting that the new park would share the same characteristics as Havana's waterfront. However, in spite of the President's personal support, opposition to the proposed park was intense. Correspondence, draft resolutions, draft proclamations, and congressional hearings occupied a period of years, ever failing to reach a final agreement. In 1938, the bill creating the park was again passed over in committee.

> *Congressional Record,* January 17, 1938: "… Mr. LEWIS of Colorado: Mr. Speaker, my objection to this bill (H.R. 7487) is based upon careful investigation which has developed the following facts: This bill proposes to establish a national monument at San Juan, P.R. This monument will include the entire main reservation of the post of San Juan, P.R., and other structures and areas pertaining to this post. This bill also proposes to place the areas mentioned under the Secretary of the Interior for administration, protection, and development, virtually effecting a transfer of jurisdiction from the War Department to the Department of the Interior….The station contains accommodations for 55 officers and 1,006 enlisted men. It includes the headquarters of all military activities on the island, warehouses for the storage of supplies for the entire command, shops, and a hospital. The cost of all improvements at this station is $3,626,386.72, including $865,000 which as been expended for new construction and rehabilitation since 1927…The strategic value of this military reservation is based on its location at the entrance to San Juan Harbor, and on the fact

> that it is located on the island of San Juan in close proximity to the capitol and other government buildings, and the principal commercial and shipping sections of the city. Furthermore, the location of this station has certain psychological advantages in that the military power of the sovereign government has been located here ever since Puerto Rico became a colony of Spain several hundred years ago. It is believe that prestige and tradition also require that troops representing the sovereign power be stationed in the vicinity of the capitol and principal city of the island. . . .There is added a proviso to the end of the bill which reads as follows: "Provided, That the President may authorize the use of lands therein by other Federal agencies when deemed by him not detrimental to the purposes of said national monument." Presumably under this proviso the President could authorize the Army to remain in its present quarters on the post of San Juan. However, the administration, protection, and development of this reservation is to be exercised by the Secretary of the Interior, and it is impossible to visualize how satisfactory arrangements can be made for dual control where the military arm of the Government must be subject to regulation by a nonmilitary department of the Government would be inimical to the public interest, particularly in a foreign possession where the matter of prestige is of such great import. . . .Particularly in these times it is imperative that nothing shall be done to impair our national defense, either on the American continent or on our insular possessions. Preservation of "unique historic landmarks" is interesting and important, but preservation of national safety is vital. Therefore, Mr. Speaker, I object to this bill. [53]

Intoning, "these times," Congressman Lewis spoke to Japan's war with China, Italy's aggression in Ethiopia, and Spain's civil war. Lewis and members of the committee were also aware of Germany's unprecedented military build-up under the dictatorship of Hitler. President Roosevelt, in awareness of the growing global threat, was himself asking Congress to appropriate $800,000,000 to rebuild the U.S. Navy.

Failing to reach agreement on creating a national park with the advent of international trouble, meant its deferral for many more years as world events slid toward a second conflict. Following his January 17 statement in committee that derailed the bill, Congressman Lewis suggested instead that the War Department and the Department of the Interior negotiate a cooperative agreement permitting the National Park Service some involvement in administering a restoration program.[54]

Even this half-measure proved too difficult to accomplish as an Army led restoration program, funded with relief funding provided by the Works Progress Administration (WPA) was drafted in October of 1939, only weeks after Germany's invasion of Poland. A comprehensive masonry repair and restoration program directed at the San Juan military reservation for 1939-40 was instead solely administered by the Quartermaster Corps. At Castillo San Cristóbal, this program included removal of loose debris and vegetation from walls and the bases of walls. Walls, firing steps, and embrasures were cleaned, pointed and faced, and storm



Figure 2.18: The Army supervised repair projects funded under the Depression-era WPA program in 1939. This image shows repair work taking place at San Cristóbal's so-called "Haunted Sentry Box" c. 1939, (National Archives II, RG126 PG, box 2 of 8, folder 2F).

drainage systems were repaired and improved. Courtyard patio walking surfaces and sentry boxes were repaired or replaced (Figure 2.18)

WORLD WAR II

During the summer of 1939, the United States military leadership at the War Department was refining its secret color-coded war plans, including calling for an updated plan for the joint defense of the Puerto Rico-Virgin Islands Area. The War Department identified "Japan, Germany and Italy acting in concert" as the only foreseen enemy.[55]

> The Joint Planning Committee is aware of the enhanced recognition accorded by both War Department and Navy Department in recent months, due to the changing world situation, to the strategic importance of the Puerto Rico - Virgin Islands Area. This strategic importance embraces the following significant aspects: a.) Puerto Rico is favorably situated as an advanced base from which to operate, in connection with Guantanamo, such naval forces as may be assigned either the task of controlling all sea routes from the Atlantic Ocean to the Panama Canal and the Gulf of Mexico, or of supporting Fleet operations in the Atlantic…c.) Puerto Rico is favorably situated as an advanced base from which to operate aircraft against all the land areas which border the Caribbean Sea on its north, east, and south, thereby supplementing aircraft operating from the Canal Zone, Guantanamo, and the continental United States on missions for the direct defense of the Panama Canal and the coasts of United States territory… e.) The Puerto Rico - Virgin Islands Area, if permitted to fall into hostile possession, would be of great value to an enemy as a base from which to project attacks against the Panama Canal, our coastal sea lanes, and even against the continental United States.

That fall, the 1-51st Coast Artillery and the 1-66th Coast Artillery (AAA) were sent to Puerto Rico from the mainland United States, and the construction of

new coastal batteries was authorized.[56] The heavy new coastal armament was to be concentrated east and west of San Juan relying on new 6 inch guns, as had been recommended in principle as early as 1903. However one battery of two 16 inch guns was installed immediately west of El Morro on Isla de Cabras. These immense guns were emplaced at the mouth of the harbor in order that San Juan's defenses would not unduly rely on its limited air support. It was argued that the destruction of the gasoline depot serving Borinquen Field would ground the airplanes, leaving San Juan vulnerable to naval bombardment from long-range guns. However, because smaller guns could be installed quickly, four-gun emplacements of rapid-fire 155mm guns were authorized at Isla de Cabras, as well as at San Cristóbal's outlying La Princesa battery (Figure 2.19).[57] The same 155mm rapid fire guns were specified elsewhere to serve as the sole armament guarding Puerto Rico's secondary harbors such as Aguadilla, Mayaguez, and Ponce.[58]

No new guns were authorized for emplacement inside the ancient Spanish fortifications of El Morro or Castillo San Cristóbal. Of only limited value during World War I, with the successful deployment of military aviation, the large masonry fortresses had become a distinct liability. The emplacement of modern guns inside the massive antique fortresses would only attract unwanted attention.

> It is desired that care be taken to insure that, in the actual siting of the 155mm gun emplacements, these emplacements be located at points not readily registered upon from the air. It is noted that some of the sites indicated on enclosed map show locations at very prominent terrain features that would greatly facilitate the sighting of aerial bombs that might be directed at the emplacement.[59]

The new gun battery at La Princesa emplaced four M1918 155mm "Grande Puissance Filloux" guns of French design. These field artillery guns of World War I vintage were adapted for use in coastal defenses by mounting them on circular center-pivot mounts developed by the Army for use in Panama. Each emplacement within the battery of four guns was surrounded with traverses made of piled



Figure 2.19: Detail of U.S. Coast and Geodetic Survey Chart, marked up in 1941 showing location of battery of four 155mm guns emplaced at La Princesa. These guns had the advantage of being quickly emplaced early in the war, (National Archives II, RG 77, Harbor Defense Files, Entry 1007, box 118).

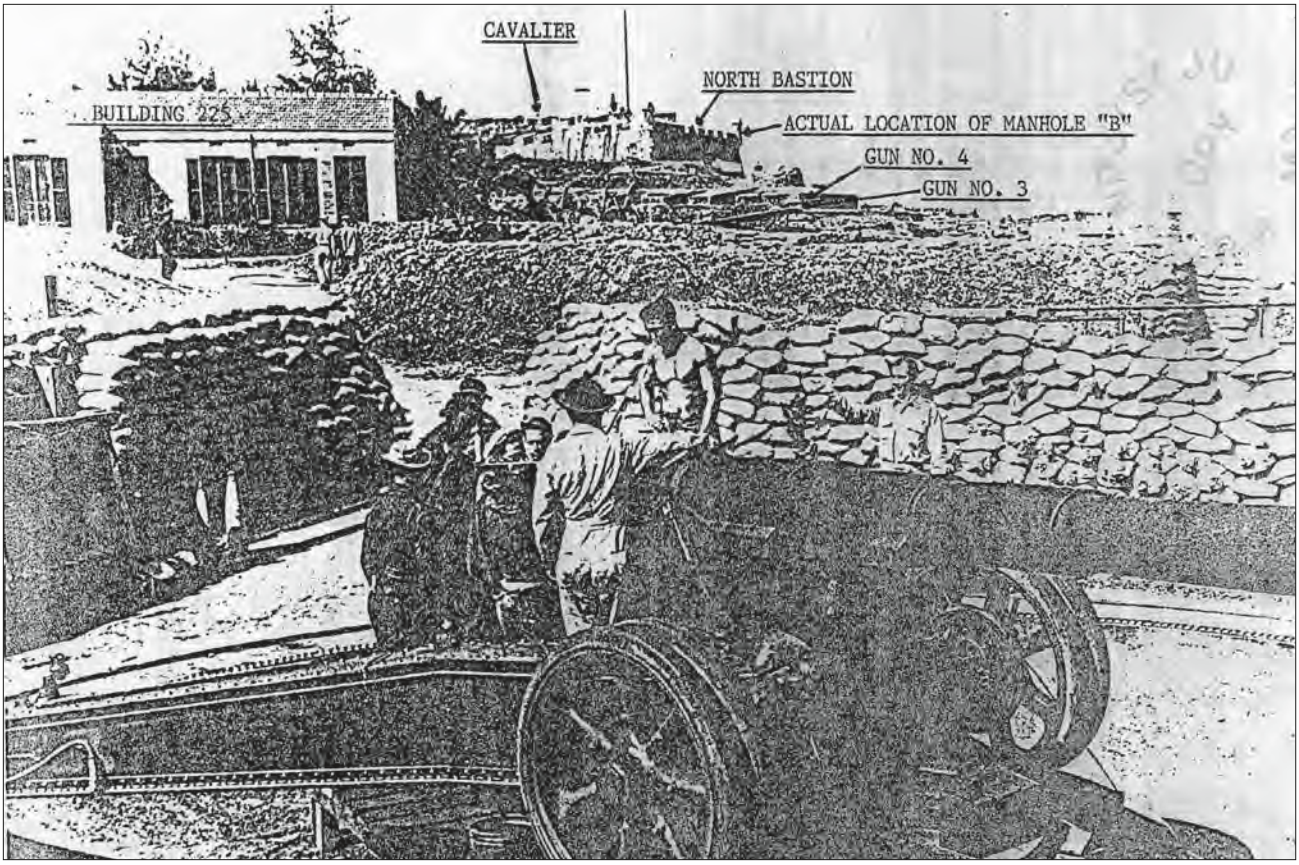


Figure 2.20: Photocopy of image showing the 155mm battery at San Cristóbal's La Princesa in operation c. 1943. Note close proximity to officers' housing, (San Juan NHS Collection, Preliminary research report of Hector R. Marin, 1 March 1985, showing "Gun Number 2, Battery Number 3 (La Princesa) 155mm M1918 GPF Gun, 1st Battalion, 51st Coast Artillery).

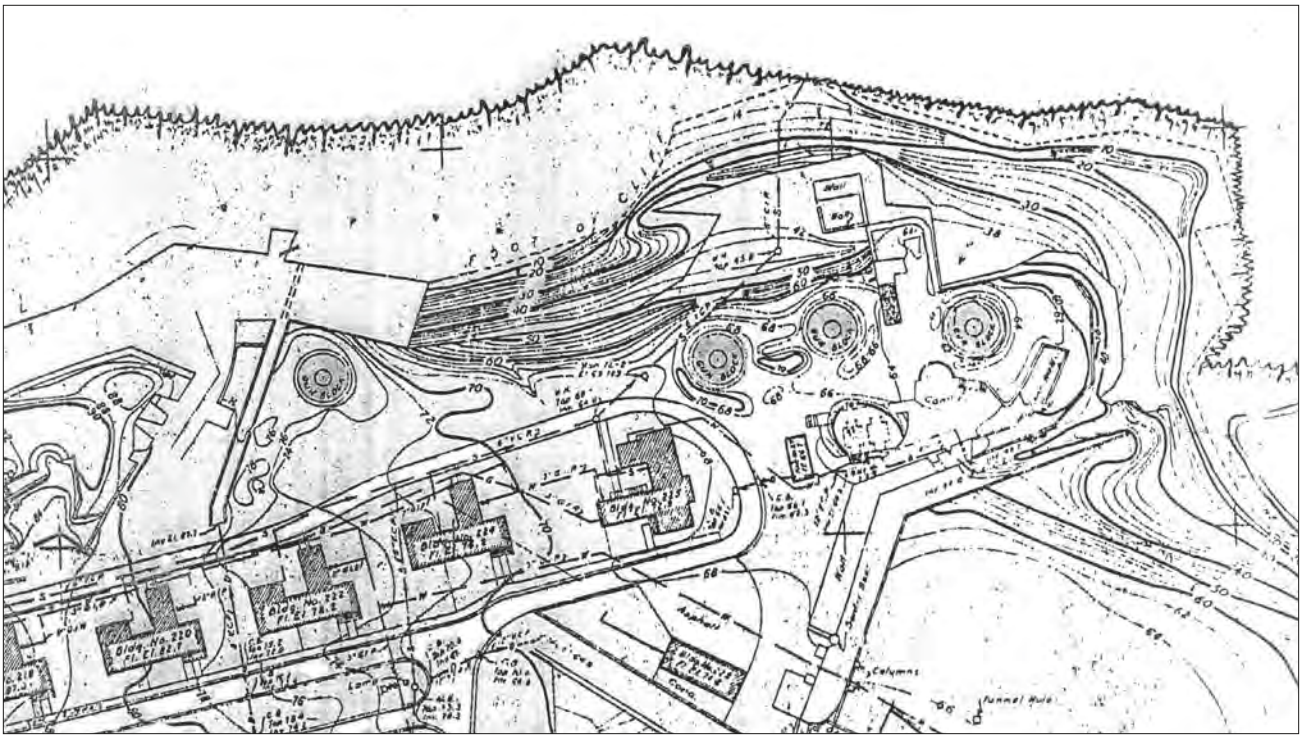


Figure 2.21: Detail of Fort Brooke As-Built Plan, c. 1945. Image shows exact placement of the guns making up the 155mm battery, (San Juan NHS Collection, Preliminary research report of Hector R. Marin, 1 March 1985).

sandbags for protection in case of an explosion or gun failure (Figures 2.20-2.21). Powder charges and shells were stored in magazines constructed by the Spanish and subsequently refitted. Because of the close proximity of the neighboring officers' housing, only a small quantity of ammunition was stored on site.[60]

Not only was existing officers' housing nearby this 155mm battery at La Princesa, the Army had plans for additional quarters. In 1941, Puerto Rico's insular government ceded to the Army the so-called "Abanico Plot," consisting of 1.6 acres of land, immediately east of the El Abanico Fort. This parcel, consisting of a designed earthform known as a "glacis" forward of a fortification, was graded with earthmoving equipment in order that it could be used to construct additional officer housing for Corps of Engineers staff.[61]

These 155mm guns at San Cristóbal were apparently were never fired at an enemy. German submarines successfully hindered commerce throughout the Caribbean during World War II, especially during 1942, damaging or destroying hundreds of merchant ships. However land based defenses were never challenged in battle. In 1942, a bombproof Joint Operations Center was constructed in San Cristóbal's dry moat in 1942. In 1943, the post of San Juan was renamed Fort Brooke and soon after the war's end in 1945, the four hastily built gun emplacements at the La Princesa battery were dismantled.

RESUMING THE PARK QUESTION

With the emergency of World War II having past, the Department of the Interior reinitiated the national park question in 1946. By 1948, a draft agreement between the Department of the Army and the Department of the Interior was sent to President Truman. The agreement was signed by the Secretaries of both Departments, subject to the President's approval, and was said to be "a major element in the plan of the Department of the Interior to encourage travel in Puerto Rico and the Caribbean."[62] In a early post-war memo to the Secretary of the Interior, the Department's Division of Territories and the National Park Service wrote: "The [pre-war] plans were to leave the Army in physical custody of the fortresses. This may be all right as the basis for starting negotiations but our goal should be to eliminate the Army entirely."[63] The National Park Service obtained nothing in the way of real estate, and only a modicum of control from this early agreement with the War Department. The 1948 agreement extended to the National Park Service the privilege of reviewing and commenting on "…all Army plans for major maintenance and repair, for structural changes in the historic fortifications, or for alteration to existing open spaces proposed by the Army." The agreement also made possible the physical presence of National Park Service staff on site, requiring the Army to furnish office and museum space to their new partner. Estimating



Cultural Landscape Report

San Cristóbal Outworks
San Juan National Historic Site

San Juan, Puerto Rico

Period Plan c. 1945

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. As-built plan, 1949
2. Orthographic Photo, 2004
3. National Park Service, historic photos

DRAWN BY

Alexandra von Bieberstein, AutoCAD 2013 & Illustrator CS5

LEGEND

- National Historic Site Boundary
- Security Fence
- Canopy Vegetation
- Beach
- Turf
- Building
- Paved Surface
- Fortification
- Sidewalk/ Plaza Space

NOTES

1. Projection: UTM Zone 19N, NAD 83, International Feet
2. All features shown in approximate scale and location

0′ 35′ 70′ 140′

Drawing 2.2

annual costs of operating the new National Historic Site at $65,000, the agreement opened the door to a greater future role for the NPS:

> "…Army agrees to assign suitable space in the historic fortifications to the National Park Service for the conduct of the interpretive program and states the intention to transfer jurisdiction over the national historic site to the Department of the Interior as soon as the military installations situated thereon are no longer needed for military purposes…"

Even prior to the war, the undercutting of walls and foundations through the action of the surf had become pronounced. Given war-time budgets, between 1940 and 1946, the deterioration of San Juan's fortifications accelerated, with the War Department ruling that funds appropriated to the military could not be used for the rehabilitation of historic structures.[64] Designation as a national historic site under the authority of the National Historic Sites Act of 1935, permitted funds to be appropriated and expended for their preservation. However, responsibility for requesting appropriations and expending preservation funding would remain the responsibility of the Army. Designation as such also permitted the involvement of National Park Service expertise in the treatment of historic structures. With the approval of President Truman, the order creating the San Juan National Historic Site was signed by Secretary of the Interior J.A. Krug on February 14, 1949 (Figure 2.22).

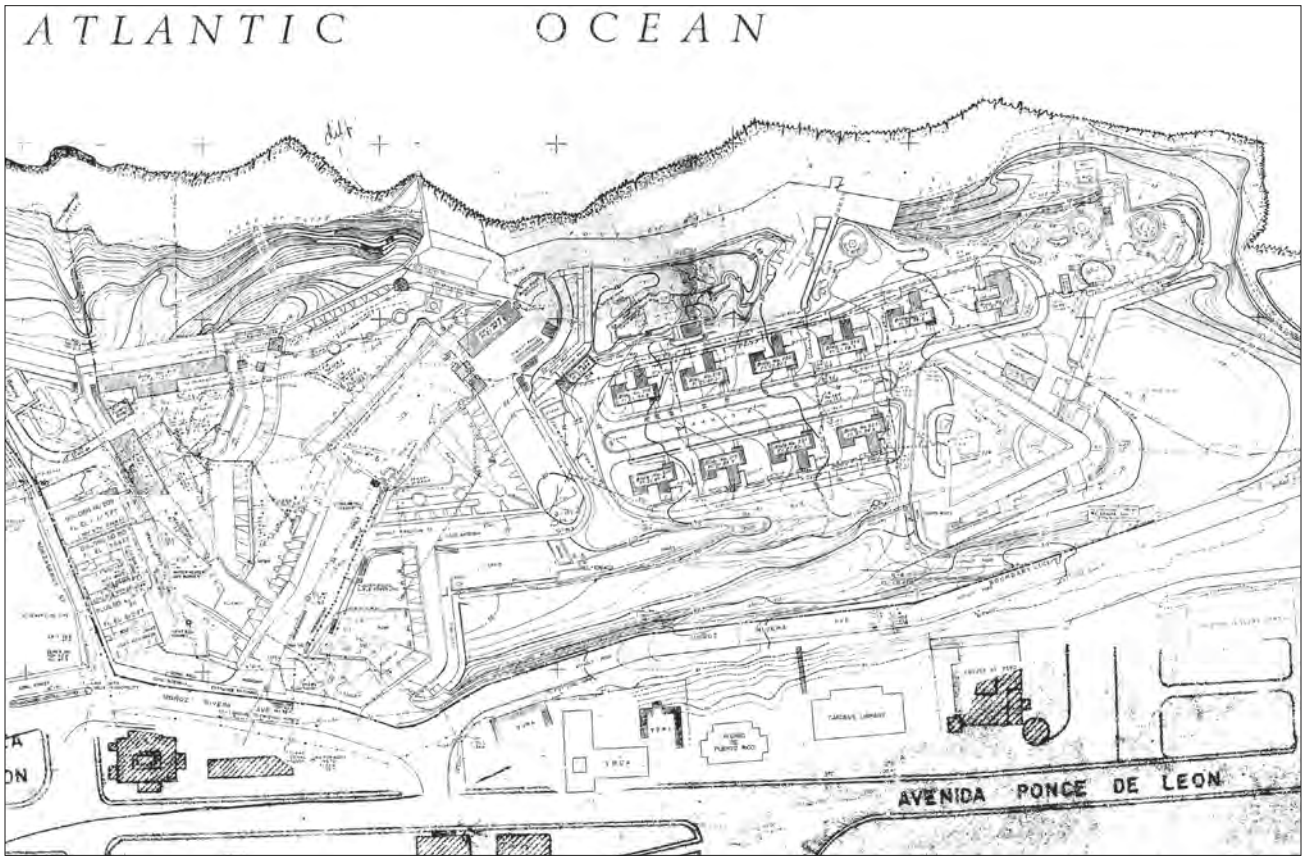


Figure 2.22: Detail of 1949 Fort Brooke As-Built Plan. The preparation of this precise drawing coincided with the formal establishment of San Juan National Historic Site, (San Juan NHS Collection).

Almost from the start, the dual administration of the National Historic Site did not go smoothly. Commitments for National Park Service office space in the Joint Operations Center (Bldg. 213) were threatened by the transfer of Army staff from Panama, and within months, the Secretary of the Army needed to be reminded that the Army retained the financial and administrative responsibility for repairing and preserving the fast crumbling fortifications.[65]

Given its meager post-war budget, National Park Service operations at San Juan were confined to interpreting the fortifications to the public, an ambitious program of historical research, and advising the Army regarding historic preservation. This advice was freely given. As had been done earlier with the military, the National Park Service sought out agreements with the Insular authorities regarding the care of those portions of the wall extending southward from the Casa Rosa gate that had earlier been transferred to local care by the Army. The National Park Service also objected strenuously to proposed project by San Juan's Municipal Housing Authority that would remove 900 of the estimated 1,500 families from their shacks in the La Perla neighborhood in order to construct more substantial public housing for the remaining 600 families. As had been argued since before World War II, the National Park Service sought the complete removal of the informal La Perla settlement in support of a waterfront park between the two fortresses that would attract tourists and tourist developments.[66]

By 1953, a disagreement between the Army and the National Park Service over the construction of a radio antenna mast at El Morro, suggested to NPS Assistant Director Ronald Lee that the National Park Service begin informal negotiations with the Army whereby the military would retain the quarters, office, and hospital facilities, and the National Park Service would acquire the "ancient fortifications."[67] Given the longstanding structural issues facing the walls at the waterfront, the Army was certain to find the NPS proposal an attractive offer, relieving the military of troublesome assets that were sure to require vast expenditures, and that were no longer of value to the military mission.

Perhaps with Assistant Director Lee's proposal in mind, in 1953, the Army took inventory of its property in San Juan when it completed a detailed set of "As-Built" drawings for the Fort Brooke post. Two years after revising these drawings, the Army gave notice that the ancient Spanish fortifications were indeed, "in excess of its needs and that the property will be disposed of pursuant to the regulations of the General Services Administration."[68] It was the masonry fortifications, so full of maintenance problems, that the Army sought to rid itself of responsibility first, intending to retain the El Morro Esplanade, the San Cristóbal Outworks "La Princessa" officer housing area and various buildings that were still found useful. General Service Administration regulations gave preference to the transfer of the property to other agencies of the federal government, and with the cooperative agreement between the Army and the National Park Service over this very

question in place since 1948, the NPS was well positioned to successfully counter appeals from Puerto Rico's territorial government for transfer of the fortifications and their adjacent open spaces.[69]

Administrative details of the transfer of lands were finally consummated on September 13, 1961, involving 36.33 acres of land comprising the bulk of San Juan's Spanish masonry fortifications including El Morro, the North Wall, and Castillo San Cristóbal . The agreement between the two Executive Departments divested the Department of the Army of:

> "…the care and custody of, and accountability for the property described, vesting those responsibilities and accountability in the Department of the Interior. The funding of operations, improvements, and maintenance of the transferred property automatically becomes a function of the Department of the Interior."[70]

These were excellent terms for the Army, as the agreement also provided for continued military control of access to NPS property, continued military occupancy of certain portions of transferred property, and even stipulated the return of the property to the sole administration of the War Department in the event of a national emergency. The "La Princessa" housing area within the San Cristóbal Outworks was left out, entirely exempt from this 1961 agreement, and retained for use by the military without encumbrance.

Having been handed the responsibility for the care of the fortifications, the National Park Service was fortunate to acquire considerable funding to address long-deferred repairs to San Juan's historic fortifications through an unemployment relief measure signed by President Kennedy on September 14, 1962. The Public Works Acceleration Act (S. 2956) authorized the expenditure of $900,000,000 on the nation's most economically depressed areas. Approximately $400,000 ($3.15M in 2015 dollars) was directed toward preservation work at the San Juan National Historic Site.[71] The largest portion of this funding was directed to maintenance and repairs to the North Wall that lay between the two fortresses, but a significant amount of work was directed toward fortifications comprising the San Cristóbal Outworks.

This program of work became known as the Accelerated Public Works Program (APW), and represented the first major effort to repair and maintain the fortifications in over twenty years. Julio Marrero-Nunez, as Superintendent of the San Juan National Historic Site was responsible for directing the work program and filing periodic progress reports which describe program activities regarding Castillo San Cristóbal.

> Narrative Report: Accelerated Public Works APW 3 - San Cristóbal & Outworks, El Morro. "The Accelerated Public Works day labor force, consisting of laborer and a mason crew began work on Feb. 18 and was terminated on June 28, 1963. The labor crew was principally engaged in the clearing of the



Figure 2.23: Earthen berms placed by the Spanish in 1897 to absorb the force of bombardment were removed in 1963 with funding supplied by the Accelerated Public Works program, (San Juan NHS Collection, 4094).



Figure 2.24: At the La Princesa battery, the 1963 WPA earthmoving extended beyond removal of the earth sheltering installed by the Spanish, also uncovering one of the four 155mm gun mounts installed by the U.S. Army during World War II, (San Juan NHS Collection, 4100/141).

> bastions and the removal of out-dated military structures in the fortifications of San Cristóbal and El Morro. The mason crew was employed in the patching and repairing of walls and pavements which were either in critical condition or which had been cleared by the laborers. The initial day labor project was the clearing of Trinidad Bastion. Approximately 550 cubic yards of earth were removed from this Bastion and deposited in the main moat of El Abanico in order to raise the level of the moat to the top of the wall foundations of that fort…The labor force was then moved to Santa Teresa Bastion. At Santa Teresa a number of obsolete Army structures were demolished and removed (Figure 2.23).The majority of laborers, however, were engaged in excavating the original masonry of the Bastion which had been covered by earthworks at the time of the Spanish American War. The 1898 earthworks had subsequently been leveled and otherwise altered in connection with the construction of US Army quarters of La Princesa in the 1940's [sic]. Some 960 cubic yards were removed and transported to the east glacis of El Abanico which over the years had been partially destroyed [by the construction of officer housing during World War II. A large amount of the excavated earth was also deposited at the foot of the north wall of the Bastion to help protect the foundation from the erosive action of the ocean. On April 4 the labor force reached its full complement of 878 men. It included a labor crew of 653, a truck driver and a labor foreman. The mason crew consisted of 11 masons, 11 mason helpers and one mason foreman. The mason crew remained as a unit, first patching and repairing the entire south wall of La Princesa Bastion, approx. 9,000 sq. feet in area. They then were moved to San Carlos Bastion where the patched 20,000 sq. ft. of wall area. The labor crew was divided between San Cristóbal, El Morro, small areas of Santa Teresa and La Princesa. At San Cristóbal, 500 cubic yards of earth were removed from the north embrasures of Baluarte Plano in order to expose the original floor and drainage gutter. Several concrete footings for various Army Signal Corps installation long since dismantled were demolished…Approximately 390 cubic yards of earth were excavated from La Princesa Bastion, exposing a World War II anti-aircraft gun track and the remains of the original embrasures and gun platforms of the Bastion (Figure 2.24). On June 21, most of the labor force was laid off…[72]

Although landscape conditions within the San Cristóbal Outworks area were much improved following the APW program, the area remained closed to the public due to its proximity to active military housing and the limited NPS staff available for protection and interpretation. However, as an unintended consequence of the APW work, the area became more attractive to the uninvited public, as a criminal element used the concealed spaces within the fortifications to conduct illegal activities.[73]

As part of the early 1960 park Master Plan, MISSION-66 edition, the park entertained ambitious plans for the San Cristóbal Outworks. The 1960s vision for the Outworks called for it to serve as the eastern terminus of a lengthy shoreline trail that connected the pre-existing trail ending at El Morro, to San Cristóbal and its Outworks. This trail would be routed past a new waterfront park created following the removal of the La Perla neighborhood.[74] Early National Park Service

Master Plans for the San Cristóbal Outworks proposed the construction of parking lots and stairs leading down to the shoreline, between the El Abanico and La Princesa batteries.

As these park Master Plans were under development in 1964, the Army closed the book on its role in San Juan, leading to an additional transfer of lands to the National Park Service. In 1965, the Secretary of the Army elected to inactivate the Antilles Command, reducing the Army mission in Puerto Rico to the recruiting and induction of new soldiers, along with facilities accommodating the operation of the Army Reserves. This decision started the Army upon the process of gradually terminating its operations in San Juan. In June of 1966, the Army Signal Corps moved its operation out of the Joint Operations Center (Bldg. 213) in San Cristóbal's dry moat, removing antenna from San Cristóbal and from the San Carlos Ravelin. By the following month, eighty percent of the Army residential quarters and administrative offices had been vacated.[75] On August 31, 1966 the Army initiated the transfer of the 4.95 acre La Princesa housing area, on the San Cristóbal Outworks to the Department of the Navy, along with its improvements, identified as, "…ten family housing units, 3 garages and a sentry box." The remaining 52.05 acres of Army administered lands at San Juan were reported as excess to the General Services Administration.[76]

All the discussions and paperwork effecting a transfer to the National Park Service were fundamentally complete when the property was reported as excess, with this formality leading to the incorporation of these lands into the San Juan National Historic Site through the Army's 1948 agreement with the National Park Service. The Puerto Rico Office of Civil Defense had been busily making arrangement following the announcement of the post's closure as well. One month after the August 31st transfer from the Army, the National Park Service granted to the Puerto Rico Office of Civil Defense a special-use permit to occupy the bomb-proof Joint Operations Center (Bldg 213). After the 1966 transfer, besides the 4.95 acre La Princesa housing area in-holding belonging to the Navy, the National Park Service remained the sole administrator of the San Juan National Historic Site. Following the transfer, the property was administratively listed on the National Register of Historic Places, without documentation, with the end date of the period of significance listed as 1799.[77]

Unfortunately, the funding available under the APW program of the early 1960's was sufficient to merely address superficial deterioration and segments of wall that posed the greatest threat for short-term failure. Since the 1920s, the Army had been aware that surf action was undercutting the soft sandstone and limestone bedrock supporting the fortifications, causing widespread damage. By 1971 an evaluation of the required foundation work was tallied and the bill came to over eleven million dollars.[78] Recommendations for correcting the failing foundations were prepared by the Jacksonville District of the Corps of Engineers in May 1971.

Over sixty percent of the projected eleven million dollar project was slated for the construction of a stone breakwater off of the shore of the El Morro fortress. The project directed two hundred thousand dollars toward the oceanfront slope below San Cristóbal and its Outworks (Figure 2.25). The techniques used to stabilize the eroding slope were to place concrete into voids wherever gravity would hold it there, and where the slope was too steep, to spray concrete on the failing slope using the Gunite© process. This technique, best known for its use in constructing swimming pools, "guns" concrete at extremely high pressure through a nozzle, forcing it into an interlaced network of steel reinforcing rods. The result

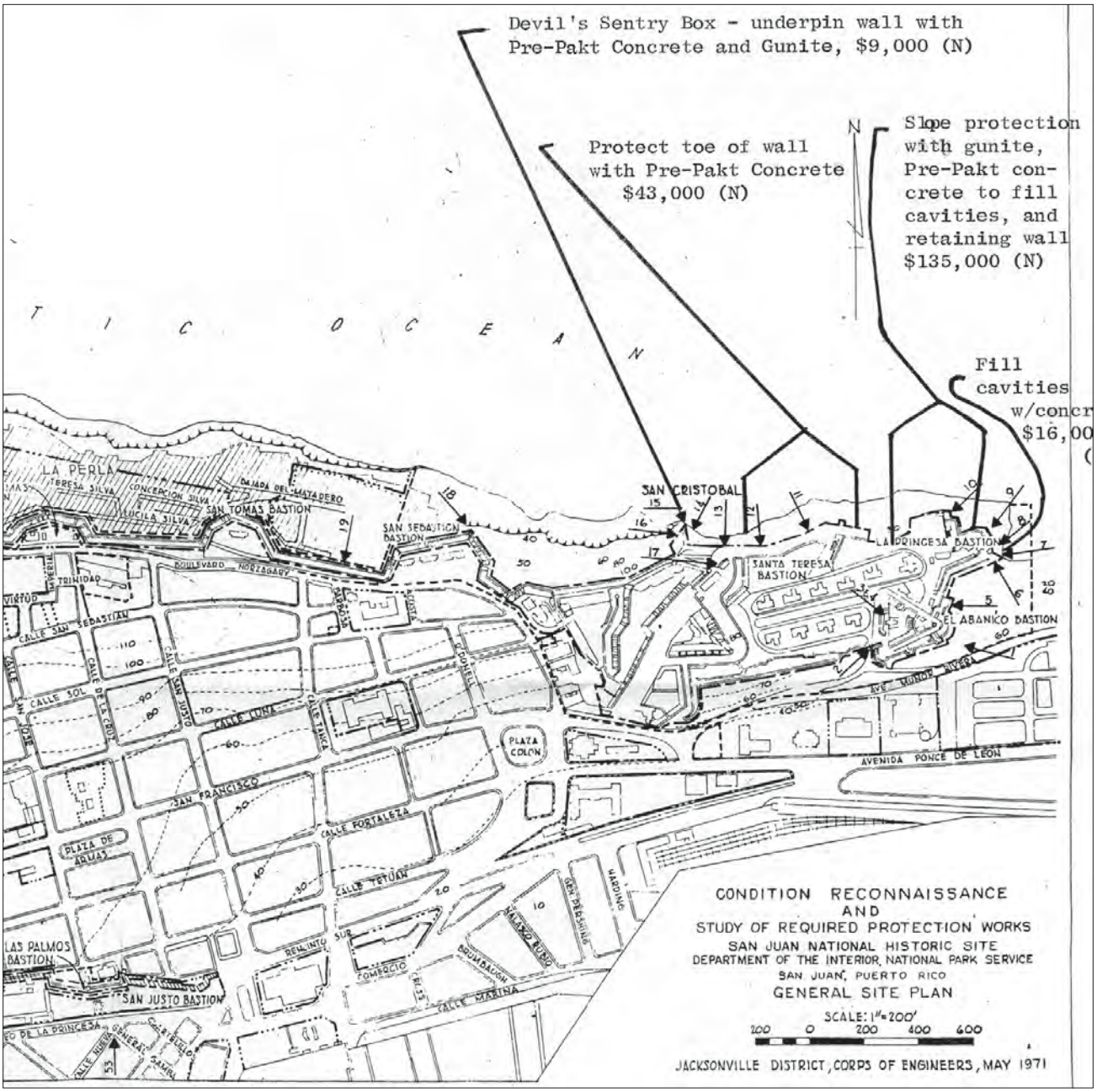


Figure 2.25: During the 1970's the National Park Service took measures to protect the foundations of the historic Spanish fortifications that were eroding due to surf action. Detail from, "Conditions Reconnaissance and Study of Required Protection Works," Army Corps of Engineers, May, 1971, (San Juan NHS Collection).

is a near vertical concrete wall, constructed without formwork and taking on an irregular "organic" shape (Figure 2.26).

In August of 1971, as the Corps of Engineers project was under development, the Navy decided to vacate the La Princesa housing area within the San Cristóbal Outworks, licensing the five-acre in-holding to the National Park Service until the formalities of legal conveyance could be completed.[79] This paperwork was completed during the course of the following year and the property was officially transferred on May 15, 1973.[80] The transfer of the ten 1930s dwellings begged the question as what was to be done with them. This was not the least of the open questions facing the park's management team during the early 1970s, when park management recognized that existing park plans were inadequate to help resolve a constellation of critical issues.

The Park Master Plans for San Juan National Historic Site accomplished during the 1960s were developed for an agency having responsibility, but limited control, over its San Juan assets. Although the Army formerly occupied National Park Service facilities through special-use permits, until 1966 when the military finally moved out, the NPS limited the focus of its planning to staffing, developing interpretive and museum programs, and maintenance.

In 1974, the National Park Service faced a number of fundamental choices, including its continued operation of the San Juan National Historic Site.[81] Several difficult resource management questions were being considered, several of these arrayed around the central choice of an appropriate "historic period" guiding treatment choices, including;

- The future of the 19th century buildings (208, 209, 210, and 211) lining the east side of Norzagary Street, as an earlier park document, complaining that they concealed the façade of San Cristóbal, declared them "devoid of historical and architectural significance";
- The future of former WWII Joint Operations Center (Bldg. 213) in the dry moat, then occupied by Puerto Rico's Office of Civil Defense;
- The future of the San Cristóbal Outworks area, including the ten vacant 1930s officers' quarters that had become the site of illicit activities (Figure 2.27);
- The future of longstanding NPS plans to build a shoreline trail from El Morro to the San Cristóbal Outworks, an idea first proposed in the 1920s.
- The future of the "Hill of the Three Wisemen" comprising the forward glacis of the El Abanico Fort, ceded by Puerto Rico to the War Department during WWII. During the 1970s, the hillside was being used infor-



Figure 2.26: Photograph showing the characteristics of the repairs made by spraying concrete on the slope at high pressure using the "Gunite" process, c. 1981, (San Juan NHS Collection, HABS PR-47-41).



Figure 2.27: Image taken c.1950 from the Puerto Rico Capitol building of the Hill of the Three Wisemen, the designed earthform east of El Abanico. This photo shows the soil compaction and erosion caused by the use of this area for informal parking during weekends and special events, (San Juan NHS Collection).

mally as an unsightly parking lot, causing erosion and potentially damaging subterranean features (Figure 2.28).

- The choices available for the stabilization of foundations that continued to be undermined by ocean surf.

These questions were raised by the park as part of an appeal for funding a new "General Management Plan" effort, the planning project to be organized and directed through the NPS Denver Service Center, created through the consolidation of Eastern and Western offices of design and construction in 1971. The question as to the appropriate historic period had been raised earlier in 1962, when the respected National Park Service architect Charles Peterson discouraged proposals to return the exterior architectural appearance of the park office building to the late 18th century. Instead, Peterson suggesting that the 19th century Manuel Castro plan of 1861 guide future architectural treatments.[82] Yet Peterson's recommendation, if broadly applied park-wide, would negate any significance of late the 19th century Spanish modifications prior to 1898, to the point of overlooking the 1897 demolition of walls and bastions that permitted the expansion of the city.

With these questions having been raised, continued management difficulties regarding the vacant military housing within the San Cristóbal Outworks required attention before headway could be made toward completing the San Juan NHS General Management Plan. In the superintendent's annual report for 1978, Superintendent Whitt remarked that:

> "...funding was made available for the demolition of contemporary ruins of former U.S. Army military housing in the La Princesa area and the restoration of that important part of the San Cristóbal complex. The project should be completed within another year."[83]

Beyond park hopes that the removal of the vacant housing would curtail illegal activities, the removal of the 1930s housing and the palm trees lining the interior streets of the development would open up views eastward, toward the land ap-



Figure 2.28: During the 1970s and early 1980s, the advanced glacis east of El Abanico, locally known as the "Hill of the Three Wisemen" was used as informal parking. This was one of the preservation issues raised in the 1984 General Management Plan for San Juan National Historic Site, (San Juan NHS Collection, 2871).

proach to San Juan that Castillo San Cristóbal was designed to defend (Figure 2.29). Superintendent Whitt's forecast for the demolition was apparently optimistic. His annual report for 1979 (submitted in 1980), notified the Regional Director that the demolition contract had recently been negotiated with the Small Business Administration for completion of the work during the upcoming year.[84]

In 1981, a memorandum written by Park Ranger Gregorio Batista confirmed that the vacant housing was indeed demolished in 1980. Unfortunately following the removal of the residential buildings, the social problems plaguing the area remained as before, merely displacing unsavory activities to the adjacent La Princesa and El Abanico fortifications. Dubbing La Princesa as "The Mummy's Cave," participants in late night parties involving drugs and alcohol damaged doors and locks and vandalized the historic structures with graffiti. During weekends, the general public, seeking scarce greenspace within San Juan, would visit the area recently cleared of housing with picnic blankets and metal detectors, using logs of driftwood to span moats and climb fencing.[85] Ranger Batista's recommendations centered on substituting a patrol of two uniformed park rangers, for the current patrols then being carried out through a contracted security guard service.[86]

Also, while the General Management Plan was being prepared the system of fortifications at San Juan was submitted for consideration as a UNESCO World Heritage Site in 1982. The resulting 1984 listing raised the awareness of the international significance of "The Fortaleza and San Juan [National] Historic Site" as of "outstanding universal value," perhaps encouraging park planners to take a broader, more philosophical view toward interpretive possibilities that included the 20th century, and the role of the property in the history of the United States, as well as that of Spain.

The GMP planning effort occupied several years, marshalling the resources of San Juan NHS park staff, the Denver Service Center, the Historic American Building



Figure 2.29: When the National Park Service finally acquired the five-acre La Princessa [sic] Housing Area from the U.S. Navy in 1973, the vacant buildings became a liability, attracting illegal and unsavory activities. Additionally, the presence of the former military housing, along with its street trees and landscaping, obscured the historic "field-of-fire," oriented toward the land approach to San Juan. The National Park Service demolished the housing in 1980. Compare this image to Figure 2.2, taken c. 1896 from the same vantage point. Image c. 1963, (San Juan NHS Collection, 9508).

Survey, and the Southeast Regional Office. This planning was accomplished in consultation with various other federal agencies and departments of the Commonwealth. The Chief Historian of the National Park Service Edwin C. Bearss, a noted military historian, assigned himself the task of preparing a Historic Structures Report for the "San Juan Fortifications 1898-1958," completing his report on 20th century history in the months prior to the completion of the General Management Plan effort.

CLASHING PRESERVATION PHILOSOPHIES

Because the 1984 General Management Plan for San Juan NHS was intended to serve for a lengthy period up to and beyond twenty-five years, the plan included a philosophical forward-looking preamble. Those preparing the plan could not anticipate every issue that would face the park in the future, and provided some helpful generalities to guide the decisions of future park superintendents and resource. This philosophy was written to be consistent with the *Secretary of the Interior's Standards for the Historic Preservation Projects,* developed in 1976, following the assignment of responsibility to the Secretary in the National Historic Preservation Act of 1966.[87]

The preservation philosophy presented in the Secretary of the Interior's guidance, and later adopted in spirit into the 1984 General Management Plan for San Juan NHS, was intended to remove aesthetic bias from preservation decisions. The guidance provided was decidedly anti-restoration, being in greater favor of preserving the authenticity found in existing conditions. This mode of thinking owes some reference to mid-19th century writer and critic John Ruskin who wrote in his book, *The Seven Lamps of Architecture*;

> [Restoration] means the most total destruction which a building can suffer: a destruction out of which no remnants can be gathered; a destruction accompanied with false description of the thing destroyed… it is impossible, as impossible as to raise the dead, to restore anything that has ever been great or beautiful in architecture…Take proper care of your monuments, and you will not need to restore them.[88]

In keeping with this mode of thought, the 1984 GMP proposed these fundamental concepts to guide future preservation choices:

- The National Park Service will preserve the San Juan fortifications in their existing form, retaining as closely as possible their appearance between 1949 and 1961, the period during which the facilities were last used for military purposes;

- Missing historic fabric will not be reconstructed except when it is determined through the preservation maintenance program that reconstruc-

tion is necessary to ensure structural stability;

- No physical alterations will be undertaken to provide for adaptive use of the casemates or other interior spaces, or to provide for handicapped visitor access or for visitor safety, if it is determined that such actions will impair the significant architectural features or structural systems of the fortifications;

- Interior spaces will generally not be restored unless it is absolutely necessary to help convey an interpretive theme.[89]

It was convenient that the troublesome 1930s military housing within the Outworks was dispatched prior to the publication of the GMP, as the plan specified that, "The fortifications of San Cristóbal, including both the fort and the outworks, represent a continuum of history, and they will all be preserved in their existing form." The prescription did however end speculation as to the fate of the concrete World War II Joint Operations Center (Bldg. 213) in the San Cristóbal dry moat. The plan remained silent on prior proposals to build a shoreline trail below San Cristóbal connecting westward to El Morro, however, the plan did provide for reopening the long-closed shoreline trail between the San Juan Gate and El Morro.

Although the plan was completed in December of 1984, it forecast that the "San Cristóbal outworks will be opened to the public for the first time in 1984." The plan plainly stated that the Outworks had been closed due to prior criminal activity on site and the National Park Service's inability to "insure visitor safety." After the National Park Service and the Commonwealth of Puerto Rico had agreed in 1981 on concurrent law enforcement jurisdiction, there is indication that by the time the General Management Plan was completed, that there had been improvements that made consideration of opening the Outworks reasonable.

The plan suggested that opening the Outworks would also permit additional interpretive opportunities for tourists and local people, and encouraged the use of the area for passive leisure pursuits compatible with the historic purposes of the park. Visitation to the Outworks would be facilitated by a "Park-and-Ride shuttle bus stopping at the south El Abanico gate, with a visitor contact station at the guardhouse, and additional visitor services and bathroom facilities retrofitted into the El Abanico guardhouse. Existing paved roads formerly serving the La Princesa military housing would be removed and replaced with a service road gently graded in order to comply with standards for handicapped accessibility.

While restroom facilities were retrofitted into the El Abanico guardhouse, and interpretive wayside exhibits were designed and installed throughout the grounds of the San Cristóbal Outworks, the park's 1992 "Statement for Management" reported that the, "San Cristóbal Outworks remain closed to public use due to

staffing constraints."[90] Detailed landscape plans prescribed by the GMP to guide landscape treatment were never completed as hoped and the San Cristóbal Outworks remained closed throughout the 1990s.

Other ambitious GMP proposals requiring close cooperation with local authorities were left unfulfilled as the relationship between the National Park Service and the Commonwealth of Puerto Rico became increasingly strained. The ill feelings had their origin over well-intentioned yet divergent preservation values. In 1988, the National Park Service rejected a proposal from the Commonwealth to construct a landscaped parking lot on the Hill of the Three Wisemen, immediately east of El Abanico. In 1989, there was acrimony and accusations directed toward the National Park Service over the removal of trees lining the central driveway leading to El Morro following Hurricane Hugo. In 1992, the details of the rehabilitation of the Cuartel de Ballaja were challenged through the Section 106 process and referred to the Advisory Council on Historic Preservation.[91] In time, these differences grew to include the technical merits of masonry finishes.

General Management Plan objectives for gathering, organizing and presenting cultural resource data were satisfied in part during 1991, when a partnership between Columbia University and the former North Atlantic Region's Building Conservation Center completed an extensive Historic Structure Reports for the Fortifications of San Juan National Historic Site. This Historic Structure Report, comprised of three substantial volumes, was bound together with a Cultural Landscape Report for El Morro.

Both the Historic Structure Reports for the Fortifications of the San Juan National Historic Site and the companion Cultural Landscape Report for El Morro contradicted the fundamental preservation philosophy outlined in the park's operational planning document, offering recommendations inconsistent with the post World War II end date for the period of significance and preservation. Where the 1984 GMP prescribed the preservation of the San Juan fortifications in their "existing form," retaining as closely as possible their mid 20th century appearance, the 1991 Historic Structure Report and Cultural Landscape Report both recommended the reestablishment of circa 1898-1900 conditions.[92] The Historic Structure Report and the Cultural Landscape Report both recommended the removal of buildings and landscape features constructed by the U.S. Army. But, the most important differences between the 1940s and 1898 choice of dates involved the masonry surface of the historic walls. Apparently, the Army pursued a piecemeal program of patching the walls that effected a patina of age featuring a mottled and weathered appearance on the stone walls. Under Spanish management, up to and including the late 19th century, the walls were periodically recoated with stucco and burnished to a smooth consistent finish. The 1991 Historic Structure Report recommended the periodic reapplication of stucco to protect the underlying masonry, the same way that paint is used to preserve exterior wooden architectural surfac-

es.[93] Beginning in 1994, the San Juan National Historic Site began experimenting with this approach, hoping to determine an optimum formula and technique for reapplying the stucco coating.

Officials from the Puerto Rico SHPO office expressed their concern to the National Park Service that the proposed stuccoing of the walls would destroy the patina of age, which many considered a charming aspect of San Juan's architectural identity. Concerned that the patina was rather the product of advanced decay and leading to incipient failure, the National Park Service pressed on with its stucco trials. In 1997 an exchange of accusations and defenses between the Puerto Rico SHPO and the National Park Service indicated that the relationship between the parties had deteriorated to the point where a third party was needed to help mediate the dispute.[94]

In 1999, an "Expert Committee Regarding the San Juan Fortifications" was assembled in San Juan. The meeting was monitored by Alberto Tagle of the Getty Conservation Institute and Martha Catlin of the Advisory Council for Historic Preservation. The findings of the panel supported the reapplication of stucco to protect the stone walls. Weighing in on the formula of the stucco, the experts recommended that the mixture be prepared with lime putty and "pozzolana," a naturally occurring cement, instead of modern formulations of Portland cement.

However, searching for some relevancy in the findings of the committee regarding the question of future treatments for the San Cristóbal Outworks, the panel of experts prefaced their recommendations with an appeal to adopting a consistent preservation philosophy. Introducing their specific technical recommendations, the committee recommended that: "The entire fortification system should be considered as one site, regardless of ownership and including those sections not considered in the World Heritage Site." In their prologue, the panel offered that the goal of the treatment be preservation, rather than aesthetic effects; that the National Park Service proceed with care and consideration of local values, writing that, "…interventions should be minimal and limited to those actions which will protect existing fabric and slow down decay."[95]

When the expert panel made its philosophical recommendations in 1999, the landscape of the San Cristóbal Outworks no longer reflected the post World War II period recommended for preservation in the 1984 General Management Plan. Moreover, the construction of ten housing units there in the 1930s by the Army had significantly altered the landscape that the United States acquired from Spain in 1898. The demolition of the 1st and 2nd "Retirada" bisecting the parcel in 1930 has made it difficult to prescribe measures accurately reflecting landscape conditions following the Spanish-American War; and the removal of officers' quarters in 1980 made it difficult to reflect the site is as it was during World War II.

As part of the 2003 Business Plan prepared for the San Juan National Historic Site, the park restated its longstanding goal to open the San Cristóbal Outworks to the public. Opening the area will require some additional infrastructure, such as walkways and safety barriers that a landscape plan, requested by the park since the 1960s, would help to address. Developing landscape treatment recommendations and a schematic landscape treatment plan for the San Cristóbal Outworks also presents the park with an opportunity to design walkways, safety barriers and other exhibits that are meaningful to interpretation and education beyond merely moving visitors safely through the site.



Figure 2.30: This c. 1981 image of the San Cristóbal Outworks shows the property soon after the National Park Service removed the housing development constructed by the U.S. Army in 1930-1931. Note location of security fencing surrounding the parcel. Public access to this area has been limited since National Park Service acquisition in 1973, (San Juan NHS Collection, HABS PR-94-7).

ENDNOTES

1. *Photographic History of the Spanish-American War*. New York: Pearson Pub. Co., 1898. (LC Call No: E 735 .P5); http://www.loc.gov/rr/hispanic/1898/whitney.html

2. War Department, Adjutant-General's Office, Military Information Division. *Military Notes on Puerto Rico*, (Washington: Government Printing Office, 1898.

3. Edwin C. Bearss. *Historic Structure Report, Historical Data Section: San Juan Fortifications, 1898-1958, San Juan National Historic Site*, (Denver, CO: US Dept. of the Interior, National Park Service, 1984), 25.

4. Goethals to Wilson, 1/20/1899, National Archives RG 77, General Correspondence 1894-1924, doc. 27360/169.

5. Hodges' report and enclosures has become separated from its covering memorandum held at the National Archives. However, it is understood that the drawing held at National Archives II, Cartographic Branch, RG 77, Fortifications File, Dr. 107, SW 3-22, graphically outlines the major proposals for new fortifications. Further General Wilson's endorsement contained on the wrapper for RG 77, General Correspondence, doc. 26967/17 relays some of the tactical details of Hodges report.

6. Brig. Gen. John M. Wilson, 1st indorsement, April 15, 1899, National Archives, RG77, General Correspondence, doc. 26967/17.

7. Flagler to Wilson, Feb. 13, 1901. National Archives, RG 77, General Correspondence, doc. 37102/6 (SAJU 299).

8. National Archives, RG 77, General Correspondence, doc. 26967. July 7, 1902 , R.L. Carmichael, Captain, Artillery Corps forwards a proposal recommending removal of the counterscarp wall and embankment of the dry moat on the South side of El Morro as a means of supplying material for filling, in the proposed improvement of the El Morro parade grounds and etc. Carmichael's proposal is forwarded up and endorsed by many until it arrives at the desk of Brig. Gen G. L. Gillespie 9/10/1902 - Excerpt from Gillespie's endorsement: "The land front of the Morro of San Juan is a very perfect and complete relic of a system of fortifications that has passed away. The stone work is of the best. The combination of scarp, moat, counterscarp, glacis and face cover is, as it stands, one of the few complete specimens of this obsolete defensive system. To mutilate the old work for the simple purpose of obtaining filling material a little cheaper than by taking it from some other point appears to be a matter which should not be entered on except after the most careful consideration. It is suggested that before any steps are taken to destroy the historical completeness of the work, a Board be formed to look into the question from a less purely utilitarian point of view. As a work of actual defense, the counter scarp glacis and face cover have no present value. The modern project of defense would not be injuriously affected by the proposed work." The 10th endorsement by Major General Arthur MacArthur, Major General Commanding, Department of the East supports Gillespie's critique. Excerpt from MacArthur's endorsement: "My views in this respect were obtained from a considerable experience in Manila, where a most unreasonable clamor was raised by utilitarians, demanding the destruction of perhaps what is one of the handsomest works surrounding a walled town left in the world. I resisted the idea, and hope that the works at Manila and at other points in our island possessions which represent distinct types of military engineering may be permanently preserved under conditions which will not interfere with the spirit or progress of the interests of individuals. I know that such action is possible in Manila and that the old fortifications could not only be maintained as a beautiful example of the science of fortifications, but could be made to work into a scheme for beautifying the city, and without interfering with any material interest whatever. I am satisfied that such is also the case in the present instance, and therefore recommend that the views expressed by the Chief of Engineers [Gillespie] be definitely adopted by the War Dept. in respect of the works at San Juan."

9. George W. Davis, Yates Stirling, George L Gillespie, Henry C. Hasbrouck and C.A.F. Flagler to the Secretary of War, December 15, 1900. National Archives, RG 77, General Correspondence, doc. 37288/6 (SAJU 381).

10. Transcript, Committee on Insular Affairs, House of Representatives, Washington, D.C., Saturday, April 12, 1902, "Supervisory Authority over Public Lands in Porto Rico (Library of Congress Call #HD441 .D3 1902).

11. "Acquirement of San Juan Military Reservation," notes copied from publication entitled "U.S. Military Reservations, National Cemeteries and Military Parks," edition of 1916, National Archives II, Cartographic Branch, Fortifications File, DR107-12-45B.

12. 2nd Lieut. J. S. Oakes to The Adjutant General (through military channels), July 29, 1903, National Archives, RG 77, General Correspondence, doc. 26967/163. The 1st endorsement of Oakes proposal, written by Major Henry A. Reed of the Artillery Corps reads: "This is original with Lieutenant Oakes: it involves a new idea, practically dispensing with fortifications in the City of San Juan. Wile it seems unwise to relinquish the commanding sites now occupied in the City, it may be said that many naval officers here advocated the fortifying of Punta Salinas in addition to the present sites: and this map gives valuable information as to this Punta."

13. Edmund Morris, *Theodore Rex,* (New York: Random House, 2001)191.

14. Captain W. V. Judson, Corps of Engineers, to The Adjutant General, (through the Chief of Engineers), April 15, 1903. National Archives, RG 77, General Correspondence, doc. 26967.

15. Newsclipping, "Defense of San Juan: Plan for Principal Fortifications of Porto Rico," *The Washington Star,* November 3, 1903, National Archives, RG 77, General Correspondence, doc. 26967/174. Note: "Proceedings of a Board of Officers convened at San Juan, P. R.," Sept. 11, 1903, National Archives, RG 77, General Correspondence, doc. 26967/177 contains the following discussion regarding plans to develop the land south of the San Cristobal Outworks. "For some reason unknown to the Board, the land lying to the immediate south of San Cristobal and between it and the military road and the greater portion of which was included in the tract recommended by Capt. W.V. Judson, Corps Engineers, as necessary for military purposes, was not included in the tract set aside by the G. O. above mentioned. In view of the restricted sites for Officers Quarters, Barracks, Ordnance storehouses and work shops and parade ground for the garrison stationed at San Cristobal; the probability of the erection of inflammable and objectionable buildings in close proximity to the batteries and garrison if this land remains in possession of private parties, the board recommends that title be acquired to the following property; The tract lying to the south and south east of San Cristobal and bounded by the following lines: the Military road on the south, the military reservation line with the bearing of N. 3o - 53' west for 260 feet on the west, the present adjacent and southern boundary lines of the military reservation on the north and a line running along the western boundary of the property of the Asilo Municipal on the east; this later line to extend from the present military reservation on the north to the Military road on the south."

16. Bearrs, 73.

17. National Archives, War Department, Bureau of Insular Affairs, Frank McIntyre, Chief of Bureau of Insular Affairs to The Adjutant General, March 31, 1913 (SAJU 451)

18. Bearrs, 137.

19. Bearrs, 100, quoting Rodriguez to Taft, January 31, 1908, National Archives, RG 92, General Correspondence 1890-1914, doc. 160228.

20. National Archives, War Department, Bureau of Insular Affairs, Frank McIntyre, Chief of Bureau of Insular Affairs to The Adjutant General, March 31, 1913 (SAJU 451)

21. Col. Roessler to The Chief of Engineer Officer, Eastern Department, March 4, 1914. National Archives, RG 77, General Correspondence, doc. 37102/35.

22. Col. W. M. Black, Department Engineer, Corps of Engineers to Chief of Staff, Eastern Department, April 9, 1914, page 2, National Archives, RG 77, 37102/38 (SAJU 389).

23. Captain E. J. Dent, Corps of Engineers to The Commanding Officer, District of Porto Rico, San Juan, April 20, 1914, National Archives, RG 77, General Correspondence, doc. 37102/53.

24. Col. W. M. Black, Department Engineer, Corps of Engineers to Chief of Staff, Eastern Department, April 9, 1914, page 2, National Archives, RG 77, 37102/38 (SAJU 389).

25. Lieut. Col. C.H. McKinstry, to The Chief of Engineers, (through Div. Engineer, Eastern Div.) January 25, 1916 (SAJU400).

26. Lieut. Col. C.H. McKinstry to The Chief of Engineers (through Div. Engineer, Eastern Div.), January 26, 1916, (SAJU 400).

27. Bearrs, 150.

28. Bearrs, 143, 150.

29. Bearrs, 143.

30. M.V. Haas, Assistant Engineer to The District Engineer, Porto Rico District, New York City. National Archives, RG 77, General Correspondence, doc. 106439/12.

31. M.V. Haas, Assistant Engineer to The District Engineer, Porto Rico District, New York City. National Archives, RG 77, General Correspondence, doc. 106439/12

32. "Fortifications built by the United States," (6/11/1917-7/22/1919), National Archives II, College Park, MD, Cartographic Branch, Fortification File, DR107-12-45B, narrative cites July 22, 1919 approval to scrap the three 4.7" guns as Corps of Engineers 472.3-F35.

33. Major General Eli A. Helmick (IG) to The Adjutant General, "Inspection of the 65th Infantry, Porto Rico," April 15, 1927, National Archives II, RG 159, Office of the Inspector General, Entry 11, Box 291. Note: "Consolidation of the 42nd and 65th Infantry regiments. The first contingent from the 42nd Infantry of enlisted men and their families arrived from Panama while I was in San Juan… Little difficulty was experienced in caring for the families of enlisted men. Chaplain Marino Bassallo was very active in the work of caring for these families, and had placed all but a comparatively few who, with their children, were given temporary shelter and food in the C.M.T. Camp on the reservation of San Juan." According the Army Center for Military History in the online volume, "American Military History," vol. 2, "The Army's CMTC program, a very modest alternative to the system of universal military training proposed in 1919, provided about 30,000 young volunteers with four weeks of military training in summer camps each year. Those who completed four years of CMTC training became eligible for Reserve commissions, the CMTC thus providing another (though much smaller) source for the rolls of the Officers' Reserve Corps and the National Guard."

34. http://en.wikipedia.org/wiki/USS-Wright-(AV-1)

35. Lieutenant Virgil Baker, District Communication Superintendent to Commanding Officer, post of San Juan, P.R. May 7, 1918, National Archives , RG 395, U.S. Army Overseas Operations and Commands 1898-1942, District of Puerto Rico, Entry 6120. "Your cooperation is urgently requested in obtaining a revocation by the War Department of its permission which I have accidentally learned has been given for the use of the part of the Army Reservation adjacent to and eastward of this Station as a location for the undesirable population infesting the mud flats of Puerto de Tierra…" See also, Governor Arthur Yager to Major General Frank McIntire, Asst. to the Chief of Staff, War Department, April 20, 1919, National Archives, RG 395, U.S. Army Overseas Operations and Commands 1898-1942, District of Puerto Rico, Entry 6120, "… I notice also that the military officers here are making a survey of all the Federal property and buildings in the Marina which the Insular Government has been occupying and using for many years as offices for some of its departments, and there are rumors to the effect that those officers are planning also to take that property from the insular Government

for some military purpose. I do not see how it is possible for the Insular Government to give up possession of this property in the Marina at this time, and I do not see also how it can be necessary or useful for military purposes, in fact the status and condition of the Porto Rico Regiment seems to me now to be so uncertain that the whole matter requires careful revision and adjustment…"

36. Col. Melville S. Jarvis, Porto Rico Infantry to Col. C. B. Hartman, Quartermaster Corps, June 2, 1919. National Archives, RG 395, U.S. Army Overseas Operations and Commands 1898-1942, District of Puerto Rico, Entry 6120.

37. National Archives II, RG 159, Office of the Inspector General, Entry 11, Box 291, Reservation, Location, Administration, Purpose, Etc, March 1, 1921, San Juan Reservation. Note: This document contains an inventory of post buildings, including record of two temporary lavatories, two temporary barracks buildings, and N.C.O quarters somewhere on the San Juan post; no temporary officers' quarters are listed.

38. Annotated drawing, "San Juan Island Porto Rico showing Military Reservations, Walls, and Fortifications" 1914, showing locations of projects and funding for wall repairs, last date noted is May 12, 1932, National Archives II, Cartographic Branch, Fortification File, DR107-12-45B

39. Lieut. Col W. W. Taylor, Jr., to Commanding General, 2nd Corps Area, Governor's Island, N.Y. February 27, 1925, "Inspection of Post of San Juan and Sub-post of Henry Barracks, Porto Rico," National Archives II, RG 159, Office of the Inspector General, Entry 11 Box 291.

40. Major General James H. McRae to The Inspector General, "Inspection of Post of San Juan and Sub-Post of Henry Barracks, Porto Rico, (FY 1927), April 18, 1927, National Archives II, RG 159, Office of the Inspector General, Entry 11 Box 291.

41. Jody Cook and John Sprinkle, National Register of Historic Places Registration Form for Randolph Field Historic District, (Atlanta, GA: National Park Service, Southeast Regional Office, 2001) 50.

42. Jody Cook and John Sprinkle, National Register of Historic Places Registration Form for Randolph Field Historic District, (Atlanta, GA: National Park Service, Southeast Regional Office, 2001) 51, citing, Muriel Zimm Ray, "The Well Planned Post," M.A. thesis, George Washington University (1994) 23.

43. Cook, 51.

44. War Department, Office of the Quartermaster General, Construction Service, "Studies for Proposed New Construction, San Juan, Porto Rico," Approved by Geo. B. Ford, A.I.A., July 5, 1929. National Archives II, RG 159, Office of the Inspector General, Entry 11, Box, 134.

45. Completion Report for Construction of 9 - Sets Company Officers' Quarters, 1-Set Field Officer's Quarters at La Princessa Area, San Juan, Porto Rico. National Archives II, RG 77, Office of the Chief of Engineers, Construction Completion Reports, 1917-1943, San Juan, P.R. Entry 391, Box 279, Book 1. Note: The same record book documents the construction of quarters occurring on the San Sebastian Bastion concurrent with this project, as well as concrete quarters at El Morro.

46. Annual Survey and Inspection of Post of San Juan, Porto Rico, April 15, 1930, National Archives II, RG 159, Office of the Inspector General, Entry 11, Box 291.

47. Master Plan for San Juan NHS, 1963 edition, Park Origins and Land Status, SAJU Dead file #165.

48. Radio Address of the President, San Juan, Puerto Rico, July 7, 1934, National Archives, Franklin D. Roosevelt Library, ARC Identifier, 197459.

49. Secretary of the Interior Harold Ickes to President Franklin Roosevelt, November 23, 1934 (SAJU 42).

50. Secretary of War George H. Dern to President Franklin Roosevelt, December 20, 1934, (SAJU 52).

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52. Hearing Before the Committee on Public Lands and Surveys, United States Senate, Seventy-Fourth Congress, First Session on S. 2864, "A Bill to Establish the San Juan National Monument, Puerto Rico, and for Other Purposes," (Washington, D.C.: United States Government Printing Office, 1935), SAJU 32/

53. Congressional Record, (H.R. 7487), January 17, 1938, (SAJU 34).

54. Assistant Director G. A. Moskey to Director Demaray, January 25, 1938, SAJU 31.

55. The Adjutant General to The Commanding General, Puerto Rican Department, July 7, 1939, "Development of the Puerto Rican Joint Defense Plan and the Puerto Rican Defense Project," declassified, National Archives, RG 395, U.S. Army Overseas Operations and Commands, District of Puerto Rico, Entry 6120, Boxes 1 and 2.

56. Hector R. Marin to Gregorio Batista, "Preliminary research on the use of San Juan's fortification by the U.S. Army during the Second World War, 1 March 1985, SAJU Dead File 234.12

57. Lieut. Col. K. T. Blood, C.A.C. Executive to Chief of Coast Artillery, War Department, July 20, 1940, declassified, National Archives, RG 395, U.S. Army Overseas Operations and Commands, District of Puerto Rico, Entry 6120, Boxes 1 and 2. Excerpt: "1. The proposals appearing in basic communication are considered sound. The likelihood that additional fixed seacoast batteries will be installed on the north shore raises a question as to the advisability of authorizing all or part of the proposed construction at Fortress San Cristobal, Palo Seco and Borinquen Field. It is believed, however, that all of the proposed construction should be authorized for the following reasons: a.) the gun emplacements can be built at a relatively small expense and will be available long before the fixed installations which may be approved, are completed. Thereafter they will be available to reinforce the fires of such fixed seacoast installations as are ultimately approved."

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61. Lieut. Col. F.F.C. Hyde, District Engineer, to Chief of Engineers, through Division Engineer, Caribbean Div., New York City, August, 26, 1941, SAJU 418.

62. Secretary of the Interior C. Girard Davidson to President Truman, September 30, 1948, SAJU 615.

63. Division of Territories and the National Park Service to the Secretary, August 8, 1946, SAJU 100.

64. Associate Director Demaray to the Secretary, August 14, 1947, SAJU 104.

65. J.A. Krug, Secretary of the Interior, to Gordon Gray, Secretary of the Army, July 2, 1949, SAJU Local 399, also SAJU 8130, also Nunez 131.

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Construction of Housing Development on La Perla Site," March 11, 1949, SAJU 113.

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70. Captain James W. Clawson, Corps of Engineers, "Transfer of Portions of Fort Brooke," September 13, 1961, accepted by Kitteredge Wing for the National Park Service, executed in the presence of Brigadier General Roland H. Del Mar, SAJU Dead files, 292.

71. Supt. SAJU, to Director, Superintendent's Monthly Narrative Report for February, March 12, 1963, (SAJU dead file 136).

72. Narrative Report, Accelerated Public Works - APW 3, San Cristobal & Outworks, El Morro, (SAJU dead file 97).

73. Management Appraisal Report, April 17, 1964, (SAJU dead file 96).

74. Master Plan, February 12, 1965, Chapter 5: Design Analysis/General Development. Excerpts: Visitor Use Facilities: 1.) San Cristobal "The main visitor center is located within the fort casements and will contain information and orientation facilities, museum, interpretive exhibits and assembly area. Interpretive tours of the fort will begin here. Additional interpretive exhibits will be available at El Abanico, the easternmost fortification of San Cristobal. Access to El Abanico will be from either of two parking areas, one just outside the south fort wall along a short spur from Avenue Munoz Rivera, the other in the moat within the walls. The two shoreline trails are easily accessible from the three-paking areas at San Cristobal (SAJU Dead file #165); Excerpt: "No Rift Seen with US Over La Perla Plan," The San Juan Star, February 5, 1967, Washington: "Carlos Alvarado, executive director of the Urban Renewal and Housing Corp (URHC), says his agency's plans for La Perla will not conflict with any policy of the federal government's connected with the nearby El Morro fortress. Alvarado said the URHC intends to create only a park in the area once La Perla slum is torn down. "We do not plan to have any buildings in the park," Alvarado said. "Therefore there's no chance of conflict with the wishes of the federal government." The National Parks [sic] Service, which owns El Morro recently expressed concern that the Commonwealth government might build something on the site of La Perla that would not be appropriate. The federal agency was particularly apprehensive that high rise buildings might be constructed on the nearby site. Alvarado dismissed these fears. He said his agency abandoned any plans for housing in the area more than three years ago…"

75. Superintendent SAJU to Director, Superintendent's Monthly Narrative Report for June, July 8, 1966, SAJU, no id#)

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82. "Foreword," Charles E. Peterson, March 27, 1962 (SAJU 771).

83. Superintendent Lloyd K. Whitt to Regional Director, Southeast Region, Superintendent's Annual Report, March 14, 1979, H2621-SER-01, (SAJU, no reference).

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86. Ibid.

87. http://www.cr.nps.gov/hps/hli/introguid.htm

88. John Ruskin, The Seven Lamps of Architecture, (London: Smith, Elder & Co. 1849).

89. General Management Plan-Environmental Assessment, San Juan National Historic Site, San Juan, Puerto Rico. National Park Service, Denver Service Center, December 1984.

90. United States Department of the Interior Requisition, Form DI-1, September 28, 1987, "Furnish labor, tools, materials and equipment to perform the following work at San Cristobal Outworks Restroom: a.) Supply and install water and sanitary liners; install required restroom accessories, b.: Construct concrete block and concrete floor finished in Boneonite; install ceramic floor and wall tiles; plaster new concrete block and paint, $19,675.00," (SAJU dead file 353); "Statement for Management," San Juan National Historic Site, San Juan, Puerto Rico, approved by Acting Regional Director, May 1, 1992, (SAJU dead file 167).

91. <http://www.achp.gov/casearchive/southeastcase.html>

92. Joan Berkowitz, E. Blaine Cliver et al, *Historic Structure Report: The Fortifications of San Juan National Historic Site, v. 1*, (National Park Service, North Atlantic Region, 1991) chap. III, 117; Richard Crisson, Robert Holzheimer and Marjorie Smith, "Cultural Landscape Report: El Castillo de San Felipe del Morro," in Historic Structure Report: The Fortifications of San Juan National Historic Site, v. 3, (National Park Service, North Atlantic Region, 1991) part IV, 48.

93. Joan Berkowitz, E. Blaine Cliver et al, *Historic Structure Report: The Fortifications of San Juan National Historic Site*, v. 1, (National Park Service, North Atlantic Region, 1991) chap. III, 128.

94. Lilliane D. Lopez, Architect, Advisor to the Governor, Culture Planning and Urbanism, State Historic Preservation Officer, to The Honorable Bruce Babbitt, Secretary, Department of the Interior, April 10, 1997 (SAJU 577); Danielle Brown (for Acting Regional Director), to Lilliane D. Lopez, State Historic Preservation Officer, May 29, 1997 (SAJU 580).

95. Elena Charola, Luis Torres Montes, Luis Angela Useche, Fernando M.A. Henriques, Jeanne Marie Teutonico, with Alberto Tagle, and Martha Caitlin. "Recommendations of the Expert Committee Regarding the San Juan Fortifications," San Juan Puerto Rico, 7-11 June 1999, (SAJU 571).

3. EXISTING CONDITIONS

This chapter describes the existing conditions of San Juan National Historic Site in 2015. Existing landscape conditions are documented for each of the ten landscape characteristics and features including spatial organization, land use, topography, natural systems, views and vistas, circulation, vegetation, buildings and structures, small-scale features, and archeological features.

The narrative is supplemented by an existing conditions drawing (see Drawing 3.1). This drawing is based on aerial photos taken in 2004 and 2010, with updates integrating site photos taken in 2012. A brief description of individual site features is presented in the following chapter, Analysis & Evaluation. Detailed information about buildings and structures is provided in a series of historic structure reports (*The Fortifications of San Juan National Historic Site Volume I, II, and III* published in 1991 by Joan Berkowitz et al.).

LANDSCAPE CHARACTERISTICS AND FEATURES

The following section documents the general landscape characteristics and features of the San Cristóbal Outworks. Detailed descriptions of landscape features are presented in the following chapter, Analysis and Evaluation.

SPATIAL ORGANIZATION AND LAND USE

Spatial organization is the three-dimensional organization of physical forms and visual associations in a landscape, including the articulation of ground, vertical, and overhead planes that define and create spaces. Land use describes the principal activities in a landscape that form, shape, and organize the landscape as a result of human interaction.

Although no longer an active military base, the San Cristóbal Outworks retain the general organization and interrelationships characteristic of the historic period. The outworks themselves and their physical relationship to one another remains primarily unchanged from the historic period. Prior to c.1930 the 1st and 2nd Retirada walls bisected the central open area of the outworks north to south. The Retirada walls were removed in preparation for the 1930 construction of officers housing. In 1980, the National Park Service removed the officers housing, accompanying roadways, and residential plantings. The Outwork fortifications remain clustered around a modified open area consisting primarily of turf grass. To the north and east, as during the historic period, a combination of fortification walls and natural cliffs drop steeply to the shores of the Atlantic Ocean (Figure 3.1). The south boundary of the park continues to be

defined by topographic change and fortification walls. Contemporary security fencing lines much of the perimeter. South of the park is the modern city of San Juan. San Cristóbal continues to define the western edge of the San Cristóbal Outworks (Figure 3.2).

The Spanish began construction of the defenses at San Juan in the 16th century. San Cristóbal's purpose was to defend the approach from the land to the east. The site's primary use was for defense through World War II. The property was transferred to the National Park Service in 1996. While portions of the Outworks are used for recreational purposes, portions remain closed to the public because of safety concerns.



Figure 3.1: View northwest to the great wall and La Princesa. Steep cliffs descending to the Atlantic Ocean have been reinforced with a mixture of stone, masonry work, and concrete. Vegetation grows on portions of the sea cliffs, 2012 (SAJU).



Figure 3.2: View east across San Carlos to El Abanico and the Capitol. As during the historic period the land drops quickly to the Atlantic Ocean north of the Outworks while fortification walls form the south boundary (image right) The modern city of San Juan is visible beyond the park boundary, 2012 (SAJU).

TOPOGRAPHY, NATURAL SYSTEMS, AND VIEWS AND VISTAS

Topography is the three-dimensional configuration of a landscape surface characterized by features (such as slope and articulation) and orientation (such as elevation and solar aspect). Natural systems and features are the natural aspects that have influenced the development and physical form of a landscape. Views and vistas are the prospect created by a range of vision in a landscape, conferred by the composition of other landscape characteristics and associated features. Views are the expansive or panoramic prospect of a broad range of vision, which may be naturally occurring or deliberately contrived. Vistas are the controlled prospect of a discrete, linear ranger of vision, which is deliberately contrived.

The natural topographic advantage offered by the site overlooking the Atlantic Ocean on the north shore of the San Juan islet made the site a natural choice for development of the impressive network of fortifications. The commanding location allowed for control of San Juan harbor, the key point for control over the Caribbean. The rising topography, proximity to the Atlantic Ocean, and unhindered views across the land east and to the Atlantic Ocean offered the Spanish a natural advantage for defense. The San Cristóbal Outworks are located on a hill rising 150 feet above sea level, allowing for wide-sweeping views which allowed the Spanish to easily spot enemies and a military



Figure 3.3: View northeast from La Trinidad. Substantial fortification walls line the south boundary of the Outworks. Site topography drops in a series of steep steps from the central portion of the Outworks to the south boundary and Avenida Muñoz Rivera. Portions of the south entry drive and Avenida Muñoz Rivera are visible at image right, 2012 (SAJU).



Figure 3.4: View northeast from Avenida Muñoz Rivera to the south entry drive and gate. Note the imposing security fence lining the roadway, 2012 (SAJU).



Figure 3.5: View northwest from El Abanico to El Abanico Guardhouse. A portion of the northeast entry gate and accompanying moat is visible at image right. Note the fencing along the cliff edge, 2012 (SAJU).



Figure 3.6: View northeast across the open central portion of the Outworks to El Abanico. A trace of a residential vehicular circulation route installed c. 1930 is visible in the middleground. The South Gate sentry box is visible at image right, 2012 (SAJU).

advantage. Within the Outworks, topography has been carefully designed and engineered to work in conjunction with the fortifications. Constructed as a land defense from the east, the site retains unobstructed views to the east. The sites natural topography complemented by additional height offered by the defenses provides a sweeping view to the east. Contemporary development within San Juan has altered the view to the east, however the historic wide-spread view remains (Figure 3.3).

CIRCULATION

Circulation includes the spaces, features, and applied material finishes that constitute the systems of movement in a landscape.

Circulation systems at San Juan National Historic Site include both historic and contemporary pedestrian and vehicular routes. During the historic period a network of tunnels allowed below-ground pedestrian movement between fortifications. Many of these tunnels remain today, although the entrances to some tunnels have been sealed. During the historic period the Outworks were accessed via the south and east entry drive. The south entry drive was expanded in conjunction with the development of the officers housing in the 1930s, to include a 'y" at the entrance from Avenida Muñoz Rivera. The south entry drive is presently surfaced crumbling and cracking bituminous asphalt concrete (Figure 3.4). Although no longer extant, the entrance of the east entry drive to the fortifications is marked by the Northeast Bridge (Figure 3.5). Evidence of the northeast drive itself has been removed. An internal vehicular circulation system consisting of several loops surrounding a residential boulevard served the officers housing development constructed in the 1930s. Both the officers housing and the roadway system were removed by the National Park Service in 1980. Today a faint trace of the internal residential circulation system is still visible today (Figure 3.6).

Contemporary circulation systems are minimal and designed to accommodate universal access to the park's primary facilities. Developed circulation routes are primarily associated with visitor access to San Cristóbal. Treatment recommendations in the report illustrate proposed pedestrian and vehicular circulation routes within the Outworks.

VEGETATION

Vegetation includes the deciduous and evergreen trees, shrubs, vines, ground covers and herbaceous plants, and plant communities, whether indigenous or introduced in a landscape.

Vegetation within the Outworks, as during the historic period, consists primarily of grass. Grass covers steep designed slopes within the fortifications and the central open area. Volunteer vegetation grows on the eastern sea cliffs (Figure 3.1). Residential plantings, including palm trees planted c.1930, within the interior of the outworks have been removed. Removal of volunteer vegetative growth on fortifications has been executed within the past decade to reduce the impact of vegetation on historic structures.

BUILDINGS AND STRUCTURES

Buildings are elements constructed primarily for sheltering any form of human activity in a landscape. Structures are elements constructed for functional purposes other than sheltering human activity in a landscape. Engineering systems are also structures.

Military fortifications and accompanying infrastructure including walls, ramps, and gates are the predominant buildings and structures of the San Cristóbal Outworks. Built with defense as the primary objective, the buildings and structures of the Outworks are careful crafted for strength, security, and protection. The buildings and structures present on the site today reflect the long military history of the site including improvements made to the site during World War II. The impressive fortifications and accompanying structures consist primarily of brick, stone, stucco, and earth. The fortifications of the San Cristóbal Outworks were intended to support Castillo San Cristóbal. The Outworks consist of La Trinidad Countergaurd, San Carlos Ravelin, Santa Teresa Battery, El Abanico Gaurdhouse, El Abanico Fort, the Northeast Gate of El Abanico, the South Gate of El Abanico, and La Princesa Battery. Historic structures no longer present include the 1st and 2nd Retirada and the La Princesa Housing area. The interconnected network of walls, moats, bridges, tunnels, ramps, and staircases continue to connect fortifications throughout the Outworks (Figure 3.7).

Minor alterations have been made to the Outworks landscape to accommodate contemporary maintenance and visitor needs. The primary development of infrastructure to support park needs was done within the San Cristóbal fortifications. Within the fortifications a contemporary maintenance garage was constructed in the south west corner. The El Abanico Guardhouse was converted to a maintenance garage in 1930, and to a restroom for park visitors c.1980.



Figure 3.7: View west from El Abanico to La Trinidad, San Carlos, and Santa Teresa, 2012 (SAJU).

SMALL-SCALE FEATURES

Small-scale features are the elements providing detail and diversity for both functional needs and aesthetic concerns in a landscape.

Small scale features within the San Cristóbal landscape consist primarily of fences, informational and directional signage, and furnishings necessary for visitor use including waysides, lighting, benches, and garbage cans. Fences primarily protect visitors from steep drop-offs within the fortifications and secure the park perimeter. Existing fence styles within the Outworks includes: steel pipe fencing, metal 'banister-style' fencing with concrete posts, and chainlink fencing with a barbwire top. Several wooden bridges span moats. Signs include directional and interpretive information.

ARCHEOLOGICAL FEATURES

Archeological sites are the ruins, traces, or deposited artifacts in a landscape, evidenced by the presence of either surface or subsurface features.

Archeological sites and features are present within the San Cristóbal Outworks. The site was occupied by the Spanish beginning in the 16th century. Prior to the arrival of the Spanish the site had been occupied by various native groups, including the Taino for hundreds of years. For more information regarding archeology sites and features within the park, archeology reports should be consulted.

Atlantic Ocean

CASTILLO SAN CRISTÓBAL

SANTA TERESA

LA PRINCESA

Masonry Rubble

HILL OF THE THREE WISEMEN

EL ABANICO

Visitor Center

Plaza San Juan Bautista

Avenida Muñoz Rivera

SAN CARLOS

Capitol (1925)

Carnegie Library

Casa de España

Ateno Puertorriqueño

Casa Olímpica

LA TRINIDAD

Avenida Ponce de León

To Old San Juan

Paseo Covadonga

Cultural Landscape Report

San Cristóbal Outworks San Juan National Historic Site

San Juan, Puerto Rico

Existing Conditions

National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

SOURCES

1. As-built plan, 1949
2. Orthographic Photo, 2004
3. Orthographic Photo, 2010
4. National Park Service photos, 2013

DRAWN BY

Alexandra von Bieberstein, AutoCAD 2013 & Illustrator CS5

LEGEND

- National Historic Site Boundary
- Security Fence
- Safety Fence
- Canopy Vegetation
- Beach
- Turf
- Building
- Paved Surface
- Fortification
- Sidewalk/ Plaza Space
- Historic Road Trace
- Masonry Rubble

NOTES

1. Projection: UTM Zone 19N, NAD 83, International Feet
2. All features shown in approximate scale and location

0′ 35′ 70′ 140′

Drawing 3.1

4. ANALYSIS AND EVALUATION

This chapter begins with an evaluation of the historical significance of the San Cristóbal landscape and an evaluation of its historic character based on findings of the site history and existing conditions chapters. The analysis and evaluation have been developed in accordance with the National Register of Historic Places program, which lists properties that are significant to our nation's history and prehistory, and the National Park Service's *Guide to Cultural Landscape Reports: Contents, Process, and Techniques* (1998).The first section of this chapter includes a summary of World Heritage Site status, existing National Register documentation, a statement of significance, and an evaluation of the historical integrity of the San Cristóbal outworks according to the seven aspects defined by the National Register. The second section analyzes the historic character of San Cristóbal according to National Park Service cultural landscape methodology, which organizes the landscape into characteristics and associated features. Historic and existing conditions of extant features are compared and evaluated to determine whether or not it contributes to the historic character of the landscape.

SUMMARY OF SIGNIFICANCE

Over 250 years of Spanish efforts to fortify and retain control of Puerto Rico and access to the Caribbean are reflected in the fortifications encompassed by San Juan National Historic Site. In addition to the San Cristóbal Outworks, the subject of this report, the park encompasses Castillo San Cristóbal, Castillo San Felipe del Morro, approximately two-and-a-half miles of massive stone walls which enclose the old city, the San Juan Gate, and Castillo San Juan de la Cruz. San Juan National Historic Site is a World Heritage Site and listed as a nationally significant district on the National Register of Historic Places. The San Cristóbal Outworks also contribute the nationally significant San Juan Historic Zone. San Juan National Historic Site contributed to the 2013 National Historic Landmark designation of Old San Juan. In all four instances the San Cristóbal Outworks contribute to the significance of the larger landscape.

WORLD HERITAGE STATUS

"San Juan Fortifications: La Fortaleza and San Juan National Historic Site" were accepted to the World Heritage List of the United Nations Educational, Scientific and Cultural Organization (UNESCO) on January 23, 1984. The World Heritage List identifies cultural and natural properties considered to be of outstanding universal value, and by virtue of this quality, especially worth safeguarding for future generations. The

historic site qualified for this distinction because it is directly and tangibly associated with events, ideas, or beliefs of outstanding universal significance[1]. Specific reference to Castillo San Cristóbal within the nomination states, 'with its dependencies, is another accomplished example of the military architecture of the second half of the 18th century.'[2] The significance of the fortifications and outworks as described in the World Heritage List nomination follows:

> 'The fortifications of San Juan and the other mighty redoubts built by Spain in the Americas are premier physical evidences of the epic imperial struggles that permanently fixed the destiny of the Americas. They are key monuments of the era when the Caribbean was the cockpit of international maritime rivalry and its islands played a part of almost undue importance in world strategy that was particularly international in its happenings. . . . In their engineering art, the Spanish forts girdling the Caribbean are manifestations of the architectural-engineering and historical heritage of the Old World and the New. . The defenses of San Juan are a well-preserved element in this grand system. . . These fortifications are eminent physical reminders of Spain's past conquest and political dominion in the Caribbean and of the epic struggle she conducted to maintain her Empire in the Americas. In this century, however, these fortifications have been transformed into potent symbols of the cultural ties that link the Hispanic World. . San Juan's forts remain as the cultural patrimony of the Puerto Rican people, while possessing a meaning even for nations who have striven to control or influence the Hispanic peoples . . .They form, individually and collectively, for all these reasons part of the universal historical heritage of humanity'.[3]

NATIONAL REGISTER STATUS

The National Park Service evaluates the historic significance of properties though a process of identification and evaluation defined by the National Register of Historic Places Program. According to the National Register, historic significance may be present in buildings, sites, districts, structures, or objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property can be found to have significance on a national, state, or local level, but must meet one or more of the following criteria in order to be considered eligible for the National Register: (A) Association with events that have made a significant contribution to the broad patterns of history; (B) Association with the lives of persons significant in our past; (C) Retention of distinctive characteristics of a type, period, or method of construction, or the work of a master, or that possess high artistic value, or that represents a significant and distinguishable entity whose components may lack individual distinction; or (D) Has yielded or may be likely to yield information in prehistory or history.

Summary of Existing National Register Documentation

San Juan National Historic Site was administratively listed on the National Register of Historic Places with the passage of the National Historic Preservation Act

on October 15, 1966.[4] Two subsequent National Register nominations encompass the San Cristóbal Outworks. Documentation listing the San Cristóbal Outworks as a contributing resource to the San Juan Historic Zone, a historic district encompassing the northwestern triangle of the islet of San Juan was accepted to the National Register of Historic Places on October 10, 1972.[5] National Register documentation completed in 1974 lists the San Cristóbal Outworks as contributing structural resource to San Juan National Historic Site. The significance of the San Cristóbal Outworks is related to the significance of the larger landscape in both instances.

Statement of Significance

The San Cristóbal Outworks are nationally significant over the period beginning in 1533, with the initial construction of fortifications on San Juan, and extending to 1945, the end of World War II. The period of significance encompasses four centuries of expansion and improvements to the fortifications by the Spanish between 1533 and 1898, and subsequent modifications by the United States until the end of World War II. The San Cristóbal Outworks are significant under the following National Register criteria and in the following areas:

Criterion A: Pattern of events, European struggle for control over the Americas

The San Cristóbal Outworks contribute to the national significance of the San Juan Historic District and San Juan National Historic Site. Spain recognized the pivotal location of San Juan Bay to protect ships and control access to the Caribbean as early as the 16th century, and developed a network of impressive fortifications between c. 1533 and 1898. The fortifications were tested in 1791 when the British unsuccessfully attacked the city, and nearly 100 years later the Spanish fired on United States war ships from the San Cristóbal Outworks.

Criterion C: Design/ Construction, Largest extant Spanish fortifications in the new world

The San Cristóbal Outworks contribute the national significance of San Juan National Historic site and the San Juan Historic Zone. The fortifications are the largest extant Spanish fortifications in the New World. Early construction of the fortifications dates to the early to mid-16th century. The Spanish constructed the fortifications to defend the approach from the land to the east. The fortifications present configuration was assumed after 1765 when Chief Engineer Thomas O'Daly began work that would make the fortress the backbone of an improved and enlarges defense system.

Criterion D: Historic Archeology

Historic archeology at the San Cristóbal Outworks contributes to the national significance of the property. National Register documentation indicates that San Juan Historic Zone, which encompasses the Outworks is significant in the areas of aboriginal and historic archeology. Specific information regarding archeology at the park is documented in park archeology reports.

EVALUATION OF LANDSCAPE INTEGRITY

According to the National Register of Historic Places, integrity is the ability of a property to convey its significance through physical resources. The National Register program identifies seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Retention of these qualities is necessary for a property to convey its significance; however, not all seven aspects must be present for a property to retain integrity.

A basic test of integrity is to judge whether a participant of the historic period would recognize the property and its features as they exist today. That is to say, if Spanish or United States military personal from 1533-1945 were to return today, would they easily recognize the fortifications?

Overall, the San Cristóbal Outworks landscape retains integrity to the period of significance, with all seven aspects of integrity evidenced within the property. Only design, setting, and materials are diminished by minor alterations to the site's layout including removal of the 1930s officers housing complex, alterations to gates, and incompatible structural repairs.

LOCATION

Location is the place where the cultural landscape was constructed or the landscape where the historic event occurred.

The San Cristóbal Outworks of San Juan National Historic Site remain in the same location they were originally constructed in. The location of the San Cristóbal Outworks and surrounding fortifications is important to understanding why the Spanish constructed the defense network in that location and its significance to historic context.

Evaluation: Retains high integrity of location to the period of significance.

DESIGN

Design is the combination of elements that create form, plan, space, structure, and style of a cultural landscape.

The San Cristóbal Outworks landscape retains its historic organization and spatial relationships, defied by a network of interrelated fortifications, buildings, walls, bridges, and gates, as well as the strategically manipulated topography and strategic views, designed and constructed by the Spanish and American armies (Figure 4.1). Removal of the 1930s officer housing and accompanying infrastructure including roadways and residential plantings has altered the character of the central portion of the Outworks. Modifications to allow contemporary use, including the construction of parking and security fencing have slightly diminished the integrity of design. Overall, however, the original design intent remains clearly evident.

Evaluation: Retains high to moderate integrity of design to the period of significance.

SETTING

Setting is the physical environment of the cultural landscape.

The setting of the San Cristóbal Outworks has been moderately altered since the end of the historic period through continued development within San Juan. Despite additional urban development, the majority of the San Cristóbal Outworks setting remains intact, including surrounding topographic and natural features including the Atlantic Ocean immediately to the north (Figure 4.2).

Evaluation: Retains moderate to high integrity of setting to the period of significance.



Figure 4.1: View northeast from El Abanico to the Northeast Gate. The Atlantic Ocean is visible beyond. El Abanico Gaurdhouse is visible at image left. A portion of the modern San Juan skyline is visible at image right, 2012 (SAJU).



Figure 4.2: View east from San Carlos to El Abanico. Note the extensive modern development beyond the park boundary, 2012 (SAJU).



Figure 4.3: View north from San Carlos to Santa Teresa and the Atlantic Ocean beyond. Note the various layers of patches and repairs on the fortification walls, 2012 (SAJU).

MATERIALS

Materials are the physical elements that were combined or deposited during the particular period(s) of time and in a particular pattern of configuration to form the cultural landscape.

The majority of original building materials remain from the period of significance. Removed materials include the officer housing units, and accompanying roadways and residential plantings. Non-historic materials have been used to repair the masonry structure of the fortifications and contemporary security fencing has been installed around much the perimeter of the fortifications. Despite removal of some historic material and non-historic additions, the San Cristóbal Outworks retain the majority of historic materials dating to the period of significance and reflect the availability of materials and technology at the time of construction.

Evaluation: Retains moderate to high integrity of materials to the period of significance.

WORKMANSHIP

Workmanship is the physical evidence of the crafts of a particular culture or people during a given period in history or prehistory.

The San Cristóbal Outworks demonstrates workmanship of the historic period. Common construction methods and innovative approaches are evident within the fortifications, including extensive earth moving, and high-quality construction of substantial walls, moats, fortifications, bridges, and ramps (Figure 4.3).

Evaluation: Retains high integrity of workmanship to the period of significance.

FEELING

Feeling is a cultural landscape's expression of the aesthetic or historic sense of a particular period of time.

The extant historic characteristics and features of the San Cristóbal Outworks convey the property's historic character. The overall feeling of the property as military fortifications demonstrating strategic, well-built, and thoughtful construction and design principals is evident. The property evokes a sense of its historic aesthetics and uses throughout the period of significance (Figure 4.4).

Evaluation: Retains high integrity of feeling to the period of significance.

ASSOCIATION

Association is the direct link between an important historic event or person and a cultural landscape.

The San Cristóbal Outworks continue to be associated with the military and social history of the Spanish and United States Army and the impressive architecture of the fortifications that make the property historically significant. The property is sufficiently intact to convey these relationships to visitors, with extant historic characteristics and features that convey the property's historic association.

Evaluation: Retains high integrity of association to the period of significance.

EVALUATION OF LANDSCAPE CHARACTERISTICS AND FEATURES

The following evaluation of landscape characteristics and features is accomplished by comparing existing conditions to what is known to have been present during the historic period. This comparison is essential to determining which landscape characteristics or features convey the significance of a cultural landscape and contribute to historic character. Features are organized by landscape characteristic including buildings and structures, circulation, vegetation, and small-scale features. A summary table at the end of this chapter identifies individual landscape features, and indicates its presence in 1898, the end of Spanish control, 1945 the end of the period of significance and World War II, and 2015. The last column contains a narrative analysis for the feature comparing historic and existing condition and concludes with a condition assessment.

BUILDINGS AND STRUCTURES

La Trinidad Counterguard (contributing)

La Trinidad Counterguard is located south of San Carlos Ravelin and east of the South Bastion of the main fortress. Construction was directed by Engineer Thomas O' Daly between 1773 and 1776, designed to protect San Carlos Ravelin and San Cristóbal from breaching fire. A fifty-five-foot elevation drop from north to south is accomplished by three levels of stepped construction (HSR, Volume II, 362). The upper and middle levels feature an esplanade equipped with embrasures and banquettes facing east or southeast. Stone stairs provide access to the upper and middle areas from the moat. The middle and base areas feature vaulted casemates. The counterguard was altered in 1894 by the Spanish when the city walls were opened to provide for expansion of the city. The structure is in good condition, minimally impacted by weather, structural deterioration, and vegetative growth (LCS) (Figure 4.5 and Figure 4.7).

San Carlos Ravelin (contributing)

San Carlos Ravelin, a triangular masonry structure, is located east of the main curtain wall of the main fortress. Built between 1766 and 1770 under the direction of Thomas O'Daly, land adjacent to the structure slopes gently away toward cliffs,



Figure 4.4: View from San Cristóbal east across the San Cristóbal Outworks, 2012 (SAJU).



Figure 4.5: View northeast to La Trinidad Counterguard from Avenida Munoz Rivera, 2012 (SAJU).



Figure 4.6: View east to San Carlos (image left) and the Great Moat from San Cristóbal. El Abanico is visible beyond. The Capitol building is visible at image right, 2012 (SAJU).

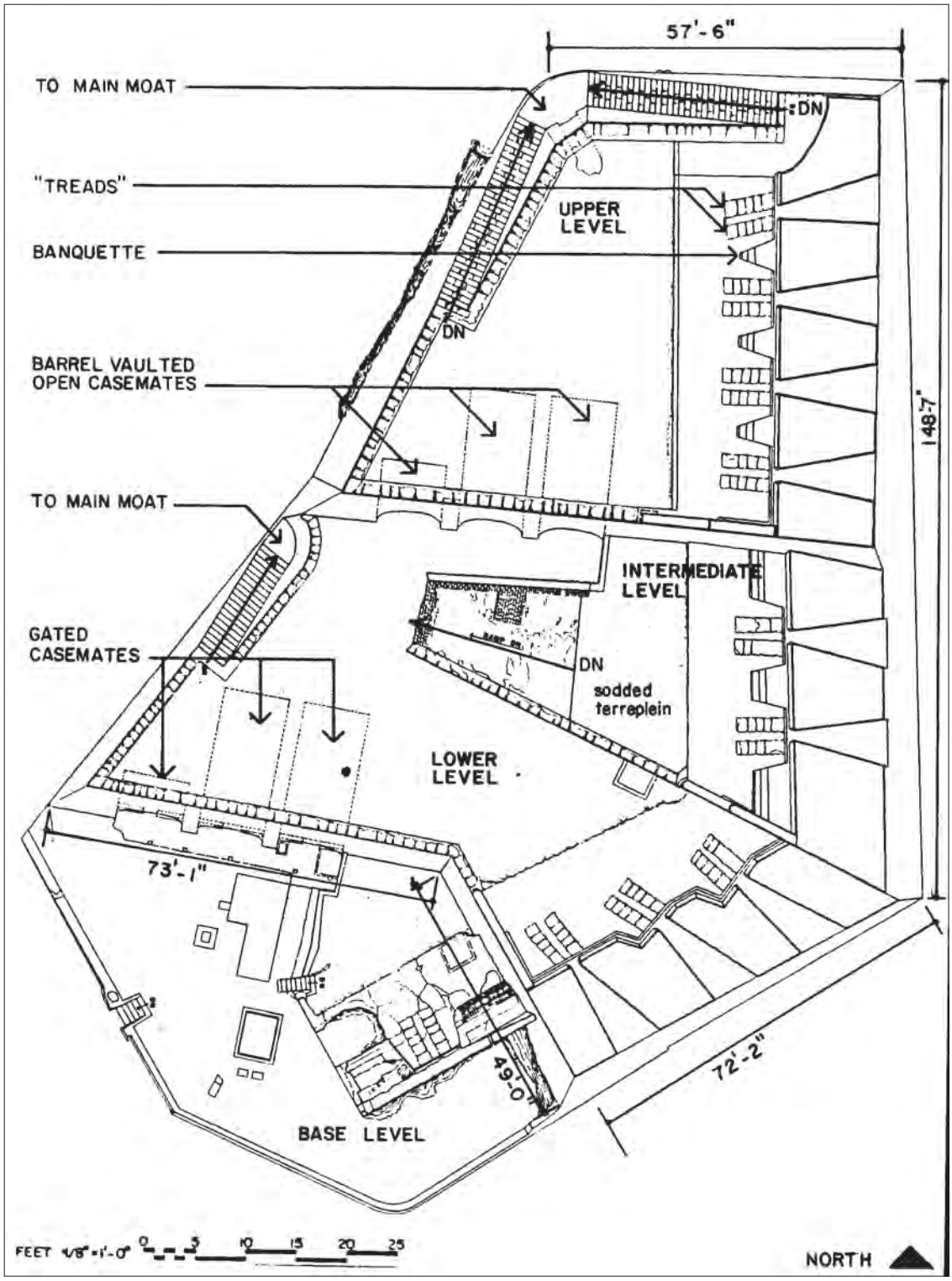


Figure 4.7: La Trinidad Counterguard with levels and elements labeled. HABS drawing (1984) annotated by Jana Gross (1989), (HSR Volume II, 364).

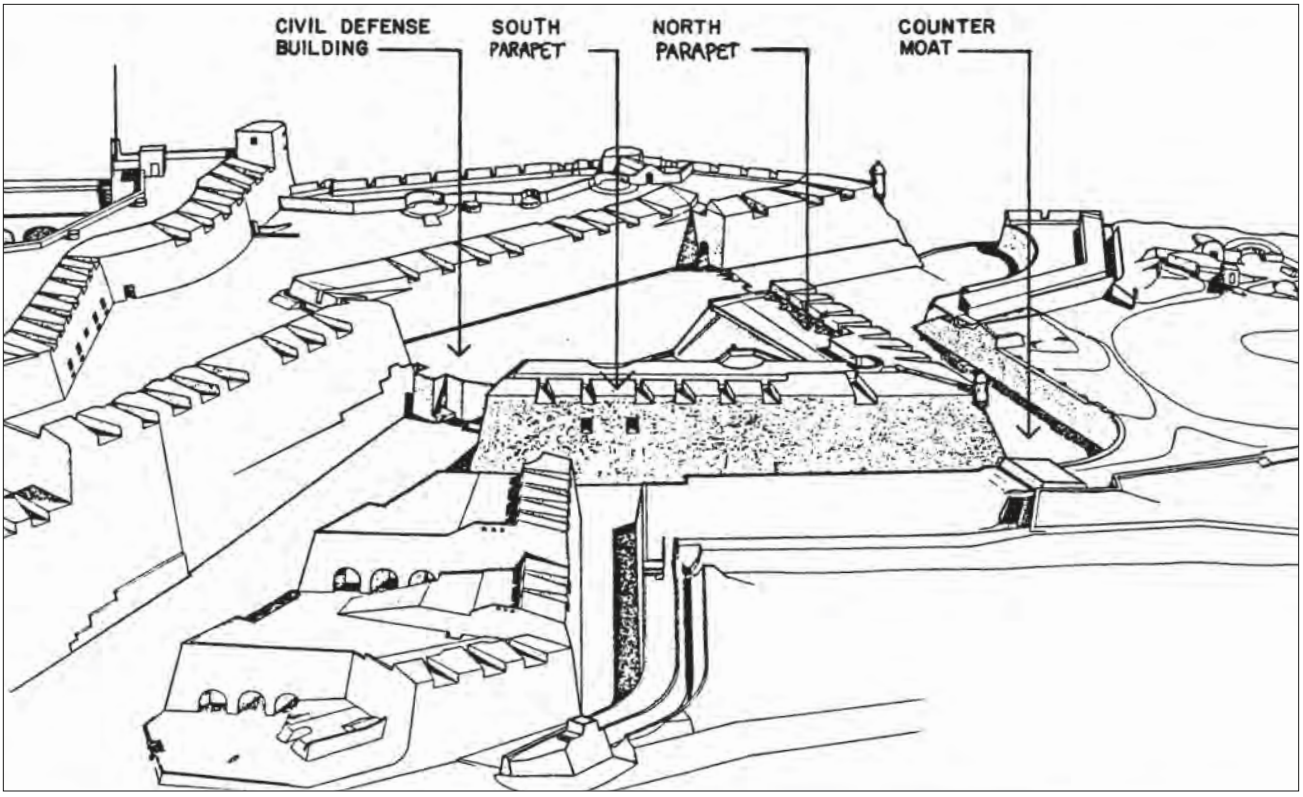


Figure 4.8: Aerial perspective of San Carlos Ravelin with features labeled. Based on a HABS site plan (1985), annotated by Jana Gross (1989), (HSR Volume II, 335).

which drop sharply to the ocean. Its parapets overlook a countermoat beyond which lies the 19th century Santa Teresa Battery to the north, la Trinidad Counterguard to the south, and an open glacis slope to the east. Component features include the 20th century civil defense building, south parapet, north parapet, counter moat, banquette, terreplein, and ramp. The structure was altered by the Spanish in 1897 and by the United States Army between 1940 and 1942. The structure received preservation treatment by the National Park Service between 2001-2005 (HSR Volume II, 334-337). The structure is in good condition, moderately impacted by structural deterioration, vegetative growth, and vandalism (LCS) (Figure 4.6 and Figure 4.8).

Santa Teresa Battery (contributing)

The Santa Teresa Battery is located east of San Cristóbal's North Bastion along the northern edge of the glacis. Initial construction in 1783 was directed by Thomas O'Daly, Engineer. The battery was modernized by the Spanish 1896-1897. The battery reflects two distinct layers of construction belonging to the eighteenth and late nineteenth centuries. The original eighteenth-century form as a redoubt functioned primarily as a seaward defense. Additionally, several small moats and ditches before the rampart at the eastern extreme served as a landward defense (HSR Volume II, 300). Components of the complex battery structure include: traverse remnant, modern garage remains, covered ways, parapets, moat, an 18th



Figure 4.9: View north to Santa Teresa Battery. North of Santa Teresa the land drops sharply to the Atlantic Ocean. The open area in the foreground was the site of the 1st and 2nd Retirada walls between c.1898 and 1930, and the officers housing development between 1930 and 1980, 2012 (SAJU).

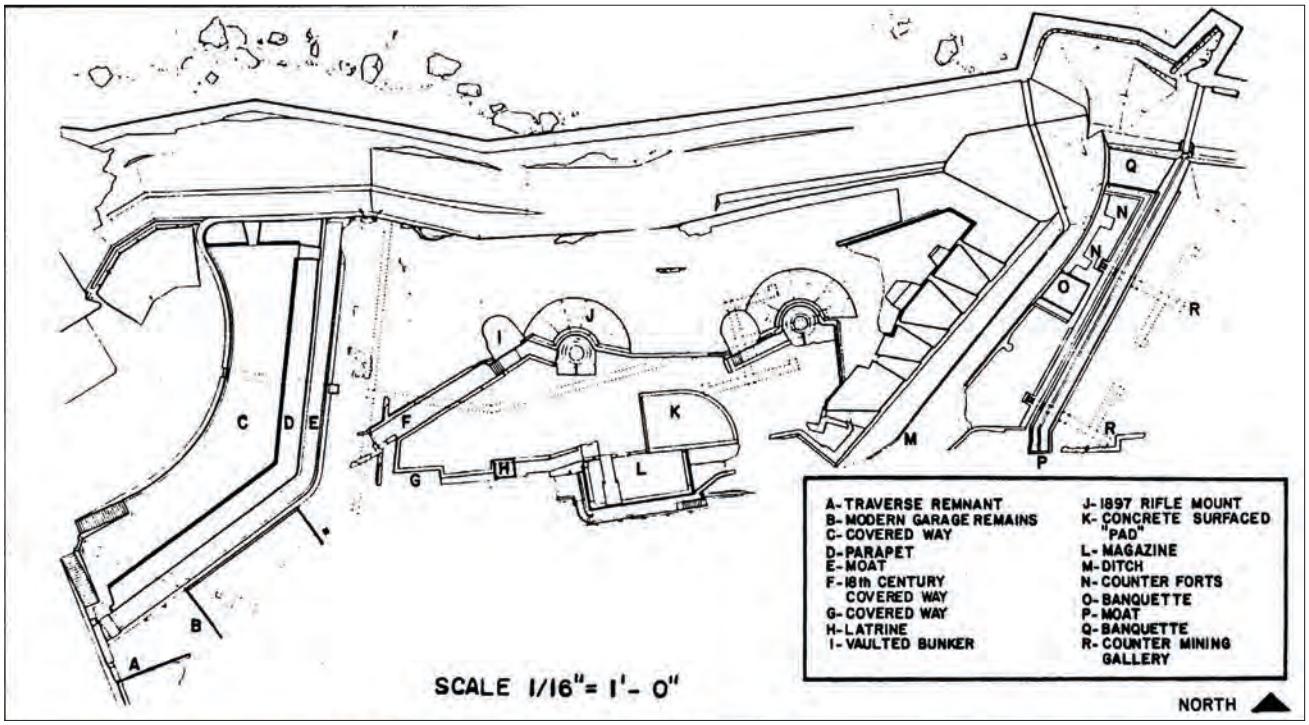


Figure 4.10: Plan of Santa Teresa Battery with individual features labeled. HABS drawing (1986) annotated by Jana Gross (1989). (HSR Volume II, 301).

century covered way, latrine, vaulted bunker, 1897 riffle mounts, concrete surfaced "pad", magazine, ditch, counter forts, banquettes, moat, and counter mining gallery (HSR, Volume II, 301). The battery is in good condition, Impacted by moderate structural deterioration. The structure received extensive preservation treatment concluding in 2005 (LCS)(Figure 4.9 and Figure 4.10).

El Abanico Guardhouse (contributing)

The El Abanico Guardhouse was constructed c. 1896. The masonry building is surfaced with cement stucco was sited to control access to the La Princesa battery.



Figure 4.11: View northwest to the El Abanico Guardhouse from El Abanico, 2012 (SAJU).

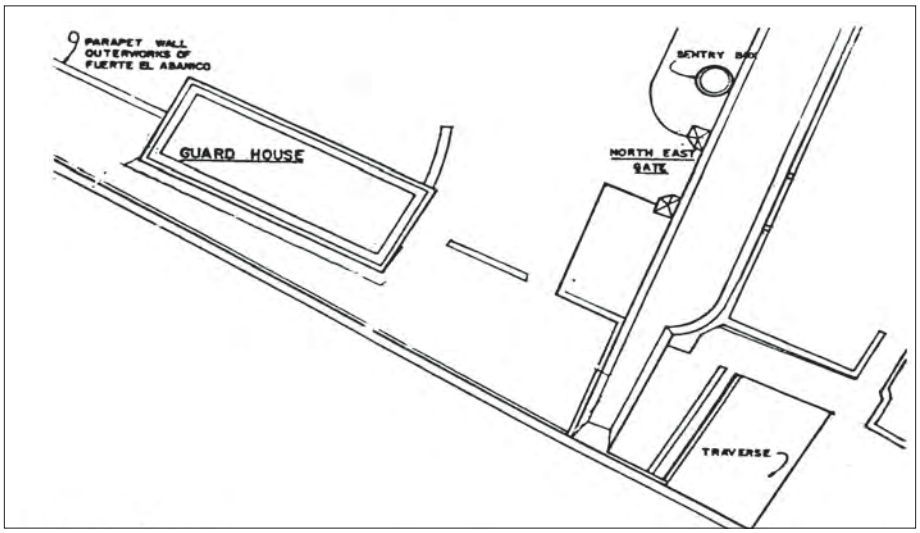


Figure 4.12: HABS site plan showing location of Gaurdhouse at El Abanico, 1963, (HSR Volume II, 448).

The north façade was altered in 1930 when the United States Army converted the building to a four-car garage. The structure was converted to a visitor restroom c. 1980 by the National Park Service. Two masonry retaining walls lay adjacent to the structure (HSR, v2, 447-450). The guardhouse is in fair condition, being moderately impacted by inappropriate or inadequate preservation/ rehabilitation efforts that utilized Portland cement exterior finishes, structural deterioration, and vandalism (LCS)(Figure 4.11 and 4.12).

Fort El Abanico (contributing)

El Abanico was the last element of the original design of the within the outworks parcel to be completed. Constructed between 1779 and 1783 under the direction of Thomas O'Daly (HSR Volume II, 427; NR, 1974 H-205). El Abanico is located due east of the main fortress and south of La Princesa. It occupies a low



Figure 4.13: View east from the central open area within the Outworks. The South Gate sentry box is visible to the right of El Abanico. The Capitol building is at image right, 2015 (SAJU).

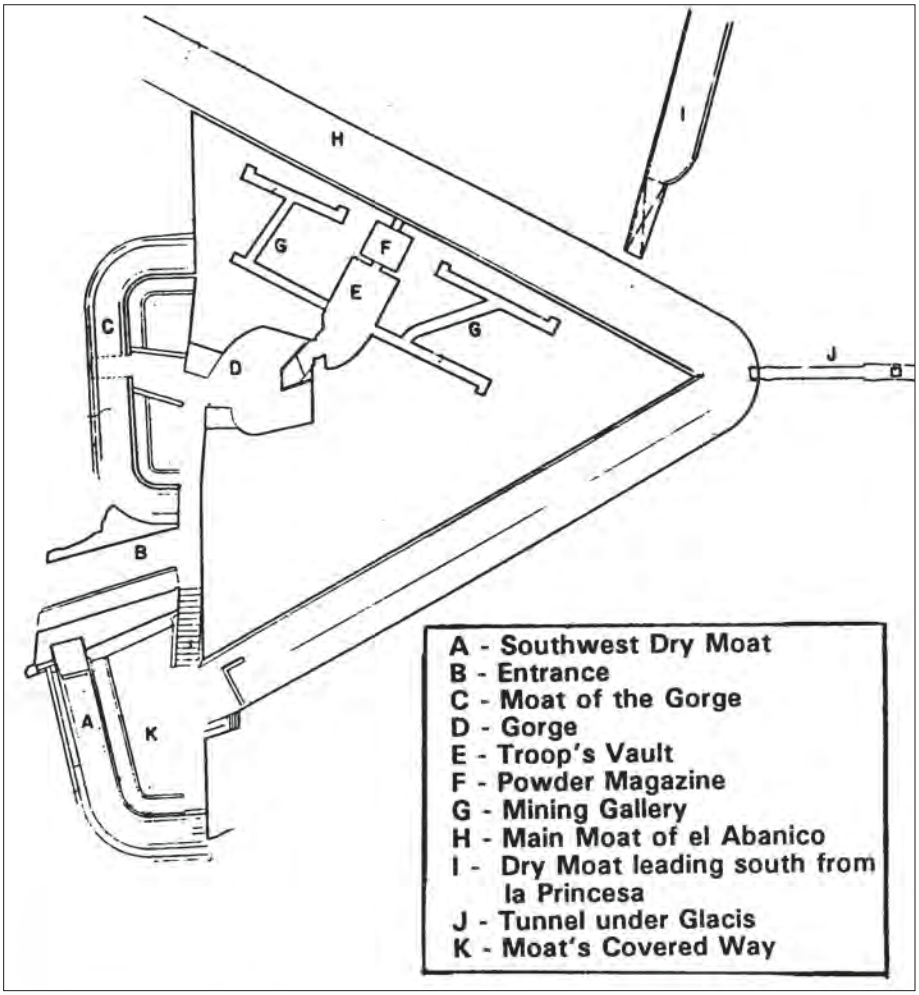


Figure 4.14: Plan of El Abanico with selected elements labeled. Detail of HABS plan (1963) as annotated by Jana Gross (1989), (HSR Volume II, 419).



Figure 4.15: View west to the Northeast Gate and El Abanico. Contemporary security fencing blocks this entryway. A non-historic wooden bridge spans the moat. Note the four gateposts and sentry box. The El Abanico Gaurdhouse is to the left of the gate, 2012 (SAJU).

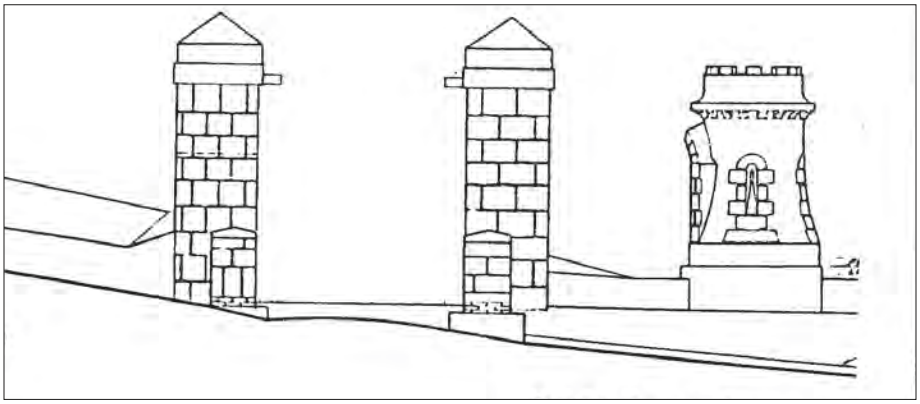


Figure 4.16: East elevation of the Northeast Gate, HABS drawing, 1963 (HSR Volume II, 469).

hill overlooking the north coast and San Juan's Puerta de Tierra district which is the primary land approach into Old San Juan (HSR, Volume II, 416-430). Features include a covered way at the entrance, the gorge (entrance area with moat), the north and south ramps, the 'fan battery', north and south terrapleins, the main moat, dry moat, moat's covered way, and the forward glacis. Altered by the Spanish between 1896-1897 and by the United States Army between 1901-1902, the National Park Service again altered the structure in 1960, further stabilizing the structure in 2001 (LCS). The structure is in fair condition, facing moderate impacts from structural deterioration, previous improper preservation efforts using Portland cement finishes, the growth of volunteer vegetation (Figure 4.13 and Figure 4.14).

The Northeast Gate of El Abanico (contributing)

The Northeast Gate consists of five sided masonry gateposts, a modern wooden bridge, a pair of secondary gateposts, and a sentry box. (HSR, V II, 467). The gate is located at the southern end of the moat between El Abanico and the La Princesa battery. Constructed in 1896, the gate provided access from the east to the glacis of San

Cristóbal and to La Princesa. The Northeast Gate provided access for construction materials for a large scale modification project to La Princesa. The Northeast Gate and the South Gate are similar. The structure is in good condition (LCS) (Figure 4.15 and Figure 4.16).

The South Gate of El Abanico (contributing)

The South Gate of El Abanico consists of two five sided masonry gateposts and detached cylindrical masonry sentry box. It was built c. 1896 as a new and permanent entrance to La Princesa and El Abanico. The structure is located within the south parapet of the entrance covered way of El Abanico. The structure includes two gate posts that are approximately seventeen-feet tall. They are built of dressed



Figure 4.17: View north to the South Gate, including posts and sentry box. The historic wooden gate has been removed, 2015 (SAJU).

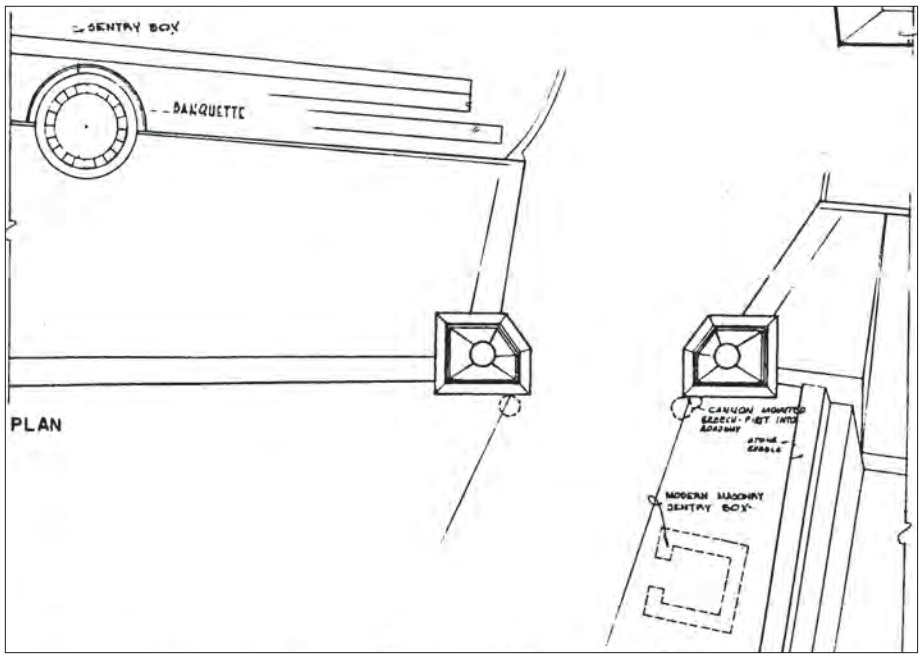


Figure 4.18: Plan view of the South Gate of El Abanico, drawn by HABS, 1963. (HSR Volume II, 481).

sandstone in an ashlar pattern. Both gates and hardware are missing. Portland cement patches indicate where brackets once extended to support the gates. The sentry box is located west of the gateposts and is approximately eleven-feet tall. The sentry box of the South Gate and the Northeast Gate are similar. The wooden gate itself was removed prior to 1963, although at that time the iron eyelet remained. (HSR, v2, 480) The South Gate is in fair condition. The South Gate sentry box is in need of stabilization and repairs. No evidence of protective stucco remains on the posts. The gate is occasionally used to access the outworks area (LCS) (Figure 4.17 and 4.18).

La Princesa Battery (contributing)

La Princesa Battery was constructed between 1779 and 1783 under the direction of Thomas O'Daly. It was modernized by the Spanish between 1896 and 1897 and equipped with four modern seacoast rifles. The structure was again modernized by the United States Army in 1940 for use during World War II and rehabilitated by the National Park Service in 2001. The structure retains original architectural features dating to c. 1783 as well as to subsequent layers of construction. La Princesa originally functioned as a bastion (a strong point in the outworks) to improve the irregular land features and to prevent access to El Abanico from the east and north shore. The Spanish 1896 seacoast rifle installation and the large c. 1940



Figure 4.19: View northeast across La Princesa. The north wall of the fortification drops steeply to the Atlantic Ocean below, 2012 (SAJU).

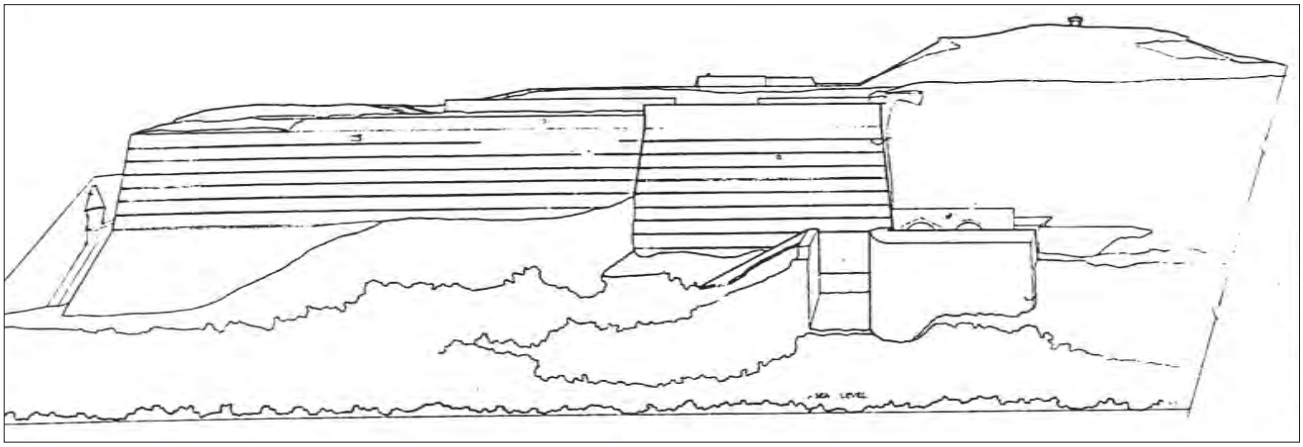


Figure 4.20: North elevation of La Princesa. Drawing by HABS, 1963, (HSR Volume II, 385).

gun-block indicate the re-orientation of La Princesa weaponry toward the sea. By the late nineteenth century and into the twentieth century, La Princesea was a focal point in San Juan's costal defenses. The battery embodies three centuries of military technology (HSR, Volume II, 380). Recent preservation efforts have improved the condition of the structure. The structure is in fair condition, being moderately impacted by structural deterioration, vandalism, and natural factors such as exposure to extreme weather (LCS) (Figure 4.19 and Figure 4.20).

1st Retirada (non-contributing)

The First Retirada, no longer visibly extant, was a fortified masonry structure with countermined ditches designed to shelter troops in the event of a retreat from positions eastward. The First Retirada was located east of the Second Retirada and west of El Abanico. Both the 1st and 2nd "Retirada" bisected the Outworks parcel. They were demolished in 1930 and officers housing was constructed in the area when, "many old foundations which had to be dynamited before they could be removed." These foundations were in fact the 1st and 2nd Spanish Retirada lines of retreat. It is not known with certainty if significant fragments of these structures survive below ground. (Completion Report for Construction of 9 - Sets Company Officers' Quarters, 1-Set Field Officer's Quarters at La Princesa Area, San Juan, Porto Rico. National Archives II, RG 77, Office of the Chief of Engineers, Construction Completion Reports, 1917-1943, San Juan, P.R. Entry 391, Box 279, Book 1).

2nd Retirada (non-contributing)

The Second Retirada, no longer extant, was a fortified masonry structure with countermined ditches designed to shelter troops in the event of a retreat from positions eastward. The Second Retirada was located west of the First Retirada, south of Santa Teresa, and east of San Carlos.

(See section on 1st Retirada for more information.)

La Princesa Housing Area (non-contributing)

The former La Princesa Housing area consisted of ten officers' quarters along with roads, walks, and utility systems. Construction began in January of 1930 and was intended to relocate officers of the 65th infantry and their families into residential housing from the crowded Infantry Barracks. Construction required the excavation of approximately 40,000 cubic yards of soil, including the remains of the 1st and 2nd Spanish Retirada lines which had traversed the parcel north-south. Portions of the covered way connecting the San Carlos Ravelin with the El Abanico Fort were compromised. La Princesa officers' housing development was razed by the National Park Service c. 1980.

TOPOGRAPHY

Forward Glacis of El Abanico 'Hill of the Three Wise Men' (contributing)

Natural topographic features were integrated into the construction of forts, including El Abanico which is located on a natural topographic rise (HSR, Volume II, p. 416). The Forward Glacis of El Abanico, also known as the 'Hill of the Three Wise Men' was used as a parking area during the 1970s. Use of this area as a parking lot caused erosion and potentially damaged subterranean features. In 1988, the National Park Service rejected a proposal from the Commonwealth to construct a landscaped parking lot on the Hill of the Three Wisemen, immediately east of El Abanico. The Forward Glacis of El Abanico is a contributing feature (Figure 4.21).

San Cristóbal Topography (contributing)

Castillo San Cristóbal, translating to "St. Christopher Castle," was named during the 17th century for the local name for the hill on which it was built. The San



Figure 4.21: View west from the Plaza San Juan Bautista to the Forward Glacis of El Abanico, also known as the 'Hill of the Three Wise Men," 2012 (SAJU).



Figure 4.22: View east from the drive to the South Gate along a portion of the outer wall of the San Cristóbal Outworks. Note the steeply-sloped walls covered in grass, 2012 (SAJU).



Figure 4.23: View from the south side of the open central area of the Outworks north to Santa Teresa. Note the relatively flat grade, remnant portions of the La Princesa Housing Loop Road are visible, and the predominant turf grass vegetation cover, 2012 (SAJU).



Figure 4.24: View southeast from La Princesa. The cliffs on image right are covered in volunteer vegetation, 2012 (OCLP).

Cristóbal fortifications rise nearly 150 feet above sea level. The network of walls, moats, ramps, and stairs within the fortifications exist within both natural and designed topography. The topography of San Cristóbal is contributing (Figure 4.22).

VEGETATION

Turf (contributing)

Turf grass was the primary ground cover during the historic period. Turf grass remains the primary ground cover. Volunteer vegetation growing on, within, and surrounding the Outworks is removed by the National Park Service to protect resources and maintain the historic character (Figure 4.23).

Residential landscape- La Princesa housing (non-contributing)

Residential plantings consisting of trees and foundation plantings surrounding residences of the La Princesa Housing area were planted c. 1930. Palm trees lined the interior residential streets. Residential landscaping in the Outworks area was removed c. 1980 when the National Park Service removed the housing development (Figure 4.23).

South Entry Drive Trees (non-contributing)

Historic documentation indicates that palm trees were planted lining a portion of the south entry drive concurrently with the planting of palm trees in the residential portion. Trees lining the south entry drive were removed c.1980.

Cliff Vegetation (non-contributing)

Volunteer vegetation grows on the steep cliffs surrounding the fortifications. This vegetation is especially dense north of the La Princesa battery (Figure 4.24).

VIEWS

View from San Cristóbal and Outworks to the east (contributing)

The San Cristóbal Outworks were built to defend the approach from the land to the east. Views to the east were compromised in 1930 when the house and palm trees of the La Princesa Area were developed. Removal of these structures in the c. 1980s restored the historic views to the east. Contemporary off-site development to the east and southeast impacts the historic character of views to the east (Figure 4.24).

CIRCULATION

La Princesa Housing Loop Road (non-contributing)

The La Princesa housing loop road was constructed c.1930 to serve the ten officers houses of the La Princesa area. The road entered the Outworks from the South Gate and access road. This internal circulation route consisted of two interconnected loops surrounding a promenade planted with palms. The La Princesa Housing Loop Road was removed c.1980 by the National Park Service. Trace remnants of the road can be seen in the landscape today (Figure 4.25).

Drive to Northeast Gate (non-contributing)

Constructed c.1901, the drive to Northeast Gate provided access from points east to the fortifications. The drive led over the Hill of the Three Wisemen and through the Northeast Gate north of El Abanico. This access route was removed by 1945.

Drive to South Gate (contributing)

The drive to South Gate was constructed prior to 1897. 1901 documentation indicates this roadway provided access to the fortifications from Avenida Muñoz Rivera to the South Gate. It appears that a portion of this access route was incorporated into the Avenida Muñoz Rivera by 1945. Prior to 1901, the drive had a single entry point. By 1945, the entry drive had a branched entry/exit from



Figure 4.25: View east from San Carlos. Note the expansive view offered by the sites natural topographic advantage enhanced by the fortifications. The San Cristóbal Outworks were developed to defend attacks from the east. Note the faint outline of the La Princesa Housing Loop road, still visible today. Modern development has altered the historic view from this location, but the range of view is still evident, 2012. (SAJU).

Avenida Muñoz Rivera, likely developed in conjunction with the officers housing. Today the drive is surfaced with non-compatible asphalt pavement.

La Trinidad Moat Entry Drive (non-contributing)

Provides vehicular access from Avendia Muñoz Rivera to a parking area within the La Trinidad Moat.

ENDNOTES

1. GMP, 15-16
2. ICOMOS, 1982 Nomination form, 2.
3. GMP, 15-16
4. Public Law 89-665 (15 October 1966), *The National Historic Preservation Act of 1966*.
5. National Register 1972, 1.

FEATURE SUMMARY TABLE:

Feature	Alternative Name	LCS/ Building Number	Extant 1898	Extant 1945	Extant 2015	Contributing
Buildings & Structures						
La Trinidad Counterguard	La Contraguardia de la Trinidad	091711/ HS-213	Yes	Yes	Yes	Contributing
San Carlos Ravelin	Revellín de San Carlos	006066/ HS-203	Yes	Yes	Yes	Contributing
Santa Teresa Battery	El Baluarte de Santa Teresa	006067/ HS-204	Yes	Yes	Yes	Contributing
El Abanico Guardhouse	Edificio para Fuegos de Armas de Plantón	091714/ HS-216	Yes	Yes	Yes	Contributing
El Abanico Fort	El Fuerte del Abanico; Fort of the Fan	001270/ HS-205	Yes	Yes	Yes	Contributing
The Northeast Gate of El Abanico	-	091715/ HS-217	Yes	Yes	Yes	Contributing
The South Gate of El Abanico	-	091716/ HS-218	Yes	Yes	Yes	Contributing
La Princesa Battery	Fuerte de La Princesa	091713/ HS-215	Yes	Yes	Yes	Contributing
1st Retirada	-	-	Yes	No	No	Non-contributing
2nd Retirada	-	-	Yes	No	No	Non-contributing
La Princesa Housing Area	-	-	No	Yes	No	Non-contributing
Topography						
Forward Glacis of El Abanico	Hill of the Three Wise Men	-	Yes	Yes	Yes	Contributing
San Cristóbal Topography	-	-	Yes	Yes	Yes	Contributing
Vegetation						
Turf	-	-	Yes	Yes	Yes	Contributing
Residential landscape- La Princesa housing	-	-	No	Yes	No	Non-contributing
South Entry Drive Trees	-	-	No	Yes	No	Non-contributing
Cliff Vegetation	-	-	No	Yes	Yes	Non-contributing
Views						
View from San Cristóbal and Outworks to the east	-	-	Yes	Yes	Yes	Contributing
Circulation						
La Princesa Housing Loop Road	-	-	No	Yes	No	Non-contributing (remnant)
Drive to Northeast Gate	-	-	Yes	No	No	Non-contributing
Drive to South Gate	-	-	Yes	Yes	Yes	Contributing
La Trinidad Moat Entry Drive	-	-	No	No	Yes	Non-contributing

5. TREATMENT TASKS

FOUNDATION FOR TREATMENT

Current park planning initiatives include the preparation of a park "Foundation Document," intended to serve as the underlying guidance for all management and planning decision for San Juan National Historical Park. The park Foundation Document further clarifies the park's preservation philosophy expressed in the 1984 park General Management Plan.

Within the National Park Service, a park Foundation Document describes the core mission of a park unit, identifying the park purpose, significance, fundamental and important resources and values, interpretive themes, assessment of planning and data needs, special mandates and administrative commitments.

"Castillo de San Cristóbal and Outer Defenses" are featured among the park's "Fundamental Resources and Values," this importance explained as these defensive works being an example of the engineering principle of designing fortifications using a horizontal defense system involving smaller detached fortifications known as outworks. The Outworks provided for "defense in depth," keeping an enemy force away from the principal forts and protecting key terrain to prevent its use by an enemy. Castillo San Cristóbal and its outer defenses represent a continuum of history and are exemplary of the evolution of fortification developments over five centuries. The Castillo San Cristóbal Outworks parcel, the subject of this cultural landscape report, is further important for the support that this outdoor space may offer to the park's ongoing resource preservation programs, including its "Commitment to Traditional Masonry Techniques and Structure Integrity" and also as a key point of public engagement in creating stronger "Connections to the City of San Juan."

Where the park Foundation Document details no specific tasks, preservation is recommended as the default treatment of existing features. Preservation, or "the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property," will prevent the loss of historic materials and/or spatial relationships, and ensure that historic features are protected in place.

LANDSCAPE TREATMENT PHILOSOPHY

Part of an internationally significant system of colonial fortifications, the Castillo San Cristóbal Outworks landscape will be managed in support of resource preservation, visitor education and park operations. Park managers will collaborate with the Commonwealth and municipal partners to effect stronger connections with the City of San Juan, serving an expanded civic role as part of the monumental and ceremonial gateway into the old city. Improving public access to the San Cristóbal Outworks will make available a significant open space within a densely populated community. Improved access will be accomplished through treatment measures designed to protect historic fabric, including archeological resources. Accommodating visitation within the San Cristóbal Outworks will require installation of modest infrastructure providing for visitor safety and resource preservation. Perimeter security fencing will be redesigned to foster a more welcoming appearance from the vantage point of Avenida Muñoz Rivera. New infrastructure will include durable walking surfaces and safety barriers guiding safe movement throughout the site, and will be consistent with designs for site furnishings installed elsewhere in the national historical park.

LANDSCAPE TREATMENT TASKS

Each of the following treatment task narrative describes the issue or deficiency as well as the desired future condition, treatment considerations, and a statement that relates the task to current park planning initiatives.

1. RE-OPEN SAN CRISTÓBAL OUTWORKS EAST ENTRANCE GATE TO PEDESTRIANS

Description

Visitor access to the San Cristóbal Outworks parcel from the Commonwealth Capitol and its adjacent urban plaza is currently blocked by security fencing constructed for both visitor safety and law enforcement (Figure 5.1). The former pedestrian gate immediately north of the El Abanico Fort should be re-opened to visitors during daytime park hours of operation (Figure 5.2; Drawing 5.1).

Given the scarcity of public open space in Old San Juan, opening the San Cristóbal East Entrance Gate during the established hours of park operations is responsive to recent civic investments in the rehabilitation of the waterfront Plaza San Juan Bautista opposite the Commonwealth Capitol. More liberal public access to the San Cristóbal Outworks parcel brings this open-space into interplay with the Capitol and the civic buildings lining the south side of Avenida Muñoz Rivera. The juxtaposition of civic architecture and accessible waterfront open space may serve as a catalyst for an improved arrival experience for visitors to Old San Juan.



Figure 5.1: View west to the Northeast Gate of the San Cristóbal Outworks parcel from the Plaza San Juan Bautista, 2012 (SAJU).



Figure 5.2: View west to the Northeast Gate of the San Cristóbal Outworks from the Hill of the Three Wisemen, 2012 (SAJU).



Figure 5.3: View north to the Northeast Gate of the San Cristóbal Outworks from the El Abanico fortification, c. 1957. Note the placement of security fencing within the historic perimeter walls, (SAJU Photograph Collection 10987-46).

Treatment Considerations

Visitor safety, resource protection and effective law enforcement must continue to be a primary management concern. However, the current strict control of public access to the San Cristóbal Outworks parcel is a leftover practice from when this area housed U.S. Army officers and their families. Its continuation currently prevents this area from fully serving residents of San Juan and also visitors from around the world (Figure 5.3).

Reopening the east entrance gate to the San Cristóbal Outworks parcel should not be misunderstood as simply fashioning a new gate within the existing security fence. Reconfiguring safety and security fencing to accommodate a new access gate must be accompanied by new system of pedestrian walkways, a driveway to accommodate emergency vehicles, all of which will need to be constructed beyond limits of the current National Park Service boundary on the adjacent Hill of the Three Wisemen, which is the historic engineered Forward Glacis of the adjacent El Abanico fortification (see Drawing 5.1).

Relationship to Park Planning

This proposed task relates directly to promoting stronger "Connections to the City of San Juan, as expressed in the Foundation Document for San Juan NHS. The Foundation Document cites "…the location of the fort relative to the community of San Juan has created an interdependent landscape shaped by urban design, recreation opportunities, and identity. This relationship means that the preservation of the park lands and structures is dependent on a continued connection between the park and the San Juan community. "

2. CONSTRUCT EXTENSION OF PASEO DEL MORRO BETWEEN CASTILLO SAN CRISTÓBAL TO PLAZA SAN JUAN BAUTISTA

Description

Since the early 1980s the coastal promenade along San Juan's northeastern harborside has abruptly terminated just beyond the El Morro water battery (Figure 5.4). Such a promenade was proposed as early as the 1920s, during the design process for the Capitol building. One of the city's longstanding goals has been continuation of this popular walkway eastward along the northern shoreline past the La Perla community, below and beyond the San Cristóbal fortress to its logical terminus at the urban plaza opposite the Commonwealth Capitol (Figure 5.5). While this task may be considered peripheral to the rehabilitation of the San Cristóbal Outworks parcel, San Juan National Historic Site should actively participate in moving this important civic project forward (Drawing 5.1).



Figure 5.4: View southwest into San Juan Harbor from El Morro, showing the popular coastal promenade to be extended to San Cristóbal and the Plaza San Juan Bautista, 2012 (SAJU).



Figure 5.5: View east between San Cristóbal and El Morro, showing the route of the proposed extension of the Paseo del Morro coastal promenade, 2012 (SAJU).

Treatment Considerations

The design of the new Paseo segment below the Castillo San Cristóbal and the Outworks parcel must consider safety and security measures protecting those walking along the Paseo from objects falling or thrown from above. Further, safety and security features must discourage the public from attempting to scale the walls and steep slopes above the walkway.

Relationship to Park Planning

This proposed task relates directly to promoting stronger "Connections to the City of San Juan, as expressed in the Foundation Document for San Juan NHS. The Foundation Document cites "…the location of the fort relative to the community of San Juan has created an interdependent landscape shaped by urban

design, recreation opportunities, and identity. This relationship means that the preservation of the park lands and structures is dependent on a continued connection between the park and the San Juan community. "

3. INSTALL OUTWORKS VISITOR CIRCULATION PATTERN SUPPORTING EFFECTIVE INTERPRETATION

Description

The San Cristóbal Outworks parcel has remained largely inaccessible to park visitors following the demolition of the Army's La Princesa housing complex in 1980 (Figure 5.6). The remaining streets of the former complex are currently obscured under turf cover, leaving the area without walks or pathways to direct and organize public visitation of this area. A new network of visitor walkways should be installed serving the San Cristóbal Outworks parcel that supports effective interpretation of the "defense-in-depth" strategy emphasized in park interpretive materials (Figure 5.7; Drawing 5.1).

Treatment Considerations

Although this area has been profoundly disturbed by both the 1930's construction and the 1980 demolition of the former La Princesa housing complex, there are nevertheless important archeological resources here that have the potential to provide important information that is not otherwise available through documentary sources. Much of the disturbed area attributed to the former streets of the housing complex may be reused in developing a new pedestrian pattern to best minimize archeological impacts.



Figure 5.6: View northeast of the newly completed La Princesa housing area, 1931, (National Archives RG77 Entry 393).



Figure 5.7: View northeast from approximately same angle as previous image. The San Cristóbal Outworks parcel currently lacks an effective system of visitor pathways supporting interpretation goals, 2012 (SAJU).

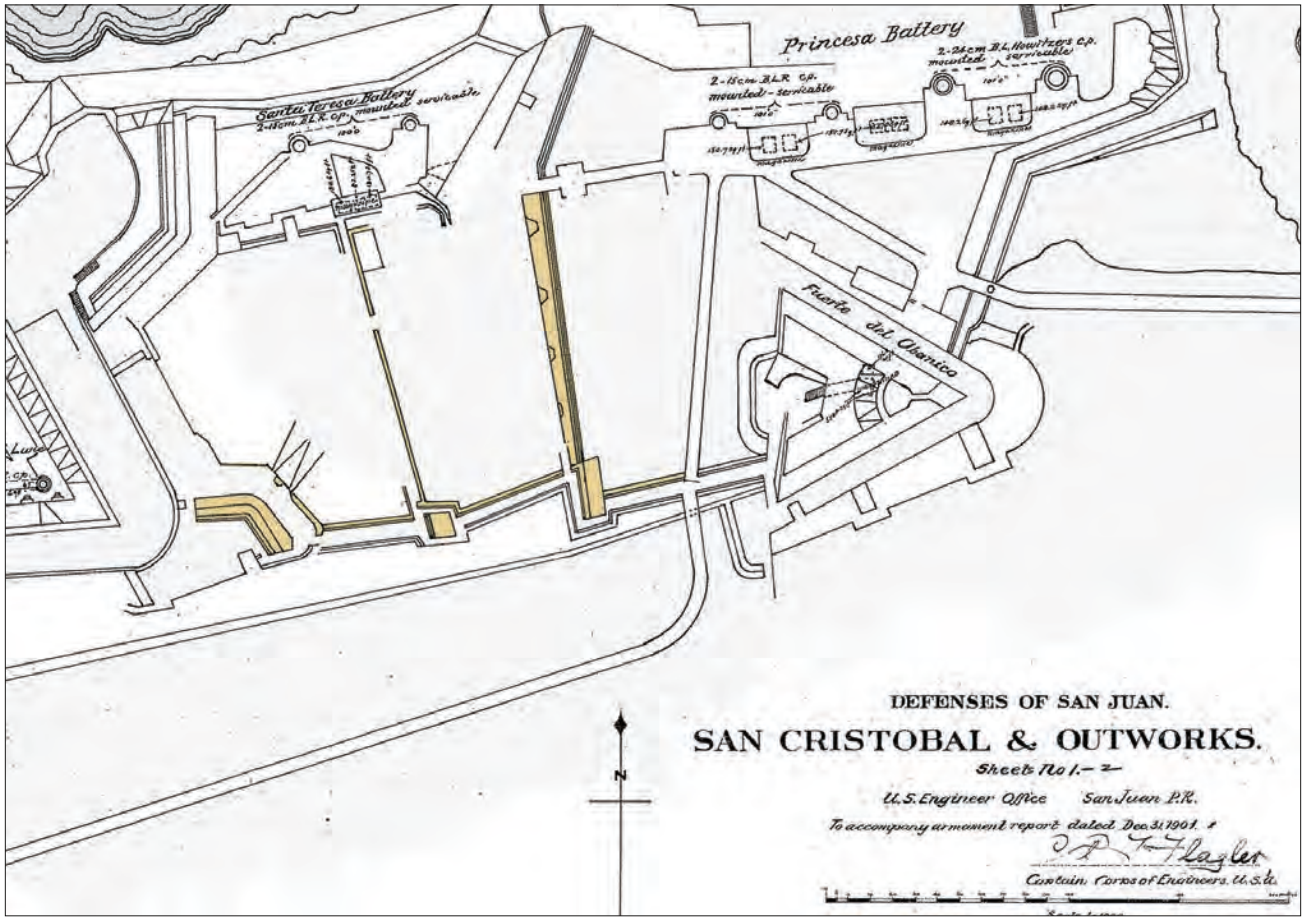


Figure 5.8: Detail of 1901 Flagler Plan, highlighting the locations of missing 1st and 2nd Retirada defensive features. New visitor pathways should highlight these important missing features, (National Archives, Cartographic, Fortification Files).

The species of turf found within the Outworks parcel grows by means of powerful subsurface rhizomes having the ability to penetrate densely compacted soil, and bituminous pavements. To promote cost-effective landscape maintenance at this location, the new pedestrian circulation pattern should utilize exposed aggregate concrete pavements that can repel the incursion of turf roots and rhizomes. The widths of new walkways should comfortably accommodate two persons walking side-by-side, yet be no greater than two meters wide.

Venturing beyond the limits of the disturbed street areas once serving the La Princesa housing complex, there is a tremendous opportunity to construct two new pedestrian links that parallel the former alignments of missing defensive structures (Figure 5.8). Aligned to the immediate west of both the First and Second Retirada, these new walkway segments will mark the location of these missing defensive features at these locations, and lead visitors to occupy these areas of the landscape and observe how military engineers built defenses capitalizing on topography, shoreline and other natural features.

Relationship to Park Planning

As the Castillo San Cristóbal and its Outworks are listed among the parks Fundamental Resources and Values, this proposed task bears the opportunity for more effective interpretation of key interpretive concepts, including horizontal "defense



Figure 5.9: View north from Avenida Muñoz Rivera to the entrance of the San Cristóbal Outworks. The existing security fencing surrounding the San Cristóbal Outworks parcel presents an unwelcoming appearance, SAJU, 2012.

–in-depth." While key defensive elements of the Outworks parcel are absent due to construction and subsequent demolition of the U.S. Army's La Princesa housing development, a new pattern of visitor circulation may effectively mark the location of these missing elements with minimum disturbance to archeological resources.



Figure 5.10: Prior to 1980, security fencing serving the former La Princesa housing development was located within the historic masonry walls surrounding the parcel, (SAJU Photograph Collection, c. 1981, 7519).



Figure 5.11: This photosimulation image illustrates the relocation of the existing security fencing to create a more welcoming appearance upon entering Old San Juan. The shorter railing shown simulated above is intended as a safety feature, discouraging visitors from climbing the engineered slope of the El Abanico Fort, (OCLP, 2013).

4. REDESIGN SECURITY FENCING FOR IMPROVED APPEARANCE AT ENTRANCE TO OLD CITY

Description

The existing safety and security fencing, topped with strands of barbed-wire, provides an unwelcoming first impression to visitors passing the Commonwealth Capitol and entering the old city of San Juan (Figure 5.9). Acknowledging the necessity for safety and security fencing here, a new design for this infrastructure should be implemented that satisfies safety and security requirements, while also creating a more positive impression on San Juan's visitors (Drawing 5.1 and 5.2). Doing so will provide the San Cristóbal Outworks parcel a greater civic presence and role in welcoming visitors to the old city. Prior to 1980, security fencing excluding unauthorized night-time to this area was partiality concealed behind surviving defensive walls (Figure 5.10). Existing security fencing paralleling Avenida Muñoz Rivera and east of El Abanico should be replaced with barrier more compatible with the architecture of the historic fortifications (Figures 5.11 and 5.12).

Treatment Considerations

In some locations will be necessary to retain or install security fencing. However,



Figure 5.12: This photosimulation image illustrates the relocation of the existing security fencing away from Avenida Muñoz Rivera, creating a more welcoming appearance upon entering Old San Juan. The relocated security fence also marks the approximate location of the former "covered way," a missing defensive feature, (OCLP, 2013).

in others, including parallel to Avenida Muñoz Rivera, replacing existing security fencing with safety fencing will improve aesthetics and the entrance experience, while providing the protection necessary to deter the public from attempting to access unsafe areas. The continued presence of fencing to exclude visitors during evening hours remains an unfortunate necessity. This kind of infrastructure is inherently utilitarian, although effort should be made to find a fence style that has aesthetic appeal. Virtually every visitor to Old San Juan enters via the Avenida Muñoz Rivera that passes by the San Cristóbal Outworks parcel. Traveling along the formal entry route into Old San Juan, visitors form their initial impression of both the city and the ancient fortifications under the stewardship of the National Park Service from this critical vantage point.

Relationship to Park Planning

This proposed task relates directly to promoting stronger Connections to the City of San Juan, as expressed in the Foundation Document for San Juan NHS. The Foundation Document cites "…the location of the fort relative to the community of San Juan has created an interdependent landscape shaped by urban design, recreation opportunities, and identity. This relationship means that the preservation of the park lands and structures is dependent on a continued connection between the park and the San Juan community."



Figure 5.13: Oblique aerial view of San Cristóbal Outworks parcel during March of 1924. This image documents the survival of the 1st and 2nd Retirada features and the covered way well into the 20th century, (National Archives, RG126. PG Box 7 Folder 7a).



Figure 5.14: View northeast to the La Princesa battery and the El Abanico Fort. Stockpiled masonry materials are shown in the foreground, 2012 (SAJU).



Figure 5.15: Photosimulation based on the prior image, illustrating Treatment Tasks 3 and 5. The portrayed visitor circulation system utilizes the alignment of the circulation system constructed in 1930 to serve the La Princesa housing complex. Missing defense features, including the 1st and 2nd Retiradas have been marked with relocated stockpiles of masonry, (OCLP, 2013).

5. REMOVE VOLUNTEER TREE GROWTH ADJACENT TO THE LA PRINCESA BATTERY

Description

Non- historic vegetation grows on fortification walls and sea cliffs near the La Princesa Battery. This volunteer vegetation should be removed to prevent further damage to fortification walls from roots, ensure visitor safety, enhance historic character, remove potential habitat for exotic invasive species, and ensure the preservation of historic views north and east to the Atlantic Ocean.

Treatment Considerations

Primary management concerns for the park are visitor safety, resource protection, and effective law enforcement. The vegetation growing on fortification walls and sea cliffs creates an environment which screens portions of the cliffs below the Outworks. Removal of this vegetation will enhance historic character, and open these areas to public view, reducing undesirable activity occurring on park land. Reduction of undesirable activity will make the park more welcoming to visitors and an increased asset to the community. Vegetation removal should be conducted in a manner which preserves historic resources and minimizes environmental impact.

Relationship to Planning

This proposed task relates direction to promoting strong "Connections to the City of San Juan" as expressed in the (draft) Foundation Document for San Juan NHS. The Foundation Document cites " . . . the location of the fort relative to the community of San Juan has created an interdependent landscape shaped by urban design, recreation opportunities, and identity. This relationship means that the preservation of the park lands and structures is dependent on a continued connection between the park and San Juan Community."

6. MARK AND INTERPRET LOCATIONS OF IMPORTANT MISSING DEFENSIVE FEATURES

Description

Site disturbance from both the 1930s construction and 1980s demolition of the Army's La Princesa housing complex, has made it difficult to provide effective interpretation of the Outworks defensive system to park visitors (Figure 5.13). Missing defensive features, including the first and second Retiradas, and the missing Covered Way, should be economically marked with materials and methods causing minimal ground disturbance (Drawing 5.1).

Treatment Considerations

The park masonry preservation program has found the San Cristóbal Outworks parcel a useful location for stockpiling masonry materials needed for the never-ending task of repairing San Juan's historic walls and fortifications (Figure 5.14). The San Cristóbal Outworks parcel may continue to meet this practical requirement of the park maintenance program and also fulfill interpretive objectives if this stockpiled masonry could be relocated and placed so as to mark the location of the first and second Retiradas. Doing so will cause no ground disturbance, and will actually accommodate a greater quantity of stockpiled masonry than is presently stored on site (Figure 5.15).

Relationship to Park Planning

Reconfiguring, and supplementing existing stockpiles of masonry materials within the San Cristóbal Outworks parcel supports the "Commitment to Traditional Masonry Techniques and Structure Integrity," which is identified as one of the park's as a Fundamental Value. Additionally, marking these missing features supports key interpretive objectives found within the draft Foundation Document.

7. REPLACE EXISTING SAFETY RAILINGS WITH COMPATIBLE NEW CODE-COMPLIANT SAFETY RAILINGS.

Description

Existing stainless steel open frame safety railing in widespread use throughout the San Cristóbal Outworks parcel are durable and effectively withstand the salt-laden winds of the coastline, yet are not compliant with current life-safety codes (Figure 5.16). Existing safety railings should be replaced with safety infrastructure featuring an infill of mesh or vertical bars in full compliance with applicable codes (Drawing 5.1). In several instances on site, wire-topped security fencing may be justifiably replaced with lower profile code-compliant safety railings for an improved visitor experience.

Treatment Considerations

Immediately west of the main entrance to the Castillo San Cristóbal on Calle Norzagaray, there is an appropriate example of code compliant safety railing that could be considered for adaptation and widespread application (Figure 5.17). In compliance with the spirit of the *Secretary of the Interior's Standards for the Preservation of Historic Properties*, this new infrastructure should not give the false impression as historic fabric. However, this new infrastructure should also show respect and compatibility with similar urban furnishings found nearby (Figure 5.18).



Figure 5.16: View west to the La Princesa battery, showing non-compliant safety railings, 2012 (SAJU).



Figure 5.17: View east to the main entrance to the Castillo San Cristóbal showing an example of compliant safety railing infrastructure along Norzagaray Street, 2007 (SAJU).

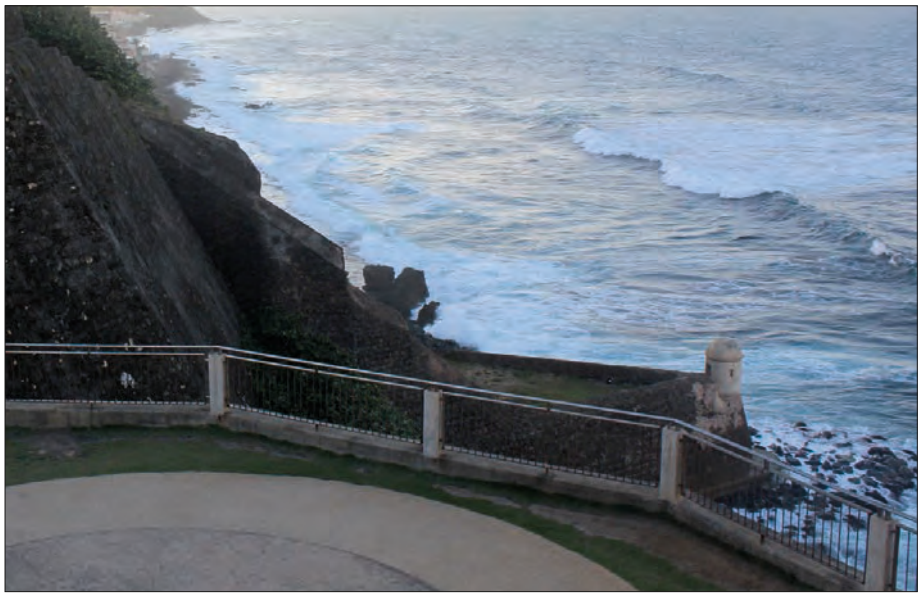


Figure 5.18: View west in San Cristóbal's Dry Moat where the park has recently installed code-compliant safety railing, 2012 (SAJU).



Figure 5.19: View north to the South Gate. Note the missing gate feature and deteriorated asphalt surface, 2015 (SAJU).

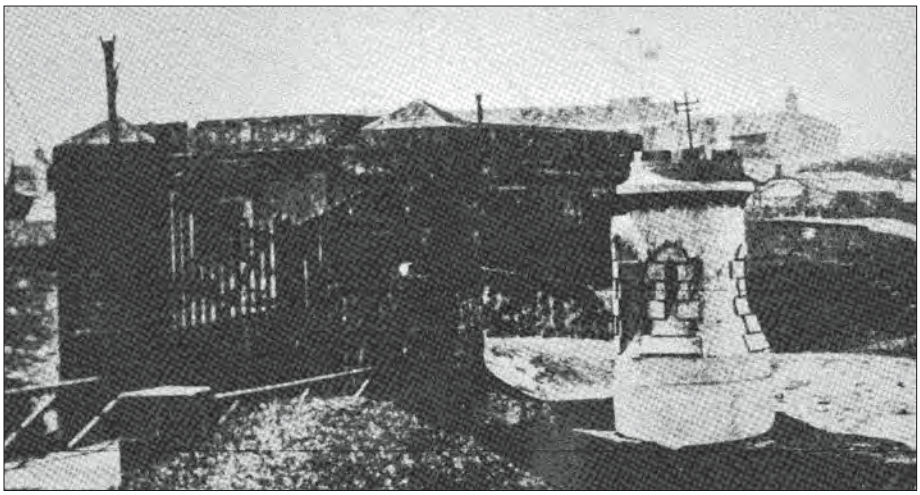


Figure 5.20: Detail of post-1904 photo of Northeast Gate looking west. Note the form of the wooden gate, (HSR Volume II, 474).

Relationship to Park Planning

Under "Connections to the City of San Juan" cited as a Fundamental Resource and Value by the park Foundation Document, reference is made to a forthcoming "Physical Security Survey and Plan." Implementation of this task is subject to consideration of physical security and safety issues park-wide.

8. REPLACE ASPHALT SURFACE OF DRIVE TO THE SOUTH GATE WITH HISTORICALLY COMPATIBLE SURFACE

Description

The asphalt driveway connecting Avenida Muñoz Rivera to the South Gate of the San Cristóbal Outworks detracts from the historic character of the San Cristóbal Outworks (Figure 5.19). The asphalt surface should be replaced with a historically compatible and durable surface treatment.

Treatment Considerations

Treatment recommendations for the establishment of a new visitor circulation pattern supporting effective interpretation (Task 3), recommends exposed aggregate concrete pavements that can repel incursion of turf roots and rhizomes. The materials and finish selected for this internal circulation route should be used to resurface the drive to the South Gate.

Relationship to Park Planning

This proposed task, in conjunction with Task 4, to relocate security fencing for improved appearance at entrance to Old City, relates directly to promoting stronger connections to the City of San Juan, as expressed in the Foundation Document for San Juan NHS. Replacement of the non-compatible asphalt with a historically compatible surface will enhance the historic character of the entry drive and improve the arrival sequence for visitors while enhancing the area in close proximity to the community of San Juan.

9. INSTALL WOODEN GATES AT NORTHEAST GATE AND SOUTH GATE ENTRANCES

Description

Wooden doors inside the northeast and South Gate structures provided security and protection during the historic period. Today, the openings for these former entrance gates continue to be framed by substantial masonry gateposts, however the missing wooden doors should be replaced. Security fences guard the outward perimeter of both historic gates detracting from historic character and creating an unwelcoming entrance. Replacement of the missing wooden gates at the south entrance gate will complement efforts to improve the public face of the Outworks along Avenida Muñoz Rivera (Task 4). Replacement of the missing wooden gate at the northeast entrance gate will complement Task 1, which calls for the northeast entrance to be reopened to pedestrians. Replacement of the missing wooden gate will enhance historic character and provide an additional measure of security.

Treatment Considerations

The details of the historic gates within the south and northeast entrance gate are not fully documented. An early 20th century photograph of the Northeast Gate appears in the Historic Structure Report prepared for San Juan's historic fortifications. This poor quality image indicates a wooden picket gate comprised of two leaves, suspended on stone pintels at ground level and leveled with a timber pintel let into the masonry piers (Figure 5.20). Using the historic photograph as an approximate guide, a historic architect and historic carpenter should be consulted to prepare shop drawings, select appropriate materials, and design and plan a



Figure 5.21: Photosimulation looking north toward the South Gate. Note the replacement wooden door within the South Gate, (OCLP 2015).

conservative construction methodology. Once the imposing security fencing along Avenida Muñoz Rivera has been replaced with a safety rail, as described in Task 4, the installation of the replacement wooden gates within the South Gate entrance will further enhance the entrance experience for visitors while providing an additional measure of security (Figure 5.21). Visitor safety, resource protection and effective law enforcement must continue to be a primary management concern.

Relationship to Park Planning

This proposed task relates directly to promoting stronger "Connections to the City of San Juan, as expressed in the Foundation Document for San Juan NHS. The Foundation Document cites " . . . the location of the fort relative to the community of San Juan has created an interdependent landscape shaped by urban design, recreation opportunities, and identity. This relationship means that the preservation of the park lands and structures is dependent on a continued connection between the park and San Juan Community.



Figure 5.22: Diagram of example geophysics grid laid over existing conditions plan. The baseline of the x-axis is oriented on the center points of the Santa Teresa and La Princesa gun batteries. The y-axis originates at the center point of the Santa Teresa gun battery, (OCLP 2015).

10. DEVELOP AND IMPLEMENT A LONG-TERM GEOPHYISICAL INVESTIGATION STRATEGY

Description

Geophysical investigation is likely to provide new knowledge pertaining to site history, construction techniques, and historical use of the San Cristóbal Outworks landscape. Geophysical investigation will aid park managers to better understand the interrelationship between fortifications and supporting infrastructure. New knowledge could be gained regarding the location and construction of missing features, including the 1st and 2nd Retirada walls. Previously unknown features could also be identified. This information will aid the park to enhance interpretation and visitor experience while further protecting resources

Treatment Consideration

Developing and implementing a long-term geophysical investigation strategy will assist park managers to prioritize areas for data collection. As resources allow, geophysical

data can be collected in an organized and efficient manner. The integrated grid system will allow data collected during multiple investigations to be linked together for analysis (Figure 5.22).

Relationship to Park Planning

As the Castillo San Cristóbal and its Outworks are listed among the parks Fundamental Resources and Values, this proposed task bears the opportunity to gain new knowledge which will allow for more effective interpretation of key interpretive concepts and further protect resources.

Cultural Landscape Report

San Cristóbal Outworks
San Juan National Historic Site
San Juan, Puerto Rico

Treatment Plan

National Park Service
Olmsted Center for Landscape Preservation
www.nps.gov/oclp

SOURCES

1. As-built plan, 1949
2. Orthographic Photo, 2004
3. Orthographic Photo, 2010
3. National Park Service photos, 2013

DRAWN BY

Alexandra von Bieberstein, AutoCAD 2013 & Illustrator CS5

LEGEND

- National Historic Site Boundary
- Security Fence
- Safety Fence
- Canopy Vegetation
- Beach
- Turf
- Building
- Paved Surface
- Fortification
- Sidewalk/ Plaza Space
- Historic Road Trace
- Masonry Rubble

NOTES

1. Projection: UTM Zone 19N, NAD 83, International Feet
2. All features shown in approximate scale and location

0' 35' 70' 140'

Drawing 5.1



Cultural Landscape Report

San Cristóbal Outworks
San Juan National Historic Site

San Juan, Puerto Rico

Fencing Plan

National Park Service

Olmsted Center for Landscape Preservation

www.nps.gov/oclp

SOURCES

1. As-built plan, 1949
2. Orthographic Photo, 2004
3. Orthographic Photo, 2010
3. National Park Service photos, 2013

DRAWN BY

Alexandra von Bieberstein, AutoCAD 2013 & Illustrator CS5

LEGEND

- National Historic Site Boundary
- Security Fence (remove)
- Safety Fence (retain)
- Security Fence (install)
- Safety Fence (install)
- Canopy Vegetation
- Beach
- Turf
- Building
- Paved Surface
- Fortification
- Sidewalk/ Plaza Space
- Historic Road Trace
- Masonry Rubble

NOTES

1. Projection: UTM Zone 19N, NAD 83, International Feet
2. All features shown in approximate scale and location

0’ 35’ 70’ 140’

Drawing 5.2

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