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National Monuments
St. Augustine, Florida



Castillo de San Marcos and Fort Matanzas National Monuments
Cultural Landscape Report

Cultural Resources, Partnerships and Science Division
Southeast Region

Castillo de San Marcos and Fort Matanzas National Monuments
Cultural Landscape Report

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WLA Studio

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Cultural Resources, Partnerships, & Science Division



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About the cover: Fort Marion National Monument, St. Augustine, Florida. Castillo De San Marcos National Monument Florida Saint Augustine, ca. 1938. [Washington, D.C.: Department of the Interior, National Park Service] Photograph. https://www.loc.gov/item/2007676130/.

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Fort Matanzas National Monuments
Cultural Landscape Report

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Table of Contents

Introduction 1

Scope of Work and Methodology 1
Summary of Findings 2
Historical Overview 2
Existing Conditions 4
Analysis and Evaluation 4
Treatment 4
Recommendations for Further Study 5

Site History 7

Introduction 7
American Indian Period 7
First Spanish Period (1565-1763) 8
Spanish Territorial Claims in the New World (1513-1565) 8
Spanish Florida (1565-1671) 9
Construction of Castillo de San Marcos (1672-1695) 11
Conflict and Expansion of St. Augustine Defenses (1695-1762) 14
The British Occupation of Florida Period (1763-1784) 21
The Second Spanish Period (1784-1821) 22
The War Department Period (1821-1933) 25
The National Park Service Period (1933-Current) 42

Existing Conditions 79

Introduction 79
Castillo de San Marcos National Monument 80
Natural Systems and Features 81
Spatial Organization 82
Topography 83
Land Use 83
Vegetation 85
Views and Vistas 86
Circulation 86
Buildings and Structures 90
Small-Scale Features 95
Park Headquarters and Maintenance Facility 99
Vegetation 99
Circulation 100
Buildings and Structures 101
Small-Scale Features 102
City Gate 105
Vegetation 105

Circulation 105
Buildings and Structures 106
Small-Scale Features 107
Fort Matanzas National Monument 108
Natural Systems and Features 108
Vegetation 110
Topography 111
Land Use 111
Fort Matanzas Headquarters and Visitor Center Character Area 112
Spatial Organization 112
Utilities 112
Vegetation 112
Views and Vistas 113
Circulation 114
Buildings and Structures 118
Small-Scale Features 120
Fort Matanzas Character Area 123
Spatial Organization 123
Vegetation 123
Views and Vistas 124
Circulation 124
Buildings and Structures 124
Small-Scale Features 125
Beach Ramp Character Area 125
Spatial Organization 126
Vegetation 126
Views and Vistas 126
Circulation 126
Buildings and Structures 127
Small-Scale Features 128

Analysis and Evaluation 149

Introduction 149
Castillo de San Marcos 150
National Register Status 150
Contributing Resources 151
Period of Significance 151
Statement of Significance 151
Landscape Integrity Overview 153
Analysis of Landscape Characteristics 153
Natural Systems and Features 153
Spatial Organization 155
Land Use 157
Cultural Traditions 159
Cluster Arrangement 159
Circulation 160
Topography 172
Vegetation 176
Buildings and Structures 181
Views and Vistas 191

Constructed Water Features 192
Small-scale Features 194
Evaluation of Landscape Integrity 199
Location 200
Design 200
Setting 200
Materials 200
Workmanship 200
Feeling 201
Association 201
Fort Matanzas National Monument 205
National Register Status 205
Contributing Resources 205
Period of Significance 205
Statement of Significance 206
Landscape Integrity Overview 207
Analysis of Landscape Characteristics 207
Natural Systems and Features 208
Spatial Organization 211
Land Use 213
Cultural Traditions 214
Cluster Arrangement 215
Circulation 216
Topography 225
Vegetation 229
Buildings and Structures 232
Views and Vistas 238
Constructed Water Features 240
Small-Scale Features 241
Evaluation of Landscape Integrity 245
Location 245
Design 245
Setting 245
Materials 246
Workmanship 246
Feeling 246
Association 246
Integrity of the Site as a Whole 246

Treatment and Use 253

Introduction 253
Standards for Rehabilitation: 254
Standards for Restoration: 254
Standards for Reconstruction: 255
Castillo de San Marcos National Monument Management Philosophy 255
Previous Treatment Documents 257
Period of Significance 258
Specific Treatment Concerns 258
Treatment Recommendations Castillo de San Marcos National Monument 258

Primary Treatment: 258
Treatment Period 1672-1924 259
Treatment Objectives and Recommendations 259
Buildings and Structures 269
Vegetation 278
Circulation 285
Views and Vistas 288
Small-Scale Features 289
Proposed PMIS Statements for Castillo de San Marcos National Monument 293
Fort Matanzas National Monument Management Philosophy 298
Previous Treatment Documents 299
Period of Significance 300
Specific Treatment Concerns 300
Treatment Recommendations Fort Matanzas National Monument 300
Primary Treatment: 300
Treatment Period 1740 to 1937 301
Treatment Objectives and Recommendations 301
Buildings and Structures 315
Vegetation 319
Circulation 322
Views and Vistas 325
Small-Scale Features 326
Proposed PMIS Statements for Fort Matanzas National Monument 329
Recommendations for Further Study 333
Castillo de San Marcos 333
Fort Matanzas 333
Rising Sea Levels and Environmental Changes 335

Bibliography 337

Appendix A: Glossary 341

Appendix B: Historic Plans 343

Appendix C: Vegetation 367

Appendix D: Product Descriptions and Technical Drawings 375

List of Figures

About the cover: Fort Marion National Monument, St. Augustine, Florida. Castillo De San Marcos National Monument Florida Saint Augustine, ca. 1938. ii

Introduction 1

Figure 1: Location Map Castillo de San Marcos National Monument 4
Figure 2: Location Map Fort Matanzas National Monument 5

Site History 7

Figure 3: 1677 Salazar Plan 12
Figure 4: 1737 Arredondo Map 16
Figure 5: "English military report on St. Augustine, with plans and views of St. Augustine Castle, the Spanish watch tower on Anastasia Island, and Matance's Fort. 1743" 18
Figure 6: 1756 Brozas y Garay Plan 19
Figure 7: 1763 Castelló Map 20
Figure 8: John De. Solís, "A new & accurate plan, of the town of St. Augustine" 21
Figure 9: 1782 "St Augustine and its Environs, 1782" 22
Figure 10: Sam A. Cooley, photographer "Fort Marion, Fla" 30
Figure 11: Undated photograph of City Gate, circa 1870s 31
Figure 12: "Hotel San Marco, showing City Gate" 31
Figure 13: Fort from southwest circa 1875-1890 33
Figure 14: View of Castillo, circa 1890 34
Figure 15: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 34
Figure 16: William Henry Jackson, "Golf at St. Augustine," circa 1902 35
Figure 17: "Fort Marion from Hotel San Marco" 35
Figure 18: View of Fort from southeast, circa 1930s 36
Figure 19: "Fort Marion on Matanzas Bay," circa 1912 37
Figure 20: "Seawall, Fort Marion, St. Augustine, Fla," circa 1910-1920 37
Figure 21: Victor Rahner, "Aerial of Fort Marion" 38
Figure 22: Benham plan of Fort Matanzas 39
Figure 23: Fort Matanzas circa 1923 41
Figure 24: Fort Matanzas circa 1924 41
Figure 25: Fort Matanzas and beach area circa 1929 41
Figure 26: 1936 Castillo de San Marcos Boundary Map 42
Figure 27: Entrance walkways circa 1939 43
Figure 28: Parking lot circa 1939 44
Figure 29: North green in January 1942 44
Figure 30: Fort Matanzas circa 1933 45
Figure 31: Fort Matanzas circa 1934 45

Figure 32: 1934 photograph prior to development of Visitor Center 45
Figure 33: Fort Matanzas dock on Rattlesnake Island circa 1935 46
Figure 34: Fort Matanzas bulkhead circa 1936 46
Figure 35: Visitor Center under construction circa 1935 46
Figure 36: Fort Matanzas entrance sign circa 1950 46
Figure 37: General Plan Fort Matanzas National Monument 47
Figure 38: Detail of General Plan Fort Matanzas National Monument 47
Figure 39: Fort Matanzas and seawalls circa 1947 48
Figure 40: Fort Matanzas and damaged seawalls circa 1947 48
Figure 41: Corbet Hotel circa 1914-1915 48
Figure 42: Fort Matanzas Visitor Center circa 1950 49
Figure 43: Fort Matanzas Visitor Center circa 1950 49
Figure 44: Fort Matanzas Visitor Center entrance walkway circa 1950 49
Figure 45: Castillo de San Marcos from top of Bennett Hotel circa 1958 50
Figure 46: Castillo de San Marcos, HABS documentation, ca. 1964 51
Figure 47: Hurricane Dora Damage 51
Figure 48: CASA aerial circa mid-1960s 51
Figure 49: Existing conditions map 1968 52
Figure 50: Fort Matanzas entrance sign circa 1959 53
Figure 51: Fort Matanzas shoreline stabilization project in 1966 53
Figure 52: Undated aerial 53
Figure 53: Covered way wall repair circa 2002 54
Figure 54: Moat wall under repair circa 2004-2005 55
Figure 55: Wall after repair circa 2003 55
Figure 56: Walkway under construction in 1976 56

Existing Conditions 79

Figure 58: View of utilities looking northeast from the intersection of the Fort Alley crosswalk and the sidewalk along South Castillo Drive. The mast arm for the Fort Alley crosswalk signals can be seen to the left 84
Figure 59: Southeastern view of irrigation control valves near the opening in the covered way wall on the south end of the Castillo de San Marcos 85
Figure 60: Interior view of the Castillo de San Marcos from the western side of the fort's courtyard to the northeast. A maintained lawn space is located at the center of the fort. 85
Figure 61: View of existing vegetation at Castillo de San Marcos looking northeast from the northwestern entrance of the visitor parking lot. Note the open character of the site. 85
Figure 62: View from the fort's gun deck looking west to South Castillo Drive. Defensive structures visible from this position include (from foreground to background) the moat, counterscarp, covered way, covered way wall, glacis, and Cubo Line. 86
Figure 63: View from the fort's gun deck looking southeast with (from left to right) the ravelin, moat, counterscarp, covered way, covered way wall, and glacis. State Road A1A extends across the Matanzas River to Anastasia Island in the background 86
Figure 64: View from the fort's gun deck looking south to the visitor parking lot. 86

Figure 65: View from the NPS staff parking lot northeast to the visitor parking lot. A crosswalk at this southeastern end of the study area provides pedestrian access across South Castillo Drive 87
Figure 66: View south along South Castillo Drive. A crosswalk provides pedestrian access from Fort Alley east to the national monument site. 87
Figure 67: View east along the walkway leading from Fort Alley to the Castillo de San Marcos. Note the increase in grade as the walkway, intended as an accessible route, extends up the glacis. 87
Figure 68: View west along the walkway leading from the Castillo de San Marcos to Fort Alley. Note the eroded sections of the glacis along the edges of the walkway and the shifting walkway alignment visible at the score lines 87
Figure 69: View east along the walkway leading from Fort Alley. Note the worn areas lining the walkway 88
Figure 70: View west from the entrance plaza. The walkway marked as accessible leading from South Castillo Drive includes three steps near the fort's entrance 88
Figure 71: Confluence of walkways at the fort's entrance plaza, looking east, with the ticket booth in the background. Note the various material treatments and turf quality 88
Figure 72: View of the fort's entrance plaza, looking west, with the ticket booth to the right. The entrance to the ravelin is seen just left of the ticket booth 88
Figure 73: Main walkway, looking north, leading from the visitor parking lot to the Castillo de San Marcos. Note the washed areas and sediment along the route 89
Figure 74: Looking southwest along the sidewalk connecting Water Street to the City Gate. Note the cracks visible between the walkway's joints 89
Figure 75: View east along the dirt pathway to the fort from South Castillo Drive, just south of Cubo Line 89
Figure 76: Southeastern view along the dirt pathway as the route passes through the covered way wall. The pathway is used by pedestrians and maintenance vehicles to access the interior sections of the fort grounds 89
Figure 77: Southeastern view along the dirt pathway adjacent to the covered way at the fort's southern. The wall of the ravelin is visible to the left 89
Figure 78: Northeastern view to the drawbridge leading from the entrance plaza (right) to the ravelin (left) 90
Figure 79: Southern view of the moat at the western side of the Castillo de San Marcos 90
Figure 80: Southern view from the northern end of the water battery with gun emplacements in the foreground and the hot shot furnace and utility shed in the background 91
Figure 81: Southeastern view of cannon row from the southern end of the water battery with the seawall in the background 91
Figure 82: View west to the hot shot furnace at the center of the water battery with the eastern scarp wall of the Castillo de San Marcos in the background 92
Figure 83: View west to the utility shed along the eastern wall of the Castillo de San Marcos. The eastern scarp of the fort serves as the western wall of the utility shed 92
Figure 84: View north of the seawall from the northern end of the water battery. The seawall

separates the fort green (left) from Hospital Creek (right). The walkway leading to Water Street is seen to the left, in the fort green 92
Figure 85: View north to the seawall from the central salient at the eastern end of the water battery. The northeastern bastion of the Castillo de San Marcos is seen in the background 92
Figure 86: View north of the living seawall from the sidewalk along the eastern end of the visitor parking lot 93
Figure 87: View east from the north side of the Castillo de San Marcos of the covered way (center). The covered way wall (left) and the counterscarp (right) define the edges of this structure 93
Figure 88: Western view of the covered way wall near the wall's southwestern salient 93
Figure 89: Southern view of the covered way wall near the southwestern salient. The covered way is seen to the left and the glacis is seen to the right, with the walkway leading from South Castillo Drive in the background. Exposed dirt and filter fabric are visible where the wall meets the glacis 93
Figure 90: View southwest from the covered way to the inside corner of the covered way wall. Brick steps lead to a small concrete landing 94
Figure 91: View south to the fort green from the vegetative buffer south of the park headquarters. The glacis is seen in the background rising toward the Castillo de San Marcos 94
Figure 92: Northern side of the Cubo Line looking east from the sidewalk adjacent to South Castillo Drive 94
Figure 93: View northwest to the southeastern corner of the Castillo de San Marcos with the ravelin and drawbridge visible to left 95
Figure 94: Northeastern view of the ticket booth at the fort's entrance plaza 95
Figure 95: View east from South Castillo Drive of the entrance sign at the southern end of Castillo de San Marcos National Monument 96
Figure 96: View east from the sidewalk lining South Castillo Drive to the Cubo Line, with the Castillo de San Marcos in the background. An interpretive sign (left) describes the history of the Cubo Line. A standard regulatory sign (right) directs visitors to the fort entrance 96
Figure 97: A small concrete marker at the southeastern end of the visitor parking lot median identifies the Castillo de San Marcos as a "National Historic Civil Engineering Landmark" 97
Figure 98: View northeast of benches along the walkway between the covered way wall and the glacis. Worn turf is visible near the top of the glacis (WLA Studio 2016). 97
Figure 99: View west from the visitor parking lot to South Castillo Drive. A black aluminum fence serves as a barrier between the parking area and roadway 98
Figure 100: View northwest from the visitor parking lot to South Castillo Drive. Payment kiosks (left) and light standards (right) are located in the parking lot median 98
Figure 101: View south to waste receptacle at the eastern end of the visitor parking lot 98
Figure 102: View south from northwestern corner of the study area. This section of the site features

a clipped hedge along the western side of the park headquarters building (left) and open turf with cabbage palm and live oak trees between this building and South Castillo Drive (right)..... 99
Figure 103: View northwest to the park headquarters building from the lawn north of the access road. A hedge separates the building's walkway from the turf space. Small flowering trees and perennials are planted outside of the foundation hedge..... 99
Figure 104: View looking east from southeastern corner of the park headquarters building. A planting bed extends from the walkway in front of the maintenance office (left) toward the access road (right). The fort green is visible to the far right..... 99
Figure 105: View to the northeastern corner of the study area from just east of the park headquarters and maintenance facility. A debris pile and dumpster (left) are located on the northern side of the road. The fort green (right) is along the southern side of the road..... 100
Figure 106: Eastern view from just east of South Castillo Drive to park headquarters building (left). The sidewalk lining the access road meets the walkway leading to the building's entrance near the flagpole. Parking spaces are located along the south end of the access road (right). The fort green is seen to the far right, outside of the vegetative buffer..... 100
Figure 107: Shell-concrete and brick patio at the entrance to the park headquarters building, behind a screening wall and entrance sign..... 100
Figure 108: View east of the walkway leading to the maintenance office and maintenance yard from the main entrance of the park headquarters building..... 101
Figure 109: View north from the access road to the sidewalks east of the maintenance facility. Concrete and unit-paver sidewalks provide pedestrian routes from the parking area. 101
Figure 110: Northern view to the intersection of sidewalks servicing the parking area east of the maintenance facility. Two cannon and a carriage are placed at this intersection..... 101
Figure 111: Park headquarters building, looking north from access road. Note the entrance sign in the form of a screening wall just right of the entrance walkway. A flagpole with a ground-mounted uplight is placed in the landscape in front of the building..... 101
Figure 112: Western maintenance yard, looking north from the access road. A small drive leads to the maintenance yard from the access road past the park headquarters building (left) and the waste storage area (right)..... 102
Figure 113: Eastern maintenance yard, looking northwest from the gate north of the access road..... 102
Figure 114: View north from the access drive to the eastern side of the waste storage area..... 102
Figure 115: View north from the access road to the park headquarters entrance sign..... 102
Figure 116: View from access road to parking area. Signs state that parking is intended for "National Park Service Employee Parking Only"..... 103
Figure 117: The Albert Manucy commemorative marker is mounted to a wooden post in a planting bed north of the entrance drive, east of South Castillo Drive..... 103
Figure 118: View northeast across the small patio east of the entrance to the park headquarters building. Two benches are bolted to the concrete surface of the patio..... 103
Figure 119: View northwest to the southeastern corner of the park headquarters building. Note the

picnic table placed just outside of the maintenance office entrance 104
Figure 120: View east toward Water Street. A metal gate is located south of the maintenance facility (left), along the access road 104
Figure 121: View south to fort grounds from Water Street. A metal gate blocks vehicular access from the residential area north of the study area to the park headquarters and maintenance facility 104
Figure 122: View east from the sidewalk along South Castillo Drive to the park headquarters building. A black aluminum fence lines the northern end of the study area between the building and sidewalk 105
Figure 123: View of City Gate, looking west from the sidewalk along South Castillo Drive 105
Figure 124: View west from the sidewalk lining South Castillo Drive. Spanish bayonet is planted at the southeastern corner of City Gate 105
Figure 125: View northeast from the sidewalk along Orange Street. A temporary parking space is seen between Orange Street and the Cubo Line 106
Figure 126: View looking south from the northern end of the City Gate site. The moat and walkway are seen in the foreground with a light enclosed in a metal cage visible to the right. The City Gate pillars, wall extensions, and the Cubo Line are seen in the background 106
Figure 127: Southern side of City Gate pillars looking north from Orange Street 106
Figure 128: Western portion of Cubo Line reconstruction, looking east toward City Gate pillars .. 107
Figure 129: Plaque on the southern side of the eastern column commemorating the tricentennial of Castillo de San Marcos 107
Figure 130: Coquina bench and recorded information box near the reconstructed Cubo Line. View from sidewalk lining the western side of South Castillo Drive 107
Figure 131: View looking south from western side of moat. A directional light, encased in wire mesh, is seen in the foreground 108
Figure 132: Northwestern view from the intersection of the HQ/VC complex's entrance drive and State Road A1A 112
Figure 133: View south from the entrance drive of the live oak trees at the center of the FOMA VC area loop road 113
Figure 135: View northwest from the southeastern corner of the visitor center. Coontie (left) is planted along the foundation 113
Figure 134: View southwest to the screening wall linking the visitor center and the law enforcement ranger office 113
Figure 136: View west from the FOMA VC area loop road. Dumpsters are exposed at the end of the drive extension 113
Figure 137: Northern view along the eastern section of the visitor parking area 114
Figure 138: View to the north of the marsh from the marsh trail west of the FOMA VC area loop road 114
Figure 139: View west to Fort Matanzas from the end of the marsh trail west of the FOMA VC area loop road 114
Figure 140: View from boardwalk looking southwest to Rattlesnake Island 114
Figure 141: Western view along the entrance drive as the route cuts through dense maritime

hammock forest cover 115
Figure 142: View northwest along the marsh trail from the drive extension west of the FOMA VC area loop road 115
Figure 143: View east from the parking area. A dirt road extends from the visitor parking area and crosses a sidewalk north of the comfort station 115
Figure 144: View southeast from the boardwalk. A dirt road used by maintenance vehicles intersects with the pedestrian route 115
Figure 145: Northern view of the gravel-surfaced parking area along the inside of the FOMA VC area loop road with the sidewalk and retrofitted access ramp in the foreground 116
Figure 146: View east from FOMA VC area loop road. An accessible parking space is separated by a concrete header curb with an access ramp leading to the sidewalk 116
Figure 147: View southwest from the sidewalk connecting the visitor parking area with the visitor center. The sidewalk is constructed of the original coquina curb and an updated concrete surface. 116
Figure 148: Northwestern view of the walkways behind the visitor center with cut flagstone step treads in the foreground and two concrete walkways in the background 117
Figure 149: Northwestern view along the brick walkway connecting the visitor center to the law enforcement ranger office 117
Figure 150: View southwest of the pathway near the law enforcement ranger office leading to the eastern shore of the Matanzas River 117
Figure 151: Looking southeast along the boardwalk loop leading from the parking area through the maritime hammock forest southeast the comfort station 118
Figure 152: Southwestern view of the visitor center from the FOMA VC area loop road 118
Figure 153: Western view to the law enforcement ranger office north of the visitor center 118
Figure 154: Comfort station, looking east from the FOMA VC area loop road 119
Figure 155: Southwestern view of the retaining wall at the visitor center 119
Figure 156: A coquina-block planter filled with coontie lining the northwestern end of the visitor center, looking southeast 120
Figure 157: Fort Matanzas National Monument entrance sign along western side of State Road A1A looking north 120
Figure 158: Southwestern view to the educational sign at the dock behind the visitor center. 120
Figure 159: View west from the north end of the law enforcement ranger office. A shingle-roofed educational sign is mounted beside a fishing line receptacle station. The pathway to the east bank of the Matanzas River is seen to the right 121
Figure 160: Benches are placed along the walkway extending from the dock to the portico at the northwestern end of the visitor center (background) 121
Figure 161: Eastern view of wooden bollards along the entrance road with the entrance sign and State Road A1A in the background 122
Figure 162: View north of the wheelchair-accessible picnic table west of the visitor parking area 122
Figure 163: A waste receptacle is located between the wheelchair-accessible picnic table and the visitor parking area, looking west 122
Figure 164: A headwall protects the storm pipe near the western end of the FOMA VC area loop

road, looking southwest 123
Figure 165: View from the fort's gun deck looking southwest across the maintained turf area surrounding the fort with the natural vegetation of Rattlesnake Island in the background 123
Figure 166: View from the gun deck south toward Matanzas Inlet 124
Figure 167: View south along the pathway leading from the dock to the fort. 124
Figure 168: View northeast of the staircase leading from the pathway to the fort's gun deck 124
Figure 169: View north to Fort Matanzas from the maintained turf area 125
Figure 170: Bulkhead and riprap between Fort Matanzas and the Matanzas River 125
Figure 171: View from just east of the wooden access ramp looking north with the Atlantic Ocean to the east and the Summerhouse condominiums to the west 126
Figure 172: View from just east of the wooden access ramp looking south toward the undeveloped portion of Anastasia Island 126
Figure 173: View northeast of the parking area along the access road with the vehicular turnaround in the foreground and parking stalls in the background 127
Figure 174: View from the end of the entrance drive looking east, across the beach access ramp, toward the Atlantic Ocean 127
Figure 175: View south of the modular block wall at the southern corner of the parking area, just beyond the vehicular turnaround 127
Figure 176: A wooden structure is used to provide an enclosure for portable toilets at the Beach Ramp site, as seen looking north from the entrance road 128
Figure 177: Looking north from the end of the access road, a sign near the beach access ramp provides regulatory information for beachgoers 128
Figure 178: View from just east of the beach access ramp. Signs provide information on rip currents, beach warning flags, and directions to the next vehicular access point. 129
Figure 179: View southeast of the beach access ramp. A sign informs people visiting the site that no motorized vehicles are allowed along the beachfront between the Beach Ramp landscape and the southern end of Anastasia Island 129
Figure 180: Bollards line each side of the entrance road and extend into the sand dunes. A metal gate is used to block vehicular access in the evenings during sea turtle nesting season as seen looking east to the Atlantic Ocean 130
Figure 181: Two waste receptacles are located in the parking lot area. The photo above shows the receptacle at the southeastern end of the parking area 130

Analysis and Evaluation 149

Figure 182: Detail Berrios Map 1797 154
Figure 183: Detail Cortazar Map 1817 154
Figure 184: 1859 Coastal Survey 155
Figure 185: Overlay 1859 Survey and 2018 Google Earth Aerial 155
Figure 186: Detail 1764 Map 156
Figure 187: Post Card 157
Figure 188: Fort Marion circa 1885-1891 158

Figure 189: Fort Marion circa 1870-1890 158
Figure 190: Detail 1783 Map 161
Figure 191: Detail 1819 Map 161
Figure 192: Sam Cooley Entrance Gate 161
Figure 193: City Gate circa 1938 161
Figure 194: Detail Manucy 1964 City Gate Drawing 162
Figure 195: Detail 1737 Map 162
Figure 196: Looking South circa 1875-1887 162
Figure 197: Looking South circa 1891 162
Figure 198: Looking southeast circa 1892-1900 163
Figure 199: Detail 1939 163
Figure 200: Detail 1965 163
Figure 201: Circa 1930s Parking Lot 164
Figure 202: Detail 1936 Boundary Map 164
Figure 203: 1965 aerial 164
Figure 204: View of Parking Lot circa 1962 164
Figure 205: 1965 165
Figure 206: City Gate circa 1875-1878 Jacksonville Historical Society 166
Figure 207: City Gate 1905 166
Figure 208: Brozas y Garay 1756 167
Figure 209: 1796 Map 167
Figure 210: Circa 1890 167
Figure 211: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 168
Figure 212: "Birds-eye view of Fort Marion, Saint Augustine Florida," circa 1920 168
Figure 213: Victor Rahner, "Aerial of Castillo," circa 1924 168
Figure 214: William Henry Jackson, "Golf at St. Augustine," circa 1902 168
Figure 215: 1930s Entrance Walkway 169
Figure 216: Detail 1936 Boundary Map 169
Figure 217: Parking Lot circa 1939 169
Figure 218: 1940s 169
Figure 219: Circa 1940 Sidewalk Construction 169
Figure 220: Sidewalk Plan circa 1936 170
Figure 221: Walkway circa 1970s 170
Figure 222: 1965 170
Figure 223: Circa early-1970s 170
Figure 224: Circa late-1980 170
Figure 225: City Gate circa 1890 172
Figure 226: 1817 Map 172
Figure 227: 1763 Map 173
Figure 228: Circa 1875-1890 174
Figure 229: Circa 1890 174
Figure 230: 1937 Moat excavation 175
Figure 231: 1995 Moat work 175

Figure 232: Detail 1819 Map 177
Figure 233: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 177
Figure 234: 1875 Map 177
Figure 235: "Fort Marion, St. Augustine, Fla," circa 1880 178
Figure 236: Circa 1890 178
Figure 237: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 179
Figure 238: Detail 1936 Boundary Map 179
Figure 239: 1965 179
Figure 240: Circa early-1970s 180
Figure 241: Circa 1980 180
Figure 242: Circa 1980 180
Figure 243: 2018 Google Earth 181
Figure 244: City Gate 1938 182
Figure 245: 1737 Map 183
Figure 246: 1756 Map 183
Figure 247: 1763 Map 184
Figure 248: 1817 Map 186
Figure 249: Circa 1880 188
Figure 250: Circa 1938 189
Figure 251: Circa 1935 189
Figure 252: Circa 1965 189
Figure 253: Circa 1976 189
Figure 254: Circa 1977 189
Figure 255: Circa 1965 190
Figure 256: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 191
Figure 257: Circa 1884-1891 191
Figure 258: 1939 192
Figure 259: Circa 1891 193
Figure 260: City Gate 1951 195
Figure 261: Circa 1878-1880 Jacksonville Historical Society 195
Figure 262: Detail from William Henry Jackson, "Fort Marion from the Warden residence," 196
Figure 263: Detail from William Henry Jackson, "Fort Marion from the Warden residence," 196
Figure 264: 1938 Entrance Walkway 197
Figure 265: Circa 1938 Entrance Walkway 197
Figure 266: Circa 1938 Entrance and Flagpole 197
Figure 267: Detail 1936 Boundary Map 198
Figure 268: 1870 map of Matanzas Inlet area with 2018 aerial image below. Note the size of Rattlesnake Island and its relation to Matanzas Inlet 209
Figure 269: 1952 map of Matanzas Inlet area with 2018 aerial image below. The construction of dikes, canals, and natural changes to Rattlesnake Island's coastline has altered the form of the island's coastline and relation to Matanzas Inlet 209
Figure 270: 1934 survey of existing conditions prior to construction of the Headquarters and Visitor

Center. Buildings were placed near the Matanzas River and informal roads curved through the landscape, avoiding natural features where possible 211
Figure 271: 1935 preliminary road plan for Headquarters and Visitor Center. Circulation routes are direct to Atlantic beachfront and structures at western side of Anastasia Island while working to avoid dunes 212
Figure 273: 1937 photograph of entrance road, looking west from Ocean Shore Boulevard 217
Figure 272: 1976 photograph of Youth Conservation Corps members replacing pathway from dock to fort, looking north 217
Figure 274: 1937 photograph of FOMA VC area loop road, looking west 218
Figure 275: 1934 photograph looking north along informal road extending from future site of utility building and road extension 218
Figure 278: 1937 photograph of road leading to beach ramp and parking area north of road, looking west 219
Figure 276: 1951 photograph of newly resurfaced FOMA VC area loop road, looking southeast. 219
Figure 277: 1968 photograph of drop off area at visitor center, looking southwest. Note the exposed sand-asphalt surface of the road and sidewalk 219
Figure 279: 1938 photograph of repaired beach ramp, looking southeast 220
Figure 280: 1949 photograph of second parking area being constructed near the beach ramp, looking east. The parking area is covered with crushed coquina 220
Figure 281: 1998 aerial photograph of newly paved parking areas with Summer House condominiums visible 220
Figure 282: 1972 photograph of beachfront parking, looking south from end of beach ramp 220
Figure 283: 1937 photograph of sidewalk with coquina curb along FOMA VC area loop road, looking north 221
Figure 284: 1937 photograph, looking northeast, of walkway linking FOMA VC areas loop road parking area to visitor center 221
Figure 285: 1937 photograph of staircase and walkway leading up slope to ranger residence, looking south from visitor center entrance 221
Figure 286: 1936 construction detail of walkway 222
Figure 287: 1937 photograph of crushed-coquina walkway (left) and coquina-stone walkway (right) behind visitor center, looking southeast 222
Figure 288: 1937 photograph of dry-laid coquina flagstone walkway linking dock and visitor center, looking northeast to visitor center 222
Figure 289: 1950 photograph of smooth sand-asphalt sidewalk and paver walkway leading to visitor center, looking southwest 223
Figure 290: 1979 photograph of walkways behind visitor center, looking north 223
Figure 291: 1978 photograph of barge being used to board Matanzas Queen northwest of utility building, looking north 223
Figure 292: 1979 photograph of wheelchair ramp installed along sidewalk, looking west from parking area to visitor center 223
Figure 293: 1983 photograph of seating area near Ribault Massacre marker along nature trail,

looking northwest with Fort Matanzas visible through opening in cedar tree 224
Figure 294: 2016 photograph of boardwalk south of FOMA VC area loop road..... 224
Figure 295: 1936 photograph of bulkhead with stone pavers between wall and northeastern scarp of Fort Matanzas, looking southeast..... 226
Figure 296: 1967 photograph of groin, installed in 1966. Note the graded and sodded space between the groin and the southeastern scarp of Fort Matanzas 226
Figure 297: 1936 grading plan for HQ/VC area 227
Figure 298: 1934 photograph of proposed location for HQ/VC parking area 227
Figure 299: 1936 grading plan for beach ramp area. Note the attempt to avoid steep slopes 228
Figure 300: 1975 aerial photograph of Fort Matanzas landscape, looking northwest. Note the formalized turf area adjacent to the natural landscape of Rattlesnake Island 229
Figure 301: 1935 photograph of wrapped and protected trees adjacent to HQ/VC building construction..... 230
Figure 302: 1937 photograph of grasses and perennials in coquina planter along front of visitor center, looking northwest 230
Figure 303: 1980 photograph of coontie (Zamia floridana), left, and shrimp plant (Justicia brandegeana), right, looking northwest from visitor center to utility building..... 230
Figure 304: c. 1885 photograph of Fort Matanzas, looking north. Note the cracks along the scarp and the vegetation covered the gun deck and tower 233
Figure 305: 1929 photograph of Fort Matanzas after reconstruction, looking north..... 233
Figure 306: 1972 aerial photograph of eastern section of Fort Matanzas site. The shoreline stabilization efforts between 1936 and 1966 created the leveled space seen at the fort's southeastern corne 233
Figure 307: c. 1940 photograph of visitor center, looking southwest from parking area. Sand-asphalt sidewalks and the crushed-coquina walkway are visible 234
Figure 308: c. 1937 photograph of utility building and screening wall, looking west from area north of visitor center entrance..... 234
Figure 309: 1950 photograph of garage doors at northwestern end of utility building..... 234
Figure 310: 1934 photograph of unidentified man standing near future site of 1935 dock construction, looking west. Note the old dock pilings and stone groin visible to the right and Fort Matanzas to the left 234
Figure 311: 1935 photograph of completed visitor center dock, looking northwest. Fort Matanzas is visible across the Matanzas River to the right 235
Figure 312: c. 1936 photograph of groin south of visitor center dock, looking northwest. Fort Matanzas is visible across the Matanzas River to the left..... 235
Figure 313: 1972 photograph of people fishing from groins along eastern shore of Matanzas River, looking northwest from visitor center dock..... 235
Figure 314: 1973 photograph of visitor center dock, looking west from western edge of Anastasia Island. A boat lift and shade structure have been added to the original dock 236
Figure 315: 1979 photograph of newly constructed visitor center dock, looking northeast from Matanzas River 236
Figure 316: 2016 photograph of comfort station, looking east from visitor center parking area .. 236

Figure 317: 1970s photograph of southeastern view to Matanzas Inlet from terreplein of Fort Matanzas 238
Figure 318: 1983 photograph of western view to Rattlesnake Island and Intracoastal Waterway channel from top of Fort Matanzas 238
Figure 318: 1968 photograph of northwestern view to Fort Matanzas from visitor center dock ... 239
Figure 320: 2016 photograph of trees between FOMA VC area loop road and LE ranger office, looking east from brick walkway linking the LE ranger office and visitor center. Note the open character of the site as trees have been removed since the site's original construction 239
Figure 321: 1937 photograph of coquina-masonry headwall, looking northwest from preserved area at center of FOMA VC area loop road 241
Figure 322: 1937 photograph of guard rails at entrance from Ocean Shore Boulevard, looking east from western entrance road 242
Figure 323: 1937 photograph of guard rail construction along road extension linking utility building with FOMA VC area loop road, looking east from road extension to loop road and parking area 242
Figure 324: 1949 photograph of original entrance sign, installed in 1937, looking south 243
Figure 325: c. 1940 photograph of western entrance to HQ/VC from Ocean Shore Boulevard 243
Figure 326: 1957 photograph of entrance sign, looking south from western entrance to HQ/VC 243
Figure 327: 1987 photograph of entrance sign installation, looking southwest from SR A1A 243
Figure 328: c. 1990 photograph of entrance sign, looking northwest from SR A1A 243

Treatment and Use 253

Figure 329: Mortar ledges on coquina walls 269
Figure 330: Vegetation on fort's scarp walls 270
Figure 331: Water Battery wall 271
Figure 332: Cubo Line with utilities in foreground 272
Figure 333: Covered way wall coping stones condition 273
Figure 334: Brick stairs in covered way 274
Figure 335: Condition of turf in water battery 279
Figure 336: Reinforced geogrid for turf 281
Figure 337: Example of areas to use grid reinforced turf 281
Figure 338: Example of areas to use fiber reinforced turf 281
Figure 339: Example of stabilized path 286
Figure 340: Example of areas to install stabilized aggregate path 286
Figure 341: Gravelpave system by Invisible Structures 286
Figure 342: Example of area to use reinforced aggregate service path 287
Figure 343: Reorganized entrance plaza 287
Figure 344: Rendering of reconfigured entrance plaza 287
Figure 345: Detail of City Gate 287
Figure 346: Reliance Foundry R-8902 Stainless Steel Bollard 287
Figure 347: Example of view from fort towards St. Augustine 289
Figure 348: Barcoboard Steel Frame Double-Board bench 290

Figure 349: Central Park Recycled Plastic Bench by JayHawk Plastics 290
Figure 350: Wide Loop U Bike Rack by Parktastic 291
Figure 351: Utilities to be hidden with grade adjustments and turf 292
Figure 352: Rendering of visitor gathering area and viewing platform 317
Figure 353: Rendering of viewing platform at dock 317
Figure 354: Rendering of marsh platform 318
Figure 355: Vegetation growing on coquina retaining wall 319
Figure 356: 1950 photograph showing trees growing around visitor center 319
Figure 357: Examples of areas worn by visitor traffic 320
Figure 358: Circa 1935 photograph showing vegetation growing in loop road island 321
Figure 359: 1935 photograph showing vegetation growing close to visitor center 321
Figure 360: Circa 1935 photograph of coquina curb under construction 323
Figure 361: 1935 photograph of flagstone walkway at visitor center 324
Figure 362: Concept for bus parking 325
Figure 363: View south from Fort Matanzas 325
Figure 364: Vegetation growth on historic coquina planter 326
Figure 365: Bench from 1935 NPS document Park Structures and Facilities 327
Figure 366: Picnic table from 1935 NPS document Park Structures and Facilities 328
Figure 367: Examples of site furnishings at visitor center 328
Figure 368: Utilities on rear facade of visitor center 328

List of Illustrations

Illustration 1.1: 1672 to 1737 Castillo de San Marcos 57
Illustration 1.2: 1738 to 1763 Castillo de San Marcos 59
Illustration 1.3: 1764 to 1784 Castillo de San Marcos 61
Illustration 1.4: 1821 to 1844 Castillo de San Marcos 63
Illustration 1.5: 1845 to 1936 Castillo de San Marcos 65
Illustration 1.6: 1937 to 1966 Castillo de San Marcos 67
Illustration 1.7: 1937 Overall Site Fort Matanzas 69
Illustration 1.8: 1937 Headquarters and Visitor Center Fort Matanzas 71
Illustration 1.9: 1937 Headquarters and Visitor Center, Enlargement Fort Matanzas 73
Illustration 1.10: 1937 Entrance Area and Beach Ramp Fort Matanzas 75
Illustration 1.11: 1937 Fort Matanzas 77
Illustration 2.1: Existing Conditions Overall Site Castillo de San Marcos 131
Illustration 2.2: Existing Conditions Castillo de San Marcos 133
Illustration 2.3: Existing Conditions Park Headquarters and Maintenance Facility, City Gate 135
Illustration 2.4: Existing Conditions NPS Staff Parking and Visitor Areas Castillo de San Marcos ... 137
Illustration 2.5: Existing Conditions Overall Site Fort Matanzas 139
Illustration 2.6: Existing Conditions Headquarters and Visitor Center Fort Matanzas 141
Illustration 2.7: Existing Conditions Headquarters and Visitor Center, Enlargement 137
Illustration 2.8: Existing Conditions Entrance Area and Beach Ramp Fort Matanzas 143
Illustration 2.8: Existing Conditions Fort Matanzas 145
Illustration 5.1: Treatment Recommendations: Overall Site Castillo de San Marcos 163
Illustration 5.2: Treatment Recommendations: Castillo de San Marcos 165
Illustration 5.3: Treatment Recommendations: Park Headquarters, Maintenance, City Gate 167
Illustration 5.4: Treatment Recommendations: Overall Site Fort Matanzas 305
Illustration 5.5: Treatment Recommendations: Headquarters and Visitor Center 307
Illustration 5.6: Treatment Recommendations: Headquarters and Visitor Center, Enlargement 309
Illustration 5.7: Treatment Recommendations: Entrance Area and Beach Ramp 311

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Introduction

This Cultural Landscape Report (CLR) examines the site history and existing conditions of and provides treatment recommendations for Castillo de San Marcos National Monument (CASA) and Fort Matanzas National Monument (FOMA). The purpose of the CLR is to provide the National Park Service with an assessment of the character-defining features of these two national monuments. The treatment recommendations included in this document aim to protect and preserve historic resources while specifically addressing issues related to contemporary usage of the site.

The Site History section of this CLR presents a chronological overview of the development and evolution of both national monuments. It includes information from existing histories of both Castillo de San Marcos and Fort Matanzas. It includes information gathered from the national monument archives, located at Timucuan Ecological and Historic Preserve, in Jacksonville, Florida. Illustrations of period plans for both Castillo de San Marcos and Fort Matanzas are located at the end of the Site History section.

The Existing Conditions section compiles information collected on site visits in 2016, 2017, and 2018. Illustrations of existing conditions at both Castillo de San Marcos and Fort Matanzas are located at the end of the Existing Conditions section.

The Analysis and Evaluation Section uses criteria developed by the Secretary of the Interior and the National Register of Historic Places to evaluate the significance and integrity of individual landscape features.

The Treatment Section provides recommendations for both Castillo de San Marcos and Fort Matanzas national monuments. The treatment recommendations consider the approved management categories of existing historic resources and address landscape issues associated with contemporary use of the site.

The Appendices for this report include a glossary, a group of historic plans and maps for the national monuments, information on products discussed in the treatment recommendations, and the NPSpecies database plant list for these sites.

Scope of Work and Methodology

The project site includes the approximately twenty acres of the Castillo de San Marcos National Monument. It also includes approximately 25 acres of the Fort Matanzas National Monument. The study area of the Fort Matanzas National Monument includes the area around the Headquarters and Visitor Center on Anastasia Island and the area around Fort Matanzas on Rattlesnake Island.

According to the project scope of work, this CLR will: (1) describe the historical development of the areas; (2) document the existing site conditions; (3) provide analysis of the landscapes potential National Register significance; (4) identify and assess integrity of character defining features; (5) determine appropriate treatment strategies; and (6) develop treatment recommendations that facilitate preservation of these resources, address park management concerns, and inform ongoing and proposed facility development. The CLR will also include a prioritized list of draft NPS Project Management Information System (PMIS) statements for landscape preservation/ rehabilitation projects.

This CLR will help inform the decision process as the NPS works to improve interpretation of the site, address circulation concerns, and provide for the health, safety, and welfare of park employees and visitors. The treatment section also includes a discussion of overall management objectives for the site as documented in planning studies or other management documents. Management issues identified by park managers include:

- management of Castillo grounds in a way that can sustain the 800,000 annual visitors;
- developing a “Welcome Plaza” to improve a visitor’s welcome experience;

- management of Castillo grounds, with specific recommendations for turf management.
- management of Fort Matanzas grounds, with specific recommendations for turf management in particular;
- management of high visitor use at Fort Matanzas that results in erosion, traffic and parking issues, and other resource damage;
- identifying and providing design ideas for an area where visitors can wait for their boat trip to Fort Matanzas;
- identifying which cultural landscape features are inadequately identified in the Facilities Management Software System (FMSS) and which FMSS assets might need updating or inclusion;
- and addressing resilience to natural hazards.

This CLR uses primary and secondary sources to establish the historic significance of the landscape, identify a period of significance, and complete the historic analysis. Primary and secondary sources inform the history section that describes the evolution of the landscapes at both national monuments.

The Site History utilizes the work of several scholars who produced histories of Castillo de San Marcos and Fort Matanzas. Cécile-Marie Sastre prepared a history of the cultural landscape in 2000 that synthesizes the work of other scholars. Edwin C. Bearss and John C. Paige's *Historic Structure Report of Castillo de San Marcos* was especially helpful for information on the periods following the Spanish departure from Florida. Luis Arana and Albert Manucy, past historians with long relationships with Castillo de San Marcos, are generally considered the experts on these two national monuments.

Using information gathered during site visits, this CLR identifies landscape characteristics and associated features that contribute to the historic significance of the site. This CLR compares the historic condition of a resource with its current condition to evaluate its historic integrity.

Summary of Findings

Historical Overview

Spain constructed Castillo de San Marcos between 1672 and 1695. Castillo de San Marcos was the last of ten fortifications that Spain built in the area around present-day St. Augustine, Florida, which they founded in 1565. St. Augustine was the first permanent European settlement in what is today the continental United States. Castillo de San Marcos is the oldest masonry fortification remaining in the continental United States.

Spain built Castillo de San Marcos to defend St. Augustine, their main colonial outpost in southeastern North America, and to protect the important sea routes from the New World to Spain. The founding of St. Augustine was part of Spain's strategy to solidify their claim to Florida against rival European nations. Before the construction of the existing masonry structure, the Spanish built nine wooden forts between 1565 and 1672. The first forts were on Anastasia Island, on the east side of the Matanzas River, before the Spanish relocated their settlement to the present location of St. Augustine. This report refers to this period as the First Spanish Period (1565- 1763).

Following an attack by pirate raiders in 1668, the Spanish began construction in 1672 of the masonry fortification that became Castillo de San Marcos. After completing Castillo de San Marcos in 1695, the Spanish made numerous additions and modifications to both the main structure and its outlying landscape. Many of the landscape features representative of the Castillo de San Marcos colonial period were completed by 1756.

In 1763, Castillo de San Marcos and the other Spanish possessions in St. Augustine transferred to British control according to the terms of the Treaty of Paris ending the Seven Years' War. The British called the fortress St. Mark.[1] This report refers to this as the British Occupation of Florida Period (1763-1784). During the American Revolution, Spain declared war on Britain in 1779; and following the conclusion of the American

1. This report refers to the fortress as Castillo de San Marcos. Other names associated with the fortress include Castle of St. Mark, St. Mark, and Fort Marion. Each name change will be discussed and alternative names will be included parenthetically to highlight the name changes in each time period.

Revolution in 1785, Britain returned to Spain ownership of Castillo de San Marcos and other properties transferred in 1763. This report refers to this as the Second Spanish Period (1784-1821). During the first decades of the 1800s, Spain faced multiple insurrections in its colonies in Central America and South America. Additionally, the United States desired Spanish territory in Florida. In the 1810s, when the Spanish were unable to control Seminole Indians from leading raids into Georgia, United States soldiers under Andrew Jackson pursued Seminole's into Spanish territory, further weakening Spain's grip over Florida. United States Secretary of State, John Quincy Adams led the negotiations with Spain, which resulted in the 1819 Adams-Onis Treaty where Spain ceded Florida to the United States. The treaty was not ratified by both nations until 1821, when Spain transferred ownership of Florida and all Spanish possessions in the region to the United States. Because the United States government placed the property under the administration of the War Department, this report refers to this as the War Department Period (1821-1933).

In 1825, the United States government renamed Castillo de San Marcos as Fort Marion. The War Department used Castillo de San Marcos as a garrison prior to the Civil War and as a military prison, where they incarcerated numerous American Indians following various conflicts in Florida and in the American West. After the Civil War, the War Department deemed the fort and its associated defensive earthworks as unnecessary for national defense and began treating the property more as a historic resource than a military installation. A Presidential Proclamation made the Castillo de San Marcos (still called Fort Marion at the time) a national monument on October 15, 1924. The War Department continued to manage the site until the National Park Service took partial administrative responsibility of the site in 1933 and exclusive responsibility two years later. This begins the period that this report refers to as the National Park Service Period, which extends to the present day. The United States Congress renamed the national monument in 1942, reinstating the title, Castillo de San Marcos.

Fort Matanzas National Monument is located approximately 14 miles south of Castillo de San Marcos National Monument along A-1-A just north of the Matanzas Inlet. The historic fort is on Rattlesnake Island, where the Intracoastal Waterway joins the Matanzas River. NPS operates a visitor center and headquarters on the south end of Anastasia Island, almost opposite the historic fort. The visitor center complex also features a dock, restroom, nature trails, and support structures.

The Spanish constructed Fort Matanzas between 1740 and 1742, building a series of towers along the Matanzas River where soldiers watched for enemy ships entering the river from the south. The Matanzas River provided access to St. Augustine; and the Spanish constructed Fort Matanzas from which soldiers would harass enemy vessels and would alert the main garrison of threats. By the time the building was transferred to the United States in 1821, the fort was in very poor condition and therefore never used by the United States War Department for military purposes. During their administration of the site, the War Department did attempt to secure funds to stabilize the building for historic preservation purposes. Ownership of land around Fort Matanzas was also in question until 1916, when a Presidential Executive Order assigned the islands lying in the Matanzas River, which included Rattlesnake Island, to the Fort Matanzas Military Reservation. Fort Matanzas became a National Monument on October 15, 1924, at the same time as Castillo de San Marcos. The War Department oversaw a major stabilization of the building in 1927. In 1935, administration of Fort Matanzas transferred to the NPS. In 1937, the NPS constructed a visitor center and ranger residence across the river from the historic fort. The NPS also maintained the fort, made necessary repairs, and installed a seawall to protect the building from erosion. Between 1935 and the 1960s, several donations of land increased the original size of the national monument to its current size, which encompasses approximately 300 acres.

An overview of the history of both Fort Matanzas and Castillo de San Marcos is included in the Site History section. The Site History defines the periods of development to highlight significant developments in the evolution of the features associated with the site. These periods are as follows:

American Indian Period

First Spanish Period (1565 - 1763)

British Occupation of Florida Period (1763 -1784)

Second Spanish Period (1784 - 1821)

War Department Period (1821 - 1933)

National Park Service Period (1933 - present)

Existing Conditions

The existing conditions section documents the condition of the landscape using information collected during site visits in 2016, 2017 and 2018. The section includes information about landscape characteristics and landscape features including natural systems and features, spatial organization, land use, cultural traditions, cluster arrangement, circulation, topography, vegetation, buildings and structures, views and vistas, constructed water features, and small-scale features.

Analysis and Evaluation

The analysis and evaluation section of this CLR uses the National Register of Historic Places documentation to establish the period of significance and statement of significance for the two national monuments. The analysis and evaluation section examines the evolution of the site during the periods of significance and compares the historic landscape to existing conditions.

Treatment

Castillo de San Marcos National Monument

Rehabilitation is the recommended treatment approach because it provides for the ongoing maintenance and preservation of historically significant resources while allowing for the introduction of new features that support current use of the site. The treatment recommendations provide strategies to improve the ability of the landscape to withstand the pressures associated with high volume of visitation and the impact that visitation has on the vegetation and circulation system at the national monument. Rehabilitating Castillo de San Marco's landscape involves preserving the existing features that contribute to the historic significance of the site. Rehabilitation also involves introducing non-historic features that will improve the site's resiliency.



Figure 1: Location Map Castillo de San Marcos National Monument (Source: NPS)

The treatment recommendations include:

- Maintain the historic structures and buildings to their appearance during the Spanish Colonial period or War Department period depending upon the time of their construction; this includes ongoing preservation maintenance like removing vegetation, repairing parging and coping;
- Maintain the spatial organization and landscape features that contribute to the significance of the landscape, including the historic buildings and structures;
- Maintain the historic character of the landscape by retaining the open appearance of the esplanade/fort green as an open lawn area;
- Replant turf in areas where it is worn, using a soil-stabilizing system and structured soil to reduce soil compaction and improve turf resiliency;
- Install soil stabilized walkways in high traffic areas;
- Replant historic cedar trees and elm trees in areas south and west of fort with in kind species to maintain a portion of the landscape dating to the War Department period of significance;
- Plant trees along the perimeter of the fort green to soften views of South Castillo Drive/A1A and to screen modern features that compromise the historic character of the site;
- Replace concrete plaza using a uniform

concrete surface that is distinguishable from historic materials;
- Use interpretive signage to make the historic landscape more legible to visitors.

Fort Matanzas National Monument

Rehabilitation is the primary treatment approach for Fort Matanzas National Monument because it enables the NPS to maintain and repair historic resources, while simultaneously allowing new additions to support its use as a commemorative site. The goal of treatment is to improve the interpretation of Fort Matanzas and the conserved natural environment by preserving and/or rehabilitating the character-defining resources present during the period of significance. Another goal is to improve the ability of the landscape to withstand the pressures associated with steadily increasing visitation and the impact it has on the vegetation and circulation system at the national monument. The treatment recommendations improve visitor orientation, access, and circulation. Rehabilitating the study area's landscape includes preserving the existing features that contribute to the historic significance of the site.

Treatment recommendations include:
- Maintain Fort Matanzas as it appeared during the Spanish Colonial period;
- Maintain and improve upon the shoreline stabilization features at Rattlesnake Island and Anastasia Island as needed to protect historic and natural resources;
- Maintain the visitor center as it appeared after its original construction in 1937;
- Maintain the historic utility building as needed to serve as park offices while retaining original aesthetic seen in 1937;
- Use materials compatible with historic features when repairing historic buildings, structures, small-scale features, and circulation routes;
- Infill planting areas to reestablish landscape character as seen in 1937;
- Replant turf as needed at fort site and entrance from State Road A1A (SR A1A) using a soil-stabilizing system and structured soil to reduce compaction and improve resiliency in heavily damaged areas;
- Provide designated space for guests to await ferry service to Fort Matanzas from the HQ/VC;



Figure 2: Location Map Fort Matanzas National Monument (Source: NPS)

- Provide a wildlife-observation deck at the marshland north of the VC area loop road;
- Strengthen the interpretive opportunities for making the historic landscape more legible and accessible for visitors.

Recommendations for Further Study

Archeological Study. Conduct an archeological study at Castillo de San Marcos National Monument to locate missing War Department features that would allow the NPS to more accurately interpret the development of the site during that period.

National Register Nomination. Amend the National Register listing for the Castillo de San Marcos National Monument to expand the period of significance to 1933 from its current end date of 1924. Expand the statement of significance to include the commemoration, recreation, and preservation aspects of the War Department period of historic significance.

Historic Structure Report. An updated Historic Structure Report on Castillo de San Marcos and associated features would help inform future preservation treatments for the structures. The existing HSR's date from 1983 and 1986.

Archeological Study. Conduct an archeological study at Fort Matanzas National Monument to locate features in the landscape behind the visitor center.

National Register Nomination. Amend the National Register listing for the Fort Matanzas National Monument to provide a revised period of significance (1565 to 1937).

Natural Hazards Adaptation Plan. With rising sea levels, historic coastal resources are particularly sensitive to the effects of natural hazards. Develop a Resilience to Natural Hazards Plan in order to properly plan and prepare for possible damage to Castillo de San Marcos and Fort Matanzas and other features at the national monuments.

Site History

Introduction

Castillo de San Marcos and Fort Matanzas, both in St. Johns County, Florida, represent the best-preserved evidence of Spain's 287-year presence in southeastern North America. Initially constructed between 1672 and 1695, Castillo de San Marcos formed the core of a system of defenses to protect St. Augustine, Florida, the first permanent European settlement in the continental United States. Fort Matanzas, initially constructed from 1740-1742, served as an important outpost to guard the "back door" route to St. Augustine. Fort Matanzas is approximately 13.5 miles south of Castillo de San Marcos. Today, Castillo de San Marcos is the oldest surviving masonry fortification in the continental United States.

Castillo de San Marcos and its surrounding landscape reflect conventions of seventeenth-century military engineering, specifically the bastion system of fortification design. (Please refer to Appendix A, which provides a glossary of some of the military terms used in this report.) This style incorporated bastions from which to fire artillery and a series of earthworks outside the fort's walls to keep invaders at a distance.[2] Constructed with locally sourced coquina stone, Castillo de San Marcos featured four corner bastions, curtain walls, multiple embrasures, a glacis, and a moat among other features. The much smaller Fort Matanzas featured a large parapet wall, sentry watchtower, and a deck upon which cannon were mounted. Fort Matanzas was also constructed with coquina. The Spanish utilized the labor of American Indians, enslaved Africans, convicts, hired workers, and soldiers to construct the two defensive works.

Both Fort Matanzas and Castillo de San Marcos became the property of Great Britain in 1763. The British changed the name of Castillo de San Marcos to Fort St. Mark. Both forts returned to Spanish control in 1784. The United States took possession of Castillo de San Marcos and Fort Matanzas in 1821 when Florida became a territory of the United States. From 1821 to 1900, the U.S. War Department maintained a small garrison at Castillo de San Marcos and used it for various functions, including as a storage facility and prison. The War Department changed the name of Castillo de San Marcos to Fort Marion and made various changes to the fort and landscape. Over the decades of managing the property, the War Department developed an appreciation for the fort's historic significance and made efforts to preserve the building and its features. By the end of the nineteenth century, the less-used Fort Matanzas was in poor condition and its foundation had split into three sections, necessitating extensive repairs.

Castillo de San Marcos (then still called Fort Marion) and Fort Matanzas were declared national monuments on October 15, 1924. In 1933, the War Department transferred the two properties to the National Park Service (NPS). An Act of Congress restored Castillo de San Marcos' original name in 1942 as part of a public-private partnership to foster heritage tourism in St. Augustine based on Spanish culture. Through the park's efforts, both fortifications continue to reflect the history of European colonialism in North America.

American Indian Period

The earliest evidence of human occupation in northeastern Florida dates to the Mount Taylor period (4000-2000 BC). This period refers to evidence of habitation found at the Mount Taylor site in Volusia County, Florida, located approximately eighty miles south of St. Augustine, near the modern town of DeBary. There are no known sites associated with the Mount Taylor culture in Fort Matanzas National Monument or Castillo de San Marcos National Monument. There is evidence however of American Indian presence at the two national monument sites during the Orange period (2000-1000 BC). This period, named for the Orange Mound in Volusia County, is associated with the development of distinctive

2. Jennifer D. Brown, *Castillo de San Marcos National Monument Historic Resource Study* (Atlanta: National Park Service, 1997), 10- 11.

fiber-tempered pottery. American Indians of the Orange period established seasonal camps and settlements, exploiting the natural environment through hunting, fishing, and gathering activities. The national monuments also show evidence of occupation during the Transitional period (1200-500 BC). American Indians of the Transitional period developed sophisticated ceramics and established permanent settlements in the region. The St. Johns period (500 BC to AD 1565) was a period of American Indian population increase, increased social complexity, and development of new styles of pottery. It was also the period when oysters became the most dominant shellfish utilized for food.[3]

Immediately prior to the arrival of Spanish explorers, the Timucua tribe occupied the northeast and north central areas of Florida. The Timucua likely included 200,000 to 300,000 individuals, organized into various chiefdoms. The Timucua were semi-nomadic, moving between the inland forests, where they lived during the milder seasons, to the seashore, where they lived during the hot summer months. They cultivated crops, including maize, beans, squash, and other root vegetables. They also hunted game, fished, and collected shellfish.[4] Early Spanish explorers described the Timucua as being "well built and standing four to six inches or more above them." The Timucua also decorated themselves with tattoos made from poking holes in the skin and rubbing ashes into the wounds.[5]

3. Stephen C. Byrne, *Archeological Investigations at the Visitor Center Midden Site Fort Matanzas National Monument St. Johns County, Florida*, (Tallahassee: National Park Service Southeast Archeological Center, 1990), 10-12.
4. NPS, "Timucuan: Original Florida Natives," accessed April 24, 2018, https://www.nps.gov/casa/learn/historyculture/timucua.htm.
5. Ibid.

First Spanish Period (1565-1763)

Please refer to Illustrations 1.1 and 1.2 at the end of this chapter.

Spanish Territorial Claims in the New World (1513-1565)

Christopher Columbus's voyage of 1492 laid the groundwork for the Spanish colonization of portions of the Caribbean over the following decades. The Spanish began exploring North America soon thereafter. The "principal impetus for the Spaniards' exploration to the north of their Caribbean colonies was their need for slave labor."[6] They were also attracted by the continent's natural resources. Juan Ponce de León explored the coastline of Florida in 1513, claiming the area for the Spanish Crown. His attempt to establish a colony in *La Florida* in 1521 was contested by local American Indians however and failed.[7] Panfilo de Narváez landed in Tampa Bay in 1528 and explored the western edges of the Timucua territory. In 1539, Hernando de Soto led an army of 500 soldiers through north and central Florida, fighting two battles against the Timucua, killing hundreds.[8] In order to justify the invasion of American Indian lands, Spanish explorers greatly exaggerated the presence of natural resources, gems and precious metals, and the barbarity and strangeness of the people living there, explaining to their Spanish financiers that the region was "begging for colonization."[9]

The Spanish wanted to establish a military outpost near the coast of North America from which to defend shipping lanes between the Spanish colonies in the New World and Spain. Ships laden with valuable cargo followed the Gulf Stream paralleling the Florida coast on their return voyage from ports in the Caribbean and South America.[10] Spanish sailors learned that the current helped propel ships along the coast of Florida and across the Atlantic. Preventing other European nations

6. Hudson, *Knights of Spain, Warriors of the Sun*, 32.
7. Charles Hudson, *Knights of Spain, Warriors of the Sun: Hernando de Soto and the South's Ancient Chiefdoms*, (Athens, Georgia: University of Georgia Press, 1997), 32.
8. NPS, "Timucuan: Original Florida Natives."
9. Ibid.
10. The Gulf Stream is a water current that originates in the Gulf of Mexico, flows between the southern tip of Florida and Cuba, then flows north-eastward along the coast of Florida before turning across the Atlantic Ocean towards Europe.

from interfering with the maritime routes became a primary military strategy of the Spanish. This resulted in the development of military strongholds in the Caribbean and in Spanish-controlled Florida.

The interaction between the missionaries and American Indians had a devastating impact on the tribes, who did not have immunity to infectious diseases introduced by the Europeans.[11] The Timucua in east Florida and Guale tribes along coastal Georgia were among the hardest hit. Despite the hardships wrought by enslavement, conquest, and conversion, American Indians from the Timucua, Guale and Apalachee (occupying the area of Florida between the Aucilla and Apalachicola Rivers) played a significant role in the history of the Spanish establishment of St. Augustine and the construction of Castillo de San Marcos.

Spanish Florida (1565-1671)

Between 1562 and 1564, French Huguenots established control over an area along the southeastern Atlantic coastline by building Charles Fort in 1562 at Port Royal Sound (present-day South Carolina), which was quickly abandoned, and Fort Caroline in 1564 on St. John's River (present-day Jacksonville, Florida). Spain believed these French colonists, led by Jean Ribault, threatened their control over the important shipping channel along the coast of Florida. Spain's King Philip II sent General Pedro Menéndez de Aviles to remove the French. In August 1565, General Menéndez's ships, carrying 800 people, arrived at the St. Johns River. "After a brief sea chase [of Ribault], the Spanish retired south to a site they had reconnoitered, a Timucuan village called Seloy."[12] Menéndez established contact with a local Timucuan chieftain, Cacique Seloy. From Seloy, Menéndez received permission to fortify an existing building north of the present location of Castillo de San Marcos. Menéndez added "earthworks, a moat, and artillery."[13] Menéndez named the fortified compound St. Augustine, because he had first sighted the land on August 28, the Feast Day of St. Augustine of Hippo.[14]

On September 10, Jean Ribault sailed south to confront Menéndez, but a hurricane carried his ships farther south and wrecked his fleet between present-day Daytona Beach and Cape Canaveral. At this time, Menéndez marched north to attack the mostly unguarded French settlement at Fort Caroline. Menéndez then marched south in search of Ribault. Ribault and 127 of the shipwrecked Frenchmen were blocked by an inlet as they tried to return over land to Fort Caroline.

Menéndez, along with about 70 soldiers, encountered a detachment of Ribault's men near the inlet along the south end of Anastasia Island.[15] As the Frenchmen had lost most of their food and weapons in the shipwreck, Menéndez seized the advantage and captured the French force. Menéndez "demanded that they give up their Protestant faith and accept Catholicism."[16] When the Frenchmen refused, 111 of them were killed. Two weeks later, a second group of French soldiers, including Ribault, appeared at the inlet. On October 12, Ribault and his men surrendered. After refusing to give up their faith, 134 of the men, including Ribault, were killed. The double massacres of French troops resulted in this inlet and the river running behind Anastasia Island to being known as the Matanzas River; "Matanzas" is the Spanish word for massacre or slaughter.[17]

Now in control of the region, over the next hundred years, Spanish authorities constructed nine wooden forts in the area around the present town of St. Augustine: the first fortified structure in Seloy's Timucua village, the next two on Anastasia Island, and the next six on the mainland near today's St. Augustine. The first four forts, including the one occupying Seloy's communal building, were constructed between 1565 and 1574. In 1586, the Spanish constructed their sixth fort, named San Juan de Pinos, on the mainland in a location near

11. Jason B. Palmer, "Forgotten Sacrifice: Native American Involvement in the Construction of the Castillo de San Marcos," *The Florida Historical Quarterly* Vol. 80, No. 4 (Spring 2002): 438.
12. NPS, "The Massacre of the French," https://www.nps.gov/foma/learn/historyculture/the_massacre.htm
13. The Historic Fortifications of St. Augustine Castillo de San Marcos and Fort Matanzas National Monuments Nomination to the World Heritage List by the United States of America 1990, 12.
14. Brown, *Historic Resource Study*, 7 and NPS, "The Massacre of the French."
15. According to a Historic Structure Report on Fort Matanzas, "the island became known in succession as La Escolta, Island of La Cantera, and Santa Anastasia." See The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report* (Denver: Denver Service Center, 1980).
16. NPS, "The Massacre of the French."
17. Ibid.

the present site of St. Augustine and Castillo de San Marcos.[18] Soon after the workers completed San Juan de Pinos, most of the Spanish settlers living on Anastasia Island moved to be close to the fort and the protection it provided against potential enemies. The Spanish also recognized that an enemy could attack St. Augustine from either direction along the Matanzas River. To protect against an attack from the south, the Spanish constructed a wooden tower at the inlet to watch for hostile ships.

The developing network of Spanish defensive positions was meant to counter a growing list of threats to Spanish control over Florida. Local American Indians resisted Spanish efforts to control territory and their efforts to extract their labor.. Uprisings against the Spanish included those by the Timucua in 1565, the Guale in 1576-1579 and 1597, and the Apalachee in 1638 and 1647.[19] Threats to the Spanish settlers also included European adversaries who challenged Spain's claim to Florida. In the 1660s, King Charles II of England granted the Lords Proprietors the Carolina territory. This extended the southern boundary of the colony of Carolina to include a 150-mile line of Spanish settlements all the way from St. Catherine's Island to St. Augustine. Subsequent attacks by the English on Spanish missions along the southeastern coast and fortifications on barrier islands tested Spanish defenses. Additionally, English privateers, some with the support of the English monarchy, were increasingly active in Florida and throughout the Caribbean, raiding Spanish ships and towns.

Francis Drake was one of the more active English privateers in the 1500s. Drake had become famous in for his circumnavigation of the globe between 1577 and 1580. Later, Drake "devastated the Spanish colonies in the Caribbean through the spring of 1586."[20] That year, Drake also led an attack on St. Augustine. His men quickly captured the town, burned down Fort San Juan de Pinos, and captured its bronze cannon. Thomas Cate, who sailed with Drake, described the fort:

> When the day appeared we found it built all of timber, the walls being none other but whole masts or bodies of trees set upright and close together in manner of a pale, without any ditch as yet made, but wholly intended with some more time; for they had not as yet finished all their work, having begun the same some three or four months before: so as, to say the truth, they had no reason to keep it, being subject to fire, and easy assault.[21]

Drake's raid led Spanish authorities to recognize the weaknesses of a wooden fort, "Such forts could be built quickly But with equal facility could they be destroyed. If Indian fire arrows, enemy attack or mutinies failed, then hurricanes, time, and termites were certain to do the job."[22]

In 1580, Governor Pedro Menéndez Marquéz, Menéndez de Aviles' nephew who served as the governor of Florida from 1577 to 1594, reported the discovery of coquina, a local rock buried beneath the sand on barrier islands along north Florida. Coquina is a consolidated sedimentary rock composed of fragments of various shells, sand, and limestone. Menéndez recognized that coquina was solid enough to serve as a building material. Several years later, in 1595, Governor Domingo Martínez de Avendaño requested permission from Spanish authorities to construct a fort using the stone. A group of laborers, including stonecutters and masons, arrived in St. Augustine but a new fort was not immediately constructed.[23] According to Albert Manucy, the first confirmed use of masonry construction in St. Augustine was for a "stone powder magazine built at the fort by order of Governor Gonzalo Méndez de Canzo between 1596 and 1598."[24]

During this period, largely as a response to the growing threat posed by England and France, Spain began developing a new defensive strategy for their settlements in the Caribbean and Florida. In 1586, Bautista Antonelli, a Spanish military engineer, travelled to the Caribbean to inspect fortifications and to develop a strategy to improve Spanish

18. Sastre, *Cultural Landscape Report*, 26.
19. Palmer, *Forgotten Sacrifice,* 440.
20. NPS, "Sir Francis Drake," Fort Raleigh National Historic Site, accessed April 24, 2018, https://www.nps.gov/people/sirfrancisdrake.htm
21. Brown, *Historic Resource Study*, 9; (Archaic spellings have been corrected in this quotation).
22. Historic Print and Map Company, *The History of Castillo de San Marcos* (St. Augustine: Historic Print and Map Company, 2005), 9-13.
23. Sastre, *Cultural Landscape Report*, 26-27.
24. Albert Manucy, *The houses of St. Augustine, 1565-1821* (St. Augustine: St. Augustine Historical Society, 1962), 17.

defenses. Two years later, Antonelli presented a general plan for fortifying Spanish sites, which employed engineering principles characteristic of the Renaissance but adapted them to local terrain and changes in military technology.[25] Several of forts attributed to Antonelli exhibit characteristics later seen in the design of Castillo de San Marcos. Antonelli's 1563 design for a fortress in Bernia is similar to that later used for Castillo de San Marcos. It has a similar symmetrical, quadrilateral-shaped plan with four corner bastions. The interior rooms of the fort are organized around a courtyard, which served as a parade ground and service area.[26]

On September 22, 1599, a major storm struck St. Augustine, destroying portions of the existing fort.[27] Subsequent Spanish governors in St. Augustine continued to advocate for replacing the wooden fort with a more substantial, masonry one. In the early 1600s, Governor Juan Fernández de Oliveras and Governor Andrés de Villegas argued to authorities in Spain that a masonry fort was more defensible and would provide better protection to the residents of the town. Despite the governors' enthusiasm for using coquina, Spanish authorities did not provide enough funds for masonry construction and the next fort was again built of wood. This fort was named Castillo de San Marcos.

By 1655, according to a report describing the conditions of buildings in St. Augustine written by accountant Don Pedro Beltán de Santa Cruz, the wooden Castillo de San Marcos was in such poor condition it could not support cannon to defend itself or the city. In 1668, the pirate Robert Searles (John Davis) of Jamaica attacked St. Augustine. Davis and his men used a captured Spanish ship to sail undetected into Matanzas Bay. Under cover of darkness, his troops attacked St. Augustine. Both soldiers and residents retreated into Castillo de San Marcos and Searle's force took possession of the abandoned town. After ransacking the homes and removing anything of value, the pirates departed.[28]

After the attack, Governor Francisco de la Guerra renewed efforts to secure funds to construct a masonry fort to replace the dilapidated wooden fort. In March of 1669, Mariana, Queen Regent of Spain, ordered the authorities in Mexico responsible for governing the Spanish colonies in the Americas to supply the necessary funds to construct a new fort and to pay for a garrison of 300 soldiers to defend St. Augustine.[29] Adding to the urgency for a more substantial fort, in 1670, English settlers established the city of Charles Town (modern day Charleston), which the Spanish authorities saw as another challenge to their sovereignty over its territory in North America. Queen Regent Mariana also appointed a new governor of Florida—Manuel de Cendoya. Governor Cendoya travelled to Mexico to secure the funds for the project before arriving in St. Augustine in 1671. He brought laborers that he recruited from Cuba, including masons and stonecutters. He also brought a military engineer, Ignacio Daza, and a Master of Construction, Lorenzo Lajones.

Construction of Castillo de San Marcos (1672-1695)

A formal ground breaking for the masonry fort, also called Castillo de San Marcos, occurred on October 2, 1672; construction began on November 9. Workers began digging coquina from a quarry on Anastasia Island and assembled lime and other construction materials. Construction of the fort began under the leadership of Governor Cendoya and supervised by Daza. The Spanish selected the site for Castillo de San Marcos based on its proximity to the Matanzas River and its harbor. According to Albert Manucy, "Engineer Daza and Governor Cendoya decided the new fort should be erected on the west shore of the bay by the side of the old fort, a site which took into account every natural defense feature of the site."[30]

Daza, who historians believe drafted the plans for the fort, would have been familiar with the principals of military engineering exhibited in

25. Roy Eugene Graham to Joy MacMillan, June 16, 2012, "Working/ Narrative to date," pages 38-40.
26. Sandro Parrinello and Silvia Bertacchi, "The Fort of Bernia by Giovanni Battista Antonelli," accessed April 20, 2018, https://link.springer.com/content/pdf/10.1007%2Fs00004-014-0214-8.pdf
27. Jeanette Thurber Connor, *The Nine Old Wooden Forts of St. Augustine*, accessed April 24, 2018, http://cdm16455.contentdm.oclc.org/cdm/ref/collection/p15428coll2/id/1512), 1.
28. Historic Print and Map Company, *The History of Castillo de San Marcos*, 5.
29. Sastre, *Cultural Landscape Report*, 28, 56-57.
30. Manucy, *The Building of Castillo de San Marcos*, 14.

recently constructed Spanish forts in Havana, Cuba. These fortifications include the Castillo de Real Fuerza (1562), designed by Bartolome Sanchez and Fransico de Calona; and the Castillo de San Salvador de la Punta (1589-1600) and the Castillo de los Tres Reys del Moro (1589-1630), designed by Battista Antonelli. Antonelli was among the most influential military engineers during this time and designed several more fortresses for Spain in the Caribbean. The design of Castillo de San Marcos was in keeping with the general engineering principles exhibited in these other forts.[31]

During the initial phase of construction, Castillo de San Marcos was designed as "a bastioned masonry square lined with wooden guardrooms that supported a planked terreplein, a small ravelin to defend the entrance gate, a moat and a water battery with three salients."[32] In December of 1672, Cendoya wrote King Charles II of Spain that construction of the new fort was proceeding and "possesses several advantages over any adversary who might dare attack by sea as well as by land… The square of [the new fort] is the same size of the old one, save that it is larger where the bastions are thrown forward.[33] Neither Governor Cendoya nor Daza lived to see the fort completed however; Cendoya died on March 8, 1673 and Daza died a few days later.[34] An early plan from 1677 shows the general outline of the fort from this period (Figure 3).

The work force used to construct Castillo de San Marcos included "Spanish artisans and convicts, black royal slaves, drafted Indians, and English prisoners of war."[35] The Spanish tried to use members of the local Timucuans and members from the Guales as laborers.[36] The Spanish implemented the *repartimiento* system, which required their leaders to supply workers in exchange for "religious education, military protection, and trading privileges."[37] After a 1656 uprising, the Spanish had relocated several Timucuan villages, concentrating Timucuans and Guales into "a few main villages located along

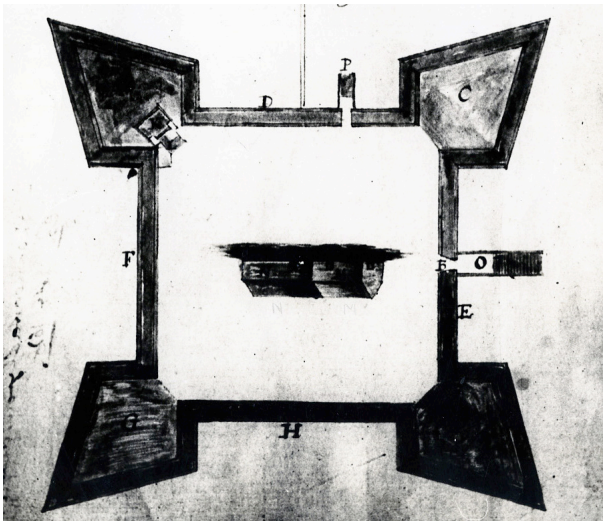


Figure 3: 1677 Salazar Plan (CASA no. A74)

transportation routes to the west and north of St. Augustine."[38] As the Timucuan and Guale populations declined because of infectious disease, the Spanish turned to the Apalachees to provide labor and to grow food crops for the settlement.[39] After an epidemic killed many of the local American Indian workers, Cendoya secured permission to import 30 enslaved Africans from Havana to continue the work. By 1673, the Spanish conscripted members of the Yamasee to supplement the labor force.[40]

Throughout the construction of Castillo de San Marcos, a lack of labor, food, or funds resulted in periodic work stoppages. In 1673, more than three hundred American Indians from several different groups were in St. Augustine working on the Castillo. Because the groups had long histories of conflict, "cultural friction between groups became a daily source of tension on the construction site."[41] The workers also faced high mortality rates, with infectious disease particularly damaging to the American Indian laborers.[42] In 1675, work temporarily halted when a ship bringing provisions and material wrecked. Construction stopped again in December 1677 when local authorities ran out of money to pay the laborers. Work resumed in August 1679 after five thousand pesos arrived from New Spain and American Indian laborers returned to finish construction on the

31. Roy Eugene Graham to Joy MacMillan, June 16, 2012, "Working/ Narrative to date," page 30.
32. Sastre, *Cultural Landscape Report*, 28.
33. Connor, *Nine Old Wooden Forts*, 5.
34. Palmer, *Forgotten Sacrifice*, 447
35. Nomination to the World Heritage List, 14.
36. Palmer, *Forgotten Sacrifice*, 443.
37. Palmer, *Forgotten Sacrifice*, 440.
38. Palmer, *Forgotten Sacrifice*, 439.
39. Palmer, *Forgotten Sacrifice*, 440.
40. Palmer, *Forgotten Sacrifice*, 444.
41. Palmer, *Forgotten Sacrifice*, 443.
42. Palmer, *Forgotten Sacrifice*, 447.

fort's walls.[43] In the fall of 1681, Juan de Císcara, a military engineer, arrived in St. Augustine to inspect the fort. In January of 1682, he reported on the work required to complete the project and made recommendations to improve the fort's design, such as having a shallow moat with a tall moat wall.[44] Construction of these recommended improvements continued under the supervision of Captain Diego Díaz Mejía.

The masonry ravelin was located on the south side of the fort. It was a triangular outwork with coquina-faced retaining walls that protected the main entrance (or sally port) into Castillo de San Marcos. Placing this structure in front of the entrance blocked direct fire from an enemy force. Two wooden bridges, providing access to the fort, used the ravelin to span the moat. The original ravelin was built around 1682; the Spanish replaced it with the current ravelin in the 1760s.[45]

English pirates tested the incomplete defenses around St. Augustine in March 1683. They landed at the mouth of the Matanzas Inlet at the south end of Anastasia Island. After surprising the soldiers stationed at a watchtower near the inlet, the corsairs marched overland towards St. Augustine. A Spanish soldier saw the pirates and alerted officials in St. Augustine, who sent a force of soldiers to intercept the attackers. The pirates retreated to their ships, and after burning the Matanzas Watchtower, sailed up the Matanzas River and "anchored at the inlet in plain sight of the unfinished Castillo.... But the corsairs, looking at the stone fort and nursing their wounds, decided to sail on."[46]

According to Palmer's history of the fort, by "spring 1685, focus shifted to the third and last major phase of the work—the moat and earthworks outside the fort."[47] Again, American Indian workers provided much of the labor, digging and transporting dirt around the site. In August 1687, work stopped due to a shortage of food, but construction resumed the following year.[48]

The engineers of Castillo de San Marcos utilized the natural water systems when designing the defensive earthworks that extended out from the fort. The workers constructed ditches and moats that drained into adjacent rivers and creeks to minimize standing water, which the Spanish considered unsanitary.[49] The moat at Castillo de San Marcos was comprised of the curtain wall of the fort (or scarp), an outer retaining wall (or counterscarp), and the moat floor. The counterscarp of the Castillo de San Marcos moat ranged between six and seven-feet in height.[50] Seventeenth-century moats were either wet moats or dry moats. Evidence suggests that the Castillo de San Marcos was a dry moat that could be flooded for defensive or sanitary purposes. This conforms to seventeenth-century fortification design. Sébastien Le Prestre de Vauban, whose treatises on military architecture were widely influential at that time, recommended dry moats for larger fortresses.[51]

The area beyond the moat, extending away from the fort, was the covered way. Known in Spanish as an *estrada encubierta*, the covered way provided a narrow passage through which soldiers could move outside the walls of the fort while being protected from enemy fire. The covered way occupied the space between the top of the moat's outer wall (counterscarp) and a second retaining wall (covered way wall). Castillo de San Marcos' covered way encircled the perimeter of the fort on the north, west, and south sides. The shape of the covered way generally followed the outline of the fort. The covered way had a level ground plane approximately thirty-five feet wide. A five-foot-high coquina retaining wall separated the covered way from the glacis beyond and provided protection to soldiers. The Spanish constructed a firing step at the base of the covered way wall that allowed soldiers to rise and shoot over the wall towards an invading force. Construction on the

43. Palmer, *Forgotten Sacrifice,* 449.
44. Cécile-Marie Sastre, *Castillo de San Marcos NM History of the Cultural Landscape for the Cultural Landscape Report* (St. Augustine: Castillo de San Marcos and Fort Matanzas National Monuments, 2000), 59.
45. Sastre, *Cultural Landscape Report*, 128.
46. National Park Service, *Castillo de San Marcos: a Guide*, 28-29.
47. Palmer, Forgotten Sacrifice, 452.
48. Palmer, Forgotten Sacrifice, 452.
49. Sastre, *Cultural Landscape Report,* 123-124.
50. Sastre, *Cultural Landscape Report,* 59.
51. Sébastien le Prestre de Vauban, *The New Method of Fortification, as practiced by Monsieur de Vauban, Engineer General of France with an explication of all terms appertaining to that art/made English*, London: Abel Swall, 1691, 76-77; accessed on line https://quod.lib.umich.edu/e/eebo/A47731.0001.001?rgn=main;view=fulltext.

covered way began in 1687, fifteen years after work began on the main fort. It was mostly complete in 1695, about the same time as the fort, but work continued on the covered way into the 1730s.[52]

Spanish engineer Alonso Solana wanted to construct a water battery with a twenty-four-foot-wide seawall. This wall was "to withstand the beating of the waves and prevent them from breaking on the fortifications as well as for seeing from the top of the parapet the feet of those who might reach the moat wall."[53] It included a narrow terreplein and three salient angles where the Spanish installed guns to defend against ships entering the bay or passing in front of the fort. It was completed around 1695; but it did not have the thick foundation recommended by Solana. The base of the built wall was wider than its crest, allowing the scarp wall facing the bay to be sloped.[54]

By 1695, the first phase of construction of the fort was complete. The fort's four masonry curtain walls completely enclosed the interior courtyard. Guardrooms, built using wood-frame walls and roofs, lined the courtyard. Above the guardrooms, wooden planks supported the terreplein. Outside the main structure, many of the defensive earthworks were either completed or under construction. The ravelin, water battery, and moat were in place.[55] The seawall holding back Matanzas Bay was also nearing completion. The general appearance of the fort remained relatively consistent from this time until 1738, when the Spanish began making major alterations to the fort and additions to the surrounding earthworks.

Conflict and Expansion of St. Augustine Defenses (1695-1762)

Castillo de San Marcos and St. Augustine

At the beginning of the 1700s, the territorial conflict between Spain, England, and France continued with the Queen Anne's War (1702-1713), also known as the War of Spanish Succession. England wanted Spain and France to relinquish its colonial territories in North America. Most of the primary features of Castillo de San Marcos were in place by 1701, when threat of war motivated the Spanish authorities in St. Augustine to strengthen Castillo de San Marcos in case of an attack. English settlers north of Florida made raids into East Florida, forcing Spanish authorities to send soldiers to several missions around Florida to watch out for possible threats.

One direct attack came in 1702, when James Moore, the Governor of the Carolina colony, led a force against St. Augustine. His force numbered approximately 1,200 men, including a large contingency of American Indians. The English force first occupied the Spanish outpost Santa María on Amelia Island and San Juan on St. Johns River. Two Spanish soldiers communicated these events to the main garrison in St. Augustine. Florida Governor Joseph de Zúñiga y Cerda prepared for the attack and moved four months of provisions into Castillo de San Marcos in case of a siege. Spanish forces cleared the grounds around the fort, removing all structures within musket range to prevent the English from using them to shield their movements. Colonel Robert Daniel led a group of soldiers towards St. Augustine, using canoes to paddle up the St. Johns River. They landed at another Spanish mission, San Diego de Salamatoto, from where they marched overland towards St. Augustine.[56]

As Daniel moved overland, Governor Moore sailed several warships into position through the St. Augustine Inlet and surprised the Spanish in St. Augustine. Residents abandoned the town and sought refuge in Castillo de San Marcos. The combined English forces marched into the unguarded town, occupied the St. Francis Monastery south of Castillo de San Marcos, and prepared to lay siege to the fort. Moore's men dug siege trenches towards the fort, where they set up artillery to bombard the newly completed fort. Moore only had four cannons however and was unprepared for a long siege. On December 26, Spanish reinforcements arrived in four ships.[57] Moore burned his own boats and retreated overland towards the St. Johns River. Upon their departure on January 29, 1703, Moore's troops

52. Sastre, *Cultural Landscape Report*, 135.
53. Sastre, *Cultural Landscape Report*, 152.
54. Ibid.
55. Sastre, *Cultural Landscape Report*, 28-29.
56. Sastre, *Cultural Landscape Report*, 31.
57. Sastre, *Cultural Landscape Report*, 32.

set fire to St. Augustine, burning down most of its buildings.[58]

The masonry fort withstood the bombardment and successfully protected the residents and garrison of St. Augustine. Despite this success, the experience highlighted deficiencies in the fort. During the siege, the additional weight of soldiers and cannon on the terreplein damaged the structural beams supporting the upper platform. Spanish soldiers repaired the damage to the fort, but soon after the siege, Spanish officials in St. Augustine requested permission to replace wooden ramps and wooden beams with more substantial masonry. These improvements did not occur for several decades.[59]

The boat that Governor Joseph de Zúñiga y Cerda sent to Havana requesting support had slipped out through Matanzas Inlet. Spanish officials recognized that the Matanzas River and Matanzas Inlet was a "weak spot in the St. Augustine defenses. An enemy could enter the inlet, sail north first on the Matanzas and then on the Sebastian River, land on the south or west shores of the latter, and thus surprise the town and its fort on a flank or the rear."[60] The Spanish had already constructed watchtowers along the coast to give St. Augustine warning of approaching ships, such as the watchtower at Matanzas Inlet, as early as 1569. Between 1569 and 1740, the Spanish built a succession of wooden watchtowers at Matanzas Inlet, most located on the southern end of Anastasia Island.

Moore's siege also prompted the Spanish to build outworks to strengthen the defenses of St. Augustine from an overland attack. They constructed lines of entrenchment around the north, west, and south sides of the town. In 1704, the Spanish began constructing the Cubo Line, the line of entrenchment closest to Castillo de San Marcos.[61] The Cubo Line extended west from the fort, from the covered way to the San Sebastian River. The earth rampart wall generally paralleled the route of present-day Orange Street. There were small redoubts equally spaced along the line. The original City Gate was a 5 ½ feet wide opening in the palisaded segment of Cubo Line about 27 ½ feet west from the moat wall. It was the only opening through these defenses on the north side of Castillo de San Marcos. The road leading north from St. Augustine passed through this opening in the wall. This road split into two roads north of the town. One road traveled north along the coast. The second road travelled west towards Spanish outposts on the St. Johns River.

In 1706, Governor Francisco de Corcoles y Martínez directed the construction of a second line of entrenchment—the Rosario Line. Similar in construction as the Cubo Line, the Rosario Line was a palisaded earthwork protecting the west and south sides of St. Augustine. The Spanish completed construction on the Rosario Line around 1718.[62] Towards the end of its construction, the Spanish also added the San Francisco redoubt on the southeastern end of the line. The San Francisco Redoubt featured coquina-stone construction, which differentiated it from the wood and earth redoubts built along the Cubo Line.[63] They later added two additional coquina-stone redoubts to the Rosario Line in the 1760s.[64] With the combination of the Rosario Line and the Cubo Line, St. Augustine became a walled city or *recinto*.[65] Also in 1706, Governor Francisco de Corcoles y Martínez ordered construction of a palisaded hornabeque or hornwork approximately a half mile north of the Cubo Line. The Hornwork ran east to west from Macariz Creek to the San Sebastian River. This Hornwork provided another line of defense from an attack from the north and provided a secure area for American Indians displaced during Moore's raid.[66]

The Cubo Line, Rosario Line, and Hornwork earthworks, constructed using sandy soils, deteriorated quickly and required constant maintenance. By 1716, Spanish records describe them as in poor condition. In 1718, the Spanish made repairs to the Hornwork and Rosario Line and rebuilt the Cubo Line, moving it north of its original location. During this time, officials in St. Augustine also constantly confronted maintenance

58. National Park Service, *Castillo de San Marcos, A Guide to Castillo de San Marcos National Monument, Florida* (Washington D.C.: National Park Service, nd), 38.
59. Sastre, *Cultural Landscape Report*, 61.
60. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 14.
61. Sastre, *Cultural Landscape Report*, 161-162.
62. Sastre, *Cultural Landscape Report*, 33; however, Sastre says construction began in 1718 on page 176.
63. Sastre, *Cultural Landscape Report*, 33.
64. *Sastre, Cultural Landscape Report,* 37.
65. *Sastre, Cultural Landscape Report,* 113-115.
66. Sastre, *Cultural Landscape Report*, 162.

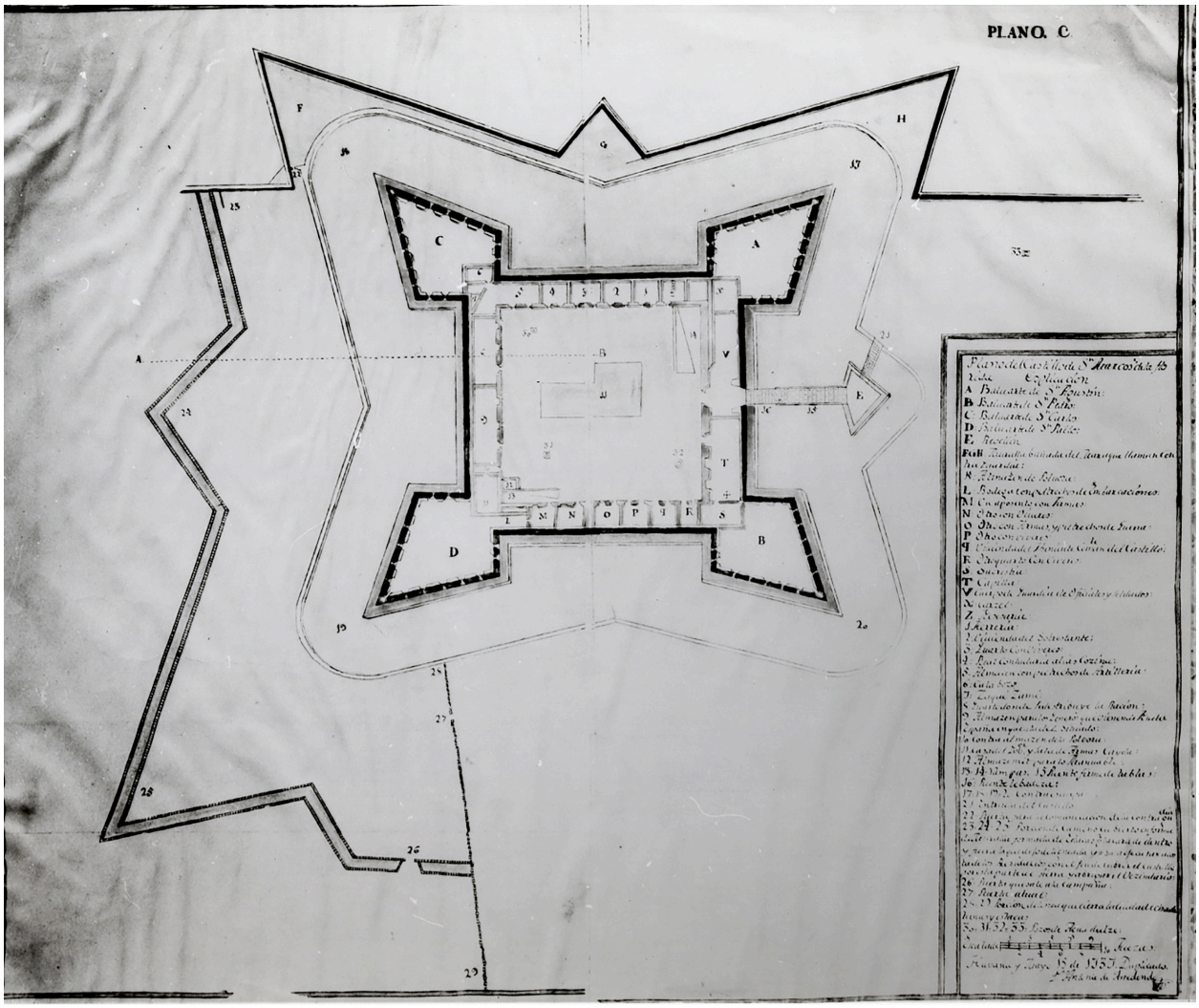


Figure 4: 1737 Arredondo Map (CASA no. A400)

issues with the fort. In 1721, the Viceroy in Mexico provided 6,000 pesos to fix the terreplein and gun carriages.[67] By 1735, the wooden timbers supporting the terreplein had deteriorated so severely that local workers inserted additional timbers to keep the upper platform from caving in. By 1737, the Hornwork had deteriorated to the point of becoming useless.[68]

In 1736, Antonio de Arredondo, a military engineer, arrived in St. Augustine to inspect the fort and to develop plans for improving the town's defenses. In January 1737, he reported on the poor condition of the fort. When describing the fort and its surrounding outworks, Governor Manuel de Montiano wrote that "this castle, the only defense here, has no bombproofs for the protection of the garrison, that the counterscarp is too low, that there is no covered way, that the curtains are without demilunes, that there are no other exterior works to give them time for a long defense; . . . we are as bare outside as we are without life inside, for there are no guns that could last 24 hours and if there were, we have no artillerymen to serve them."[69]

Arredondo devised a series of modifications to the fort and the outworks and prepared a map, *Plano del Castillo de San Marcos de la Florida,* to illustrate his plans[70] (Figure 4). Of note, the plan shows an unfinished covered way. It wraps around the north side of the fort and ends at its intersection with the Cubo Line on the west side of the fort. In the map legend, Arredondo describes the covered way as "in the shape of a wall with stakes on the inner

67. Sastre, *Cultural Landscape Report*, 61.
68. Sastre, *Cultural Landscape Report*, 162.
69. Sastre, *Cultural Landscape Report*, 136.
70. Sastre, *Cultural Landscape Report*, 96-97.

and outer faces, which was traced out and it is to be built by convicts, with the objective of covering the Castillo on this land side and to shelter the townspeople."[71] Over the next two decades, the Spanish transformed the fort and associated landscape as they implemented Arredondo's recommendations.

In 1736, Arredondo left for Cuba but returned to St. Augustine in April 1738. When he arrived back in St. Augustine, Arredondo brought another engineer, Lieutenant Pedro Ruíz de Oláno, 81 convict laborers, six stonecutters, a mason, a carpenter, 400 troops to reinforce the garrison, new artillery for the fort, and money to pay laborers. By 1738, the north side of the covered way neared completion, but work on the covered way continued for the next two decades.

Arredondo's plan also shows the Cubo Line extending west from its intersection with the covered way towards the north edge of the town of St. Augustine. The legend describes the Cubo Line as being "part of the line, made of yucca and stakes, which encloses the city." Upon completion, the Cubo Line had three redoubts at regular intervals: Santo Domingo, Medio Cubo, and Cubo Redoubts. The Santo Domingo Redoubt stood at the intersection of the Cubo Line and the Rosario Line. Also during this period, the Spanish relocated the City Gate, moving it to its current location at the north end of present-day St. George Street in 1738-1739.[72]

Arredondo's 1737 plan shows the covered way on the north side of the fort "in the shape of a wall. . . with the objective of covering the Castillo on this land side and to shelter the townspeople." The "townspeople" entered the covered way through a gate on the west side of the wall (near the current location of the Cubo Line.)[73] Arredondo also shows the locations of four "fresh water wells." Three are in the courtyard and one is south of the fort, between the bridge to the ravelin and the seawall. Arredondo also provides the first documentation of the completed water battery.[74]

71. Sastre, *Cultural Landscape Report*, 97.
72. Sastre, *Cultural Landscape Report*, 176-177.
73. Historic Print and Map Company, *The History of Castillo de San Marcos*, 35.
74. Ibid.

On his map, the north and south salient walls are only a few feet from the edge of the moat. The inner faces of the north and south salient walls join near center of the water battery forming the middle salient. The water battery's retaining wall extended north, joining the northeastern edge of the covered way; and the sea wall extended south from the battery's south salient.[75]

At this time, the Spanish built additional fortifications beyond St. Augustine. These also included outpost fortifications defending the main routes towards the city. For example, in the late 1730s, the Spanish founded the town of Gracia Real de Santa Teresa de Mose for Africans who had escaped from their former British masters and been freed under the Spanish sanctuary policy. Fort Mose, several miles north of St. Augustine, added another layer of defense along the northern approach to the town. Fort Francisco de Pupo and Fort Picolata were farther west along the banks of the St. Johns River. In 1738, the Spanish built a stone watchtower on Anastasia Island to protect against an attack from across the river.

By the end of the 1730s, General James Oglethorpe, the leader of the British colonial settlement in Georgia, established military outposts along the coast in southern Georgia and northern Florida. Great Britain formally laid claim to this territory with the Charter of the Colony of Georgia in 1732. Seeking to establish a permanent military stronghold in the Georgia colony, General Oglethorpe first arrived upon the future site of Savannah on February 12, 1733. In the 1730s, disputes between England and Spain culminated in the War of Jenkins' Ear (1739 - 1748). England declared war on Spain on October 23, 1739 after a series of naval battles in the Caribbean. Spain made the formal declaration of war on England on November 28.

In late 1739, General Oglethorpe assembled a regiment of men from South Carolina to challenge St. Augustine. General Oglethorpe invaded eastern Florida, first raiding Spanish outposts on the St. Johns River. In January 1740, his troops destroyed Forts Francisco de Pupo and Picolata. In June 1740, Oglethorpe attacked St. Augustine and laid siege of the fort. For 27 days, Oglethorpe's troops bombarded Castillo de San Marcos. Governor

75. Sastre, *Cultural Landscape Report*, 152-153.

Manuel de Montiano sent word to Spanish officials in Cuba asking for supplies and support. On July 7, six Spanish supply ships entered Matanzas Inlet. Oglethorpe had blockaded the Matanzas River and a brief naval battle occurred when the Spanish ships arrived. The British ships withdrew, opening a path for the Spanish to enter Matanzas Bay and dock at St. Augustine. On July 20, Oglethorpe abandoned the siege.

After the siege, Engineer Ruíz de Oláno reported that the fort had suffered minor damage. Because he was concerned that Oglethorpe would invade again, Ruíz de Oláno made recommendations to strengthen the fortifications. He argued that the outworks, including the covered way and Cubo Line, needed improvements to prevent an invading force from getting too close to the fort. The Spanish also realized they needed to reinforce the defenses outside of St. Augustine.

Fort Matanzas

In 1736, Antonio de Arredondo, the military engineer sent to inspect St. Augustine, submitted a report on the defenses of St. Augustine. His report included a description of the strategic significance of defending the Matanzas Inlet,

> To the extreme south point of that Island (Anastasia), the bar of Matanzas is situated, where there is a guard stationed but without any shelter whatsoever. This is abandoned to the insult of any class of enemies. That guard is intended to give advice of any vessel that may come in that direction…. Hence I judge it necessary that on both these bars, a lookout tower be built, with the necessary defense and protection for the guards thereof, for the better service of the object intended.[76]

Oglethorpe's 1740 attack on St. Augustine had highlighted the strategic importance of defending Matanzas Inlet. It was an unprotected flank where a naval force could approach undetected. Governor Manuel de Montiano agreed they needed a more substantial and permanent fortification along the Matanzas River. He directed engineer Ruíz de Oláno to build a masonry watchtower along the west banks of the river south of St. Augustine. According to one account, "It was perhaps the



Figure 5: "English military report on St. Augustine, with plans and views of St. Augustine Castle, the Spanish watch tower on Anastasia Island, and Matance's Fort. 1743" (Library of Congress, https://www.loc.gov/item/2007574360/)

fall of 1740 when the construction of Matanzas Redoubt began for effective and permanent control of the inlet. The fort was finished in 1742."[77] Another report describes the fort as "situated on the small marshy island which separated that part of the Matanzas River, north of the small island, leading to St. Augustine, from the other part, south of the island, inner end of Matanzas Inlet, and due to the nature of the terrain, was built on wooden piling."[78] The defensive work occupied the island today known as Rattlesnake Island, on the banks opposite Anastasia Island.

The coquina-constructed building was rectangular in form, with three levels and measuring approximately 48 feet square and 40 feet tall. The uppermost level was an observation deck on top of a tower that rises above the lower level terreplein. Quarters and storage magazines occupied the space below the observation tower. The lower level extended horizontally from the base of the tower to create a terreplein for artillery. The Spanish referred to the structure as "Torre de Matanzas" or "Fuerte de Matanzas." In 1743, an unknown Englishman reconnoitered the Spanish defenses in St. Augustine, including Fort Matanzas. His sketch of the building provides a view of the building at that time (Figure 5).

76. Matanzas Stabilization Team, *Matanzas Historic Structure Report*,19-20.

77. Nomination to the World Heritage List, 17.
78. Matanzas Stabilization Team, *Matanzas Historic Structure Report* ,28-29.

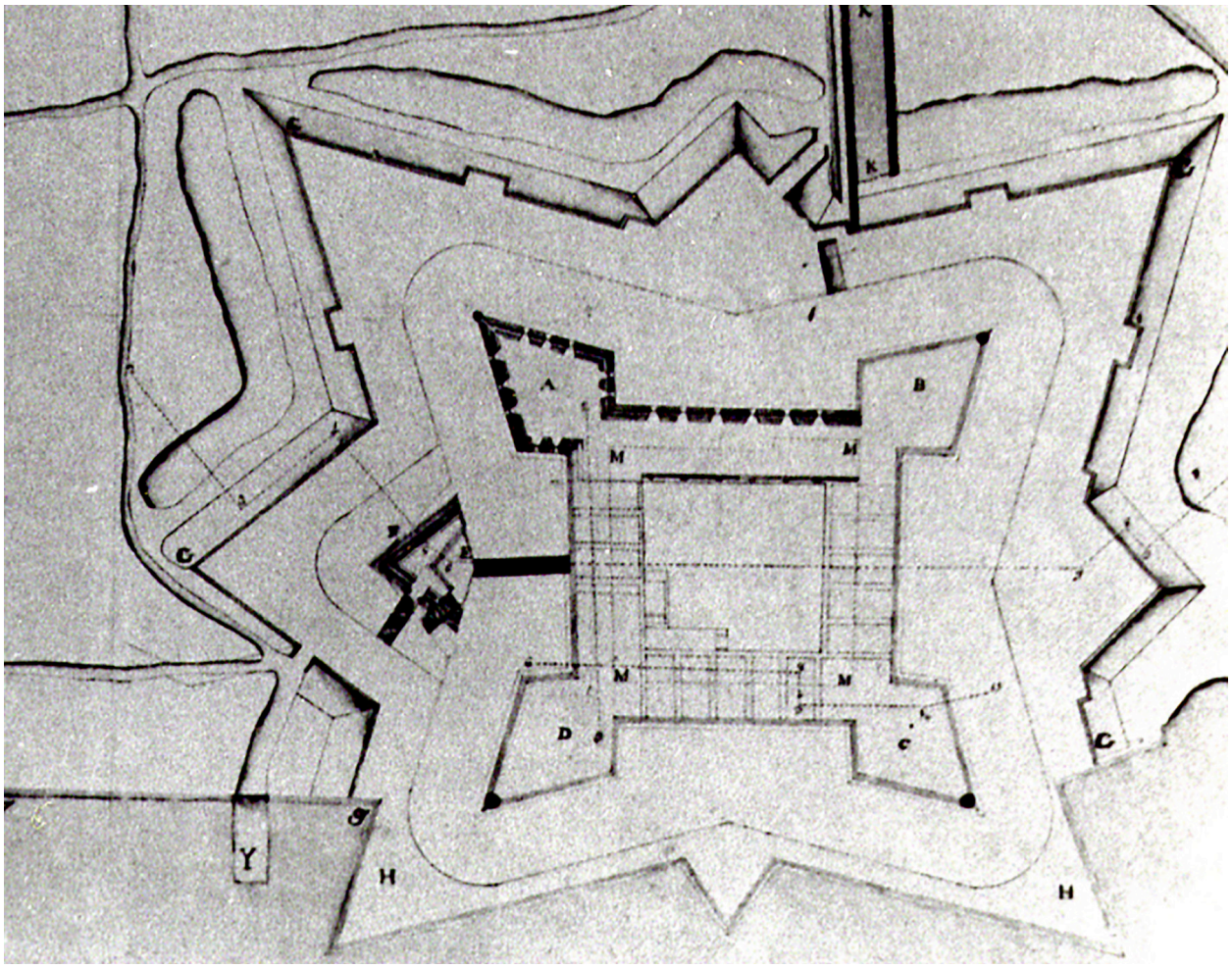


Figure 6: 1756 Brozas y Garay Plan (CASA no. A5000)

Castillo de San Marcos and St. Augustine

Castillo de San Marcos experienced another burst of activity between 1752 and 1756 as the Spanish attempted to complete Arredondo's and Ruíz de Oláno's plans. The Spanish finished the conversion of the casemates from frame construction to masonry in 1756.[79] As part of this construction project, they also raised the walls of the fort, increasing the height of the parapet from twenty-six feet to thirty-five feet. The parapet had embrasures cut into north, west, and south walls. The enlargement of the interior rooms decreased the size of the fort's courtyard. Most of the masonry features in the fort were covered in plaster and painted white. The *garita*, or sentry boxes, were painted red. The retaining walls of the outer works, including the moat wall and the covered way wall were not plastered nor painted.

In 1756, Pedro de Brozas y Garay prepared his *Plano Que Demuestra la perfecta conclusion del recinto del Castillo de S. Agustin de la Florida* (Figure 6). His map shows the plans to expand the covered way and glacis and rebuild the ravelin. In 1758, the project to renovate the covered way was still under construction when work stopped because of a lack of funds.[80]

In the early 1760s, local authorities in St. Augustine feared they would be the target of a British invasion because of the ongoing French and Indian War (Seven Years War). Accordingly, they accelerated work on defensive upgrades. The Spanish sent Engineer Pablo Castelló to St. Augustine to help Pedro de Brozas y Garay.[81] Under these two engineers' supervision, they completed several projects to improve the earthwork defenses around Castillo de San Marcos. Arredondo's plan called for replacing the wooden palisade of the covered way with a masonry wall. By 1760, work on the fortifications resumed and laborers were installing

79. Sastre, *Cultural Landscape Report*, 65.

80. Ibid.

81. Sastre, *Cultural Landscape Report*, 66.

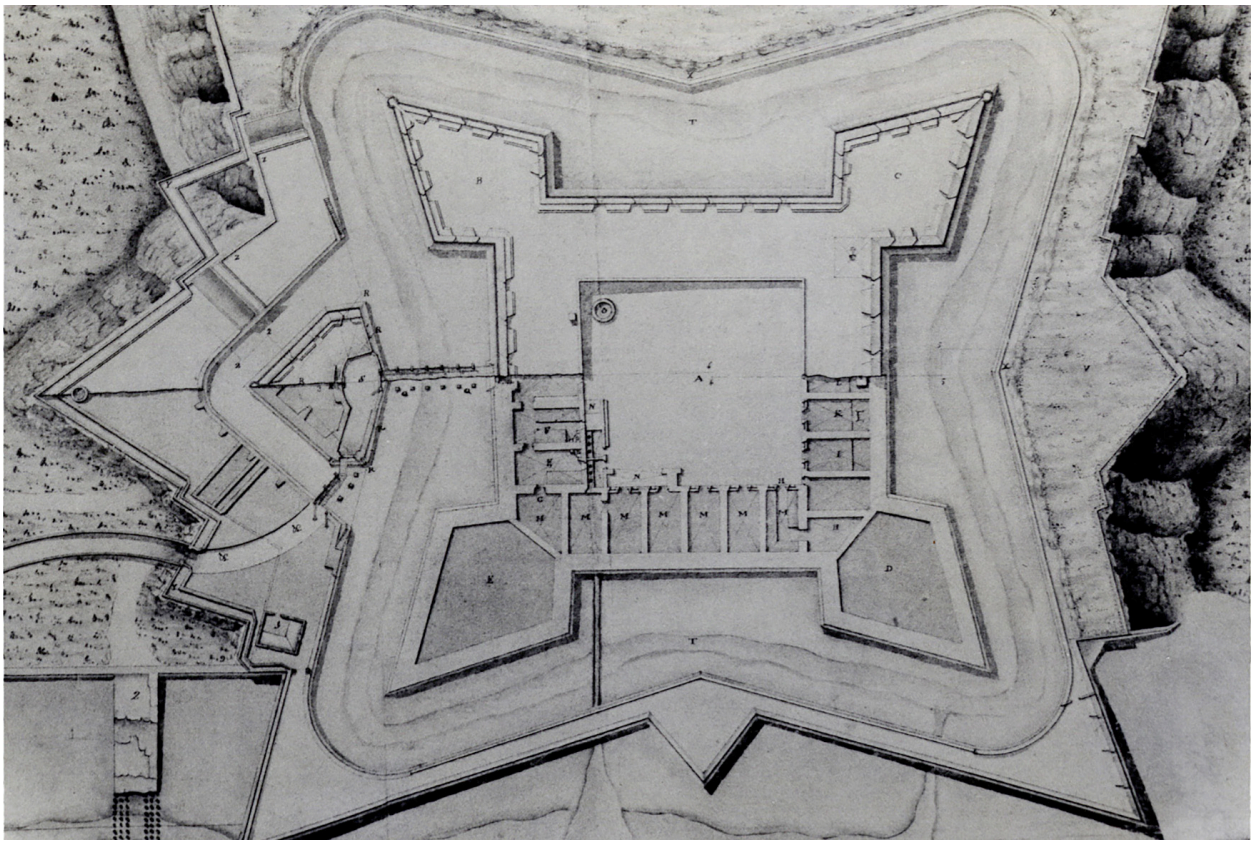


Figure 7: 1763 Castelló Map (CASA A4852)

the coquina retaining wall of the covered way.[82] The new coquina wall was approximately six feet high. During construction of the wall, workers added a glacis outside of the covered way by building up layers of earth. In 1760, the moat was described as measuring approximately forty-four feet wide and six-and-a-half- feet deep. By 1761, they had constructed two stone redoubts along the Rosario Line: the Rosario Redoubt and the Meriño Redoubt. In 1762, they began construction of the Mose Line, two miles north of the town. In 1762, Spanish also raised the height of the covered way wall, installed a wooden palisade in the covered way, and continued construction on the glacis.[83]

In 1763, Engineer Pablo Castelló determined that the ravelin of the fort was undersized and made plans to replace it with a larger structure. The new ravelin was large enough to mount five cannon and contain a powder magazine. During the construction project, the Spanish also replaced the wooden bridges and realigned the moat to accommodate the new ravelin.[84] In 1763, as part of an inventory of Spanish possessions in Florida, Engineer Pablo Castelló prepared a detailed plan recording the condition of the fort (Figure 7).[85] His plan shows that the Spanish had also built a seawall extending south from the water battery along the bay in front of St. Augustine. They had not built a seawall to the north, but they did construct a wall along the shore to hold up the edge of the glacis on that side of the fort.[86]

82. Sastre, *Cultural Landscape Report*, 137.
83. Sastre, *Cultural Landscape Report,* 138.
84. Sastre, *Cultural Landscape Report*, 28.

85. Sastre, *Cultural Landscape Report*, 101. The full title of the plan is *Plano del Castillo del Presidio de San Augustín de la Florida, viso interior y exteriormente en el estado en que se hallaba en 21 de Julio de 1763, cuando por orden de S. M. se entregó a la Gran Bretaña en que se indicant tanbién lavadas de Amarillo las obras que se construyeron en 1762 y las demás proyectadas para resguardo de su Puerta y defense de aquel friente,* The title of the map, roughly translated into English is: *Plan of the Castle of the Presidio of San Augustine in Florida, as seen internally and externally in the state in which it was on July 21, 1763, when by order of His Majesty it was delivered to Great Britain wherein it is also indicated in yellow the works that were built in 1762 and the others projected for the safety of its gate and defense of that front.*
86. Sastre, *Cultural Landscape Report*, 160.



Figure 8: John De. Solís, "A new & accurate plan, of the town of St. Augustine [N.P., ?, 1764]" (Library of Congress, https://www.loc.gov/item/73694477/)

The British Occupation of Florida Period (1763-1784)

Please refer to Illustration 1.3 at the end of this chapter.

Castillo de San Marcos and St. Augustine

In 1763, France, Britain, and Spain agreed to the Treaty of Paris ending the French and Indian War. As part of the treaty, Spain relinquished control over Florida in exchange for maintaining possession of Havana, Cuba, which the British had captured during the war. Britain divided Florida into two territories: East Florida and West Florida. St. Augustine served as the capital of East Florida, which extended west to the Apalachicola River.

On July 21, 1763, Great Britain took possession of the Castillo de San Marcos, which they renamed Castle St. Mark. British military officials inspected the fort. Lieutenant Colonel James Robertson, Deputy Quartermaster General in North America, described the earthworks as unfinished but well designed. "The covered way and outworks being uncompleat and the grounds immediately round the fort very favorable for an approach. The Spaniards sensible of the risqué they would have run, had Mr. Oglethorp [sic] in place of battering the fort from the Island attack'd it on the land side. After his departure fortified themselves by lines which would be very difficult to approach and easy to defend, the Morasses being deep broad and continued."[87] The Spanish had not completed their effort to replace the covered way wall with a coquina wall, leading John Bartram, who visited the fort in December 1765, to comment "It appears by ye many curious hewn stones lying on one side that it was not finished according to their intention."[88]

By 1763, the Cubo Line was an earthen ruin covered in yucca. A map from 1764 records the lines of earthworks, the outline of the fort, and the general character of St. Augustine at this time (Figure 8). British troops made few changes to the Castillo de San Marcos (Castle St. Mark) during the first years of their occupation. By 1772, they confronted unavoidable maintenance issues. The British made minor repairs to the fort and its features, including routine maintenance on the moat; but with the Spanish gone from Florida, the British were not overly concerned about a direct attack on St. Augustine. This changed with the outbreak of the American Revolution in April 1775. Once the American Revolution began, Governor Patrick Tonyn led an effort to strengthen the defenses around the capital of East Florida. The British made changes to the fort, converting the casemates to barracks and adding a second floor to the rooms that lined the courtyard. In 1776, they began construction of seven redoubts west of St. Augustine along the banks of the San Sebastian River to protect from an attack from that direction.[89] They also repaired the four lines of entrenchment north of the city, including the Cubo Line, Rosario Line, the Hornwork Line, and Mose Line. They replaced the Cubo Line's retaining walls with a new revetment of pine logs,

87. Sastre, *Cultural Landscape Report*, 66-67.

88. Ibid.

89. Sastre, *Cultural Landscape Report,* 166.



Figure 9: 1782 "St Augustine and its Environs, 1782" (Library of Congress, https://www.loc.gov/item/73691561/)

repaired the firing step, and repaired the moat.[90] It had three semi-circular redoubts (renamed Fort Moultrie, Fort Tonyn, and Fort Clarke). The British also added two earthwork features in the covered way north of the fort. These included a 12-foot tall bonnet and an 8-foot tall ravelin.

After Spain expressed support of the American colonists against Great Britain, British troops increased their efforts to fortify the earthwork defenses around Castillo de San Marcos (Castle St. Mark). Spain declared war on England on June 23, 1779. By 1781, Spain had captured British posts in West Florida, including Pensacola, Mobile, and Baton Rouge. Spanish commanders made plans to retake St. Augustine, but they never executed these plans. In 1781, British engineer Captain Elias Durnford supervised the reconstruction of the line of circumvallation west of the Rosario Line. The redoubts and outworks appear on a British map from 1782 (Figure 9).

Fort Matanzas

When British troops took possession of St. Augustine in 1763, they also used Fort Matanzas and made periodic repairs to the fort to keep it functioning. In 1763, Lt. Col. Robertson inspected Fort Matanzas and reported, "Matanzas is a tower, where the Spaniards had five guns which they have taken away, the garrison sends ten men hither, it serves to guard the lower bar at the south of the Island."[91] The British installed two six-pounders at the fort as early as 1765 and stationed a small garrison at the fort. In 1783, they added two eighteen-pounders and refurnished the parapet with "earth-filled cedar merlons."[92]

The Second Spanish Period (1784-1821)

Castillo de San Marcos and St. Augustine

At the conclusion of the American Revolution, the Treaty of Versailles returned ownership of Florida to Spain. According to the terms of the treaty, Great Britain surrendered the forts of St. Augustine but was able to remove its weapons. On July 12, 1784, Spanish troops under Governor Vicente Manuel de Zespedes took possession of Castillo de San Marcos and Fort Matanzas.[93] When the Spanish returned to St. Augustine, they found the improvements that the British had made to Castillo de San Marcos and its associated earthworks. In the late 1780s, the Spanish made several repairs to structural features at the fort and surrounding landscape that had deteriorated due to weather, insect damage, and age.

During this period, Spain again worried about possible attack on St. Augustine. In addition to Spain's traditional foes, England and France, this time a potential threat came from Americans living near Florida's northern border. The Americans wanted to push Spain out of Florida in order to expand southward. In 1795 a group of English-speaking settlers living in northeast Florida and along the coast of southern Georgia revolted against the Spanish. According to various histories of the event, the settlers both coveted the land controlled by the Spanish in Florida and resented the Spanish for not protecting them from American Indian raids. In July, the rebels attacked the Spanish battery of San Nicolas, killing three Spanish soldiers and capturing an entire company. San Nicolas was located on the northern bank of the St. Johns River, in present-day Jacksonville, where the Kings Road intersected the river at a narrow spot in the river called "Pass de San Nicolas" by the Spanish and "Cow Ford" by the British.[94] The

90. Sastre, *Cultural Landscape Report*, 167.
91. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 40.
92. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 269-270.
93. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 49.
94. Wayne Wood, Jacksonville's Architectural Heritage: Landmarks for the Future (Jacksonville: University of North Florida Press, 1989), 229-230.

Spanish militia retook San Nicolas but the rebels escaped and most fled to Georgia. The rebels often presented themselves as members of the French Republic, leading to this rebellion being called "Florida's French Revolution."[95] Spanish officials, determined to punish the rebels and those known to have assisted the rebellion, arrested several suspects and incarcerated many of them at Castillo de San Marcos. The rebellion highlighted another threat to Spanish rule in Florida and provided additional motivation to improve the defenses around St. Augustine.

During this period, roughly 1784-1821, the Spanish built several military installations in addition to San Nicolas. These included Quesada's Battery at the mouth of the St. Johns River, Fort San Carlos in Fernandina, Buena Vista Blockhouse on the St. Johns just north of Palatka, and the Twenty Mile Blockhouse near Ponte Vedra Beach.

On the heels of "Florida's French Revolution," between 1796 and 1802, England and Spain fought the Anglo-Spanish War. Though the war was contested mainly in Europe, Castillo de San Marcos nevertheless experienced a burst of construction activity.[96] The Spanish made improvements to the Cubo Line, the water battery, the covered way, and the glacis. The Spanish also rehabilitated many of the features of the lines of entrenchment around St. Augustine and rebuilt a former British redoubt south of St. Augustine.[97] It was in 1808, that the Spanish, while making major repairs to the Cubo Line, constructed the coquina pillars of the City Gate.[98]

From 1812 to 1813, Americans living near Florida continued their efforts to disrupt Spanish control over Florida. Wanting to expand into Florida, Americans, mostly from Georgia, tried to destabilize the region with periodic forays into the area around the St. Johns and St. Mary Rivers. In March 1812, George Mathews, serving as an agent for the U.S. Government, led American forces that took possession of Fernandina and Amelia Island. Mathews' troops were called the "Patriots," and U.S. Navy gunboats provided support during the invasion.[99] Around March 23, the Patriots dislodged a Spanish garrison from Fort Picolata, twenty-one miles west of St. Augustine.[100] By March 25, they had marched to the outskirts of St. Augustine. After a reconnaissance of the town's defenses, the Patriots decided not to attack and marched north. They soon occupied Fort Mose, blocking access to St. Augustine from the north and laid siege to the town. On April 11, U.S. Army troops arrived and took possession of Fort Mose.[101] In May, a small flotilla of Spanish ships sailed to within firing range of Fort Mose. After shelling the Patriot and American camps for several hours, the flotilla returned to St. Augustine. With the outbreak of the War of 1812 in June, President James Monroe distanced his administration from Mathews but decided to leave the American troops in Florida to block the British from gaining a foothold in Spanish territory. That summer and fall, Seminoles, allied with the Spanish, began raiding American positions. On September 11, 1812, Spanish forces, including twenty-five Spanish militiamen, thirty-two free blacks from the Seminoles' auxiliaries, and six Seminoles, ambushed an American convoy headed to Fort Mose at the Twelve Mile Swamp, located approximately twelve miles out from St. Augustine.[102] The Americans, dispirited after the fight, abandoned Fort Mose on September 14, ending the siege of St. Augustine.[103]

In 1811, the commanding engineer at St. Augustine, Manuel de Hita, left for Santo Domingo. He was not replaced until December 1816, when Engineer Francisco Cortazar arrived. In January 1817, Engineer Cortazar prepared a report on the condition of Castillo de San Marcos. He provided estimates for necessary construction projects, including repairs to the ravelin wall and the bridge into the fort. According to his report, the Cubo Line was the only serviceable outwork. It had three redoubts, but these had no gun platforms or interior revetment. The moat was just over forty-one feet wide and over four feet deep at the time. Cortazar wanted to reconstruct the palisade and deepen the moat to eleven feet. To counter the

95. Cormac A. O'Riordan, "The 1795 Rebellion in East Florida" 1995, University of North Florida Thesis and Dissertation. http://digitalcommon.unf.edu/edt/99. 12-13.
96. Sastre, *Cultural Landscape Report*, 73-74.
97. Nomination to the World Heritage List, 20.
98. Sastre, *Cultural Landscape Report*, 168.
99. James G. Cusick, *The Other War of 1812: The Patriot War and the American Invasion of Spanish East Florida* (Gainesville: University Press of Florida, 2003).
100. James G. Cusick, *The Other War of 1812,* 142.
101. James G. Cusick, *The Other War of 1812,* 155.
102. James G. Cusick, *The Other War of 1812,* 232–34.
103. James G. Cusick, *The Other War of 1812,* 235.

effects of erosion, he recommended the addition of stone retaining walls. Cortazar also wanted to add wooden revetment to interior walls of the redoubts.[104]

On May 10, 1817, the Chief Engineer stationed in Havana approved a list of projects and provided the funds required to repair the terreplein, bridge, and Cubo Line. In July, under Cortazar's supervision, workers began work on several of the projects.[105] Cortazar had included in his request a project to replace the bridge over the moat at the City Gate. This project was not funded. On March 1, 1818, work on the fort stopped because of the lack of funds. In June, four thousand pesos arrived and work resumed on the repairs. In July, Cortazar provided plans for multiple repairs to the fort, water battery, covered way, moat, and Cubo Line. To accomplish this work, Cortazar estimated needing twelve masons, six carpenters, one hundred laborers, four hundred bushels of lime, seventy-five cartloads of rip rap, one thousand stakes (nine feet long and eight inches thick), two thousand feet of four-inch-wide boards, and one hundred and fifty pounds of nails.[106] Work resumed in July but stopped again in October because of the lack of workers. Cortazar requested permission to use prisoners, and convicts worked on the Cubo Line until work stopped again in November.

Spain and the United States agreed to the Adams-Onis Treaty in 1819, which ceded Florida to the United States. The treaty stated, "His Catholic Majesty cedes to the United States, in full property and sovereignty, all the territories which belong to him, situated to the eastward of the Mississippi, known by the name of East and West Florida. The adjacent islands dependent on said provinces, all public edifices, fortifications, barracks, and other buildings, which are not private property, archives and documents, which relate directly to the property and sovereignty of said province, are included in this article."[107] Spain, however, did not immediately sign the agreement.

In November 1819, the United States informed Spanish authorities that it would forcibly take Florida unless Spain honored the terms of the Adams-Onis Treaty. This resulted in another round of construction at Castillo de San Marcos to prepare for possible invasion by the United States. The Spanish made additional repairs to the wall of the covered way and repaired the Cubo Line. Labor issues continued to be a problem for the Spanish engineer overseeing work. Local authorities released the convicts used to repair the outworks of the fort and authorities in Spain denied requests for additional laborers.

In an 1820 report, Spanish authorities reported on the improvements made to the fort since January 1817. According to the report, workers had repaired the floor of the terreplein of the main fort and repaired two of the bastions and firing steps. They replaced the drawbridges with fixed bridges.[108] They rebuilt much of the palisade walls of the covered way and added traverses to the covered way.

In February 1820, Lieutenant Nicolás de Fano, who replaced Cortazar, reported that the Cubo Line was in fair shape and was being maintained by convicts. By April 1820, Castillo de San Marcos had a new engineer, Ramón de la Cruz. He described the Cubo Line as eroded and the counterscarp of the moat as in ruins. He recommended adding a log revetment to retain the sandy soil. In October 1820, de la Cruz issued another report on the declining condition of the fort. Engineer de la Cruz stated that the water battery wall was still in poor condition and expressed concern that river water could undermine the main walls of the fort. The Governor responded that there were no funds to be expended upon repairs.[109] An inventory of the fort in June 1821 suggests that some work improving the Cubo Line had been completed.

Fort Matanzas

Spanish Engineer Mariano de la Rocque's inspection of forts around St. Augustine included an inspection of Fort Matanzas. His report on military buildings, dated July 31, 1789, declared Fort Matanzas in satisfactory condition.[110] A history of the structure recounts that according to De la Rocque, "nothing needed to be done to Fort Matanzas, but keep it in its extant condition.

104. Sastre, *Cultural Landscape Report*, 169-170.
105. Sastre, *Cultural Landscape Report*, 78-79.
106. Sastre, *Cultural Landscape Report*, 79.
107. Digest of Legislative History Fort Matanzas National Monument (CASA FOMA Archives), 1.
108. Sastre, *Cultural Landscape Report*, 129.
109. Sastre, *Cultural Landscape Report*, 81.
110. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 62.

A small vessel should be provided for the use of the detachment stationed there. In case of war, the fort would be reinforced with a gunboat and two other boats manned by the numbers required for effective defense."[111] The Spanish made minor repairs to the fort over the next several years. They replaced rotten wooden features, like ladders, doors, and the wooden merlons of the parapet. The Spanish repaired the terreplein to stop water from infiltrating the structure. In the 1790s and early 1800s, the Spanish made almost annual repairs to the fort, replacing deteriorated features, rebuilding the terreplein, and repairing cracks in the parapets and foundation.[112] By 1796, Spanish officials reported concerns about the foundation of the fort. In July, "Commander Esteban Lacal reported that the foundations were badly deteriorated because Matanzas River was beating the walls continuously and displacing the stones."[113] A force of masons arrived in August to repair the damage.[114]

As work progressed at Castillo de San Marcos to improve its defenses in the first decade of the 1800s, a Spanish council of war in February 1808 instructed St. Augustine officials to place obstacles in the Matanzas River to "delay an enemy's approach to St. Augustine in case of an attack, which would likely come via the inlet. Later the commanding engineer and the artillery engineer recommended the leveling of some sand dunes on Anastasia Island. The dunes, within a musket shot opposite Fort Matanzas, formed something like an entrenched line. If reached by an enemy, the dunes might have cancelled the fort's defense capability."[115] In 1809, part of the second story floor of Fort Matanzas collapsed requiring major repairs.

Engineer Cortazar inspected Fort Matanzas around 1818. Cortazar found that "river erosion had exposed and destroyed part of the footing and undermined the scarp wall."[116] The failure resulted in a crack in the parapet of the roof and through the arch over the officer's quarters. Cortazar recommended replacing the foundation and rebuilding much of the structure; but his proposal was never approved. The Spanish had not repaired the structural failure at Fort Matanzas by September 28, 1820, when lightning struck the roof causing significant damage. Three weeks after the lightning strike, engineer de la Cruz described the fort:

> The Castillo called Matanzas, for the defense of the inlet, is located at a distance of 21 miles down the coast to the south. The inlet communicates with the bay over a navigable river with several other branches of little importance. This fuerte is a regular square of proper height, all of stone, but its foundations are destroyed and all that part containing the second story and the roof is completely ruined, due to inclement weather and lack of repairs which should have, according to several requests, been attended to several years ago.[117]

The War Department Period (1821-1933)[118]

Please refer to Illustrations 1.4 and 1.5 at the end of this chapter.

Castillo de San Marcos and St. Augustine

On January 29, 1821, the Spanish Government finally ratified the Adams-Onís Treaty. Workers were still fortifying Castillo de San Marcos when news arrived that fort was to be turned over to the United States. Engineer de la Cruz prepared an inventory of Spanish public properties in St. Augustine prior to the formal transfer of ownership. This inventory includes drawings documenting structures and tracts of land, including a "plan of the Castillo, two cross-sections and four elevations of the courtyard walls."[119] The plan, *Plano del Castillo de San Marcos, su explicación en el Inventario, No. 1*, provides a comprehensive record of the condition of the

111. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 63.
112. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 271.
113. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 69.
114. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 69.
115. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 72.
116. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 75.
117. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 78-79.
118. The period of development extends to the year the War Department transferred administration over the site to the NPS, which is 1933. The War Department discontinued using the site as an active military post in 1900.
119. Sastre, *Cultural Landscape Report*, 81.

fort and its surrounding landscape at this time. According to Sastre's report on the cultural landscape,

> The folio provides precise measurements of the curtain walls, bastions, courtyard, ramp to the terreplein, ditch, counterscarp, main and ravelin bridges, covered way and traverses. The width of the moat at salient angles 1 and 2 measured eleven yards, one foot. The moat at salient angles 3 and 4 measured eleven yards, two feet in width. The counterscarp of the moat measures half a yard in thickness. The ravelin was described as a flanked structure without a parapet, possessed of two staircases with an additional one in the center. The face of the ravelin (east) through which a bridge communicated with the covered way measured eleven yards, one foot. Its flank measured three yards, two feet. The other face (west) measured sixteen yards, two feet, and its flank measured five yards, one foot. The scarp measured half a yard. The moat measured six yards, six inches.
>
> The width of the covered way measured nine yards, one foot. The coquina-stone covered way wall, which also served as a retaining wall for the glacis, measured half a yard. The parapet had no interior slope and the entire length of the covered way was lined with a palisade nine feet high from seven to eight inches thick and secured with girders. The slope of the glacis measured twenty-one yards from the top of the covered way wall to its base. The traverses that lay at right angles in the covered way were constructed of turf.[120]

On July 10, Castillo de San Marcos and all Spanish governmental property, including land and military installations, in East Florida officially transferred to the United States.[121] A presidential order on November 30, 1821, authorized the War Department to manage Castillo de San Marcos "with all the space immediately around it, recognized by the Spanish authorities as public property."[122] At this time, Florida became a U.S. Territory; it would become a state in 1845. On January 7, 1825, the War Department renamed Castillo de San Marcos to Fort Marion to honor Revolutionary War General Francis Marion; Congress officially recognized the name change on June 28, 1832.[123]

With the departure of Spain from North America, no European nation was blocking American expansion into Florida; and, as a result, the American military did not consider Castillo de San Marcos to be an important military asset.[124] The Matanzas River and the St. Augustine Inlet were too shallow for larger ships that were becoming standard features of navies at the time. The shallowness of the inlet had long posed a risk for larger ships, going back as far as 1565 when Menéndez de Aviles sent his galleon, the *San Pelayo*, away rather than risk entering the harbor. Thus, Fort Matanzas was also not considered strategically important. The presence of American Indians residing in the area posed a significant challenge to American settlement of Florida.

With Florida now part of the United States, American settlers moved in, increasing the young territory's population. As a result, tensions between the new settlers and the remaining American Indian population also increased. These settlers pressured the federal government to remove local American Indians, notably the Seminole Nation, in order to acquire their land. As a result, the U.S. Government began the process of relocating members of the Seminole Nation from Florida to Indian Territory in present-day Oklahoma. Some Seminole leaders agreed to move and signed a treaty in 1832, but many other Seminoles rejected the treaty and retreated into remote areas of Florida. The U.S. Army pursued the Seminoles, leading to seven years of fighting known as the Second Seminole War (1835-1842). In 1837, the army captured Seminole leader Osceola after duplicitously waving the white flag that signified a negotiation for peace. The army temporarily imprisoned Osceola at Castillo de San Marcos before it moved him to Fort Moultrie near Charleston, South Carolina. Approximately twenty Seminoles, captured in October 1837, escaped imprisonment at the fort in late November. Led by Wild Cat (Coacooche), the Seminoles crawled out of a small hole in the fort's wall and scaled down

120. Sastre, *Cultural Landscape Report*, 82.
121. Sastre, *Cultural Landscape Report*, 82-83.
122. Digest of Legislative History Castillo de San Marcos National Monument (CASA FOMA Archives).
123. Ibid.
124. Albert C. Manucy, "Some Military Affairs in Territorial Florida," *The Florida Historical Quarterly* 25, no. 2 (1946), 203.

handmade ropes fashioned from torn bedding.[125] The subsequent Third Seminole War (1855-1858) reduced the Seminole Nation to approximately 200 persons.

During the Seminole Wars, the U.S. War Department was responsible for maintaining both Castillo de San Marcos and Fort Matanzas. According to early inspection reports, Castillo de San Marcos was in a "rapid state of dilapidation."[126] Army personnel in St. Augustine made funding requests for maintenance, but the War Department provided just enough to maintain the structure in "an adequate state of repair."[127]

A hurricane struck the east coast of Florida on October 2, 1826, damaging many buildings in St. Augustine.[128] The following year, the City of St. Augustine made an effort to restore some of the historic Spanish structures. It advertised for bids to replace the bridge at the City Gate with a causeway; however, no acceptable bids were received. In June, the mayor of St. Augustine initiated work on the gates without the permission of the army. His crew was going to construct a new causeway reusing materials from the bridge and gates. The crew had dismantled portions of the masonry gate before the Post Quartermaster of Fort Marion, Lieutenant Harvey Brown, stopped the work because it was federal property. In August, the Quartermaster General rejected the city's claim of ownership of the City Gate.[129]

In the early 1830s, St. Augustine residents campaigned to get federal funding to repair Castillo de San Marcos (Fort Marion) and the city's seawall. Judge Robert R. Reid of St. Augustine wrote Territorial Delegate Joseph M. White about the poor condition of the fort and asked for his assistance in preserving the "fine and venerable monument of art."[130] For the residents of St. Augustine, the condition of the seawall became an increasingly important issue. In addition to the old seawall deteriorating, the army had opened a section of the seawall to construct a wharf. In 1832, Congress set aside the land around the St. Francis Barracks as a military reservation. President Monroe had placed the building and lot under War Department administration in 1821.[131] Originally constructed as part as a chapel and convent, the War Department used the building for various purposes, including as a jail and later as officer quarters and for administrative use. During the Seminole Wars, a portion of the garden was converted to a cemetery.

On March 2, 1833, President Andrew Jackson signed into law an act appropriating $20,000 for repairs of Castillo de San Marcos (Fort Marion) and reconstruction of the seawall. On March 13, 1833, the Corps of Engineers assigned Lieutenant Stephen Tuttle to supervise repairs to the seawall and the fort. Tuttle arrived in June and prepared a work proposal for his superior, Chief Engineer Charles Gratiot. Tuttle reported that water was undercutting the seawall and entire sections of the wall had failed.[132] Tuttle also commented upon the condition of the earthwork defenses. According to Tuttle, the Cubo Line was in poor condition and its parapet was in ruins. The City Gate was partially dismantled, because of the city's 1826 project, and was missing its doors. The bridge was gone, and the City of St. Augustine had replaced it with a stone causeway. In his proposed work plan, Tuttle included an extensive list of projects to repair the fort. When the army rejected his proposal, Tuttle revised his plans to focus on resurfacing the fort's terreplein and rebuilding the failed sections of the water battery.

On June 28, 1833, Captain G. S. Drane, the post commander at St. Augustine, put Tuttle in direct command of Castillo de San Marcos (Fort Marion) to expedite the construction projects and general maintenance. According to Sastre's report, by the end of September, "Tuttle's workmen had cleaned the fort, ventilated the casemates and purified them with fire, removed grass and weeds from its walls, the moat was cleared of rubbish, the bridges replaced, replaced broken tabby and policed the outworks."[133] The fort was, in Tuttle's estimation, a superior building, but he concluded that the building was obsolete from a strategic, military perspective. As such, the military began to value

125. Kenneth W. Porter, "Seminole Flight from Fort Marion," *The Florida Historical Quarterly* 22, no. 3 (1944): 113–33.
126. Bearss, *Historic Structure Report*, 36.
127. Sastre, *Cultural Landscape Report*, 84.
128. Bearss, *Historic Structure Report*, 44.
129. Sastre, *Cultural Landscape Report*, 179-180.
130. Bearss, *Historic Structure Report*, 46-47.
131. Ibid.
132. Bearss, *Historic Structure Report*, 53-54.
133. Sastre, *Cultural Landscape Report*, 87.

Castillo de San Marcos more for its historical significance than its military value.[134]

Tuttle proposed building a new seawall on top of the existing seawall built by the Spanish. Residents of St. Augustine raised objections to the plan. Secretary of War Lewis Cass ruled that a new seawall should be constructed "without regarding the old structure."[135] According to Edwin Bearss and John Paige's *Historic Structure Report for Castillo de San Marcos*, among the workers on the seawall project were enslaved Africans, "most of whom were to be employed in the Anastasia Island quarries."[136] The workers at the quarries began digging and cutting coquina in October 1833. In November, Tuttle had teams and carts sent to haul stone from the quarries. Tuttle contracted John M. Hanson to build the new seawall. The project faced numerous challenges and bad weather caused delays. The War Department relieved Tuttle from his duties in June 1834 after work had begun on the seawall. Lieutenant Francis S. Dancy replaced Tuttle and found serious issues with the seawall, still under construction. Dancy concluded that the new seawall was poorly constructed and rejected the work completed by Hanson. The foundation was not built as specified and, according to Bearss', "For about a third of the wall's length, new stone was laid on the foundation of the old."[137] The old foundation was undermined and leaning outward.[138] Also, after inspecting the fort, Dancy reported that no repairs had been made to the "salients of the water battery and one had crumbled into the water."[139]

Dancy, like his predecessor, expressed an appreciation for the historic significance of the fort and argued on behalf of its preservation. President Jackson made another $50,000 available for the War Department for repairs to the fort and to construct a new seawall between the fort and St. Francis Barracks.[140] In March 1836, the residents of St. Augustine petitioned the U.S. Congress for permission to construct a public street, 30 feet wide and 2,500 feet long, "paralleling the immediate rear of the old Spanish Cubo Line."[141] This is present-day Orange Street.

In 1836, the army transferred Dancy to the U. S. Army Corps of Engineers so he could directly supervise the work in St. Augustine to the fort and seawall. A series of controversies and staff changes occurred in the next few years, complicating work at Castillo de San Marcos (Fort Marion). Residents criticized Dancy. They complained about the cost of the project and questioned Dancy's salary. President Martin Van Buren dismissed the Army Corps of Engineer's Chief Engineer, Charles Gratiot, who was Dancy's supervising officer. Colonel Joseph G. Totten replaced Gratiot. Totten then appointed Lieutenant Henry W. Benham to replace Dancy in January 1839. When Benham arrived in St. Augustine, the Army Corps of Engineers had completed 2,120 feet of new seawall.[142]

Like Dancy, Benham advocated for preserving the fort because of its historic significance. Benham, however, also made a case for its use as a military depot. In October 1839, Benham issued a report describing the condition of the fort. According to his report, the glacis was missing in places and the covered way was in poor condition. The water battery and terreplein of the main fort could not support the weight of artillery. These structures would need work to accommodate the new guns in use by the military. The water battery required immediate work because the salient angles had largely failed and had collapsed into the bay. Large openings had developed within the water battery walls, and Benham was concerned that water would threaten the main fort.

In March 1840, Benham provided the Army Corps of Engineers with a proposal and cost estimate for repairs to the fort. In his proposal, he provided additional descriptions of the condition of the landscape around the fort. Roads and footpaths cut into the earth mounds of the glacis.[143] Local residents had developed a potter's field north of the fort in the open field beyond the glacis.[144] In April 1842, Benham prepared a topographic map

134. Sastre, *Cultural Landscape Report*, 40 and Edwin C. Bearss and John C. Paige, *Historic Structure Report for Castillo de San Marcos National Monument St. Johns County, Florida (Denver: Denver Service Center, National Park Service, 1983)*, 182-184.
135. Ibid.
136. Bearss, *Historic Structure Report*, 75.
137. Bearss, *Historic Structure Report*, 114.
138. Bearss, *Historic Structure Report*, 73.
139. Sastre, *Cultural Landscape Report*, 88.
140. Sastre, *Cultural Landscape Report*, 89.
141. Digest of Legislative History Castillo de San Marcos, 2.
142. Bearss, *Historic Structure Report*, 114.
143. Bearss, *Historic Structure Report*, 153-154.
144. Bearss, *Historic Structure Report*, 156.

of the grounds around Castillo de San Marcos (Fort Marion). According to Sastre, Benham's map shows that the Cubo Line was essentially gone. The map shows a foot-deep depression where the Cubo Line moat had been. Slight mounds of earth, rising between three and six feet above the ground, were the only remains of the line.[145]

Benham discounted the strategic importance of the glacis, arguing that it was not wide enough to protect the fort. The walls were not tall enough and the slope of the glacis was too steep. He proposed extending it further from the fort, doubling its width.[146]

In December 1841, Benham sent a proposal to Totten in which he argues for completely reconstructing the water battery. He recommended widening the water battery by filling in the moat on the east side of Castillo de San Marcos (Fort Marion). From 1842 to March 1844, under the guidance of Benham, workers rebuilt the water battery. By February 1843, Benham began work positioning the traverse circles and pintle-blocks for twenty gun emplacements. While waiting for delivery of the ironwork, Benham had workers prepare the granite blocks by drilling pintle holes. Pintles and pintle-plates arrived in November. Benham notified his superiors that the water battery was completed in March 1844.[147]

In February 1842, an Executive Order established the Military Reservation of Fort Marion, recognizing a change in the army's estimation of the strategic value of the fort's military assets. The Military Reservation in the 1840s included Castillo de San Marcos (Fort Marion), St. Francis Barracks, two large lots formerly used for powder houses, the lighthouse, the quarries, the Dragoon Barracks lot, the King's Forge, the Military Hospital lot, and the Cubo Line with the City Gate. The military reservation included several individual reservations. Those created in 1842 (with their acreage) included: military reservation on Magazine Lot (11-1/3 acres), military reservation at Fort Marion (19 acres), military reservation on new hospital lot (5/6 acre), military reservation on St. Francis Barrack Lot (3-5/6 acre), military reservation on Old Powder Lot (6-1/4 acre), military reservation on Dragoon Barrack Lot (5/6 acre), military reservation on Blacksmith's Lot (595 square yards).[148]

In May 1844, the War Department received additional funds for projects at Castillo de San Marcos (Fort Marion). By 1845, military officials expressed concern that the reconstructed seawall would result in land-grab by local residents, who would try to extend their existing property lines towards the new wall. In July, the St. Augustine City Council agreed to construct a street along the backside of the seawall from the plaza on the north to St. Francis Barracks to the south. As the wall neared completion, the city had still not begun work on the street. Secretary of War William L. Marcy agreed not to complete construction until they could get residents to relinquish any claim on the area behind the seawall. Once satisfied that the city would comply with the agreement, from December 1845 to April 1846, workers completed the seawall project by filling in behind the wall with sand and earth.

In March 1849, the Secretary of War stated that his agency reserved "all the public land in the town (St. Augustine) and vicinity, including the site of the work at Matanzas Inlet." Because there was no known survey of the property, the boundaries of the War Department claim created confusion that lasted many years.

In 1859, the U.S. Army sent William H. C. Whiting to inspect the physical condition of Castillo de San Marcos (Fort Marion). Because the army made only minor repairs to the fort in the first few decades under their control, Castillo de San Marcos (Fort Marion) and the surrounding landscape was in poor condition. The building itself was deteriorating. Residents of St. Augustine made use of the area outside the fort, grazing cattle on the glacis, in the covered way, and in the moat. Trash and vegetation filled the moat. Footpaths still crisscrossed the grounds around the fort.[149] Whiting recommended that the military reservation be fenced to protect it from additional damage. He also recommended that the moat be

145. Sastre, *Cultural Landscape Report*, 173.
146. Sastre, *Cultural Landscape Report*, 92.
147. Bearss, *Historic Structure Report*, 223-230.
148. Congressional Serial Set (U.S. Government Printing Office, 1870), accessed November 4, 2019, https://books.google.com/books?id=F0ILAAAAYAAJ&pg=RA1-PA70&lpg=RA1-PA70&dq#v=onepage&q&f=false.
149. Sastre, *Cultural Landscape Report*, 157.



Figure 10: Sam A. Cooley, photographer "Fort Marion, Fla" (Library of Congress, https://www.loc.gov/item/2015648151/)

cleaned and the deteriorating bridges to the fort be replaced.[150]

The peacetime repairs on the fort were interrupted by the outbreak of the Civil War. On January 7, 1861, troops of the Florida State Militia occupied Castillo de San Marcos (Fort Marion). Three days later, Florida seceded from the Union and joined the Confederate States of America. In May, the Confederate Army transferred several weapons stationed at Castillo to fortify other areas of the Confederacy.[151] In February 1862, Confederate military officials decided to abandon East Florida. In March 1862, Union forces captured Jacksonville and St. Augustine. The Union Army focused on defending the St. Johns River. As a result, Castillo de San Marcos (Fort Marion) was not a high priority; however, Union forces did have guns in position at the fort.[152] The military also constructed other ancillary structures to support their use of the fort. For example, a photograph of the fort during this period shows a small, simple frame building that appears to be a guardhouse near the main entrance to the fort (Figure 10).[153]

Approximately 6,000 Federal troops occupied St. Augustine during the war. Most were quartered in the St. Francis Barracks, while others were housed in temporary huts or tents on the terreplein at the fort. In mid-September, the 7th New Hampshire arrived to relieve an earlier garrison. Some of the troops were quartered around Fort Marion, mostly north of the fort, where they built "comfortable quarters for themselves."[154] By June 1863, reports of Confederates in the area prompted Union troops to fortify the fort. They "emplaced seven or eight heavy guns and a battery of light artillery, commanding the approaches to the town."[155] They removed the top of the garita on the northwest bastion to create a clear line of fire for the large gun mounted there to cover the road to Jacksonville.[156] (Army records indicate that they reconstructed the northwest garita in 1866.[157]) The troops also reactivated the Hornwork Defense line north of St. Augustine.

After the Civil War, the War Department concluded again that Castillo de San Marcos (Fort Marion) was not vital to their overall coastal defense strategy. According to their reasoning, the historic, coquina walls could not withstand a bombardment from modern weapons. The depth of the harbor also limited its usefulness. Nevertheless, the Military Reservation of Fort Marion and the St. Francis Barracks would serve as the Florida Headquarters of the U.S. Army from the end of the Civil War until 1877. During the early 1870s, officials made repeated requests for appropriations to pay for "cleaning and repair of Fort Marion."[158] According to his report from 1873, Major Quincy Gillmore, an engineer with the U.S. Army Corps of Engineers, commented, "the channel leading up to the harbor is not practicable for even light draught vessels of war."[159] Regardless, the War Department did recognize its historic value and deemed it suitable for continued use as a military prison.[160]

In January 1872, residents of St. Augustine again petitioned U.S. Congress for appropriations to restore Castillo de San Marcos (Fort Marion). At this time, the War Department and the City of St. Augustine cooperated to repair the City Gate. Army officials agreed to reconstruct the stone

150. Sastre, *Cultural Landscape Report*, 157-158.
151. Bearss, *Historic Structure Report*, 255.
152. Bearss, *Historic Structure Report*, 260.
153. The Library of Congress dates this photograph as between 1861 and 1869, but photographer Sam Cooley is known to have been in St. Augustine in 1864, which is the likely date of the image.
154. Bearss, *Historic Structure Report*, 260.
155. Ibid.
156. Luis R. Arana, "Fort Marion in Civil War Times," *El Escribano* 23 (1986): 60–61.
157. Bearss, Historic Structure Report, 263.
158. Bearss, *Historic Structure Report*, 269.
159. Bearss, *Historic Structures Report*, 270.
160. Bearss, *Historic Structure Report*, 262.



Figure 11: Undated photograph of City Gate, circa 1870s (CASA no. CG4)

bridge if the city agreed to restore the masonry piers of the gate. The city had constructed a temporary stone causeway leading to the gate, and the army proposed to replace this with something more historically appropriate. Photographs of the City Gate around this period show its poor condition. The sentry boxes remain partially dismantled, a result of the city's attempt to destroy the gate in 1827. (These were both reconstructed in 1879) (Figure 11).[161]

After the 1870s, Florida and St. Augustine experienced a boom in tourism. Henry Morrison Flagler, co-founder of Standard Oil, was instrumental in developing the tourism industry in the state. He visited St. Augustine in 1878 and returned each winter beginning in 1883. In 1885, the Flaglers and Rockefellers stayed at the San Marco Hotel, which opened the previous year, as they were friends of its builder, Issac Cruft of New England. That year, 1885, Flagler bought land west of the city for construction of a 450-room hotel, the Hotel Ponce de Leon, which opened in January 1888. He soon purchased the Jacksonville, St. Augustine & Halifax Railroad, which he renamed the Florida East Coast Railway. Flagler developed the railroad line in conjunction with hotels to support each other and attract visitors to Florida (Figure 12).[162] Visitors to the hotels used the



Figure 12: "Hotel San Marco, showing City Gate" (CASA no. CG2)

grounds of Castillo de San Marcos (Fort Marion). The area around the fort became the location "for outdoor activities such as picnics, leisurely strolls, games, and sports."[163]

Between 1875 and 1878, the army imprisoned captured chiefs and leaders from the Arapaho, Cheyenne, Comanche, and Kiowa tribes at Castillo de San Marcos.[164] Seventy-two Plains Indians arrived at the prison on May 21, 1875, under the supervision of Captain Richard Henry Pratt.[165] Captain Pratt experimented with a combination of penal reform and education at Castillo de San Marcos (Fort Marion), which eventually led to his founding of the Carlisle Indian School in 1879. At Castillo de San Marcos (Fort Marion), Pratt supplied the prisoners with paper and drawing material, encouraging them to record memories of their life. These artworks, drawn onto pages from cast-off account books, are known as "ledger drawings." Pratt encouraged the prisoners to sell the artworks to townspeople and tourists, allowing them to keep the profits for themselves.[166] Pratt also allowed the prisoners to sell polished palm seeds and alligator teeth to local vendors.[167] Tourists and townspeople flocked to the fort to see the prisoners or to watch special performances by the American Indians. One of the ledger drawings depicts a "buffalo chase" on the fort green. The drawing shows four American Indians and two soldiers on horseback pursuing a bull. While spectators watched from the green and from the terreplein,

161. Sastre, *Cultural Landscape Report*, 180.
162. Leslee F. Keys, "Preserving the Legacy: The Hotel Ponce de Leon and Flagler College" (PhD diss., University of Florida, 2013), 224. Roosevelt's speech is reprinted in Alfred H. Lewis, ed., A Compilation of the Messages and Speeches of Theodore Roosevelt 1901-1905 (Bureau of National Literature and Art, 1906), 132.
163. Sastre, *Cultural Landscape Report*, 53.
164. Sastre, *Cultural Landscape Report*, 46.
165. Ibid.
166. Richard Pearce, Women and Ledger Art: Four Contemporary Native American Artists (University of Arizona Press, 2013), 4.
167. Sastre, *Cultural Landscape Report*, 49.

the performers eventually killed and butchered the bull for a banquet that followed the spectacle. The American Indians also performed dances for spectators. One such event, also captured in a ledger drawing, shows "The Indian and Sports War Dance," sponsored by the local yacht club to raise funds for Pratt's school. [168]

Another group of American Indian prisoners arrived at Fort Marion in April 1886. Over 500 Apaches lived in cone-shaped Sibley tents on the terreplein. Like the earlier contingent of Plains Indians, the Apaches could leave the fort and earn money by selling willow baskets, moccasins, and other trinkets for sale. Local women in St. Augustine came to the fort to teach classes, which focused on reading, writing, and speaking English. Young children attended classes taught by nuns at the local Sisters of St. Joseph convent. The Apache were incarcerated at the fort for just over one year before most of them were moved to Alabama and then to Oklahoma. Richard Pratt selected a group of 103 of the children to attend the Carlisle School.[169]

By January 1887, the army held 447 Apache Indians at the fort.[170] Because of limited space in the casements, most of the prisoners lived in tents pitched on the terreplein. The Chiricahua Apaches at Castillo de San Marcos (Fort Marion) added another level of interest for tourists who travelled to the fort to see the "last remnant of a raiding band of American Indians."[171]

In the 1870s, government officials argued on behalf of rehabilitating the fort, describing the fort as a "castle 300 years old and a great place of interest."[172] In 1881, Lieutenant Colonel G. A. De Russy described the fort as a "venerable old pile, blackened by time and falling into ruin and decay."[173] He urged for its "preservation."[174] Chief Engineer Wright notified De Russy that, according to Bearss, he "was sympathetic to historic preservation, and would give the restoration of Fort Marion all the assistance in his power."[175] In 1882, the army made several repairs, including rebuilding bridges and repairing the demilune ditches. In 1884, the War Department appropriated $5,000 towards "the preservation of Fort Marion, and the improvement and enclosure of its grounds."[176] According to a review of the legislative history of Castillo de San Marcos National Monument, "This allotment of Federal funds, the first one voted for historic preservation exclusively, aimed at the conservation of Fort Marion as it was in 1821 and beautification and enclosure of the grounds."[177]

In 1884, the War Department made plans to install a fence "enclosing the reservation at Marine, Charlotte, and St. George Streets."[178] In 1885, Mayor John G. Long of St. Augustine wrote to Secretary of War Robert Todd Lincoln objecting to plans to enclose the military reservation with a fence. The project would have resulted in the closure of several roads and would inconvenience property owners who had built upon federal property. He suggested that the fort grounds become a city park for the residents of St. Augustine.[179]

In January 1886, the army appointed Lieutenant William M. Black to oversee projects at Castillo de San Marcos (Fort Marion). Black immediately undertook projects to stabilize and waterproof the fort. A photograph dated circa 1886 shows the condition of the landscape around the fort, including the covered way walls and glacis on the southwest side of the fort. The covered way wall was in poor condition and had a large gap in the southwest salient. The ground had large bare places that appear to be the result of erosion (Figure 13).

In 1886, United States Representative Charles Dougherty of Florida introduced legislation "for repair of Fort Marion…, and for the inclosure of the grounds attached to the fort as a park or place of public resort."[180] Congress did not pass this bill. Chief Engineer J. C. Duane estimated that the cost to restore the fort to be ten thousand dollars.[181]

168. Sastre, *Cultural Landscape Report*, 48.
169. "Apache Incarceration - Castillo de San Marcos National Monument (U.S. National Park Service)," accessed November 4, 2019, https://www.nps.gov/casa/learn/historyculture/apache-incarceration.htm.
170. Bearss, *Historic Structure Report*, 305.
171. Jere L. Krakow, *Administrative History of Castillo de San Marcos National Monument and Fort Matanzas National Monument* (National Park Service, 1986), 6.
172. Bearss, *Historic Structure Report*, 282.
173. Bearss, *Historic Structure Report*, 283.
174. Ibid.
175. Bearss, *Historic Structure Report*, 284.
176. Bearss, *Historic Structure Report,* 293.
177. Digest of Legislative History Castillo de San Marcos, 2.
178. Bearss, *Historic Structure Report,* 295.
179. Bearss, *Historic Structure Report,* 320.
180. Bearss, *Historic Structure Report*, 333
181. Bearss, *Historic Structure Report*, 334.

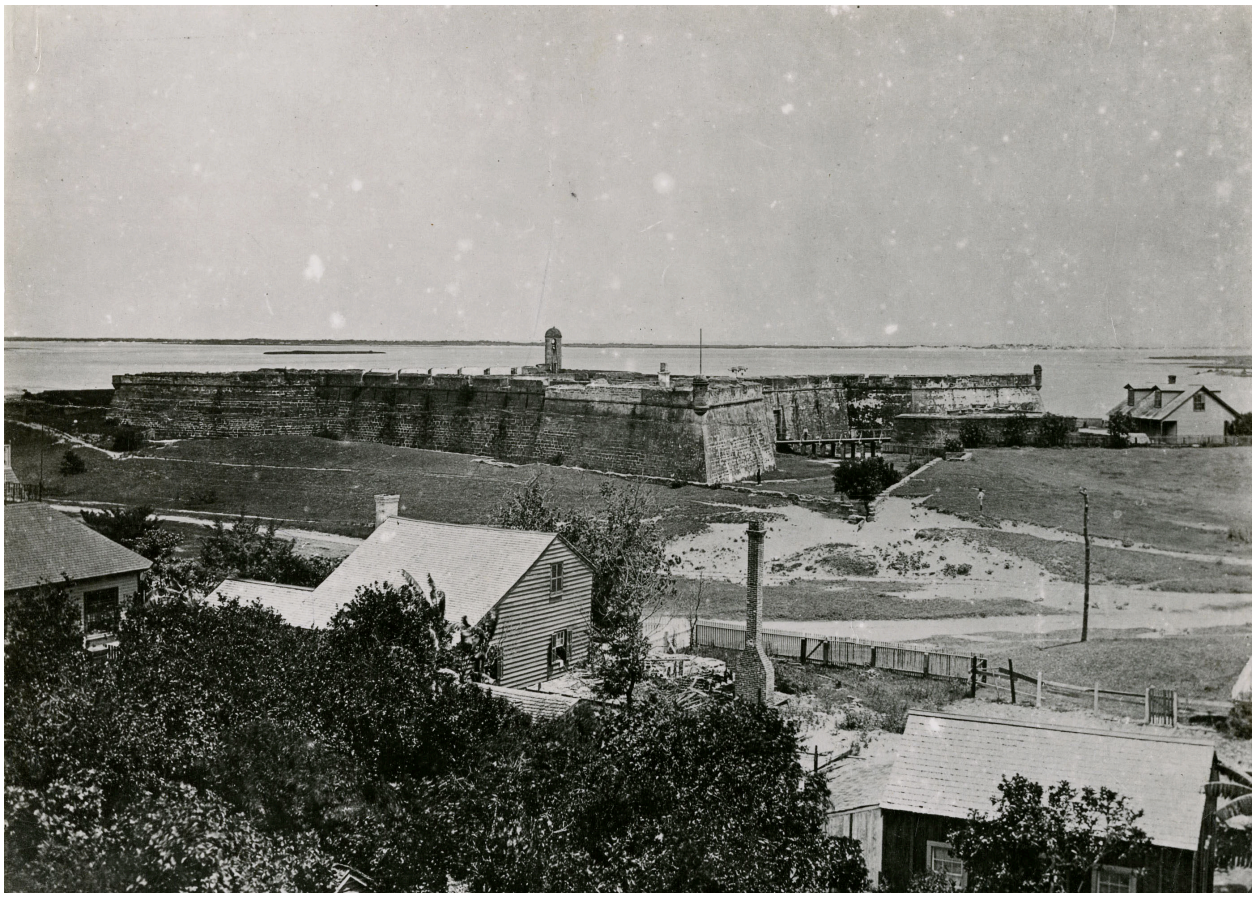


Figure 13: Photograph of Castillo de San Marcos from southwest circa 1875-1890 (CASA no. A1)

United States Senator Wilkinson Call continued efforts to increase funding for maintenance and repairs to Castillo de San Marcos (Fort Marion). He introduced numerous funding bills in the U.S. Congress in the 1880s and 1890s. In 1889, Senator Call introduced Senate Bill 250, which included $15,000 to "restore the fort, beautify the grounds, and extend the seawall to the north boundary of the reservation." This bill passed, and President Benjamin Harrison signed it into law on August 18, 1890.[182]

Overseen by Captain Black (after a promotion) and Lieutenant D. D. Gaillard, laborers made significant changes to the grounds around Castillo de San Marcos (Fort Marion). These changes resulted in a very different landscape, converting the site from a military reservation to a more park-like setting. They constructed curvilinear walkways across the fort green and planted trees and shrubs across the landscape. Additionally, during this period, laborers made various repairs to the Castillo de San Marcos (Fort Marion) and the Army Corps of Engineers extended the seawall further north from the water battery all the way to the northern boundary of the military reservation.[183] Captain Black's work at Castillo de San Marcos (Fort Marion) coincided with a dramatic change in the federal role in historic preservation. It was also in the 1890s that Congress established the first five Civil War national battlefield parks to be administered by the War Department—Chickamauga and Chattanooga, Antietam, Shiloh, Gettysburg, and Vicksburg.[184]

182. Bearss *Historic Structure Report*, 334-335.

183. Sastre, *Cultural Landscape Report*, 144, 159-160.

184. This topic is most thoroughly investigated in Timothy B. Smith, *Altogether Fitting and Proper: Civil War Battlefield Preservation in History, Memory, and Policy, 1861-2015* (Knoxville: University of Tennessee Press, 2017).



Figure 14: View of Castillo, circa 1890 (CASA no. A19)



Figure 15: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 (Library of Congress, https://www.loc.gov/item/det1994005120/PP/)

A photograph dated circa 1890 shows the fort landscape prior to Captain Black's beautification of the fort green (Figure 14). The remains of the Cubo Line moat, since converted to a drainage ditch, are visible in the photograph. A small bridge, likely wooden, spans the moat, which appears to be filled with water. This bridge may be one the War Department built in September 1885.[185] A blacksmith shop, constructed in the 1870s is also visible near the grove of trees on the fort green. The St. Augustine lighthouse on Anastasia Island is visible in the background. This 165-foot tower was constructed in 1874, replacing an earlier lighthouse constructed in 1824.[186] A photograph dated 1894 shows the landscape around the fort after the completion of Captain Black's projects (Figure 15). (The Library of Congress has mislabeled this photograph. It was taken from the San Marco Hotel not from a local residence). The Cubo Line moat is not visible in the photograph. A small white building is visible southeast of the fort near the bay. This was a boat house/bath house built circa 1880 on a short dock off the south flank of the water battery. It was removed in 1913. Black also removed the blacksmith shop because it was in poor condition.[187]

In the early 1890s, the War Department employed an ordnance-sergeant "to take care of the reservation grounds and fort."[188] According to Bearss, this individual's duties "included mowing the lawn, cultivating trees and shrubbery."[189] The ordnance-sergeant lived in a cottage located on the south side of the fort in the covered way. By 1892, it was clear that one person alone could not maintain the property.[190] In 1895, responsibility for maintaining the grounds was divided between the Army Corps of Engineers and the Quartermaster General.[191]

185. Bearss, *Historic Structure Report*, 321.

186. https://www.staugustinelighthouse.org/get-involved/about-mission-uvp/history/
187. Bearss, *Historic Structure Report*, 331.
188. Bearss, *Historic Structure Report,* 351.
189. Ibid.
190. Bearss, *Historic Structure Report,* 351-352.
191. Bearss, *Historic Structure Report*, 353.



Figure 16: William Henry Jackson, "Golf at St. Augustine," circa 1902 (Library of Congress, , https://www.loc.gov/item/det1994004878/PP/)

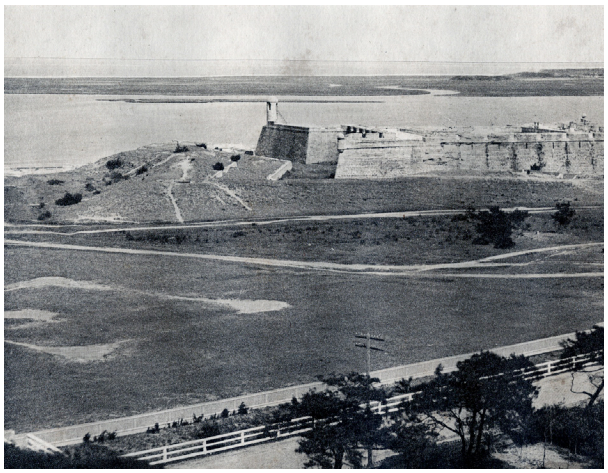


Figure 17: "Fort Marion from Hotel San Marco" (CASA no. A4809)

In 1895, a group of wealthy winter visitors constructed three holes (later five) on the fort green, creating the first golf course in Florida. The course included private property, owned by the St. Augustine Golf Club, and part of the military reservation. Three holes of the course traversed the fort green on its west and north sides. After the San Marco Hotel burned in 1897, the course expanded with additional holes added on Golf Club-owned land extending west from San Marco Avenue to the San Sebastian River.[192] It was not until 1902 when the War Department entered into a formal agreement to allow the St. Augustine Golf Club permission to use the fort grounds (Figure 16). In a historic photograph, a water spigot is visible near the top of the wooden staircase and the walkway system installed by Black is visible in the background.

Henry Flagler brought the Cuban Giants baseball team to St. Augustine for several winters beginning in 1885. Flagler was a proponent of the sport and financed exhibition games and stadiums across Florida. Flagler was involved in the staging of an exhibition game in 1886 in St. Augustine. The local paper announced, "The colored employees of the Hotel Ponce de Leon will play in a game today at the fort grounds with a picked nine from the [Hotel] Alcazar. As both teams possess some of the best colored baseball talent in the United States being largely composed of the famous Cuban Giants, the game is likely to be an interesting one."[193] The Cuban Giants were a semi-professional team whose home field was in St. Augustine. They were not, despite their name, comprised of Cuban nationals. The Cuban Giants were a team of African Americans and are considered the first all-black professional team.[194] A baseball diamond is visible on the fort's grounds in a photograph taken around this time (Figure 17). St. Augustine was also home of the Ponce de Leon festival, a multi-day celebration "that included a variety of town events including baseball, fireworks, and reenactments." Designed to increase tourism in St. Augustine, the festivals reenactments included "the arrival of Juan Ponce de Leon in Florida," the founding of St. Augustine, and the raids by Drake and Oglethorpe. The festival began in 1883 and ended during the Depression.[195]

The U.S. Army stopped using Castillo de San Marcos (Fort Marion) as a military prison in 1900. On September 12, 1900, the army withdrew the St. Augustine garrison, effectively ending its use as a full-time military facility. According to Charles

192. Tingley, "Timeline."

193. Geoff Dobson, "Historic City Memories: First pro baseball team" (article assessed online: https://historiccity.com/2009/staugustine/news/florida/historic-city-memories-first-pro-baseball-team-1852 on July 21, 2017.)
194. Frank Ceresi and Carol McMains, "Original Photo of the 1885-1886 Cuban Giants: Black Baseball's First Professional Team" (article accessed November 5, 2019: https://www.thenationalpastimemuseum.com/article/original-photo-1885-1886-cuban-giants-black-baseballs-first-professional-team on July 21, 2017).Charles Tingley points out that the date of the game must be incorrect because the Ponce Hotel did not open until 1888.
195. Melissa Klatzkow, *1927 Ponce de Leon Festival*, accessed on November 5, 2019, https://guides.uflib.ufl.edu/Ponce.



Figure 18: View of Fort from southeast, circa 1930s (CASA no. B1074)

Tingley, in 1901 the army loaned the City of St. Augustine obsolete armament from Castillo de San Marcos (Fort Marion). The Mayor and the President of the Historical Society were concerned that the historic guns not meet the same fate as the one that had been placed in a battery near the lighthouse during the Spanish American War in 1898. It was destroyed and the sold for scrap. The loaned weapons included: four 32 pounders, one rifled gun, two 8-inch Columbiads, one 10-inch seacoast mortar, and 1840 cannonballs. Sometime prior to 1900, the War Department installed a weather radio tower in the covered way, east of the main entrance to the fort. The tower remained until 1938. The tower appears in another photograph from the early 1900s that also shows the concrete walkways installed on the fort grounds. The photograph also shows a young man riding a bicycle on the narrow walkway (Figure 18).

On October 21, 1905, President Theodore Roosevelt visited St. Augustine, staying at the Hotel Ponce de Leon, and spoke at the fort.[196] In 1907, the National Society of the Colonial Dames of America in The State of Florida installed a tablet "depicting the significance of the City Gate."[197] In 1908, the federal government deeded a strip of land that had been part of the military reservation to the St. Johns County Board of Public Instruction upon which to build a school. This parcel included the Cubo Line area extending west from City Gate. By July of 1908, workers had filled portions of the Cubo Line moat to accommodate the construction project but spared the City Gate. Also, in 1908, the federal government permitted the City of St. Augustine to construct a twenty-five-foot wide road on federal property. It was named Fort Marion Circle; it was realigned and renamed Castillo Drive in 1965 and became South Castillo Drive in 1992. The War Department transferred to the city "a strip of land not exceeding 23 feet in width on the north line of Fort Marion Reservation, for the purpose of restoring the street formerly known as Clinch Street, extending from San Marcos Avenue, on the western boundary of said Reservation, eastward to the Matanzas River."[198] By 1915, however, city leaders had decided against building this road and requested the federal government to take the land back.

Despite the diminished presence of the army in St. Augustine, the War Department remained responsible for maintenance of the fort and grounds. In June 1906, Secretary of War Lindley Garrison declared a number of historic structures under War Department control to be historic landmarks.[199] District Engineer George R. Spalding reported in September 1908 that "certain repair work is urgently needed" at the fort.[200] Among his complaints was that the fort's bridges were rotten and unsafe. The War Department attempted to accommodate to the growing number of visitors to the fort. According to Bearss, in 1910, Sergeant George M. Brown opened the fort to the public but proved not to be a hospitable host.[201] A panorama of the fort's grounds captures the appearance of the landscape at this time (Figure 19).

In 1912, Mayor of St. Augustine, Dr. DeWitt Webb, received permission from the army to repair the City Gate. The project resulted in repairs to the foundations of one pillar, repointing masonry, replacing wood in the sentry boxes, and removing

196. Keys,"Preserving the Legacy," 224.
197. Keys,"Preserving the Legacy,"76.
198. Digest of Legislative History Castillo de San Marcos, 6.
199. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 110.
200. Bearss, *Historic Structure Report*, 355.
201. Bearss, *Historic Structure Report*, 356-357.



Figure 19: "Fort Marion on Matanzas Bay," circa 1912 (Library of Congress, https://www.loc.gov/item/2007660749/.)

overgrown vegetation.[202] A fire devastated large areas of downtown St. Augustine in 1914. The headquarters of the St. Augustine Historical Society was one of the buildings burned. The society requested permission to use Castillo de San Marcos (Fort Marion) as a headquarters and museum.[203] In following decades, the Historical Society led public tours of the fort and provided for interpretive displays.

The War Department declined to spend money repairing non-strategic properties during World War I. Following the war, in 1921, the War Department listed Castillo de San Marcos (Fort Marion) among the federal properties slated for disposal. By this time, the War Department had long concluded that Castillo de San Marcos (Fort Marion) and Fort Matanzas lacked military value. Residents of St. Augustine however protested the disposal. Major William C. Lamen, with the Jacksonville office of the Corps of Engineers, also argued against it. "To allow a spot so intimately connected with the history of this country to pass into the hands of private parties or to be controlled by state or municipal authorities would outrage local public sentiment somewhat similar to what would follow the suggestion that Washington's Monument or Arlington Cemetery be disposed of."[204]

There was also incredible public interest in Castillo de San Marcos (Fort Marion). Bearss suggests that in the early 1900s, 50,000 people visited annually.[205] On February 22, 1921, the Historical Society and Colonial Dames participated in a large event at the fort to celebrate George Washington's birthday and to "launch the Centennial anniversary of Florida's acquisition as a territory by the United States."[206] President-elect and Mrs. Warren G. Harding attended the event just months prior to his inauguration. Harding had a history of visiting St. Augustine, having made annual visits to the city beginning in 1904.[207] In the year ending June 30, 1921, records indicate that 31,065 people visited the site.[208]

The Secretary of War sought the opinion of Major General Black, the now-retired engineer who had previously served in St. Augustine, about the future of the historic structures under their control. Black recommended that both Castillo de San Marcos (Fort Marion) and Fort Matanzas be preserved. The District Engineer in Jacksonville agreed. A photograph from this period shows what appears to be a group of tourists visiting Castillo de San Marcos. They are gathered near the bell tower on the San Carlos Bastion. The photograph also shows a seacoast mortar gun mounted in the middle salient of the water battery (Figure 20). This photograph is dated 1910-1920 at the Library of Congress, but it was probably taken earlier because the seacoast mortar gun was given to the city and moved to the plaza in 1902.

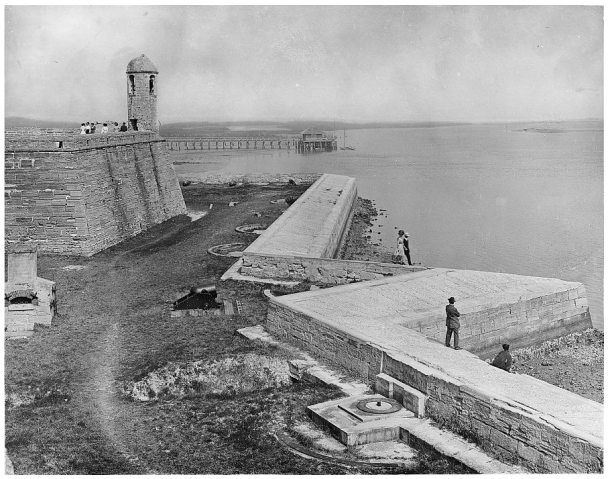


Figure 20: "Seawall, Fort Marion, St. Augustine, Fla," circa 1910-1920 (Library of Congress, https://www.loc.gov/item/det1994024658/PP/

202. Sastre, *Cultural Landscape Report*, 181.
203. Bearss, *Historic Structure Report*, 359.
204. Sastre, *Cultural Landscape Report*, 54.
205. Bearss, *Historic Structure Report*, 358.
206. Keys,"Preserving the Legacy,"78.
207. Keys,"Preserving the Legacy," 224.
208. Luis R. Arana, et. al. "Historical Research Management Plan for Castillo de San Marcos National Monument, St. Augustine, Florida" (CASA FOMA Archives), 23.

In July 1922, the War Department removed both forts from their excess property list. In March 1923, Secretary of War John Weeks visited Castillo de San Marcos (Fort Marion). On October 15, 1924, President Calvin Coolidge, who became president following Harding's death in 1923, designated Castillo de San Marcos (Fort Marion) and Fort Matanzas national monuments through provisions of the Antiquities Act of 1906. The Fort Marion National Monument included 18.09 acres encompassing the fort and surrounding grounds. That year, U.S. Congress appropriated funds for the "protection, preservation, repair and maintenance of historical fortifications" that included Fort Marion.[209]

At this time, the War Department negotiated a new agreement with the St. Augustine Golf Club. The document, entitled "To the St. Augustine Golf Club, To Occupy and Use Certain Portions of the Military Reservation Pertaining to Fort Marion, St. Augustine, Florida," states that the license to use the fort green had been granted by the Secretary of War on May 8, 1902. It was amended in 1905. The new document terminated these previous agreements and replaced them with a "license revocable at will by the Secretary of War." The Club was "authorized to occupy and use for golfing purposes all that portion of the reservation situated eastward of the road designated as San Marco Avenue and Fort Marion Circle, exclusive of the bastioned masonry work within the moat."[210] According to the new terms, the St. Augustine Golf Club paid $200 a year for maintaining the grounds. The club was also permitted to build and maintain three sand greens and three tees. This agreement continued until the club disbanded in 1925 at which time the club president, J. L. Ketterlinus, agreed to pay for removing the tee boxes and greens.[211]

An aerial photograph of the fort dated 1924 shows the sand greens. They appear as bright circles set within the turf of the fort green. The walkways and fence, installed in the previous decade, remain in

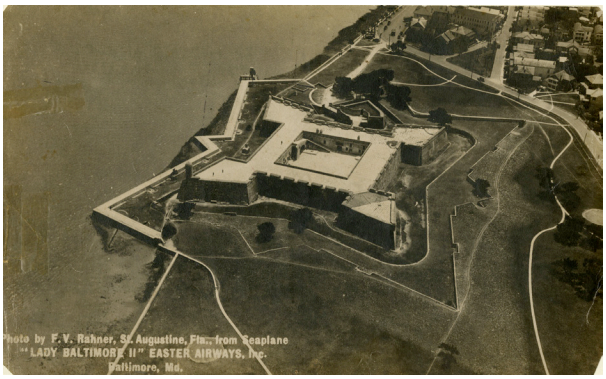


Figure 21: Victor Rahner, "Aerial of Fort Marion" (CASA A396a)

place. By this time, the pedestrian network is fully developed with concrete walkways converging in the level area in the covered way where the bridge connects to the ravelin. The curved walkway from the bridge to the ravelin terminates at a staircase that leads over the covered way wall (Figure 21).

In 1926, the St. Augustine Historical Society installed a twelve-car parking lot on Army property at the intersection of Bay Street (now Avenida Menendez) and Fort Marion Circle (now South Castillo Drive). A second lot, which would accommodate twenty cars parked perpendicular to the street, "extended west along the north side of Ft. Marion Circle."[212] In 1927, "the federal government opened US Route 1, a national road running north from Miami, Florida, up the east coast through St Augustine to Kent, Maine."[213] The construction of this road helped facilitate tourism in St. Augustine by providing another connection to the city. Visitors continued to travel to St. Augustine by boat and rail, and as automobile usage increased, more visitors arrived in their personal automobiles.[214]

In July 1925, the Corps of Engineers transferred responsibility for the military reservation to the Quartermaster Department. A hurricane damaged the seawall in September 1928. The Corps of Engineers repaired the holes.[215] In April 1929, the War Department entered into an agreement with St. Augustine Historical Society to become caretakers for Castillo de San Marcos (Fort Marion) and help with its interpretation.

209. Digest of Legislative History Castillo de San Marcos, 7.
210. Secretary of War, *To the St. Augustine Golf Club, To Occupy and Use Certain Portions of the Military Reservation Pertaining to Fort Marion, St. Augustine, Florida*, (Folder 22: Care and Protection of City Gates and Grounds, 1915- 1923.
211. Krakow, *Administrative History,* 20. Ketterlinus was the son-in-law of Standard Oil Partner William Warden, whose winter home was located immediately north of the fort property.
212. Charles A. Tingley, "Report on the history of the parking lot at the Castillo de San Marcos," (CASA FOMA Archives).
213. Keys,"Preserving the Legacy,"79.
214. Ibid.
215. Bearss, *Historic Structure Report*, 372.

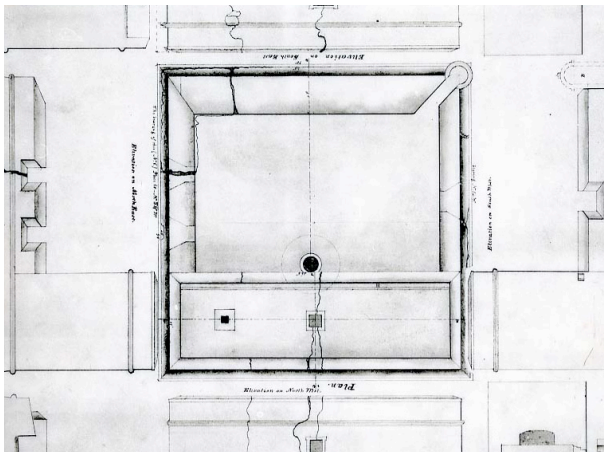


Figure 22: Benham plan of Fort Matanzas (CASA no. M881)

However, during the early years of the Great Depression, funds were scarce and "repairs to the fort and improvements to the grounds were minimal."[216] Workers repaired walkways, pruned trees, and graded the "parkway."[217] In 1928, the Quartermaster Department undertook several projects to waterproof the terreplein, spreading coats of hot asphalt over layers of felt.[218]

In the 1920s, Florida experienced a rapid increase in development leading to a real estate boom that spread to St. Augustine. Supported by improved railroad connections, like Henry Flagler's line that connected Florida with New York, real estate speculators bought and sold land at a rapid pace. Local community leaders in St. Augustine, wanting to promote real estate development on Anastasia Island, initiated plans to construct a new bridge over the Matanzas River. In 1927, construction finished on the Bridge of Lions between downtown St. Augustine and Anastasia Island. The 1,538-foot bridge, built in the Mediterranean Revival style, replaced a flat wooden bridge constructed in 1895 by the St. Augustine and South Beach Railway company. Developer David Paul Davis created the first significant residential development on Anastasia Island.[219] Davis received permission to dredge material from the bay, which he spread over the low-lying marsh ground on the north end of the island across the river from Castillo de San Marcos. He laid out an elaborate subdivision, which he named Davis Shores.[220] Two hurricanes that struck the area in 1926 and 1928 temporarily slowed development. Then, with the stock market crash in 1929, St. Augustine's development boom ended for a generation.

Fort Matanzas

After the War Department took over management of the forts in St. Augustine in 1821, they found Fort Matanzas in poor condition. Vegetation grew on the terreplein and on the roof of the watchtower. Large vertical cracks were present in the curtain wall, caused in part by a failure of the foundation. Many of the smaller, historic features, including the sentry box, stairways, doors, and windows had disappeared.[221]

After Lieutenant Henry W. Benham arrived in St. Augustine in 1839 to supervise the Corps of Engineers' work, he also visited Fort Matanzas and drew a plan of the fort (Figure 22). Benham reported that it was in worse condition than Castillo de San Marcos (Fort Marion) and that "several cracks ran the length of the tower, tides undermined a portion of the terreplein and most of the sentry box had disappeared."[222] Many years later, District Engineer Quincy A. Gillmore ordered Captain J. C. Post to inspect Fort Matanzas in 1880. "This was the first interest, although limited, shown by the War Department in the Matanzas tower in nearly four decades."[223] Post reported that the fort was in "a decaying condition."[224] Fort Matanzas also captured the imagination of tourists interested in the Spanish fortifications. A tourism guide to St. Augustine in the 1880s described Fort Matanzas: "The remains of the Spanish fort are seen on the right bank as the boat approaches Matanzas. Its ruins are among the most picturesque in Florida. In early morning and at sunset the fort and its surroundings present a scene of beauty well worth the journey to behold."[225]

216. Bearss, *Historic Structure Report,* 380.
217. Bearss, *Historic Structure Report*, 380-381.
218. Bearss, *Historic Structure Report*, 374.
219. David Nolan, The Houses of St. Augustine (Sarasota: Pineapple Press, Inc., 1995),76.
220. Robert Steinbach and Larry Paarlberg, "Bridge of Lions/ DOT Structure No. 780074," National Register of Historic Places Inventory/Nomination Form, August 13, 1982.
221. Denise Larimore, *Historic Resource Study: Fort Matanzas National* Monument, St. Augustine, Florida (Athens: University of Georgia, 1992), 4.
222. Krakow, *Administrative History*, 2.
223. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 92.
224. Ibid.
225. Ibid.

During this period, as St. Augustine became a popular tourist destination, a connection between St. Augustine and Anastasia Island improved accessibility to the island and raised awareness of Fort Matanzas. During the 1800s, Darius Allen acquired land on the southern end of Anastasia Island under the Homestead Act, which required he build a home and establish occupancy. In the late 1800s, as visitation to the island increased, Allen constructed a hotel on his property across the river from the historic fort. In 1901, he sold the property to George W. Corbett, who continued to operate a hotel on the site.

In 1885, Lieutenant George I. Scriven inspected the fort and reported that, considering its dilapidated condition, Fort Matanzas "is not worth restoring to its original state, even if such a restoration were advisable but, undoubtedly, as a relic of the Spanish occupancy of this country, it is worth a slight expense and care necessary to put it into a safe condition and to prevent it from crumbling away."[226] Lieutenant Scriven reported that the tides had undermined the foundation. Evidence of erosion showed on the building's walls. Scriven prepared a detailed description of the structure and the interior rooms. His team also measured and recorded the dimensions of the building. Overall, the building was "falling into decay; the walls, undermined by the actions of the tides "had cracked.[227] The erosion was worse on the east and south salient. There was vegetation growing on the terreplein and on top of the tower. The arch supporting the roof was missing stones. He concluded that the building required extensive repairs.[228]

In the 1880s and 1890s, as numerous funding bills appeared in the United States Congress to fund maintenance and repairs to Castillo de San Marcos, one bill, introduced in February 1890, included $5,000 "to provide for the preservation of Fort Matanzas."[229] These bills, however, were not passed. Another attempt to secure funds for Matanzas came in 1909, when J. E. Ingraham, an officer with the Florida East Coast Railway, alerted Senator Duncan Fletcher of Fort Matanzas' deteriorated condition. Again, the effort failed to secure money for the preservation of the fort.[230]

In 1911, the Florida Coastline and Transportation Company cut a canal across the marshland west of Rattlesnake Island and Fort Matanzas. Beginning in 1833, the company had built an intracoastal canal from St. Johns River to Miami. "The canal used as many of the extant natural waterways as possible, but it could not keep a uniform depth due to tidal flow. The man-made cut across marsh land represented the attempt by the canal company to keep proper depth at the Matanzas Inlet area."[231]

In July 1915, Fort Matanzas was listed on the War Department's "Bulletin 27" of historic properties. This document listed twelve forts and several historic memorials and monuments under its jurisdiction that should become national monuments.[232] Florida Senator Duncan Fletcher wrote the Secretary of War requesting assistance on behalf of Fort Matanzas. It was unclear who owned the land around Fort Matanzas. On April 3, 1916, a Presidential Executive Order added the islands in the Matanzas River to the Fort Matanzas Military Reservation. In 1916, an appropriation of $1,025 provided for some of the necessary repairs. The work accomplished at the time included the rebuilding and repairs of walls, construction of a walkway to a boat landing, and removal of trees and vegetation growing on the fort.[233] Workers with the Army Corps of Engineers repointed cracks in the walls with Portland cement, replaced missing stones, and rebuilt faces of walls. The Fortifications Act of 1917 provided funds for the preservation of "obsolete coastal defenses." Using these funds, the War Department made more significant repairs to the tower of Fort Matanzas.[234]

In the early 1920s, when Major General William Black recommended preservation of Castillo de San Marcos (Fort Marion), he also argued on behalf of Fort Matanzas because of "its unique type of construction, its close connection

226. Larimore, *Historic Resource Study*, 4.
227. Matanzas Stabilization Team, *Matanzas Historic Structure Report,* 101.
228. Ibid.
229. Digest of Legislative History Fort Matanzas, 2.
230. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 105.
231. Digest of Legislative History Fort Matanzas, 2.
232. Ronald Lee, "The Proclamation of National Monuments Under the Antiquities Act, 1906-1970," accessed on April 22, 2018, https://www.nps.gov/archeology/PUBS/lee/Lee_CH8.htm#159.
233. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 117.
234. Larimore, *Historic Resource Study*, 4.

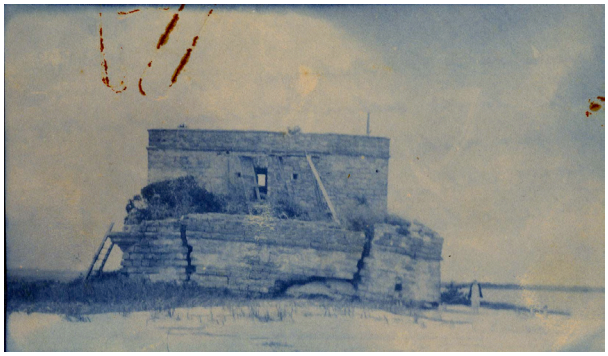


Figure 23: Fort Matanzas circa 1923 (CASA no. M5)

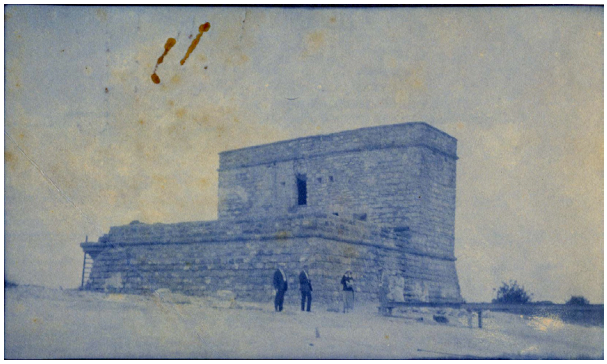


Figure 24: Fort Matanzas circa 1924 (CASA no. M68)

with the early history of Florida, and the public interest which it attracts."[235] In 1922, the Army Corps of Engineers inspected Fort Matanzas and prepared a proposal for stabilizing the fort. The proposal to put the fort "in a fair state of preservation and prevent undue deterioration" included the complete reconstruction of the south wall, the addition of drive pilings to secure the foundation, and the complete reconstruction of the foundation. The cost estimate for the work was $4,200. The War Department appropriated $2,375 for Fort Matanzas in 1924.[236] It approved additional appropriations in 1926. A photograph dated 1923 shows the building's condition prior to repair (Figure 23). Over the course of these years, workers dismantled walls and rebuilt the foundation, "employing as much of the historic fabric as feasible, and replacing in their original positions the facing stones."[237] They repaired the large vertical cracks in the main wall by placing tie rods through the roof and resurfaced the terreplein. They piled oyster shells around the foundation to protect the foundation walls from

235. Ibid 24.
236. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 120.
237. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 121.

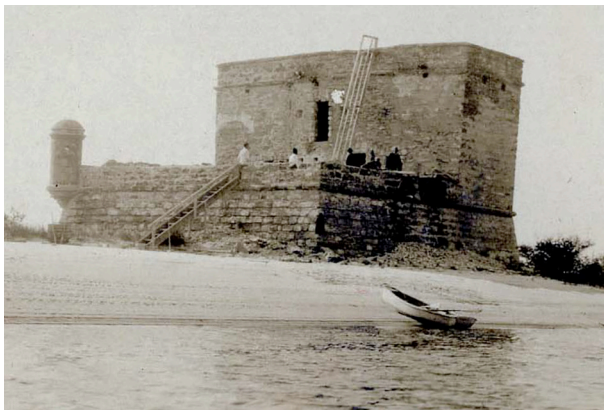


Figure 25: Fort Matanzas and beach area circa 1929 (CASA no. M378)

the waters of the river.[238] Three years after laying down the oyster shell apron, the Army Corps of Engineers added a layer of riprap consisting of curb stones that "had been cast of concrete during the real estate boom."[239] A photograph dated circa 1924 shows the building after the army's repairs. The foundations have been repaired, but the sentry box, which was reconstructed a few years later, is missing. The curb stones may be visible at the base of the building. The walkway to the dock almost meets the southeast corner of the building (Figure 24).

The army's attempts to stabilize Fort Matanzas continued in 1927. In November, the War Department constructed a seawall around the southeast corner of Fort Matanzas. During this period, the St. Augustine Historical Society was also overseeing the preservation work at Fort Matanzas. Access to the site improved when Ocean Shore Boulevard, with a wooden bridge over Matanzas Inlet, opened in 1927. In 1929, representatives of the St. Augustine Historical Society alerted the Army Corps of Engineers about a large crack developing in the area of the sentry box. The Army Corps of Engineers rebuilt the sentry box, finishing the project in December.[240] The seawall constructed in 1927 does not appear in a 1929 photograph of Fort Matanzas. The photograph does show the piles of oyster shells that the army put around the foundation of the fort a few years earlier (Figure 25).

238. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 126.
239. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 133.
240. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 139.

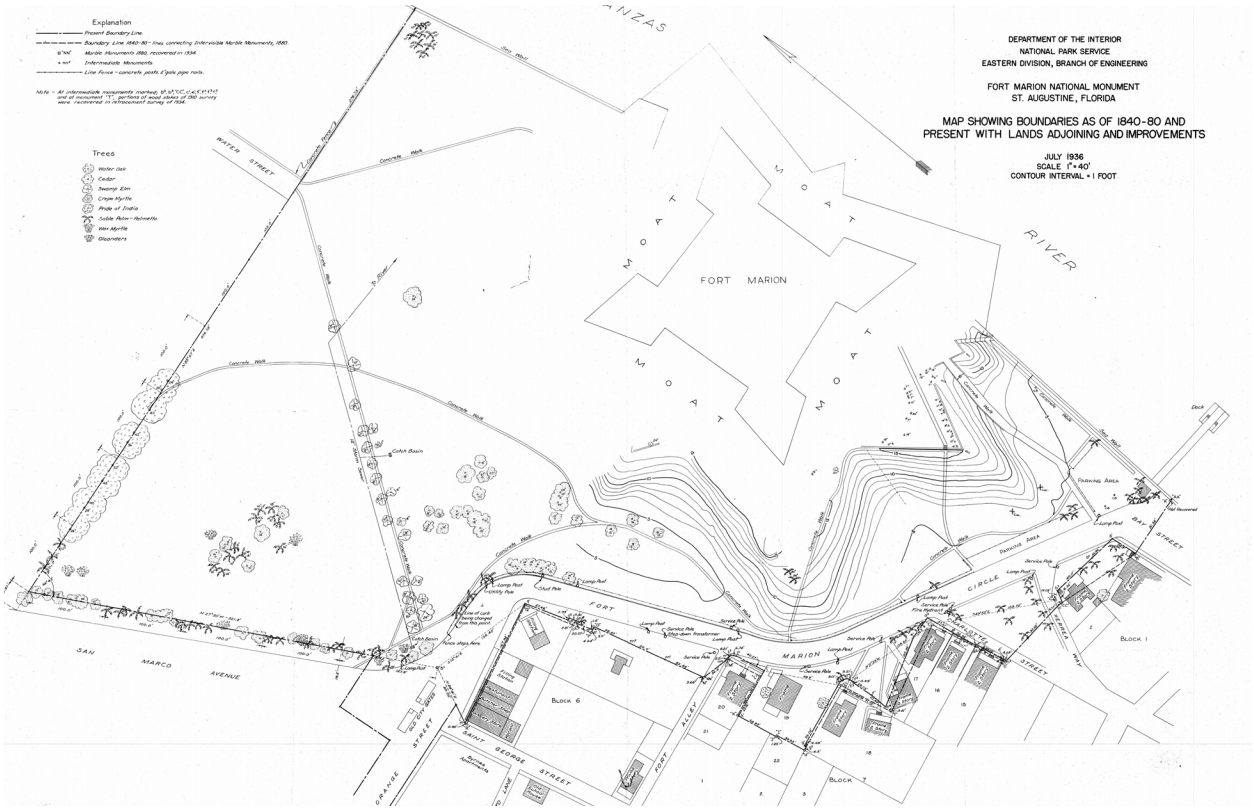


Figure 26: 1936 Castillo de San Marcos Boundary Map (CASA FOMA Archives)

The National Park Service Period (1933-Current)

Please refer to Illustrations 1.5 – 1.11 at the end of this chapter.

Castillo de San Marcos and St. Augustine

President Woodrow Wilson signed the Organic Act on August 25, 1916 creating the National Park Service (NPS), a new federal bureau within the Department of the Interior. On June 10, 1933, President Franklin D. Roosevelt issued Executive Order 6166 that reorganized the National Park Service and dramatically increased the number of sites under its jurisdiction. This was followed on July 28, 1933 by Executive Order 6228 that specified the sites, parks, monuments, and memorials to be placed under National Park Service administration. These two executive orders transferred to the NPS the "functions of administration" for these sites then being managed by other federal agencies, in particular the Forest Service and the War Department. In total, 56 national monuments and military sites, including Fort Matanzas and Castillo de San Marcos (Fort Marion), transferred to NPS administration on account of Executive Order 6228. On August 10, 1933, the War Department transferred one acre of land around Fort Matanzas to the NPS. The NPS chose to honor the War Department's agreement to permit the St. Augustine Historical Society to share management responsibilities at the two sites.[241]

The NPS soon transferred Herbert Kahler to St. Augustine to oversee New Deal-created Civil Works Administration (CWA) projects at the two sites. The NPS promoted Kahler to Acting Custodian of the national monuments in October 1934. He became Superintendent in August 1936 and served until May 1939. Early CWA projects at Castillo de San Marcos (Fort Marion) included the removal of soil from the moat, replacement of the drawbridge, and installation of floodlights to illuminate the fort at night.[242] Kahler also initiated a project to create a research team to develop interpretive programming. According to Bearss, Kahler found nine informational signs at the fort, all "put up by local groups," which he wanted to replace with NPS signs.[243]

241. Krakow, *Administrative History*, 40.
242. Bearss, *Historic Structure Report,* 420-421.
243. Bearss, *Historic Structure Report*, 422.



Figure 27: Entrance walkways circa 1939 (CASA no. I37)

Projects funded under the New Deal transferred from CWA to the Public Works Administration (PWA) in 1934. The Historic American Building Survey sent a team to document Fort Matanzas in February 1934 and Castillo de San Marcos (Fort Marion) in April 1934. PWA also funded archaeological studies around Castillo de San Marcos (Fort Marion). This was part of a comprehensive program to revive St. Augustine's economy based on its Spanish heritage as the city faced bankruptcy. Superintendent Kahler promoted local historic preservation efforts in St. Augustine by facilitating a federal-local partnership involving NPS staff and the Carnegie Institution.[244] On October 26, 1936, members of "the newly-constituted National Committee for the Preservation and Restoration of Historic St. Augustine" held their first meeting in Washington, D.C.[245] The St. Augustine Historical Society and the City of St. Augustine contributed funds to the effort, as did the Carnegie Institution and private donors. The initiative resulted in research on historic resources and surveys of historic structures, including documentation by the Historic American Buildings Survey (HABS).

The cooperative management agreement between the NPS and the St. Augustine Historical Society expired in June 1934, but the NPS extended the agreement another year. In July 1935, the NPS began its exclusive administration of the national monuments but continued to have a working relationship with St. Augustine Historical Society for several decades.

A July 1936 map showing the boundaries of the Castillo de San Marcos (Fort Marion) National Monument records the locations of walkways, parking areas, and plantings (Figure 26). Two parking areas, discussed earlier, appear on the map, both in the southeast corner of the site, near where Fort Marion Circle (present-day South Castillo Drive) turns south along the edge of Matanzas Bay. It becomes Bay Street (present-day Avenida Menendez) at this point. The map also depicts a fence along the south and west boundary of the site, which was probably installed to encourage visitors to use the concrete walkways. The walkway system at the entrance area, not shown in its entirety on the 1936 map, is visible in a 1939 photograph (Figure 27). By this time, three concrete walkways converge at the bridge to the ravelin. One walkway crosses the covered way, leading to a set of stairs going over the covered way wall. A second concrete walkway parallels the outside of the covered way wall, ending at a set of steps leading into the covered way. The main walkway, shown to be ten-feet wide on the 1936 map, passes through the opening in the covered way wall. The fourth walkway connects to the walkway along the top of the seawall.

In 1937, Verne Chatelain, the first chief historian for the NPS Branch of History and member of the National Committee for the Preservation and Restoration of Historic St. Augustine, submitted a report outlining a preservation strategy for St. Augustine.[246] Soon after, archeologists investigated various historic resources associated with Castillo de San Marcos (Fort Marion). In 1937, John C. Winter supervised an archaeological dig for the Carnegie Foundation of Washington around the Cubo Line and the City Gate. Beginning at the City Gate, Winter moved eastward toward Castillo de San Marcos (Fort Marion). In addition to recording the Cubo Line, Winter also determined the "stratigraphy of the glacis slope."[247] Reconstruction of the Cubo Line had actually begun in 1933, when "William R. Kenan, Jr., Florida East Coast Railway and Hotel Ponce de Leon chief executive and brother-in-law of Henry M. Flagler, invested in reconstruction of the defensive line."[248] In 1938, the NPS proposed spreading new dirt over the glacis and reseeding with grass to stop erosion of the slopes. That year, the NPS also requested permission to remove fill dirt from the moat. The NPS sent F. F. Gillen, Chief of Construction Section for the Branch of

244. Keys, "Preserving the Legacy," 83.
245. Keys, "Preserving the Legacy," 85-86.
246. Keys, "Preserving the Legacy," 87.
247. Bearss, *Historic Structure Report*, 429.
248. Keys, "Preserving the Legacy," 90.



Figure 28: Parking lot circa 1939 (CASA no. I002)



Figure 29: North green in January 1942 (CASA no. I10)

Engineering of the Eastern Division, to Castillo de San Marcos to evaluate the project. Gillen recommended excavating soil from the moat and filling it with water. The plan called for the installation of tidal gates at the water battery to maintain four feet of water in the moat.[249] When NPS workers dug two feet of mud from the bottom of the moat, they spread the mud over the glacis slope. The NPS finally installed the tidal gates to feed water into the moat in 1949.

In the 1940s, the NPS also explored the recreation of the type of drawbridge that the Spanish would have had at Castillo de San Marcos in the colonial period. Architect Thor Borresen led the team investigating the drawbridge. Borresen left the NPS before the project was completed. After the NPS filled the moat with water, it also replaced the piers of the bridge between the ravelin and the fort. The project to rebuild the bridges happened in the 1950s.

The NPS retained the parking lots installed in the 1920s for several years, but expressed concerns about cars having to back out into traffic. The parking area south of the fort is visible in a 1939 photograph (Figure 28). In January 1938, the WPA proposed construction of a new parking lot in the fort green along the north side of Fort Marion Circle (South Castillo Drive). The NPS eventually constructed the lot in 1940.[250] In 1938, the NPS removed the storm-warning radio tower from the water battery that the United States Weather Bureau installed decades previously. The NPS moved a flagpole, erected in 1926, to a new location on the south curtain. Also in 1938, the NPS initiated a landscape maintenance plan for the national monument that included pruning and treatment of diseased trees around the fort.[251]

Edward Freeland became the superintendent of the national monuments in May 1939. He served until December 1941, when C. Raymond Vinten replaced him. Superintendent Vinten served in the position until 1961. Fort Marion National Monument was renamed Castillo de San Marcos National Monument by an Act of Congress on June 5, 1942. During World War II, different branches of the United States military utilized Castillo de San Marcos for training. The U.S. Coast Guard held infantry drills on the grounds in 1942 and 1943.[252] A photograph from January 1942 shows army trucks and army tents on the north fort green next to the seawall (Figure 29). St. Augustine was also a popular destination for troops on leave from the Jacksonville Naval Air Station and the Army's Camp Blanding. The large numbers of soldiers in St. Augustine led the NPS to construct a shelter on the edge of the fort green where soldiers could wait while hitching for a ride back to their bases.

The NPS submitted lists for ongoing maintenance of the two forts and surrounding grounds during WWII. Most of the major projects were delayed because of the war. In 1946 and 1947, the NPS received additional funding to address the backlog of work. In 1947, the NPS repointed the masonry at the City Gate and along the causeway. NPS staff, including Albert Manucy, the historical technician at the national monument, reported that masonry joints had opened and stones were missing on the City Gate walls and towers. The brick dome of the sentry box, according to NPS records, had a "sizable crack." The NPS completed repair of the City Gate by December 1947.[253] The next year,

249. Ibid.
250. Tingley, "Report on the history of the parking lot."
251. Bearss, *Historic Structure Report*, 430.
252. Bearss, *Historic Structure Report*, 439.
253. Bearss, *Historic Structure Report,* 444.

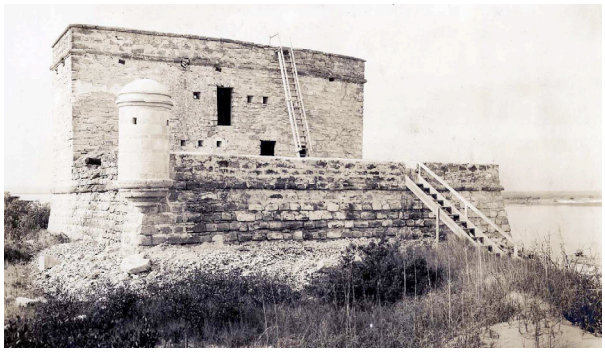


Figure 30: Fort Matanzas circa 1933 (CASA no. M246)



Figure 31: Fort Matanzas circa 1934 (CASA no. M809)

the NPS began repairing the foundation walls of Castillo de San Marcos. In 1952, the NPS repointed the masonry walls of the covered way.

In 1950, Ripley's Odditorium, now known as Ripley's Believe It or Not, opened its doors in the former "Castle Warden," on the parcel adjacent to the national monument. Warden had been a partner in the Standard Oil Company.[254]

Fort Matanzas

Officials with the NPS visited Fort Matanzas in the fall of 1933. A photograph from 1933 of Fort Matanzas shows the War Department sentry box and the oyster shell apron around the foundation of the fort (Figure 30). William J. Harris, who served as the curator of Castillo de San Marcos (Fort Marion), became the "Custodian of Fort Matanzas and Fort Marion."[255]

The Historic American Building Survey sent a team to document Fort Matanzas in February 1934. The HABS "team found the oyster shells at the southeast corner of the fort were being washed away by the river currents."[256] The conditions of



Figure 32: 1934 photograph prior to development of Visitor Center (CASA no. M643)

the area around the fort and the washed-out oyster shell apron appear in a 1934 photograph of the fort. The banks of the river appear to be several yards from the building (Figure 31). Erosion of the banks of the river concerned NPS officials. The Army Corps of Engineers constructed a dike closing a gap between Rattlesnake Island and an adjacent marsh as part of its rerouting the Intracoastal Waterway. The project immediately exacerbated erosion around the fort area. In September, the river was within two feet of the southwest corner and was cutting eighteen inches under the building.[257]

In August 1935, Herbert Kahler became the superintendent of both Fort Matanzas and Castillo de San Marcos (Fort Marion). In 1935, Kahler helped negotiate "the acquisition by gift from Ada D. Corbett of 17.34 acres near the south end of Anastasia Island" on the east bank of the Matanzas River across from the historic fort.[258] This property provided an opportunity for the NPS to develop park facilities and over the next few years, the NPS implemented several significant construction projects. The property still had an old water tower on site as well as several other frame buildings. A photograph from December 1934 shows the character of the site prior to the NPS developing infrastructure and constructing its visitor center facilities (Figure 32).

Among the projects approved by the NPS in 1935 were construction of docks, the stabilization of the area around the historic fort, and construction of a new visitor center.[259] In September 1935, the PWA awarded a contract to construct two

254. Keys, "Preserving the Legacy,"91-92.
255. Bearss, *Historic Structure Report,* 420.
256. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 151.
257. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 152.
258. Krakow, *Administrative History*, 47.
259. Ibid.



Figure 33: Fort Matanzas dock on Rattlesnake Island circa 1935 (CASA no. M1051)

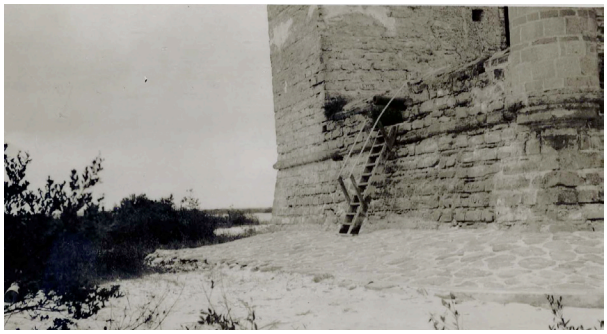


Figure 34: Fort Matanzas bulkhead circa 1936 (CASA no. M815)



Figure 35: Visitor Center under construction circa 1935 (CASA no. M836)



Figure 36: Fort Matanzas entrance sign circa 1950 (CASA no. I183)

docks on the east and west sides of the Matanzas River (Figure 33). John LaBey, an NPS architect, proposed construction of a steel bulkhead around Fort Matanzas. On the opposite side of the river, the NPS considered constructing jetties to help slow the erosion of the banks of Anastasia Island. The NPS eventually approved and awarded the Fort Matanzas bulkhead project in the summer of 1936. "The bulkhead was designed to surround the fort on the south, east and a small portion of the north side. The reason why the bulkhead was not to extend completely around the fort was due to lack of available funds."[260] The bulkhead was twelve feet from the fort and was backfilled with large stones. On the side of the bulkhead facing the river, workers added a slope of riprap for additional protection. A photograph dated 1936 shows the bulkhead after completion. The bulkhead appears to include a mortared apron of stones that extends several feet away from the foundation of the building (Figure 34).

In 1935, the NPS approved plans for constructing a visitor center on the newly acquired tract across the river from Fort Matanzas. The plans, drafted by staff with the NPS Eastern Division, Branch of Plans and Design, were directed and approved by Charles Peterson, Deputy Chief Architect, and Oliver Taylor, Deputy Chief Engineer.

The NPS Eastern Division, Branch of Plans and Design drafted the plans for the buildings at the new visitor center as well as for the landscape. Landscape features include exterior stairs, retaining walls, coquina stone culverts, coquina curbs, parking areas, and roads. PWA provided funds for the project. The site featured grassy dunes and mature live oak trees that the NPS incorporated into the site design, preserving natural site features where feasible. On the west side of Ocean Shore Boulevard (today's SR A1A) improvements included a sand-asphalt access road, a Headquarters and Visitor Center building, a parking lot, and a boat dock. East of Ocean Shore Boulevard, a sand-asphalt access road extended toward the Atlantic Ocean beachfront. This road terminated at a timber ramp providing vehicular access to the beach. A small parking area was sited just west of the timber ramp, on the north side of the access road. In August 1935, the NPS contracted O.P. Woodcock Construction Company of Jacksonville to construct the buildings. The project was completed by January 1936. A photograph from 1935 shows the

260. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 157.

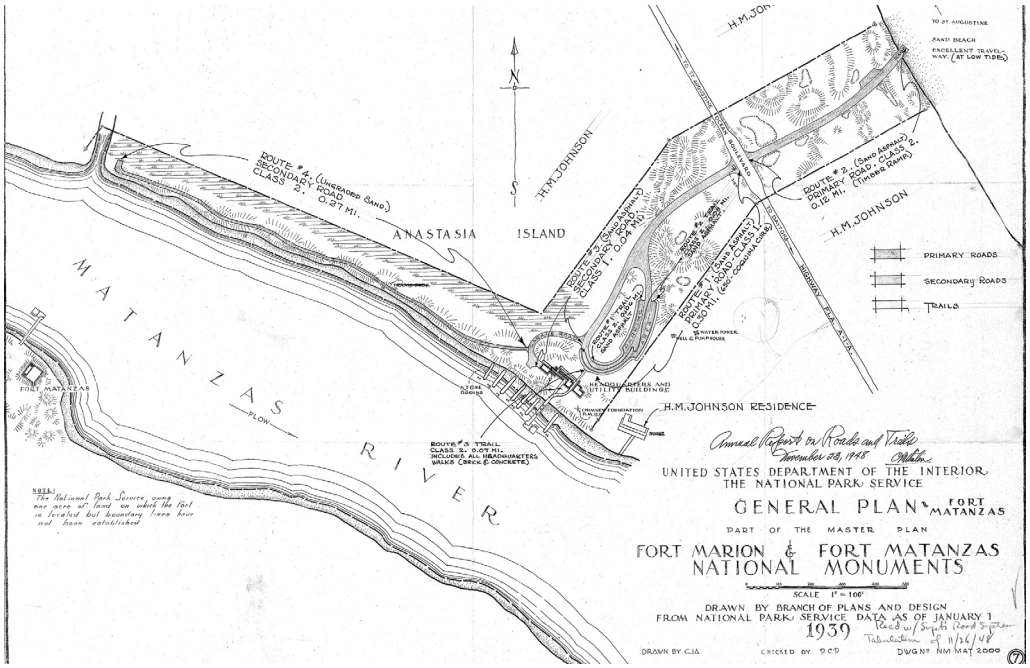


Figure 37: General Plan Fort Matanzas National Monument (NPS Etic FOMA_347_2000_Z1[id177798])

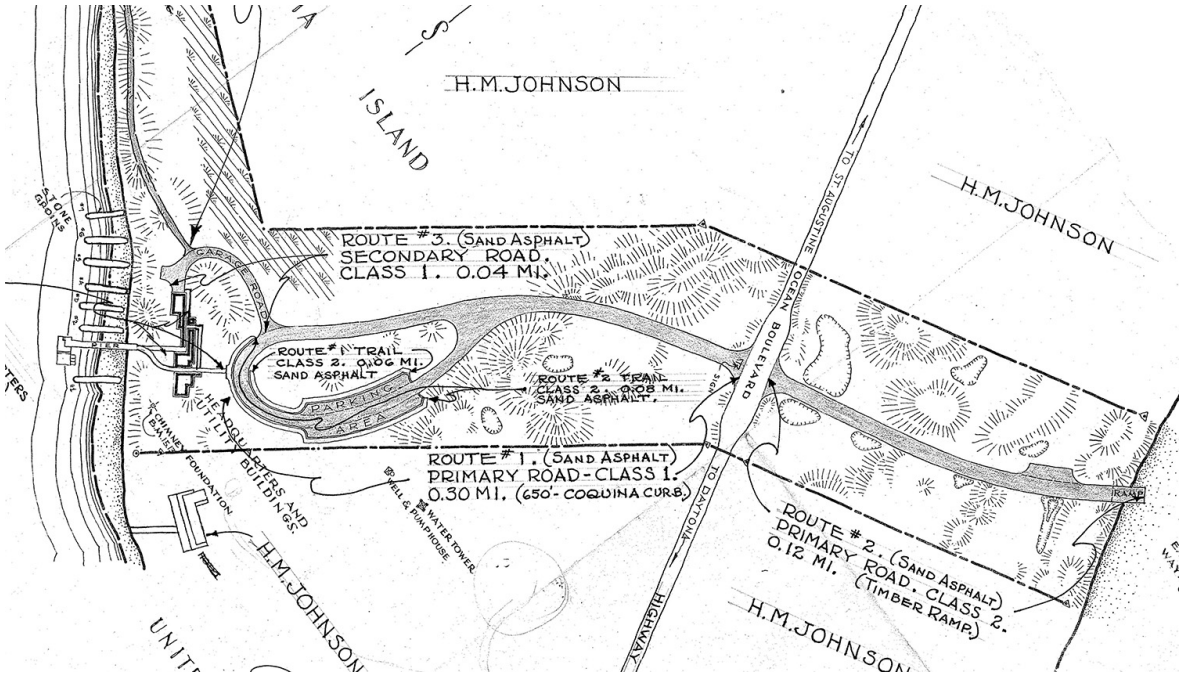


Figure 38: Detail of General Plan Fort Matanzas National Monument (NPS Etic FOMA_347_2000_Z1[id177798])

building under construction (Figure 35). The NPS contracted M.G. Caddell of Palatka to construct the access road, walkways, the entrance sign, and retaining walls around the buildings. Landscape construction began in January 1937 and finished that July (Figure 36).

The complex was officially opened to the public on October 12, 1937, Columbus Day. The two-story Headquarters and Visitor Center building (called the Fort Matanzas Visitor Center as of 2019) had the main visitor contact station on the lower story; a ranger residence occupied the second story. The complex also had a detached garage/utility building (called the Law Enforcement Ranger Office as of 2019). An NPS General Plan for Fort Matanzas, dated 1939, shows the layout of different features, including the Visitor Center, parking lot, sidewalks, and walkways. The plan also shows sand dunes preserved during construction (Figure 37 and Figure 38).

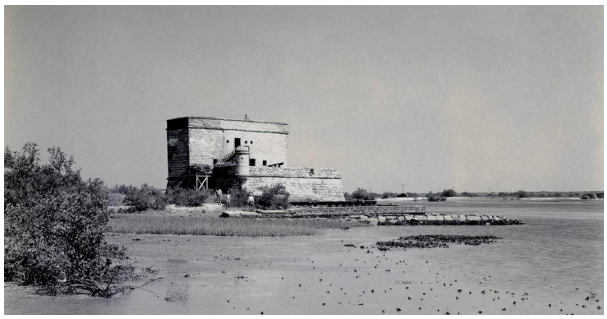


Figure 39: Fort Matanzas and seawalls circa 1947 (CASA no. M127)

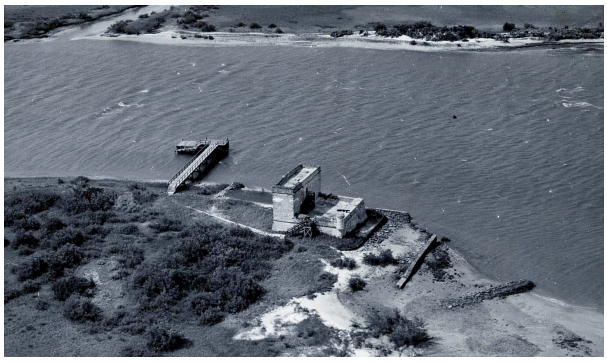


Figure 40: Fort Matanzas and damaged seawalls circa 1947 (CASA no. M411)

In 1940, the NPS made extensive repairs to the historic Fort Matanzas structure and again dealt with the problem of the eroding riverbanks and water threatening the fort. The Emergency Recovery Administration (ERA) completed a project for the NPS in 1940. It cleaned the steel sheet piling added a few years earlier and then constructed a new coquina seawall and two groins. The new coquina seawall was outside the older seawall and ERA workers filled the gap with sand dug from the island. ERA workers began taking sand from a site "seventy-five feet from the fort. Borresen believed that this site had been a lunette with ditch and glacis."[261] The NPS stopped the digging and moved the borrow site to another location on the island. Another layer of riprap was added to the outside of the new seawall.[262] The multiple seawalls appear in a 1947 photograph of the fort. The older sheet piling is visible behind the new masonry seawall (Figure 39).

A hurricane destroyed sections of the Fort Matanzas seawall and damaged the southeastern corner of the fort in October 1944. The NPS did

261. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 165.
262. Ibid.



Figure 41: Corbet Hotel circa 1914-1915 (CASA no. M1077)

not repair the fort wall until September 1945.[263] An aerial photograph dated 1947 shows the unrepaired seawall (Figure 40).

Also in 1944, the Trustees of the Internal Improvement Fund deeded 120 acres of land, including the tidewater adjacent to Rattlesnake Island, to the Fort Matanzas National Monument. This land acquisition and an additional 89.42 acres added to the site by Presidential Proclamation 2773 brought the Fort Matanzas National Monument close to its present size.[264] In 1946, Superintendent Vinten began negotiations with Howard M. and Tressa Johnson about donating property they owned adjacent to the national monument on the southern tip of Anastasia Island. The terms of the donation would not be finalized until 1962.[265] The Johnsons owned property on either side of the national monument and lived in the historic building that had once been the Corbett Hotel (Figure 41).

In 1948 and 1949, the NPS contracted to rebuild the coquina seawall protecting Fort Matanzas. Between 1948 and 1952, the NPS completed several stabilization projects at the fort, which included repairing the southern corner and repointing the tower and west wall.[266] Based on photographs of the Fort Matanzas visitor center area from 1950, the NPS also repaved the parking lot and replaced original crushed coquina walkways with asphalt sidewalks and traditional concrete walkways (Figure 42). The NPS expressed dissatisfaction with how the original parking lot

263. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 169.
264. Krakow, *Administrative History*, 53.
265. Larimore, *Historic Resource Study,* 5; and Jere L. Krakow, *Administrative History*, 52-53
266. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 171.



Figure 42: Fort Matanzas Visitor Center circa 1950 (CASA no M864)



Figure 43: Fort Matanzas Visitor Center circa 1950 (CASA no M864)



Figure 44: Fort Matanzas Visitor Center entrance walkway circa 1950 (CASA no. M210)

was designed using sand asphalt as a base for the roads (Figure 43 and Figure 44).

Residential development on Anastasia Island resumed after World War II. Davis Shores, the subdivision begun but never finished in the 1920s, began selling lots again. St. Johns County ran water and sewer service to the island. In 1955, the county opened the R. B. Hunt Elementary school to serve the growing number of residents on the island. Residential development filled the ocean side of the island first and then crept back across the island towards Matanzas Bay.

Mission 66: Castillo de San Marcos

In 1956, Conrad Wirth, Director of the National Park Service, launched a plan to enhance national parks around the country, improving interpretive and visitor services as well as making major upgrades to park infrastructure. Wirth's initiative became known as Mission 66, because the ten-year program was designed to be completed by 1966, the 50th anniversary of the National Park Service. Mission 66 provided $1 million for physical improvements at Castillo de San Marcos, "with an accelerated time frame to coincide with St. Augustine's 400th anniversary."[267]

The Mission 66 master plan for Castillo de San Marcos National Monument focused on improving visitor services and the preservation of structures and the landscape. The plan acknowledged that the national monument "will receive an increasing number of visitors, [but] there is no reason to make major changes to the present pattern of use."[268] It does state that the NPS "must constantly seek means and methods of improving services to the visitor [and] there must be an awareness that overdevelopment and intrusions upon the historic scene must be avoided."[269] The Mission 66 master plan stated it was necessary to extend the park boundaries in order to "permit restoration of the glacis of the fort, to preserve the historic setting of the Castillo and the City Gate, to permit moving Fort Marion Circle (South Castillo Drive), and to provide off-street parking near the entrance to the Castillo."[270] According to the Administrative History of the national monument, Congress enacted legislation that authorized the acquisition of 1.185 acres for relocating Fort Marion Circle (South Castillo Drive).[271] During the decade, the NPS completed several projects at Castillo de San Marcos to reestablish a more historically appropriate landscape. It removed overhead telephone cables from the perimeter of the park and removed curbs from the City Gate area. Several of the projects repaired historic landscape features,

267. Keys, "Preserving the Legacy,"103.
268. National Park Service, Master Plan Narrative for Castillo de San Marcos National Monument Mission 66 Edition (Washington D.C.: National Park Service, 1961), 6.
269. Ibid.
270. NPS, Mission 66 Master Plan, 8.
271. Jere L. Krakow, *Administrative History*, 56.



Figure 45: Castillo de San Marcos from top of Bennett Hotel circa 1958 (CASA no. I400)

including restoration of Cubo Line. In 1958-1959, under the supervision of historian Albert Manucy, the NPS reconstructed the drawbridge at Castillo de San Marcos.[272]

In the 1950s, the road leading into St. Augustine, San Marcos Avenue, changed names at the City Gate, becoming Fort Marion Circle. In 1951, the City of St. Augustine, the Florida Department of Transportation, and the NPS began making plans to widen Fort Marion Circle.[273] This project was included in the goals for Mission 66 and planning continued into the late 1950s and into the 1960s. Land for widening the road came from both the NPS and adjacent landowners. After the realignment project, Fort Marion Circle was renamed Castillo Drive. Today, the entire stretch of road along the national monument is South Castillo Drive/SR A1A/US Business 1. Also in the late 1950s, the city and Florida Department of Transportation widened Bay Street (presently Avenida Menendez) into four lanes with additional parking areas. This project involved the construction of a new seawall doubling the width of Bay Street (Avenida Menendez). This project required the demolition of the Hotel Bennett and exposed the foundations of the seventeenth-century "King's Smithy" which was briefly interpreted by the NPS.[274] In January 1962, the NPS began construction on a temporary parking area south of Fort Marion Circle (South Castillo Drive) on the site of the former Hotel Bennett. According to Bearss, during construction crews encountered an artesian well. The project was completed in February, but the NPS had to remove this parking area a few years later during the road alignment project.[275]

In 1957, during the development of the road realignment plan, the NPS approved a landscape plan for the area around the realigned road as part of a larger Master Plan. The plan called for new walkways and the construction of a new 122-car parking area south of the fort and accessed off Fort Marion Circle (South Castillo Drive.) This new lot, constructed in 1965, replaced the parking area that the NPS developed in this area in the 1940s. The 1940s parking lot and existing walkway system is visible in a photograph from 1958 (Figure 45). The photograph also shows that the NPS removed several walkways from the previous decades, including one cutting across the south glacis towards the parking lot. The 1957 landscape plan also proposed a new walkway behind the Cubo Line (then proposed for reconstruction). It does not appear that the NPS ever constructed this walkway.

According to Bearss, "park staff began making tentative plans in 1963 to improve the physical setting of the city gate and re-establish its historic relationship to the fort."[276] Work on the City Gate began in November 1964.[277] The NPS widened the moat in front of the City Gate and restored the masonry bridge. The NPS installed a path between the pillars and paved the sidewalk with crushed seashells. The NPS also reconstructed the palm log revetment extending out from the City Gate walls. The NPS also added a "message repeater" to assist with interpretation of the area. The NPS completed this work in 1965. [278]

In 1964, the NPS reconstructed a section of the Cubo Line inside of the national monument's boundary, between the covered way and South Castillo Drive. The HABS report includes an aerial photograph taken during the reconstruction of the Cubo Line that shows building material scattered around the area north of the reconstructed moat

272. Sastre, *Cultural Landscape Report*, 129.
273. Bearss, *Historic Structure Report,* 448.
274. Tingley, "Report on the history of the parking lot."
275. Bearss, *Historic Structure Report*, 457.
276. Bearss, *Historic Structure Report*, 458.
277. Ibid.
278. Ibid.

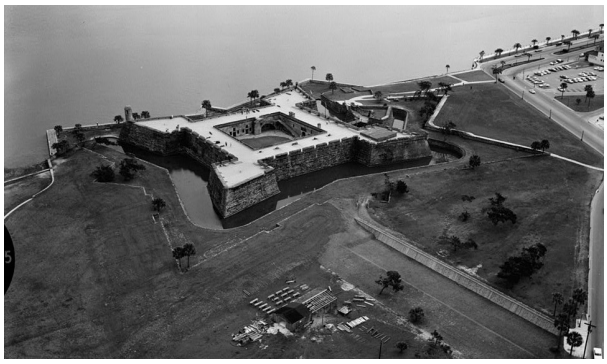


Figure 46: Castillo de San Marcos, HABS documentation, ca. 1964. (Library of Congress)

(Figure 46). Photographs also show a temporary building on the fort green where the NPS fabricated the concrete palm logs to use for the reconstruction.

The NPS began installation of an irrigation system and new storm drain system across the fort grounds in 1964.[279] That September, Hurricane Dora struck St. Augustine. A photograph from 1964 shows the extent of the damage. Standing water appears on the fort green and several trees are broken or uprooted. The photograph also shows the trenches for the irrigation system, the Cubo Wall, still under construction, and the construction shed built for that project (Figure 47).

The NPS constructed an administration and utility building (called the Park Headquarters Building and Maintenance Facility as of 2019) on the northwestern edge of the national monument site in 1964. Staff occupied the building in January 1965. The administrative building was named for Albert Manucy, NPS staff member, historian, and native of St. Augustine.[280] When originally constructed, the building had three linear masses arranged in the shape of a "Z" in plan. The wing closest to South Castillo Drive was oriented south to north. A second wing, slightly longer than the first, extended to the east. The final wing, the largest of the three, extended north towards the national monument's boundary. A walkway entered the complex from the south, connecting to building at the main entrance near the junction of the two first wings described above. A screen wall aligned with the south elevation of the first wing enclosed a shell concrete entrance courtyard with benches and plantings that included crepe myrtle, gardenia, and ligustrum. A second walkway

279. Bearss, *Historic Structure Report,* 460.
280. Keys, "Preserving the Legacy," 104.



Figure 47: Hurricane Dora Damage (CASA no. CG518)



Figure 48: CASA aerial circa mid-1960s (CASA FOMA Archives)

traveled beneath the overhanging roof of the middle wing to create a loggia along the south façade of this wing. A freestanding wall extended east from the building to create another courtyard that the NPS possibly used as a service yard. Much of the surrounding area was covered in turf, but hedges along the loggia and enclosing the paved courtyard in front of the building included tea olive and dwarf yaupon holly.

As the South Castillo Drive road realignment project neared completion, the NPS added new concrete walkways and curbs around the parking lot and between the parking lot and the entrance into the fort. It also planted trees and palms north of the fort to create a vegetative screen between the national monument and the adjacent residential neighborhood.[281] A mid-1960s aerial shows the new complex and associated plantings (Figure 48). The photograph shows a newly repaved walkway from the parking lot and a large paved area at the entrance, where the bridge from the ravelin

281. Bearss, *Historic Structure Report,* 462.

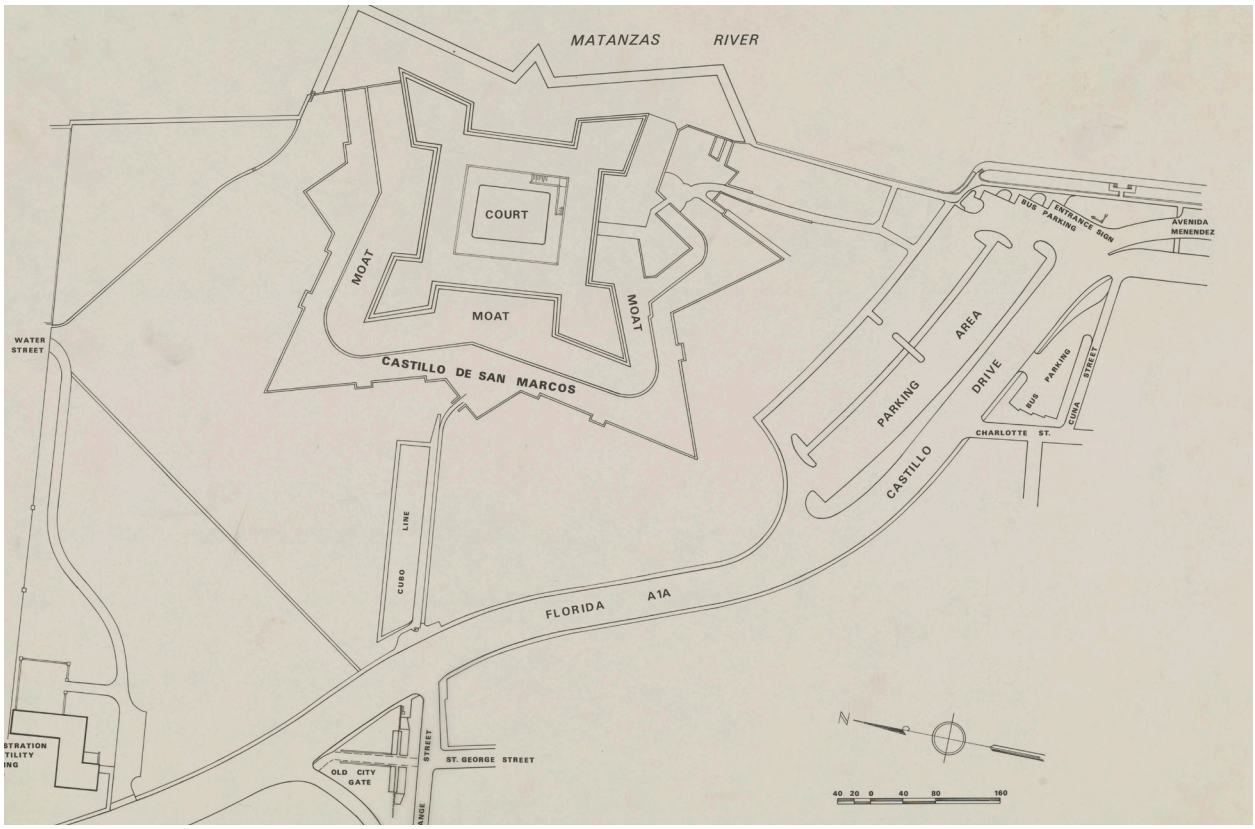


Figure 49: Existing conditions map 1968 (CASA FOMA Archives)

meets the covered way. It also shows the seating area along the south salient of the glacis seen in photographs from the 1950s. This seating area appears to have been sited to take advantage of several large trees growing in this area.

Superintendent Roberts prepared a list in 1965 of projects completed as part of Mission 66 program. It included eighteen projects. Landscape-related projects included restoration of the southwest glacis, construction of the utility and administration buildings (Park Headquarters), new walks and landscaping on the fort green, planting trees and palms, new entrance and access walkways, relocation of SR A1A and construction of new parking lot, redevelopment of the City Gate area, reconstruction of the Cubo Line, and installation of a new irrigation well, irrigation system, and drainage system in the fort green. [282] The NPS prepared an existing conditions map of the national monument in 1968. It shows the extent of the administration and utility building complex. A road leads east out of the parking lot to join with Water Street. This map shows a walkway behind the Cubo Line. This walkway does not exist today and, even though it appears on at least two NPS maps, there are no photographs showing its construction (Figure 49).

Mission 66: Fort Matanzas

During the Mission 66 period, as the NPS made various improvements to visitor amenities at Fort Matanzas. In 1958, the NPS constructed a new sign at the entrance into Fort Matanzas National Monument in 1958 (Figure 50). In July 1961, Bertrum Roberts became the superintendent upon the retirement of Superintendent Vinten. Superintendent Roberts oversaw several projects at Fort Matanzas and Castillo de San Marcos in the early 1960s. In 1962-1964, the NPS accepted the donation of 78 acres of land by Howard M. and Dr. Tressa C. Johnson to the Fort Matanzas National Monument. From the time of the construction of the Fort Matanzas Visitor Center, Johnson owned the land on either side of federal property. The NPS property prior to the donation was an inverted "L" shaped parcel that extended all the way across Anastasia Island from the Atlantic Ocean, on the east, to the Matanzas River, on the west. The base of the "L" extended northwest along the banks of the Matanzas River reaching a point directly across from the historic fort (See

282. B.C. Roberts to Thad Belm, May 17, 1965 (located in CASA FOMA Archives).



Figure 50: Fort Matanzas entrance sign circa 1959 (CASA no. M267)

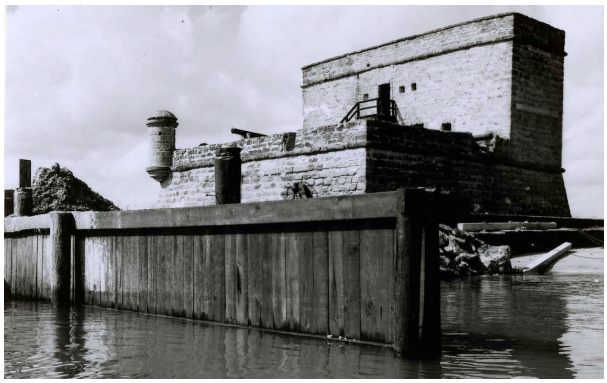


Figure 51: Fort Matanzas shoreline stabilization project in 1966 (CASA no. 425)



Figure 52: Undated aerial (CASA no. M1152g)

Figure 38). The Johnson's family home was next to the Fort Matanzas Visitor Center, almost directly across the south property line. According to the Johnson's wishes, the donation took place over three years and they received a life tenancy on their property (Mr. Johnson died in 1971 and Mrs. Johnson died in 1974). The addition of these acres, valued in excess of $300,000, brought the national monument acreage to 298.51.[283] In 1963, the NPS rehabilitated the dock at Fort Matanzas National Monument.

Hurricane Dora damaged the seawall at Fort Matanzas in 1964. In 1965, the NPS resumed their ongoing effort to stabilize the shoreline.

283. Krakow, *Administrative History*, 54.

The NPS also completed a shoreline stabilization and sand dune restoration project on Anastasia Island. On Rattlesnake Island, it also added a new timber revetment around the fort, which workers backfilled with soil and covered with sod (Figure 51). The next year the NPS repaired the old steel bulkhead and coquina seawall (Figure 52).

Post Mission 66: Castillo de San Marcos and St. Augustine

Castillo de San Marcos was administratively listed on the National Register of Historic Places on October 15, 1966 with the passage of the National Historic Preservation Act. Luis R. Arana, an NPS historian, prepared additional documentation to the nomination on a form dated June 14, 1973. The purpose of the additional documentation form was to add the water battery and the City Gate to the National Register listing.[284]

Theodore Davenport replaced Roberts as superintendent in early 1966. He served in the position until 1971. George F. Schesventer became superintendent in March 1971. During his nine-year tenure, the national monument prepared several planning documents and made changes to park operations. In 1971, the NPS prepared another master plan for the national monument. Among its goals was to "preserve and maintain the Castillo and its associated historic structures as closely as possible to their period of greatest military strength (1763)."[285] The 1971 master plan mentions the visual intrusion created by the parking lot and South Castillo Drive. In 1976-1977, the NPS constructed a cashier's booth outside the entrance into Castillo de San Marcos, near the bridge to the ravelin. This structure replaced the "Cash Booth" built in the mid-1960s. In 1977, the NPS Southeast Regional horticulturalist Lynch H. D. Boykin Jr. recommended removal of all trees and shrubs growing near the fort.[286] In May of 1978, the NPS addressed the erosion of fill and failure of coquina walls at the ravelin. The NPS eventually filled the ravelin with additional soil, built a wooden deck for pedestrians, and installed sod on the exposed sections. During

284. Luis R. Arana, "Castillo de San Marcos," National Register of Historic Places Inventory/Nomination Form, National Park Service, St. Augustine, June 14, 1973, Revised June 1976.
285. National Park Service, "A Master Plan for Castillo de San Marcos National Monument" (Atlanta, GA: National Park Service Southeast Region, 1971), 10.
286. Bearss, *Historic Structure Report,* 465-466.

the Schesventer administration, the national monument initiated historic structure reports on Castillo de San Marcos. This resulted in several preservation projects, including repair to scarp walls and the terreplein. It was also during this period that ferry service to Fort Matanzas began.

Martha Aikens served as superintendent between 1980 and 1983. Barbara Griffin then served between 1984 and 1987. Michael Tennent served as acting superintendent for a brief time prior to both of these superintendents. In 1985, the NPS repaved the parking lot in the south fort green at Castillo de San Marcos National Monument.[287] Wallace Hibbard became superintendent in 1987. In 1987, the NPS constructed a larger fee booth on the same site of the previous one. In 1991, the NPS added a maintenance shop to the Park Headquarters Building and Maintenance Facility complex. A few years later, in 1994, the NPS added a library and archives wing onto the existing utility and administration buildings. This wing was aligned with South Castillo Drive, extending north from the existing building and creating an interior courtyard in the middle of the complex. The addition was constructed by NPS staff. It sits on a slab foundation and features CMU walls covered in stucco like the rest of the complex.

In 1993, the City of St. Augustine assisted the NPS with landscape improvements at South Castillo Drive. As part of the project, the NPS planted 318 wax myrtle shrubs to screen the parking lot from the fort. The NPS and the city also installed parking meters at the parking lot to encourage short-term parking. In 1994, local merchants raised concerns about the parking lot and pedestrian safety. They petitioned the NPS to keep the lot open after the fort had closed so visitors to St. Augustine could use the lot. They also asked the NPS to install cross walks across San Marco Avenue to make it safer and easier for tourists to walk between the town and the national monument.

In 1996, the NPS drained the moat of water, closed the moat floodgates, installed a perforated drain pipe, and brought in fill dirt from different locations in St. Augustine to raise the level of the bottom of the moat. The NPS, working with the Denver Service Center, also made repairs to the covered way walls, and repaired structural cracks.

287. Krakow, *Administrative History*, 67.



Figure 53: Covered way wall repair circa 2002 (CASA FOMA Archives)

Other projects in the late 1990s at Castillo de San Marcos included the addition of a course of coquina to the ravelin wall. NPS reports indicate the project was to prevent erosion that was impacting the counterscarp wall.

Hurricane Dennis and Hurricane Floyd struck the eastern coast of Florida in 1999, resulting in damage to trees and shrubs at both national monuments. In March 1999, the NPS removed dead shrubs from around the parking lot at Castillo de San Marcos National Monument. According to the 2000 Superintendent Annual Narrative Report, the NPS added onto the Park Headquarters Building and Maintenance Facility complex by adding a small hipped-roof maintenance office just to the north of the headquarters. They also adding accessible parking during this project. Around 2000, the NPS worked with the Historic Preservation Training Center to make repairs to the City Gate. Repairs included repointing the masonry walls, repairs to the sentry box, and replacement of one of the pomegranate-shaped finials on top of the stone pillars. In April 2000, NPS staff installed new sod in the covered way. In May, the NPS had to rebuild the entrance sign on South Castillo Drive because of damage.

Tropical Storm Gabrielle struck St. Augustine in September 2001. Afterward, NPS staff removed dead trees from around Castillo de San Marcos National Monument and repaired damaged walkways. Also in 2001, the NPS finished another project to enlarge the maintenance compound and add accessible parking at the park headquarters. In 2002, the NPS completed a large preservation project on the covered way retaining wall. Staff with the Historic Preservation Training Center removed previous Portland cement patches to



Figure 54: Moat wall under repair circa 2004-2005 (CASA FOMA Archives)



Figure 55: Wall after repair circa 2003 (CASA FOMA Archives)

the wall and repointed the wall using flexible lime putty. They replaced missing capstones on the wall coping. These missing stones had allowed erosion to develop along the top of the wall and water flow along the face of the wall had damaged the coquina stones. According to records, more than 70 cracks had developed in the walls (Figure 53). The NPS completed a similar project on the moat wall in 2004 and 2005 (Figure 54).

In 2003, the NPS installed a wooden picket fence and a hedge of pittosporum between South Castillo Drive and the main parking lot at Castillo de San Marcos. The purpose was to encourage pedestrians to use the designated crosswalks. The NPS removed the fence five years later. At this time, the NPS replaced the wooden walkway and staircase that provides pedestrian access between the water battery and the covered way north of the fort. This wooden staircase and walkway were first installed in April 1992, according to an Assessment of Actions Having an Effect on Cultural Resources. The one built in 1992 had deteriorated to the point of posing a safety risk to visitors. The NPS proposed replacing it "in-kind in exactly the same location." Also in 2003, the NPS repaired the low retaining wall at the base of the north glacis. This retaining wall was used as a walkway that joined the concrete walkway leading towards Water Street. The wall was originally added in 1849 as part of the U.S. Army work on the water battery. The stucco on top of this wall had cracked, exposing the stone underneath. The project repaired stones and resurfaced the entire feature with a new layer of lime-based stucco [288] (Figure 55).

In 2005, the NPS completed a project to repair the bridge between the ravelin and Castillo de San Marcos. During the project, the NPS replaced the bridge's piers with new coquina blocks placed on new concrete footings. The NPS also replaced the wood decking of the bridge in 2005 and repaired the decking again in 2018. In 2006, workers with the HPTC repaired large sections of the covered way wall and scarp walls. The project staff dismantled and rebuilt approximately fifty feet of the covered way wall. They also filled large cracks in the scarp wall with new coquina to protect against moisture infiltration. After numerous vehicular collisions, the NPS constructed a new entrance sign to Castillo de San Marcos National Monument in 2009. In 2011, the NPS replaced the concrete sidewalks around the parking lot at Castillo de San Marcos National Monument and along South Castillo Drive. The next year, the NPS installed new crosswalks and pedestrian signals on South Castillo Drive. Also in 2012, the NPS rebuilt sections of the covered way wall. In circa 2012, Ripley's Museum removed the wooden pickets and rails from between the concrete posts of the fence along their property line. This necessitated the NPS to construct a metal fence extending from the northwest corner of the park Headquarters Building towards the sidewalk on South Castillo Drive. The NPS has also constructed a tall concrete wall east of the maintenance building to screen the Ripley's Museum parking lot.

Hurricane Matthew struck the Florida coast in October 2016. The following year, in October 2017, Hurricane Irma hit St. Augustine. Both storms produced flooding, deposited debris, and uprooted trees at the national monument.

288. Archives North Green Retaining Wall Project 2003 (CASA Central Files Administrative Records, in CASA FOMA Archives).



Figure 56: Walkway under construction in 1976 (CASA no. M1551)

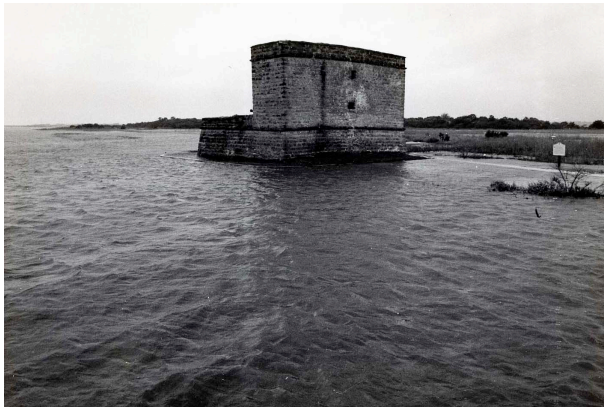


Figure 57: Fort Matanzas in high water in 1970s (CASA no. M1320)

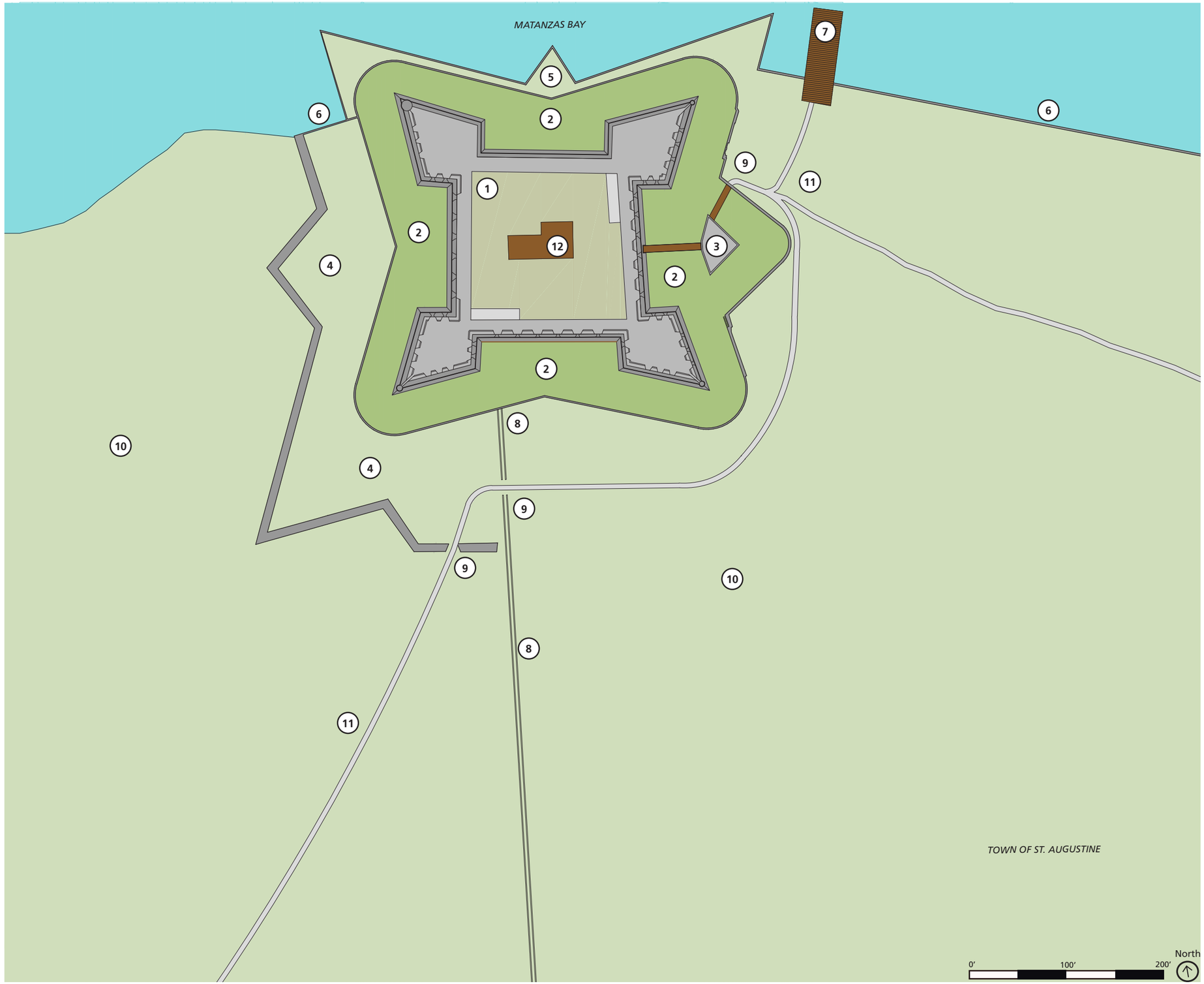
Post Mission 66: Fort Matanzas

During Superintendent Davenport's tenure from 1965 to 1971, the NPS completed another project at Fort Matanzas to stabilize the shorelines of Rattlesnake Island and Anastasia Island. Boat service to Fort Matanzas from the Visitor Center temporarily ended in 1970 before resuming the next year. During Superintendent Schesventer's tenure from 1971 to 1980, the NPS prepared a master plan for Fort Matanzas in 1973 and revised the plan in 1976. The goals of the master plan were to "re-create the 1742 to 1763 fort appearance."[289] During this period, commercial development crept closer to the national monument's boundary. In 1972, Superintendent Schesventer tried to convince local planning staff and the zoning commission to not approve a proposed condominium development adjacent to the park. It was approved and resulted in the construction of the Summerhouse development in 1980.[290]

In the early 1970s, U.S. Army Corps of Engineers closed a breakthrough on Rattlesnake Island created during Hurricane Dora in 1964. The hurricane cut Rattlesnake Island into two landmasses. This caused a sand bar to develop in Matanzas River that almost connected Rattlesnake Island and Anastasia Island. In 1976, the NPS used a team from the Youth Conservation Corps to repair groins on the east bank of the Matanzas River.[291] Also in 1976, the NPS completed several repairs to the headquarters building at Fort Matanzas. The character of the rear landscape, including two walkways, is visible in a photograph taken during construction (Figure 56). In 1978, the NPS constructed new docks at both Anastasia Island and Rattlesnake Island. The docks featured floating decks to help with loading visitors. The dock at the visitor center had a structure to provide shade for visitors waiting for the ferry. Between 1979 and 1980, the NPS started another project to build-up the shoreline around Fort Matanzas. During the 1970s, high tides had surrounded the fort in water on several occasions and the bulkheads developed cracks (Figure 57). The new project included installation of sheet piling around the southeast corner of the site and the addition of coquina riprap as a breakwater between the fort and the river.

Around 1983, the NPS constructed the nature trail at Fort Matanzas National Monument. In 1984, the NPS repaved the roads and parking lot at the Fort Matanzas visitor center. In the late 1990s, the NPS also replaced the roof at the Visitor Center at Fort Matanzas National Monument. Tropical Storm Gabrielle, which struck the St. Augustine area in 2001, damaged trees at both national monuments and damaged the boardwalks at Fort Matanzas National Monument. In 2001, the NPS replaced the gates and dock at Fort Matanzas National Monument.[292] Hurricane Matthew struck the St. Augustine area damaging trees at Fort Matanzas and the roof of the historic utility building (currently park office space). In 2019, the NPS paved the parking area at Fort Matanzas and installed new interpretive waysides.

289. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 178.
290. Krakow, Administrative History, 63.
291. Matanzas Stabilization Team, *Matanzas Historic Structure Report*, 180.
292. Castillo de San Marcos and Fort Matanzas Monuments Superintendent's Annual Narrative Report Calendar Year 1999 (CASA Central Files Administrative Records, Folder A2621 in CASA FOMA Archives).



Major Events and Characteristics

1672 Construction on Castillo de San Marcos begins
1680s Seawall constructed south of fort
1695 First phase of construction complete
Fort Bastion walls 6 feet lower than present
Courtyard larger than present
Moat wall 5 feet lower than present
Original Ravelin smaller than present
1704 Cubo Line constructed
1737 Engineer Antonio de Arrenondo draws map of fort and makes recommendations for improvements

Feature Key

1	Castillo de San Marcos
2	Moat
3	Ravelin
4	Covered Way
5	Water Battery
6	Sea Wall
7	Wharf
8	Cubo Line
9	Gates
10	Esplanade
11	Paths
12	Governor's House

Credits

1. Drawing of Castillo de San Marcos (1669-1738), Albert Manucy
2. Arredondo 1737 Plan (CASA no. A47)

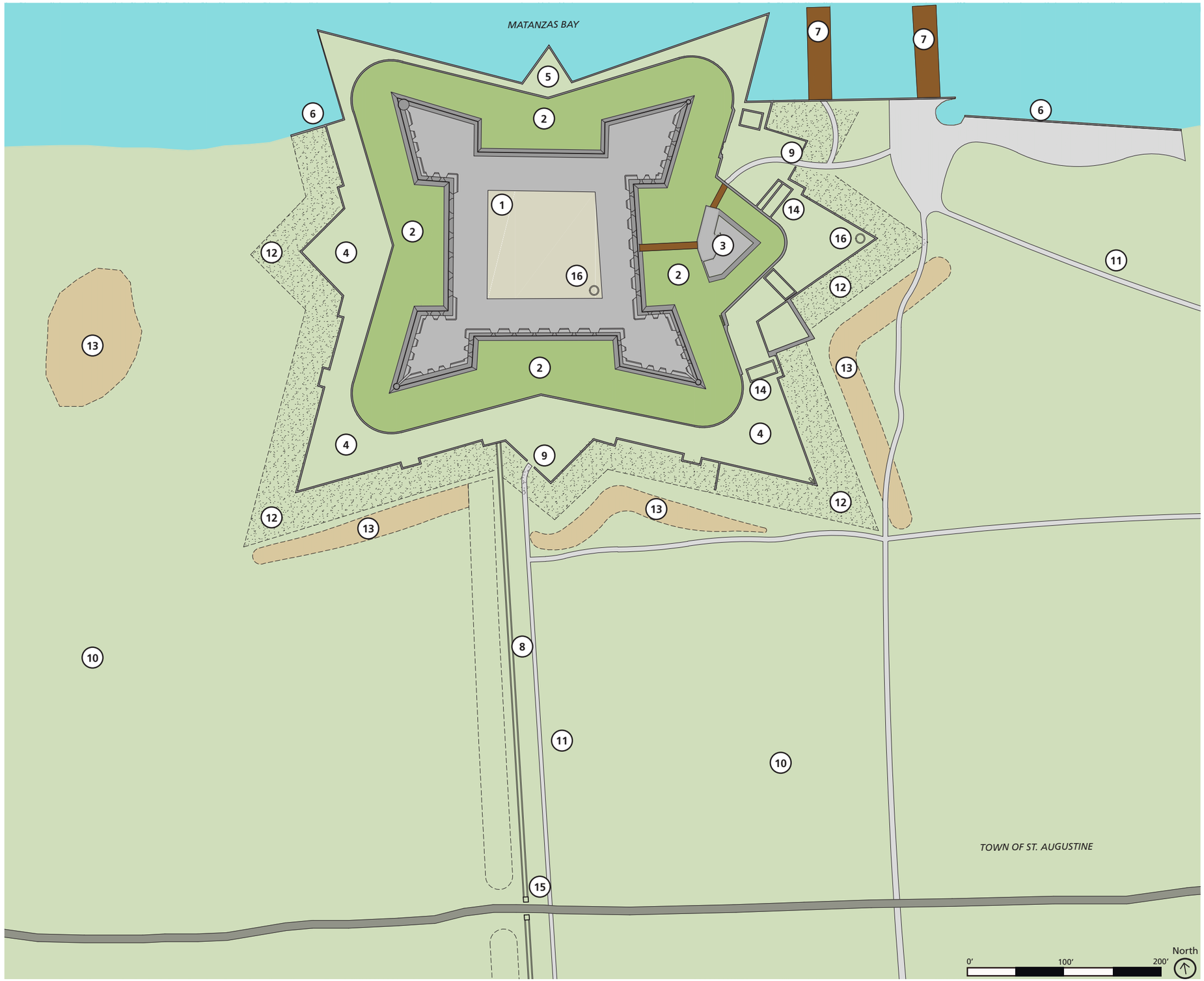
Illustration 1.1
1672 to 1737

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

November 2019



Major Events and Characteristics

1740 Oglethorpe seige of St. Augustine

1740 Covered way wall begun and narrow glacis added outside covered way

1752 Construction begins to raise Bastion walls to full height and courtyard reduced to present size

Moat wall 5 feet lower than present with a 5 foot tall steep slope above moat wall to floor of covered way

1758 Covered way wall raised to 3 feet

1762 Original Ravelin replaced with present, larger Ravelin and covered way wall raised to six feet

1763 St. Augustine and Florida transfered to Great Britian

Feature Key

1	Castillo de San Marcos
2	Moat
3	Ravelin
4	Covered Way
5	Water Battery
6	Sea Wall
7	Wharf
8	Cubo Line
9	Gates
10	Esplanade
11	Paths
12	Glacis
13	Borrow Pits
14	Traverse
15	City Gate
16	Well

Credits

1. Albert Manucy, Drawing of Castillo de San Marcos (1756-1761)
2. Castello, 1763 Map (CASA no. A5002)

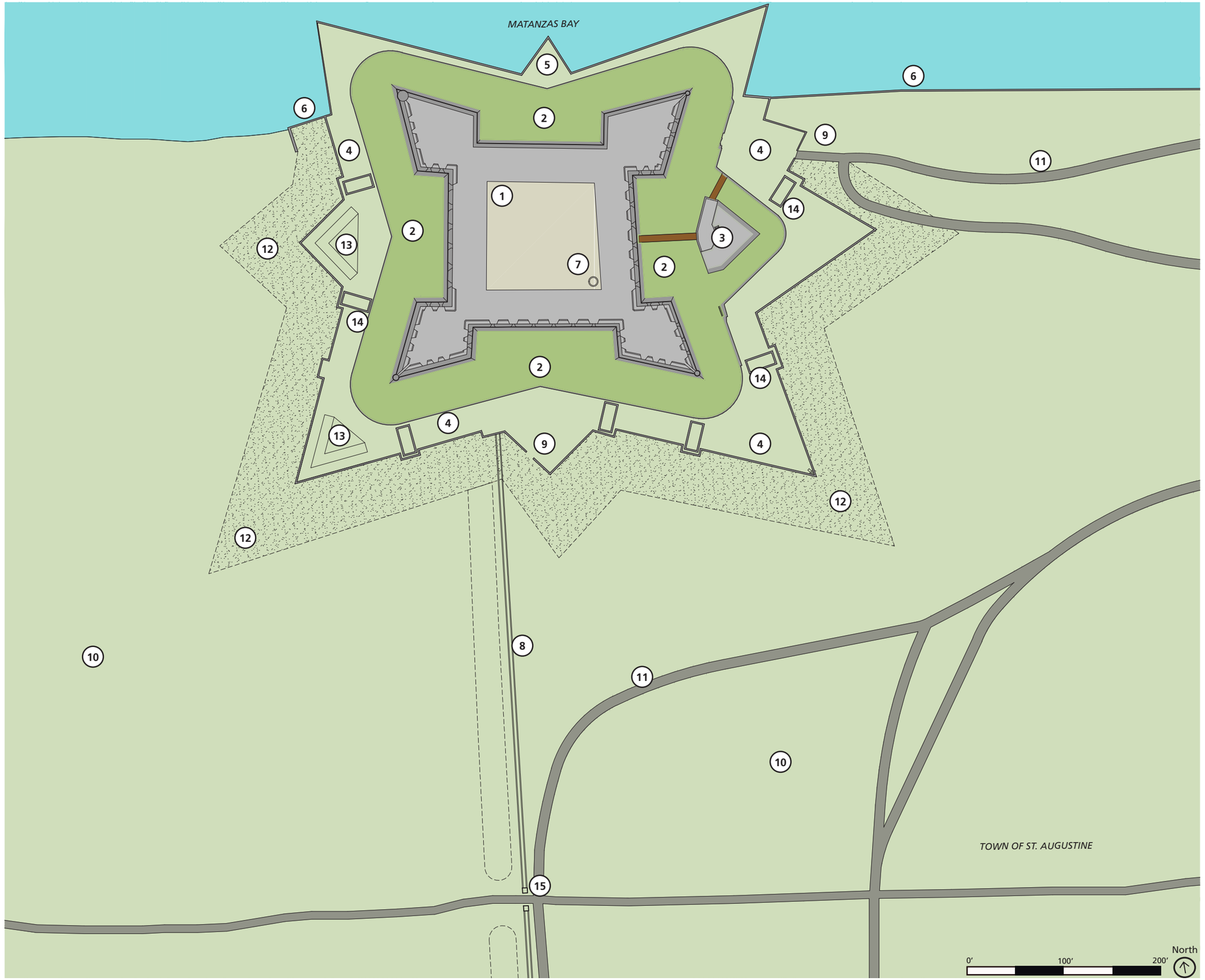
Illustration 1.2
1738 to 1763

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

November 2019



Major Events and Characteristics

1763 St. Augustine and Florida transfered to Great Britian and fort renamed "Fort St. Mark"

Moat wall raised to present height

1781 Glacis repaired and extended

Earthworks (Bonnet, Ravelin, and Traverses) constructed in covered way

1784 St. Augustine and Florida returned to Spain

Feature Key

1	Castillo de San Marcos
2	Moat
3	Ravelin
4	Covered Way
5	Water Battery
6	Sea Wall
7	Well
8	Cubo Line
9	Gates
10	Esplanade
11	Paths
12	Glacis
13	Bonnett/Ravelin
14	Traverse
15	City Gate

Credits

1. Albert Manucy, Drawing of Castillo de San Marcos (1776-1785)
2. Solis, 1764 Map of St. Augustine (Library of Congress, http://hdl.loc.gov/loc.gmd/g3934s.ar164200)

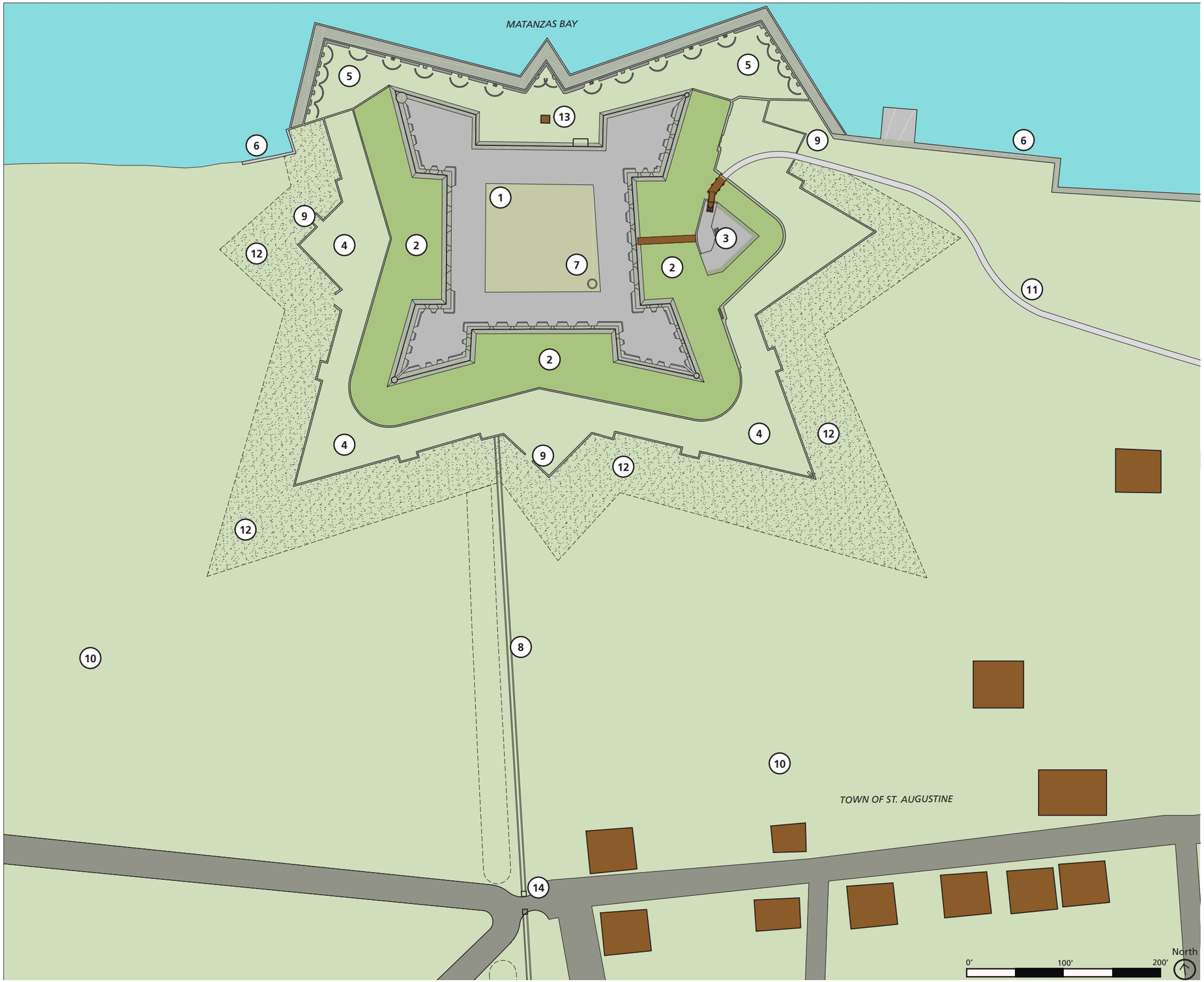
Illustration 1.3
1764 to 1784

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

November 2019



Major Events and Characteristics

1821 St. Augustine and Florida transferred to United States
1825 Fort renamed “Fort Marion”
1834-1846 new seawall constructed south of fort
1842-1844 new Water Battery and Hot Shot Furnace constructed
North Glacis raised in height
Salt marsh grass recorded in moat
Traverses and earthworks in covered way removed

Feature Key

1	Castillo de San Marcos
2	Moat
3	Ravelin
4	Covered Way
5	Water Battery
6	Sea Wall
7	Well
8	Cubo Line (Deteriorated)
9	Gates
10	Fort Green
11	Paths
12	Glacis
13	Hot Shot Furnace
14	City Gate

Credits

1. Albert Manucy, Drawing of Castillo de San Marcos (1844)
2. Purcell, 1777 Map of St. Augustine (CASA no. SA 45)

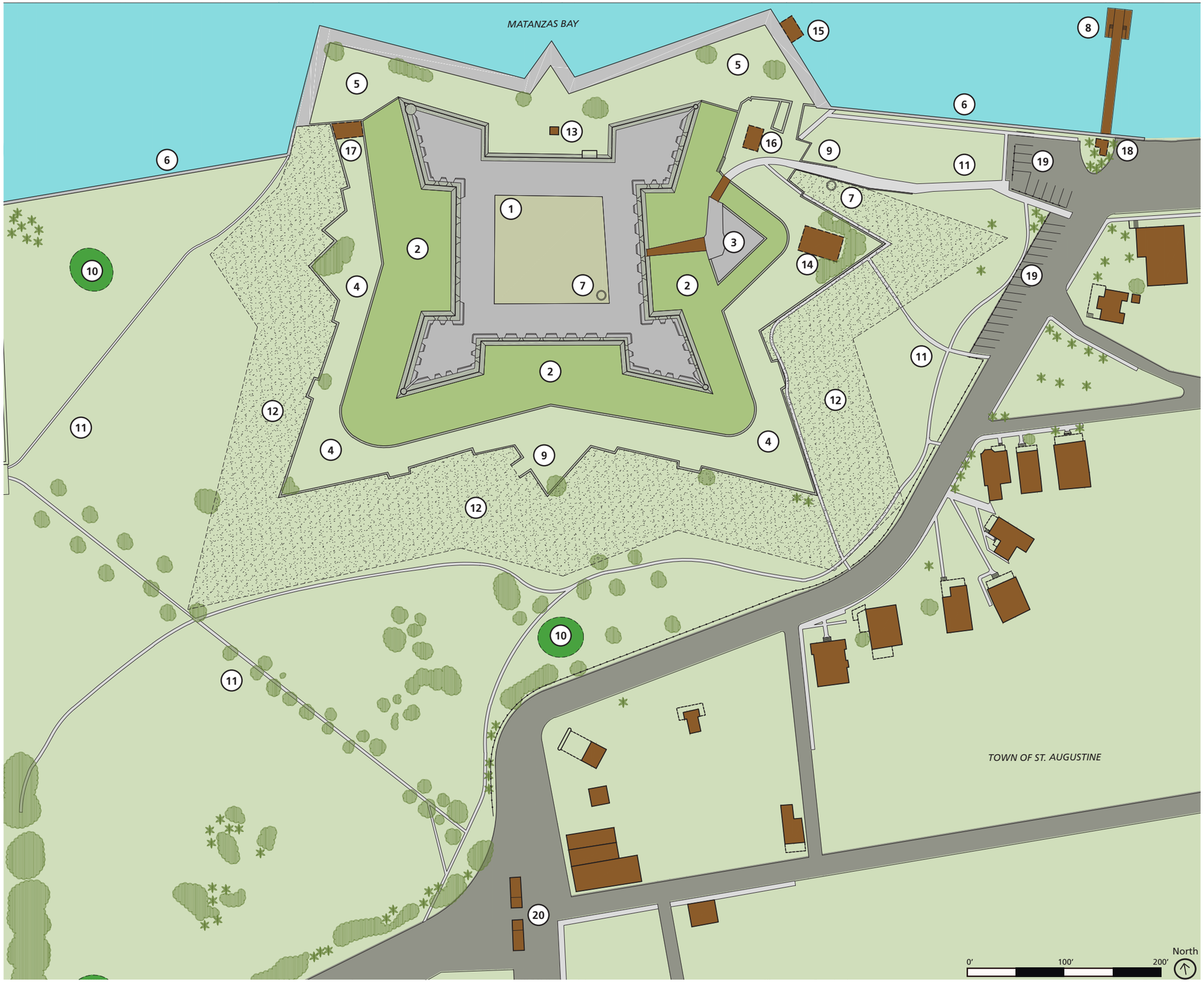
Illustration 1.4
1821-1844

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

November 2019



Major Events and Characteristics

1849 Section of seawall constructed north of fort

1857 Cubo Line partially filled and glacis regraded

1875-1890 Ordnance-sergeant cottage in covered way

1891-1896 new War Deparment circulation system and landscape plantings added

1895-1924 Three hole golf course on fort green

Pre-1906 -1938 Storm warning tower in covered way near fort entrance

Fort Marion Circle paved

1926 Parking lots added

1928 Tool house built in north covered way

1933 Fort Marion transfers to the NPS

1936 NPS boundary map shows existing conditions at that time

Feature Key

1	Castillo de San Marcos
2	Moat
3	Ravelin
4	Covered Way
5	Water Battery
6	Sea Wall
7	Well
8	NPS Dock
9	Gates
10	Golf Course Green
11	Concrete Walkways and Sidewalks
12	Glacis
13	Hot Shot Furnace
14	Ornance-Sergeant Cottage (removed 1890)
15	Oil Storage Building (removed 1934)
16	Storm Warning Tower (removed 1938)
17	Tool House Storage Building (removed 1940)
18	Ticket Stand (constructed 1930s)
19	Parking Lots
20	City Gate

Credits

1. 1936 Boundary Map Castillo de San Marcos National Monument (CASA_maps8398_1-4-3_001).
2. 1937 “Sketch showing realignment of sidewalks,” Castillo de San Marcos (CASA_maps8398_1-8-6_010).
3. 1924 Aerial (CASA no. A396a)

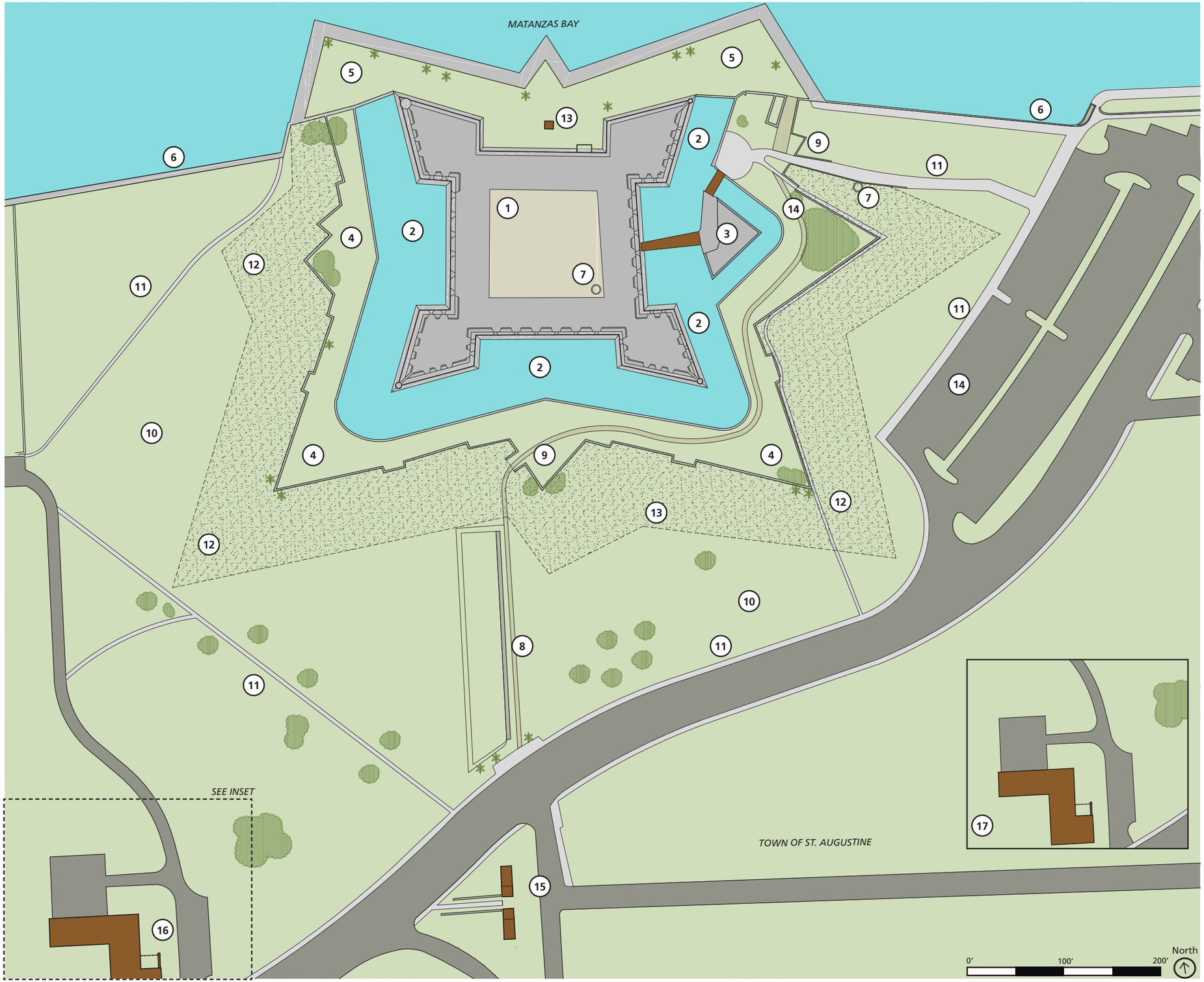
Illustration 1.5
1845 to 1936

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

November 2019



Major Events and Characteristics

1937 Moat flooded (Moat drained in 1996)

1942 Fort Marion's name changed back to Castillo de San Marcos

1958 Fort Marion Circle realigned

1964 Partial reconstruction of Cubo Line, including section at City Gate

1964-1965 Park Headquarters and Maintenance facility constructed

1965 New Parking Lot

War Department buildings removed

War Department circulation system partially removed

Feature Key

1	Castillo de San Marcos
2	Moat
3	Ravelin
4	Covered Way
5	Water Battery
6	Sea Wall
7	Well
8	Cubo Line (Reconstructed)
9	Gates
10	Fort Green
11	Concrete Walkways and Sidewalks
12	Glacis
13	Hot Shot Furnace
14	Parking Lot
15	City Gate
16	Park Headquarters and Maintenance
17	Inset Map of Park Headquarters and Maintenance

Credits

1. 1966 Existing Conditions Map, Castillo de San Marcos National Monument, (CASA_maps8398_1-5-5_004)
2. 1936 Boundary Map, Castillo de San Marcos National Monument (CASA_maps8398_1-5-3_003)
3. 1946 Aerial Photograph (CASA no. A510)

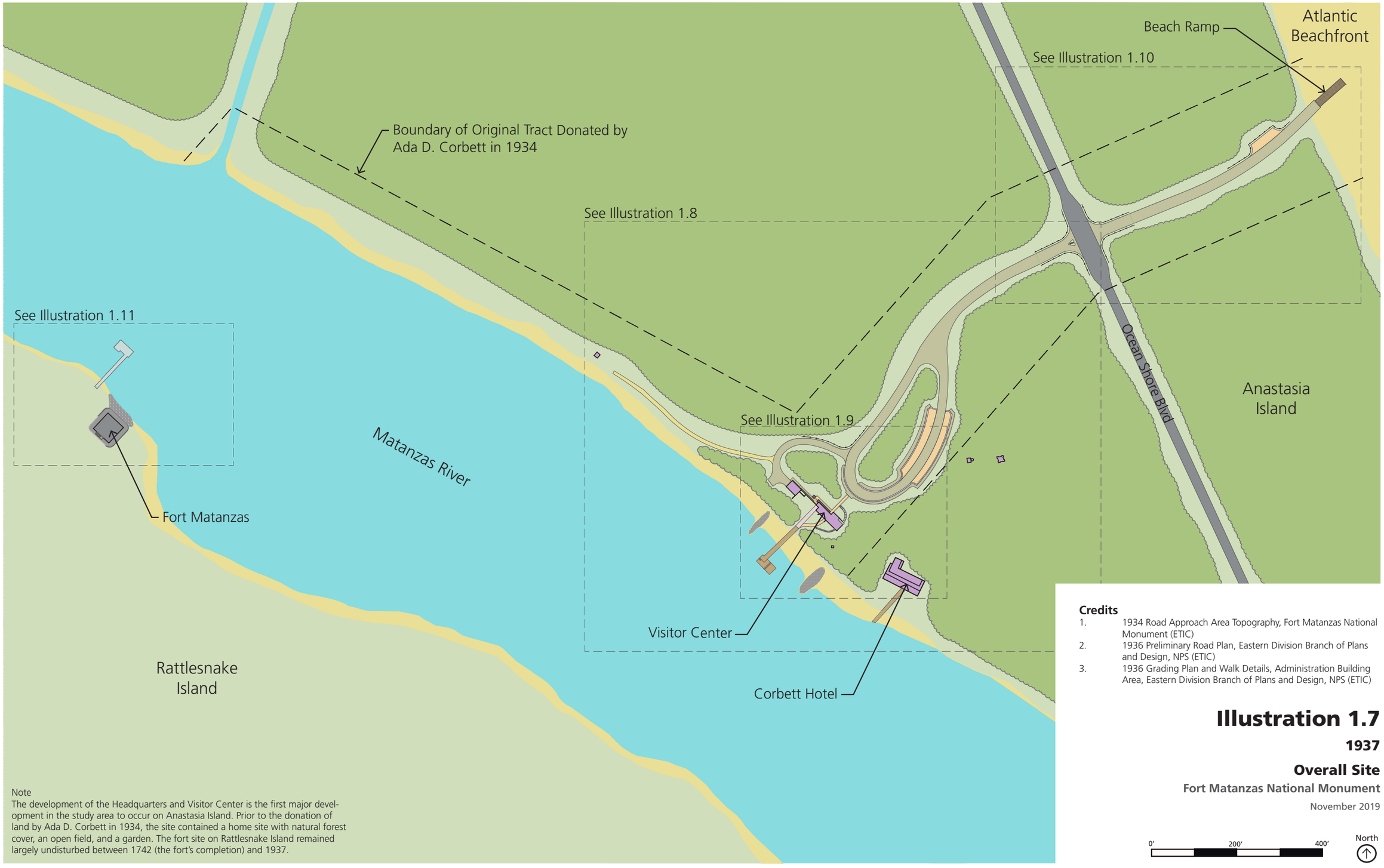
Illustration 1.6
1937 to 1966

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

November 2019



Note
The development of the Headquarters and Visitor Center is the first major development in the study area to occur on Anastasia Island. Prior to the donation of land by Ada D. Corbett in 1934, the site contained a home site with natural forest cover, an open field, and a garden. The fort site on Rattlesnake Island remained largely undisturbed between 1742 (the fort's completion) and 1937.

Credits

1. 1934 Road Approach Area Topography, Fort Matanzas National Monument (ETIC)
2. 1936 Preliminary Road Plan, Eastern Division Branch of Plans and Design, NPS (ETIC)
3. 1936 Grading Plan and Walk Details, Administration Building Area, Eastern Division Branch of Plans and Design, NPS (ETIC)

Illustration 1.7

1937

Overall Site

Fort Matanzas National Monument

November 2019

0′ 200′ 400′

North

Frame Building, former Fishing Cabin

Dirt Road

Coquina Headwall

Sand-Asphalt Entrance Road topped with Crushed Coquina

FOMA VC Area Loop Road, Sand Asphalt topped with Crushed Coquina

Ocean Shore Blvd

Crushed-Coquina Parking Area

Pump House

Water Tower

Utility Building

Maritime Hammock Forest; dominant species include Live Oak (Quercus virginiana), Cabbage Palm (Sabal palmetto), Red Cedar (Juniperus virginiana), and Saw Palmetto (Serenoa repens)

Coquina Riprap Groin, typ.

Corbett Tract Boundary

Visitor Center

Remnant of Previous Home Site

Corbett Hotel

Matanzas River

Fishing Pier

Credits

1. 1934 Road Approach Area Topography, Fort Matanzas National Monument (ETIC)
2. 1936 Preliminary Road Plan, Eastern Division Branch of Plans and Design, NPS (ETIC)
3. 1936 Grading Plan and Walk Details, Administration Building Area, Eastern Division Branch of Plans and Design, NPS (ETIC)

Illustration 1.8

1937

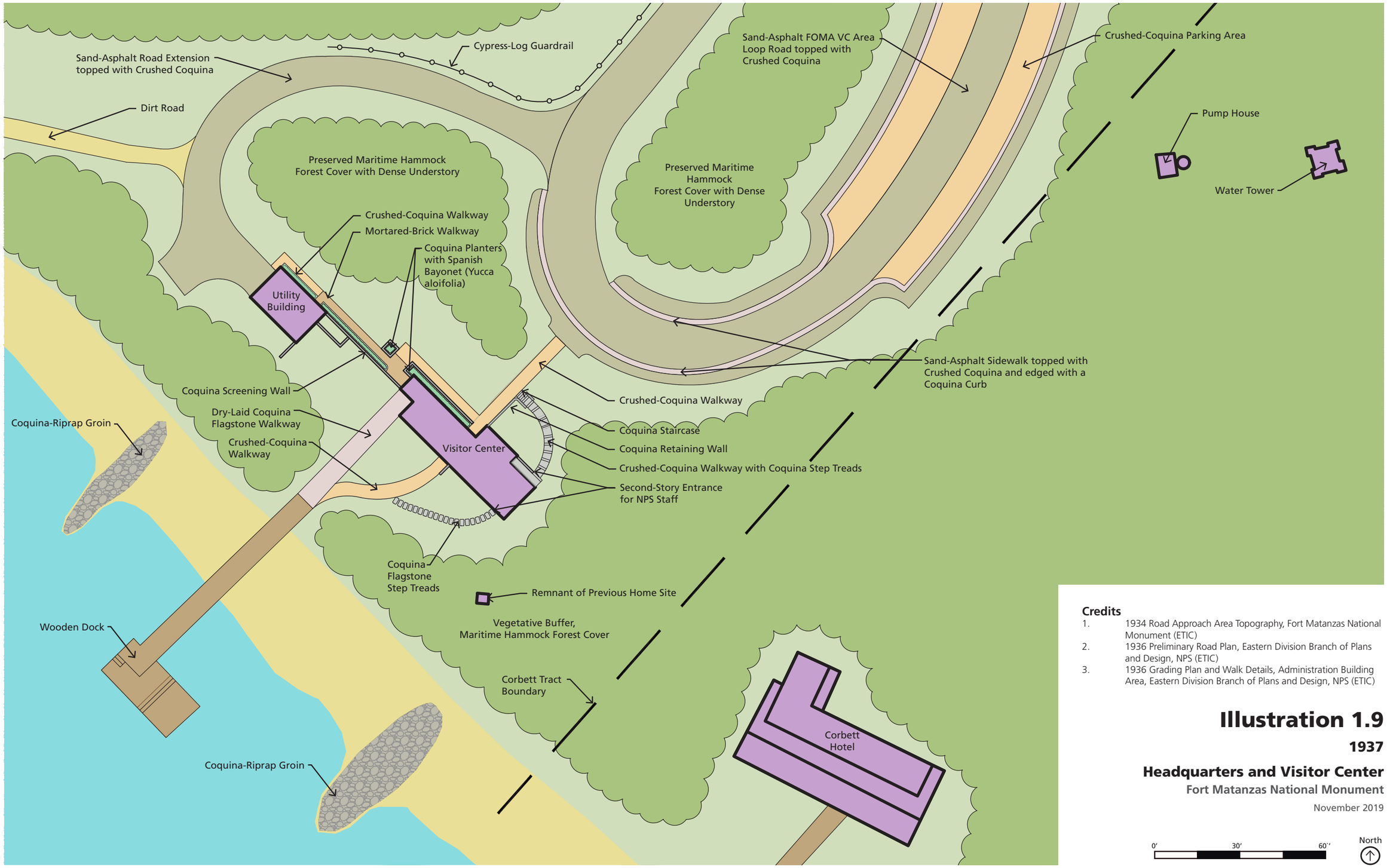
Headquarters and Visitor Center

Fort Matanzas National Monument

November 2019

0′ 100′ 200′

North



Credits

1. 1934 Road Approach Area Topography, Fort Matanzas National Monument (ETIC)
2. 1936 Preliminary Road Plan, Eastern Division Branch of Plans and Design, NPS (ETIC)
3. 1936 Grading Plan and Walk Details, Administration Building Area, Eastern Division Branch of Plans and Design, NPS (ETIC)

Illustration 1.9

1937

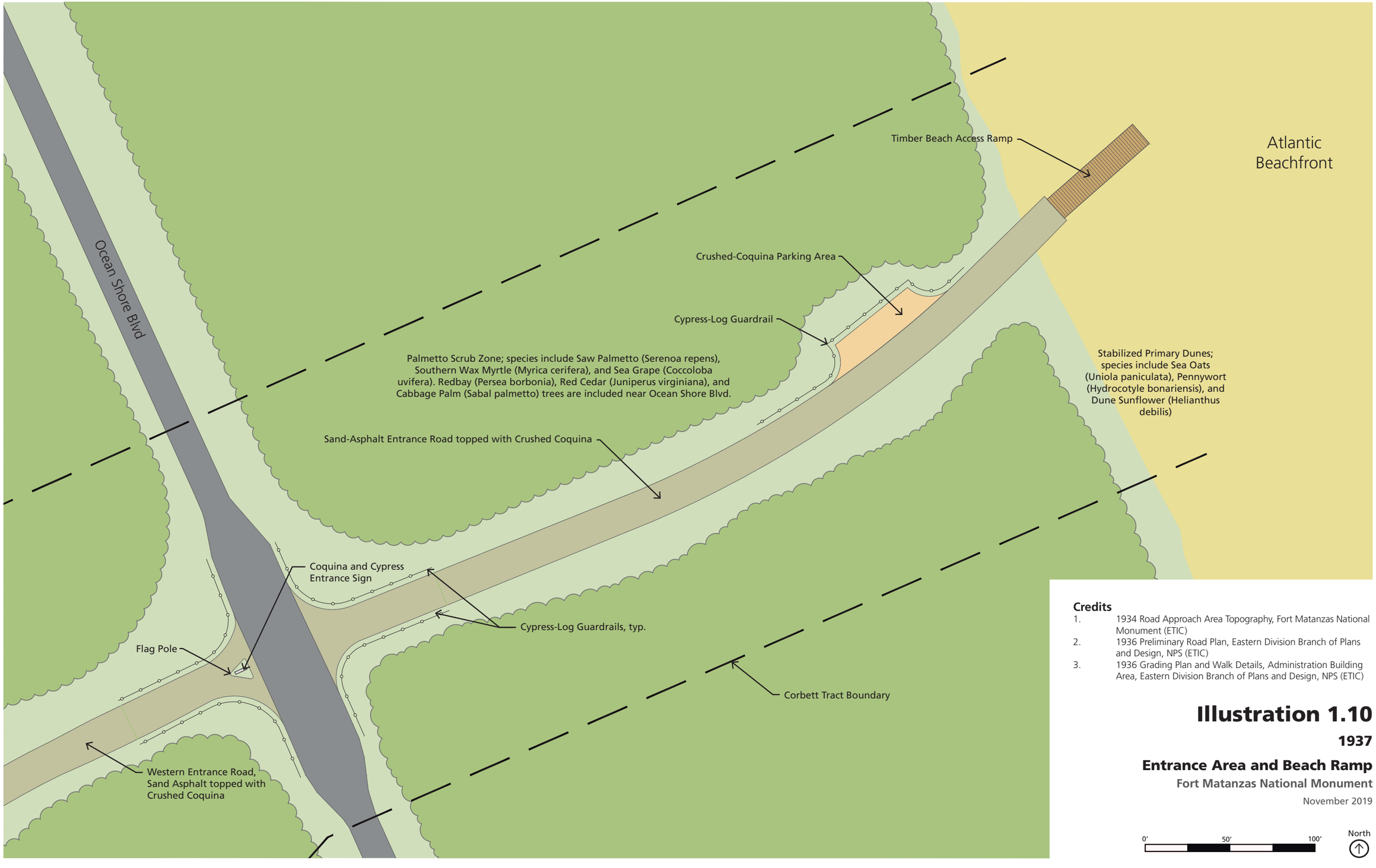
Headquarters and Visitor Center

Fort Matanzas National Monument

November 2019

0′ 30′ 60′

North



Credits

1. 1934 Road Approach Area Topography, Fort Matanzas National Monument (ETIC)
2. 1936 Preliminary Road Plan, Eastern Division Branch of Plans and Design, NPS (ETIC)
3. 1936 Grading Plan and Walk Details, Administration Building Area, Eastern Division Branch of Plans and Design, NPS (ETIC)

Illustration 1.10

1937

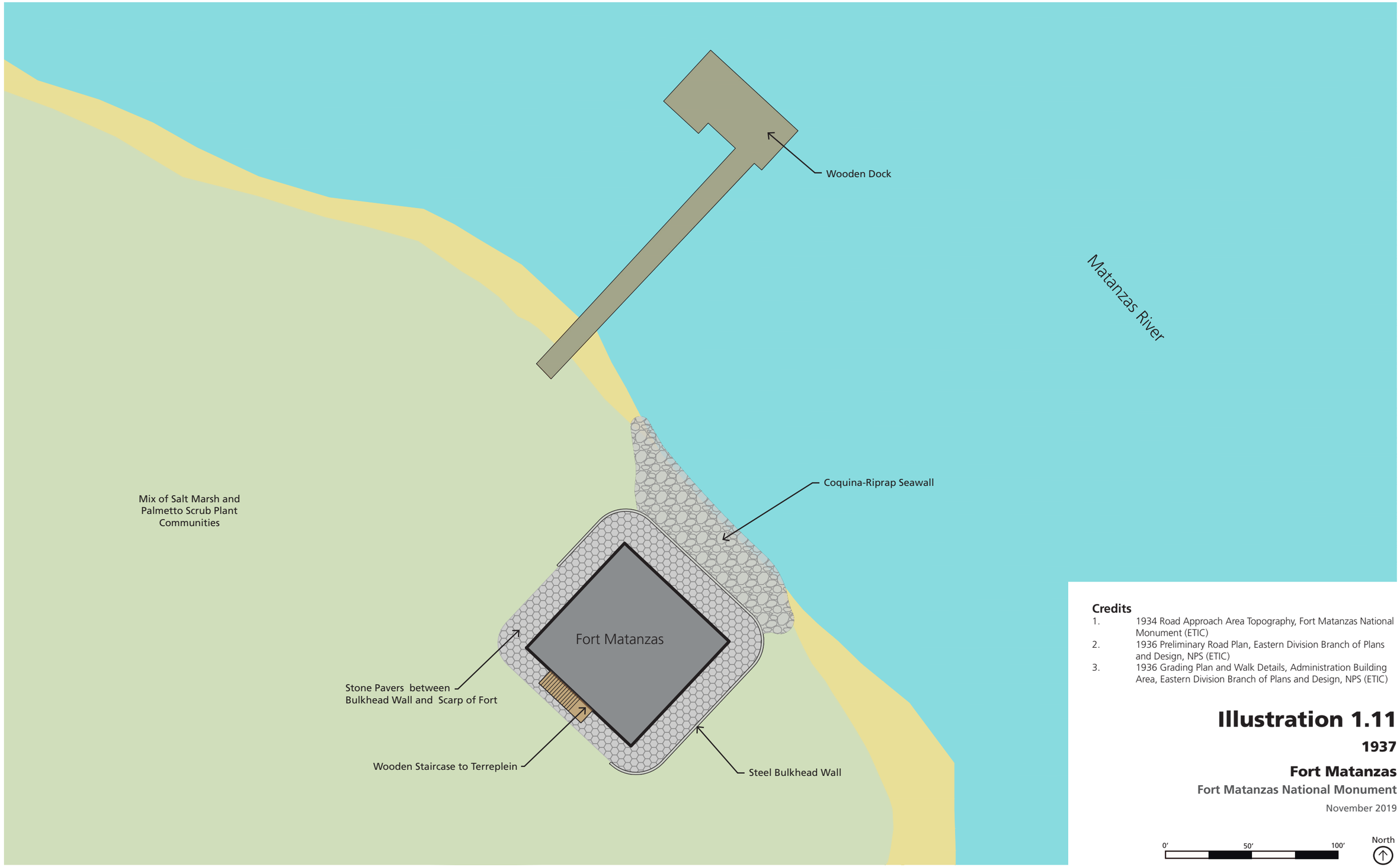
Entrance Area and Beach Ramp

Fort Matanzas National Monument

November 2019

0′ 50′ 100′

North



Credits

1. 1934 Road Approach Area Topography, Fort Matanzas National Monument (ETIC)
2. 1936 Preliminary Road Plan, Eastern Division Branch of Plans and Design, NPS (ETIC)
3. 1936 Grading Plan and Walk Details, Administration Building Area, Eastern Division Branch of Plans and Design, NPS (ETIC)

Illustration 1.11

1937

Fort Matanzas

Fort Matanzas National Monument

November 2019

0′ 50′ 100′

North

Existing Conditions

Introduction

To understand the cultural importance of a landscape it is necessary to study the history of the site as well as the existing physical features. When studying these physical features, natural and cultural characteristics are important factors to note as both have an impact on the evolution of a landscape. For instance, clear sight lines into the landscape can be the reason for the placement of a building. The placement of this building, a cultural feature, then has an impact on the natural systems and features of the landscape and influences future development. So, by studying landscape characteristics individually as well as how one feature impacts the other, a greater understanding of the cultural landscape can be formed. This understanding of site conditions is then paired with historical context to determine future needs and appropriate treatment recommendations.

Existing conditions are documented during two phases: research and on-site survey. During the research phase, investigators review available files and documentation in order to develop a strategy for on-site observations and field recordings. During site surveys, investigators combine information gathered during the research phase with direct observations to create a complete documentation of the current status of the cultural landscape.

The focus of this study is Castillo de San Marcos National Monument and Fort Matanzas National Monument, both located in St. Johns County, Florida. The landscape characteristics detailed above will be discussed separately for each of the two sites. The existing conditions found at Castillo de San Marcos National Monument will be described first, followed by those at Fort Matanzas National Monument, a component landscape of Castillo de San Marcos. The Castillo de San Marcos National Monument is separated into three character areas: Castillo de San Marcos National Monument, City Gate, and the Park Headquarters and Maintenance Facility. The natural systems and features will be described for all three landscapes and the remaining landscape characteristics will be detailed when discussing the City Gate and Park Headquarters and Maintenance Facility character areas.

Castillo de San Marcos National Monument

Refer to Illustrations 2.1 to 2.4 for maps showing existing conditions.

The Castillo de San Marcos National Monument is an approximately twenty-acre site managed by the National Park Service (NPS) in St. Augustine, Florida. The national monument is roughly triangular in shape, with State Road A1A/South Castillo Drive forming its western boundary. Castillo de San Marcos is located on the eastern edge of the national monument along Matanzas Bay. The park headquarters and maintenance facility occupies the northwestern corner of the site. A visitor parking lot occupies the southern boundary of the site. A disconnected parcel on the opposite side of State Road A1A/South Castillo Drive contains the City Gate, which is part of the national monument. The city of St. Augustine currently surrounds the northern, western, and southern sides of the national monument. Historically, the colonial town of St. Augustine occupied a smaller area southwest of Castillo de San Marcos and was protected by a series of earthwork defenses known as the Cubo Line and Rosario Line.

Castillo de San Marcos is a symmetrical four-bastioned fortification surrounded by a series of defensive outworks including a ravelin, moat, covered way, and glacis. The curtain walls of Castillo de San Marcos and many of the earthworks' retaining walls feature local coquina quarried on Anastasia Island near current day Anastasia State Park. The coquina walls of the fort are thirty feet high, ten to fourteen feet thick at the base, and five feet thick at the top. The entrance or sally port into the fortress is located in the southern curtain wall.

Castillo de San Marcos' ravelin, a triangular, masonry structure, is located within the fort's moat to protect the sally port on its southern elevation. The fort is accessed over two bridges that use the ravelin to span the moat. Spain replaced an original ravelin with the existing one in 1762. The moat currently surrounds the fort on three sides (northern, western, and southern). For much of its early history, the moat also extended around the eastern side of Castillo de San Marcos, but the United States Army Corps of Engineers modified the eastern section of the moat during the construction of the water battery in 1842-1844. The moat is approximately forty-two feet wide. It has a coquina retaining wall or counterscarp that is approximately 6 feet tall. The water battery is an earthen platform with coquina retaining walls on the eastern side of the fort facing Matanzas Bay. The water battery was a firing platform for coastal artillery, and it retains features relating to the mounting of coastal defense artillery. It also features a hot shot furnace, a coquina and stucco structure, that the Army constructed in 1842 to heat projectiles.

A seawall extends north and south from the water battery to hold back the waters of Matanzas Bay. Spain originally built a seawall adjacent to Castillo de San Marcos in the 1600s, but the United States Army Corps of Engineers largely rebuilt the seawall in the 1830s and 1840s using granite and coquina. The Army Corps of Engineers subsequently extended the seawall to the south and north, so today, the entire eastern boundary of the national monument includes a seawall.

The covered way occupies the area beyond the moat, on the northern, western, and southern sides of the fort. It features a five-foot-tall coquina retaining wall that generally parallels the outline of the fort's curtain wall. It is approximately thirty feet wide, with a level grass surface between the moat's counterscarp and the covered way wall. The glacis, a grassy slope, extends out from the covered way wall. The glacis and covered way occupy the northern, western, and southern sides of the fort. The glacis leads down to a large, open greenspace. Modern walkways cross the greenspace, connecting to adjacent roads and points of crossing.

In 1963, the NPS reconstructed the Cubo Line, a defensive earthwork crossing the glacis on the western side of the fort from the edge of the covered way to today's State Road A1A/South Castillo Drive. The northern and southern surfaces of the Cubo Line have concrete-cast palm logs to recreate the historic wooden revetment retaining wall. A shallow moat is north of the Cubo Line.

The City Gate is on the opposite side of State Road A1A/South Castillo Drive from Castillo de San Marcos. The City Gate features two 14-foot-

tall pillars. A stone wall extends east and west on either side of the pillars. A coquina bridge spans a shallow moat north of the wall. The City Gate was originally part of the Cubo Line and today features short sections of a recreated Cubo Line extending beyond the masonry walls.

The open spaces are mostly turf, with a combination of Bermuda and St. Augustine grasses. Where trees are present, predominant species include live oak (*Quercus virginiana*), red cedar (*Juniperus virginiana* var. *silicicola*), and cabbage palm (*Sabal palmetto*). Spanish bayonet (*Yucca aloifolia*) plantings are located near the Cubo Line and City Gate. Other understory plantings can be found near the site's three parking lots. The general lack of understory vegetation provides mostly unobstructed views throughout the fort grounds and to Matanzas Bay and the St. Augustine Historic District.

Structures with historical, architectural, and/or engineering significance located in parks of the National Park System in which the National Park Service has, or plans to acquire, any enforceable legal interest are inventoried and included in the List of Classified Structures (LCS). Significant structures from the LCS found at the Castillo de San Marcos National Monument include the fort, moat, covered way, glacis, ravelin, City Gate pillars, reconstructed Cubo Line, water battery, seawall, and hot shot furnace.

Natural Systems and Features

Hydrology

Castillo de San Marcos National Monument is located along Matanzas Bay. The Matanzas River, the site's most dominant waterbody, borders the site's eastern edge. This river is part of the Intracoastal Waterway, which runs alongside the coasts of the Atlantic Ocean and Gulf of Mexico. It is a relatively narrow estuary, approximately 22 miles long, which is separated from the Atlantic Ocean by Anastasia Island. Castillo de San Marcos is near the Matanzas River's northern limit, just south of Saint Augustine Inlet, which allows access to the Atlantic Ocean. A system of catch basins and drop inlets, which are spread throughout the landscape removes stormwater from the site. After rain events, stormwater can be slow to drain. Standing water persists after storms in the lower sections of the site, such as the depression north of the reconstructed Cubo Line and the moat surrounding the northern, western, and southern boundaries of the fort. Rainwater can also be slow to drain from sections of the visitor parking area south of the fort and along the sidewalk leading from this lot to the fort's entrance. After significant storms, water can rest on the site for days before infiltrating or receding to storm drains. During these larger rain events, such as those associated with Hurricane Matthew in October of 2016 and Hurricane Irma in September of 2017, standing water expands to others areas such as the fort green along the western end of the site and the water battery, at the site's eastern boundary.

Soils

The soil in the area surrounding Castillo de San Marcos is nearly entirely mapped as St. Augustine-Urban land complex. This area is composed of fifty-five percent St. Augustine soils, thirty-five percent buildings and pavement (which account for the urban land portion of the soil classification), and the remaining ten percent is made up of other soil types. Where this classification occurs, the areas of soil and urban land are either so small or so complexly mixed that they cannot be shown as separate entities when mapped. This classification consists of nearly level, somewhat poorly drained St. Augustine soils that have been used for urban development. Many areas of this soil type are located adjacent to waterways, tidal marshes, and low areas from which sandy soil has been dredged. The general profile is made up of a top layer of approximately four inches. This is dark

gray fine sand mixed with shell fragments. Below this layer is a section of brown and light gray fine sand mixed with shell fragments, approximately ten inches deep. The following layer, between ten inches and thirty-three inches, is composed of light gray and gray fine sand mixed with sandy clay and shell fragments. The segment below this layer is composed of gray fine sand and shell fragments. A small portion of the site, along the western edge of the Matanzas River and the eastern portion of the national monument, is composed of Pellicer silty clay loam soils. This soil type is very poorly drained and nearly level, with slopes less than one percent. It has much higher clay content than St. Augustine-Urban land complex soils and is frequently flooded. While this soil type is not suited for construction, it is a vital habitat for local plants and animals.[263]

Climate

St. Augustine's climate is classified as humid subtropical. Specific temperature and precipitation data from the National Centers for Environmental Information, recorded near the St. Augustine Lighthouse, are used in this section. The lighthouse is approximately 1.6 miles from the Castillo de San Marcos National Monument. The average temperature during the spring (March to May) is 69.1 degrees Fahrenheit (°F). The temperature average during the summer months (June to August) climbs to 81.1°F. This average during fall (September to November) drops slightly to 72.8°F. The winter months (December to February) see an average of 58.1°F. The average annual temperature is 70.28°F. The highest recorded temperature in St. Augustine, 103°F, occurred in July of 1986. The lowest temperature, 10°F, was recorded in January of 1985. The mean annual temperature in St. Augustine has increased at a rate of 0.01°F each decade between 1901 and 2007. The spring months see an average rainfall of 3.25 inches. During the summer months, this average is 5.7 inches. The average rainfall during the fall is 4.62 inches. Winter is the driest season, averaging 2.76 inches. The wettest month on average is September at 7.31 inches. Because of the area's geography, major storms are a concern. St. Augustine is either hit directly or touched by a tropical storm system every 3.63 years. This is evidenced by the arrival of Hurricane Matthew in October of 2016 and Hurricane Irma in September of 2017, both of which caused extensive damage throughout the region.[264]

Threatened and Endangered Species

The only threatened or endangered species present at Castillo de San Marcos National Monument is the wood stork (*Mycteria americana*). The wood stork is an approximately 4-foot-tall, large wading bird with long legs and a wingspan of about five feet. This white-feathered bird with black trim is found in freshwater or estuarine wetlands. Its North American population once dwindled to small numbers found throughout Central and South Florida. The wood stork was classified as endangered in 1984. The species has since expanded its breeding range north to Georgia, South Carolina, and North Carolina. Due to this expansion, in 2014, the wood stork's classification was updated from *endangered* to *threatened*. Multiple species present at the site are listed as *species of concern*. These, all categorized as birds, include the turkey vulture (*Cathartes aura*), osprey (*Pandion haliaetus*), laughing gull (*Larus atricilla*), common loon (*Gavia immer*), tree swallow (*Tachycineta bicolor*), loggerhead shrike (*Lanius ludovicianus*), great blue heron (*Ardea herodias*), reddish egret (*Egretta rufescens*), downy woodpecker (*Picoides pubescens*), and double-crested cormorant (*Phalacrocorax auritus*).[265]

Spatial Organization

The national monument is found at the eastern end of St. Augustine's downtown area. South Castillo Drive passes along this edge of the city and divides the site into western and eastern sections. East of this road, along the Matanzas River's western limit, is Castillo de San Marcos. This section of the study area includes Castillo de San Marcos, associated structures, and earthworks as well as pedestrian sidewalks and crosswalks. A visitor parking lot is located southwest of the fort. The park headquarters and maintenance facility is located north of the fort, with an access drive linking these buildings to South Castillo Drive and Water Street. The City Gate section of

263. Soil Conservation Service, "Soil Survey of St. Johns County, Florida," (Washington D.C.: Department of Agriculture, 1983).

264. National Oceanic and Atmospheric Administration, "National Centers for Environmental Information Web Services," accessed online on 7/31/2017, (https://www.ncdc.noaa.gov/cdo-web/)(NPS NRCA).

265. National Park Service, "NPSpecies Information on Species in National Parks," accessed online on 7/31/2017, (https://irma.nps.gov/NPSpecies/Search/SpeciesList/CASA).

the national monument is located west of South Castillo Drive at the road's intersection with Orange Street. Moving farther south from City Gate, a parking lot used by employees of the NPS is found between Cuna Street and South Castillo Drive. A crosswalk links this parking lot to the visitor parking area and sidewalks at the southern end of the Castillo de San Marcos grounds.

Topography

The Castillo de San Marcos National Monument is located on the western shore of the Matanzas River, separated from the Atlantic Ocean by Anastasia Island. The natural elevation of the site varies from at or a few feet above sea level. The construction of the fort and associated structures has altered the natural topography of the site. This is seen most clearly approximately 150 feet outside of the fort's scarp. Here the glacis section of the site begins at roughly four feet above sea level and rises toward the fort until it reaches the covered way wall, ending at an elevation of 14 feet 6 inches. After peaking at the end of this earthwork, the grade immediately drops down approximately four feet to the base of the covered way wall and extends to the cap of the counterscarp before dropping roughly five feet to the moat. The vegetated moat base stretches to the fort's scarp. Another clear alteration to the site's natural topography can be seen at the Cubo Line, where a roughly 250-foot-long wall of earth supported by palm-log-shaped formed-concrete revetments leads from the covered way wall west to the sidewalk adjacent to South Castillo Drive. A forty-two-foot-wide dry moat lines the northern portion of this wall.

Land Use

The primary land use within Castillo de San Marcos National Monument is recreation related to the historical tourism and NPS interpretation of the site. The national monument site is divided into three major segments. The central portion of the site is composed of Castillo de San Marcos and associated defensive structures, the fort green, and the City Gate. The park headquarters and maintenance facility is located to the north. At the southern end of the site, west of South Castillo Drive, a small parking lot is available for use by NPS employees. A larger, city-operated visitor parking lot is located across South Castillo Drive from the NPS employee parking area.

Because of its inhabitation by the armies of Spain, Great Britain, the Confederate States of America, and the United States, the Castillo de San Marcos provides a tangible link to multiple eras of American and European history. This is most evident in the central section of the site. Here, people can directly observe the methods and materials used to construct the oldest remaining European fortification in the continental United States while learning of the historical context of its construction and occupation during the Colonial period. Visitors can find historic defensive structures and earthworks east of South Castillo Drive at the fort site and west of this road at the City Gate, which is used by many residents and tourists as the northern entry point to the shops and restaurants of the St. Augustine Historic District. There are opportunities for both ranger-led and self-guided interpretive programs at the site during operating hours.

Castillo de San Marcos National Monument is highly-trafficked, with 748,058 people having visited the site in 2018.[266] Like many sites operated by the NPS in urban environments, the fort grounds are used by residents of St. Augustine and tourists as a space for passive recreation. The fort green, maintained much as it would have been during occupation, with few trees or understory plantings, supports a variety of private and public events. These gatherings range from small occasions such as weddings to large events like St. Augustine's Independence Day fireworks celebration, which is the largest daily crowd the site sees at approximately 20,000 visitors.

The park headquarters and maintenance facility is located at the northern end of the national monument site. This area is generally off limits to park guests; however, the hardwood trees buffering the office and maintenance area from the fort green provide shade enjoyed by people visiting the park during the warmer months. At the southern end of the national monument boundaries, parking lots flank South Castillo Drive. A small lot near the western edge of the road provides parking for NPS employees. A larger lot to the east handles visitor parking and provides drop off and parking spaces for buses and larger vehicles.

266. National Park Service, "Annual Park Recreation Visitation," accessed online on 10/18/2019. (https://irma.nps.gov/Stats/Reports/Park/CASA).

Utilities

The most visible utility structures along South Castillo Drive are the overhead power and communication cables lining both sides of the street. Moving south, shortly after crossing West Castillo Drive, before arriving at the grounds of Castillo de San Marcos, these cables and utility poles are no longer present, which opens up views through the rolling turf areas of the fort grounds, toward Matanzas Bay. While the overhead utility lines have been moved below ground, pedestrian light standards line the western edge of South Castillo Drive, spaced approximately every one hundred feet. Two main crossings allow pedestrian access to the site from the shops and restaurants of the historic district west of South Castillo Drive. At these crosswalks, signalized mast arms extend over the four lanes of South Castillo Drive. Pedestrian signal boxes are mounted at each side of the street. Valve boxes and above-ground utilities are visible near the corner of South Castillo Drive and the walkway leading to the Castillo de San Marcos from the Fort Alley crosswalk (Figure 58). A curb and gutter system with catch basins handles stormwater runoff from South Castillo Drive. A network of catch basins and drop inlets drains water from the Castillo de San Marcos' visitor parking lot. The parking lot is equipped with light poles and pay stations for the metered parking spaces.

Throughout the fort grounds, few utilities are present. Drop inlets drain water from low points such as the base of the moat north of the Cubo Line wall on the western edge of the fort grounds. A French drain system allows water to drain from the moat space between the scarp and counterscarp of the fort. Irrigation heads and valves are spread throughout the lawn spaces to allow for watering of the grassed areas (Figure 59).



Figure 58: View of utilities looking northeast from the intersection of the Fort Alley crosswalk and the sidewalk along South Castillo Drive. The mast arm for the Fort Alley crosswalk signals can be seen to the left (WLA Studio 2016).



Figure 59: Southeastern view of irrigation control valves near the opening in the covered way wall on the south end of the Castillo de San Marcos (WLA Studio 2016).



Figure 60: Interior view of the Castillo de San Marcos from the western side of the fort's courtyard to the northeast. A maintained lawn space is located at the center of the fort (WLA Studio 2016).



Figure 61: View of existing vegetation at Castillo de San Marcos looking northeast from the northwestern entrance of the visitor parking lot. Note the open character of the site (WLA Studio 2016).

Vegetation

A 5,000-square-foot lawn is located in the center of the fort's courtyard. A walkway, featuring large blocks of concrete, defines the perimeter of the lawn panel, which is roughly square-shaped with angled edges at the southwestern and southeastern corners. The lawn spans seventy-two feet from the edge of the southern walkway to the edge of the northern walkway and seventy-five feet from the western walkway to the eastern walkway. The turf is worn along the western and eastern edges of the space and near a drainage inlet at the southern end of the lawn (Figure 60).

A dry moat extends along the fort's northern, western, and southern walls. This vegetated space is forty-two feet wide and spans from the fort's scarp to its counterscarp. The area is regularly cut but not as often as the turf zones outside of the fort's counterscarp. This space consists of grasses and annual weed varieties with a few small, woody saplings visible.

Much of the site immediately surrounding the fort is maintained as turf. This area is composed of a combination of St. Augustine grass and annual weed varieties. Cabbage palm (*Sabal palmetto*) and live oak (*Quercus virginiana*) are the primary tree species dotting the landscape surrounding the Castillo de San Marcos (Figure 61). Three date palms, two *Phoenix dactylifera* x *sylvestris* and one *Phoenix dactylifera*, are near the national monument's entrance sign, at the southeastern entrance to the visitor parking lot. The only tree plantings grouped in masses large enough to offer substantial shade are found at the northern end of the fort grounds. These trees and shrubs south of the park headquarters and maintenance facility establish a separation between the fort's landscape and the structures near the study area's northern boundary. Trees in this area include live oak, cabbage palm, red cedar (*Juniperus virginiana*), and Southern magnolia (*Magnolia virginiana*).



Figure 62: View from the fort's gun deck looking west to South Castillo Drive. Defensive structures visible from this position include (from foreground to background) the moat, counterscarp, covered way, covered way wall, glacis, and Cubo Line (WLA Studio 2016).



Figure 63: View from the fort's gun deck looking southeast with (from left to right) the ravelin, moat, counterscarp, covered way, covered way wall, and glacis. State Road A1A extends across the Matanzas River to Anastasia Island in the background (WLA Studio 2016).

Views and Vistas

The viewshed available from the fort's gun deck provides clear sight lines in many directions. The surrounding defensive structures are visible from atop the fort including the moat, counterscarp, covered way, covered way wall, glacis, Cubo Line, ravelin, and water battery (Figure 62). Anastasia Island is visible to the east, across the Matanzas River (Figure 63). The park headquarters and maintenance facility to the north is screened by plantings of trees and shrubs. To the west, the reconstructed Cubo Line leads the eye to the City Gate, which stands on the western edge of South Castillo Drive. The shops and restaurants across South Castillo Drive can also be seen in this direction. The large visitor parking lot is visible southwest of the fort (Figure 64). Farther southwest, the spires of Flagler College and the Cathedral Basilica of St. Augustine can be seen extending above the tree canopy of the St. Augustine Historic District.



Figure 64: View from the fort's gun deck looking south to the visitor parking lot (WLA Studio 2016).

While the views at ground level are not as expansive as those from the fort's gun deck, they are still impressive. Due to the open character of the national monument's landscape, many of the same views seen from the top of the fort are available at ground level. The Matanzas River and Anastasia Island can be seen to the west, along with sight lines to the St. Augustine Historic District. The fort and many of its associated defensive structures are easily visible from South Castillo Drive by pedestrians and motorists.

Circulation

Roads

State Road A1A (SR A1A) extends from Key West, FL, north to Callahan, FL, and connects cities along Florida's eastern coast. The road passes along the eastern edge of the St. Augustine Historic District and provides vehicular access to the Castillo de San Marcos National Monument. The local name as the route passes through this historic district transitions to South Castillo Drive. The road is four lanes wide as it extends along the western edge of the Castillo de San Marcos grounds, with two northbound and two southbound travel lanes.

At the study area's southern end, Charlotte Street is aligned north-south and intersects with SR A1A west of the NPS staff parking lot, forming the parking lot's western boundary. Cuna Street extends west from SR A1A, follows the NPS staff parking lot's southern side, and intersects with Charlotte Street, creating the parking lot's



Figure 65: View from the NPS staff parking lot northeast to the visitor parking lot. A crosswalk at this southeastern end of the study area provides pedestrian access across South Castillo Drive (WLA Studio 2016).



Figure 67: View east along the walkway leading from Fort Alley to the Castillo de San Marcos. Note the increase in grade as the walkway, intended as an accessible route, extends up the glacis (WLA Studio 2016).



Figure 66: View south along South Castillo Drive. A crosswalk provides pedestrian access from Fort Alley east to the national monument site (WLA Studio 2016).



Figure 68: View west along the walkway leading from the Castillo de San Marcos to Fort Alley. Note the eroded sections of the glacis along the edges of the walkway and the shifting walkway alignment visible at the score lines (WLA Studio 2016).

southwestern corner. At the study area's northern boundary, Water Street travels north-south through the Uptown neighborhood and ends at the fort green, where a gate blocks vehicular access to the grounds of the Castillo de San Marcos. The eastern sidewalk along Water Street transitions to a walkway and extends from the Uptown neighborhood, past the gate, and to the fort.

Parking Lots

A large, asphalt-paved parking lot is located east of South Castillo Drive and is available for use by people visiting the national monument site. The parking area is south of the Castillo de San Marcos with walkways leading from the lot to the entrance of the fort. The lot includes 115 spaces for car parking (four of which are accessible spaces), six motorcycle spaces, and three bus spaces (meant for drop-off and pickup, not for long-term parking) at the southern end of the parking area. The City of St. Augustine operates and maintains the lot and has placed automated pay stations in a raised central median, which runs the length of the lot, excluding driveways at each end of this median. A fee of $2.50 per hour is required for use of the lot. A smaller parking area is reserved for NPS employees. This lot has approximately fifteen parking spaces and is located at the intersection of South Castillo Drive and Charlotte Street, across from the larger public parking area.

Sidewalks and Walkways

Pedestrian circulation at the national monument site is handled primarily through a network of concrete sidewalks and walkways. Where the segments of the site are separated by South Castillo Drive, brick paver crosswalks allow for pedestrian access across this road. A crosswalk connects the NPS staff parking lot to the visitor parking lot near the southern end of site (Figure 65).



Figure 69: View east along the walkway leading from Fort Alley. Note the worn areas lining the walkway (WLA Studio 2016).



Figure 71: Confluence of walkways at the fort's entrance plaza, looking east, with the ticket booth in the background. Note the various material treatments and turf quality (WLA Studio 2016).



Figure 70: View west from the entrance plaza. The walkway marked as accessible leading from South Castillo Drive includes three steps near the fort's entrance (WLA Studio 2016).



Figure 72: View of the fort's entrance plaza, looking west, with the ticket booth to the right. The entrance to the ravelin is seen just left of the ticket booth (WLA Studio 2016).

Another crosswalk is located at the intersection of South Castillo Drive and Fort Alley. A concrete sidewalk, ranging from six to eight-feet-wide, lines the eastern edge of South Castillo Drive. This sidewalk connects with the park headquarters and maintenance facility before extending farther north to provide pedestrian access to the businesses along San Marco Avenue. Toward the southern end of the national monument site, this sidewalk lining South Castillo Drive leads to the visitor parking area (Figure 66). A concrete walkway extends east from the intersection of the crosswalk and sidewalk and leads up the glacis to the southwestern corner of the covered way wall (Figure 67, Figure 68). This six-foot-wide walkway then follows the outside edge of the covered way wall (Figure 69). Large groups often use this route to walk side-by-side or gather beside the walkway at the top of the glacis; they often are standing in the turf area surrounding the walkway. Before reaching the fort entrance, this walkway meets a three-step staircase near the entrance plaza (Figure 70). Just beyond this staircase, the walkway converges with others to form a collection of various material treatments, scoring patterns, and layout styles (Figure 71, Figure 72).

A sidewalk wraps around the northern and northeastern limits of the visitor parking lot and connects with a walkway following the St. Augustine seawall. This walkway then leads south to the Bridge of Lions, which crosses the Matanzas River. In the visitor parking lot, a central median constructed of concrete pavers with one section of poured concrete visually breaks up the asphalt-paved lot and provides a collection point for pedestrians. A ten-foot-wide walkway leads from the southeastern section of the parking lot to the entrance plaza (Figure 73). North of the Cubo Line, extending from the sidewalk adjacent to South Castillo Drive, a three-foot-wide walkway links to Water Street, just east of the maintenance area at the northern end of the site (Figure 74).



Figure 73: Main walkway, looking north, leading from the visitor parking lot to the Castillo de San Marcos. Note the washed areas and sediment along the route (WLA Studio 2016).



Figure 75: View east along the dirt pathway to the fort from South Castillo Drive, just south of Cubo Line (WLA Studio 2016).



Figure 74: Looking southwest along the sidewalk connecting Water Street to the City Gate. Note the cracks visible between the walkway's joints (WLA Studio 2016).



Figure 76: Southeastern view along the dirt pathway as the route passes through the covered way wall. The pathway is used by pedestrians and maintenance vehicles to access the interior sections of the fort grounds (WLA Studio 2016).



Figure 77: Southeastern view along the dirt pathway adjacent to the covered way at the fort's southern. The wall of the ravelin is visible to the left (WLA Studio 2016).

Another three-foot-wide walkway extends from the northeastern section of the Castillo de San Marcos, linking Water Street and the water battery. At the southern corner of the water battery, a ten-foot-wide walkway constructed of two-foot-square concrete pavers connects the water battery with the entry plaza.

Pathways

Informal routes are used by many pedestrians and staff members to reach sections of the historic site where formalized paths, such as concrete walkways, are not provided. These are typically bare-earth paths that bisect turf areas. An informal pathway, approximately six feet wide, extends from South Castillo Drive toward the covered way wall at the western portion of Castillo de San Marcos. This path follows along the south side of the Cubo Line (Figure 75), up the glacis, and passes through an opening of the covered way wall (Figure 76). At the entrance to the covered way, this dirt path splits in two directions. One section widens to roughly ten feet and leads south, eventually ending at the fort's entry plaza (Figure 77). The other section, approximately four feet wide, extends north before turning east and leading down a

set of steps, through the covered way wall, and to the covered way. The pathway continues until reaching the wooden staircase connecting the covered way and the water battery. At the water battery's northern end, a dirt path leads south, and eventually fades from view shortly after passing the hot shot furnace, as the primary surface shifts from maintained turf to sand.

Buildings and Structures

Ravelin

Located in the southern section of the Castillo de San Marcos' moat, the ravelin is composed of an earthen terreplein surrounded by coquina walls. This part of the fort's defensive system consists of two levels connected by a small staircase. Poured concrete forms the ground plane of the lower level. This area of the ravelin is connected to the covered way and the fort's sally port by two drawbridges. These drawbridges and the lower section of the ravelin are used to access the fort's interior. The ravelin's upper level is enclosed by a parapet. The ground plane is a combination of concrete paving and earth. Wooden steps and platforms have been installed on this upper level.

The triangular form of the ravelin is supported by coquina-block walls, which measure twenty-eight feet by twenty-eight feet by forty feet along their base. The longest wall faces the fort's scarp and primary entrance. The smaller walls mirror the angle of the nearby counterscarp, which serves as the outer boundary for the fort's moat and as structural support for the covered way. The walls support and protect the terreplein at the upper level of the ravelin. Parapets extend from the ground plane on this upper level. Coquina-block pillars are built up at the lower level to support the drawbridge extending from the covered way. The Spanish coat of arms is inset at the top of the wall supporting the upper level of the ravelin, above the ravelin's staircase.

Two entrance bridges connect to the ravelin. The bridges are similarly constructed, but the bridge extending to the ravelin from the covered way is supported by wooden piers (Figure 78). Piers constructed of coquina block support the second bridge, leading from the ravelin to the fort's sally port. At both bridges, wooden beams span across these vertical columns. Wooden joists are stacked



Figure 78: Northeastern view to the drawbridge leading from the entrance plaza (right) to the ravelin (left) (WLA Studio 2016).



Figure 79: Southern view of the moat at the western side of the Castillo de San Marcos (WLA Studio 2016).

upon these beams with wooden boards spanning the joists to create a walking surface. Both sides of the two bridges are finished with cross-rail-style wooden railings. The first of the two bridges extends approximately thirty feet from the covered way to the ravelin. About twenty feet from the covered way, the bridge turns slightly west. A timber counterweight constructed with metal hardware and chains connecting to the bridge deck allows for the remaining deck length to be raised and lowered to control access to the ravelin and, ultimately, the core of the fort. The second bridge extends approximately forty-five feet from the ravelin, north to the fort's sally port. It is here that a similar drawbridge structure is present, allowing NPS employees to raise and lower the remaining fourteen feet of the bridge's deck.

Moat

This forty-two-foot-wide ditch extends from the wall of the fort, which serves as the moat's scarp, to the counterscarp, which is established by the wall supporting the covered way (Figure 79). The northern, western, and southern sides of the



Figure 80: Southern view from the northern end of the water battery with gun emplacements in the foreground and the hot shot furnace and utility shed in the background (WLA Studio 2016).



Figure 81: Southeastern view of cannon row from the southern end of the water battery with the seawall in the background (WLA Studio 2016).

fort are encircled by the moat. The water battery extends along the eastern end of the fort. Low retaining walls generally flush with the existing grade extend from the scarp to the counterscarp of the moat on both the northeastern and southeastern ends, where the moat abuts the water battery. This northeastern wall is circular in form and extends into the water battery. The southern wall extends in a direct line from the southeastern corner of the scarp to the counterscarp. The moat is currently maintained as dry. While vegetation is periodically removed from the ditch, the area is not mowed regularly. Small tree saplings can be seen emerging from the slowly naturalizing area.

Scarp/Curtain Walls at Fort

The curtain wall of the fort establishes the scarp of the moat. Like other walls found on site, the scarp wall is built of coquina block with lime mortar. This wall is approximately thirty feet tall.

Counterscarp/Moat Wall

The moat's counterscarp establishes the outer limit of the moat while setting the elevation for the covered way, which extends from the top of this wall. The counterscarp is a coquina-block wall with lime mortar and varies in height, between approximately four and ten feet. The shortest segment is on the northern end of the fort, and the tallest is found at the southern end, near the ravelin.

Water Battery

A dry moat surrounds the northern, western, and southern edges of Castillo de San Marcos. The water battery is located along the eastern edge of the fort. This portion of the fort's defensive system extends forty-one feet from the fort's eastern curtain wall to the seawall. The length of the water battery is approximately 248 feet. Remnant segments of sixteen barbette-type gun emplacements are found along the seawall with traverse rails and pintle blocks (Figure 80). A row of cannon stretches across three concrete pads located at the southeastern corner of the water battery (Figure 81). Each pad is six feet wide and spaced six inches apart but differ in length. The first is ten feet long and holds two cannon. The second, fourteen feet long, holds three. The third pad, 11 feet 6 inches long, also holds three cannon. A hot shot furnace is in the center of the battery between the gun emplacements and the forts curtain wall. A utility shed is located southwest of the hot shot furnace, against the eastern curtain wall of the fort.

Hot Shot Furnace

The Hot Shot Furnace is a stucco and coquina structure, built during the construction of the water battery, and was used to heat iron cannon balls before firing them at wooden ships and other flammable targets. The furnace measures nine feet long and eight feet wide. A chimney tops the southern end of the structure and measures eleven feet tall at its cap. The top of the furnace slopes down toward its northern end. Star-shaped iron anchors cling to the sides of the furnace and support the iron bars found inside. The semicircular opening for inserting shot is located at the southern end with a granite step below. A small interpretive sign placed on a low two-foot-by-two-foot concrete column, accompanied by a



Figure 82: View west to the hot shot furnace at the center of the water battery with the eastern scarp wall of the Castillo de San Marcos in the background (WLA Studio 2016).



Figure 84: View north of the seawall from the northern end of the water battery. The seawall separates the fort green (left) from Hospital Creek (right). The walkway leading to Water Street is seen to the left, in the fort green (WLA Studio 2016).



Figure 83: View west to the utility shed along the eastern wall of the Castillo de San Marcos. The eastern scarp of the fort serves as the western wall of the utility shed (WLA Studio 2016).



Figure 85: View north to the seawall from the central salient at the eastern end of the water battery. The northeastern bastion of the Castillo de San Marcos is seen in the background (WLA Studio 2016).

three-foot-by-5 ½-foot concrete landing, is on the eastern side of the furnace (Figure 82).

Utility Shed

This coquina-block building with a shingle roof is located on the eastern curtain wall near the Bastion San Agustin. The shed extends seven feet out from the curtain wall. The eastern edge of the block building is eight feet long. A doorway is located on the northern face of the building. South of the shed, a 4-foot-by-4 ½ -foot concrete pad supports a ground-mounted transformer (Figure 83).

Seawall

The fort's seawall lining the water battery's eastern edge is approximately 730 feet long. This structure is a segment of the St. Augustine seawall, which begins at the Florida National Guard Headquarters to the south and extends north from the national monument site, ending near the intersection of Water Street and Pine Street (Figure 84). The original Spanish seawall was built in the late 1600s. The War Department built a new coquina and granite seawall between 1833 and 1842. The landward face of the wall is built of coquina block. Granite can be seen on the seaward side of the wall up to the high water mark. The remaining section of the wall above the granite facing is coquina block. To reach the height of the Matanzas River at high tide, the seawall rises vertically from the ground plane of the water battery, creating a parapet along the water battery's eastern limit. The seawall extends east into Matanzas Bay in the form of three salients (Figure 85).

Living Seawall

This fifty-foot-wide structure consists of a twenty-foot-wide strip of coquina rip-rap and a thirty-foot-wide sediment storage zone east of the seaward side of the historical seawall. The



Figure 86: View north of the living seawall from the sidewalk along the eastern end of the visitor parking lot (WLA Studio 2016).



Figure 87: View east from the north side of the Castillo de San Marcos of the covered way (center). The covered way wall (left) and the counterscarp (right) define the edges of this structure (WLA Studio 2016).



Figure 88: Western view of the covered way wall near the wall's southwestern salient (WLA Studio 2016).



Figure 89: Southern view of the covered way wall near the southwestern salient. The covered way is seen to the left and the glacis is seen to the right, with the walkway leading from South Castillo Drive in the background. Exposed dirt and filter fabric are visible where the wall meets the glacis (WLA Studio 2016).

sediment storage zone between the breakwater and the historical seawall allows for sand and other material to build up behind the riprap barrier after entering this space through an opening near the south end of the rip-rap strip. The living seawall extends 280 feet between the southern salient of the water battery and the historical seawall near the southeastern corner of the visitor parking area (Figure 86).

Covered Way

The covered way consists of the flat, grassed space between the moat and glacis on the northern, western, and southern sides of the Castillo de San Marcos. The inner boundary of this structure is defined by the moat's counterscarp. The covered way wall establishes the outer edge of the structure (Figure 87). The width of the covered way varies, given the various angles of the covered way wall. Generally, the width is approximately thirty-one feet. This measurement increases to approximately one hundred feet at the northwestern and southwestern salients. The NPS maintains the surface of the covered way as turf. Exposed earth can be seen along the edges of the counterscarp and covered way walls where erosion has occurred.

Covered Way Wall

This 4-foot-tall coquina-block wall separates the covered way from the glacis. The wall begins on the northeastern corner of the fort site where the glacis terminates at the western limit of the water battery. The covered way wall extends west from a separate retaining wall, which supports the glacis at its terminus. The covered way wall lines the perimeter of the covered way, with salients extending from the northern, western, and southern ends of the wall as well as the northwestern and southwestern corners. Along its run, sections of the wall, approximately 6 feet 6 inches deep by 19 feet wide cut into the glacis (Figure 88, Figure 89). Steps have been constructed along the covered way wall leading from the glacis down to the covered



Figure 90: View southwest from the covered way to the inside corner of the covered way wall. Brick steps lead to a small concrete landing (WLA Studio 2016).



Figure 91: View south to the fort green from the vegetative buffer south of the park headquarters. The glacis is seen in the background rising toward the Castillo de San Marcos (WLA Studio 2016).

way. One of these staircases is located at the wall's southwestern corner. This set of brick steps leads down from the southwestern salient of the wall to a small concrete landing in the covered way (Figure 90). The other set of steps is located in a recessed area on the western end of the wall near the northwestern salient. These steps are constructed of coquina block and covered in concrete. A concrete landing is also located at the base of this stair set. There is an 11-foot 6-inch-wide opening along the western salient of the wall which allows for pedestrian traffic and for NPS utility vehicles to enter the covered way.

Glacis

This grassed slope extends approximately sixty-three feet from the covered way wall, down toward the open park area to the north, South Castillo Drive to the west, and the national monument's visitor parking lot to the south. Aside from a few individual trees, the glacis is maintained as an open, rolling hill, clear enough to allow for easy views from the fort into the surrounding landscape.



Figure 92: Northern side of the Cubo Line looking east from the sidewalk adjacent to South Castillo Drive (WLA Studio 2016).

Fort Green

Because the national monument site is maintained with very few trees, shrubs, and other ornamental materials, most of the site is a grassed, unobstructed landscape (Figure 91). The fort green is composed of the open space outside of the fort's glacis and other central defensive structures. The largest portion of the fort green is located on the northern end of the site. Other than a few trees and narrow sidewalks connecting Water Street to South Castillo Drive and the water battery, nothing transects this northern section of the fort green. There is also a large grassed area on the eastern end of the site, south of the Cubo Line. While space is available south of Castillo de San Marcos, the visitor parking lot encompasses most of land outside of the fort's glacis.

Cubo Line

Built of concrete pillars formed to resemble the original palm logs used by the Spanish, the Cubo Line extends from the covered way, 250 feet west to the sidewalk along the eastern edge of South Castillo Drive. While the northern and southern faces of the structure are composed of horizontal and vertical faux palm logs, the top is unfinished and the mounded earth is exposed along this surface. A moat, approximately forty-two feet wide, lines the northern face of the Cubo Line. Other reconstructed sections of this wall can be seen at the City Gate west of South Castillo Drive and near the intersection of Orange Street and Cordova Street, just west of the national monument site (Figure 92).

Castillo de San Marcos

The centerpiece of the Castillo de San Marcos National Monument is a symmetrical, four-bastioned structure built of coquina block (Figure 93). The curtain wall surrounding the fort is thirty feet tall. A parapet with merlons and embrasures extends from this curtain wall. The base along the curtain wall of the Castillo de San Marcos is wider than its top, with the wall sloping toward the center of the fort as it reaches its peak. A ravelin is located south of the fort. Access to the fort is gained via a drawbridge to the ravelin and a drawbridge from the ravelin, which connects to the building's sally port. A moat, approximately forty-two feet wide, surrounds the building on the northern, western, and southern sides.



Figure 93: View northwest to the southeastern corner of the Castillo de San Marcos with the ravelin and drawbridge visible to left (WLA Studio 2016).

Ticket Booth

This small building, originally constructed in 2010 and enlarged in 2014, measures 11 feet by 10 feet 6 inches. It is a simple rectangular structure with an open gable roof, covered in wooden shingles (Figure 94). Three ticketing windows are located on the western side of the building, which faces the entry plaza. One window is on the northern end and another is on the southern end. Shallow display cases attached to the northern and southern ends of the ticket booth are used to house signs with information about the national monument. Doors on the northern and eastern sides of the building provide access for employees. The ticket booth is outfitted with security cameras near its southern corners and along the north face. HVAC equipment is sited near the door on the eastern face of the ticket booth.



Figure 94: Northeastern view of the ticket booth at the fort's entrance plaza (WLA Studio 2016).

Small-Scale Features

Water Battery Pintles, Pintle Blocks, and Traverses

Small-scale features associated with the 1840s gun emplacements remain at the water battery. Most of the twenty emplacements have some remnants of the original hardware and all are in various condition. The granite pintle blocks are in good condition. The metal components show evidence of rusting, but have been painted with a rust inhibiting coating. Gun emplacements 16, 18, 19, and 20 are completely missing.

Cannon

As of 2018, a total of thirty-six cannon of various types are on display at Castillo de San Marcos. All are historic, with several dating from the Spanish Colonial period, including a fragment of one that was found buried at the fort, while others date to the War Department period. Nine are in the water battery. These include eight iron howitzers and one 32-pounder. The howitzers date circa 1815-1846; they were transferred to the NPS when they assumed administration of the site in 1935. Twenty-five cannon of various types are on display on the terreplein of the fort. These include two circa 1750 25-pounders, a 1737 4-pounder gifted to the NPS in 1953, a 1743 16-pounder bronze transferred from West Point Military Academy in 1762, a circa 1690 24-pounder transferred in 1935, two circa 1750 18-pounders transferred in 1935, a 1750 24-pounder transferred in 1935, a circa 1690 18-pounder gifted to the NPS in 1955, a 1724 15-inch bronze mortar loaned to the NPS in 1971, a 1784 12-inch bronze mortar gifted to the NPS in 1958, a 1798 8-pounder bronze gifted to the NPS in 1978, a 1762 6-pounder bronze transferred from West Point Military Academy in



Figure 95: View east from South Castillo Drive of the entrance sign at the southern end of Castillo de San Marcos National Monument (WLA Studio 2016).



Figure 96: View east from the sidewalk lining South Castillo Drive to the Cubo Line, with the Castillo de San Marcos in the background. An interpretive sign (left) describes the history of the Cubo Line. A standard regulatory sign (right) directs visitors to the fort entrance (WLA Studio 2016).

1962, a 1735 18-pounder bronze loaned to the NPS in 1971, a 1798 12-pounder bronze transferred from West Point Military Academy in 1962, a 1795 4-pounder bronze gifted to the NPS in 1960, two circa 1700 2-pounders transferred in 1935, a 1783 12-inch bronze mortar gifted to the NPS in 1960, a 1807 12-inch bronze mortar gifted to the NPS in 1960, a circa 1700 4-pounder cast iron gifted to the NPS in 1954, a 1724 15-inch bronze mortar loaned to the NPS in 1971, a 1774 12-inch bronze mortar gifted to the NPS in 1958, a 1768 4-pounder bronze transferred to the NPS in 1962, and a circa 1690 3-pounder cast iron gifted to the NPS in 1954. There are also two cannons located in the courtyard and in the fort's rooms, including a 1764 18-pounder loaned to the NPS in 1971 and a fragment of a circa 1690 16-pounder which exploded in 1702 and was found buried in the fort's moat.

Signs

A variety of sign types exist at Castillo de San Marcos National Monument. Each sign type is categorized by function and use throughout the national monument and described in detail below:

Entrance Sign – The national monument's entrance sign is located at the southern end of the site at the entrance to the visitor parking lot. The sign is constructed of two coquina-block columns with decorative tops similar to the design seen atop the City Gate pillars. Each column is placed on a concrete pad. The NPS arrowhead emblem is placed on the southern pillar. A metal sign spans between the two columns. The top section of the sign is brown with white lettering. This reads "National Park Service" above with "United States Department of the Interior" below. Underneath this lettering the sign coloring is black and large white lettering reads "Castillo de San Marcos National Monument" (Figure 95).

Interpretive Panels – Multiple interpretive panels and signs are located throughout the national monument site. At the southern end of the visitor parking lot, a City of St. Augustine directory is mounted between two vertical metal poles. This multi-colored map denotes nearby civic and historic landmarks and identifies destinations within a five-minute walk of this sign's location. Another interpretive sign near the visitor parking lot provides a brief introduction to Castillo de San Marcos for those approaching from the parking area, with a sequential description of the fort's use from a Spanish-held fort to its service as a part of the U.S.'s coastal defense system. A similar sign near the cannon in the water battery provides a brief description of updates made during the fort's use by U.S. forces and displays an early photograph of the water battery with gun emplacements installed along the seawall and the hot shot furnace visible near the center of the space. A white sign with black lettering is mounted on a single wooden post just beyond the western end of the reconstructed Cubo Line. This sign describes the previous need for the Cubo Line and its use as the defensive wall for St. Augustine. The description is accompanied by a sketch of the wall as it would have appeared in 1810 (Figure 96). These panels were replaced with new waysides in 2018.

Regulatory and Road Signs – Many of these signs are found throughout the park, with most being metal signs placed on metal pole bases.



Figure 97: A small concrete marker at the southeastern end of the visitor parking lot median identifies the Castillo de San Marcos as a "National Historic Civil Engineering Landmark" (WLA Studio 2016).



Figure 98: View northeast of benches along the walkway between the covered way wall and the glacis. Worn turf is visible near the top of the glacis (WLA Studio 2016).

The parking lot contains metal signs signifying that payment is required for parking. Accessible parking spaces are marked with individual signs. Directional signs are posted in the parking lot as well. Near the southern end of the parking area, a sign is posted that lists the national monument's hours of operation and provides notices such as the restriction of unmanned aircraft on the national monument's grounds. This particular sign display is interchangeable and a locked door allows for signs to be removed and updated as necessary. Typical stop signs and pedestrian crossing signs are located near the entrances to the parking lot. An interchangeable sign box like that near the parking area is located close to the crosswalk leading to the national monument from Fort Alley. There is also a small sign here directing those visiting the park toward the accessible entrance leading from the visitor parking area. A sign at the western end of the Cubo Line directs pedestrians to the national monument's entrance sidewalk near the crosswalk leading from Fort Alley. In the NPS staff parking lot, signs are posted identifying the parking area as being for NPS employees only. Near the fort's entry plaza, signs ask that those visiting the park keep off of the steps leading down to the moat and that they do not sit or stand on the coquina-block walls throughout the national monument.

Commemorative Concrete Marker – A concrete marker with a mounted metal plaque on its top is located at the southwestern end of the raised median in the visitor parking lot. This marker recognizes Castillo de San Marcos as a National Historic Civil Engineering Landmark and features the seal of the American Society of Civil Engineers. The bottom right of the plaque reads "ASCE 1976" (Figure 97).

Benches

Five benches are located on the walkway that follows the southern end of the covered way wall (Figure 98). The back of the benches are against the extended top of the covered way wall, and the benches face southeast. A similar bench is found along the linear walkway leading from South Castillo Drive to Water Street. Three backless benches are located at the entry plaza, along the covered way wall, east of the first of two drawbridges leading to the fort's entrance. These benches are all made of recycled plastic and are similar styles, although those at the entry plaza are backless. All have black legs and brown slats for the seating surface and back supports, where applicable. A different bench type is found at the western end of the reconstructed Cubo Line, along the walkway on the eastern end of South Castillo Drive. This bench is made of horizontal composite timbers, which are stacked in a curvilinear fashion from the seat to the back. The bench is supported by three metal legs.

Fences

A black aluminum fence is located between the visitor parking area and South Castillo Drive (Figure 99). The fence extends from the northwestern entrance of the parking lot to the southeastern entrance. The fence was installed to encourage pedestrians to use the crosswalks near the visitor parking lot's entrance drives rather than walk directly across South Castillo Drive when traveling to or from the parking lot.



Figure 99: View west from the visitor parking lot to South Castillo Drive. A black aluminum fence serves as a barrier between the parking area and roadway (WLA Studio 2016).



Figure 100: View northwest from the visitor parking lot to South Castillo Drive. Payment kiosks (left) and light standards (right) are located in the parking lot median (WLA Studio 2016).

Gates

Gate arms are located on either side of the northern driveway of the visitor parking lot. The brown metal arms with reflective tape swing closed and connect with a centrally located bollard placed between the two traffic lanes at this entrance. The NPS typically keeps the gates open, and each is locked to a post outside of the curb lining the drive.

Lights

Lighting standards are in the visitor parking lot and along the walkway adjacent to South Castillo Drive (Figure 100). Each of the light poles in the parking area supports two lamps. The lights along South Castillo Drive are smaller in scale and are outfitted with one light fixture each. The poles in the visitor parking lot are equipped with arms extending horizontally to allow for the hanging of banners or signs. Small, pedestrian scale lighting standards are provided along the seawall near the southeastern corner of the parking area. Ground-mounted and wall-mounted light fixtures



Figure 101: View south to waste receptacle at the eastern end of the visitor parking lot (WLA Studio 2016).

are located in numerous places around the site. Ground-mounted fixtures are in the water battery and covered way and are used to illuminate the fort's scarp. Wall-mounted fixtures, also used to light the scarp, are fixed to the vertical face of the counterscarp.

Parking Payment Kiosks

Five automated payment kiosks are located within the raised median in the center of the visitor parking lot. The payment machines are spaced across the central and southeastern ends of the median. These kiosks accept coins and cash as well as debit and credit cards. Meters accepting only coins were previously located at every parking space.

Waste Receptacles

Two large waste receptacles are located in or nearby the visitor parking lot. The first is at the northwestern corner of the raised median in the center of the lot. The other is located at the southeastern end, adjacent to the bicycle racks (Figure 101). An additional receptacle is located at the fort's entrance plaza. These wildlife-proof waste receptacles measure two feet deep and four feet wide at their bases. There are two openings along the front of the receptacles, one labeled "trash" and the other "recycling." Doors allowing access to the inside of the receptacles are on the front of the containers.

Bike Racks

Four bike racks are provided adjacent to a pedestrian walkway between the southeastern corner of the visitor parking lot and the seawall. The bike racks are constructed of metal tubing, which is coated and painted black. The metal

tubing has been formed to create two vertical legs and a curved top. A concrete pad provides space for parked bikes. The vertical legs of each bike rack are securely set in this concrete pad.

Park Headquarters and Maintenance Facility

The park headquarters and maintenance facility is a collection of buildings and maintenance yards at the northwestern corner of the Castillo de San Marcos National Monument. The NPS first developed the site during 1964 and 1965 as part of the Mission 66 program, and they have since expanded and updated the area. This facility is located across South Castillo Drive from the St. Augustine Visitor Information Center. The site provides parking for NPS employees but is not intended to be used for parking by those visiting Castillo de San Marcos. The facility is fairly well-screened from the fort green by trees and shrubs.[267]

Vegetation

The majority of the existing landscape consists of modern foundation plantings of evergreen trees and shrubs with a few colorful perennials and flowering trees. Some older trees, such as cabbage palm (*Sabal palmetto*) and live oak (*Quercus virginiana*) specimens were preserved during the facility's construction in the 1960s. St. Augustine grass is the primary groundcover outside of these foundation planting areas (Figure 102). Hardy, evergreen trees and shrubs found at the facility include plants such as yaupon holly (*Ilex vomitoria*), loblolly bay (*Gordonia lasianthus*), live oak (*Quercus virginiana*), and glossy privet (*Ligustrum lucidum*). These are paired with flowering trees and perennials, such as crape myrtle (*Lagerstroemia indica*), flowering dogwood (*Cornus florida*), and yellow daylily (*Hemerocallis lilioasphodelus*) to create a low maintenance landscape that visually distinguishes this northern end of the national monument from the southern portion of the site (Figure 103, Figure 104).



Figure 102: View south from northwestern corner of the study area. This section of the site features a clipped hedge along the western side of the park headquarters building (left) and open turf with cabbage palm and live oak trees between this building and South Castillo Drive (right) (WLA Studio 2016).



Figure 103: View northwest to the park headquarters building from the lawn north of the access road. A hedge separates the building's walkway from the turf space. Small flowering trees and perennials are planted outside of the foundation hedge (WLA Studio 2016).



Figure 104: View looking east from southeastern corner of the park headquarters building. A planting bed extends from the walkway in front of the maintenance office (left) toward the access road (right). The fort green is visible to the far right (WLA Studio 2016).

267. National Park Service, "Final General Management Plan and Environmental Impact Statement, Castillo de Marcos National Monument" (Washington D.C.: National Park Service, 2007).



Figure 105: View to the northeastern corner of the study area from just east of the park headquarters and maintenance facility. A debris pile and dumpster (left) are located on the northern side of the road. The fort green (right) is along the southern side of the road (WLA Studio 2016).



Figure 106: Eastern view from just east of South Castillo Drive to park headquarters building (left). The sidewalk lining the access road meets the walkway leading to the building's entrance near the flagpole. Parking spaces are located along the south end of the access road (right). The fort green is seen to the far right, outside of the vegetative buffer (WLA Studio 2016).

Circulation

Roads

South Castillo Drive is located west of the park headquarters and maintenance facility. The road is four lanes wide. Two of these lanes lead south, one is a left-turn lane leading to West Castillo Drive, and the last is a northbound lane. An entrance drive to the park headquarters and maintenance facility extends east into the property from South Castillo Drive. This driveway leads through the site and connects with Water Street and the residential community north of the national monument site (Figure 105).

Parking Lots

Three designated parking areas are located off the driveway linking South Castillo Drive and Water Street. These parking spaces are reserved for NPS employees. The first parking area is located directly in front of the park headquarters building, south of the entrance drive. This parking area provides nine parking spaces, including one accessible space. Two additional spaces are available farther east along the driveway, across from the walled and gated structure housing two dumpsters. Ten parking spaces are located on the eastern end of the maintenance area, near the site's northern boundary. South from this small lot, two asphalt-paved parking stalls extend southeast from the driveway. Two storage trailers are parked on this parking extension.



Figure 107: Shell-concrete and brick patio at the entrance to the park headquarters building, behind a screening wall and entrance sign (WLA Studio 2016).

Sidewalks and Walkways

A six-foot-wide concrete sidewalk lines the eastern edge of South Castillo Drive and passes along the western edge of the park headquarters and maintenance facility. A five-foot-wide sidewalk extends east from South Castillo Drive's sidewalk and continues along the northern end of the park headquarters and maintenance facility's entrance drive (Figure 106). This sidewalk transitions to an eight-foot-wide concrete walkway as it turns north to the entrance of the park headquarters building. A small shell and concrete patio with brick accent bands is located east of this eight-foot-wide walkway (Figure 107). A concrete walkway extends east from this entrance walk and lines the northern



Figure 108: View east of the walkway leading to the maintenance office and maintenance yard from the main entrance of the park headquarters building (WLA Studio 2016).



Figure 109: View north from the access road to the sidewalks east of the maintenance facility. Concrete and unit-paver sidewalks provide pedestrian routes from the parking area (WLA Studio 2016).



Figure 110: Northern view to the intersection of sidewalks servicing the parking area east of the maintenance facility. Two cannon and a carriage are placed at this intersection (WLA Studio 2016).

end of the small patio and the southern facade of the park headquarters building (Figure 108). This walkway continues east, expands near the maintenance office at the building's southeastern corner, and ends at its intersection with the entrance drive of a walled storage area.



Figure 111: Park headquarters building, looking north from access road. Note the entrance sign in the form of a screening wall just right of the entrance walkway. A flagpole with a ground-mounted uplight is placed in the landscape in front of the building (WLA Studio 2016).

At the northeastern corner of the park headquarters and maintenance facility, an L-shaped sidewalk collects pedestrians from a small parking area. The two extensions of this sidewalk are constructed of concrete unit pavers (Figure 109). These two extensions meet at a section of poured-in-place concrete with decorative scoring patterns (Figure 110). The sidewalk at the small parking area leads to a poured-in-place concrete sidewalk along the driveway linking South Castillo Drive and Water Street. This concrete sidewalk leads west, beyond the southeastern corner of the walled maintenance yard. A gap in this sidewalk is located near a gate providing access to the maintenance yard. The sidewalk continues west before ending at the facility's walled and gated dumpster storage area.

Buildings and Structures

Park Headquarters

The headquarters for Castillo de San Marcos National Monument are housed in the administrative offices located in the northern portion of the site (Figure 111). The headquarters building was originally constructed between 1964 and 1965 and has since been expanded. The building is U-shaped, surrounding a central courtyard. A portion of the building extends south from the southwestern corner. The maintenance offices are located at the southeastern corner, adjacent to a maintenance yard. The outer walls of the building are faced with stucco and painted white. Brown wooden shutters are mounted on each side of the windows along the exterior walls. Wooden shingles cover the building's cross-hipped bonnet roof.



Figure 112: Western maintenance yard, looking north from the access road. A small drive leads to the maintenance yard from the access road past the park headquarters building (left) and the waste storage area (right) (WLA Studio 2016).



Figure 113: Eastern maintenance yard, looking northwest from the gate north of the access road (WLA Studio 2016).



Figure 114: View north from the access drive to the eastern side of the waste storage area (WLA Studio 2016).

Maintenance Facility

The maintenance area is located just east of the park headquarters building. A linear, roofed storage building extends approximately 150 feet from the eastern facade of the headquarters building to the stucco wall lining the small parking area at the eastern end of the maintenance facility. Approximately fifty feet from the eastern facade of the headquarters building, a roofed extension of this building spans forty-five feet south to the



Figure 115: View north from the access road to the park headquarters entrance sign (WLA Studio 2016).

stucco wall screening the maintenance facility from the access road between South Castillo Drive and Water Street. This forty-five-foot-long building extension separates the western (Figure 112) and eastern (Figure 113) maintenance yards. NPS staff can access each of these open-air yards via a small gated driveway linking the spaces to the access road connecting South Castillo Drive and Water Street. A walkway is located between the two yards by an opening in the north-south-oriented building extension. Waste storage is provided south of the screening wall between the maintenance facility and the access road connecting South Castillo Drive and Water Street. Stucco walls and metal gates house two dumpsters, one to the west and one to east (Figure 114). The wood-shingled roofs and the stucco-faced walls of the maintenance facility mirror the materials used to construct the headquarters building, located to the west.

Small-Scale Features

Signs

A variety of sign types exist at the park headquarters and maintenance facility. These are categorized by function and use throughout this character area and described in detail below:

Park Headquarters Building Entrance Sign – A white stucco screening wall is located east of the walkway leading to the front entrance of the headquarters building. This wall extends east from a post supporting the building's roof and screens the small patio near the building's entrance. Black letters are fixed to the wall above a trimmed dwarf yaupon holly hedge and read "National Park Service Headquarters." Next to this lettering is a mounted NPS arrowhead emblem (Figure 115).



Figure 116: View from access road to parking area. Signs state that parking is intended for "National Park Service Employee Parking Only" (WLA Studio 2016).



Figure 117: The Albert Manucy commemorative marker is mounted to a wooden post in a planting bed north of the entrance drive, east of South Castillo Drive (WLA Studio 2016).

Regulatory and Road Signs – A brown metal sign with white lettering and an arrow pointing south along South Castillo Drive directs people to the fort entrance. This sign is located near the entrance to the administration offices and maintenance area driveway. Signs throughout the parking area in front of the park headquarters building inform readers that the lot is for NPS employees only and feature the NPS arrowhead emblem. These brown signs with white lettering are mounted to black metal posts (Figure 116). A blue metal sign on a metal post identifies the accessible parking space at the southern end of the administrative offices parking lot. A small brown metal sign with white lettering near the administrative offices entrance states that "all park passes much be purchased at fort."

Albert Manucy Marker – The marker signifying the placement of Albert Manucy, historian and former curator for the NPS Southeast Regional Office, on the Great Floridians 2000 list is located in a planting bed on the north end of the entrance drive leading to the park headquarters and maintenance facility from South Castillo Drive. The round marker is mounted to a wooden post. The marker is blue with white text. In small lettering aligned with the circular perimeter, the top of the marker reads "Great Floridians 2000." The bottom reads "Florida Department of State" followed by "Florida League of Cities." In bold text, the name "Albert Manucy" is printed in two lines at the center of the marker (Figure 117).



Figure 118: View northeast across the small patio east of the entrance to the park headquarters building. Two benches are bolted to the concrete surface of the patio (WLA Studio 2016).

Benches

Two benches are located on the small patio near the entrance to the park headquarters building behind the screening wall and building entrance sign. The seating surface of the backless benches is constructed of square wooden timbers, which are painted brown. The trapezoid-shaped metal legs of the benches have rounded corners and are painted black (Figure 118).



Figure 119: View northwest to the southeastern corner of the park headquarters building. Note the picnic table placed just outside of the maintenance office entrance (WLA Studio 2016).



Figure 120: View east toward Water Street. A metal gate is located south of the maintenance facility (left), along the access road (WLA Studio 2016).

Picnic Table

A walkway lines the southern facade of the of the park headquarters building. A picnic table is located at the south side of this walkway west of the entrance drive to the walled maintenance yard, just outside of the maintenance office. The picnic table is wooden and is unfinished (Figure 119).

Flag Pole

A flag pole displaying the American flag is located in front of the park headquarters building, east of the entrance walk. This is a metal pole mounted on a square, concrete base. The pole is located in the turf area, outside of a nearby planting bed. A light, pointing to the top of the flag pole, is located near the pole's base.

Lights

Ground-mounted lighting is used to illuminate site elements such as a flag pole, plant material, and building facades. These lights are located near the administrative offices.

Gates

The NPS uses brown metal gates to separate the waste storage area from the driveway leading from South Castillo Drive toward Water Street. Two brown metal gates, each spanning fifteen feet, shield this area from view and allow access to the dumpsters housed behind the gates. A third gate, which spans the drive through the facility, is located just east of the waste storage area. This brown metal gate consists of two square metal beams which swing closed toward the middle of the driveway. Each metal arm is fixed to a concrete column and can be locked open by being connected to a brown metal post south of the concrete column (Figure 120). A similar gate is located at the entrance to the access drive from Water Street (Figure 121).



Figure 121: View south to fort grounds from Water Street. A metal gate blocks vehicular access from the residential area north of the study area to the park headquarters and maintenance facility (WLA Studio 2016).

Fence

A black aluminum fence extends from the sidewalk along South Castillo Drive to the northwestern corner of the park headquarters building. This fence separates the maintained landscape and turf area west of the park headquarters and maintenance facility from the adjacent property's parking lot north of the study area (Figure 122).



Figure 122: View east from the sidewalk along South Castillo Drive to the park headquarters building. A black aluminum fence lines the northern end of the study area between the building and sidewalk (WLA Studio 2016).



Figure 123: View of City Gate, looking west from the sidewalk along South Castillo Drive (WLA Studio 2016).

City Gate

The Cubo Line, extending from the Castillo de San Marcos to the San Sebastian River, was a key element of St. Augustine's defense. This city wall was originally constructed in 1704 after the city was burned by the English in 1702. The Spanish rebuilt the Cubo Line in 1739, and they installed a gate in the same location at which City Gate exists today. This is the only gate that provided access to and from the area north of St. Augustine. The Spanish updated the Cubo Line in 1808 and outfitted it with palm log revetments along its east end. This same year, the Spanish rebuilt the City Gate pillars. A moat on the northern end of the Cubo Line was traversed by a wooden bridge until the current stone-walled causeway was constructed in 1827. A small park had formed around the City Gate landscape by 1910. City Gate is in the triangular space between Orange Street and South Castillo Drive (Figure 123).



Figure 124: View west from the sidewalk lining South Castillo Drive. Spanish bayonet is planted at the southeastern corner of City Gate (WLA Studio 2016).

Vegetation

Like other areas of Castillo de San Marcos National Monument, the number of plant species at City Gate is minimal. The dry moat on either side of the crushed-coquina walkway is maintained as turf. Grass has been established between the palm log revetments on top of the Cubo Line; however, the supports for this wall are exposed and the grass does not fully cover the top of this structure. Five cabbage palms (*Sabal palmetto*) are located on the site, with four near South Castillo Drive beyond the eastern masonry pillar and the other south of the western pillar. A small cluster of Spanish bayonet (*Yucca aloifolia*) is located on the eastern end of the landscape, north of the rebuilt Cubo Line (Figure 124).

Circulation

Roads

South Castillo Drive is located between City Gate and Castillo de San Marcos. The road establishes the eastern border of the City Gate landscape. South Castillo Drive is four lanes wide with two northbound lanes and two southbound lanes as it passes the site. Orange Street is formed by a convergence of two travel lanes at the site's southwestern corner, which creates the triangular shape of the landscape. A turn lane is located on the northwestern side. The southern side of the site is defined by Orange Street's eastbound lane and its perpendicular intersection with South Castillo Drive. This eastbound lane is surfaced with brick pavers. All other roadway surfaces are paved with asphalt. A loading area is located on the southern end of the site and is constructed as a parallel parking space along Orange Street.



Figure 125: View northeast from the sidewalk along Orange Street. A temporary parking space is seen between Orange Street and the Cubo Line (WLA Studio 2016).



Figure 126: View looking south from the northern end of the City Gate site. The moat and walkway are seen in the foreground with a light enclosed in a metal cage visible to the right. The City Gate pillars, wall extensions, and the Cubo Line are seen in the background (WLA Studio 2016).

This brick-paved parking space, approximately fifty feet long and ten feet wide, allows delivery trucks and large vehicles to service the businesses in the St. Augustine Historic District to the south (Figure 125).

Sidewalks and Walkways

A concrete sidewalk runs along the eastern end of the site and links to the sidewalk system lining the western end of South Castillo Drive. ADA compliant access ramps are located at the northern and southern ends of this sidewalk at the Orange Street intersections. A short concrete walkway leads from this sidewalk to the eastern end of the reconstructed Cubo Line. The NPS has surfaced the causeway traversing the moat and leading between the two masonry pillars with a crushed coquina surface. This walkway is approximately eighteen feet wide. There are few signs of wear along the coquina-surfaced walkway; however, the surface can be slow to drain after rain events (Figure 126).



Figure 127: Southern side of City Gate pillars looking north from Orange Street (WLA Studio 2016).

Buildings and Structures

City Gate Pillars

Two coquina-block rectilinear pillars flank the crushed-coquina walkway leading south from the City Gate landscape to the St. Augustine Historic District. These columns are topped with decorative caps and pomegranate-shaped finials. Decorative panels are carved into the northern and southern face of each pillar. Dome-topped sentry boxes are attached to the southern side of each pillar and are equipped with loopholes, which extend through each column and provide views to the landscape north of City Gate. The northern and southern faces of each column measure approximately 7 feet 6 inches wide. The eastern and western faces measure approximately eleven feet wide. A coquina-block retaining wall extends from each pillar and is topped by a coquina-block parapet (Figure 127).

Cubo Line

The reconstructed Cubo Line extends out from each of City Gate's coquina-block pillars. The eastern section extends approximately sixteen feet while the southern portion extends approximately forty-eight feet toward the southwestern corner of the site. Built of concrete pillars formed to resemble the original palm logs used by the Spanish during the wall's construction in 1808, the northern and southern faces of the structure are composed of horizontal and vertical faux palm logs. The top is unfinished and the back-filled earth along the top of the structure is planted



Figure 128: Western portion of Cubo Line reconstruction, looking east toward City Gate pillars (WLA Studio 2016).



Figure 129: Plaque on the southern side of the eastern column commemorating the tricentennial of Castillo de San Marcos (WLA Studio 2016).

with turfgrass (Figure 128). Supports between the revetments are partially exposed along the top of the Cubo Line. A moat, approximately forty feet wide, lines the northern face of the Cubo Line. An additional section of the Cubo Line has been reconstructed west of the national monument boundaries, just north of Orange Street. This section is visible from the City Gate landscape.

Small-Scale Features

Signs

A variety of sign types exist at City Gate. Each sign type is categorized by function and use throughout this character area and described in detail below:

Tricentennial Marker – A bronze plaque attached to the southern face of the eastern pillar commemorates the tricentennial of Castillo de San Marcos. This plaque was placed in 1972 (Figure 129).



Figure 130: Coquina bench and recorded information box near the reconstructed Cubo Line. View from sidewalk lining the western side of South Castillo Drive (WLA Studio 2016).

Interpretive Panel – A white sign with black lettering is attached to the face of a low concrete pillar at the eastern end of the City Gate landscape, south of the Cubo Line. The sign provides a brief description of the materials used to construct the large coquina pillars and the iron doors which once closed the passageway between the pillars.

Regulatory and Road Signs – A red and white "Do Not Enter" sign is mounted on a metal breakaway pole located at the southwestern corner of the site, near the confluence of the two sections of Orange Street. A white sign with red lettering states that no parking is allowed in the parallel space along Orange Street and that the parking area set in the triangular City Gate landscape is for loading and unloading vehicles only and that there is a thirty-minute limit for this parking space. This sign is also mounted on a breakaway metal pole. Two small brown signs with white lettering are attached to wooden posts near the southern face of the western and eastern parapets. White lettering on these signs informs readers to keep off historic structures at the site.

Bench

A small bench constructed in the form of a low seat wall is located at the southeastern end of the City Gate landscape. Coquina block is stacked to form the base of the bench. A precast concrete cap sits atop this base (Figure 130).



Figure 131: View looking south from western side of moat. A directional light, encased in wire mesh, is seen in the foreground (WLA Studio 2016).

Recorded Information Box

The coquina base of the bench at the southeastern corner of the site extends toward Orange Street. Here, a recorded information box, housed in a small concrete pillar, sits on top of this coquina base. The eastern end of the pillar features push-button style audio device with a speaker. The device does not appear to be operable.

Lights

Two ground-mounted, wire-mesh-enclosed lights are located at City Gate on each side of the elevated walkway, which traverses the moat north of the Cubo Line. Each light is directed at one of the two City Gate pillars (Figure 131).

Fort Matanzas National Monument

Fort Matanzas National Monument is approximately 14 miles south of St. Augustine, along SR A1A. The national monument encompasses approximately three hundred acres, including parcels on the eastern side and western side of SR A1A. This includes approximately two hundred acres on Rattlesnake Island, on the western side of the Matanzas River and one hundred acres on Anastasia Island. Fort Matanzas is on the northeastern end of Rattlesnake Island. The Spanish completed construction of the fort in 1742. The coquina masonry fortification replaced wooden towers designed to guard the southern entrance into the Matanzas River. Fort Matanzas features a thirty-foot-high observation deck, a terreplein, officer and soldiers' quarters, and a powder magazine. The United States War Department and, later, the NPS completed stabilization and restorations to the fort in the 1900s. The NPS constructed a new shoreline around the fort to protect it from shoreline erosion. The NPS also added a dock as part of its effort to facilitate visitation to the building. A ferry service transports visitors to the fort from the visitor center across the Matanzas River.

In 1937, the NPS constructed a HQ/VC complex on the eastern side of the Matanzas River, slightly down river from the fort. The HQ/VC complex extends across SR A1A. A visitor center, historic utility building, and comfort station, with access roads, sidewalks, and walkways, along with other landscape features, are located west of SR A1A. A parking area and a beach access ramp are located to the east, between SR A1A and the Atlantic Ocean.

Structures with historical, architectural, and/or engineering significance located in parks of the National Park System in which the National Park Service has, or plans to acquire, any enforceable legal interest are inventoried and included in the List of Classified Structures (LCS). The only structure at Fort Matanzas National Monument included in the LCS is Fort Matanzas.

The study area for this report includes the twenty acres of the HQ/VC complex on Anastasia Island and the 5 acres surrounding Fort Matanzas on Rattlesnake Island. This report organizes the study area into three character areas: Fort Matanzas Headquarters and Visitor Center, Fort Matanzas, and Beach Ramp. The natural systems and features will be described for the overall study area and the remaining landscape characteristics will be detailed when discussing each of the three character areas.

Natural Systems and Features

Hydrology

The Spanish built Fort Matanzas on the eastern edge of Rattlesnake Island to provide soldiers clear views toward Matanzas Inlet and Atlantic Ocean to the east and the Matanzas River to the south. The national monument site includes not only Rattlesnake Island, where the fort still stands, but a large portion of the southern tip of Anastasia Island, located between the Atlantic

Ocean and the Matanzas River. Beach access on the eastern edge of Anastasia Island, along the Atlantic coast, is provided by a parking lot off the eastern edge of SR A1A. Across SR A1A from this beachside lot, an entry drive leads to the HQ/VC and parking lot, on the western end of Anastasia Island. In the center of the lot is a live oak (*Quercus virginiana*) grove created by the one-way loop that leads back to the entry drive. This low-lying area accommodates stormwater runoff from the parking lot and drains north, underneath the drive, to a marshland edged by a linear walking trail. Marshes surround Fort Matanzas outside of the turf area immediately surrounding the fort.

Soils

Fort Matanzas National Monument covers a variety of landforms and thus contains numerous soil types. The site consists of 25.7 percent St. Augustine fine sand with clayey substratum. This soil type formed as a result of dredging operations and is a mix of marine sands, shell fragments, and loamy or clayey material. It is poorly drained and is found in low, flat areas. Pellicer silty clay loam, which is frequently flooded, encompasses 15.8 percent of the site. This type of soil is found in estuaries along the Atlantic coast and is very poorly drained. Slopes where this soil type is found are typically less than one percent. Generally, the surface layer of this soil is very dark brown silty clay loam and is about ten inches thick. Below this, between ten inches and around fifty-five inches in depth, the material is a dark greenish gray clay loam. A soil type found within thirteen percent of the site is the Fripp-Satellite complex. This classification is a combination of well-drained Fripp soils, found on rolling slopes along beach dunes, and poorly-drained Satellite soils, found in the narrow swales between the Fripp soils. This soil is composed of sandy deposits mixed with shells and shell fragments. Satellite fine sand is found within 12.7 percent of the national monument boundaries. Slopes in areas containing this soil type range from zero percent to two percent. This is a poorly-drained soil found along swales between sand dunes and low mounds adjacent to drainage courses. Moultrie fine sand, which is frequently flooded, is found in 12.5 percent of the site. This soil type is found in tidal marsh areas and is very poorly drained. Water accounts for 11.8 percent of the overall site. Soil areas classified as beaches found in 8.6 percent of the site. Beach soil areas consist of long, narrow strips along the Atlantic coast. These areas are covered twice daily by seawater during high tides and include small areas of dunes adjacent to these narrow, sandy stretches.[268]

Climate

Specific temperature and precipitation data from the National Centers for Environmental Information, recorded near the St. Augustine Lighthouse, are used in this section. The lighthouse is approximately 12.2 miles north of the Fort Matanzas National Monument. This information is used to provide a general summary of the climate throughout the St. Augustine area. The average temperature during the spring (March to May) is 69.1 degrees Fahrenheit (°F). The temperature average during the summer months (June to August) climbs to 81.1°F. This average during fall (September to November) drops slightly to 72.8°F. The winter months (December to February) see an average of 58.1°F. The average annual temperature is 70.28°F. The highest recorded temperature in St. Augustine, 103°F, occurred in July of 1986. The lowest temperature, 10°F was recorded in January of 1985. The mean annual temperature in St. Augustine has increased at a rate of 0.01°F each decade between 1901 and 2007. The spring months see an average rainfall of 3.25 inches. During the summer months, this average is 5.7 inches. The average rainfall during the fall is 4.62 inches. Winter is the driest season, averaging 2.76 inches. The wettest month on average is September, at 7.31 inches.

The environment surrounding the western portion of the Fort Matanzas National Monument site's HQ/VC is largely undisturbed. Evergreen trees and marshland are the dominant vegetation types. Most of the built environment near this section of the HQ/VC complex is surrounded by maritime forest cover. Large shade trees and dense plantings provide a microclimate cooler than that found in other sections of the national monument. At Fort Matanzas and the Beach Ramp sections of the site, the absence of large canopy trees and limited forest cover leads to warmer temperatures than found, for example, at the oak grove in the center of the FOMA VC area loop road near the west end of the HQ/VC complex.

268. Soil Conservation Service, Soil Survey of St. Johns County.

Because of St. Augustine's geography, major storms are a concern. A tropical storm system either directly hits or brushes the area every 3.63 years. This is evidenced by the arrival of Hurricane Matthew in October of 2016 and Hurricane Irma in September of 2017, both of which caused extensive damage at Fort Matanzas National Monument. As a result of these storms, old-growth trees were damaged and dunes were reshaped. Man-made structures were also impacted. The dock behind the HQ/VC facility received heavy damage. Visitors use this dock to access the ferry boats, which transport people visiting the park across the Matanzas River, to and from Fort Matanzas. The damage this dock sustained has forced trips to Fort Matanzas to be halted until the dock can be safely reopened.[269]

Threatened and Endangered Species

The National Park Service has identified four threatened species at the Fort Matanzas National Monument. These include two birds and two reptiles. The threatened birds are the piping plover (*Charadrius melodus*) and the wood stork (*Mycteria americana*). The former is a small shorebird that nests along open, sandy beaches and the latter is an approximately four-foot-tall wading bird found in freshwater and estuarine wetlands, typically nesting in cypress and mangrove trees. The reptiles listed as threatened are the loggerhead turtle (*Caretta caretta*) and the green turtle (*Chelonia mydas*). Both of these turtle species occupy three habitat types at different times during their lifespan including open water, coastal areas, and beaches. Both nest on sandy beaches. Four species, two mammals and two reptiles, are identified as endangered. The first is the Anastasia Island beach mouse (*Peromyscus polionotus phasma*), a subspecies of the old-field mouse found in sand dunes and adjacent scrub areas. The second, the west indian manatee (*Trichechus manatus*), is found in the large rivers, estuaries, and coastal waters of Florida. The leatherback turtle (*Dermochelys coriacea*) and Kemp's ridley sea turtle (*Lepidochelys kempii*) are also labeled as endangered. Like the loggerhead turtle and green turtle, these turtle species inhabit open water and coastal foraging areas and emerge for occasional nesting on sandy beaches.

269. National Oceanic and Atmospheric Administration, "National Centers for Environmental Information Web Services," accessed online on 7/31/2017, (https://www.ncdc.noaa.gov/cdo-web/)(NPS NRCA).

Vegetation

The vegetation found on the Anastasia Island section of the national monument site include plants typical of beaches, stabilized primary dunes, a secondary dune system, and maritime hammock forest cover. The beach sections are located along the Atlantic Ocean and Matanzas River coasts and the dune systems are farther inland from these beach areas. The zones classified as maritime hammock forests account for a majority of the land cover experienced by people visiting the national monument. This community type is often identified by the presence of red cedar (*Juniperus virginiana* var. *silicicola*), live oak (*Quercus virginiana*), and cabbage palm (*Sabal palmetto*). When entering the western section of the Fort Matanzas National Monument from SR A1A, this forest type is abundant. A canopy of live oak trees, the dominant canopy species of the maritime hammock plant community, and an understory of saw palmettos (*Serenoa repens)* line the edges of this approach. A grove of live oak trees in the central space of the FOMA VC area loop road at the HQ/VC mirrors the canopy along the entrance drive and provides a shaded area equipped with picnic tables. Trees line the edge of the Matanzas River just west of the visitor center, obscuring views out across this estuary to Rattlesnake Island and Fort Matanzas. The landscape transitions to open marshland north of the parking area, where grasses and sedges fill the landscape. The area south of the HQ/VC's visitor parking lot is a naturalized maritime hammock forest, much like the landscape on either side of the site's entrance drive.

Across the Matanzas River at Fort Matanzas the natural vegetative patterns of Rattlesnake Island have been disturbed by dredging operations along the Intracoastal Waterway and subsequent soil deposition. Although the northeastern portion of the island has been disturbed, the majority of the vegetation outside of the fort site is similar to the undeveloped areas found in the national monument's boundaries on Anastasia Island. The plant cover at Rattlesnake Island consists of marshland grasses and sedges, shrubs (primarily southern wax myrtle [*Myrica cerifera*]), and sections of maritime hammock forest consisting of red cedar, live oak, and cabbage palm. Immediately surrounding the fort vegetation is cut close to the

ground and maintained as turf for easy access to the historic structure.

At the Beach Ramp section of the national monument site, east of SR A1A, a typical progression of coastal habitats can be identified between the beach along the Atlantic Ocean and the old-growth maritime hammock forest of the HQ/VC complex. This progression begins with the stabilized primary dunes lining the beachfront. Here, sea oats (*Uniola paniculata)*, pennywort *(Hydrocotyle bonariensis*), and dune sunflower (*Helianthus debilis*) help stabilize steep slopes. The secondary dune is a transitional palmetto scrub zone of saw palmetto (*Serenoa repens*), southern wax myrtle (*Myrica cerifera*), and other plants typical of this habitat. Redbay (*Persea borbonia*), red cedar, and cabbage palm trees begin to emerge from the landscape near SR A1A, east of a semicircular clearing of maintained turf.

Topography

The topography of Fort Matanzas National Monument is typical of low-lying coastal areas of the Southeast. The entry sequence transitions from elevations supporting mature forest cover to the sandy shore of the Matanzas River. The entrance drive brings people visiting the site from a highway with views out to the Atlantic Ocean down into a semi-enclosed, secluded landscape. This entry drive leads west from State Route A1A (SR A1A) to the headquarters and visitor center (HQ/VC) parking lot. The road gradually drops in elevation from roughly fourteen feet to six feet along the approximately eight hundred-foot-long approach to the HQ/VC. Once in the circular parking area, the natural mounds and vegetated dunes work with the surrounding vegetation to create a sense of enclosure and lead people to the national monument's visitor center. West of the visitor center, the slope toward the sandy western shore of Anastasia Island fades into the Matanzas River. North of the HQ/VC and parking area, a low-lying, open landscape at approximately one foot to two feet in elevation emerges when moving beyond the vegetated buffer north of the entry drive. This opening reveals views to a nearby marsh. Dunes between 4 ½ feet and 6 feet tall along the western edge of the sandy trail beside the marsh conceal views to the Matanzas River until a break in these dunes appears roughly four hundred feet from the beginning of the walking trail. The area surrounding Fort Matanzas, on Rattlesnake Island, is relatively flat and has been expanded around the fort by back-filled retaining walls. The visible area from the fort out to other portions of this island are filled with low-lying marshes with little topographic change compared to the landscape experienced near the HQ/VC across the river, on Anastasia Island. The Beach Ramp landscape east of SR A1A is flat as the roadway leads to the Atlantic Ocean. The dunes along the sides of this roadway slope up to the vegetated edges of the developed parking and beach access area. The grade consistently drops as the route from the Beach Ramp landscape leads from the parking area to the lower levels of the sandy coast, and ultimately, to the Atlantic Ocean.

Land Use

The NPS assumed administrative control of Fort Matanzas National Monument in 1933. At this time, the property managed by NPS consisted only of the 1-acre site surrounding Fort Matanzas on Rattlesnake Island. The 1934 donation of 17.34 acres along the western edge of Anastasia Island by Ada D. Corbett allowed the NPS to begin planning a visitor center across the Matanzas River from Fort Matanzas. The HQ/VC complex was open to the public in 1937. Since that time, the national monument site has expanded, encompassing much of the southern end of Anastasia Island. However, the Fort Matanzas National Monument continues to focus on providing historical and environmental education as well as passive recreation opportunities for people visiting the park.

Surrounding land uses include private residential properties as well as public landscapes. Helen Mellon Schmidt Park, part of the St. Johns County network of parks, is located at the southern end of Rattlesnake Island. This area is separated from the NPS-owned northern portion of the island by a row of boulders, which creates a barrier between the two sites. This park includes marshland and vehicular access to fishing areas. Summer Haven, a small unincorporated community, is located southeast of Rattlesnake Island. This residential area is bisected by SR A1A. The northern end of the Fort Matanzas National Monument is mostly surrounded by the Matanzas River and marshland. The northeast corner of the site, along the Atlantic beachfront, is bounded by condominiums and single-family residential properties.

Fort Matanzas Headquarters and Visitor Center Character Area

Spatial Organization

The Anastasia Island section of the national monument extends from the high water mark of the Atlantic Ocean shoreline west to the eastern bank of the Matanzas River. The area in the site's boundaries along Anastasia Island is largely composed of beach and sand dunes. This area is bounded by the Matanzas River and SR AIA. To the south of the visitor center and associated parking lot, there is a comfort station and a nature trail and boardwalk. South of the HQ/VC complex's visitor center is the Johnson House, which is used as NPS employee housing. Wooded areas surround the developed zones of the HQ/VC complex. Parking is organized around a looped entrance road.

Utilities

Overhead electric lines are visible lining State Road A1A but do not enter the study area. Exposed utilities are clustered near buildings and are generally not visible to visitors. An HVAC unit is located at the back of the HQ/VC complex's visitor center, along its southwestern face. Electrical meters with wiring housed in tubing are attached to the back of the building. A second HVAC unit is located on the southeastern end of this building. A gasoline tank, a water spigot, an HVAC unit, and a radio antenna are located near the southwestern end of the historic utility building. An electrical meter, electrical distribution box, and an HVAC unit are located behind the comfort station. A drinking fountain is mounted on the wall in the middle of the northwestern face of the comfort station and is easily seen from the parking lot. Exterior outlets at the southwestern end of the comfort station are used to power two vending machines.



Figure 132: Northwestern view from the intersection of the HQ/VC complex's entrance drive and State Road A1A. (WLA Studio 2016).

Vegetation

Many of the vegetated areas at Fort Matanzas National Monument remain undisturbed. Where developed, the built environment is incorporated into the site in a way that preserves most of the natural vegetation and utilizes the existing plant communities and individual plants for functional and educational purposes. These preserved plants are complemented by a minimal palette of introduced species, found at the site's entrance and used as foundation plantings near buildings and structures.

At the national monument's entrance, a large circular area spanning both sides of SR A1A is maintained as open space. The cleared, low-cut grass surface allows for views to the entrance sign from SR A1A and safe views along this road for those leaving the national monument. Cabbage palms (*Sabal palmetto*) radiate from the entrance drive and define the edge of this grassed space. Low ornamental grasses surround the entrance sign (Figure 132).

Dense maritime hammock forest cover lines the entrance drive leading west to the HQ/VC complex. Where possible, trees at the site have been allowed to mature. This can be seen along the edges of this entrance drive and in the center of the FOMA VC area loop road. The collection of large caliper live oak trees (*Quercus virginiana*) in the interior of the FOMA VC area loop road provides shade for the visitor parking lot and the HQ/VC grounds (Figure 133). The understory surrounding the developed portion of the national monument has been kept clear in most areas.



Figure 133: View south from the entrance drive of the live oak trees at the center of the FOMA VC area loop road (WLA Studio 2016).

East of the visitor parking area, coontie (*Zamia floridana*) fills two planters along the western side of the comfort station. Southeast of the comfort station, an elevated boardwalk passes through the site's maritime hammock forest to the southeastern shore of the Matanzas River. A laminated informational sheet available at the boardwalk's starting point near the comfort station provides interpretive information describing the natural systems associated with the plant communities found at the site.

Live oaks just northeast of the visitor center serve as a shaded canopy above a small seating area where students gather for park-led educational sessions throughout the day. A shrimp plant (*Justicia brandegeana*) fills the planter at the northeastern corner of the visitor center (Figure 134). This plant is also found in the bed in front of the historic utility building (currently park office space) and is planted in front of the screening wall that spans from the visitor center to the Historic utility building. A few coontie specimens are found in the landscape surrounding the visitor center, used as foundation plantings (Figure 135).

Views and Vistas

When entering the site, the natural buffer lining each side of the entrance drive focuses views along the driveway leading from State Road A1A to the HQ/VC complex. When this driveway meets the loop drive near the HQ/VC complex, a drive extension leading northwest to the historic utility building is visible. Two dumpsters can be seen along this extension (Figure 136). From this point, vehicles are led around the circular drive, past the visitor center, and they arrive at the parking



Figure 134: View southwest to the screening wall linking the visitor center and the law enforcement ranger office. (WLA Studio 2016).



Figure 135: View northwest from the southeastern corner of the visitor center. Coontie (left) is planted along the foundation (WLA Studio 2016).



Figure 136: View west from the FOMA VC area loop road. Dumpsters are exposed at the end of the drive extension (WLA Studio 2016).

area located between the comfort station and the live oak grove at the circular drive's center. The character of the view from this parking area changes throughout the day. When the parking lot is full, the view is dominated by a row of cars on each side of the drive. When few cars are parked at



Figure 137: Northern view along the eastern section of the visitor parking area (WLA Studio 2016).



Figure 138: View to the north of the marsh from the marsh trail west of the FOMA VC area loop road (WLA Studio 2016).



Figure 139: View west to Fort Matanzas from the end of the marsh trail west of the FOMA VC area loop road (WLA Studio 2016).



Figure 140: View from boardwalk looking southwest across the Matanzas River to Rattlesnake Island (WLA Studio 2016).

the site, views are available throughout the site, to the surrounding native forest (Figure 137).

When approaching the visitor center on foot, the open archway at the building's bottom level draws the eye directly to the landscape beyond and leads patrons to the eastern shore of the Matanzas River. The topographic relief of the dune landscape and the vegetated riverbank inhibit views out to Rattlesnake Island and Fort Matanzas. An opening in the vegetation along the eastern bank of the Matanzas River allows access down to the sandy riverbank and to the dock. Once on the dock, a view of the fort is revealed to the northwest.

A marsh is located north of the historic utility building. Here, the tree canopy between the marsh and the river recedes, revealing a more expansive view of the surrounding landscape than seen from the parking area at the HQ/VC complex. Large drifts of wetland grasses and wading birds inhabiting the marsh are visible from a dirt road that visitors use as the Marsh Trail (Figure 138). Further along this road, the vegetation blocking views across the Matanzas River thins, and visitors can see Rattlesnake Island and Fort Matanzas to the west (Figure 139).

A boardwalk begins just southeast of the comfort station. The dense forest cover that lines the edges of the boardwalk and its curvilinear alignment prevent open views. However, at the end of the boardwalk, before looping back to the visitor parking area, the boardwalk reaches an opening in the vegetation as the route nears the eastern shore of the Matanzas River. From this point, visitors can see Rattlesnake Island in the distance (Figure 140).

Circulation

Roads

Asphalt roads leading to both the HQ/VC complex near the Matanzas River and the beach access point along the Atlantic Ocean extend from SR A1A. SR A1A has two vehicular travel lanes, one northbound and one southbound, and two bicycle lanes, one outside of each vehicular travel lane. Right-turn lanes are provided for both the HQ/VC



Figure 141: Western view along the entrance drive as the route cuts through dense maritime hammock forest cover (WLA Studio 2016).



Figure 142: View northwest along the marsh trail from the drive extension west of the FOMA VC area loop road (WLA Studio 2016).



Figure 143: View east from the parking area. A dirt road extends from the visitor parking area and crosses a sidewalk north of the comfort station (WLA Studio 2016).



Figure 144: View southeast from the boardwalk. A dirt road used by maintenance vehicles intersects with the pedestrian route (WLA Studio 2016).

complex to the west and the public beach access area to the east. The two-lane asphalt entrance road (Figure 141) extends west from SR A1A for approximately 425 feet before transitioning to the one-lane FOMA VC area loop road, which eventually reconnects the two-way asphalt road leading from SR A1A. Just before approaching the visitor center, at the southwestern end of the FOMA VC area loop road an asphalt driveway extension leads toward a dumpster pad. This extension allows access to two dumpsters and the nearby historic utility building located southwest of the FOMA VC area loop road. Beyond this drive extension, the one-lane road passes the HQ/VC's complex's visitor center and turns northeast toward the visitor parking area and comfort station at the southeastern end of the FOMA VC area loop road. This one-way road then merges with the two-way entrance drive and heads northeast, back to SR A1A.

A dirt road splits from the road accessing the Historic utility building and dumpster pad and heads north, following the eastern bank of the Matanzas River. The NPS has roped off sections used as vehicular turnarounds to limit disturbance along the road. The road allows access to the eastern bank of the Matanzas River where the dunes and vegetation screening the waterway from view recede near the road's end. The road is approximately five hundred feet long and is lined on the western side by the Matanzas River and to the east by an open marshland. The NPS uses this road to access the river's shore and to launch boats when needed. Visitors use this road as a marsh trail to access the riverbank and to view the nearby marshland (Figure 142).

On the eastern end of the FOMA VC area loop road, near the northern limit of the parking area, a dirt road leads from the one-way asphalt road to the area behind the comfort station (Figure 143). This drive links to a network of dirt service roads connecting this section of the national monument



Figure 145: Northern view of the gravel-surfaced parking area along the inside of the FOMA VC area loop road with the sidewalk and retrofitted access ramp in the foreground (WLA Studio 2016).



Figure 146: View east from FOMA VC area loop road. An accessible parking space is separated by a concrete header curb with an access ramp leading to the sidewalk (WLA Studio 2016).

with the Johnson House and maintenance area. The service roads in this section of the national monument are not intended for public use but intersect with the boardwalk system southeast of the loop drive (Figure 144).

Parking Lots

Perpendicular parking spaces with a gravel surface line approximately 225 feet along both sides of the FOMA VC area loop road near the comfort station. A raised sidewalk lines the front of these spaces. This sidewalk links the parking lot to the visitor center. Individual parking stalls are unmarked. The area along the southwestern side of the FOMA VC area loop road accommodates fifteen to eighteen vehicles (Figure 145). The parking area along the southeastern side of the FOMA VC area loop road fronting the comfort station has the same capacity, with one additional space separated from the others by the placement of a concrete header curb extending from the edge of the FOMA VC area loop road to the face of the raised walkway along



Figure 147: View southwest from the sidewalk connecting the visitor parking area with the visitor center. The sidewalk is constructed of the original coquina curb and an updated concrete surface (WLA Studio 2016).

the front of the parking spaces. This delineated stall is used as a universally accessible parking space (Figure 146). Outside of these parking areas, it is common for vehicles to park along the perimeter of the live oak grove and picnic area. Parking is also common outside of the gravel spaces along the southeastern section of the FOMA VC area loop road. Erosion and damage to understory areas can be seen where parking in undesignated areas occurs.

A small parking area is located where the asphalt drive extension leading from the FOMA VC area loop road ends at the historic utility building, near the trailhead for the pathway leading to the Matanzas River. This parking area is intended for law enforcement and police use only. The space is wide enough to accommodate three vehicles.

Sidewalks and Walkways

A concrete sidewalk is located outside of the southbound bicycle lane along the western edge of SR A1A. A turfgrass buffer strip separates the pedestrian sidewalk from the edge of the roadway. After entering the site, the two parking areas along the FOMA VC area loop road near the comfort station are edged with sidewalks. These concrete sidewalks with coquina curbs lead from the parking area to the visitor center (Figure 147). The sidewalks have been retrofitted with concrete access ramps, which are not ADA compliant. A 12 ½-foot by16-foot concrete pad is located west of the sidewalk lining the western side of the loop drive. This paved area is in the shaded interior of the FOMA VC area loop road, below a canopy of live oak trees. It is connected to the concrete sidewalk by a 6-foot-long concrete walkway. A



Figure 148: Northwestern view of the walkways behind the visitor center with cut flagstone step treads in the foreground and two concrete walkways in the background (WLA Studio 2016).



Figure 149: Northwestern view along the brick walkway connecting the visitor center to the law enforcement ranger office (WLA Studio 2016).

wheelchair-accessible picnic table is in the center of this paved space.

The sidewalk lining the eastern side of the FOMA VC area loop road connects with the walkway leading to the visitor center. The sidewalk lining the parking area's western side crosses the FOMA VC area loop road and connects with the walkway leading to the visitor center via a retrofitted concrete access ramp. This ramp extends into the FOMA VC area loop road from the coquina-curbed concrete sidewalk along the southwestern edge of the FOMA VC area loop road. A concrete walkway extends perpendicularly from the southwestern end of the FOMA VC area loop road where the two pedestrian routes from the parking area converge and leads to the arched opening at the visitor center's lower level. The walkway continues through this opening, beyond the visitor contact station, and links with another concrete walkway, which extends from the northwestern corner of the visitor center to the dock at the



Figure 150: View southwest of the pathway near the law enforcement ranger office leading to the eastern shore of the Matanzas River (WLA Studio 2016).

eastern shore of the Matanzas River. A walkway constructed of cut coquina stone step treads extends from the concrete walkway just beyond the archway at the back of the visitor center and links to a porch at the southeastern corner of the visitor center (Figure 148).

At the front of the visitor center, two paved routes diverge from the walkway leading from the FOMA VC area loop road to the visitor contact station. The first, a 4-foot-wide concrete walkway that heads north for approximately forty-five feet before turning toward the northwestern corner of the visitor center. Here, the walkway transitions from concrete to a mortared-brick surface in a basket-weave pattern, edged by a soldier course on each side. This walkway extends approximately eighty feet to the historic utility building (Figure 149). The second walkway, which includes a concrete and coquina-block staircase, begins near the breezeway at the base of the visitor center. This walkway links to a landing at the southeastern corner of the visitor center's upper level.

Pathways

A sandy trail leading directly to the river's shore begins at the northwestern corner of the Historic utility building (Figure 150). Landscape timbers are used as step treads to assist in walking down the sloped pathway, which extends roughly seventy feet to the eastern edge of the Matanzas River. A similar sand and landscape-timber path is used to access the waterfront south of the dock behind the visitor center. No formal trailhead sign is located at this access point. These routes are used by people visiting the park to access the river's edge, where fishing is a popular activity.



Figure 151: Looking southeast along the boardwalk loop leading from the parking area through the maritime hammock forest southeast the comfort station (WLA Studio 2016).



Figure 152: Southwestern view of the visitor center from the FOMA VC area loop road (WLA Studio 2016).

Boardwalk

A boardwalk is located southeast of the comfort station and parking area. Single-page laminated sheets describing the flora and fauna found in the surrounding maritime hammock forest are available near the beginning of the boardwalk in a plastic container mounted to the boardwalk's railing. This half-mile loop is constructed of treated southern yellow pine and wood-alternative composite decking (Figure 151). The boardwalk meanders through Anastasia Island's maritime hammock forest and leads to the eastern bank of the Matanzas River, with open views of the river and beyond to Rattlesnake Island. A dirt road, used by maintenance vehicles, crosses a section of this nature trail.



Figure 153: Western view to the law enforcement ranger office north of the visitor center (WLA Studio 2016).

Buildings and Structures

Visitor Center

This two-story building measures approximately sixty-six feet by twenty-six feet. The building was constructed on a sloped dune and the upper floor extends south, along the top of this dune, beyond the limits of the building's lower level. The first floor of the building is frame construction with a coquina stone veneer. The second story is wood-framed and faced with gray siding. The building is topped by a cross-hipped roof covered in wooden shingles. A brick chimney extends from the roof. A barrel-vaulted breezeway separates the first floor into two sections (Figure 152). The primary visitor entrance is located in this archway. Staff offices are located on the top level of the building and are accessible by a coquina stone walkway from the back of the visitor center or by the staircase from the walkway leading from the parking area, at the building's front. These offices can also be reached by a door and interior staircase located along the southern end of the breezeway, across from the primary visitor entrance.

Historic Utility Building

This building originally functioned as a utility building with a two-car garage, workroom, and a generator room. The building has operated as a ranger office and has housed law enforcement services for the park since its conversion to an office in 1990. This thirty-feet by twenty-two feet rectangular building was built using similar materials used to construct the visitor center. The Historic utility building is constructed of coquina blocks and has a hipped roof with wooden shingles. A mortared-brick walkway along the northeastern side of the building provides access to doors at the building's eastern and northern end (Figure 153). A small wood-shingled overhang



Figure 154: Comfort station, looking east from the FOMA VC area loop road (WLA Studio 2016).



Figure 155: Southwestern view of the retaining wall at the southeastern end of the visitor center (WLA Studio 2016).

extends over the entryway at the northern entrance.

Comfort Station

This building measures roughly twenty-four feet by fifty feet. The base of the building is built of coquina block and the upper portion is wood-framed with gray siding. Wooden shingles cover the building's hipped roof. Restrooms are located on the northern and southern ends of the building with entrances at the northwestern and southwestern corners. The roof continues over these corners but the walls are recessed and doors to the restrooms are placed on the northern and southern ends of the recessed areas. Vending machines are located on the southern end of the building and a drinking fountain is mounted to the western face of the comfort station (Figure 154).

Dock

A gated metal bridge with railings extends southwest from the eastern bank of the Matanzas River behind the visitor center. This bridge provides access to a dock supported by concrete piers. The dock is used by people visiting the park to board a ferry, which departs at regular intervals during the day, and travels across the river to Fort Matanzas. The dock allows for both wet and dry docking of ferry boats. The dock has recently received significant storm damage from Hurricanes Irma and Matthew in 2016 and 2017, respectively. Ferry service resumed in spring 2018 following repairs to this structure.

Screening and Retaining Walls

When developing the site, care was taken to limit disturbance to the existing sand dunes and vegetation where possible. Because of this, few walls were needed. When screening and retaining walls were constructed, all were built of coquina block. At the visitor center, a wall extends from the southern end of the breezeway and meets the cheek wall for the staircase leading up the dune along the southeastern face of the building. This retaining wall is roughly fourteen feet long (Figure 155). On the opposite side of the breezeway, a wall extends six feet toward the southwestern end of the property. A four-foot-tall screening wall spans the distance between the visitor center and the historic utility building, a distance of approximately fifty feet. A retaining wall near the northeastern corner of the historic utility building provides space for the building's parking area. A wall at the southeastern end of the historic utility building extends sixteen feet from the building and turns northeast, where it runs six feet before meeting the four-foot-tall screening wall connecting the historic utility building to the visitor center. A ten-foot-long screening wall extends southwest from the back corner of the historic utility building and ends at the dunes lining the Matanzas River.

Planters

A low coquina-block edge defines the perimeter of the national monument's entrance sign near the intersection of the western entrance road to the HQ/VC complex and State Road A1A. This 7-inch-tall rectilinear wall measures roughly 8 ½ feet by 22 feet, and the NPS uses this area as a as a planter with ornamental grasses. Near the southwestern end of the FOMA VC area loop road, at the western end of the HQ/VC complex, a low coquina-block planter begins at the northern end



Figure 156: A coquina-block planter filled with coontie lining the northwestern end of the visitor center, looking southeast (WLA Studio 2016).



Figure 157: Fort Matanzas National Monument entrance sign along western side of State Road A1A looking north (Meaghan Alvarado, 2014. https://www.visitstaugustine.com/article/exploring-past-fort-matanzas).



Figure 158: Southwestern view to the educational sign at the dock behind the visitor center (WLA Studio 2016).

of the walkway leading to the visitor center from the FOMA VC area loop road and ends near the visitor center's northwestern corner (Figure 156). Another planter is at the corner of two intersecting brick sidewalks near this same northeastern section of the visitor center. This square planter measures six feet by six feet. At the comfort station, two coquina-block planters are located on either side of the drinking fountain, facing the parking lot, and measure 1 foot 9 inches by 14 feet 6 inches each.

Small-Scale Features

Signs

A variety of sign types exist at Fort Matanzas National Monument. Each sign type is categorized by function and use and described in detail below:

Entrance Sign –A two-sided metal sign facing north and south identifies the entrance to Fort Matanzas National Monument. This sign is mounted upon a coquina-block base. A vertical four-sided column is at the western end of this base, beside the metal sign. A routed and painted NPS arrowhead emblem is fastened to the column's northern and southern faces. A low coquina-block foundation on which the metal identifier sign is mounted extends east from this column. The top of the metal sign extends slightly above the top of the column. Along the top of the metal sign, there is a black horizontal line with two rows of small white lettering. The first row of lettering reads "National Park Service." The second reads "U.S. Department of the Interior." The bottom of this black horizontal stripe is aligned with the capstone of the column to the west. The remainder of the metal sign's background is brown-gray. Two lines of large white lettering with "Fort Matanzas" listed above and "National Monument" listed below contrast with this brown-gray background. A low coquina-block planter is offset from the entrance sign. Ornamental grasses are planted between this planter wall and the sign, obscuring the coquina base upon which the metal sign is mounted (Figure 157).

Interpretive Panels – A brown wooden sign with white lettering is mounted on a brown wooden post between the gated entrance to the dock and the sandy trail leading to the eastern shore of the Matanzas River (Figure 158). The sign provides a brief history of Fort Matanzas. A small sign in front of the visitor center near a live oak tree describes the historical importance of the live oak species and informs readers that the tree was once highly valued for ship building. North of the



Figure 159: View west from the north end of the law enforcement ranger office. A shingle-roofed educational sign is mounted beside a fishing line receptacle station. The pathway to the east bank of the Matanzas River is seen to the right (WLA Studio 2016).



Figure 160: Benches are placed along the walkway extending from the dock to the portico at the northwestern end of the visitor center (background) (WLA Studio 2016).

historic utility building, a path leads to the eastern bank of the Matanzas River. Near this trail, a brown vertical wooden board is supported by two wooden posts. This sign has a wooden shingle roof and is used to display information about aquatic wildlife (Figure 159). A monofilament fishing line recycling station is also located at this path. It is mounted to a wooden post at the trail's entrance.

Regulatory and Road Signs – Many examples of this sign type can be found at the national monument. These include a stop sign mounted on two vertical wooden posts at the national monument's entry drive. Two brown signs with white lettering are mounted to a post along the entry drive and state that alcohol is prohibited and that all pets must be leashed. This style is seen in other locations at the national monument. A similarly colored sign is fixed above the breezeway at the visitor center and reads "Visitor Center." A brown sign with white lettering is located near the southwestern corner of the visitor center, near a trail to the Johnson House. This sign reads "Closed Area Beyond This Point." Another is found at the entrance to the road leading to the historic utility building. This sign states that the road is only to be used by authorized vehicles. Other signs, such as speed limit signs and directional signage are found along the entry drive and FOMA VC area loop road.

Benches

Two benches are sited on the northwestern side of the concrete walkway leading from the northwestern end of the visitor center to the dock. Horizontal recycled plastic timbers form the seating surfaces and backs of the benches. These timbers are gray and each bench is supported by metal legs (Figure 160). Three benches are located near the comfort station, across the area housing two vending machines, between the parking lot and entrance to the boardwalk and nature trail. Two of these benches are the same model used behind the visitor center. The other is also made of a composite material but the back is a light brown color and the legs are black and made of a composite material. A group of roughly ten backless composite benches is located in front of the visitor center. The seating surface of the benches is brown and the legs are black. This area is used for groups to gather during educational sessions.

Bollards

Wooden bollards line each side of the road leading to the western end of the national monument site as this road bisects the semicircular clearing at the entrance from SR A1A (Figure 161). A total of fifteen bollards line the northern side of this road and seventeen line the southern side. Farther southwest along this road, another grouping of wooden bollards is located along the southern side of the road connecting to the historic utility building from the FOMA VC area loop road. A total of twenty-two bollards extend along the roadside here until meeting a retaining wall at the historic utility building's parking area.



Figure 161: Eastern view of wooden bollards along the entrance road with the entrance sign and State Road A1A in the background (WLA Studio 2016).

Picnic Tables

Five wooden picnic tables measuring eight feet by five feet are located at the oak grove inside the FOMA VC area loop road. One of these is a wheelchair-accessible table that is placed on a concrete pad (Figure 162). This concrete pad measures 12 ½ feet by 16 feet and connects to the walkway on the western side of the parking lot.

Lights

Ground-mounted lights are provided at the entrance sign. An overhead light is located north of the entry drive. This light is mounted on a large wooden pole and illuminates the area near the entrance gate. Security lights are mounted to the buildings in the HQ/VC.

Waste Receptacles

A brown wildlife-proof waste receptacle with yellow text is located adjacent to the sidewalk lining the western side of the parking area. The receptacle measures two feet deep and four feet wide at its base. There are two openings along the front of the receptacle, one labeled "trash" and the other "recycling." Doors providing access to the inside of the receptacle are on the front of the container (Figure 163). Additional waste receptacles are located at the southeastern corner of the FOMA VC area loop road, near the entrance to the boardwalk and nature trail and behind the visitor center.



Figure 162: View north of the wheelchair-accessible picnic table just west of the visitor parking area (WLA Studio 2016).



Figure 163: A waste receptacle is located between the wheelchair-accessible picnic table and the visitor parking area, looking west (WLA Studio 2016).

Dumpsters

A short length of pavement extends north from the drive leading to the historic utility building. Two dumpsters are located on this paved surface. These are visible when approaching the HQ/VC visitor parking area from the national monument's entry drive.

Bike Rack

A wood-alternative composite bike rack is located in front of the visitor center, northwest of the intersection of the FOMA VC area loop road and walkway leading to the visitor contact station. It is placed directly in the landscape, in the area maintained as turf.

Gate

A brown metal gate is located along the western entrance drive between State Road A1A and the FOMA VC area loop road leading to the western end of Anastasia Island. This gate consists of two square metal beams with diagonal supports. These arms swing closed toward the middle of the driveway. Each metal arm is fixed to a



Figure 164: A headwall protects the storm pipe near the western end of the FOMA VC area loop road, looking southwest. The western side of the FOMA VC area loop road is visible in the background (WLA Studio 2016).



Figure 165: View from the fort's gun deck looking southwest across the maintained turf area surrounding the fort with the natural vegetation of Rattlesnake Island in the background (WLA Studio 2016).

metal column and can be opened and closed automatically. An electronic keypad mounted on a metal arm is located on each side of the entry gate.

Headwall

A coquina-block headwall is located just south of the entrance drive inside of the FOMA VC area loop road. The headwall marks the site of an eighteen-inch-diameter drain pipe leading stormwater to the wetland north of the entry drive. The top of this headwall extends eight feet parallel to the entry drive and is one foot thick. Two reflective markers are located above the headwall (Figure 164).

Mailboxes

Five black metal mailboxes are located near the beginning of the driveway to the historic utility building. These mailboxes are all mounted on one wooden platform supported by two wooden legs. This structure is painted white. Black stencil lettering on the front of the wooden structure reads "8635 A1A South."

Fort Matanzas Character Area

Fort Matanzas is located on Rattlesnake Island at the western bank of the Matanzas River, fourteen miles south of St. Augustine. The fort is the last in a long line of historic outposts constructed near Matanzas Inlet. Like the watchtowers that predated the fort, Fort Matanzas was a key component in the defense of St. Augustine. While earlier watchtowers in the vicinity were constructed of wood, Fort Matanzas was built as a coquina stone structure in 1742. Today, the fort joins Castillo de San Marcos in representing two of the defensive elements in Spain's protection of its interests in the New World.

Spatial Organization

Fort Matanzas is at the northeastern edge of Rattlesnake Island, across the Matanzas River from the HQ/VC complex. Immediately surrounding the fort, the NPS has installed a series of seawalls that create a level ground plane around the building. A pathway leads from the fort, northwest to a dock, which provides access for ferry trips to and from the fort site.

Vegetation

While the natural vegetative patterns of Rattlesnake Island have been disturbed by dredging operations along the Intracoastal Waterway and subsequent spoil deposition, the majority of the landscape outside of the fort site is similar to the undisturbed areas found within the national monument's boundaries on Anastasia Island. The plant types found along Rattlesnake Island consist of shrubs (primarily southern wax myrtle [*Myrica cerifera*]), and sections of maritime hammock forest consisting of red cedar (*Juniperus virginiana* var. *silicicola*), live oak (*Quercus virginiana*), and cabbage palm (*Sabal palmetto*). Immediately surrounding the fort, vegetation is cut close to the ground and maintained as turf for easy access to the historic structure (Figure 165).



Figure 166: View from the gun deck south toward Matanzas Inlet (WLA Studio 2016).



Figure 167: View south along the pathway leading from the dock to the fort (WLA Studio 2016).

Views and Vistas

The northeastern edge of Rattlesnake Island is primarily composed of marshland. The low grasses and sedges associated with this ecological community allow for long views across the island from ground level. The views expand from atop the fort's gun deck (Figure 166). Long views in every direction except northwest are available. The mature forest at the southwestern end of Rattlesnake Island is visible. The dense vegetation along the western edge of the VC/HQ complex lines the eastern shore of the Matanzas River. Helen Mellon Schmidt Park, operated by St. Johns County, can be seen to the southeast. The preserved vegetation of Faver-Dykes State Park and Matanzas State Forest lines the horizon to the west. The rooftops of residences along the Atlantic Ocean east of the national monument site are visible just above the forest canopy of Southeast Intracoastal Waterway Park, operated by St. Johns County. From the roof of the fort, when standing upon the rooms that block the northwestern view from the gun deck, the wetlands along the Matanzas River and the beachside condominiums are visible beyond the dock and ferry used to access the fort site.

Circulation

Pathway

A sandy crushed-coquina pathway leads southeast from the dock. This route connects to a staircase, which leads up to the fort's gun deck. This pathway ranges from six to ten feet wide and spans approximately 140 feet in length. Vegetation is kept trimmed back from the sides of the pathway but no formal edging is installed along the path's perimeter (Figure 167).



Figure 168: View northeast of the staircase leading from the pathway to the fort's gun deck (WLA Studio 2016).

Staircase

A modern wooden staircase with handrails on each side leads up to the gun deck of the fort. This fifteen-step staircase is painted black. A metal chain, secured by a padlock, hangs across the bottom posts of the staircase (Figure 168).

Buildings and Structures

Fort

Fort Matanzas is a masonry tower, constructed of coquina stone. Each side of the square-shaped fort measures forty-eight feet wide at its base. The fort is forty feet tall. When viewed from the east, the gun deck is on the left side of the fort and a tower is to the right, creating a reverse L-shaped structure. This tower contains guard quarters on the lower level, adjacent to the gun deck, and an officer's quarter above. A ladder leads from the officer's quarter to a rooftop observation deck. A parapet surrounds the gun deck and observation tower.



Figure 169: View north to Fort Matanzas from the maintained turf area (WLA Studio 2016).



Figure 170: Bulkhead and riprap between Fort Matanzas and the Matanzas River, looking northwest (WLA Studio 2016).

A sentry box is located at the fort's southwestern corner (Figure 169).

Dock

This modern metal dock is supported by concrete piers. Gates are located on the dock's western, northern, and eastern sides for loading and unloading the ferry at the river's edge. A gated metal bridge extends from the dock and links with the pathway leading to Fort Matanzas This dock is smaller than its counterpart at the HQ/VC complex, where there is expanded room for people to wait for the ferry ride to Fort Matanzas and space for boat storage.

Bulkhead

A steel bulkhead encircles the eastern section of the fort. The area between the wall and fort is backfilled and covered with turf. The northeastern face of the wall along the Matanzas River is lined with riprap. The area outside of the southeastern side of the wall is graded and sodded. The top of the wall is the only visible part of the structure at this end of the fort (Figure 170).

Groins

Two stone riprap groins extend perpendicularly from the edge of Rattlesnake Island into the Matanzas River northwest of the bulkhead. The groins are spaced roughly fifty feet apart and are twenty feet long. A larger groin extends from the southeastern corner of the site. This fifteen-feet-wide structure extends thirty feet into the river. The riprap continues along the southeastern side of the fort's landscape and serves as a retaining structure at this end of the site. The NPS has backfilled and sodded the space between this groin and the southeastern face of the fort, as seen between the bulkhead and the fort's scarp.

Small-Scale Features

Signs

There are few signs in the Fort Matanzas area of the national monument. The signs on site are all regulatory signs. A sign is fixed to a chain blocking access to the staircase. The sign warns to "keep out" and that "violators will be prosecuted." A brown sign with white lettering is posted at the eastern corner of the site. This warns visitors not to enter the site and states that the "fort, shoreline and grounds" are "closed except to park service led groups." Brown vertical trail markers are placed at the border of the maintained turf, where this transitions to unmanaged vegetation. These markings feature a symbol signifying that people visiting the site are not to walk beyond this limit. The NPS arrowhead emblem is placed below this graphic.

Beach Ramp Character Area

The Beach Ramp section of the national monument provides parking spaces for beachgoers and vehicular access to the beachfront. This is the southernmost beachfront vehicular access point on Anastasia Island. Motorized vehicles are not allowed along the coastline to the south. The next vehicular access point is located at Crescent Beach Park, which, according to a sign just east of the beach access ramp, is 3.8 miles north from this section of the national monument site. St. Johns County has established a conservation zone, which limits pedestrian activity 15 feet seaward of the



Figure 171: View from just east of the wooden access ramp looking north with the Atlantic Ocean to the east and the Summerhouse condominiums to the west (WLA Studio 2016).



Figure 172: View from just east of the wooden access ramp looking south toward the undeveloped portion of Anastasia Island (WLA Studio 2016).

dune line. The gates to the access ramp are closed from 7:30 pm to 8:00 am from May 1 to October 31 to limit disturbance during sea turtle nesting season. Parking on the beach requires a fee from March 1 to Labor Day.

Spatial Organization

The features in the Beach Ramp section of the study area are concentrated along a linear route, the beach with parking and amenities placed along the way. From its intersection with SR A1A, the access road leading to the Beach Ramp passes through a semicircular clearing. This clearing mirrors the vegetation west of SR A1A, at the entrance to the HQ/VC complex. This creates a circular area surrounded by transitional and established plant communities that are bisected by SR A1A. Beyond this maintained entrance space, the entrance road to the Beach Ramp continues northeast where perpendicular parking spaces line both sides of the roadway. A wooden ramp is at the northeast limit of the developed area and leads to the sandy beachfront.

Vegetation

Most vegetation in the Beach Ramp landscape is naturally occurring. The plants along the sand dunes, in the palmetto scrub transitional zone, and in the early maritime hammock forest area just east of SR A1A are all typical of Florida's coastal plant communities. At the entrance to the Beach Ramp from SR AIA, there are six cabbage palms (*Sabal palmetto*) just outside of the wooded edge, with two on the north side of the entrance road and four to the south. The area between a semicircular grouping of plants and SR A1A is composed of maintained turf, with small patches of sand throughout.

Views and Vistas

Upon entering the Beach Ramp area from State Road A1A, vegetation lining each side of the roadway buffers the views to the north and south and directs views to the roadway and parking area ahead. When arriving at the parking area, a vista to the beach is revealed. Rooftops of structures to the north become visible but the vegetation and topography surrounding the parking area work together to shield most of these buildings from sight. From the wooden ramp leading down to the beach, the view out to the Atlantic Ocean and along the beachfront expands. The view along the beach to the north includes staircases down to the beach, tire tracks from vehicular use, and orange parking cones used to denote where motorized vehicles are allowed to travel (Figure 171). The view toward the southern end of Anastasia Island is unimpeded, with no structures or signs of vehicular use visible (Figure 172).

Circulation

Roads

The Beach Ramp section of the national monument site is organized around an asphalt access road leading from SR A1A to the beach along the Atlantic Ocean. The two-lane road is twenty-four feet wide. It extends approximately 575 feet and ends at a wooden access ramp used by pedestrians and vehicles to access the beach. The



Figure 173: View northeast of the parking area along the access road with the vehicular turnaround in the foreground and parking stalls in the background (WLA Studio 2016).

road gently curves northeast from SR A1A, which obscures views directly from the highway to the Beach Ramp's parking area.

Parking Lot

Two rows of perpendicular parking spaces line each side of the entrance road (Figure 173). Like the entrance road, these spaces are asphalt paved. The spaces are located between a sixty-foot-diameter vehicular turnaround and the wooden beach access ramp at the northeast end of the entrance road. The parking stall and vehicular turnaround boundaries are marked with white paint. There are twenty-six parking spaces, including two accessible spaces with passenger loading zones.

Beach Ramp

A timber ramp connects the entrance road and parking area to the beachfront along the Atlantic Ocean. Pedestrians and motorized vehicles use the route for beach access. The ramp acts as an extension of the entrance road and is similar in width, measuring approximately twenty-four feet wide. The ramp extends eighty-five feet from the end of the entrance road to the beach. Square timbers are aligned end-to-end along the edges of the ramp and extend above the travel surface (Figure 174).

Buildings and Structures

Retaining Walls

Modular-block concrete walls retain the slope of the dune lining the northern and southern ends of the Beach Ramp parking area. The wall lining the southern end begins approximately three hundred feet from State Road A1A, just southwest of the



Figure 174: View from the end of the entrance drive looking east, across the beach access ramp, toward the Atlantic Ocean (WLA Studio 2016).



Figure 175: View south of the modular block wall at the southern corner of the parking area, just beyond the vehicular turnaround. The entrance drive leading from State Road A1A is visible to the right (WLA Studio 2016).

vehicular turnaround space (Figure 175). The wall begins at the edge of the access road and extends southeast the length of one parking stall. The wall then extends northeast, lining the front of the parking stalls along the southern side of the access road. Once reaching the northeastern limit of the parking area, the wall turns northwest, back toward the access road and then curves slightly toward the timber beach access ramp, where the wall ends. The wall along the northern side of the parking area is much shorter. Rather than spanning the entire length of the parking area, this wall is only located at the northeastern corner and extends about twenty feet at right angles southwest and southeast from this corner.



Figure 176: A wooden structure is used to provide an enclosure for portable toilets at the Beach Ramp site, as seen looking north from the entrance road (WLA Studio 2016).

Portable Toilet Enclosure

A wooden screening structure used to house two portable toilets is located at the southwestern limit of the northern parking aisle. The structure is built upon a low wooden platform. The enclosure has four board-on-board walls. Walls completely enclose the west, north, and east sides of the structure. The eastern face of the enclosure has two openings at each end to allow access to the two portable toilets that are placed at each side of the screening structure (Figure 176).

Small-Scale Features

Signs

A variety of sign types exist at the Beach Ramp. Each sign type is categorized by function and use throughout the site and described in detail below:

Entrance Sign – A sign identifying the national monument site is located at the southeastern section of the semicircular clearing east of the entrance road's intersection with SR A1A. This sign is smaller and less intricate than the entrance sign diagonally across the intersection, at the western entrance to the HQ/VC complex. It is mounted to two metal supports. The metal sign itself, although smaller in size than its counterpart west of SR A1A, is similar in color and graphic layout. A black horizontal line stretches across the top of the sign. Below this thin stripe, the remainder of the sign is brown-gray. Within this lower section of the sign are three rows of text in white. The first two are both in large lettering and read "Fort Matanzas" with "National Monument" just below. "National Park Service |U.S. Department of the Interior" is written below these two lines in small lettering.



Figure 177: Looking north from the end of the access road, a sign near the beach access ramp provides regulatory information for beachgoers (WLA Studio 2016).

Regulatory and Road Signs – A stop sign is mounted to two circular timber posts of varying heights at the northwestern section of the semicircular clearing east of SR A1A. On the southern side of the clearing at the beginning of the entrance road, a round metal pole supports a white sign with black lettering. This sign warns of "soft sand ahead" and informs readers that the ramp is "subject to close at high tide." Further along the entrance drive a white sign with red lettering informs those visiting the park that there is "no parking any time" in this location. An identical sign is located across the entrance road. Near the end of the semicircular clearing, on the east side of the entrance road, a brown sign with white lettering and a white border reads "no parking." Just below this, a sign of similar design mounted on the same support reads "alcohol prohibited."

Along the entrance drive more "no parking" signs line the edges of the sand dune. "No parking" signs are also placed on poles just behind the modular block retaining wall where the wall abuts the vehicular turnaround area. Identical signs are placed on the northern side of the vehicular turnaround area. Signs just north of the accessible parking stalls along the northern side of the parking lot denote that the spaces are by "disabled



Figure 178: View from just east of the beach access ramp. Signs provide information on rip currents, beach warning flags, and directions to the next vehicular access point (WLA Studio 2016).



Figure 179: View southeast of the beach access ramp. A sign informs people visiting the site that no motorized vehicles are allowed along the beachfront between the Beach Ramp landscape and the southern end of Anastasia Island (WLA Studio 2016).

permit only" and that those parking in the spaces without a permit are subject to a $250.00 fine.

At the end of the parking area, before arriving at the wooden access ramp, a sign is mounted to two timber posts. Information on this sign is divided into two sections with headings in white lettering backed by a red background. The first outlines the use and conduct rules for the beach area. The second offers information on beach driving with entrance times and mandatory departure times. Text in the body of the sign, outside of these headings, is in blue. At the top of the sign, white text in front of a blue-colored wave-shaped graphic reads "Fort Matanzas." At the bottom of the sign, white text in front of the same wave-shaped graphic reads "Enjoy the Beach!" A quick response code is located at the bottom right corner of the sign (Figure 177). On the beach, at the end of the access ramp, three wooden-framed signs are mounted to a wooden post. A sign on the left features a graphic illustrating rip currents and offers information to help "Break the Grip of the Rip" with other swimming safety tips listed below. The sign to the right of this describes beach warning flags with accompanying illustrations of each flag type. Above these two signs is a smaller sign with a white background and black lettering. The sign identifies the beach area as "Fort Matanzas." A directional arrow below points north and text reads "Next Ramp Crescent Beach 3.8 Miles" (Figure 178). About fifty feet southeast of these three signs, a single sign is mounted to a thick circular metal post. This brown sign with white text states that there are "no motorized vehicles beyond this point." Below this, a small line of white lettering reads "36 CFR 4.10." The NPS arrowhead symbol is placed to the left of the text. A thin white border is around the edges of the sign. A smaller sign is attached to the bottom right corner of this sign. The smaller sign is white with a black border. On this sign the universal no sign is in red and placed on top of an illustration of a motorized vehicle, which is black (Figure 179).

Bollards

Wooden bollards line each side of the entrance road to the Beach Ramp section of the national monument site where the park road intersects with State Road A1A. A total of twenty-one bollards line the northern side of this road, and twenty bollards line the southern side. At the end of the entrance road, between the parking area and the vehicular access ramp, wooden bollards are placed along each edge of the roadway. These bollards line the roadway and then extend into the dune. A metal cable is threaded through the bollards to create a



Figure 180: Bollards line each side of the entrance road and extend into the sand dunes. A metal gate is used to block vehicular access in the evenings during sea turtle nesting season as seen looking east to the Atlantic Ocean (WLA Studio 2016).



Figure 181: Two waste receptacles are located in the parking lot area. The photo above shows the receptacle at the southeastern end of the parking area, just southwest of the vehicular access ramp (WLA Studio 2016).

pedestrian barrier between the entrance road and the sand dunes. There are seven bollards along the northern end of the access road and four along the southern end (Figure 180).

Gate

A metal gate is located at the northeastern end of the parking lot. A gate arm is placed on each end of the entrance road. This metal-tube gate with rounded corners swings closed and blocks vehicular access as needed. Two signs are mounted to the southern gate. The first is a "Do Not Enter" sign with a red symbol and white lettering. The second is a white sign with a thin black border. A black bar extends horizontally across the sign's top. White lettering reads "Attention Beach Drivers." Below this line, black lettering on a white background reads "Beach Closed to Vehicular Traffic 7:30 pm – 8:00 am May 1 – October 31."

Waste Receptacles

Two brown wildlife-proof waste receptacles with yellow text are provided at the Beach Ramp site. The receptacles measure two feet deep and four feet wide. There are two openings along the front of the receptacles, one labeled "trash" and the other "recycling." Doors providing access to the inside of the receptacles are on the front of the containers. The waste receptacles are located at the northeastern and southeastern corners of the parking lot and are placed on low wooden platforms (Figure 181).

Pet Waste Station

A pet waste station is located south of the entrance road between the parking lot and the beach access ramp. A green metal container is mounted to the top of a rectilinear wooden post. This metal container is stocked with pet waste bags. A sign is mounted to the timber post below this metal container. The green and white sign reads "Pet Waste" in white lettering over a green background. Below this, in white lettering and graphics over a white background, an illustration of a person with a leashed dog is placed next to text reading "Leash and Clean up after Your Pet." Below this white lettering on a green background reads "Please Keep This Area Clean."



Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

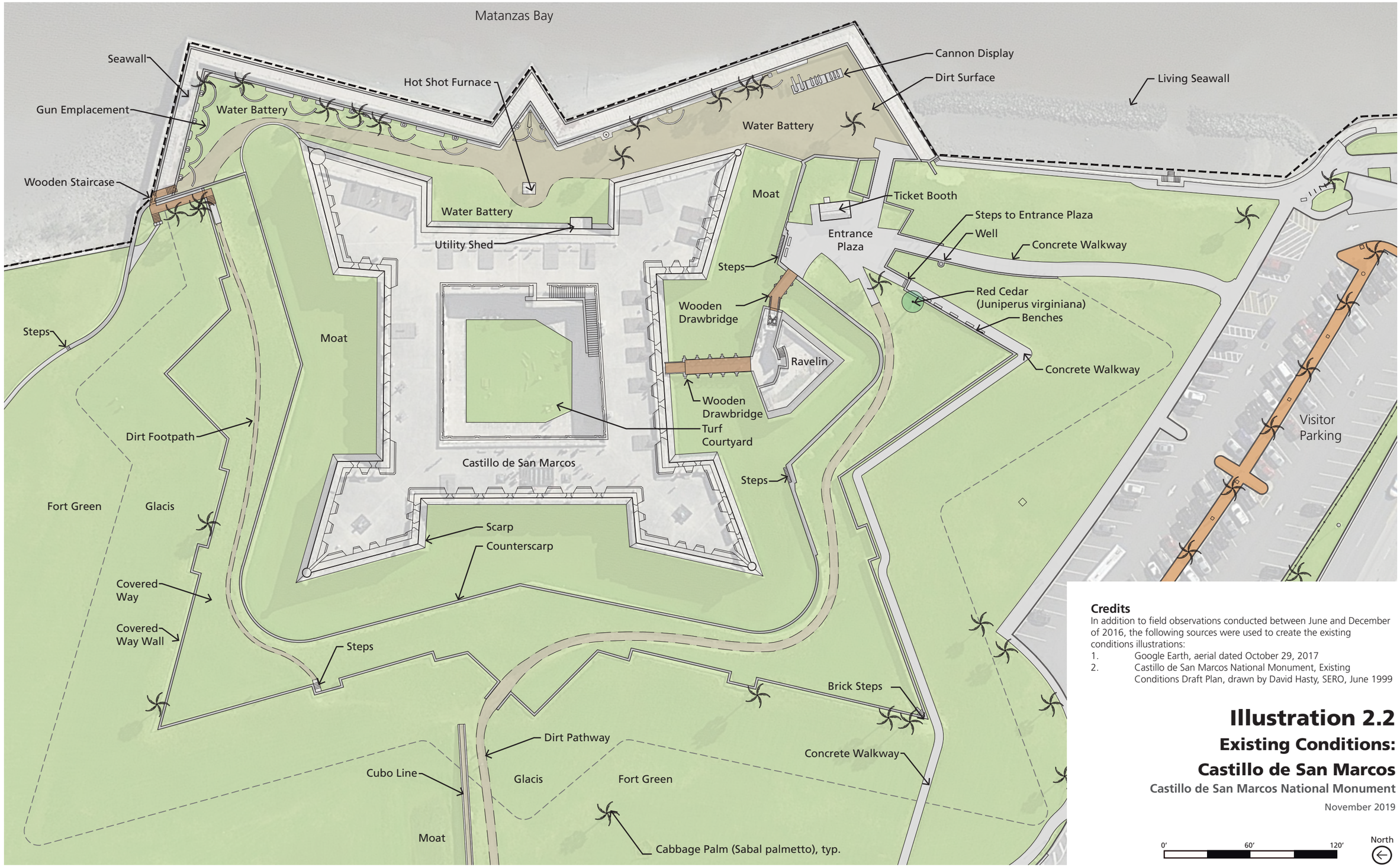
Illustration 2.1

Existing Conditions: Overall Site

Castillo de San Marcos National Monument

November 2019

0′ 120′ 240′ North



Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 2.2

Existing Conditions: Castillo de San Marcos

Castillo de San Marcos National Monument

November 2019

0′ 60′ 120′ North



Plant Legend

Key	Botanical Name	Common Name
Trees		
CC	*Callistemon citrinus*	Bottlebrush
CI	*Carya illinoinensis*	Pecan Tree
CF	*Cornus florida*	Flowering Dogwood
GL	*Gordonia lasianthus*	Loblolly Bay
IA	*Ilex x attenuata 'Savannah'*	Savannah Holly
JV	*Juniperus virginiana*	Red Cedar
QV	*Quercus virginiana*	Live Oak
LI	*Lagerstroemia indica*	Crape Myrtle
MG	*Magnolia grandiflora*	Southern Magnolia
SP	*Sabal palmetto*	Cabbage Palm
UA	*Ulmus americana*	Florida Elm var. floridana
Shrubs		
CR	*Cycas revoluta*	Sago Palm
HS	*Hibiscus syriacus*	Rose of Sharon
IV	*Ilex vomitoria*	Yaupon Holly
LL	*Ligustrum lucidum*	Glossy Privet
RH	*Rhododendron spp.*	Dwarf Azalea
SR	*Serenoa repens*	Saw Palmetto
YA	*Yucca aloifolia*	Spanish Bayonet
ZF	*Zamia floridana*	Coontie
Groundcover		
HL	*Hemerocallis lilioasphodelus*	Yellow Daylily
SS*	*Stenotaphrum secundatum*	St. Augustine Grass

*Primary groundcover throughout turf areas

Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 2.3

Existing Conditions: Park Headquarters and Maintenance Facility, City Gate

Castillo de San Marcos National Monument

November 2019

0′ 50′ 100′

North



Plant Legend

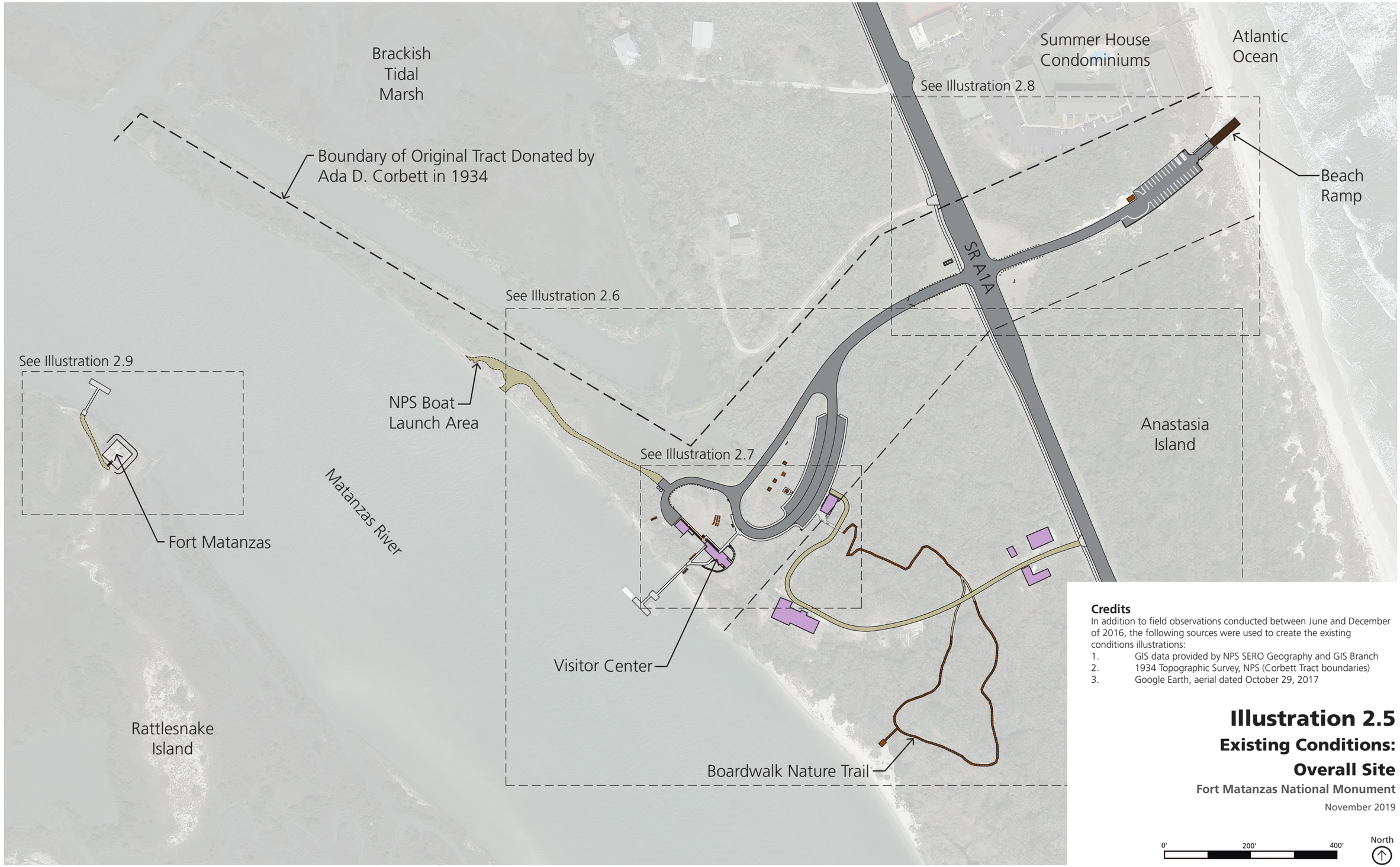
Key	Botanical Name	Common Name
Trees		
JV	*Juniperus virginiana*	Red Cedar
PD	*Phoenix dactylifera*	Date Palm
PS	*Phoenix dactylifera x*	Date Palm (Hybrid) sylvestris
SP	*Sabal palmetto*	Cabbage Palm
UA	*Ulmus americana*	Florida Elm var. floridana
Shrubs		
CR	*Cycas revoluta*	Sago Palm
FS	*Forestiera segregata*	Florida Privet
SR	*Serenoa repens*	Saw Palmetto
YA	*Yucca aloifolia*	Spanish Bayonet
ZF	*Zamia floridana*	Coontie

Groundcover
Primary groundcover outside of hardscape areas is a mix of turfgrass and a mix of annual weed varieites, maintained turf

Credits
In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 2.4
Existing Conditions: NPS Staff Parking and Visitor Parking Areas
Castillo de San Marcos National Monument
November 2019

0' 50' 100'
North



Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. GIS data provided by NPS SERO Geography and GIS Branch
2. 1934 Topographic Survey, NPS (Corbett Tract boundaries)
3. Google Earth, aerial dated October 29, 2017

Illustration 2.5

Existing Conditions: Overall Site

Fort Matanzas National Monument

November 2019

0′ 200′ 400′

North



Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. GIS data provided by NPS SERO Geography and GIS Branch
2. 1934 Topographic Survey, NPS (Corbett Tract boundaries)
3. Google Earth, aerial dated October 29, 2017

Illustration 2.6

Existing Conditions: Headquarters and Visitor Center

Fort Matanzas National Monument

November 2019

0′ 100′ 200′

North



Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. GIS data provided by NPS SERO Geography and GIS Branch
2. 1934 Topographic Survey, NPS (Corbett Tract boundaries)
3. Google Earth, aerial dated October 29, 2017

Illustration 2.7

Existing Conditions: Headquarters and Visitor Center

Fort Matanzas National Monument

November 2019

0′ 30′ 60′′

North



Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. GIS data provided by NPS SERO Geography and GIS Branch
2. 1934 Topographic Survey, NPS (Corbett Tract boundaries)
3. Google Earth, aerial dated October 29, 2017

Illustration 2.8

Existing Conditions: Entrance Area and Beach Ramp

Fort Matanzas National Monument

November 2019

0′ 50′ 100′ North



Credits

In addition to field observations conducted between June and December of 2016, the following sources were used to create the existing conditions illustrations:

1. GIS data provided by NPS SERO Geography and GIS Branch
2. 1934 Topographic Survey, NPS (Corbett Tract boundaries)
3. Google Earth, aerial dated October 29, 2017

Illustration 2.9

Existing Conditions: Fort Matanzas

Fort Matanzas National Monument

November 2019

0′ 50′ 100′

North

Analysis and Evaluation

Introduction

For cultural landscapes such as Castillo de San Marcos National Monument and Fort Matanzas National Monument, documenting existing conditions and evaluating historic resources are critical in the development of a strategy for their management and treatment. Cultural landscape analysis involves two primary activities: evaluating historic significance and assessing historic integrity. Both use criteria determined by the National Register of Historic Places, which has developed nationally recognized methods for evaluating the significance and integrity of historic buildings and landscapes. The evaluation of historic significance identifies the important historical associations of the property as well as its architectural, archeological, and social value. The property's significance is tied to a discrete period of time (period of significance) in which its important contributions were made and to broader historic contexts (historic context themes) within which the activities that occurred on the property may be placed. The analysis and evaluation section considers the site's history within recognized historic contexts to determine its contribution to the broad patterns of American history. It is important to note that historic resources, particularly cultural landscapes, change over time. As a result, a cultural landscape may have several areas of historical significance and multiple periods of significance.

In order to determine whether a landscape feature contributes to the historic significance of the Castillo de San Marcos National Monument and Fort Matanzas National Monument, this chapter compares the existing conditions of landscape features to their understood historic state. The objective of this analysis is to identify the specific features associated with the historic periods and assess to what degree they continue to convey their historic significance.

This section evaluates the physical integrity of landscape features by comparing the historic condition of features dating to the period of significance with the current condition of these features. Contributing landscape features survive from the period of significance and continue to reflect their historic appearance and function. Noncontributing landscape features include those added to the site since the period of significance or that no longer possess enough physical integrity to convey their historic appearance or function. Missing features are features that existed during the period of significance but have been removed, destroyed, or cannot be recognized in their current condition. Undetermined features include features whose age cannot be determined or whose contribution to the historic landscape is unknown. Please refer to the table at the end of this chapter for a summary of this information.

The following analysis follows a National Park Service methodology that categorizes all landscape elements as landscape characteristics. Landscape characteristics are the "tangible and intangible aspects of an inventory unit which have either influenced the history of the development of the landscape, or are products of its development, respectively."[269] Further, "these aspects individually and collectively give a landscape its historic character and aid in the understanding of its cultural importance."[270]

For sake of clarity, the following chapter separates the analysis of Castillo de San Marcos and Fort Matanzas into separate sections. Within Castillo de San Marcos, the analysis further separates the City Gate and Park Headquarters and Maintenance Facility from Castillo de San Marcos as individual character areas when appropriate. At Fort Matanzas, the analysis separates the Headquarters and Visitor Center and the Beach Ramp as individual character areas.

269. Robert R. Page, *National Park Service Cultural Landscapes Inventory Professional Procedures Guide*, (Washington D.C.: U.S. Department of the Interior, National Park Service Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, January 2009), 7-4.
270. Page, *CLI Guide*, 53.

Castillo de San Marcos

Castillo de San Marcos National Monument is located in St. Augustine, Florida. It contains approximately 20.48 acres. Historically significant landscape features at the national monument include: Castillo de San Marcos, a coquina-masonry for the Spanish begun in 1762; the City Gate, built in 1808; and various outworks surrounding the fort. More recent additions to the national monument landscape include the Park Headquarters and Maintenance Facility, initially constructed in 1965, walkways, and parking lots.

The Spanish founded St. Augustine in 1565. Following a raid in 1668, when pirates successfully captured the town, the Spanish began construction of a masonry fort in 1672. The structure was largely complete by 1696, at which time the fort walls, moat, seawall, and ravelin were in place; but modifications and additions to the fort continued over the next century. The Spanish eventually added a covered way, glacis, and raised the walls of the fort in the 1700s. The Spanish also constructed defensive earthworks that encircled the town of St. Augustine. These earthworks included the Cubo Line, begun in 1704; the Hornwork, begun in 1706; and the Rosario wall, begun in 1718.

Spanish control of northeast Florida temporarily transferred to Great Britain in 1763. The Spanish regained possession of Florida and St. Augustine in 1784. In 1821, the United States took possession of Florida and occupied Castillo de San Marcos. The U.S. War Department removed its garrison at Castillo de San Marcos in 1900. The fort was declared a national monument in 1924. Management of the property passed to the National Park Service (NPS) in 1933. The NPS continues to manage the property today.

National Register Status

The National Historic Preservation Act of 1966 established the National Register of Historic Places (NRHP), which is the official list of the historic places and landscapes designated worthy of preservation. To achieve National Register status, a property must meet the National Register criteria for evaluation. The evaluation criteria examine a property's age, integrity, and significance. For the National Register to consider a property historic, it generally needs to be at least 50 years old. To possess integrity, a property needs to appear the way it did in the past and it must be associated with important historical events, activities, or developments. The National Register evaluates a property's significance based on the following criteria:

A. Association with events that have made a significant contribution to the broad patterns of our history; or
B. Association with the lives of significant historical figures; or
C. Embodiment of the distinctive characteristics of a type, period, or method of construction, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
D. Yielding or the potential to yield significant archeological resources that are significant to history or prehistory.

Presidential Proclamation 1713, signed on October 15, 1924, designated Castillo de San Marcos (then called Fort Marion) as a National Monument. Castillo de San Marcos was listed on the NRHP on October 15, 1966, with the passage of the National Historic Preservation Act. In 1973, the NRHP received documentation for the water battery and City Gate to be added to Castillo de San Marcos National Register nomination; it does not appear that this documentation was officially accepted. A revised National Register of Historic Places Inventory—Nomination Form providing additional documentation on the water battery and the City Gate was submitted to the National Register of Historic Places on November 29, 1976 and accepted on March 4, 1977.[271] This initial documentation included three structures: Castillo de San Marcos, the City Gate, and the water battery. A subsequent National Register of Historic Places Registration form was submitted on behalf of the national monument in 1996. This form added the moat, covered way, glacis, ravelin, hot shot furnace, seawall, and Cubo Line to the list of contributing resources.[272]

271. Luis R. Arana, "Castillo de San Marcos," National Register of Historic Places Inventory/Nomination Form, National Park Service, St. Augustine, June 14, 1973, Revised June 1976.
272. Jennifer D. Brown, "Castillo de San Marcos National Monument," National Register of Historic Places Inventory/Nomination Form, National Park Service, Atlanta, August 5, 1996, Section 8, Page 15.

Contributing Resources

The 1996 NRHP registration form identifies the following contributing resources at Castillo de San Marcos National Monument:

- Castillo de San Marcos
- City Gate
- Water battery
- Moat
- Covered way
- Glacis
- Ravelin
- Hot shot furnace
- Seawall
- Cubo Line

Period of Significance

The 1996 NRHP registration form for the Castillo de San Marcos National Monument assigns two periods of significance: 1672-1821 and 1821-1924. The first period (1672-1821) begins with the construction of Castillo de San Marcos and ends with the transfer of the fort to the United States. The second period begins with the transfer in 1821 and ends in 1924 when President Calvin Coolidge declared Castillo de San Marcos (then called Fort Marion) a national monument. The U.S. War Department managed the site during this period and did not transfer the property to the NPS until 1933.

Based on the National Register's period of significance, the periods of significance used for analysis of Castillo de San Marcos National Monument in this CLR are as follows:

- Colonial period (1672-1821)
- War Department period (1821-1924)

Statement of Significance

The 1996 NRHP registration form states that Castillo de San Marcos National Monument is historically significant under Criteria A, B, and C. It also includes special Criteria Consideration E: a reconstructed building, object, or structure. Castillo de San Marcos National Monument is historically significant on the national level under Criterion A in the area of Military History for its association with European settlement and struggle to control this region of North America. The district is considered significant under Criterion B for its association with Chief Osceola. It is also historically significant under Criterion C in the area of Military Engineering as an example of European military architecture of the 1600s and later conversion to a U.S. coastal defense site. Criteria Consideration E applies to the 1963 Cubo Line reconstruction.

Criterion A: Military History

Castillo de San Marcos, including the moat, covered way, glacis, and ravelin are considered nationally significant under Criteria A for the 1672 to 1821 period. These resources "represent the military struggle that occurred in Florida between European powers, particularly Spain and England, for control of North America."[273] The seawall, water battery, and hot shot furnace are considered significant under A for the 1821 to 1924 period of significance for "their association with the early American occupation of Florida."[274]

Castillo de San Marcos represents the efforts that Spain made to settle northeast Florida and to protect Spanish interests in the North American continent. In the years prior to the fort's construction, the area around St. Augustine experienced numerous military events. Pedro Menédez de Avilés led Spanish forces against French forces, led by Jean Ribault, in 1565. Francis Drake led English troops in an expedition against St. Augustine in 1586. John Davis led a group of pirates in a raid of the city in 1668, an attack that motivated the Spanish to construct a masonry fort, Castillo de San Marcos.

Governor Manuel de Cendoya broke ground on the fort on October 2, 1672. The fort was largely completed in 1696 after a generation of work, but construction on outworks and modifications to the fort continued throughout the colonial period. During the War of Spanish Succession, Governor James Moore of Carolina led an attack against St. Augustine in 1702. Moore's successful occupation of St. Augustine prompted a second period of construction when the Spanish added additional earthworks to defend the fort and St. Augustine. General James Oglethorpe led an assault on St. Augustine in 1740 and besieged the fort for 38 days.

Spain ceded its possessions in Florida to the United States in 1821. Castillo de San Marcos, called Fort

273. Brown, "Castillo de San Marcos," Section 8, Page 14.
274. Ibid.

Marion during this period, served the U.S. Army during the Second Seminole War from 1835 to 1842. While never under attack, the fort served as a storehouse for weapons and supplies and was used as a prison for captured American Indians. Even though the War Department did not initially consider Fort Marion a strategic asset within the national coastal defense system, after the Second Seminole War, it invested in several upgrades to the fort in the 1840s.

Florida militia occupied Fort Marion in January 1861. Federal troops retook the fort in March 1862 and occupied the fort through the duration of the Civil War. In the 1870s and 1880s, the U.S. Army used Fort Marion as a military prison where it incarcerated captured American Indians during the Western Indian Wars. The army removed its garrison from Fort Marion in 1900; but during World War II, the U.S. Army and Coast Guard used the grounds as a training facility. The army transferred the site to the National Park Service in 1933.

Criterion B: Osceola

Osceola led the Seminole Nation against the U.S. Army during the Second Seminole War. Beginning in 1835, the U.S. Army pursued Osceola and his band of warriors as they withdrew to avoid capture. In October 1837, Osceola arrived under the flag of truce in St. Augustine to negotiate with American government officials. Osceola was seized and imprisoned at Castillo de San Marcos (Fort Marion). In December 1837, the army sent Osceola to Fort Moultrie, near Charleston, South Carolina, where he died on January 30, 1838.

Criterion C: Military Engineering

The 1996 NRHP registration form states that Castillo de San Marcos "is architecturally significant as the oldest masonry fortification remaining in the United States." Castillo de San Marcos, the moat, covered way, glacis, and ravelin are nationally significant under Criterion C because they represent the "military theories prevalent at the time of their construction."[275] The Cubo Line and City Gate are significant as 1800s additions to the defense of the fort. The water battery, seawall, and hot shot furnace are significant as mid-1800s updates that reflect military and engineering conventions related to coastal defense.

The Spanish built Castillo de San Marcos between 1672 and 1695. It was remodeled in 1738-1740, 1752-1756, and again in 1762. The Spanish constructed the moat, covered way, glacis, and ravelin between 1672 and 1762. The U.S. Army constructed the seawall, water battery, and the hot shot furnace between 1833 and 1844.

Castillo de San Marcos reflects the military engineering principles of the 1600s. Historians credit Spanish military engineer Ignacio Daza for developing the design for Castillo de San Marcos. According to Albert Manucy, "Daza was apparently schooled in the Italian-Spanish principles of fortification as developed from the sixteenth-century designs of Francesco de Marchi."[276] Manucy writes, "The Castillo de San Marcos was a typical example of European design transplanted to the Western Hemisphere."[277] European military engineers adopted the bastion fortress to defend against cannon bombardment. With the introduction of gunpowder and artillery, military engineers lowered the walls of fortifications, reducing their profile, and constructed earthworks beyond the fortification to protect the fortification from direct fire. Moats, covered ways, and glacis were common earthwork features that presented obstacles to an advancing adversary and provided a protected, advanced position for the fort's defenders.

Because the statement of significance focuses on the military history and military engineering of the site, the changes to the landscape that the War Department made during the 1821-1924 period are not historically significant if they do not relate to the military aspect of the site. The resources from War Department period that do contribute to the historic significance of the site (water battery, seawall, and hot shot furnace) do so because of their association with military engineering and architecture.

The development of a picturesque, park-like landscape around Castillo de San Marcos in the 1890s reflects contemporary ideas about recreation and landscape design. The design, however

275. Brown, "Castillo de San Marcos," Section 8, Page 15.

276. Albert Manucy, *The Building of Castillo de San Marcos* (Washington D.C.: U.S. Government Printing Office, n.d.), 15.

277. Albert C. Manucy, "Defending San Marcos "National Park Service Historical Handbook, accessed online 4/20/2018, http://npshistory.com/series/interpretive/1/is1c.htm).

interesting, does not satisfy National Register for Historic Places criteria. It is not a distinctive representative of the American park movement, which introduced picturesque, rural-inspired landscapes into American cities beginning in the mid-1840s. Additionally, the NPS removed many of the features of the War Department period landscape, diminishing the legibility of the design, removing its original materials and workmanship, and removing the association the landscape may have had to that period.

However, the NPS should consider expanding the statement of significance of the site to include recreation under Criteria A. The fort's green was the site of an early exhibition baseball game in 1886, which included members of the Cuban Giants, considered the first African American professional sports team. The fort's green was also the location of the first golf course constructed in Florida. In 1895, a group of winter residents in St. Augustine installed a course on the fort's grounds. The course remained in operation until 1925.

The June 2016 Foundation Document for Castillo de San Marcos National Monument identifies archeological resources as warranting special consideration in park planning. While this CLR does not evaluate the integrity of archeological resources at Castillo de San Marcos National Monument, upon review of some of the available archeological reports prepared for the national monument, it seems likely that the property would meet National Register Criteria D for the potential to yield important information about early inhabitants of the area. They would also meet Criteria D for the potential to yield information about the Spanish colonial period.

The interpretation and preservation efforts of the NPS fall outside of the national monument's period of significance. Recent additions to the site, including those accomplished during the Mission 66 period, also fall outside of the period of significance. However, the 1996 NRHP registration form includes the Cubo Line as a contributing feature, even though it is a reconstruction that dates to 1963. According to the NRHP registration form, the Cubo Line satisfies the requirement of demonstrating "a high level of historical accuracy and integrity in order to be eligible for the National Register."[278]

However, interpretation and preservation were two land uses introduced during the historic period of significance. During their occupation of Castillo de San Marcos and Fort Matanzas, military personnel saw the historic significance and lobbied for the preservation of the structures. While the work may not meet current preservation standards, it reflects an early effort to preserve a historically significant structure. Similarly, the War Department opened the fort to visitors during the period of significance and cooperated with the St. Augustine Historical Society to provide interpretation to visitors. The national monument's statement of significance should be expanded to include these preservation and interpretation efforts under Criteria A.

The NPS should consider extending the period of significance. At a minimum, the 1924 end date should be moved to 1933, when the NPS took over the site. The NPS should also consider extending the period of significance to the conclusion of the Mission 66 program, which would include several important archeological and restoration projects, including the reconstruction of the Cubo Line and restoration of the glacis, covered way, and moat.

Landscape Integrity Overview

The National Register of Historic Places specifies seven defining qualities of integrity. These include: location, design, setting, materials, workmanship, feeling, and association. To be listed on the National Register, a property's historic identity will be evident because of the survival of physical characteristics dating from the period of significance.

Analysis of Landscape Characteristics

Natural Systems and Features

During the historic period, the natural systems and features of the site influenced the design, construction, and evolution of Castillo de San

278. Brown, "Castillo de San Marcos National Monument," Section 8, Page 15.

Marcos. The most significant natural systems and features of the Castillo de San Marcos site include the waterways around St. Augustine and the St. Augustine landmass.

The physiography of the area around St. Augustine includes subtle topographic rises and drainage areas. The site of St. Augustine is part of the Eastern Valley that lies between the Atlantic Beach Ridges along the coast and the Atlantic Coastal Ridge across the San Sebastián River. The area has sandy, moderately draining soils that are not subject to flooding. The region is relatively flat. Drainage courses, including rivers and streams, cut through the higher, dryer elevations. Salt marshes occupy the low-lying areas along brackish water courses. Barrier islands along the coast protect the interior mainland, and "these sheltered areas have been important for settlement, transportation, and food throughout prehistoric and historic times," according to James Miller.[279]

The Spanish built Castillo de San Marcos on the eastern shore of a peninsula of land bounded by the Tolomato River and Matanzas River on the east and the San Sebastián River on the west and south. St. Augustine Inlet provides access to the Atlantic Ocean from the northern end of Matanzas River. From this point, Matanzas River flows 16 miles south, creating Anastasia Island. During most of the history of the site, the channel into St. Augustine was difficult to navigate. Boats entering the inlet had to steer through shifting sandbars at its entrance. Once past the sandbars, the channel turned north towards the Tolomato River before turning west and then south around the north end of Anastasia Island. The portion of Matanzas River fronting St. Augustine is known as Matanzas Bay.

According to historian Albert Manucy, Spanish officials considered the natural defenses of the harbor when siting Castillo de San Marcos. The shallow sandbars at the entrance into the channel prevented larger warships from entering the bay and threatening the fort and town. Additionally, rivers and streams around St. Augustine presented natural obstacles against potential invaders. St. Augustine and the fort had rivers on three sides and a creek crossing the fourth approach.[280] Both overland and water approaches figured

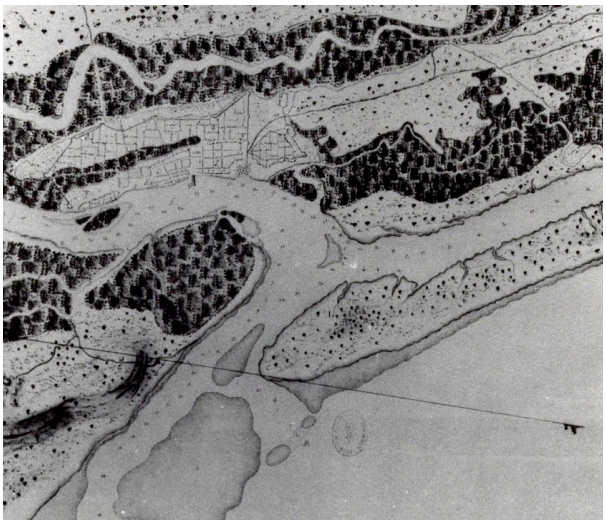


Figure 182: Detail Berrío's Map 1797 (CASA no. A5005)

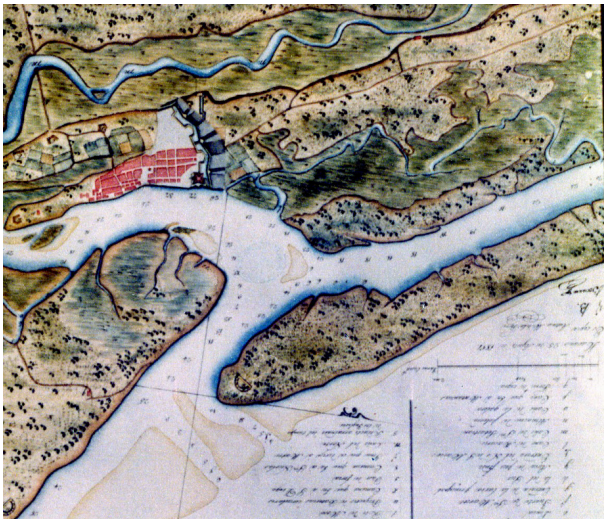


Figure 183: Detail Cortazar Map 1817 (CASA no. A4997)

prominently in various attacks on St. Augustine during its history. Defending against these lines of attacks led the Spanish to reinforce the natural defenses with additional man-made defenses around the fort and the town of St. Augustine.

By 1696, the Spanish constructed a seawall to protect St. Augustine from flooding. The seawall and water battery were rebuilt and moved eastward in 1833-1844 during the War Department period. The historic condition of the channel and St. Augustine Inlet is illustrated in multiple maps, including a 1797 map of St. Augustine by D. Pedro Diaz Berrío and an 1817 plan of St. Augustine by Cortazar (Figure 182 and Figure 183). Both maps show changes to the various sandbars around the inlet, but the overall configuration of the shoreline around St. Augustine remain relatively consistent.

279. James J. Miller, *An Environmental History of Northeast Florida* (Gainesville, Fl.: University Press of Florida, 1998), 32.
280. Manucy, *The Building of Castillo de San Marcos*, 14-15.



Figure 184: 1859 Coastal Survey (NOAA)



Figure 185: Overlay 1859 Survey and 2018 Google Earth Aerial (NOAA)

An 1859-1860 U.S. Coast Survey of the St. Augustine area shows relatively little change in the shape of landforms and watercourses of the area (Figure 184). Even the character of the salt marsh areas, where the land was periodically inundated by tidal fluctuations, seems relatively consistent between these three maps.

Post-Historic and Existing Condition

In 1959, the City of St. Augustine widened Avenida Menendez (SR A1A), burying the historic seawall south of Castillo de San Marcos. The sea wall along Avenida Menendez was moved eastward again in 2013. The NPS added a living seawall south of Castillo de San Marcos in 2011. The living seawall is within the water and mostly submerged during high tides. It features large coquina stone and functions as a breakwater, dissipating the damaging effects of crashing waves.

In 1940, the U.S. Army Corps of Engineers cut a new channel through to the Atlantic Ocean to replace St. Augustine Inlet. The sandbars and a small landmass, Bird Island, south of the new inlet eventually combined with the north end of Anastasia Island. Overlaying the 1859-1860 U.S. Coast Survey over a current aerial illustrates the character of change in the area. The watercourses and outline of landmasses are mostly in the same location. The most significant change is the cutting of a new St. Augustine Inlet and the enlargement of the north end of Anastasia Island (Figure 185).

Summary

The relationship between Matanzas River, Matanzas Bay, and the site of Castillo de San Marcos is an essential characteristic of the site. The waterways, wetlands, and marshes in the surrounding area were important features in the lives of the historic inhabitants of St. Augustine, including the American Indians who lived in the area prior to the Spanish. The shape of the landmass that contains St. Augustine, bounded by water on three sides with high land suitable for settlement, is also an important historic feature. Commercial and residential development has changed the appearance of the natural features and adversely impacted the ecology of the system. Despite these changes, the natural systems and features retain enough aspects of location, feeling, and association to convey the condition of the landscape during the period of significance.

Landscape Features

- Matanzas River and Matanzas Bay
    - Contribution Status: Contributing
- St. Augustine landmass
    - Contribution Status: Contributing

Spatial Organization

Historic Condition

During the period of significance, the spatial organization of Castillo de San Marcos remained relatively consistent despite the urbanization of St. Augustine and development of tourism in the 1800s and 1900s. Among the most significant characteristics of spatial organization at Castillo de San Marcos are the orientation of the fort to Matanzas Bay, the formal arrangement of defensive earthworks around the fort, and the spatial relationship to St. Augustine.

The Spanish selected the site for Castillo de San Marcos because of its proximity to the Matanzas River and its harbor. According to Albert Manucy,



Figure 186: Detail 1764 Map (CASA no. ar164200)

"Engineer Daza and Governor Cendoya decided the new fort should be erected on the west shore of the bay by the side of the old fort, a site which took into account every natural defense feature of the site."[281] The Spanish began construction on the fort in 1672. According to Manucy, Engineer Daza and Governor Cendoya modeled the design for the new fort on the previous one.

Over the next hundred years, the Spanish added a series of defensive earthworks, creating a fort that exemplifies the defense in depth principles prevalent in military engineering of the 1600s. The main outworks extending from the fort include the moat, covered way, glacis, and esplanade. The Spanish also built earthen walls to protect St. Augustine, eventually encircling the north, west, and south sides of the town. The Cubo Line was a portion of this defense system, extending from the fort to the San Sebastian River, protecting the north side of St. Augustine.

The esplanade was an open area around the fort that the Spanish kept clear of structures or vegetation. According to historian Sastre, a zona polémica extended beyond the esplanade north of the Castillo. The zona polémica extended approximately 4,100 feet out from the fort or 1,500 varas, leading to this area also being called the "mil y quinientas." Spanish authorities retained the right to remove any structures constructed in this zone. The esplanade and zona polémica functioned as a buffer between the fort and the town, limiting the growth of the town north of the Cubo Line.[282] All these features appear on a 1764 map based on a survey by Don John de Solis (Figure 186).

Spanish settlers chose to live close to the military forts to take shelter during periods of unrest or in case of an attack. The town of St. Augustine was destroyed during the siege of 1702. The residents rebuilt the town and the Spanish governor reported it was growing full of tabby houses by 1761. By 1672, most Spaniards in Florida lived within the protected confines of St. Augustine.[283] By the late 1600s, St. Augustine began to expand north, encroaching into the zona polémica north of the fort.

The War Department maintained the spatial organization of the site, which was, by that time, the fort surrounded by earthworks and open ground between St. Augustine and Matanzas Bay. They added the water battery on the east side of the fort in the 1840s. By the late 1800s, the area north of Castillo de San Marcos experienced both residential and commercial development. Residential and commercial buildings also began to encroach onto the west side of the military reservation. In 1885, military personnel constructed a fence to delineate the reservations' boundary.

While the fence provided a physical barrier around the reservation, beginning in the 1890s, the War Department created a park-like landscape around the fort, installing walkways, planting trees, and adding benches. Over time, the military reservation essentially functioned as a public park for residents of and visitors to St. Augustine. The park-like

281. Manucy, *The Building of Castillo de San Marcos*, 14.
282. Cécile-Marie Sastre, *Castillo de San Marcos NM History of the Cultural Landscape for the Cultural Landscape Report* (St. Augustine: Castillo de San Marcos and Fort Matanzas National Monuments, 2000), 148-149.
283. Charles Arnade, "The Architecture of Spanish St. Augustine," *The Americas* Vol. 18, no. 2 (1961): 151-152.



Figure 187: Post Card circa 1890s (CASA no. A5696)

character during this time is captured in a post card created sometime after 1892 (Figure 187).

Post-Historic and Existing Condition

The NPS has largely preserved and has restored features of the landscape's spatial organization present during the period of significance. The NPS has restored and reconstructed defensive earthworks extending out from the fort. St. Augustine's residential and commercial structures continue to surround the national monument. In the late-1950s and early-1960s, the NPS demolished several buildings along the western and southern edges of the national monument during the realignment of the road around the national monument. Today, the historic fort sits in the center of an open space. This open space is bounded by South Castillo Drive, a busy, modern road.

Summary

The spatial relationship between Castillo de San Marcos and the Matanzas River remains similar as it was in the historic period. The integrity of the spatial organization of defensive outworks remains essentially intact from the Colonial period of significance. This includes the location, design, setting, workmanship, and materials of the moat, covered way, and glacis. This also includes the open space between the fort and St. Augustine, which was originally part of the Spanish esplanade and later the fort green. The NPS reconstructed the Cubo Line, restoring the spatial relationship between the fort and the City Gate replicating the workmanship, location, and design of the original feature. While the visual character of St. Augustine has changed since the period of significance, the spatial relationship between the fort and the town retains the aspects of feeling, association, and setting as during the historic period.

- Orientation and location of Castillo de San Marcos
    - Contribution Status: Contributing
    - Condition: Good
- Defensive outworks around Castillo de San Marcos, including Cubo Line and City Gate
    - Contribution Status: Contributing
    - Condition: Good
- Spatial relationship between Castillo de San Marcos and St. Augustine
    - Contribution Status: Contributing
    - Condition: Fair

Land Use

Historic Condition

During the period of significance, the land use of Castillo de San Marcos was primarily for military purposes. Even prior to the construction of Castillo de San Marcos, St. Augustine was the site of historically significant military events, including Francis Drake's raid in 1586. From its initial construction in 1672 to 1900, Spanish, British, Confederate, and American military forces occupied and utilized Castillo de San Marcos. From 1900 to 1933, the U.S. War Department continued to maintain the property, even though they did not have an active garrison at the site. New land uses appeared during the War Department period of significance. Secondary uses of the property during the War Department period of significance include military prison, cemetery, recreation, preservation, historic interpretation, tourism, and commercial advertising. Recreational uses of the site include both passive and active opportunities.

The Spanish periodically used Castillo de San Marcos to incarcerate people, as they did in 1795 during the uprising by Anglo-speaking settlers in northeast Florida. The U.S. War Department also used it as a prison as early as 1837, when it imprisoned Chief Osceola at the fort. The fort was also used as a military prison in the 1870s for American Indians captured during battles in the western territories of the United States.

According to Edwin Bearss, residents of St. Augustine developed a "potters' field" in a section

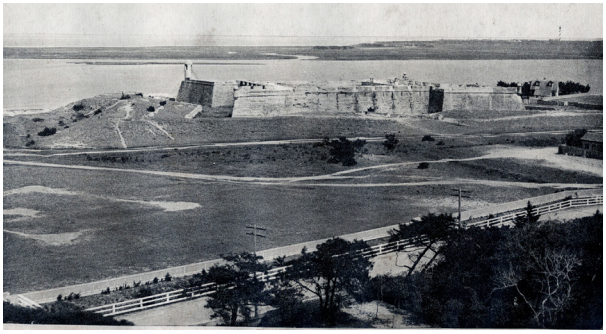


Figure 188: Fort Marion circa 1885-1891 (CASA no. A4809)



Figure 189: Fort Marion circa 1870-1890 (CASA no. A2585)

of the north glacis prior to 1840.[284] Beginning in the late 1880s, the War Department began creating a park-like landscape at Castillo de San Marcos. The addition of concrete walkways, shade trees, and benches facilitated a passive recreational use of the property. A baseball diamond was installed on the fort's grounds in the 1880s. An exhibition game, featuring members of the Cuban Giants, a professional African American team, occurred on the grounds in 1885. A photograph taken between 1885 and 1892 shows evidence of a baseball diamond in the fort green west of the fort (Figure 188). In 1895, a group of winter residents of St. Augustine constructed three holes (later five) for the first golf course in Florida on the fort green. The course included private property, owned by the St. Augustine Golf Club, and part of the military reservation.

As early as the 1830s, military officials recognized the historic significance of Castillo de San Marcos and attempted to repair broken and deteriorated features. Throughout the period of significance, the War Department made repeated funding requests to pay for repairs at the site. The War Department also opened the fort to visitors. According to historian Luis Arana, the fort became a tourist attraction after the Civil War when "affluent Northerners began wintering in Florida."[285] By 1910, the War Department had a staff person designated to give tours of the site. In 1914, the War Department entered into an agreement with the St. Augustine Historical Society to provide tours of the fort. A "large advertising sign board" was in the open space west of the fort prior to 1886. That year, Captain Black alerted his superiors to its presence and his intention to remove it.[286] It appears in a photograph taken around this time (Figure 189).

Post-Historic and Existing Condition

Today the land use is commemorative, interpretive, recreational, and administrative. The NPS has managed the site as an educational resource and public facility. The grounds are open to the public and are used by residents and visitors. Preservation has been central to the NPS's stewardship of the site, as it has largely maintained the character of the site from the previous periods. The NPS has restored historic resources and reconstructed missing military-related features from the Spanish period, including the Cubo Line. The NPS constructed the Park Headquarters and Maintenance Facility on the northwestern edge of the national monument in 1965. The complex has been enlarged and is still used.

Summary

Throughout the period of significance, Castillo de San Marcos' land use was primarily related to military operations. While the military land use was discontinued, that land use determined the location, design, setting, materials, workmanship, feeling, and association of the historic landscape. These aspects retain integrity and are legible in the landscape today. The other land uses that developed during the War Department period of significance reflect the military's diminished opinion of the fort's strategic importance in its coastal defense system. The recreational use of the property during the War Department period is historically significant because it featured an early baseball game, which included pioneer African American professional baseball players, and the first golf course built in Florida. The locations of these activities are known, and the setting

284. Edwin C. Bearss and John C. Paige, *Historic Structure Report for Castillo de San Marcos National Monument St. Johns County, Florida* (Denver: Denver Service Center, National Park Service, 1983), 156.

285. Luis Rafael Arana, "Conservation and Reutilization of the Castillo de San Marcos and Fort Matanzas," *The Florida Historical Quarterly,* Vol. 65, no. 1 (1986): 83.

286. Bearss, *Historic Structure Report*, 332.

is reminiscent of the historic period. The War Department made several repairs to the structure to stabilize and preserve it as a historical artifact. This work is visible today and retains integrity of design, materials, and workmanship. The War Department introduced interpretation of the site during the War Department period of significance.

Landscape Features

- Military land use in Colonial period and War Department period
    - Contribution Status: Contributing
- Recreation during the War Department period
    - Contribution Status: Contributing
- Preservation during the War Department period
    - Contribution Status: Contributing
- Interpretation during the War Department period
    - Contribution Status: Contributing

Cultural Traditions

Historic Condition

During the period of significance, the cultural traditions that most impacted the appearance of the landscape relate to military traditions. The design of Castillo de San Marcos reflects military engineering principles developed in Europe during the Renaissance and adapted by Spanish engineers in the sixteenth and seventeenth centuries. These military design traditions include the bastioned fort and the defense in depth outworks surrounding the fort. Similarly, the European tradition of enclosing a town with defensive structures occurred at St. Augustine. The use of coquina is in keeping with Spanish traditions of building masonry fortifications, but uses a local resource for that purpose.

By the end of the 1800s, the traditions of tourism and recreation impacted the landscape. The War Department converted the fort grounds from a military reservation into a park-like setting and opened the fort to visitors. The fort grounds featured a golf course and baseball diamond. During the War Department period of significance, the War Department began to value Castillo de San Marcos as a historically significant structure and made efforts towards its preservation. The federal government designated the area a national monument in 1924.

Post-Historic and Existing Condition

After the period of significance, the military tradition that shaped the design and use of Castillo de San Marcos ended. Since the creation of the national monument, preservation, interpretation and tourism have continued and have become the primary cultural traditions that influence the landscape.

Summary

Spanish military traditions of engineering and architecture created the landscape and are visible today at Castillo de San Marcos. The cultural traditions of military engineering determined the location, design, setting, materials, workmanship, feeling, and association of the historic landscape. These are legible today and retain integrity. The existing fort and landscape provide a visitor of the importance of military traditions during the period of significance. The other cultural traditions introduced in the War Department period of significance have continued under the management of the NPS.

Landscape Features

- Fortification Design and Construction during Colonial and War Department periods
    - Contribution Status: Contributing
- Recreation during the War Department period
    - Contribution Status: Contributing
- Interpretation/Historical Tourism during the War Department period
    - Contribution Status: Contributing
- Preservation during the War Department period
    - Contribution Status: Contributing

Cluster Arrangement

Historic Condition

Castillo de San Marcos stands alone, surrounded on three sides by open lawn and on the fourth by open water. During the War Department period of significance, temporary buildings were constructed within and outside of Castillo de San Marcos. These included the ordnance-sergeant cottage, removed in 1890, an oil storage building, removed in 1934, and another storage building built in 1928 the north covered way, that the NPS removed in 1940.

Post-Historic and Existing Condition

The NPS constructed a ticket booth/visitor information building in the 1930s near the intersection of present-day South Castillo Drive and Avenida Menendez. The NPS constructed the Park Headquarters and Maintenance Facility in 1965, but it is separated visually from the rest of the national monument by a vegetative buffer. The NPS constructed a ticket booth near the entrance to the bridge to the ravelin in 1976. The NPS replaced this building in 1987. The current ticket booth, constructed in 2010 and enlarged in 2014, is on the east side of the concrete entrance plaza, still near the entrance to the ravelin bridge.

Summary

Because Castillo de San Marcos was designed to be a solitary building, cluster arrangement is not a character-defining feature of the site. The location of the ticket booth, the only structure with a clear visual connection to the building, is not historic.

Landscape Features

- Arrangement of Fort and Ticket Booth
    - Contribution Status: Noncontributing

Circulation

The following analysis separates vehicular and pedestrian circulation. The trails in use during the Colonial period of significance could be discussed in either section, but they are discussed in the road section because the historic routes developed by the Spanish share alignments with one section of roadway in the national monument. This analysis of landscape characteristics also divides the site into three character areas: City Gate, Castillo de San Marcos, and Park Headquarters and Maintenance Facility.

Roads and Parking Lots

Historic Condition: City Gate

Albert Manucy describes the early roads around St. Augustine as "Indian trails and the quickest passage from one coastal fortified post to the next was along the inland waterway in dugouts." According to the Florida Division of Historical Resources, the Spanish established roads between St. Augustine and missions and other forts in the 1500s. In the 1600s, the Spanish developed the Royal Road, or *Camino Real*, connecting St. Augustine to the missions in North Florida. In the 1680s, military engineer Enrique Primo de Rivera began construction of a formal road suitable for oxcarts, but he never finished the project.[287]

The road leading from the north into St. Augustine passed through the City Gate. The Spanish moved the City Gate to its current location in 1738-1739. The main road from St. Augustine split into two roads north of St. Augustine. One road traveled north along the coast. The second road travelled west towards Spanish outposts on the St. Johns River. The British, under Colonel James Grant, prioritized the development of better roads during their occupation of East Florida between 1763 and 1784.[288] Paul Weaver describes the roads at that time, the "few narrow routes that existed were often impassible in rainy weather and fit only for foot or horse traffic under optimal conditions."[289]

Weaver's report includes an analysis of William Gerards De Brahm's 1769 map of East Florida. The names of the roads leading north from St. Augustine changed over time. The names usually referred to large landholdings or geographic features that the road passed, but the alignments of the roads stayed generally consistent during the Colonial period. A 1783 map shows a road heading north from Castillo de San Marcos to "Villa de Indios." The road from the City Gate appears consistent with that described by Weaver's analysis (Figure 190).

An 1819 map shows the roads leading north from St. Augustine, and they appear similar to those shown in the earlier maps. Starting at the City Gate, the Mil y Quinientas Road leads north before branching into two routes, one towards a crossing over the San Sebastian River and another that continues north. The map calls these the "Pablo Road."[290] The British improved existing roads north of St. Augustine and developed new roads leading south of St. Augustine, creating the King's Road (Figure 191). During this period, the bridge over the Cubo Line moat to the City Gate was described as being in poor condition. It was

287. Division of Historical Resources, "El Camino Real," *Florida Department of State, Division of Historical Resources*, accessed 4/20/2018, http://dos.myflorida.com/historical/explore/el-camino-real/.
288. Paul L. Weaver, "The King's and Pablo Roads: Florida's First Highways," (St. Augustine: St. Johns County Growth Management Services, 2009), 14.
289. Weaver, "The King's and Pablo Roads," 15.
290. Weaver, "The King's and Pablo Roads," 92.

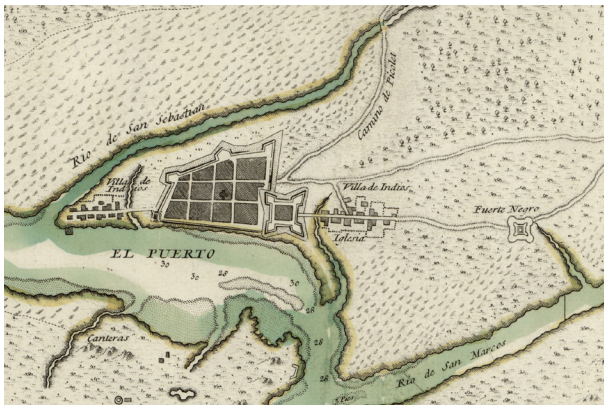


Figure 190: Detail 1783 Map (CASA no. ar163901)

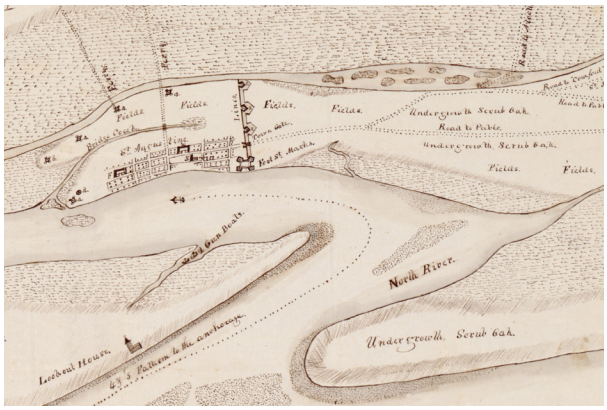


Figure 191: Detail 1819 Map (CASA no. lh000906)

replaced with a new bridge measuring 62 1/3 feet long and 15 feet wide.[291]

According to Weaver, the roads in St. Johns County were in poor condition in the period after the Civil War. A Sam Cooley photograph of the City Gate shows the condition of a section of the road at the City Gate. The narrow road has wagon wheel marks cutting into its muddy edges. The center of the road has stones laid down to create a more durable surface (Figure 192). A photograph of St. Augustine taken prior to 1890 shows the road into St. Augustine continuing to pass through the City Gate at that time (See Figure 189).

In 1884, the War Department gave the City of St. Augustine permission to install telegraph poles on federal property along the road the city had constructed along the Cubo Line and behind the City Gate. This road became Orange Street by 1886[292]. The War Department gave the St. Augustine and Halifax Railway Company a license to develop a rail line beyond the west end of



Figure 192: Sam Cooley "Entrance Gate" circa 1860s (Library of Congress)



Figure 193: City Gate project circa 1938 (CASA no. CG81)

the Cubo Line on January 13, 1890. The license conveyed a 100-foot-wide right-of-way to the company.[293] In September 1890, the U.S. Congress gave the St. Augustine Street Railway Company a right-of-way along Orange Street and along the west and south sides of the grounds surrounding Castillo de San Marcos (Fort Marion). The company laid tracks in 1891. In May 1891, the War Department approved plans for the city to pave Orange Street.

Post-Historic and Existing Condition: City Gate

In 1937, the NPS began a project to restore the City Gate, at which time they closed the gate to vehicular traffic. At that time, the NPS reconstructed a section of the coquina causeway. This project is captured in a photograph dated 1938 (Figure 193). In 1947, Superintendent Vinton

291. Sastre, *Cultural Landscape Report*, 172.
292. Sastre, *Cultural Landscape Report*, 174.
293. Ibid.

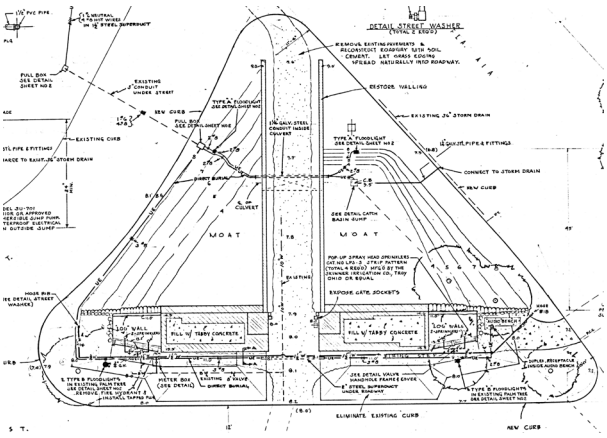


Figure 194: Detail Manucy 1964 City Gate Drawing (ETIC 343_3030)

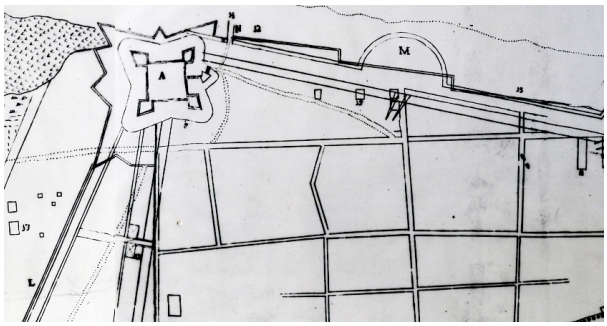


Figure 195: Detail 1737 Map (CASA A48_1)

prepared plans for improving the area around the City Gate, which included completing the causeway and repointing the City Gate.[294] In 1950, the road at the City Gate was widened.[295] In 1956, the City of St. Augustine proposed creating a traffic circle around City Gate.[296] In 1964, Albert Manucy prepared plans for the City Gates, which included removing existing curbs and pavement and installing a new curb-line to create a triangular island (Figure 194). The NPS removed the existing pavement and reconstructed the Cubo Line moat in front of the gates. The project was completed in 1964.[297] As of 2018, the triangular area completed in 1964 is still in place. The east side of the triangle is formed by South Castillo Drive. The west and south sides of the triangle are formed by Orange Street. The historic road through the gate, which aligns with St. George Street, is crushed gravel. A stone bridge spans the reconstructed moat.



Figure 196: Looking South circa 1875-1887 (CASA no. A32a)



Figure 197: Looking South circa 1891 (CASA A34a)

Historic Condition: Castillo de San Marcos

In 1737, Antonio de Arredondo prepared a plan for Castillo de San Marcos and St. Augustine. The map shows a road network in the town, though some of the features may be proposed rather than existing at the time. Some of the roads shown would be within the current boundary of the national monument. The plan shows the main road leading north away from St. Augustine. The map also shows circulation features entering the covered way near its northwest corner. Two more circulation routes approach the fort from the south and a third road connects to a wharf. It is likely that these doubled as footpaths and wagon roads (Figure 195).

Comparison of photographs showing the southern approach to Castillo de San Marcos shows the sequence of changes to the road network on the military reservation. An undated image taken sometime between 1875 and 1887 shows dirt roads leading into the entrance area passing between the ruins of the covered way stone walls (Figure 196). A photograph taken around 1891 shows a similar scene as the previous photograph with dirt roads crossing the fort green and converging at a historic opening in the covered way wall (Figure 197). Military records suggest that the War Department

294. Bearss, *Historic Structure Report*, 447.
295. Bearss, *Historic Structure Report*, 448.
296. Bearss, *Historic Structure Report*, 453.
297. Bearss, *Historic Structure Report*, 458.



Figure 198: Looking southeast circa 1892-1900 (CASA no. A3107)



Figure 199: Detail of Aerial circa 1939 (CASA no. A3506)

reconstructed the covered way walls shown in the photograph in 1891.[298]

By the 1880s, a wagon road followed the western perimeter of the military reservation. This road passed behind residential lots, turned east along the south edge of the fort green, before turning south at the seawall. In 1884, the War Department made plans to enclose the military reservation with a fence. This would have resulted in the closure of several public streets that crossed into the reservation boundary.[299] In 1890, Captain Black proposed a plan to eliminate roads crossing the reservation. According to Bearss, "A roadway would be left open along the southern and southwest sides of the reservation from Marine to St. George Streets at the City Gates. No roadway was required at the north boundary. . . ."[300] A photograph from this period shows the dirt road on the west and south sides of the military reservation (Figure 198).

By 1902, San Marco Avenue leading into St. Augustine was paved with brick. In 1908, the federal government permitted the City of St. Augustine to construct a 25-foot-wide road on federal property. It was named Fort Marion Circle; it was renamed Castillo Drive in 1965. According to Weaver, "The establishment of the Florida State Road Department in 1915 signaled the beginning of the modern road system for the state, designed to accommodate and facilitate the dramatic increase in automotive transportation."[301] An aerial photograph from 1939 shows Fort Marion Circle after being paved (Figure 199).

298. Bearss, *Historic Structure Report*, 339.
299. Bearss, *Historic Structure Report*, 319.
300. Bearss, *Historic Structure Report*, 337.
301. Weaver, "The King's and Pablo Roads," 70.



Figure 200: Detail of Aerial circa 1965 (CASA no. A2499)

Post-Historic and Existing Condition: Castillo de San Marcos

The City of St. Augustine, the Florida Department of Transportation, and the NPS worked together to widen and realign the roads along the western and southern boundaries of the national monument. In the 1950s, the road leading into St. Augustine, San Marcos Avenue, changed names at the City Gate, becoming Fort Marion Circle. In 1951, the NPS and the city began making plans to widen this road.[302] This project was included in the goals for the national monument's Mission 66 plan and was completed prior to 1965. Land for widening the road came from both the NPS and adjacent landowners. After the realignment project, Fort Marion Circle was renamed Castillo Drive in 1965. The road is visible in a 1965 aerial of the national monument (Figure 200). Also in 1959, the city and Florida Department of Transportation widened Bay Street (presently Avenida Menendez, renamed in 1965) into four lanes with additional parking

302. Bearss, *Historic Structure Report,* 448.



Figure 201: Circa 1930s Parking Lot (CASA no. A4919)



Figure 203: 1965 aerial (CASA FOMA Archives)

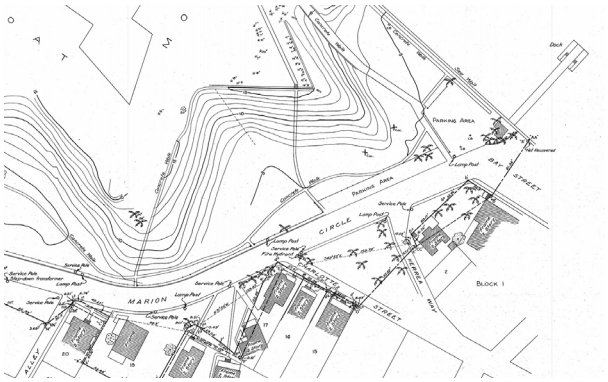


Figure 202: Detail 1936 Boundary Map (CASA_maps839¬1-5-3_003)



Figure 204: View of Parking Lot circa 1962 (CASA no. A4590)

areas. This project involved the construction of a new seawall doubling the width of Bay Street (Avenida Menendez). Castillo Drive became South Castillo Drive in 1992.

In 1926, the St. Augustine Historical Society installed a twelve-car parking lot on the army's property at the intersection of Bay Street (now Avenida Menendez) and Fort Marion Circle (now South Castillo Drive). A second lot, which accommodated 20 cars, "extended west along the north side of Ft. Marion Circle."[303] The lot is a simple pull off from Fort Marion Circle, where cars parked perpendicular to the street. Both parking lots appear in photographs from the 1930s (Figure 201).

A July 1936 map of the boundaries of the national monument shows the two parking areas: One parking area is next to the seawall; the second parking area is along Fort Marion Circle (South Castillo Drive) (Figure 202). In January 1938, the WPA proposed construction of a new parking lot in the fort green along the north side of Fort Marion Circle (South Castillo Drive). The new parking lot was to be 315 feet long and 60 feet wide.[304] NPS staff complained that the existing parking lot had "a thin covering of cinders, consequently is deeply rutted and lacks proper drainage." The plan called for a compacted oyster bed base topped with coquina gravel and coquina curbs. City residents objected to the project and it was temporarily halted.[305] The NPS eventually constructed the lot in 1940.[306]

During the realignment of South Castillo Drive, the NPS removed the 1940 parking lot.[307] An aerial photograph taken between 1960 and 1965 shows the area after the removal of the 1940 parking lot (Figure 203). The NPS created a lot on the south side of South Castillo Drive, on the site of the former Bennett Hotel. They uncovered evidence of the "King's Smith" which they exposed for

303. Charles A. Tingley, "Report on the history of the parking lot at the Castillo de San Marcos," (CASA FOMA Archives).

304. Bearss, *Historic Structure Report*, 429.
305. See the "Purpose" report that accompanies Conrad L Wirth to the Coordinating Superintendent Fort Marion Monument, "ERA Fort Marion Monument Job 5, Parking Area," May 11, 1938 (CASA FOMA Archives: Folder CASA Administration/Job Applications and Completion Reports, 1937-1939).
306. Tingley, "Report on the history of the parking lot."
307. Bearss, *Historic Structure Report*, 462.

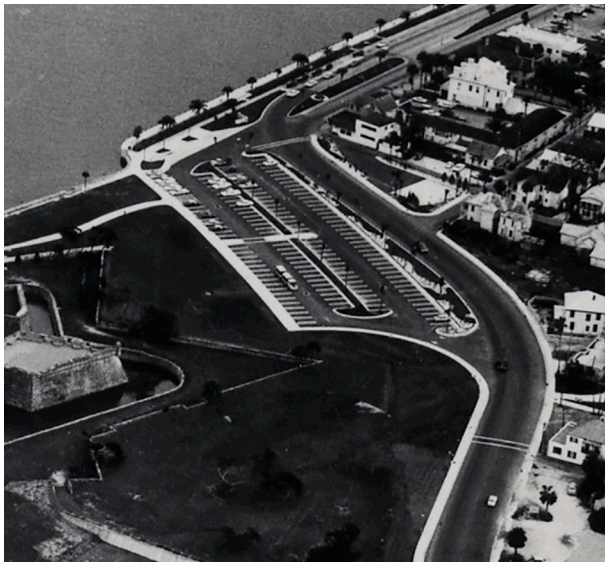


Figure 205: Detail Aerial circa 1965 (CASA no. A2499)

interpretation. The smith and the parking lot appear in a 1962 photograph (Figure 204). Between March and June 1965, the NPS constructed a new parking lot at the entrance into the fort.[308] A photograph in the national monument's archives shows the new Castillo de San Marcos parking area soon after completion (Figure 205). The NPS installed parking meters in the lot in 1993.

Today, South Castillo Drive/SR A1A/US Business 1. SR A1A enters St. Augustine from Anastasia Island south of the national monument, crossing over the Matanzas River on the Bridge of Lions. The road turns north once it leaves the bridge and travels north towards the national monument. Between the bridge and the national monument, the road is also called Avenida Menendez. At the national monument, the road becomes South Castillo Drive as it follows the southern and western boundary lines, passing east of the City Gate, before exiting the national monument heading north.

Post-Historic and Existing Condition: Park Headquarters Building and Maintenance Facility

The NPS constructed an administration and utility building (called the Park Headquarters Building and Maintenance Facility as of 2018) on the northwestern edge of the national monument site in 1964 and 1965. The NPS prepared an existing conditions map of the national monument in 1968. It shows a road leading east out of the parking lot to join with Water Street.

308. Ibid.

Summary

South Castillo Drive/SR A1A/US Business 1 enters the northwest corner of the national monument. The segment of road that aligned with the City Gate presumably occupies the general location of the historic road into St. Augustine. This short segment of road is historically significant. As part of the Spanish trail network connecting to missions and outposts north of St. Augustine, the route has remained largely intact since the 1600s. The short section in the national monument was part of the Pablo Road, and according to Weaver, "The Pablo Road is likely the oldest historic period road in Florida and certainly one of the oldest in the United States." The section of South Castillo Drive that aligns with the City Gate as it enters the national monument has integrity of location, but has lost integrity of design, material, workmanship, setting, feeling, and association.

The road that passes through the City Gate retains integrity of location, design, feeling, setting, and association.

South Castillo Drive was realigned in the late 1950s and early 1960s. This new road does not relate to routes present in the historic period and does not contribute to the historic significance of the site. The same is true for parking lots. Parking lots did exist on the site as early as 1926, but all existing lots are modern and with differnt footprints. The entrance drive and parking lots at the Park Headquarters Building and Maintenance Facility were not present during the period of significance.

Landscape Features

- Roadway between City Gate
    - Contribution Status: Contributing
    - Condition: Good
- South Castillo Drive between boundary line and City Gate
    - Contribution Status: Noncontributing
- War Department era wagon roads across fort green
    - Contribution Status: Missing
- Alignment of San Marco Avenue/Fort Marion Circle prior to realignment in 1965
    - Contribution Status: Missing

- 12-car parking lot installed south of fort in 1926
    - Contribution Status: Missing
- Early NPS parking lots installed in the 1930s south of the fort
    - Contribution Status: Noncontributing
- Current NPS parking lots constructed in 1965
    - Contribution Status: Noncontributing
- Current NPS parking lots and roads begun in 1964 and added onto in 1990s at Park Headquarters Building and Maintenance Facility
    - Contribution Status: Noncontributing
- Current alignment of South Castillo Drive completed in mid-1960s
    - Contribution Status: Noncontributing



Figure 206: City Gate circa 1875-1878 Jacksonville Historical Society (CASA no. A3125B)



Figure 207: City Gate 1905 (CASA no. 3a35903r)

Sidewalks, Walkways, and Pathways

Historic Condition: City Gate

The route through the City Gate in the Colonial period of significance would have served both pedestrians and wagons. The Spanish constructed the second Cubo Line in 1718-1719, moving it north of its original location. The Cubo Line featured an earthen wall fronted by a moat. Originally, there was a passage through the Cubo Line close to the fort. The passage was moved to the current location of the City Gate in 1739. The City Gate was constructed in 1804. A photograph from 1875-1878 does not show any formal walkways around the City Gate (Figure 206). A photograph of the City Gate from 1905 shows paths leading to the road and through the gate but no additional sidewalks or walkways (Figure 207).

Post-Historic and Existing Condition: City Gate

In 1964-1965, during the Mission 66 program, the NPS added a short section of concrete walkway to the eastern end of the Cubo Line, where it met the City Gate. This walkway led to a cross walk across South Castillo Drive. These circulation features appear on Manucy's plan for City Gate (see Figure 194). Today, the same conditions exist, with the addition of a concrete sidewalk at the back of the curb at South Castillo Drive.

Historic Condition: Castillo de San Marcos

The 1756 Brozas y Garay map of Castillo de San Marcos shows two openings in the covered way wall. One gate is at the intersection of the covered way salient, west of the fort and near the intersection with the Cubo Line. The second entrance is south of the fort, between the south salient of the covered way and the water battery. The plan shows three paths converging at the gate south of the fort (Figure 208). This southern entrance is described above when discussing roads

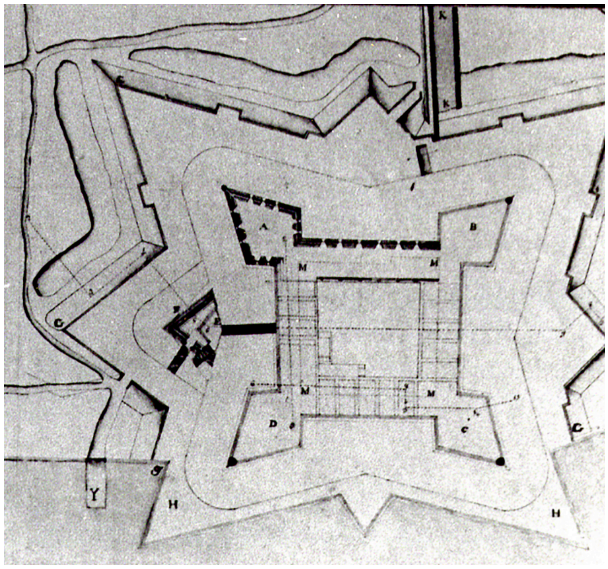


Figure 208: Brozas y Garay Map of Castillo de San Marcos circa 1756 (CASA no. A4999)

into the fort. This served as the main entrance into the fort. The Pedro Díaz Berrío's map from 1796 shows the south and west gates. This map shows a third gate in the north salient of the covered way. Paths are shown leading out from the fort from these three gates (Figure 209). These gates would have had wooden doors during the historic period.

Another circulation feature was the wooden bridges between the fort, ravelin, and the covered way. These were finished during the initial construction of the fort and reconfigured with the replacement of the ravelin in 1672. Spanish records indicate work on the bridges throughout the historic period of significance. The Spanish added supports in 1785, rebuilt them in 1802, and fixed them in 1807 and 1820. The British added stone piers in 1796.

As mentioned above, wagons and pedestrians shared common routes to the fort. Other photographs from the nineteenth century show that roads and paths converged at the south passage through the covered way wall into the 1880s using similar routes present during the Colonial period (See Figure 197). Paths approached the fort from the south and southwest during this period. A later photograph, taken sometime around 1891, shows the area after the reconstruction of the covered way walls but prior to the installation of concrete walkways in 1891 and 1892. The paths are similar as in the previous photograph, still converging and passing through an opening in the covered way wall. Two passages

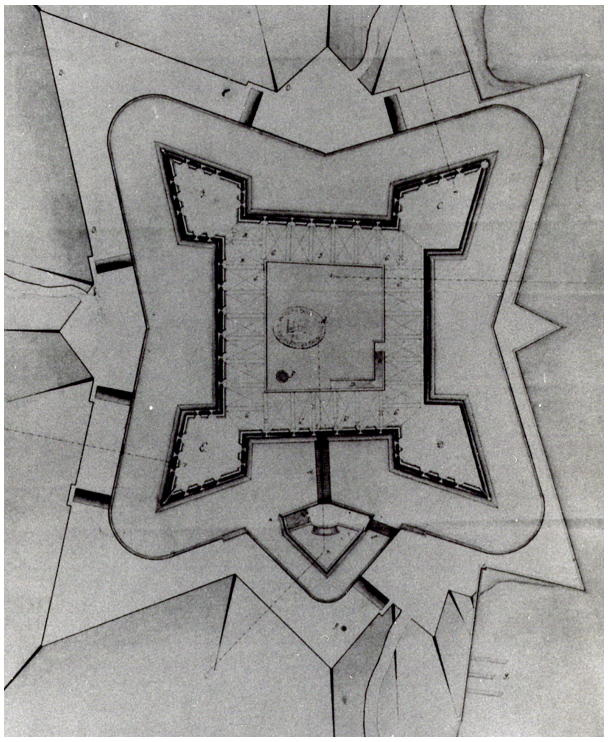


Figure 209: Berrío's Map circa 1796 (CASA no. A5004)

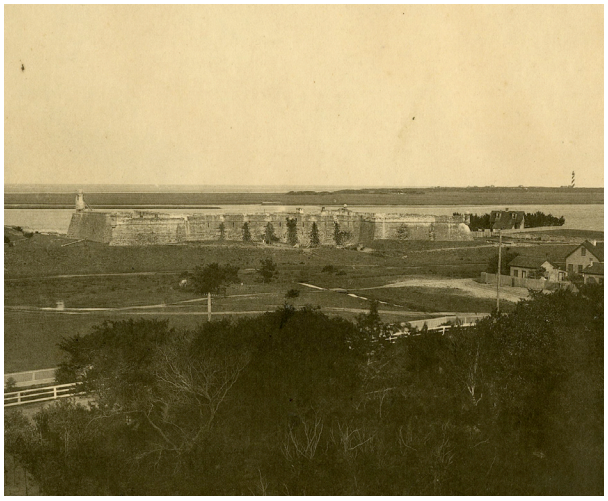


Figure 210: Detail of Aerial circa 1890 (CASA no. A19)

are visible in the covered way wall, one leading south toward town and the second leading east into the water battery.

Historic photographs also show paths crossing the greenspace west of the fort (Figure 210). Captain Black made early efforts in the late 1880s to repair the ruts cutting into the glacis. Black, assisted by Lieutenant D. D. Gaillard, removed interior roadways from the fort green and constructed several pedestrian walkways. In 1891, according to Bearss, Black proposed "A 4-foot concrete

walkway [leading] from the reservation's main gateway to the fort's postern." Walkways were also constructed across the west side of the fort green (Figure 211). The walkways, according to Bearss, "were to be built of rammed coquina or of cheap concrete."[309] In 1891, workers constructed "two hundred square yards of concrete walks, 4 feet wide and 4 inches thick, and 1,269 square yards of concrete pathways, 3 feet wide by 3 inches thick."[310] The alignments of the walkways Black had constructed across this area in 1891-1892 appear to follow the routes of footpaths seen in the earlier photograph. This suggests that he incorporated these informal paths into layout. Additionally, the arc of another walkway generally follows the outer edge of the road that curves around houses on the western edge of the military reservation.

An aerial photograph from the 1920s provides another view of the circulation system around the entrance to the fort (Figure 212). By this time, a network of concrete walkways converges in the level area in the covered way where the bridge connects to the ravelin. A new retaining wall extends south along the west side of the main path. This configuration is consistent with current conditions. The concrete walkways from the War Department period of significance use preexisting passages through the walls created in the Colonial period of significance. One concrete walkway leads south towards Bay Street (present day Avenida Menendez). A second walkway leads through the covered way wall to a concrete walkway that parallels the top of the seawall extending south from the water battery. Another aerial from 1924 provides an alternate view of this area. The curved walkway from the ravelin bridge terminates at a staircase that leads over the covered way wall (Figure 213). This photograph also shows the curvilinear walkway system in the fort green west of the fort. Informal paths still appear on the grounds and are visible cutting across the glacis on the west and north sides of the fort. These paths also appear in a historic photograph that also shows a wooden staircase at the southwest salient of the covered way. Golfers apparently used this feature to walk from tee to greens while there was a golf course on the military reservation grounds (Figure 214).



Figure 211: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 (Library of Congress, https://www.loc.gov/item/det1994005120/PP/.)

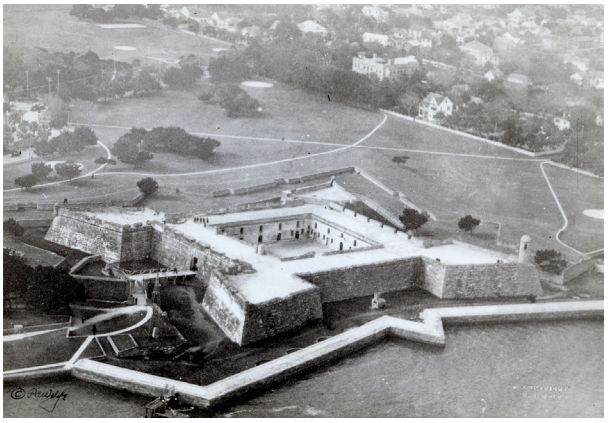


Figure 212: "Birds-eye view of Fort Marion, Saint Augustine Florida," circa 1920 (Library of Congress, https://www.loc.gov/item/2013645404/)



Figure 213: Victor Rahner, "Aerial of Castillo," circa 1924 (CASA no. A 396a)



Figure 214: William Henry Jackson, "Golf at St. Augustine," circa 1902 (Library of Congress, https://www.loc.gov/item/det1994004878/PP/)

309. Bearss, *Historic Structure Report*, 337.
310. Bearss, *Historic Structure Report*, 340.



Figure 215: 1930s Entrance Walkway (CASA no. A3335D)

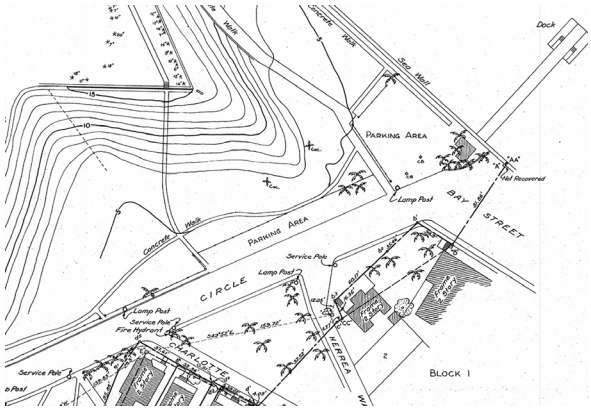


Figure 216: Detail 1936 Boundary Map (CASA_maps 839¬1-5-3_003)



Figure 217: Parking Lot circa 1939 (CASA no. I002)



Figure 218: Detail of Aerial circa 1940s (CASA no. A2499A)



Figure 219: Circa 1940 Sidewalk Construction (CASA no. A3587)

Post-Historic and Existing Condition: Castillo de San Marcos

In 1926, the Quartermaster Department, now managing the site, laid "about 400 square feet of concrete walkway from Bay Street and Marion Circle to the bridge at the entrance to the fort."[311] The new walkway and concrete retaining walls installed previously appear in a photograph from the 1930s (Figure 215).

A July 1936 map shows a 10-foot-wide concrete walkway passing between two parking lots before leading to the entrance into the fort. Another concrete walkway is along the top of the seawall. A third walkway extends to the entrance from the west side of the parking lot on Fort Marion Circle. This walkway traverses the glacis on its route towards the south salient of the covered way. Another walkway follows a route across the fort green roughly parallel to the alignment of Fort Marion Circle. Two concrete walkways enter the national monument property from the north at Water Street. These walkways occupy alignments similar to those installed in the 1890s (Figure 216).

Another photograph, taken in 1939, shows the narrow concrete walkway crossing the glacis from the west side of the parking area towards the fort entrance (Figure 217). An aerial from around 1940 show these features and the sidewalk along Fort Marion Circle. This photograph also documents that in the 1930s and 1940s the NPS removed the interior walkways crossing the west side of the fort green installed in the 1890s (Figure 218). A photograph dated 1940 shows the removal of one of these War Department walkways (Figure 219).

311. Bearss, *Historic Structure Report*, 367.



Figure 220: Sidewalk Plan circa 1936 (CASA maps 8398_1-8-6_010)



Figure 221: Walkway circa 1970s (CASA A4251)

A 1956 landscape plan for the national monument shows existing walkways around the parking lot and fort entrance (Figure 220). In the plan, the NPS proposed "obliterating" the two walkways from Water Street and creating new, more curvilinear connections. This did not occur. The NPS also proposed new sidewalks along Fort Marion Circle. Otherwise, the circulation system appears the same as that in the 1940s. Between March and June 1965, the NPS constructed new concrete walkways at the new parking lot and to the entrance to the fort. Work on the walkways continued into 1967.[312] A 1960s photograph shows that a narrow walkway along the top of the covered way wall was still in place. This walkway was part of the 1891-1892 circulation system (Figure 221). An aerial photograph taken in the mid-1960s, shows that the NPS replaced this walkway with a wider walkway (Figure 222). A later aerial shows the NPS removed the walkway in the early-1970s (Figure 223). By the mid-1980s, an aerial shows that the NPS put the walkway back and realigned its connection with South Castillo Drive (Figure 224). This photograph also shows that the NPS had paved a path with



Figure 222: Detail of Aerial circa 1965 (CASA no. A2444)



Figure 223: Detail of Aerial circa early-1970s (CASA A4791)



Figure 224: Detail of Aerial circa late-1980 (CASA A5680c)

concrete, seen in earlier photographs, leading down the ramp between the south covered way into the water battery.

The NPS also constructed new wooden bridges in 1959 based on research of the Spanish bridges during the Colonial period of significance. They have been maintained and resurfaced over time.

In April 1992, the NPS constructed a wooden staircase between the water battery and the covered way north of the fort. They replaced this staircase in 2003. In 2011, the NPS replaced the concrete sidewalks around the parking lot at Castillo de San Marcos National Monument and

312. Bearss, *Historic Structure Report*, 462.

along South Castillo Drive. The next year, the NPS installed new crosswalks and pedestrian signals on South Castillo Drive.

Today, there are concrete sidewalks along South Castillo Drive and around the NPS parking lot. A concrete walkway connects the parking lot to the entrance area. A walkway follows the covered way wall on the south side of the fort before crossing the glacis and lawn towards a cross walk at Fort Alley. Two concrete walkways lead from Water Street, one to the northwest corner of the fort and the second to near the City Gate. Today there are dirt paths across the south and west covered way. The path continues along the side of the Cubo Line towards the City Gate. There is a dirt path crossing the length of the water battery, from the entrance area to a wooden staircase at the north end of the water battery.

Post-Historic and Existing Condition: Park Headquarters Building and Maintenance Facility

When the NPS constructed the Park Headquarters Building and Maintenance Facility in 1965, it added a short segment of concrete walkway between the main entrance and the sidewalk on South Castillo Drive. As the NPS expanded the complex to the east, it added sections of walkway and sidewalk to connect the new parking areas to the buildings.

Summary

The short segment of South Castillo Drive as it enters the northwest corner of the national monument probably follows the historic route of colonial-era roads into St. Augustine. The 1960s road realignment project moved the road off this historic route almost immediately after the road enters the national monument. The short section aligned with the colonial-era roads is a contributing feature, but it is illegible as a historic resource because of the overall character of the road. The section passing through the City Gate however is recognizable to a visitor today as a historic feature. While the feature has lost its original material, it retains aspects of location, design, setting, feeling, and association. The NPS removed Fort Marion Circle, the road along the west and south boundary of the military reservation, in the 1960s. The NPS also constructed lots after the period of significance.

The paths during the Colonial period of significance were informal. During this period, paths and roads converged and passed through the same opening in the south covered way used today. The walkways and paths through historic gates in the covered way retain aspects of location, design, setting, feeling and association.

The walkway between the parking lot and the entrance follows the route that was formalized by the end of the War Department period of significance. The walkway along the top of the south covered way wall is in a similar location as one constructed in the 1890s, though the current alignment is wider than the historic walkway and the route from the salient to the road is slightly different. The two walkways from Water Street appear to follow the same alignment as the walkways installed in the 1890s during the War Department period, though they are wider than those in the period of significance. The rest of the War Department pedestrian circulation system is missing. Despite a few walkways sharing historic locations, the overall design of the War Department landscape is not legible today. The NPS has replaced all the walkways using modern concrete, so none of the original material exists today, and the original workmanship is lost. The walkways do not convey the military aspects of the site's history, for which it is historically significant, so the aspects of feeling and association do not apply. The setting is very similar today as in the historic period, so pedestrian circulation would retain integrity of setting.

Landscape Features

- Existing paths and passages through Spanish Colonial period openings in covered way wall and City Gate
    - Contribution Status: Contributing
    - Condition: Good
- Bridges between ravelin, fort, and covered way (originally constructed in 1670s, rebuilt numerous times)
    - Contribution Status: Contributing
    - Condition: Good
- Dirt roads and paths crossing fort green and converging near entrances to fort during early War Department era (1821-1880s)
    - Contribution Status: Missing

- War Department concrete walkways constructed between 1890 and 1924
    - Contribution Status: Contributing
    - Condition: Largely missing except for three remnant alignments: two on north fort green extending from Water Street and the entrance walkway.
- Modern concrete walkways and sidewalks constructed by the NPS and City of St. Augustine
    - Contribution Status: Noncontributing
- Wooden staircases constructed by the NPS in the 1990s between water battery and covered way
    - Contribution Status: Noncontributing
    - Condition: Good
- Concrete plaza and walkways at Park Headquarters Building and Maintenance Facility
    - Contribution Status: Noncontributing
    - Condition: Good

Topography

Historic Condition: City Gate

The area around the City Gate would have been relatively level prior to the Spanish construction of the Cubo Line in 1704. The 1704 Cubo Line ran along the south side of present-day Orange Street. It featured an earthen wall fronted by a moat. The Spanish constructed the second Cubo Line in 1718-1719, moving it north of its original location. It also featured an earthen wall fronted by a moat. Over the years, the earthwork eroded and the moat filled with soil. The Spanish periodically reconstructed them, eventually adding a palisade to help retain the soil.

By the middle of the 1800s, the moat of the City Gate had largely infilled. In 1857, St. Augustine installed a pipe in the Cubo Line moat, converting it to a drainage ditch. A photograph from around 1890 shows the ditch passing underneath the causeway at the City Gate (Figure 225).

Post-Historic and Existing Condition: City Gate

In 1937, the NPS had archeologists investigate the location of the moat around the City Gate.[313]

313. Bearss, *Historic Structure Report*, 428.

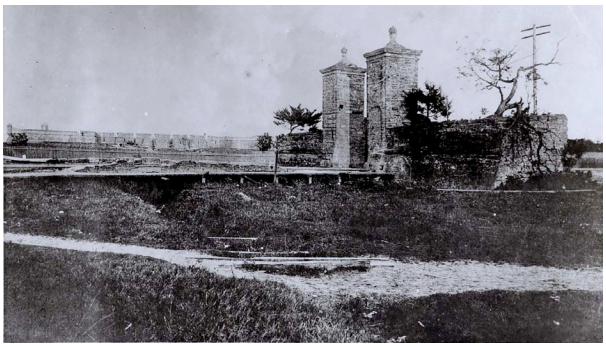


Figure 225: City Gate circa 1890 (CASA no. CG13)

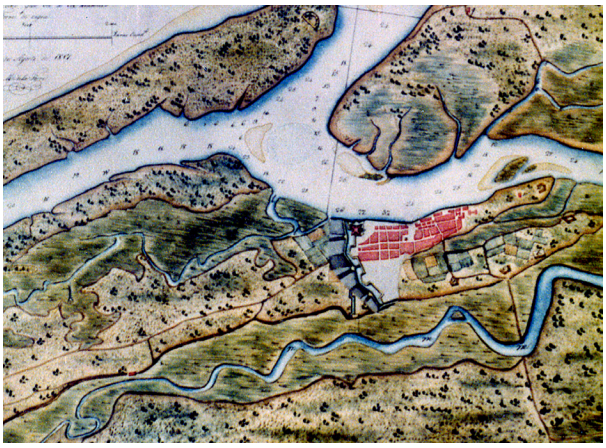


Figure 226: 1817 Cortazar Map (CASA no. A4997)

It is possible that the archeological dig left a ditch in front of the City Gate, because subsequently, Superintendent Vinten requested the ditches be infilled in 1950.[314] In 1965, the NPS excavated the moat at the City Gate. They also reconstructed the Cubo Line that joined the City Gate.[315] These features remain as constructed. Today, the triangular island around the City Gate has a moat and section of palisaded Cubo Line.

Historic Condition: Castillo de San Marcos

The topography of the Castillo de San Marcos site was relatively level when the Spanish arrived. The land would have been approximately 5 to 10 feet above sea level. The land sloped from the high points down to the surrounding waterways, which included drainage ways, creeks, rivers, and marshes. The 1817 map of St. Augustine by Cortazar illustrates how the high ground extended north along the middle spine of the St. Augustine peninsula (Figure 226).

The Spanish modified the site's topography during their construction of forts at the site. Juan Moreno y Segobia, the notary public for St. Augustine,

314. Bearss, *Historic Structure Report*, 448.
315. Bearss, *Historic Structure Report*, 458.

recorded early construction activities on Castillo de San Marcos. On October 2, 1672, according to Segobia, Governor Manuel de Sendoya, accompanied by a number of dignitaries, "began this said day to dig the foundation trenches to commence the building of said castle."[316] From 1672 to the end of the Spanish Colonial Period in 1821, the Spanish repeatedly manipulated the topography of the site, constructing and maintaining various earthen outworks.

During the first phase of construction, workers dug a 5-foot-deep trench in which they laid large foundation stones on top of packed sand.[317] Soon afterwards, the Spanish constructed a moat that would eventually surround the entire fort by 1696. During the early years of construction, the Spanish constructed a 14-foot-wide moat that was 10 feet deep in front of a temporary rampart on the west side of the fort. They excavated the bottom of the moat to just above the water line, approximately 5 feet below the surrounding grade. By 1760, the completed moat was described as approximately 44 feet wide and 6.5 feet deep. Beginning in 1687, the Spanish raised the moat wall at the ravelin and developed a level area beyond the moat to serve as a covered way. The Spanish added a coquina retaining wall, prior to 1762, raising the height of the covered way to 6 feet. The level terrace of the covered way is approximately 31 feet wide. The covered way was near completion in 1763.

After the construction of the covered way wall, the Spanish built up soil on the outside of the wall to create a narrow glacis. Pablo Castelló's 1763 map of St. Augustine shows the topographic character of the area around the fort. His plan illustrates the slope of the glacis and the slope within the moat (Figure 227). Around 1779, the British military added earth to the glacis, extending the slope 21 yards from the top of the covered way.[318] The esplanade extended beyond the glacis. The esplanade was a level area kept clear of vegetation and structures that provided unobstructed views out from the fort. During the Colonial period,

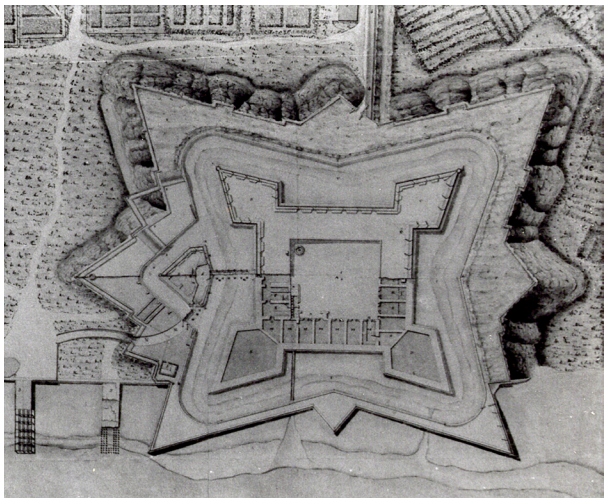


Figure 227: 1763 Castello Map (CASA A5002)

the esplanade extended north to a second line of earthworks, known as the Hornwork.[319]

Beginning in 1704, the Spanish constructed a defensive wall extending west from the fort to protect St. Augustine from an attack from the north. The Cubo Line featured a moat in front of an earth rampart. The moat, like most of the earthworks constructed during this period, was constructed from sandy soil and susceptible to erosion. During the Colonial period, the Spanish periodically redug the moat and reinforced the rampart walls. In 1743, for example, the Cubo Line moat was 11 feet wide and 5 ½ feet deep.[320] The British did maintenance on the moat during their occupation of the fort. They also constructed two earthworks in the covered way, including a 12-foot-tall bonnet and an 8-foot-tall ravelin. In 1807, after reoccupying the fort, the Spanish removed soil added by the British to bombproof the fort and added it to the glacis on the west side of the south entrance into the fort.

After the U.S. Army occupied Castillo de San Marcos (Fort Marion) in 1821, it continued to alter the site's topography during routine maintenance of the Spanish-period features. For example, the army periodically excavated the moat, beginning in the 1840s, to improve drainage.[321] The U.S. Army added more earth to the glacis in the 1840s, because, according the Bearss, "nobody had overseen the preservation of the outworks . . . and roadways and paths meandered across the

316. Albert Manucy, ed. The History of Castillo de San Marcos and Fort Matanzas From Contemporary Narratives and Letters (Washington D.C.: United States Government Printing Office, 1943), 15.
317. Manucy, *The Building of Castello de San Marcos*, 17.
318. Bearss, *Historic Structure Report*, 16, 57.
319. Sastre, *Cultural Landscape Report*, 149.
320. Sastre, *Cultural Landscape Report*, 164.
321. Bearss, *Historic Structure Report*, 173.

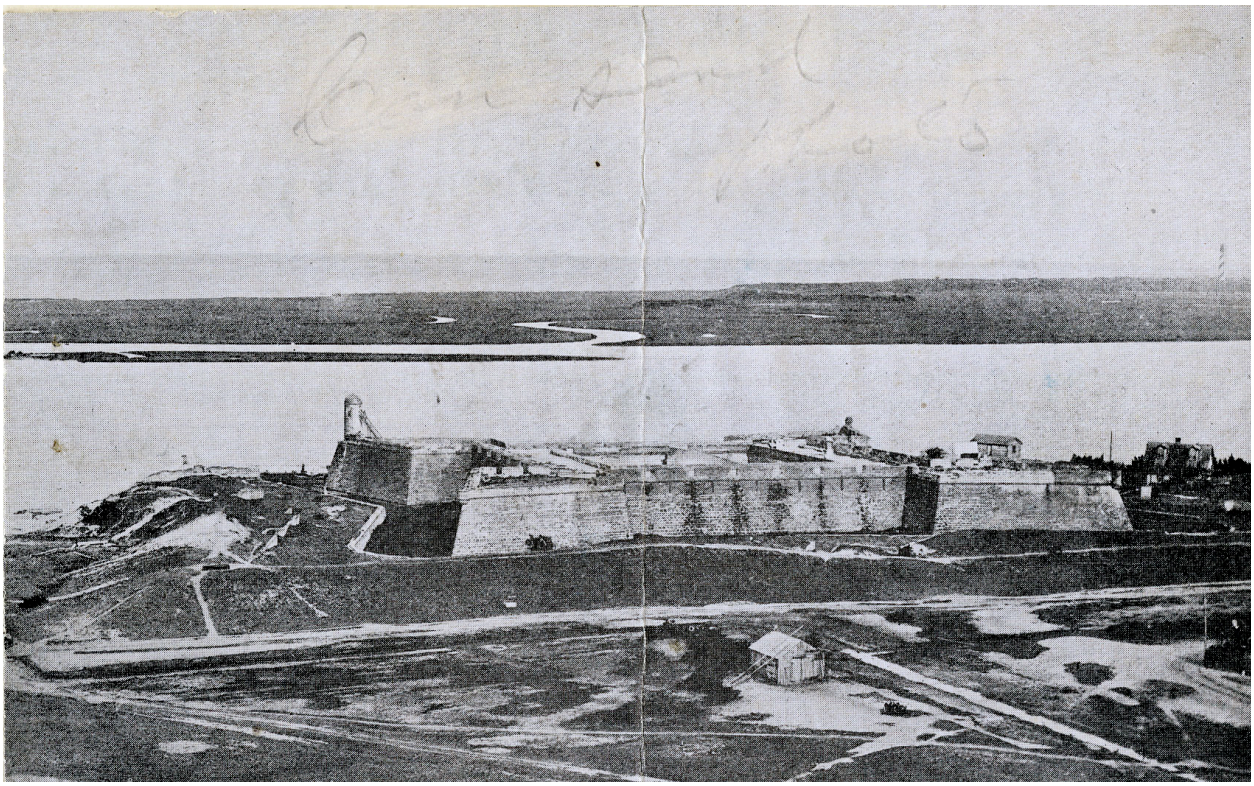


Figure 228: Detail of Aerial circa 1875-1890 (CASA no. A13bk)



Figure 229: Detail of Aerial Circa 1890 (CASA no. 4a08730u)

glacis."[322] It was also in the 1840s when the army reconstructed the water battery and filled in the moat on that side of the fort. To deal with water standing behind the water battery's seawall, the army adjusted the grade of the ground plane so it would drain water into two culverts added to the seawall. Within a few decades, by the 1870s, the glacis eroded again, with large bare areas that appear almost like sand dunes in historic photographs.[323] A photograph taken between 1880

322. Bearss, *Historic Structure Report*, 156.

323. Bearss, *Historic Structure Report*, 155.

and 1891 shows the steep slope of the glacis and evidence of erosion (Figure 228). In the late 1880s, the army regraded the glacis and installed new sod during their efforts to create a more park-like setting around the fort. According to Bearss, in 1890, Captain Black proposed, "the slopes of the glacis would be restored to the grade, about 1 to 7, shown on Spanish plans. Spoil would be used to fill low places."[324] In 1891, under Lieutenant D. D. Galliard's supervision, laborers "restored [the glacis] to their historic grade, and all low places on the reservation [were] filled and graded."[325] To accomplish the project, workers moved "11,517 cubic yards of earth… an average distance of 1,032 feet."[326]

The army converted the Cubo Line moat into a drainage ditch around 1857. By the 1880s, the moat still functioned as a drainage ditch and is visible in photographs from the period (Figure 229). In 1891, army personnel reported cleaning and grading the ditch.[327] The area known as the esplanade during the Colonial period became known as the fort green during the War Department period. During the 1890s, Captain Black leveled the fort green and proposed keeping it "at 8 feet above mean low water."[328]

Post-Historic and Existing Condition: Castillo de San Marcos

The NPS excavated 8,000 cubic feet of soil from the moat in 1933.[329] After completing archeology on the moat and around the fort in 1938, the NPS lowered the moat another two feet and spread the dirt on the glacis (Figure 230).[330] It filled the moat with water during this period.

In 1963, the NPS completed archeology and research to determine the location of the Cubo Line. In 1964, the NPS reconstructed the defensive line, including its moat and glacis. In the 1960s, during the Mission 66 projects at the national monument, the NPS sodded new grass across the site and restored the southwest glacis.[331] In 1996,



Figure 230: 1937 Moat excavation (CASA A3416)



Figure 231: 1995 Moat work (CASA no. A5625_23)

the NPS drained the moat and raised its floor level to protect the foundation stones on the scarp walls (Figure 231).

According to the St. Johns County GIS website, most of St. Augustine is between 5 and 10 feet above sea level.[332] The area around the fort also falls within this range. The topographic features constructed and reconstructed during the period of significance are now maintained by the NPS and are legible in the landscape.

324. Bearss, *Historic Structure Report*, 155.
325. Bearss, *Historic Structure Report*, 338-339.
326. Bearss, *Historic Structure Report*, 339.
327. Bearss, *Historic Structure Report*, 341.
328. Ibid.
329. Bearss, *Historic Structure Report*, 420.
330. Bearss, *Historic Structure Report*, 429.
331. Bearss, *Historic Structure Report*, 462.
332. St. Johns County, Imap, http://www.gis.bocc.co.st-johns.fl.us/imap/

Post-Historic and Existing Condition: Park Headquarters and Maintenance Facility

The Park Headquarters and Maintenance Facility occupies a level site. Grading certainly occurred during the construction of the buildings and parking lots, but no historically significant topographic features exist on the site.

Summary

The defensive earthworks constructed by the Spanish in the 1600s and 1700s created a unique topographic character at the site. These earthworks were part of the defensive architecture of the fort and are characteristic of military engineering design principles of the period. They have changed slightly over time, as occupants of the fort lowered or raised landforms during phases of construction. The features generally reflect their original design and retain much of the original material. The workmanship to create the earthworks is evident in the walls, moats, and at the glacis. The aspects of association, setting, and feeling are also evident, because the presence of these historic features accurately conveys the site's historic character. Overall, Castillo de San Marcos National Monument retains integrity of topography.

Landscape Features

- Moat
    - Contribution Status: Contributing
    - Condition: Good
- Covered way
    - Contribution Status: Contributing
    - Condition: Fair (Erosion)
- Glacis
    - Contribution Status: Contributing
    - Condition: Fair (Erosion)
- Esplanade/fort green
    - Contribution Status: Contributing
    - Condition: Good
- Water battery constructed by War Department in 1840s
    - Contribution Status: Contributing
    - Condition: Fair (Erosion)
- Reconstructed Cubo Line and moat added by the NPS in 1964
    - Contribution Status: Contributing
    - Condition: Good
- Reconstructed City Gate moat added by the NPS in 1965
    - Contribution Status: Contributing
    - Condition: Good

Vegetation

Historic Condition

The natural environment at the time of Spanish arrival featured naturally occurring plant communities except for those areas impacted by American Indians living in the area. According to Albert Manucy, "Beyond the marshes was wilderness—the pine barrens and cypress swamps, palmetto scrubs, and oak groves."[333] Trees common to the Florida flatwood plant community include live oak, hackberry, long leaf pine, and slash pine. Indigenous shrubs include huckleberry, gallberry, palmetto, shining sumac, and wax myrtle. Areas along drainage courses would have featured species better adapted to swamp environments, including cypress trees and marsh grasses. An 1819 map provides descriptions of the environment surrounding St Augustine. It notes "St. Anastasia Island" had "Undergrowth Scrub Oak with some scattering trees." The map describes the land west of St. Augustine as "low, pine barren." The area immediately north of the Cubo Line is marked as "Fields," but beyond the fields, the land transitioned to "Undergrowth Scrub Oak" on both sides of the road. This suggests that after a century of manipulation by the Spanish, much of the area featured secondary growth of native trees and shrubs (Figure 232).

The natural condition of the land around St. Augustine is also visible in early photographs of the fort and its environs. A historic view taken in 1894, looking east towards the fort, shows the northern tip of Anastasia Island prior to residential development. This is likely to have been a typical scene in the low-lying, marshy areas along the edges of the creeks and rivers (Figure 233).

The Spanish cleared the area around Castillo de San Marcos to open sight lines and maintain lines of fire. The 1797 Berrío's map and the 1817 Cortazar map show the area around the fort cleared of native vegetation. The maps also suggest that the Spanish cleared an area on either side of the main trail leading north from St. Augustine. The Spanish likely cleared this land for defensive purposes but also for planting crops during the early years of construction to feed the laborers. Land north of the fort was cleared for use by both American Indians and Spanish settlers and

333. Manucy, *The Building of Castello de San Marcos*, 14-15.

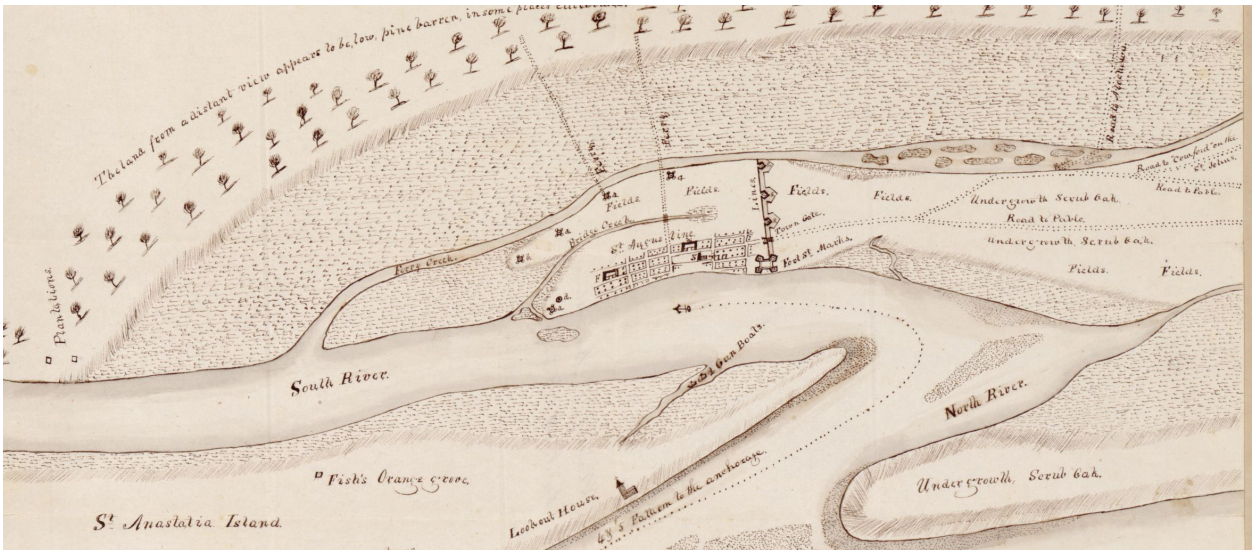


Figure 232: Detail 1819 Map (CASA no. lh000906)



Figure 233: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 (Library of Congress, https://www.loc.gov/item/det1994005120/PP/)



Figure 234: 1875 Map (CASA P1020235)

laborers. Spanish Engineer Mariano de la Rocque's map of St. Augustine from 1785 appears to show cultivated land north of the fort and east of the road extending north toward Mose (Figure 234). This map suggests residents practiced agriculture near the fort on plots north of the Cubo Line and on plots north of the Hornwork. Even though the area immediately around the fort was supposed to be kept clear for defensive purposes, records show that the Spanish did plant corn close to the fort during the Colonial period of significance. According to Albert Manucy, in 1693 Spanish officials in Florida "resolved to plant great crops of maize nearby [St. Augustine]. They found men to plow up the broad, field-like clearings around the fort, and acres of waving corn soon extended almost up to the moat." In December, a royal order prohibited the growing of crops within "a musket shot of the Castillo."[334]

As Albert Manucy explains, during the early years of Spanish settlement, the Spanish cultivated crops to supplement supplies sent from Spain or from other settlements in the Caribbean. The Spanish were not familiar with farming in sandy soils and would have looked to the American Indians for cultivation techniques and crops. The list of crops grown during this time seems to support this, including crops familiar to American Indians at the time. According to Albert Manucy, "there were few garden vegetables. Squash grew well in the sandy soil, and there were beans and sweet potatoes, citron, pomegranates, and figs. The orange had already been introduced. And of course there were the favorite seasoning of onion and garlic."[335] Yucca is another plant that appeared in the landscape

334. Manucy, *The Building of Castello de San Marcos*, 25-26.

335. Albert C. Manucy, The Building of Castello de San Marcos, National Park Service Interpretive Series, History No. 1, NPS (Washington D.C. United States Government Printing Office), 14.

during the Spanish Colonial period, as the Spanish planted it along the town palisades to harass an attacking force.[336] It is also known that marsh grass established itself in the moat by the 1800s, and it seems likely that it would be present in the moat during this period also.

The British took possession of Castillo de San Marcos in 1763. In 1779, they reconstructed the glacis around the fort, presumably adding turf to stabilize the soil. When the U.S. Army occupied the fort in 1821, it repaired the fort and reconstructed the sea wall and water battery. In 1833, records indicate that troops removed weeds and grass from the fort, but there is no indication that the army planted any vegetation other than grass during this early period except for landscaping associated with closing construction ditches associated with projects.[337]

Photographs prior to 1890 show a deteriorated landscape with few trees and bare earth. A photograph from this period shows shrubs growing along the covered way wall and on the glacis (Figure 235). A view of the fort from the northwest shows a few trees growing in the landscape (Figure 236). This photograph is dated 1870-1890, but the fence was installed in 1885, and the glacis was resodded in 1888. It was taken prior to the trees being planted in 1891, suggesting a date of 1888-1891. A large clump of evergreen trees, likely red cedars, grow near the former Cubo Line. Cedars are also seen along the covered way on the north side of the fort. There are also large cedars growing behind (southeast) of the ordnance-sergeant cottage in the covered way near the ravelin.

Captain Black submitted a landscape plan in December 1890. In it, he proposed planting the entire reservation in grass and planting groups of trees and shrubs, using native plants "so a minimum amount of care will be required" and that the plantings would not "dwarf or hide the fort."[338] In 1891, under Lieutenant D. D. Galliard's supervision, laborers graded, plowed, and seeded 8.8 acres surrounding the fort.[339] Hired or contracted laborers planted trees and shrubs, including 61 cedars, 29 myrtles, 55 palmettos,



Figure 235: "Fort Marion, St. Augustine, Fla," circa 1880 (Library of Congress, https://www.loc.gov/item/det1994013188/PP/)

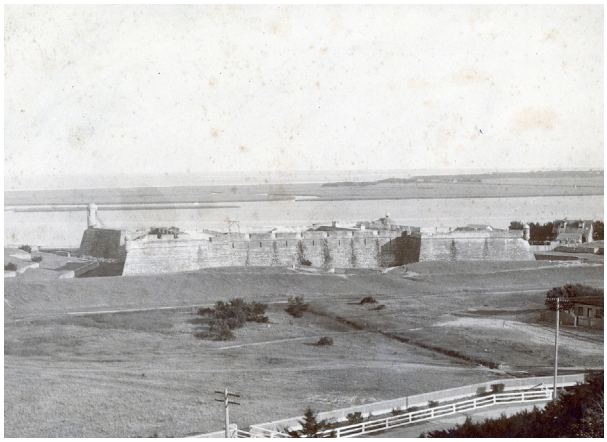


Figure 236: Detail of photograph circa 1890 (CASA no. A4853)

24 oleanders, 103 casinos, and 470 Spanish bayonets.[340] The next year, they planted 430 Spanish bayonets, 105 myrtles, 20 palmettos, and 62 elm trees.[341]

Another photograph taken a few years later shows the landscape after implementation of Black's landscape proposal. The photograph shows that Black retained many of the trees seen in the previous image, including those in the covered way, at the Cubo Line, and around the ordnance-sergeant cottage in the south covered way. New trees are also visible in the photograph. A large grouping of new trees grows near the intersection of two walkways west of the fort. An allée of trees line the walkway Water Street to the City Gate. Palmetto trees are growing within a fenced enclosure along the road at the bottom of the image (Figure 237).

336. Manucy, *The Building of Castello de San Marcos*, 29.
337. Bearss, *Historic Structure Report*, 64, 141.
338. Bearss, *Historic Structure Report*, 337.
339. Bearss, *Historic Structure Report*, 339.
340. Bearss, *Historic Structure Report*, 340.
341. Bearss, *Historic Structure Report*, 342.



Figure 237: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 (Library of Congress, https://www.loc.gov/item/det1994005120/PP/)

The U.S. Army withdrew its garrison from Castillo de San Marcos (Fort Marion) in 1900, but they remained responsible for grounds maintenance until the property transferred to the NPS in 1933.

Post-Historic and Existing Condition

A hurricane in September 1928 uprooted several trees on the fort grounds.[342] In 1928, the army planted eight large palm trees along Fort Marion Circle.[343] A July 1936 map showing the boundaries of the national monument records the location of some plant material (Figure 238). The legend of trees lists water oaks, cedars, swamp elm, crepe myrtle, pride of India, sabal palm, wax myrtle, and oleander. Cedars are the most numerous tree on the plan. The cedars near the former location of the Cubo Line are very large, some reaching 16- and 18-inches diameter. These are mature specimens seen in photographs from the 1880s and 1890s. The area around the former site of the ordnance-sergeant cottage in the covered way has several trees noted, though the map does not identify the species. They range in diameter from 6 to 20 inches. Swamp (or American) elms line the walkway from Water Street to the City Gate. These range from 1-inch diameter to 24 inches in diameter. Most are between 10- and 12-inches diameter. These date from Black's landscape project in the 1890s. In 1938, the NPS implemented a tree maintenance program.[344] In October 1944, another hurricane damaged trees on the fort green.

In September 1964, Hurricane Dora uprooted several trees on the fort grounds. During the

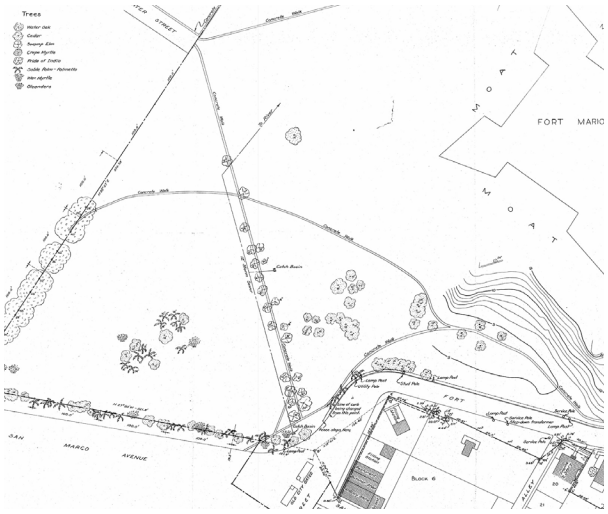


Figure 238: Detail 1936 Boundary Map (CASA_maps839¬1-5-3_003)



Figure 239: Detail of Aerial circa 1965 (CASA no. A2444)

Mission 66 program, the NPS installed new sod on the park grounds. In June 1965, the NPS planted oak trees and palms along the north property line to screen residential houses and the new administrative building. Between April and August 1965, according to Bearss,

> The work included: the planting and sodding of grass and shrubs around the new parking lot; planting and sodding of grass and shrubs around the new administrative building; planting and sodding grass and shrubs around the city gate; sodding grass around the new sidewalks. . . .[345]

An aerial photograph taken in 1965 shows the landscape prior to the planting of the screen along the north boundary line (Figure 239). The ground

342. Bearss, *Historic Structure Report*, 372.
343. Ibid.
344. Bearss, *Historic Structure Report*, 430.
345. Bearss, *Historic Structure Report*, 462.



Figure 240: Circa early-1970s (CASA A4791)

looks recently sodded. Many trees from the July 1936 plan remain on site. These include the cedars in the covered way south of the fort and several cedars in the open space near the Cubo Line, under construction at the time of the photograph. A few elms survive along the Water Street to City Gate walkway. Missing plants include the group palm trees that grew near the southeast corner of the park, where the NPS removed a parking lot during this period. A similar photograph, taken a few years later shows the NPS plantings to screen the north boundary line (Figure 240).

In 1975, the NPS removed trees growing in the covered way because their roots were damaging the fortifications.[346] In 1977, NPS horticulturalist Lynch H. D. Boykin, Jr. inspected the fort. He recommended the removal of six diseased and dead trees.[347] Boykin generally wanted all trees and shrubs growing close to historic walls removed. An undated aerial photograph, probably from the mid-1980s, shows a reduction in the number of trees in the landscape (Figure 241). The NPS removed several cedar trees from the covered way, in particular south of the fort near the former location of the ordnance-sergeant cottage. A fewer number of cedar trees are growing in the west lawn area of the fort green than in 1965.

Comparing the 1965 aerial and the mid-1980s aerial with existing conditions, it appears that all the trees found on site today were in place by 1965. This includes the palm trees growing inside the covered way north of the fort and the three palms growing above the covered way wall near the

346. Bearss, *Historic Structure Report*, 464.
347. Bearss, *Historic Structure Report*, 465.



Figure 241: Detail of Aerial circa 1980 (CASA no. A5680c)



Figure 242: Detail of photograph circa 1980 (CASA A5620_6)

southwest salient. It also includes the nine sabal palms growing in the water battery. The number of trees along the Water Street walkway is less than in the 1960s. There has also been a loss of trees since the 1980s, including the removal of all but one cedar from the covered way and removal of most of the cedars in the lawn area west of the fort.

The NPS laid new sod around the grounds in 2000. It planted a pittosporum hedge to screen the parking lot in 2003, which it removed a few years later (Figure 242). Today, there are very few shrubs on site. These include a planting of yucca near the Cubo Line and near the City Gate (Figure 243).



Figure 243: 2018 Aerial of Castillo de San Marcos (Google Earth)

The landscape around the Park Headquarters Building and Maintenance Facility has also experienced significant changes since the original construction of the building. Several plants from the original planting plan remain on site. This includes the cluster of sabal palms west of the building near the entrance driveway and the cluster of sabal palms in the yard east of the entrance courtyard. Underneath the former cluster, several zamia are growing. These appear on original plans. A few yuccas grow underneath the latter cluster of palms. These appear on original plans. A clipped yaupon hedge is shown on the plans along the loggia walkway. A hedge is there today; but it is unclear if this is the original hedge. A similar clipped yaupon hedge lines the west facade of the building. This was added in the 1990s. Most of the other plant material is not original. This includes the crepe myrtle, bottlebrush, and liriope.

Summary

The open character of the site reflects the presumed appearance of the site during the Colonial period of significance. The Spanish kept the area clear of trees for military purposes and planted grass to retain the earthworks. Therefore, the open lawn areas retain integrity of location, design, setting, feeling, and association for the Colonial period of significance. A few of the trees date from the War Department period of significance. Some of the trees growing on the site during the War Department period of significance were naturally occurring. Black's 1890s planting plan introduced a design for the vegetation, but this design is not legible today. The loss of so many trees associated with the 1890s planting plan also diminishes the aspects of setting, feeling, and association for this period of significance. Yucca is a species that the Spanish planted during the colonial period. The NPS planted yucca at the City Gate and at the Cubo Line in the 1960s.

Landscape Features

- Open area around fort (esplanade during Spanish Colonial period and fort green during War Department period)
    - Contribution Status: Contributing
    - Condition: Good
- Historic trees surviving from War Department period
    - Contribution Status: Contributing
    - Condition: fair (natural decline)
- Yucca plantings at Cubo Line and City Gate by the NPS in 1960s
    - Contribution Status: Noncontributing
    - Condition: Good
- Buffer of trees planted between fort and Park Headquarters Building and Maintenance Facility planted by NPS in circa 1965
    - Contribution Status: Noncontributing
    - Condition: Good
- Plantings of trees and shrubs at Park Headquarters Building and Maintenance Facility planted by NPS beginning in the 1960s
    - Contribution Status: Noncontributing
    - Condition: Good

Buildings and Structures

Historic Condition: City Gate

By 1804, the Spanish constructed a gate in the Cubo Line, which included a wooden guardhouse. Engineer Captain Manuel de Hita recommended replacing the wooden building with two coquina guardhouses to defend the primary entrance into the city. The Council of War approved the project in 1808. That year, the Spanish built the coquina pillars of the City Gate. They topped each pillar with pomegranate finials.[348]

According to Engineer Ramón de la Cruz's 1821 inventory of Spanish property prior to the transfer to the United States, the City Gate, also called by the Spanish the Land Gate, was in good condition.

348. Sastre, *Cultural Landscape Report*, 178.

It featured a new wooden bridge on four piers.[349] The inventory states, "the only exit to the north road cuts through the parapet at the location of the Land Gate. The gate is in good condition, ironwork satisfactory, it consists of two leaves hung on two strong pillars of great thickness and height. Each pillar is joined to a stone wall about 9 yards long, as broad as the parapet and following the line of the parapet. To cross the moat, there is a new bridge 68 feet long, 16 ½ feet wide, with railings and 4 bents. . . ."[350]

Following an 1826 hurricane that damaged many structures in St. Augustine, the City of St. Augustine began a project to rebuild the causeway leading into St. Augustine where it passed through the City Gate. They began dismantling parts of the City Gate, intending to reuse the material on a new bridge, but they were stopped by Army officials because the material was federal property.

According to Bearss, the War Department allotted funds to repair the City Gate in 1898.[351]

Post-Historic and Existing Condition: City Gate

In 1933 and 1934, a team with the Historic American Buildings Survey prepared architectural drawings of the City Gate. In 1937, the NPS began archeological work to locate the Cubo Line moat, including the section near the City Gate (Figure 244). During this project, the NPS reconstructed a few courses of coquina on the sides of the bridge. The NPS completed repairs on City Gate in December 1947. This work included repointing the mortar, replacing missing stones, and repairing cracks in the sentry box's dome.[352] In 1965, the bridge and moat were restored and a walkway was converted to crushed shells. In 1972, a bronze plaque was attached to the east pillar "on the occasion of the tricentennial of Castillo de San Marcos."[353] Around 2000, the NPS worked with the Historic Preservation Training Center to make repairs to the City Gate. Repairs included repointing the masonry walls, repairs to the sentry box, and replacement of one of the pomegranate-shaped finials on top of the stone pillars.

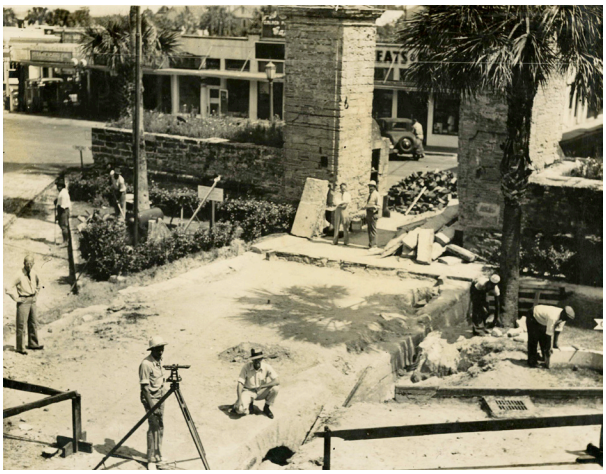


Figure 244: City Gate in 1938 showing NPS workers rebuilding bridge (CASA no. CG3)

Historic Condition: Castillo de San Marcos

Castillo de San Marcos is a coquina stone structure built in 1672-1695 and subsequently remodeled and added to during the Colonial period of significance. The War Department made their own modifications and additions to the fort and landscape in the 1800s and early-1900s.

The ground breaking for Castillo de San Marcos occurred on October 2, 1672, and construction began on November 9. Workers, including many American Indians, dug coquina from a quarry on Anastasia Island and assembled lime and other construction materials.[354] Governor Manual de Cendoya initiated the project and military engineer Ignacio Daza supervised construction.

By the end of 1673, the foundations for the south and east curtain walls and the San Agustin bastion were complete. By 1675, the northern, southern, and eastern curtain walls were almost complete. At this time a large earthwork wall enclosed the west side. Outside the walls, a 14-foot-wide and 10-foot-deep moat encircled the fort.[355] The moat around Castillo de San Marcos features a ditch (or cuvette) located along its centerline, half way between the scarp and counterscarp. The moat floor slopes towards this ditch. Because the cuvette was located just above the water table, it would fill during high

349. Sastre, *Cultural Landscape Report*, 172.
350. Sastre, *Cultural Landscape Report*, 179.
351. Bearss, *Historic Structure Report*, 353.
352. Bearss, *Historic Structure Report,* 444.
353. Bearss, *Historic Structure Report*, 439.
354. There are conflicting dates for the laying of the first stone of the fort. Albert C. Manucy puts the date at October 2, 1672. See Albert C. Manucy, *The Building of Castillo de San Marcos* (Washington D.C.: National Park Service, 1959), accessed online http://npshistory.com/series/interpretive/1/is1c.htm). Charles Tingley, the Library Manager for the St. Augustine Historic Society, prepared a timeline that places the date at November 9, 1672.
355. Sastre, *Cultural Landscape Report*, 58.

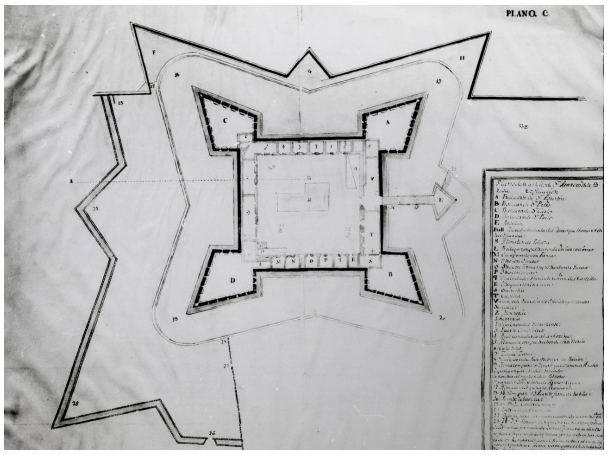


Figure 245: Arredondo 1737 Map (CASA A400)

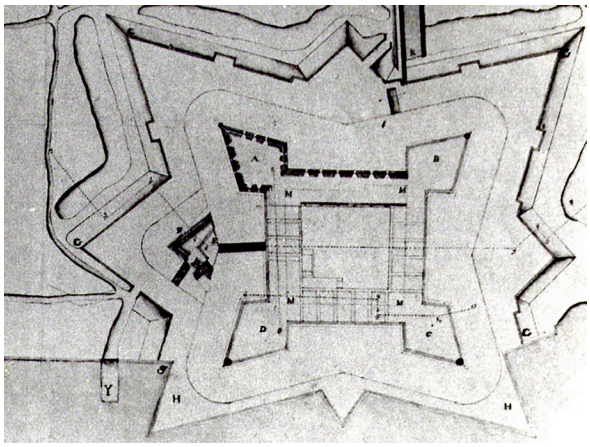


Figure 246: Brozas and Garay 1756 Map (CASA no. A5000)

tide, as the water table level rose, and drain as the tides receded and the water level fell. This flow of water into and out of the cuvette would flush the cuvette and moat of standing water. The floor of the moat, however, was above the high tide water table, keeping it dry and allowing only the cuvette to fill during tidal changes. According to Sastre, "Had the floor of the moat been excavated further, the entire moat would have flooded at high tide." [356]

By 1685, the Spanish had begun construction of a seawall on the east side of the fort to create a water battery and to protect the foundation of the fort. The water battery was begun in the 1680s and completed in 1695.[357] On the south side of the fort, the Spanish constructed a masonry ravelin to protect the main entrance. The ravelin was in the middle of the moat and supported two bridges, one connecting to the fort entrance and the second connecting to the covered way. Construction on the covered way began in 1687. It was largely complete in 1695, about the same time as the fort, but work continued on the covered way into the 1760s.[358] The covered way initially was an earthen passage protected by a wooden stockade.

Beginning in 1736, Antonio de Arredondo, a military engineer sent to St. Augustine to oversee improvements to fort, made several recommendations for the fort and surrounding defenses. At the fort, he proposed replacing the timber-framed terreplein with one supported by masonry arches.[359] Nicholás Gutiérrez, a master brick-maker, arrived from Havana to oversee the construction of the vaults. Gutiérrez suggested that they use coquina for the construction rather than bricks. Work on the coquina vaults continued until 1756. The project raised the height of the fort's parapet walls from 26 feet to 35 feet. The Spanish replaced the original ravelin with the current ravelin in the 1760s.[360] During the 1760s ravelin reconstruction, the Spanish also reconfigured the moat to accommodate the new structure. The Spanish replaced the bridges over the moat to the ravelin and from the ravelin to the fort several times over the years, including in 1785, 1788, 1796, 1802, 1807, and 1817.[361]

Beginning in the 1730s, under Arredondo's supervision, the Spanish began constructing a coquina retaining wall to raise the height of the covered way to 6 feet. In 1737, when he recorded the existing conditions of the fort, the covered way was not complete (Figure 245). During construction of the wall, the Spanish also added a glacis outside of the covered way by building up layers of earth. Albert Manucy's illustrations of the evolution of the fort show borrow pits beyond the glacis that may have been the source of the soil used to construct the glacis.[362] The glacis was, at this time, a steep and narrow embankment. Pedro de Brozas y Garay's plan from 1756 shows this condition and shows the glacis extending around the north, west, and south sides of the fort, stopping short of the salient of the south covered way.[363] It also has a section of the fort that shows

356. Sastre, *Cultural Landscape Report*, 124.
357. Sastre, *Cultural Landscape Report*, 152.
358. Sastre, *Cultural Landscape Report*, 134-135, 137.
359. Sastre, *Cultural Landscape Report*, 62.
360. Sastre, *Cultural Landscape Report*, 128.
361. Sastre, *Cultural Landscape Report*, 128-129.
362. Albert Manucy suggests that the glacis was added to the landscape after 1756. See: Sastre, *Cultural Landscape Report*, 143.
363. Sastre, *Cultural Landscape Report*, 97-98.

the covered way as having a three-tiered firing step along the inner face of the wall (Figure 246). The Brozas y Garay plan shows a short segment of wall extending north from the water battery holding the eastern edge of the glacis, near the edge of Matanzas Bay.

The Spanish constructed the Cubo Line, an earth rampart wall extending west from the covered way towards San Sebastian River, in 1704. In 1718, the Cubo Line was rebuilt north of its original, 1704 location. Portions of the Cubo Line had wooden palisade retaining walls, and the remaining section was only earth rampart walls. When recorded by Arredondo in 1737, the palisaded section measured 240 yards long. The earthwork section, between the Rosario Line and the San Sebastian River was 495 yards long.[364] By 1743, after Spanish laborers made significant renovations to the Cubo Line, the earthen walls were almost 3 feet thick with wooden palisade retaining walls. The workers refurbished three redoubts along the line, adding earthen walls approximately 8 feet thick. Each redoubt could hold six cannons. The moat in front of the Cubo Line was at this time 11 feet wide and 5 ½ feet deep. The moat was approximately 733 yards long.[365] Because of the sandy soil used to create it, the earthwork was susceptible to erosion and deteriorated rapidly. By 1749, Spanish officials were already describing it as being in such poor condition that Governor Melchor Navarret complained that St. Augustine was defenseless.[366]

On July 21, 1763, Great Britain took possession of the Castillo de San Marcos. Pablo Castellós' 1763 plan of the fort shows its condition at the time of transfer (Figure 247). By 1773, the drawbridge, covered way, glacis, moat, ravelin, wells, and one of the casemates all required repair.[367] Under the command of Colonel Lewis V. Fuser, the covered way was enlarged in 1779, and new earth ramparts were added to protect the northwest bastion and curtain wall. Using the labor of troops and three hundred enslaved Africans, the British raised the height of the glacis and erected a new palisade.[368] The British enlarged the glacis, extending it 21 yards out from the covered way. In 1779, they opened embrasures in the water battery wall

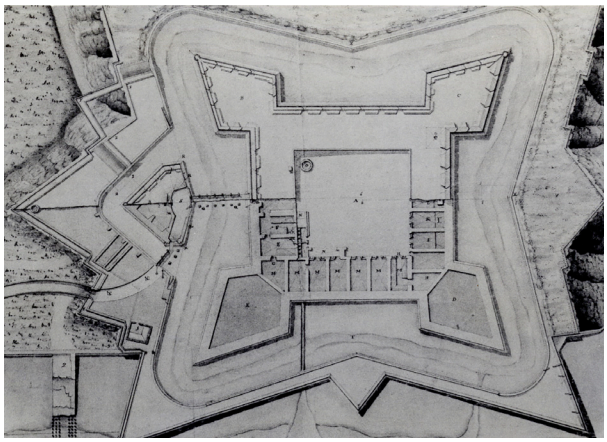


Figure 247: Castello 1763 Map (CASA no. A4852)

and installed guns in the salient angles.[369] Other improvements to the area included upgrades to "batteries in the seawall salient, wooden armor-like shields for the powder magazine and courtyard walls, a rebuilt Cubo Line, a fortified house at the former Fort Mose site."[370] The British added earthworks to the covered way during their occupation of the fort, including a bonnet, a counterguard, and several traverses on the north side of the fort.[371] Albert Manucy's evolution maps of Castillo de San Marcos also show, in addition to the traverses, two large earthworks in the north salient of the covered way. His maps label these as a twelve-foot tall bonnet and an eight-foot-tall ravelin. In 1781, Captain Durford, a royal engineer, oversaw the construction of a series of redoubts and defensive lines around the city of St. Augustine.[372]

In 1784, the Spanish retook possession of Castillo de San Marcos as a result of the January 1783 peace treaty between Great Britain and Spain. Commanding Engineer Mariano De la Rocque reported on the poor condition of the fort and recommended necessary repair work. In the late 1780s, the Spanish made several repairs to structural features at the fort and surrounding landscape that had deteriorated due to weather, insects, and age. They replaced the wooden beams supporting the main bridge to the fort and replaced the bridge between the covered way and the ravelin. Spanish laborers eventually replaced the wooden piers with stone piers during this period.[373]

364. Sastre, *Cultural Landscape Report*, 163.
365. Sastre, *Cultural Landscape Report*, 164.
366. Sastre, *Cultural Landscape Report*, 165.
367. Sastre, *Cultural Landscape Report*, 67.
368. Bearss, *Historic Structure Report*, 16, 57.
369. Sastre, *Cultural Landscape Report*, 103.
370. Nomination to the World Heritage List, 19.
371. Sastre, *Cultural Landscape Report*, 138.
372. Bearss, *Historic Structure Report*, 18-19.
373. Sastre, *Cultural Landscape Report*, 70.

They added a gate with ironwork at the ravelin entrance. They repaired the rotten wood and rusted ironwork in the fort. They cleaned two wells in the covered way in 1787 and cleaned the one in the fort's courtyard.

De la Rocque's inspection report from July 1789 describes the Cubo Line as a useless ruin that needed to be rebuilt. He also recommended repairs to the British line of defense west of St. Augustine along the banks of the San Sebastian River. The Spanish Council of War approved his recommendations on December 31, 1790, but it did not make the funds available, and the work did not happen. In 1790, the Spanish continued to perform maintenance and make minor repairs to the fort. They added a new flagpole, a new stove for the artillery gunners, and repaired doors and windows.[374] In 1792, they installed stone curbs around the two wells south of the fort in the covered way. In 1796, the Spanish also replaced the wooden piers for the fort's bridges with stone piers.[375] Workers in St. Augustine did clear the brush and make minor repairs to the outworks; but over the next few years, the Spanish allowed the earthwork lines of defense to deteriorate. By 1797, when inspected by Spanish engineer Pedro Díaz Berrío, the lines and redoubts were "non-existent."[376]

By 1797, because of their growing concern about a possible attack by Great Britain, Spain invested in improvements to the earthwork defenses around Castillo de San Marcos. At the fort, workers added earth over the terreplein for extra protection. They built additional traverses in the covered way. Then, in 1798 and 1799, they repaired the gates and palisade of the covered way. Work on the covered way continued the following year, when they replaced the wooden retaining walls holding back the earth near the main entrance to the fort. They cleared grass growing on the traverses and cleaned the moat. Under the supervision of Engineer Díaz Berrío, they also made extensive repairs to the Cubo Line. In April and June 1797, they rebuilt the earthwork, reconstructed gun platforms in its three redoubts, and cleaned its moat.

Between 1800 and 1802, additional improvements to the fort included a new "terreplein surface, parapet, firing steps over the vaults in west, south, and southern half of the east curtains, merlons and embrasures in the northwest bastion, north curtain, and northeast bastion, and a new stairway to the terreplein."[377] In 1802, workers rebuilt the fort's bridges again and treated the planks with pitch.[378]

In 1804, Engineer Manuel de Hita described the Cubo Line as being in good condition but expressed concern about its sandy soil and erosion. He wanted to add a stone retaining wall to the earthworks, similar to what they had done in the covered way.[379] In the early 1800s, the Spanish removed the aging palisade along the covered way wall and replaced it with a palm-log revetment with sharpened ends.[380] This revetment was 5 feet tall. The revetment rested on top of the coquina retaining wall. They also built a new firing step in the covered way using palm logs and tamped earth.[381] They added similar palm-log revetments to the glacis near two of the entrances into the covered way. They added four traverses over the covered way using palm logs covered with earth and added three new gates.[382]

The Spanish also made major improvements at the water battery. Under the direction of Engineer Manuel de Hita, they opened new embrasures in the water battery in 1807, including two in the north salient, four in the middle salient, and two in the south salient. They poured an 8-inch-thick tabby concrete surface to support the weight of new artillery.[383] Around 1807, the Spanish repaired the glacis near the entrance to the fort, replacing earth fill washed away by storms in September and October 1806. They used earth removed during projects at the fort and at the water battery to build up the glacis on either side of the main entrance. Then they rebuilt a palm log revetment retaining the glacis earth.[384] The main entrance palisade had a gate, 10 feet high and 10 feet wide with double doors. There were also gated entrances on the north and west sides of the fort that entered the covered way. These entrances were 9 feet high and 9 feet wide. Other projects at this time included repairs to the bridge and the moat wall.

374. Sastre, *Cultural Landscape Report*, 70.
375. Sastre, *Cultural Landscape Report*, 129.
376. Sastre, *Cultural Landscape Report*, 167.
377. Nomination to the World Heritage List, 19
378. Sastre, *Cultural Landscape Report*, 129.
379. Sastre, *Cultural Landscape Report*, 168-169.
380. Sastre, *Cultural Landscape Report*, 75.
381. Sastre, *Cultural Landscape Report*, 76.
382. Sastre, *Cultural Landscape Report*, 139.
383. Sastre, *Cultural Landscape Report*, 75.
384. Sastre, *Cultural Landscape Report*, 144.

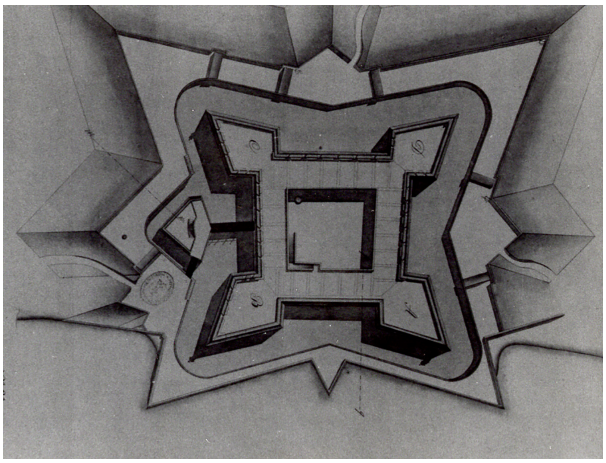


Figure 248: Cortazar 1817 Map (CASA no. A5006)

In 1808, the Spanish began making major repairs to the Cubo Line. They straightened the line, enlarged the firing step, and raised the parapet wall in the section between the City Gate and San Sebastian River. They also added a line of palm log revetments along the eastern half of the line, raising the height of the line to nine feet. Also in 1808, the Spanish built the coquina pillars of the City Gate. Other general maintenance on the outworks included periodic cleaning of the moats and cutting vegetation.

Engineer Francisco Cortazar drew a map of the fort in 1817. His *Plano del Castillo de San Marcos en San Agustín de la Florida oriental* shows the features of the outworks, including the retaining walls extending north and south of the water battery. Toward the south, this wall forms part of the stone seawall. To the north, the wall retains the glacis, but is not part of a seawall (Figure 248).

In 1817, Cortazar reported the three salient angles of the water battery had broken away from their curtain walls. Cortazar argued that a failure of the water battery wall could allow water from the bay to undermine the fort's walls, but superiors denied his requests to repair the water battery.[385]

In April 1820, a new engineer, Ramón de la Cruz recommended adding a log revetment to retain the sandy soil of the Cubo Line. This work appears to have been partially completed by June 1821.[386] According to Engineer Ramón de la Cruz's 1821 inventory of Spanish property, the Cubo Line earthwork was 917 yards long with a parapet wall 2 ¾ to 3 ¾ feet thick at top and 19 ¼ feet thick at its base.[387] The Cubo Line scarp sloped towards the bottom of the moat. In 1821, the recently added log revetment was still in good condition. The revetment was 8 ¼ feet tall and 5 ⅜ by 7 inches thick. The moat was almost 40 feet wide and approximately 4 ½ feet deep.[388]

On July 10, 1821, the United States took possession of St. Augustine and occupied Castillo de San Marcos (which they called Fort St. Marks until January 1825, when they renamed it Fort Marion). In the 1830s, residents of St. Augustine petitioned the army to reconstruct the seawall along Matanzas Bay. On March 2, 1833, President Andrew Jackson signed into law an appropriation bill assigning $20,000 for repairs to the fort and construction of the seawall.[389] On March 13, 1833, the Corps of Engineers assigned Lieutenant Stephen Tuttle to supervise repairs to the seawall and the fort. In October 1833, work on the seawall was underway. In June 1834, Tuttle was dismissed and his successor, Lieutenant Francis S. Dancy, found the completed work to be unsatisfactory. The new seawall had not been constructed as designed and sections were laid on top of the old Spanish seawall, which was failing.[390] In 1837, workers dismantled the seawall built during the Tuttle period and removed the remaining sections of the old Spanish seawall. By January 1839, when Lieutenant Henry W. Benham arrived in St. Augustine to replace Dancy, the Army Corps of Engineers had completed 2,120 feet of new seawall. They added another 480 feet by June 20th.[391] In September, Benham proposed extending the seawall another 1,700 feet.[392] By October 1840, the seawall measured 3,375 feet and was an average of 8 feet tall. It extended from the fort to Saint Francis Barracks on the south.[393] Work continued on the seawall until 1845.

In December 1841, Benham sent a proposal for completely reconstructing the water battery. He recommended widening the water battery by

385. Sastre, *Cultural Landscape Report*, 108.
386. Sastre, *Cultural Landscape Report*, 171.
387. Sastre, *Cultural Landscape Report*, 171.
388. Sastre, *Cultural Landscape Report*, 171-172. There are conflicting measurements given for the depth of the moat. On page 171, the report says the moat is 4'-7" deep; on page 172, it says "approximately 5 ½ feet deep."
389. Bearss, *Historic Structure Report*, 48.
390. Bearss, *Historic Structure Report,* 64-65.
391. Bearss, *Historic Structure Report*, 144.
392. Bearss, *Historic Structure Report,* 117.
393. Bearss, *Historic Structure Report*, 125.

filling in the moat on the east side of Castillo de San Marcos (Fort Marion). From October 1841 to March 1844, under the guidance of Benham, workers rebuilt the water battery. The War Department poured new concrete footers and laid a foundation course of granite.[394] By August 1843, laborers had laid 10 feet of new "rough dressed granite" on top of the foundation.[395] Upon completion, the interior side of the wall measured 5 ½ feet high. They reconfigured the salients to make space available to mount 20 pieces of artillery. In 1844, the War Department installed the pintles and platforms for the guns. According the Bearss, "The fort keeper was to eradicate the weeds within the battery and see to the cultivation of grass upon the terreplein and slopes….Where Bermuda did not hold, it was to be given attention and new roots set out."[396] It was also in 1844 that the War Department constructed a "7-foot shot furnace opposite the centre [sic] point of the east curtain."[397]

Sastre provides a description of the project,

> The acute angles of the northern and southern salients of the battery were made obtuse to allow more room in the battery, and the moat was filled with earth. The wall scarp was made of granite to the level of high tide, and then of coquina to the top. The Spanish wall was cut down to the height of the new scarp, and it was backed with coquina. The crown of the new wall was paved with coquina and plastered with cement. The surrounding grounds planted with grass.[398]

> Each of the twenty gun-emplacements in the new water battery consisted of a platform; a granite block topped with an iron pintle plate where the front of the seacoast carriage gyrated; a granite track topped by a matching iron track where the rear of the carriage traversed, and a firing step for observing the fire. Toward the gorge of the middle salient angle, a shot furnace was erected. Following these changes the Castillo was transformed into an active American fortification and integrated into the country's permanent system of coastal defense.[399]

During the reconstruction of the water battery, the Army Corps of Engineers installed an opening between the covered way and the south salient of the water battery.[400] The reconstructed water battery occupied the same general space, but by opening the angles of the salient walls, it shifted the water battery seawall to the south. As a result, the Army Corps of Engineers constructed a new retaining wall to support the earth of the glacis. The Army Corps of Engineers poured a concrete wall in the covered way on the east side, between the moat and the glacis.

In 1844, the War Department received additional funds for projects at Castillo de San Marcos (Fort Marion). Around this time, workers added fill to the north glacis. In November 1845 and May 1846, workers rebuilt the two wooden sluice drains under the water battery because of termite damage.[401]

In 1849, Lieutenant Gilmer with the Army Corps of Engineers submitted an inspection report that recommended repairs to the seawall, which had been damaged during a hurricane in 1846, and resodding the glacis in Bermuda grass. Repairs on the seawall continued until 1854.[402] In 1850, under the supervision of Lieutenant Jeremy F. Gilmer, workers constructed a new section of seawall extending north of the water battery. This seawall protected the glacis and esplanade where it met Matanzas Bay. The seawall was extended to the north boundary of the military reservation in the early 1890s.

By 1857, representatives of the City of St. Augustine approved a project to fill the Cubo Line moat using the remains of the mounds of dirt along its banks. The moat was still filling with water; and this project would convert it to a drainage ditch.[403] In June 1858, the War Department appointed Lieutenant William H.C. Whiting to replace Captain Gilmer. According to Bearss, Whiting reported, "The demilune ditch, a portion of the demilune glacis, the ditch, covered way, and fort glacis were accessible to cattle."[404] In 1860, Whiting supervised a project to repair the shot furnace.

394. Bearss, *Historic Structure Report*, 162-163.
395. Bearss, *Historic Structure Report,* 216.
396. Bearss, *Historic Structure Report,* 231.
397. Bearss, *Historic Structure Report*, 230.
398. Sastre, *Cultural Landscape Report*, 157.
399. Ibid.
400. Sastre, *Cultural Landscape Report*, 108.
401. Sastre, *Cultural Landscape Report*, 127.
402. Bearss, *Historic Structure Report*, 251.
403. Sastre, *Cultural Landscape Report*, 173.
404. Bearss, *Historic Structure Report*, 253.



Figure 249: Circa 1880 photograph showing Ravelin (CASA no. A17)

After the Civil War, in 1868, officials from St. Augustine petitioned the military to remove earthworks constructed during the war, including "a parapet 12 feet wide and 4 feet 3 inches high had been thrown up on the glacis west of the fort."[405] In building this earthwork, troops had dug large ditches in front of the glacis that were filling with stagnant water. In the 1870s, the War Department and the City of St. Augustine cooperated to repair the City Gate. Army officials agreed to reconstruct the stone bridge if the city agreed to restore the masonry piers of the gate.

Around 1875, the War Department constructed a small cottage with front and rear porches in the south salient angle of the covered way near the main entrance into the fort (Figure 249). This building, which Bearss calls the ordnance-sergeant's quarters, remained in this location into the mid-1890s when the ordnance-sergeant moved to another building.[406] The ordnance-sergeant was responsible for the maintenance of the fort grounds.[407] Around 1880, the War Department constructed a storehouse on a dock near the south entrance to the fort.

During an 1877 survey of the military reservation, Captain J. C. Post recorded the condition of earthworks associated with Cubo Line. He marked the east end of the visible ruins of the line with a marble monument that is present today. It was 24 feet and 2 ½ inches west of the covered way wall.

In 1886, Lieutenant William M. Black assumed the position as superintending engineer at Castillo de San Marcos (Fort Marion). In 1886, Black began efforts to improve the condition of the earthwork structures around the fort. He had workers repair ruts cut through the west and south sides of the glacis. He also flattened the glacis on the north side, upon which the army had constructed an earthen parapet during the Civil War.[408] By 1886, under Black's supervision, workers repaired the fort's terreplein; they replaced the stone arch and the ramp to the terreplein with poured concrete in a similar design. Also, workers repaired the sentry boxes and repaired cracks in the west curtain wall. Workers also repaired the coquina walls in the covered way, replaced missing material in the counterscarp, and added new sod onto the glacis.[409]

It appears likely that the army also repaired or replaced the bridges providing access to the fort. The decking of the bridges appears relatively new in a photograph from this period showing the ravelin. Repairs to the bridge also appear on Captain Black's program of work for Fiscal Year 1890.[410] In 1891, workers constructed a 292.5-foot-long concrete seawall extending north from the 1850 seawall to the northern boundary of the military reservation.[411] That year, workers also constructed three concrete retaining walls "near the entrance to the fort."[412]

In 1928, the army also constructed a tool shed attached to the north covered way wall. The NPS removed the building in 1940. In the early 1900s, the War Department installed a transmission or weather tower in the covered way east of the fort (Figure 250).

Post-Historic and Existing Condition: Castillo de San Marcos

In 1934, Superintendent Kahler had a small white storage building removed from the south salient of the water battery. This was a storage building for oil used to light the beacons in St. Augustine Harbor.[413] In 1938, the NPS removed the storm-warning radio tower from the water battery that the United States Weather Bureau installed decades previously. Sometime in the 1930s, the NPS

405. Bearss, *Historic Structure Report*, 271.
406. Bearss, *Historic Structure Report*, 322, 337. Bearss dates a photograph showing the cottage as taken in 1895, so the actual date of its removal is unclear.
407. Bearss, *Historic Structure Report*, 323.
408. Bearss, *Historic Structure Report*, 304.
409. Sastre, *Cultural Landscape Report*, 144.
410. Bearss, *Historic Structure Report*, 328.
411. Bearss, *Historic Structure Report*, 339.
412. Ibid.
413. Bearss, *Historic Structure Report*, 422-423.



Figure 250: Circa 1938 photograph of entrance to Castillo de San Marcos (CASA no. A3472)



Figure 251: Circa 1935 photograph of early ticket booth (CASA no. A3377)



Figure 252: Circa 1965 photograph of Reconstructed Cubo Line (CASA no. CG462)

constructed a "ticket stand" near the parking lot constructed south of the fort in the 1920s (Figure 251). By the 1930s, the NPS also had a dock, extending into the bay, near this building.

In 1948, the NPS began repairing the foundation walls of Castillo de San Marcos. In 1952, the NPS repointed the masonry walls of the covered way. In 1964, the NPS reconstructed a section of the Cubo Line inside of the national monument's boundary, between the covered way and South Castillo Drive. This full-scale reconstruction of the log wall of the Cubo Line included the creation of molds to cast concrete logs to recreate the appearance of a palm



Figure 253: Circa 1976 photograph of entrance area (CASA no. A4093)



Figure 254: Circa 1977 photograph of NPS staff building new ticket booth (CASA no. A4828)

log revetment. The NPS also excavated the Cubo Line moat and recreated the counterscarp in front of the moat (Figure 252). The NPS constructed a temporary building during this project, where workers fabricated the concrete palm logs.

The NPS reconstructed the bridges over the ravelin in 1959. In 1974, the NPS repaired the drawbridge and moat drains. It also repaired and repointed several of the walls in the fort and along the seawall.[414] In 1977, the NPS constructed a new ticket booth. The NPS constructed it off site and moved it into location near the entrance to the bridge to the ravelin (Figure 253). It remained on site until the late 1980s, when the NPS replaced it with a larger structure (Figure 254). NPS constructed the existing ticket booth in 2010 and enlarged it in 2014. In 1978, the NPS brought in an architectural firm to prepare recommendations for the ravelin, which was filling with water after rain events. The NPS decided to construct a wooden deck over a section of the ravelin and covered the rest of the structure with soil and sod.[415]

414. Bearss, *Historic Structure Report*, 464.
415. Bearss, *Historic Structure Report,* 468.



Figure 255: Circa 1965 photograph of Park Headquarters Building (CASA no. A4332bk)

Post-Historic and Existing Condition: Park Headquarters Building and Maintenance Facility

The NPS constructed an administration and utility building (called the Park Headquarters Building and Maintenance Facility as of 2018) on the northwestern edge of the national monument site in 1964 and 1965 (Figure 255). Staff occupied the building in January 1965. The administrative building was named for Albert Manucy, NPS staff member, historian, and native of St. Augustine.[416]

In 1991, the NPS added a maintenance shop to the Park Headquarters Building and Maintenance Facility complex. The NPS added a library and archives wing onto the building in 1994. This wing extended north from the existing building to create an interior courtyard. According to the 2000 Superintendent Annual Narrative Report, the NPS added again onto the Park Headquarters Building and Maintenance Facility complex by enlarging the maintenance building and adding accessible parking spaces.[417]

Summary

Most of the buildings and structures in the national monument date from the Colonial period of significance. These features include the fort, ravelin, moat wall, and covered way wall. The bridges and Cubo Line are modern reconstructions. The water battery, seawall, and hot shot furnace date from the War Department period of significance. The War Department repaired many of the historic features from the Colonial period of significance. For example, the War Department rebuilt segments of historic walls that had fallen into poor condition. The repairs, while not meeting current preservation standards, used similar material, design, and workmanship of the originals; the exception being the use of Portland-based cement, which is an incompatible material.

The buildings and structures from the Colonial period of significance are listed on the National Register of Historic Places. They retain integrity of location, setting, design, material, workmanship, association, and feeling. They are all historically significant and character-defining features. They all contribute to the significance of the landscape. Similarly, the features the War Department added to the site, mostly in the 1840s, are historically significant. They retain integrity of location, setting, design, material, workmanship, association, and feeling.

Modern contemporary buildings that the NPS has added to the site, including the ticket booth and Park Headquarters Building and Maintenance Facility, do not date from the period of significance. The NPS added onto the building in the 1990s and early 2000s. The addition of a library/archives wing significantly changed the original configuration of the building. This building deserves consideration as Mission 66 visitor centers and other NPS buildings are evaluated for inclusion on the National Register of Historic Places. The changes to the building are extensive enough to potentially make it ineligible.

The Cubo Line, however, is listed in the National Register of Historic Places as a contributing feature. As an accurate reconstruction, it retains integrity of location, design, setting, feeling, and association.

Landscape Features

- Castillo de San Marcos
    - Contribution Status: Contributing
    - Condition: Fair (structural cracks, vegetation growth)
- Moat
    - Contribution Status: Contributing
    - Condition: Good
- Covered Way
    - Contribution Status: Contributing
    - Condition: Good

416. Keys, "Preserving the Legacy,"104.
417. National Park Service, *Superintendent's Annual Narrative Report, Calendar Year 2000*, Castillo de San Marcos and Fort Matanzas National Monuments Archives, A2621, Park Annual Narrative Reports

- Glacis
    - Contribution Status: Contributing
    - Condition: Good
- Ravelin
    - Contribution Status: Contributing
    - Condition: Good
- City Gate
    - Contribution Status: Contributing
    - Condition: Good
- Cubo Line
    - Contribution Status: Contributing
    - Condition: Good
- Water Battery
    - Contribution Status: Contributing
    - Condition: Good
- Seawall
    - Contribution Status: Contributing
    - Condition: Fair (structural deterioration and erosion)
- Hot Shot Furnace
    - Contribution Status: Contributing
    - Condition: Good
- Various buildings constructed during War Department period but now missing
    - Contribution Status: Missing
- Park Headquarters Building and Maintenance Facility
    - Contribution Status: Noncontributing
    - Condition: Good
- Ticket Booth
    - Contribution Status: Noncontributing
    - Condition: Good

Views and Vistas

Historic Condition

Among the reasons for the location chosen for Castillo de San Marcos was its view of Matanzas Bay and the approach to the harbor. This position allowed military personnel to see potential adversaries sailing into the bay to attack St. Augustine. During General Oglethorpe's invasion of Florida and siege of St. Augustine, the view across Matanzas Bay, where Oglethorpe positioned his artillery, featured prominently in the course of the action. The Spanish were able to hold the enemy away from a direct assault on the fort and town.[418] The view across Matanzas Bay was to undeveloped Anastasia Island. A photograph from the 1890s shows the view towards Anastasia Island



Figure 256: William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 (Library of Congress, https://www.loc.gov/item/det1994005120/PP/)



Figure 257: Circa 1884-1891 photograph of San Marco Hotel (CASA no. CG2)

not long after the addition of the lighthouse (Figure 256).

Other important views were those from Castillo de San Marcos across the glacis and esplanade. In 1693, the Spanish "resolved to plant great crops of maize nearby [St. Augustine]. They found men to plow up the broad, field-like clearings around the fort, and acres of waving corn soon extended almost up to the moat." In December, a royal order prohibited the growing of crops within "a musket shot of the Castillo."[419] The view was kept open so invading forces could not hide and avoid detection.

During the War Department period, residential development filled in the area north of the military reservation. In the late 1800s, commercial development of St. Augustine included the construction of large hotels within the fort's viewshed (Figure 257). Similarly, the views toward the water changed during the War Department period of significance. In 1871, a lighthouse was

418. Manucy, *The Building of Castillo de San Marcos*, 30.

419. Manucy, *The Building of Castello de San Marcos*, 25-26.



Figure 258: 1939 Aerial of Castillo de San Marcos and Anastasia Island (CASA A3506)

constructed on Anastasia Island that is visible from Castillo de San Marcos. In 1895, a bridge was constructed across Matanzas River connecting to Anastasia Island.

Post-Historic and Existing Condition

Between 1925 and 1927, the Bridge of Lions was constructed to replace the original bridge to Anastasia Island. This bridge was replaced in 2010. Residential development of Anastasia Island began affecting the view from Castillo de San Marcos by the 1930s (Figure 258). Today, the view of Anastasia Island is full of residential buildings and docks. The NPS constructed the administration and utility building (called the Park Headquarters Building and Maintenance Facility as of 2018) on the north edge of the national monument property. The NPS planted live oaks and sabal palms as a buffer between this building and the fort. There are also important views towards the fort from various entry points into the national monument. The view of the fort from the City Gate is important because it helps connect the history of the two sites now separated by South Castillo Drive. The view of the fort from the entrance into the site at the west end of the Cubo Line is partially obscured by cedar trees. The view includes the Cubo Line in the foreground, the glacis rising in the mid-ground, and the fort itself. A similar view is available at the cross walk to Fort Alley. Here the view includes the glacis rising to the fort. It also includes a glimpse of Matanzas Bay beyond the parking lot. The view from the main entrance walkway at the parking lot includes the glacis, the fort, the water battery seawall, and Matanzas Bay. The ticket booth is highly visible in the entrance plaza. Generally, the area around Castillo de San Marcos has become more urbanized, with wide roads and commercial buildings along the boundary of the national monument.

Summary

The most significant views at the site are those from the elevated areas of the fort. These views are intact, but have been negatively impacted by residential and commercial development. The introduction of modern intrusions along the edges of St. Augustine and across Matanzas Bay diminishes the aspect of setting from the period of significance. The introduction of modern intrusions, including the headquarters complex, modern roads, walkways, and parking areas, also negatively impacts the aspect of feeling and association from the period of significance.

Landscape Features

- View to Matanzas Bay
    - Contribution Status: Contributing
    - Condition: Fair
- Views from Castillo de San Marcos to north, west, and south
    - Contribution Status: Contributing
    - Condition: Fair
- View from City Gate and other entry points towards Castillo de San Marcos
    - Contribution Status: Contributing
    - Condition: Fair

Constructed Water Features

Historic Condition

According to Albert Manucy, the Spanish dug three wells in the courtyard.[420] Arredondo shows four wells on his 1737 map of the fort. Three wells are located inside the fort, in the northeast, northwest, and southwest corners of the courtyard. A fourth is located on the south side of the fort. Pablo Castello's map of St. Augustine in 1763 shows one well inside the fort, in the southwest corner, which is described as "Well of brackish water."[421] He also shows a second well outside the fort near the south salient of the covered way. By 1776, the British redug the well in the courtyard.[422] War Department records indicate that there were two wells in the courtyard in 1834. According to Bearss, "Dirt and rubbish had been removed from two parade wells, though one had since been filled in."[423] In 1881, during a War Department inspection, Chief

420. Manucy, *The Building of Castillo de San Marcos*, 27.
421. Bearss, *Historic Structure Report*, 472.
422. Manucy, *The Building of Castillo de San Marcos*, 27.
423. Bearss, *Historic Structure Report*, 65.

Engineer Horatio G. Wright reported, "the wells fallen in and the walls themselves cracked."[424] In 1882, War Department records include an estimate to construct a well platform.[425]

By 1886, the fort grounds had two wells, one in the southwest corner of the courtyard and one near the south salient of the covered way near the fort's entrance. In June 1886, the War Department drilled a new well in the southeast corner of the courtyard. According to Bearss, "Its depth was 202 feet, and it discharged with a force sufficient to raise the water to a height of 30 feet above the parade. It was cased to a depth of 132 feet."[426] By 1890, there was a well along the path leading south towards St. Augustine through the opening in the covered way wall near the entrance to the fort. It appears in a photograph taken after the reconstruction of the covered way wall around 1891 but prior to the installation of new walkways (Figure 259). In 1908, District Engineer George R. Spalding reported that among the urgent work needed at the fort was repair to the "the covers over two wells."[427]

The moat was an early feature of the site, included during the initial construction of Castillo de San Marcos. Following the general outline of the fort's scarp walls, the moat was modified over time, including when the Spanish raised the height of the moat's walls in the 1680s. The moat was typically a dry moat. The floor of the moat was sloped to the middle, where a slight ditch, called a cuvette, was dug to be at the water table at high tide. This ebb and flow of water helped drain the moat of unsanitary standing water. The moat could be flooded if it needed to be cleaned out by opening a sluice gate in the water battery's sea wall to allow water to flow in. The fort also had a drain line that carried privy waste through the water battery sea wall. It also used tidal action to carry out waste.

During the War Department's reconstruction of the water battery in the 1840s, the War Department made changes to the original drainage features. Dealing with stagnant water trapped behind the seawall was a consideration during the War Department's reconstruction of the water battery in the 1840s.They adjusted the grade of the water



Figure 259: Circa 1891 looking south (CASA A34a)

battery and added two-and-half-foot diameter culverts with floodgates in the seawall by which they could control the flow of water into and out of the water battery. In the 1890s the War Department installed drains to convey water from areas of the fort green. The water was directed to the ditch near the Cubo Line, where it drained towards the San Sebastian River.

The Spanish constructed the Cubo Line beginning in the early 1700s. The line had an approximately forty-foot wide moat paralleling the earthwork. It originally extended all the way from the fort to the San Sebastian River. The Spanish periodically repaired the moat and Cubo Line. In 1857, the War Department converted the old Cubo Line moat to a drainage ditch extending from the fort to the San Sebastian River. According to Bearss, Captain Black reported that the drainage ditch was "choked and in an unsanitary condition."[428] The War Department regraded the ditch in 1886.[429] It appears to have been covered sometime after 1891, because it is not visible in photographs after that date.

Post-Historic and Existing Condition

In 1926, the Quartermaster Department covered an abandoned well in reinforced concrete.[430] In 1927, during work on the courtyard, "the well was cleaned and covered with iron bars and a heavy screen."[431] Two years later, according to War Department records, the "old well had been rebuilt and protected."[432] During the installation of an irrigation system in 1964, the NPS dug a well and

424. Bearss, *Historic Structure Report*, 283.
425. Bearss, *Historic Structure Report*, 322.
426. Bearss, *Historic Structure Report*, 308.
427. Ibid.
428. Bearss, *Historic Structure Report*, 332.
429. Bearss, *Historic Structure Report,* 333.
430. Bearss, *Historic Structure Report*, 368.
431. Bearss, *Historic Structure Report*, 370.
432. Bearss, *Historic Structure Report,* 375.

added a pump to supply the irrigation lines. In 1933 and 1934, the NPS proposed removing 8,000 cubic feet of soil from the moat and filling it with water.[433] In 1936, F.F. Gillen, head of the NPS construction division, recommended installing tidal gates in the water battery to maintain four feet of water in the moat. This work was accomplished in 1937.[434] Water flowed into and out of the moat through the culverts in the water battery seawall. These sluice gate culverts were repaired in 1948 and replaced in 1951. At some point prior to 1935, a drain line was constructed in the north area of the fort green. By 1944, the NPS added drop inlet basins to this system that connected to pipes that carried water from the north fort green into the bay. In 1949, the NPS repaired this storm sewer system.[435] According to Bearss, the NPS again repaired the moat drains in 1974.[436] The 1986 Historic Structure Report recommended draining the moat because of the erosion of the scarp wall's coquina stone. This was accomplished in 1996, when the NPS closed the flood gates and installed a perforated drain pipe buried near the centerline of the moat.

In 1937, NPS archeologists began investigations to locate the moat associated with the Cubo Line. During the reconstruction of the Cubo Line in 1964, the NPS excavated the section of the line's moat between the fort and South Castillo Drive. The following year, they recreated a section of the line's moat flanking the City Gate.[437]

By the 1920s, the well outside the fort appears as a circle in aerial photographs. This is the condition today. Today there is a circle of concrete marking the location of the well. The top is covered with heavy bars and a screen. The well inside the fort is covered with a wooden top.

Summary

At least two existing wells were present during the period of significance. The well in the courtyard is in an original location. The well outside the fort is in a location that dates at least to the War Department period of significance. The well inside the fort retains integrity of location, design, setting, feeling, and association to the Colonial period. The well outside the fort retains integrity of location, design, setting, workmanship, materials, feeling, and association to the War Department period.

Landscape Features

- Castillo de San Marcos moat
  - Contribution Status: Contributing
  - Condition: Good
- Courtyard well from the Spanish Colonial Period
  - Contribution Status: Contributing
  - Condition: Good
- Well south of fort present in Spanish Colonial Period
  - Contribution Status: Contributing
  - Condition: Good
- War Department flood gates in water battery wall added in 1840s
  - Contribution Status: Undetermined
  - Condition: Undetermined
- NPS-installed north green drainage system prior to 1935
  - Contribution Status: Noncontributing
  - Condition: Undetermined
- NPS installed flood gates in water battery wall installed in 1937
  - Contribution Status: Noncontributing
  - Condition: Undetermined
- Reconstructed Cubo Line moat constructed by the NPS in 1964
  - Contribution Status: Contributing (association with NR-listed feature)
  - Condition: Good
- Reconstructed City Gate moat constructed by the NPS in 1965
  - Contribution Status: Contributing (association with NR-listed feature)
  - Condition: Good

Small-scale Features

Historic Condition: City Gate

During the period of significance, the City Gate featured a wooden gate until at least 1821. Engineer Ramón de la Cruz's 1821 inventory describes two doors mounted on iron hinges. The City Gate fell into poor condition, accelerated by the partial dismantling of the feature in 1826. The War Department allotted funds to repair the City Gate

433. Bearss, *Historic Structure Report*, 420-421.
434. Bearss, *Historic Structure Report*, 428-429.
435. Bearss, *Historic Structure Report*, 446-449.
436. Bearss, *Historic Structure Report*, 464.
437. Bearss, *Historic Structure Report*, 458.



Figure 260: City Gate 1951 (CASA no. A4988)

in 1898.[438] By 1910, either the War Department or the City of St. Augustine mounted two howitzers on the south side of City Gate.

Post-Historic and Existing Condition

The NPS restored many features at the City Gate, beginning in the 1930s and particularly during the Mission 66 period. The howitzers added by the War Department stayed in place into the 1950s (Figure 260). By 1951, the NPS also added a flagpole and light standards at the City Gate. In 1965, they constructed the concrete bench behind the palisade wall and installed a message repeater. Both remain at the site. Tricentennial marker was attached to one of the pillars in 1972.

Historic Condition: Castillo de San Marcos

Many of the small-scale features of the site dating to the Colonial period of significance are unknown. Historic documents mention artillery mounted at the fort during the Colonial period. Albert Manucy recounts a British description of the fort, "there are 22 pieces of Cannon well mounted on the Bastions from 6 pound'rs to 36."[439] According to Bearss, the British added new artillery to the fort, including "eleven 24-pounder cannon, three 12-pounder cannon, one 13-inch mortar and four 5 ½ inch mortars. This brought the total armaments of the garrison to thirteen 24-pounders, three 12-pounders, two 6-pounders, one 13-inch mortar, and four 5 ½-inch mortars."[440] By 1770, according to an inventory of artillery, the British had "thirty-two 24-pounder iron cannons, seven 12-pounder iron cannons, two 6-pounder

438. Bearss, *Historic Structure Report*, 353.
439. Manucy, *The Building of Castillo de San Marcos*, 32
440. Bearss, *Historic Structure Report*, 5.



Figure 261: Circa 1878-1880 photograph from Jacksonville Historical Society, "Arms, Crests, and Monograms" (CASA no. A3128b)

cannons of brass, one 13-inch mortar, and ten 5 ½-inch mortars."[441] When the Spanish vacated the fort in 1821, turning it over the United States, they left 25 cannons and mortars. These included ten 24-pounder iron cannons, eleven 16-pounder iron cannons, one 11-inch brass mortar, one 7-inch brass mortar, and two 7-inch brass howitzers.[442]

A list of armament in 1842 states that 21 guns had been dismantled previously and the tubes were stacked on the south terreplein.[443] The 1842-1844 project designed the water battery to hold twenty guns. According to records, in 1861 there were twenty guns in place at the water battery, including four 8-inch siege howitzers and sixteen 32-pounder smoothbores. These were mounted on pintle blocks and had metal traverses. In May 1862, Confederate troops transferred twelve 32-pounder smoothbores mounted at the water battery to other battlefronts.[444] When the Confederate garrison abandoned the fort in 1862, they left behind five guns, including three 32-pounders, two 8-inch seacoast howitzers, and "a number of worthless dismounted cannon."[445] By 1873, the War Department had only five guns mounted in the water battery and another thirteen guns mounted elsewhere at the fort.[446] In the 1870s, stacks of cannon tubes appear in historic photographs, but by 1892, no guns are listed as in place according to the fort's armament report (Figure 261).[447]

441. Bearss, *Historic Structure Report*, 10.
442. Bearss, *Historic Structure Report*, 45.
443. Bearss, *Historic Structure Report*, 193.
444. Bearss, *Historic Structure Report*, 255.
445. Bearss, *Historic Structure Report*, 257.
446. Bearss, *Historic Structure Report*, 315-316.
447. Bearss, *Historic Structure Report,* 348.



Figure 262: Detail from William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 (Library of Congress, https://www.loc.gov/item/det1994005120/PP/)



Figure 263: Detail from William Henry Jackson, "Fort Marion from the Warden residence," circa 1894 (Library of Congress, https://www.loc.gov/item/det1994005120/PP/)

An 1877 survey of the military reservation by Captain J. C. Post recorded the condition of earthworks associated with Cubo Line. He marked the east end of the visible ruins of the line with a marble monument that is present today.

In 1884, the army installed a fence "enclosing the reservation at Marine, Charlotte, and St. George Streets."[448] In 1886, the fence was in good condition except for sections broken by high water. According the Bearss, "the fence was of little value" because "domestic livestock were allowed to stray through the streets of St. Augustine and the gates at the crossing streets were kept open."[449] Superintending engineer Black recommended removal of residential fences encroaching on the military reservation and the installation of small pedestrian gates to restrict access. In 1889, the War Department added a barbed wire fence along the water front north of the fort.[450]

In 1890, Captain Black made plans to extend the paling fence around the entire perimeter of the military reservation. According to Bearss, "A continuous fence enclosing the reservation was mandatory before any improvements to the grounds was undertaken. Pedestrian gates were to be positioned at frequent intervals, but no roads were to cross the reservation...."[451] In 1891, workers constructed 1,147 linear feet "of picket fence… along the south and west reservation boundary." This was in addition to the existing fence. That year they painted 1,930 feet of fence.[452] A historic photograph shows the picket fence enclosing the entire fort green. There is an additional wooden fence in the area near where the walkways converge near the City Gate. This fence features three horizontal boards and creates an area planted in palm trees along the edge of Fort Marion Circle (Figure 262). The same photograph shows that during the War Department period of significance, two cannon tubes were displayed on the north glacis, near the salients of the covered way (Figure 263).[453]

As part of the landscape projects in 1891, workers also installed ten wooden benches for visitors. During this period, a picket fence enclosed the yard around the ordnance-sergeant cottage. The fence likely was removed with the cottage in 1890. Also in 1891, the War Department constructed five flights of concrete steps. Bearss does not specify where these were located, but they appear in the description of work on the glacis, suggesting they may be located at the covered way wall, where one exists today on the west side of the fort.

Captain Black reported to the War Department about various encroachments onto the military reservation as of 1886. Among the encroachments was a "large advertising sign board" that appears in historic photographs in the area west of the fort.[454] In 1901, the army loaned the City of St. Augustine several pieces of obsolete artillery, including four 32 pounders, one rifled gun, two 8-inch Columbiads, one 10 inch seacoast mortar, and 1840 cannonballs.

448. Bearss, *Historic Structure Report*, 295.
449. Bearss, *Historic Structure Report*, 331.
450. Bearss, *Historic Structure Report*, 332.
451. Bearss, *Historic Structure Report*, 336.
452. Bearss, *Historic Structure Report*, 339.
453. According to Charles Tingley, the U.S. Army mounted a gun in the NW Bastion to cover the road into St. Augustine in 1862.
454. Bearss, *Historic Structure Report*, 332.



Figure 264: 1938 Entrance Walkway (CASA A3472)



Figure 265: Circa 1938 Entrance Walkway (CASA no. A3335D)

Post-Historic and Existing Condition

The War Department erected a 2-inch-diameter flagstaff, 40 feet tall, in the San Carlos bastion in 1926. It was moved to the south curtain wall in 1938. Also in 1926, the St. Augustine Historical Society mounted eight cannons along the south side of the fort's terreplein.[455] In 1927, the army completed numerous projects to repair Castillo de San Marcos (Fort Marion) and added additional benches to the fort grounds. Bollards and benches are other features that appear in different locations during the NPS management. In 1930, the Quartermaster Department constructed several cement benches near the entrance to the fort (Figure 264). [456] The benches had slotted concrete ends with wooden slats. Prior to 1938, the NPS added different bollards to the site probably to prevent vehicles from driving onto the main entrance walkway. A metal bollard appears in the middle of the walkway towards the fort's entrance. A concrete bench is also visible along the side of the walkway (Figure 265). In 1938, the NPS moved a flagpole mounted by the War Department in 1926 to the south curtain (Figure 266).

455. Bearss, *Historic Structure Report*, 369.
456. Bearss, *Historic Structure Report*, 377.



Figure 266: Circa 1938 Entrance and Flagpole (CASA no. A3559)

The 1936 NPS map showing the boundaries of the national monument shows a fence along the west and south of edge of the open space along the side of San Marco Avenue and Fort Marion Circle. This fence is in the approximate location of the one constructed in the 1890s (Figure 267).

Also, in the 1930s, according to Bearss, Superintendent Kahler wanted to replace nine informational signs at the fort, all "put up by local groups," with NPS signs.[457] The NPS erected several signs over subsequent decades. A small wooden sign appears along the edge of the main walkway as early as the 1930-1940s.

Today, small-scale features include benches for visitors located at the fort and in the landscape. Benches include several recycled plastic benches located at the entrance plaza, along the walkway to Water Street, and along the walkway near the south covered way wall. There is also a wooden bench mounted on metal posts near the sidewalk along South Castillo Drive near the Cubo Line. There is combination of regulatory and informational signage at the national monument, including a new entrance sign installed in 2009 and new waysides installed in 2018. A fence was erected around the parking lot sometime after 2009, which replaced a wooden picket fence installed in 2003 in the same location. It is a simple metal fence, with panels

457. Bearss, *Historic Structure Report*, 422.

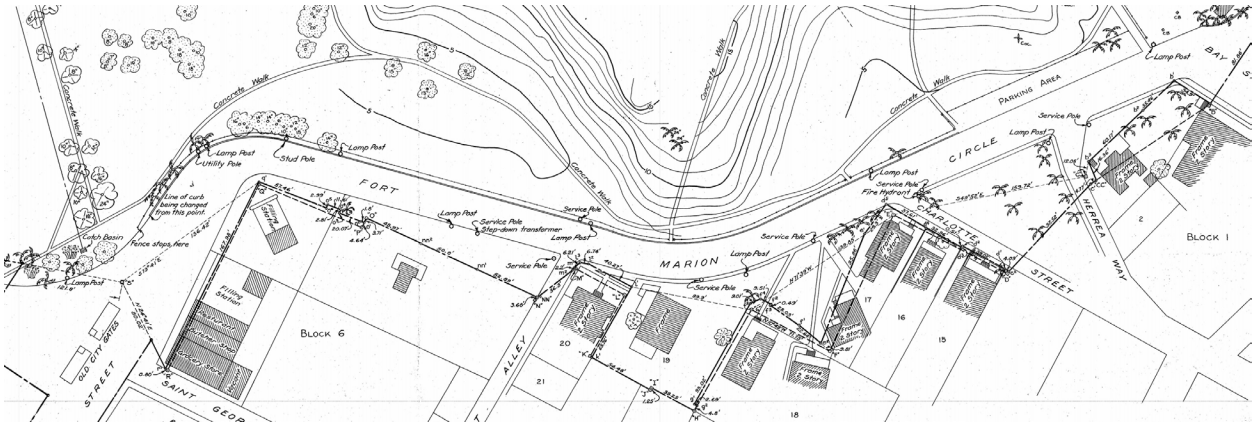


Figure 267: Detail 1936 Boundary Map (CASA_maps839¬1-5-3_003)

of pointed pickets mounted on square posts. Site features also include modern electric light standards along the sidewalks and parking lot. The lights in the parking lot and along the sidewalks are consistent with those found throughout the St. Augustine historic district. They have glass luminaires mounted on fluted metal poles. The lights in the parking lot have double luminaires. There are also waste receptacles located near the parking lot and at the entrance plaza.

As of 2018, a total of thirty-six cannon of various types are on display at Castillo de San Marcos. A complete list is provided in the existing conditions section of the small-scale features at Castillo de San Marcos. All are historic, several dating from the Spanish Colonial period, including a fragment of one that was found buried at the fort. Many are from the War Department period, which they transferred to the NPS in 1935. Nine are in the water battery. Twenty-five cannon of various types are on display on the terreplein of the fort. There are also two cannons located in the courtyard and in the fort's rooms, including a 1764 18-pounder loaned to the NPS in 1971 and a fragment of a circa 1690 16-pounder which exploded in 1702 and was found buried in the fort's moat.

Post-Historic and Existing Condition: Park Headquarters Building and Maintenance Facility

Park Headquarters Building and Maintenance Facility has a few small-scale features, including an aluminum fence, benches, and picnic tables. The fence was installed circa 2012 along the north property line behind the building; it is a simple metal fence with panels of pointed pickets mounted on square metal posts. It is painted black. These features are modern and noncontributing.

Summary

The landscape at Castillo de San Marcos evolved from a military site during the Colonial period of significance to a tourist attraction towards the end of the War Department period of significance. The displayed guns at the fort contribute to the significance of the site, because they relate to the military use of the fort. Most of small-scale features present at the site during the period of significance are now missing. The marble marker placed at the end of the Cubo Line is a contributing feature. Collectively, the loss of most small-scale features from the period of significance prevents this landscape characteristic from having integrity to the historic period of significance.

Landscape Features

- Historic artillery currently on display at the fort
    - Contribution Status: Contributing
    - Condition: Good
- British Colonial era artillery
    - Contribution Status: Missing
- Confederate era artillery
    - Contribution Status: Missing
- War Department pintles, pintle blocks, and traverses in water battery
    - Contribution Status: Contribution
    - Condition: fair
- Marble Cubo Line marker installed in 1877
    - Contribution Status: Contributing
    - Condition: Good
- Civil Engineering Landmark marker installed in 1976
    - Contribution Status: Noncontributing
    - Condition: Good
- War Department fences installed in the

1880s and 1890s
    - Contribution Status: Missing
    - Condition: NA
- War Department wooden benches installed in the 1890s
    - Contribution Status: Missing
    - Condition: NA
- War Department concrete and wooden benches installed circa 1927
    - Contribution Status: Missing
    - Condition: NA
- NPS benches (recycled plastic benches at entrance plaza and near south covered way wall)
    - Contribution Status: Noncontributing
    - Condition: Good
- NPS benches (metal and wood bench at Cubo Line and South Castillo Drive)
    - Contribution Status: Noncontributing
    - Condition: Good
- NPS metal fence installed at parking lot circa 2009
    - Contribution Status: Noncontributing
    - Condition: Good
- NPS metal fence installed at property line at the Park Headquarters Building and Maintenance Facility
    - Contribution Status: Noncontributing
    - Condition: Good
- NPS recorded information box at City Gate in 1965
    - Contribution Status: Noncontributing
    - Condition: Fair (Inoperable)
- NPS installed floodlights at City Gate
    - Contribution Status: Noncontributing
    - Condition: fair
- NPS installed floodlights at Castillo de San Marcos
    - Contribution Status: Noncontributing
    - Condition: Good
- NPS installed site furnishings (flag pole, picnic tables, benches, gates) at Park Headquarters Building and Maintenance Facility
    - Contribution Status: Noncontributing
    - Condition: Good
- NPS installed site furnishings (waste receptacles, bike racks, and payment kiosks) at visitor parking lot
    - Contribution Status: Noncontributing
    - Condition: Good
- Missing NPS installed signs from the 1930s-1990s (interpretive waysides, entrance sign, regulatory, and road signs)
    - Contribution Status: Missing
    - Condition: NA
- Existing NPS installed signs (interpretive waysides, entrance sign, regulatory, and road signs) around national monument and Park Headquarters Building and Maintenance Facility
    - Contribution Status: Noncontributing
    - Condition: Good
- Tricentennial marker installed at City Gate in 1972
    - Contribution Status: Noncontributing
    - Condition: Good
- NPS light standards at parking lot
    - Contribution Status: Noncontributing
    - Condition: Good

Evaluation of Landscape Integrity

Landscape integrity refers to a cultural landscape's ability to convey its historic significance. *National Register of Historic Places Bulletin 16A* defines historic integrity as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's prehistoric or historic period." The National Register of Historic Places identifies seven aspects that define the integrity of a historic property. These include: location, design, setting, materials, workmanship, feeling, and association. The National Register of Historic Places defines these aspects as follows:

> **Location** is the place where the historic property was constructed or the place where the historic event occurred;
>
> **Setting** is the physical environment within and surrounding a property;

Design is the combination of elements that create the form, plan, space, structure, and style of a property;

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;

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

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time; and

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

The analysis of landscape integrity in this CLR compares the historic character of landscape features with the present ability of these features to convey historic significance. In order to retain historic integrity, a property must possess at least several of these seven aspects of integrity. Evaluating historic integrity involves first determining the historic significance of a property and then identifying the existing features that contribute to our ability to recognize and understand this significance. Character-defining features are the physical qualities that make a property unique. They are the individual parts that make the whole place worthy of recognition as a historic site.

Cultural landscapes reflect the continuum of history. As such, the accumulation of historic features includes those that date to the period of significance as well as those features added subsequently but that have retained historic significance in their own right.

Location

Location is the place where the historic property was constructed or the place where the historic event occurred. The historic resources that exist at the site are in their original location. Most notable are the fort and the defensive outworks. Overall, the Castillo de San Marcos cultural landscape retains integrity of location to the period of significance.

Design

Design is the combination of elements that create the form, plan, space, structure, and style of a property. The design of the fort and landscape reflect military engineering principles of the time and include the fort and a series of earthworks extending out into the surrounding landscape. Despite the loss of features from the later period of significance, the overall design related to the Colonial period of significance retains integrity.

Setting

Setting is the physical environment of a historic property. Throughout the period of significance, the fort fronted Matanzas Bay and was surrounded by open ground. Development has occurred in the areas around the national monument, including both residential and commercial development along its boundaries. The NPS has installed a parking lot south of the fort and a major roadway encircles half the site. Despite the modern impacts to the setting, the Castillo de San Marcos cultural landscape retains integrity of setting for the historic period of significance.

Materials

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The use of coquina stone for building construction is one of the character-defining landscape features of the site. Many of the materials of the contributing resources at the national monument date from the period of significance. These features have been repaired, but repairs used existing materials or compatible materials. As such, the Castillo de San Marcos cultural landscape retains integrity of materials.

Workmanship

Workmanship is the physical evidence of the crafts of a particular culture of people during any given period of history or prehistory. The integrity of workmanship in the Castillo de San Marcos cultural landscape is visible in the planning and construction of the fort and earthworks around the fort. While individual landscape features may be missing today, those that remain support the Castillo de San Marcos cultural landscape in retaining integrity of workmanship to the period of significance.

Feeling

Feeling evaluates a cultural landscape's ability to express the aesthetic or historic character of a particular time. The site is very similar to how it was during the period of significance. The military use of the site is visible in the fort and the surrounding earthworks. The surviving landscape features express enough of the military history of the site that the Castillo de San Marcos landscape retains integrity to the period of significance.

Association

Association refers to the link between historic events or persons and the cultural landscape. The landscape features at Castillo de San Marcos are directly related to the period of significance and the Spanish construction of the fort to defend St. Augustine. The Castillo de San Marcos cultural landscape retains integrity of association to the period of significance.

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
Castillo de San Marcos National Monument					
Natural Systems and Features					
	Matanzas River and Matanzas Bay		Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	St. Augustine Landmass		Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
Spatial Organization					
	Orientation of Castillo de San Marcos	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Defensive Earth-works	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Spatial Relationship between Castillo de San Marcos and St. Augustine	c. 1672	Contributing	Fair	Colonial Period (1672-1821) War Department Period (1821-1933)
Land Use					
	Military Land Use	c. 1672	Contributing		Colonial Period (1672-1821) War Department Period (1821-1933)
	Recreation	c. 1880s	Contributing		War Department Period (1821-1933)
	Preservation	c. 1840s	Contributing		War Department Period (1821-1933)
	Interpretation	c. 1910	Contributing		War Department Period (1821-1933)
Cultural Traditions					
	Fortification Design and Construction	c. 1672	Contributing		Colonial Period (1672-1821) War Department Period (1821-1933)
	Recreation	c. 1880s	Contributing		War Department Period (1821-1933)
	Interpretation	c. 1910	Contributing		War Department Period (1821-1933)

Table 4.1: Cultural Resources Table

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
	Preservation	c. 1840s	Contributing		War Department Period (1821-1933)
Cluster Arrangement					
	NA	NA	NA	NA	
Circulation- Vehicular and Pedestrian					
	Roadway between City Gate	c. 1738	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	South Castillo Drive	1960s	Noncontributing	Good	NPS Period (1933- Present)
	Paths through openings in Covered Way	c.1695	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Concrete Walkways	c. 1890s	Noncontributing	Missing	War Department Period (1821-1933)
	Concrete Walkways	1960s-2000s, replaced 2012	Noncontributing	Good	NPS Period (1933-Present)
	Parking Lot	c.1960s	Noncontributing	Good	NPS Period (1933- Present)
Topography					
	Moat	1696	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Covered way	1687-1762	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Glacis	1762	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Esplanade/ fort green	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Reconstructed Cubo Line	1964	Contributing	Good	Colonial Period (1672-1821)
Vegetation					
	Spanish Vegetation		Missing	NA	Colonial Period (1672-1821)
	War Department Plantings	c.1880-1890s	Missing	Removed or Died	War Department Period (1821-1933)
	Trees		Noncontributing	Good	NPS Period (1933- Present))
	Open Lawn	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Yucca Plantings	c. 1960s	Contributing	Good	Colonial Period (1672-1821)
Buildings and Structures					
	Castillo de San Marcos	1672	Contributing	Good	Colonial Period (1672-1821)
	Ravelin	1760s	Contributing	Good	Colonial Period (1672-1821)
	Moat	1696	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933
	Water Battery	1842	Contributing	Good	War Department Period (1821-1933)

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
	Hot Shot Furnace	1844	Contributing	Good	War Department Period (1821-1933)
	Utility Shed	2001	Noncontributing	Good	NPS Period (1933- Present)
	Seawall	c. 1600s	N/A	Removed	Colonial Period (1672-1821)
	Seawall	1842	Contributing	Good	War Department Period (1821-1933)
	Covered way	1687-1762	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Glacis	1762	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Esplanade/ fort green	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Cubo Line (Reconstruction)	1964	Contributing	Good	NPS Period (1933- Present)
	Park Headquarters and Maintenance Facility	1964	Noncontributing	Good	NPS Period (1933- Present)
	Ticket Booth	1987	Noncontributing	Good	NPS Period (1933- Present)
Views and Vistas					
	View to Matanzas Bay	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	View north from Castillo de San Marcos	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	View to St. Augustine	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
Constructed Water Features					
	Courtyard Well	c. 1672	Contributing	Good	Colonial Period (1672-1821) War Department Period (1821-1933)
	Well south of Castillo de San Marcos	By 1886	Contributing	Good	War Department Period (1821-1933)
Small-Scale Features					
	Original Artillery		Missing		
	Original Gates		Missiing		
	Displayed Cannon		Noncontributing	Good	NPS Period (1933- Present)
	Cubo Line Marker	1877	Contributing	Good	War Department Period (1821-1933)
	NPS Signs	c. 2000s	Noncontributing	Good	NPS Period (1933- Present)
	NPS Benches and Site Furnishings	c.2000s	Noncontributing	Good	NPS Period (1933- Present)
	NPS Fences	c. 2000s	Noncontributing	Good	NPS Period (1933- Present)
	NPS Lights	c. 2000s	Noncontributing	Good	NPS Period (1933- Present)

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
	War Department Benches	c. 1891	Missing		War Department Period (1821-1933)
	War Department Fences	c. 1884	Missing		War Department Period (1821-1933)

Fort Matanzas National Monument

Fort Matanzas National Monument spans roughly 300 acres across Rattlesnake Island and the southern portion of Anastasia Island. The Spanish completed construction of Fort Matanzas in 1742, which secured the southern entrance into the Matanzas River. The fort includes an observation deck, a terreplein, officer and soldiers' quarters, and a powder magazine. After falling into poor condition repairs were made to the fort between 1916 and 1917 and again between 1924 and 1926. Administrative control of Fort Matanzas National Monument was assumed by the NPS in 1933. At this time, the property managed by the NPS consisted only of the 1-acre site surrounding Fort Matanzas on Rattlesnake Island. The 1934 donation of 17.34 acres along the western edge of Anastasia Island by Ada D. Corbett allowed the NPS to begin planning a visitor center across the Matanzas River from Fort Matanzas. The headquarters and visitor center (HQ/VC) complex, designed by the NPS Eastern Division, Branch of Plans and Design, was opened to the public in 1937. This section of the national monument site is divided by State Road A1A (SR A1A). The primary visitor services area, including the visitor center and ferry access to Fort Matanzas, is located west of SR A1A. A beach ramp and parking area are located east of SR A1A.

National Register Status

Presidential Proclamation 1713, signed on October 15, 1924, designated Fort Matanzas as a National Monument. The Fort Matanzas National Monument was placed on the National Register of Historic Places on October 15, 1966. A National Register of Historic Places Inventory Form for Fort Matanzas was submitted to the National Register of Historic Places on September 29, 1976 and accepted on March 4, 1977. In 2008, the Fort Matanzas National Monument Headquarters and Visitor Center was also placed on the National Register of Historic Places.

Contributing Resources

The 1976 NRHP nomination form for Fort Matanzas and the 2008 NRHP registration form for the headquarters and visitor center identify the following contributing resources at Fort Matanzas National Monument:

- Fort Matanzas
- Main building (visitor center)
- Historic utility building (now park offices)
- Designed landscape around the HQ/VC

Period of Significance

The 1976 nomination form for Fort Matanzas establishes a period of significance extending from 1500 to 1899. This timeframe includes the events surrounding the Ribault Massacre of 1565 in the national monument area and the subsequent construction of Spanish outposts built to defend the southern flank of St. Augustine at Matanzas Inlet. Fort Matanzas was the last of these outposts. Construction of the fort was completed in 1742. The fort was abandoned by the Spanish in 1805. Soon after, in 1821, Florida was ceded to the United States, which explains the period of significance extending into the 1800s, beyond the time of the fort's construction.

The 2008 Nomination Form for Fort Matanzas National Monument Headquarters and Visitor Center establishes a period of significance extending from 1936 to 1937. This time frame relates to the construction of the facility. The visitor center, utility building, and dock were constructed first and followed by the installation of circulation and landscape features. Circulation features that connected the site with Ocean Shore Boulevard (now SR A1A), a beach ramp, a pump and well system, stormwater infrastructure, plant materials, and other site elements were installed during construction and were in place by 1937.

The "*NPS Director's Order 28: Cultural Resource Management Guideline, Appendix Q: Preparing National Register Forms* states that "a park's historic properties should be documented in a single National Register form (as opposed to preparing separate forms for properties representing different aspects of the park's history)" and that this method "will promote an integrated approach to evaluating the park's cultural resources."[458] As previously stated, two separate National Register forms exist for the park unit. However, this CLR recognizes the preferred methodology of the NPS, which considers all historic features in a single park unit

458. "NPS-28: Cultural Resource Management Guideline, Appendix Q: Preparing National Register Forms," *National Park Service*, August 2002, https://www.nps.gov/parkhistory/online_books/nps28/28appenq.htm

when establishing a park's period of significance. Therefore, this document suggests a unified period of significance for Fort Matanzas National Monument as 1565 to 1937. This date range replaces the beginning date of 1500, included in the 1976 Fort Matanzas Nomination Form, with 1565 to align the period of significance more closely with the Ribault Massacre. This range then extends through the construction of the headquarters and visitor center, completed in 1937.

Statement of Significance

The areas of significance included in the 1976 Nomination Form for Fort Matanzas include engineering and military. The statement of significance reads that "two historical associations comprise the basic significance of Fort Matanzas National Monument. First, the 1565 Ribault Massacre occurred somewhere in the area of what is now the park, and comprises part of the sequence of events whereby Spain eliminated France from its competition for dominance in northern Florida. Second, the series of Spanish outpost structures in the vicinity—the last and most impressive of which is Fort Matanzas—served as important defense elements for the Spanish at Castillo de San Marcos and thereby represent important defensive elements in Spain's protection of its interests in the New World."

Fort Matanzas National Monument Headquarters and Visitor Center (HQ/VC) qualified under National Register Criteria A and C. The areas of significance are social history and architecture. The period of significance corresponds to the construction of the HQ/VC complex: 1936-1937. The statement of significance explains that the buildings are significant at the local level under Criteria A and C. They are eligible under Florida's New Deal Multiple Property Submission under the historic context "The New Deal in Florida, 1933-1943." They are also considered significant as an "exceptional example of NPS Rustic Architecture."

This CLR does not evaluate the integrity of archeological resources at Fort Matanzas National Monument. Upon review of some of the available archeological reports prepared for the national monuments, it seems likely that the national monument site would meet National Register Criteria D for the potential to yield important information about early inhabitants of the area. It would also meet Criteria D for the potential to yield information about the Colonial period.

Criterion A: Military History

After Ponce de León's 1513 expedition from Puerto Rico to Florida, the Spanish learned that the Gulf Stream provided the most efficient return route to Spain from their holdings in the Americas. The control of shipping channels along this route, including those on the eastern coast of Florida, was critical to the expansion of Spanish influence. In 1564, the French Huguenots established Fort Caroline in present-day Jacksonville, 60 miles north of what is now Fort Matanzas National Monument. Pedro Menéndez de Avilés was sent to defend Spanish interests in Florida and to remove this French threat. Jean Ribault arrived to resupply the French at Fort Caroline the same day Menéndez arrived in Florida. Jean Ribault and French forces sailed south to face the Spanish at their newly established base—St. Augustine. After being shipwrecked by heavy storms, the French began marching back north to Fort Caroline.

During the storm that shipwrecked Ribault and his men, Menéndez and the Spanish surprised and overtook Fort Caroline. Menéndez then traveled south with about 70 men to meet the returning French troops. The Spanish arrived at the southern end of Anastasia Island to find a group of 127 French soldiers south of Matanzas Inlet, unable to cross north to continue their march. The French surrendered but were massacred by the Spanish on land that is now part of Fort Matanzas National Monument. Jean Ribault was not with this group of Frenchmen but was traveling a few days behind with a second band of shipwrecked troops. Menéndez met Ribault and his men in the same manner—attempting to cross Matanzas Inlet. After surrendering, Ribault and 133 of his men were killed in the same way as the first group of Frenchmen. These events led to the inlet being named *Matanzas*, which is Spanish for *massacre* or *slaughter*.[459]

With the end of French occupation of the area, the Spanish established St. Augustine as their capital in Florida. The Spanish proceeded to construct wooden watchtowers along the Matanzas River

459. Albert C. Manucy, *The History of Castillo de San Marcos and Fort Matanzas, from Contemporary Narratives and Letters* (Washington, D.C.: National Park Service, 1943), 1-6.

to serve as lookout points to warn the town and Castillo de San Marcos of approaching enemy ships. After repeated attempts by General James Oglethorpe, who had founded the nearby English colony of Georgia, to overtake St. Augustine, the Spanish realized a fortified watchtower was needed to defend the town from an approach from Matanzas Inlet. By 1740, construction of Fort Matanzas was underway at the southern end of Rattlesnake Island. The English, having learned of the Spanish fort being built at Matanzas Inlet, sailed to St. Augustine to destroy the fort before it could be completed. After a failed attempt to land on Anastasia Island, they sailed south to Matanzas Inlet. On September 10, 1742, two English boats approached Fort Matanzas from the inlet. The boats were in firing range when "a cannon shot persuaded one of them to withdraw immediately, followed by the other a little later."[460] It was then that the English realized that Fort Matanzas had been completed. The occupied the fort until 1805, just prior to Florida's cession to the United States in 1821.

Criterion A: Social History

The HQ/VC complex was designed and built as a result of New Deal programs in the 1930s. During this period, President Franklin D. Roosevelt and his administration implemented programs to provide economic relief in the form of federally aided construction efforts. The HQ/VC complex is a product of the Public Works Administration (PWA), an agency created as part of the New Deal and one of the tools used to provide jobs during the Great Depression. On a broader scale, programs and agencies created by the New Deal, such as the Emergency Conservation Work (ECW) program established projects to be implemented by the Civilian Conservation Corps (CCC) and the PWA. The federal relief initiatives associated with the New Deal programs allowed the NPS to take on major construction projects during this time period. The HQ/VC complex is an example of such a project and is a significant physical link the New Deal era.

Criterion C: Architecture

The three buildings and the designed landscape in the study area, while from different eras, are all significant. Fort Matanzas is a coquina-masonry fort. The coquina stones used to construct the fort were quarried from El Peñón, just south of Matanzas Inlet. Architectural elements of Fort Matanzas' design are like those seen in other Spanish-built coastal fortifications. The parapet-enclosed terreplein is typical of these forts. The sentry tower is like those seen at other defensive structures, such as Castillo de San Marcos.

The historic buildings and landscape at the HQ/VC complex are significant as examples of the NPS rustic style of design popular during at the time of the complex's construction. This design style focused on natural building materials and finishes meant to blend the built environment into the natural environment. The construction of the visitor center and utility building included the use of coquina block, similar to Fort Matanzas, Castillo de San Marcos, and other buildings in the region. This material is also used in landscape elements such as headwalls, retaining walls, and planters. Aside from the materials used to construct the built environment, the placement of features and the importance of the natural environment are also indicative of the NPS rustic style. The entrance road was designed around the existing sand dunes, and plants were preserved to screen the buildings from long, axial views along the western entrance road. Rather than level the sandy slopes where the visitor center was proposed, the building was constructed into these slopes. The buildings are thoughtfully designed and well-crafted while allowing the natural environment to remain a major focus of the visitor experience.

Landscape Integrity Overview

Refer to overview at the beginning of the section.

Analysis of Landscape Characteristics

The following analysis of Fort Matanzas National Monument divides the site into three character areas: Fort Matanzas (on Rattlesnake Island), Fort Matanzas Headquarters and Visitor Center (HQ/VC), and Beach Ramp. The natural systems and features, spatial organization, land use, cultural traditions, and cluster arrangement for all three will be discussed first. All other landscape

460. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report* (Denver, CO: Denver Service Center, 1980), 28.

characteristics will then be discussed for each character area.

Natural Systems and Features

Historic Condition

The physiographic features of Fort Matanzas National Monument have had a significant impact on the history of Florida and played important roles in the struggle to gain control of North America. After the events of 1565, Matanzas Inlet continued to be a major factor in the defense of St. Augustine and served as an escape and resupply route for the town. In 1702, the English blockaded St. Augustine Inlet and stormed the town and Castillo de San Marcos. News of this attack was delivered to Havana after a Spanish ship was able to flee down the Matanzas River and access the Atlantic Ocean via Matanzas Inlet.[461] The inlet served St. Augustine well again in 1740 when British warships were stationed at both St. Augustine Inlet and Matanzas Inlet. The British were attempting to cut off food supplies scheduled to be delivered to St. Augustine from Havana. The Spanish received word that the supplies from Havana were being held at Mosquito Inlet, 60 miles south of St. Augustine. After a week of waiting, the Spanish traveled down the Matanzas River to Matanzas Inlet in an effort to evade the British blockade. The British ships stationed at Matanzas Inlet had been called to join the ships at St. Augustine Inlet due to strong winds in the area, but at Matanzas Inlet, the Spanish encountered two British sloops that had returned. The Spanish were able to evade the British ships and make their way down to Mosquito Inlet to pick up the food delivered from Havana. The British sloops eventually withdrew from Matanzas Inlet, enabling the Spanish to return to St. Augustine unharmed.[462]

After the attempted British siege of 1740, the importance of Matanzas Inlet became clear. If this route remained open and under control of the Spanish, St. Augustine could be resupplied and sustained as needed. However, if not protected, this route could be a major weakness exploited by opposing forces. If enemy ships entered the inlet and traveled up the Matanzas River to the San Sebastian River, they could land on the western side of St. Augustine outside of the cannon fire from Castillo de San Marcos and attack the fort from the rear. It became clear that to prevent such an attack Matanzas Inlet would need to be fortified.[463] This led to the construction of Fort Matanzas between 1740 and 1742. The fort was sited near the southeastern corner of Rattlesnake Island, described by the fort's engineer Lieutenant Pedro Ruíz de Oláno as a "small marshy island."[464] Placing the fort at the edge of Rattlesnake Island with clear views and firing lanes south along the Matanzas River to Matanzas Inlet allowed for the protection of the "back door to St. Augustine."

By the early 1800s, the coastal environment had worn on Fort Matanzas. After 60 years of service, repairs were needed. Water leaked into the fort, the cistern supplying drinking water to the fort's crew was in disrepair, and sections of the parapet wall had been broken off during tropical storms. During the repairs made to address these and other concerns at the fort, recommendations that "if carried out, altered the environment at Matanzas Inlet" were made regarding defensive measures outside of the fort site. It was recommended that obstacles be placed in the Matanzas River to the greatest extent possible to delay an enemy's approach from the inlet to St. Augustine. Another concern at the time was the height of the sand dunes along Anastasia Island. Fort Matanzas was in musket range of Anastasia Island. If enemies approached the western edge of the island on foot, they could entrench themselves behind the sand dunes, which might have "cancelled the fort's defensive capability."[465]

Historically, Rattlesnake Island was a small, slightly round island surrounded by the Matanzas River. Although Rattlesnake Island is protected from the Atlantic Ocean by Anastasia Island, there has been a constant adjustment to the size and shape of Rattlesnake Island over the years. Overlaying a 1870s map on top of a 2018 aerial shows the changes of Rattlesnake Island and the original course of Matanzas River around the island

461. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 14.
462. Ibid.
463. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 25.
464. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 28.
465. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 69-72



Figure 268: 1870 map of Matanzas Inlet area with 2018 aerial image below. Note the size of Rattlesnake Island and its relation to Matanzas Inlet (Google Earth, National Oceanic and Atmospheric Administration)



Figure 269: 1952 map of Matanzas Inlet area with 2018 aerial image below. The construction of dikes, canals, and natural changes to Rattlesnake Island's coastline has altered the form of the island's coastline and relation to Matanzas Inlet (Google Earth, National Oceanic and Atmospheric Administration)

(Figure **268**). In 1911, the Florida Coastline and Transportation Company cut a canal across the marshland west of Rattlesnake Island and Fort Matanzas. Beginning in 1833, the company had built an intracoastal canal from the St. Johns River to Miami. "The canal used as many of the extant natural waterways as possible, but it could not keep a uniform depth due to tidal flow. The man-made cut across marshland represented the attempt by the canal company to keep proper depth at the Matanzas Inlet area."[466] The widening of this canal, part of the Intracoastal Waterway, between 1932 and 1933 began to affect the form of the shoreline and character of the Matanzas River near Matanzas Inlet. From 1934 to 1935 the United States Army Corps of Engineers built a dike to close the channel between Rattlesnake Island and the marshland east of the canal. With the expansion of Rattlesnake Island to the south, Fort Matanzas was no longer located at the island's southeastern corner but rather near its northeastern end. This change is visible in a 1952 coastal survey overlaid onto a 2018 aerial (Figure 269).

The transformation of Rattlesnake Island during the period of significance was more drastic than the physical changes seen during this same period at Anastasia Island. However, alterations to Anastasia Island did occur. The most obvious modifications were seen at the island's southern end. The buildup of sediment at the southern portion of Anastasia Island due to natural changes and cultural practices shifted Matanzas Inlet south. This was noted in 1922 by Maj. General William W. Black, who had recently retired as Chief of Engineers. Maj. General Black remarked that Fort Matanzas was previously located on the shore of Matanzas Inlet, which it was constructed to defend, but the inlet had moved south. He stated that this southern shift of Matanzas Inlet resulted in the fort being hidden from the Atlantic Ocean by the sand dunes of Anastasia Island.[467]

The HQ/VC complex was completed in 1937. The placement of the site on the western edge of Anastasia Island allowed for a short ferry ride west across the Matanzas River to Fort Matanzas. Once considered a defensive liability, the dunes of Anastasia Island were viewed as a sensitive natural feature to be preserved and were incorporated into the design of the HQ/VC. The marshland north of the HQ/VC was avoided during development. The desire to preserve the dunes and maritime hammock forests at the complex resulted in small

466. Digest of Legislative History Fort Matanzas, 2.

467. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 119.

parking areas lining access drives rather than expansive parking areas. The drives were designed in a way "that would require the least possible cutting through the sand dunes."[468]

Post-Historic and Existing Condition

After the completion of the dike connecting the northern and southern portions of Rattlesnake Island in 1935, the shoreline along the Matanzas River continued to change. The increased flow of the river caused by the installation of the dike led to erosion of the shoreline along the river, mostly evident near Fort Matanzas.[469] In 1964, damage from Hurricane Dora resulted in the dike being knocked out of place and Rattlesnake Island once again split into two landforms. This decreased the current along the Matanzas River. Erosion slowed and a sand bar built up south of Fort Matanzas, which had nearly reached Anastasia Island by 1972. As a result, the Army Corps of Engineers rebuilt a granite-block dike across the canal. Once this new dike was reinstalled, the river returned to its previous flow rate and the sandbar was eroded.[470]

Since the repairs made by the Army Corps of Engineers, the shorelines have continued to change, both by natural occurrences and by human influence. The area north of the fort on Rattlesnake Island has been expanded due to spoils placed by dredging operations. Sediment has built up naturally at the southern end of Anastasia Island, which has continued to move Matanzas Inlet southward. While the shoreline has evolved over time, the interior features of the study area have remained largely unchanged. The dunes and marshlands have been avoided during development. Modern additions, such as the comfort station west of SR A1A and the additional parking row near the beach access point east of SR A1A, have minimally impacted the natural environment of the site.

Summary

The location of Matanzas Inlet is the reason for the siting of Fort Matanzas. The fort was constructed along the Matanzas River near the inlet because of Spanish desire to protect the southern approach to St. Augustine. The coquina material used to construct the fort was sourced from a quarry at El Peñón.[471] This quarry was located near the southern end of Matanzas Inlet, an area now known as Summer Haven. The stone was delivered to Rattlesnake Island via the Matanzas River. Aside from the construction and establishment of Fort Matanzas, the surrounding natural landscapes would have been an essential feature of life for those living in the area and those garrisoned at Fort Matanzas during the period of significance. The development on Anastasia Island between 1936 and 1937 embraced and preserved these features. These efforts are clear today. The waterways, shorelines, dunes, and other physiographic features of the national monument site have evolved since the period of significance. Alterations to these features are common in coastal environments and the features that influenced the development patterns of the study area remain intact and legible. The natural systems and features of the national monument strongly contribute to the historic significance of the site.

Landscape Features

- Atlantic Ocean
  - Contribution Status: Contributing
  - Condition: Good
- Matanzas Inlet
  - Contribution Status: Contributing
  - Condition: Good
- Matanzas River
  - Contribution Status: Contributing
  - Condition: Good
- Anastasia Island
  - Contribution Status: Contributing
  - Condition: Good
- Rattlesnake Island
  - Contribution Status: Contributing
  - Condition: Good
- Sand Dunes
  - Contribution Status: Contributing
  - Condition: Good
- Marshlands
  - Contribution Status: Contributing
  - Condition: Good

468. The description of these projects is contained in captions in photographs that accompany James T. Swanson's, Resident Landscape Architect, report on the construction project. The report is in the CASA FOMA Archives. See folder: Bound Reports: FOMA 1937, Final Report: Grading, Surfacing and Incidental Construction.

469. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 152.

470. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 179-180.

471. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 213.

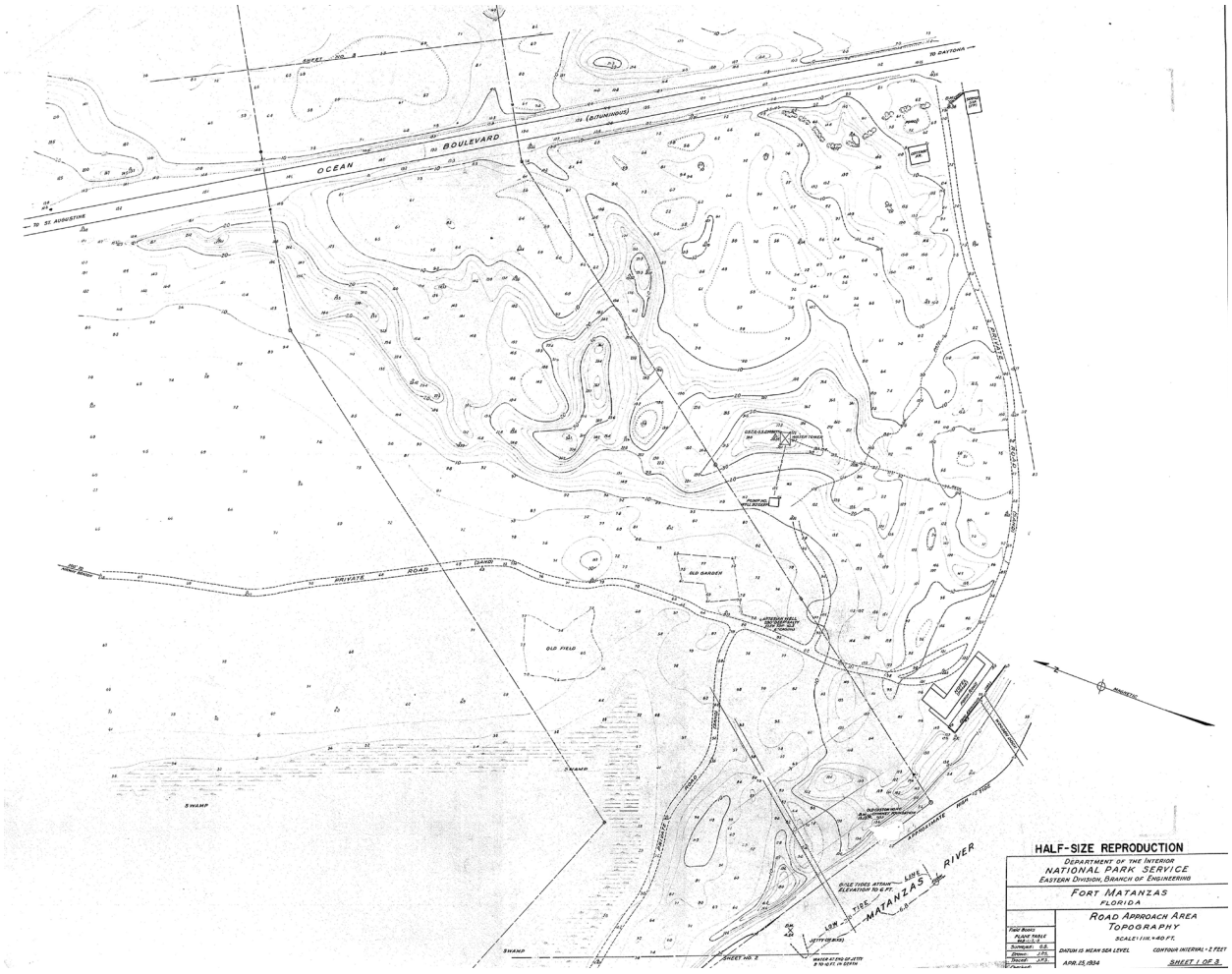


Figure 270: 1934 survey of existing conditions prior to construction of the Headquarters and Visitor Center. Buildings were placed near the Matanzas River and informal roads curved through the landscape, avoiding natural features where possible (National Park Service)

Spatial Organization

Historic Condition

Shortly after the Ribault Massacre in 1565, the Spanish began developing outposts along the Matanzas River. Wooden watchtowers were built to allow views north and south of St. Augustine. One such watchtower was constructed at Matanzas Inlet in 1569.[472] Other watchtowers would be built at the inlet until the need for additional fortification was realized in 1740, leading to the completion of Fort Matanzas in 1742. The fort was sited at the southeastern corner of Rattlesnake Island to allow for open views and firing lanes along the Matanzas River to Matanzas Inlet. The views allowed for quick discovery of approaching ships and the fort's location provided easy access to the river for Spanish soldiers stationed at the fort.

Prior to the development of the HQ/VC complex, the study area on Anastasia Island was largely undisturbed. Informal sandy drives led to the Allen Hotel, now known as the Johnson House, from Ocean Shore Boulevard, now SR A1A. These drives and much of the development at the time were placed in response to dune locations. The Allen Hotel was built on the eastern bank of the Matanzas River during the 1880s. The property was later purchased by the Corbett family, who would change the name of the hotel and update the facilities. A fishing pier was extended from the Corbett Hotel to the river (Figure 270).

The HQ/VC, completed in 1937, was organized in response to Fort Matanzas, the natural features of the site, and the boundaries of the 17.34-acre tract donated to the NPS by Ada D. Corbett. The original tract was linear and extended between the Atlantic Ocean and the Matanzas River. The visitor center and utility building, now park offices, were

472. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 15.

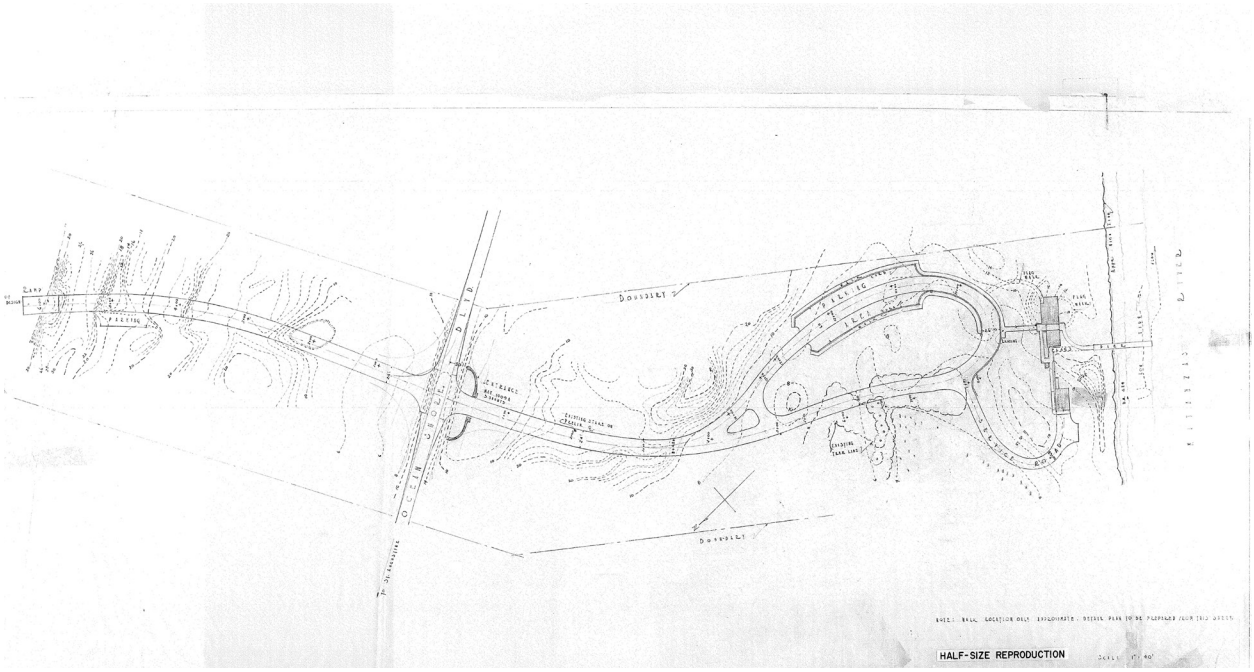


Figure 271: 1935 preliminary road plan for Headquarters and Visitor Center. Circulation routes are direct to Atlantic beachfront and structures at western side of Anastasia Island while working to avoid dunes (National Park Service)

built near the western edge of Anastasia Island across the river from Fort Matanzas. A road was built from Ocean Shore Boulevard to a parking area east of the visitor center. Similar to the layout of the sandy drives built to access the Corbett Hotel, the layout of these new roads bent around existing dunes where possible. However, given the linear nature of the donated tract, the roads remained fairly straight (Figure 271). Directly across Ocean Shore Boulevard to the east, a road and parking area were built to access a ramp providing pedestrian and vehicular access to the beachfront along the Atlantic Ocean. This access to the Atlantic beachfront was a condition of the land donation by the Corbett family.

Post-Historic and Existing Condition

While the location of Fort Matanzas has not changed, the land surrounding the fort has shifted in size. Since the fort's completion in 1742, the small islands and marshes surrounding the original Rattlesnake Island on which the fort was constructed have been connected by dikes and have grown by the collection of sediment due to both natural and cultural forces along the Matanzas River. Rattlesnake Island is now much more than a small marshland and extends to the south far beyond the fort site.

The layout of the HQ/VC is mostly the same as the original 1937 implementation. A comfort station, additional parking at the beach access ramp, and miscellaneous small-scale features have been added since the period of significance. Outside of the study area, the property now owned by the NPS has been expanded. The drives once used to access the Corbett Hotel link to the parking area at the HQ/VC and lead to maintenance facilities southeast of the study area. A boardwalk connects to the parking lot near the modern comfort station and extends to the south, leading through a maritime hammock forest before emerging at a beach overlook.

Summary

The physiographic features of the site have shifted over time. Natural and cultural processes have caused the location of Matanzas Inlet itself to move south. However, the organization of the built environment has remained mostly unchanged. Since 1565, the majority of the buildings and structures raised on the site have been clustered along the banks of the Matanzas River. By building watchtowers along the edge of the river, Spanish forces stationed at the inlet could aid in the defense of St. Augustine. Development along the shoreline also provided an efficient approach from the river for those traveling by boat, which was a primary means of access before the construction of Ocean Shore Boulevard. Fort Matanzas still sits at the western edge of the Matanzas River, pointed towards Matanzas Inlet. The visitor center and

utility building that were built to allow access to Fort Matanzas and support visitation to the historic site are still in place. Likewise, the constructed routes that provide circulation around the site are still in the same locations as in 1937. Most of the old-growth trees and forest cover of Anastasia Island remain in place, which is consistent with the character of the edges of the site and the overhead plane that would have been experienced during the period of significance. The logic behind the layout and construction of the HQ/VC in being sensitive to natural features is legible. Overall, the layout of the study area is largely unchanged and contributes to the historic significance of the site.

Landscape Features

- Development along the Matanzas River
    - Contribution Status: Contributing
    - Condition: Good
- Response to dune locations
    - Contribution Status: Contributing
    - Condition: Good
- Access to the Atlantic beachfront
    - Contribution Status: Contributing
    - Condition: Good

Land Use

Historic Condition

In the 1500s, the Spanish struggled to maintain shipping channels from the Americas along the Gulf Stream led to their interest in controlling the Floridian Peninsula. St. Augustine became the Spanish capital in 1565. During this period, military measures resulted in the construction of wooden watchtowers along the Matanzas River, including the site of the study area. To more effectively defend against the repeated attacks of the British, Fort Matanzas was constructed between 1740 and 1742. The fort was abandoned in 1805, 16 years before Florida was ceded to the United States in 1821.

Nearly all the land now owned by the NPS at the southern end of Anastasia Island was claimed by Darius Allen under the Homestead Act. Around this time, during the late 1800s, the tourism industry extended to Anastasia Island from St. Augustine. The construction of travel routes from St. Augustine to the island, first a narrow causeway and later a wooden bridge, facilitated access to the area that "became a mecca for beach-lovers."[473] Shortly after claiming the property across from Fort Matanzas, Allen constructed a residential building on the land as well as a hotel. The land was sold to George W. Corbett in 1901. Corbett continued the business established by Allen, reopening the hotel as the Corbett Hotel. With the presence of this business adjacent to the study area it seems that, if even at a small scale, the tourism industry reached the southern end of Anastasia Island during the period of significance.

During the early 1900s, repairs were made to Fort Matanzas to stabilize the walls and to prevent the building from collapsing. In 1933, the War Department transferred one acre of property surrounding the fort to the NPS. The 1934 gift of 17.34 acres of land from Ada D. Corbett to the NPS allowed for the construction of the HQ/VC across from the fort on Anastasia Island. As part of the design and planning of the HQ/VC, a survey of existing conditions was made. In the section of land gifted to the NPS, the 1934 survey shows sand roads, an old garden, an old field, and an old frame building. The Corbett Hotel is shown just south of the NPS property, with a water tower northeast of the hotel. The remaining built features include additional sand roads, pathways, and two frame buildings at the southeastern corner of the property near Ocean Shore Boulevard.

The HQ/VC was completed in 1937. This construction project included the area surrounding the visitor center and utility building at the western end of Anastasia Island as well as the beach access point on the eastern end, adjacent to the Atlantic beachfront. The opening of this facility allowed for direct contact with a mostly undisturbed section of native maritime hammock forest and associated ecological communities, which offered the opportunity for environmental interpretation programs. The local materials, such as coquina stone, also contributed to interpretation of local building resources. The access provided by the HQ/VC to the shores of the Atlantic Ocean and Matanzas River allowed for fishing and other recreational activities. The proximity to Fort Matanzas and the educational opportunities at the visitor center allowed for historical interpretation of the site.

473. Virginia Edwards, Stories of Old St. Augustine (St. Augustine, FL: Historic Print and Map Company, 1971), 26.

Post-Historic and Existing Condition

The NPS now owns roughly 100 acres of land on Rattlesnake Island, which is managed as a natural conservation area outside of the Fort Matanzas site. This area is not part of the ranger-led excursions to the fort. The NPS also now owns a large portion of the southern end of Anastasia Island. This area is covered by native forests, dunes, sandy beaches, and is used for passive recreation. The Johnson House, formerly the Corbett Hotel, serves as NPS staff housing. Aside from military operations, the 17.34-acre study area has maintained and expanded upon most of its historical functions.

Summary

The study area evolved during the period of significance from a functioning military outpost to a multi-faceted public space. Those visiting the park can learn about the history of Fort Matanzas and the Colonial period, explore the native forests and marshlands, visit the Atlantic beachfront, and enjoy many other recreational and educational activities. The current land use contributes to the site's historic significance. By constructing the HQ/VC and broadening the programming of the national monument site, the NPS raised public awareness of Fort Matanzas and helped promote the ongoing preservation of the historic structures and landscape.

Landscape Features

- Military land use
    - Contribution Status: Contributing
- Tourism land use
    - Contribution Status: Contributing
- Residential land use
    - Contribution Status: Contributing
- Environmental interpretation
    - Contribution Status: Contributing
- Historical interpretation
    - Contribution Status: Contributing
- Recreational land use
    - Contribution Status: Contributing
- Natural conservation land use
    - Contribution Status: Contributing

Cultural Traditions

Historic Condition

In a broad context, the cultural fabric of St. Augustine and the Matanzas Inlet area was shaped by the expansion of religious ideologies and the maintenance of shipping channels during the Colonial period. After the killing of Jean Ribault and the French at Matanzas Inlet in 1565, Menéndez de Avilés wrote to King Phillip II of Spain to describe the events. In the letter, Menéndez states that his goals are not only to secure the Floridian Peninsula to harvest its natural resources but also to secure the trade routes along its eastern coast and to stop the spread of ideals that conflict with the Roman Catholic Church. When Menéndez encountered the French at Matanzas Inlet, a representative of the French soldiers marching north requested passage to the newly established Fort Caroline near present-day Jacksonville. In reply, Menéndez writes:

> I responded to him that we had taken their fort and cut the throats of those who were within, because they had established it there without permission of Your Majesty, and because they spread the Lutheran sect in these provinces of Your Majesty. And [I said] that I, as Governor and Captain-General of these provinces, would carry out fire and blood war against all who might come to these parts to settle and plant the evil Lutheran sect, seeing that I had come by order of Your Majesty to plant the Gospel in these parts in order to enlighten the natives about what the Holy Mother Church of Rome says and believes, in order to save their souls. And thus, I would not give them passage; rather, I would follow them on land or at sea until I took their lives.[474]

As described by Menéndez in this letter, he killed this first group of French soldiers at the inlet and days later, after Jean Ribault and a second group of Frenchmen were halted at the southern end of the inlet, Menéndez "passed Jean Ribault and all the rest under the knife." As a result of the defeat of the French by Menéndez, Spain assumed control of Florida.

In the following years, challenges to the Spanish control of lands surrounding St. Augustine led to the fortification of Matanzas Inlet. The military traditions created and refined during the establishment of earlier defensive structures influenced the planning and construction of Fort Matanzas. The design of the fort is like other

474. "Pedro Menéndez de Avilés, Letter to King Philip II," Early Visions of Florida, ed. Kate Godfrey, University of South Florida St. Petersburg, http://earlyfloridalit.net/?page_id=647

fortifications seen during the same time period. While the fort and site are much smaller than Castillo de San Marcos, similarities are clear. For instance, much like its counterpart to the north, the fort is topped by a terreplein, equipped with cannon, and surrounded by a parapet for cover. The forts are both constructed of coquina block, a locally quarried stone.

Military function was the driver for the operation of the fort and physical character of the study area until the fort's abandonment in 1805. As the fort sat unoccupied, the site continued to develop. The Matanzas River was dredged in the early 1900s. Soon after, the Intracoastal Waterway was extended along the western side of Rattlesnake Island. These efforts increased the shipping capacity of the area's waterways.

Shortly after the 1933 transfer of the Fort Matanzas National Monument from the War Department to the NPS, the planning of the HQ/VC was underway. In 1935, the NPS published *Park Structures and Facilities*. This book describes the NPS rustic design approach as a process that "achieves sympathy with natural surroundings and with the past."[475] Many of the design and construction methods this book details are visible at the HQ/VC, completed in 1937, just two years after the book's publication. The HQ/VC features construction materials that reflect those seen at Fort Matanzas and was planned in a way that emphasizes the natural rather than the built environment. After the opening of the HQ/VC and the improved access to Fort Matanzas, historical tourism became a draw to the site.

Post-Historic and Existing Condition

While they were factors in the shaping of the national monument during the period of significance, preservation and passive recreation have emerged as more impactful factors in the management and physical character of the site in recent years. These practices have expanded along with the amount of NPS land ownership on Rattlesnake Island and Anastasia Island. This can be seen in the increase of preserved land on both islands, by the installation of stabilization structures along the NPS property's coast, and in the introduction of boardwalks and other facilities installed to increase awareness of and access to the site's natural environment.

Summary

While not currently shaping the physical character of the site, the original ideals that influenced the domination of the land for religious and commercial interests are still legible today by the presence of Fort Matanzas. At the HQ/VC, the design principles of the NPS rustic style are clear when visiting the site. The buildings and structures were designed not to subjugate the natural and historical features of the site but to increase access to and appreciation of these features. The maintenance of waterways is still in effect. The Matanzas River, along with the Intracoastal Waterway, is still maintained today as a route for commercial and personal travel. The cultural traditions that existed during the period of significance continue to contribute to the historical significance of the site.

Landscape Features

- Expansion of religious ideologies
    - Contribution Status: Contributing
- Maintenance of shipping channels
    - Contribution Status: Contributing
- Military traditions
    - Contribution Status: Contributing
- NPS rustic design approach
    - Contribution Status: Contributing
- Historical tourism
    - Contribution Status: Contributing
- Natural preservation
    - Contribution Status: Contributing
- Passive recreation
    - Contribution Status: Contributing

Cluster Arrangement

Historic Condition

Development in the study area has predominately occurred along the shores of the Matanzas River. Although structures, including Fort Matanzas, were built during the Colonial period, these were stand-alone outposts. The first evidence of clustered development in the study area is seen on Anastasia Island in the late 1800s. This includes the small, private and commercial developments established by Darius Allen and, later, the Corbett family. A hotel, private residence, fishing pier, and small frame structures were built along the

475. National Park Service, *Park Structures and Facilities* (Washington, D.C.: National Park Service, 1935), 4.

western edge of Anastasia Island with informal roads connecting these structures to Ocean Shore Boulevard.

The developments at Fort Matanzas National Monument during the period of significance continued the tradition of siting buildings and structures along the Matanzas River. The original tract donated by Ada D. Corbett to the NPS for the construction of the HQ/VC extended across Anastasia Island. Ocean Shore Boulevard bisected the tract, which created a natural separation between the Matanzas River side of the parcel to the west and the Atlantic Ocean to the east. The visitor center and utility building were constructed as close to Fort Matanzas as possible given the physical boundaries of the site. This provided an easy route from the back of the visitor center to a dock along the Matanzas River and a short boat ride to the fort on Rattlesnake Island. While part of the original HQ/VC, the beach ramp landscape is discussed in this report as a separate character area. The development of the beach ramp landscape was focused at the eastern end of the study area, near the Atlantic beachfront.

Post-Historic and Existing Condition

Since the period of significance, buildings and other features have been added to the study area, yet the areas of concentrated development remain the same. At the western end of the site, a comfort station was added near the visitor center and utility building. A boardwalk was constructed southeast of the visitor center parking lot. The beach ramp landscape has expanded and now includes a second row of parking south of the road leading to the beachfront.

Summary

Although services and buildings have expanded at the national monument, the areas of development remain focused on the western and eastern ends of Anastasia Island. The main area of the HQ/VC to the west and the beach ramp landscape are both clustered close to the waterfronts of the Matanzas River and Atlantic Ocean respectively. Dunes, maritime hammock forest cover, and SR A1A separate the two character areas. The placement of landscape improvements continues to mirror the cluster arrangement of the original construction between 1936 and 1937.

Landscape Features

- Headquarters and visitor center
    - Contribution Status: Contributing
- Beach ramp
    - Contribution Status: Contributing

Circulation

The following analysis divides the study area into three character areas: Fort Matanzas, Headquarters and Visitor Center, and Beach Ramp.

Historic Condition: Fort Matanzas

Located on the western shore of the Matanzas River, boat travel was the only way to access Fort Matanzas when the fort was completed in 1742. The shallow water just east of Rattlesnake Island required the use of a rowboat to approach the fort. During the War Department's ownership of the property, a small wooden dock was located north of the fort. In 1916, during stabilization efforts, a walkway was installed from this dock to the fort landscape.[476] A 1929 study determined that "if the fort were to be maintained by the United States as a national monument, it was recommended that a pier, extending some 30 to 40 feet out into the Matanzas River, near the north face of the fort be constructed."[477] This project was put on hold due to the concern that the cost would not be justified by the projected visitation to the fort. Shortly after the NPS took over ownership and management of the fort site in 1933, planning began for the HQ/VC on Anastasia Island. This effort spurred the construction of an improved dock on the edge of Rattlesnake Island in 1935, built by O.P. Woodcock Company. In 1936, a wooden staircase installed during the War Department period leading up through the southeastern embrasure of the fort was replaced with a steeper staircase passing through the southwestern embrasure. By 1937, this second staircase had been replaced by a larger staircase, built in the same location, providing access to the terreplein via the southwestern side of the fort.[478]

Post-Historic and Existing Condition: Fort Matanzas

After the opening of the HQ/VC, transporting visitors from Anastasia Island to Rattlesnake Island proved to be a challenge. Over the years, contracts with local businesspeople to provide ferry service

476. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 277.
477. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 136.
478. The Fort Matanzas Stabilization Team, Fort Matanzas Historic Structure Report, 303.

to and from Fort Matanzas would come and go, with service discontinued sporadically as new solutions were explored. Throughout this period, the circulation system surrounding the fort continued to evolve. In 1956, the wooden dock was rebuilt by the Shugart Construction Company.[479] Little work occurred at the fort site in the 1960s relating to the circulation system. In 1972, the 24-foot-long, 11-passenger Matanzas Queen reestablished transportation across the Matanzas River from the HQ/VC to the fort site.[480] This ferry created reliable transportation from the HQ/VC to Rattlesnake Island. In 1976, the NPS replaced a coquina-stone walkway that dated to the 1940s with an oyster-shell pathway (Figure 272).[481] The pathway has widened over time but the route from the dock area to the fort is still generally the same. A crushed coquina surface now covers the pathway. Repairs to the dock have been made over the years. A barge from a dredging company damaged the Rattlesnake Island dock in 1977, which resulted in necessary repairs. Storm events continue to impact the dock, which is now a metal structure supported by concrete piers. The NPS replaced a stairway at the fort's southwestern side in 1980. The 1980 staircase extended directly out from the fort's terreplein into the western portion of the landscape. This circulation route continues to be in place.



Figure 272: 1976 photograph of Youth Conservation Corps members replacing pathway from dock to fort, looking north (CASA No. M1340)



Figure 273: 1937 photograph of entrance road, looking west from Ocean Shore Boulevard (CASA No. M973)

Roads and Parking Lots

Historic Condition: Headquarters and Visitor Center

During the Colonial and early War Department periods the Matanzas River and informal sand roads were used to circulate to and within the study area. The clustering of built structures along the Matanzas River, including the hotel, dock, and boathouses owned by the Allen and Corbett families, provided a convenient access point for those traveling by boat. Construction of a wooden toll bridge across Matanzas Inlet began in 1925.[482] Local lawyer-turned-developer Claude Varn founded the St. Johns County Bridge Company in order to construct the bridge. The project was funded privately by Varn and other investors.[483] By 1927 this bridge and Ocean Shore Boulevard, an asphalt-paved road, were open for use. This allowed motorists to easily access the southern end of Anastasia Island and opened up the area for development.

By January of 1936, the construction of the visitor center and utility building at the western end of

479. The Fort Matanzas Stabilization Team, Fort Matanzas Historic Structure Report, 315.
480. The Fort Matanzas Stabilization Team, Fort Matanzas Historic Structure Report, 177.
481. The Fort Matanzas Stabilization Team, Fort Matanzas Historic Structure Report, 180.
482. A.J. Mehta and C.P. Jones, Florida Sea Grant Program "Matanzas Inlet," Glossary of Inlets, no. 5 (1977): 16.
483. Jennifer Edwards, "Varn linked Maine to Miami," *The St. Augustine Record*, 5/10/2010, http://www.staugustine.com/news/local-news/2010-05-10/varn-linked-maine-miami



Figure 274: 1937 photograph of FOMA VC area loop road, looking west from end of entrance road (CASA No. M964)



Figure 275: 1934 photograph looking north along informal road extending from future site of utility building and road extension (CASA No. 579)

Anastasia Island was finished. A contract was executed between the NPS and M.G. Caddell to construct the site's circulation features in January of 1937. By July of 1937, this project was completed. The roads installed were constructed of mixed-in-place sand asphalt, a popular road construction material in Florida at the time. This cost-effective material was intended for medium-to-low-density roadways. During the installation process, existing sand was mixed in place with asphaltic oil. This method was used in the entrance road west from Ocean Shore Boulevard (**Figure 273**), the FOMA VC area loop road (Figure 274), and the road from the FOMA VC area loop road to the utility building. Upon completion of the roadway installation, it was noted by landscape architect James T. Swanson, who prepared the final report for what was then known as Project 1A1, that his experience with the project led him to believe that "mixed-in-place sand asphalt does not offer a satisfactory solution to the problem of surfacing in a locality as far south as Fort Matanzas, especially when there is a complete absence of fast moving traffic." Swanson then added that he believed "this road surface will never prove entirely satisfactory although there can be no doubt that the contractor performed to the specifications, and more, in every respect."[484] The width of these roadways ranged from 16 feet to 24 feet. A sandy, informal road, present prior to development of the parcel by the NPS, was retained during these initial improvements to the circulation network. This road followed the eastern bank of the Matanzas River and extended north from the sand-asphalt drive leading to the utility building (Figure 275).

Two parking areas along the FOMA VC area loop road were installed during the initial landscape construction. These linear parking areas flanked the eastern side of this road. While the mixed-in-place sand asphalt was used along all paved travel lanes, due to its somewhat soft nature, it was not used in the parking areas to prevent rutting where cars sat stationary for long periods of time.[485] Instead, the NPS applied a crushed-coquina surface to all parking areas. Workers then tamped and rolled this surface of loose coquina shell, which resulted in "a highly satisfactory parking surface."[486] A similar but more finely crushed material was applied to the top of the sand-asphalt roads.

Post-Historic and Existing Condition: Headquarters and Visitor Center

As previously discussed, a bridge across Matanzas Inlet was first opened in 1927. This original wooden toll bridge was built using private funds. After this bridge opened, two concrete bridges

484. National Park Service, *Grading, Surfacing, and Incidental Construction, Project 1A1, Contract No. I-1p-8036, Fort Matanzas National Monument* (St. Johns County, FL: National Park Service, 1937) 12.

485. Bureau of Public Roads, Final Construction Report, Project 1A1, Fort Matanzas National Monument (St. Johns County, FL: United States Department of Agriculture, 1937) 8.

486. National Park Service, *Grading, Surfacing, and Incidental Construction, Project 1A1, Contract No. I-1p-8036, Fort Matanzas National Monument*, 11.



Figure 276: 1951 photograph of newly resurfaced FOMA VC area loop road, looking southeast (CASA No. M191)



Figure 277: 1968 photograph of drop off area at visitor center, looking southwest. Note the exposed sand-asphalt surface of the road and sidewalk (CASA No. M468)

would be built in its place. The replacement bridges were public projects. The first state-funded replacement bridge was built in 1956.[487] In 1964, the Florida Legislature voted to name the bridge the Claude Varn Bridge in honor of the man who was largely responsible for its original construction. The second concrete bridge, which exists today, dates to 1993 and was funded by the Florida Department of Transportation.[488] The bridge improvements made during the 1950s coincide with the state-sponsored widening and resurfacing of SR A1A. Around this time, the NPS updated the roads and parking lots in the study area. When originally constructed, the NPS surfaced the roads with a crushed-coquina surface. This surface had been naturally removed over time and the NPS resurfaced them in 1951 (Figure 276). This treatment method for the road was inconsistently maintained in following years. At times, the NPS topped roads with a crushed-coquina cover, and other times the NPS maintained these routes as traditional asphalt roads, with exposed blacktop (Figure 277). The latter is the treatment seen today. The parking areas, which the NPS has expanded since the period of significance, remained unpaved until 2019 as a sandy, dirt surface. The dirt road that was a remnant of the War Department landscape has been extended to the north and leads to a boat launch area used by the NPS. The national monument's footprint expanded to the south after land donations in 1948 and the 1960s by Howard M. & Dr. Tressa C. Johnson. With this southern expansion, the NPS extended a dirt access road from the FOMA VC area loop road parking lot to connect with the roadway network of the adjacent property. This road passes the Johnson House and storage areas before crossing the nature trail. Beyond this crossing, the road ends at SR A1A, near the NPS maintenance area.

Historic Condition: Beach Ramp

As part of the 1937 landscape construction, the NPS constructed a sand-asphalt road to the Atlantic beachfront using the same methods as the roads west of Ocean Shore Boulevard. This eastern road extended to a timber beach ramp used by motorists to access the beachfront. The original



Figure 278: 1937 photograph of road leading to beach ramp and parking area north of road, looking west (CASA No. M978)

487. A.J. Mehta and C.P. Jones, Florida Sea Grant Program "Matanzas Inlet," Glossary of Inlets, no. 5 (1977): 20.
488. Edwards, "Varn linked Maine to Miami," 5/10/2010.

contract called for a ramp that was 60 feet long. It was determined during construction of the beach ramp that an additional 40 feet would be needed in order to reach the hard ocean beach sand. The additional length was added using concrete footings rather than timber and sills. The NPS eliminated a guard rail for the additional length.[489] The NPS constructed a parking area north of the beach access road of crushed coquina, the same material used along the FOMA VC area loop road (Figure 278). This linear parking area was located just west of the timber vehicular ramp.

Post Historic and Existing Condition: Beach Ramp

The NPS began making adjustments to the circulation features at the beach ramp landscape soon after the period of significance. Soon after completion, the timber beach ramp had broken approximately midway along its length as a result of the graded area beneath it being washed out. This required immediate repair and the beach ramp was back in working order by 1938 (Figure 279). In 1949, a second parking area at the beach ramp was under construction. The NPS constructed this parking area directly across the row of parking installed during the period of significance. The area was surfaced with a crushed-coquina material like that used in the construction of the original parking area (Figure 280). The NPS lengthened the two rows of parking over time and paved these areas in the 1990s (Figure 281).

Driving and parking along the beach has been a popular activity on Anastasia Island for years and continues to be enjoyed by locals and tourists (Figure 282). The NPS acquired the land on the southern end of Anastasia Island in the 1960s and allowed motor vehicles south from the beach ramp to the southern end of Anastasia Island until 2010. The beach ramp is still in use but motor vehicles are only allowed north of the site, along the beaches regulated by St. Johns County.



Figure 279: 1938 photograph of repaired beach ramp, looking southeast (CASA No. M710)



Figure 280: 1949 photograph of second parking area being constructed near the beach ramp, looking east. The parking area is covered with crushed coquina (CASA No. M151)



Figure 281: 1998 aerial photograph of newly paved parking areas with Summer House condominiums visible (CASA No. M3396d)



Figure 282: 1972 photograph of beachfront parking, looking south from end of beach ramp (CASA No. M682)

Sidewalks, Walkways, and Pathways

Historic Condition: Headquarters and Visitor Center

Like the previous iterations of vehicular travel routes, the early versions of pedestrian ways

489. National Park Service, *Grading, Surfacing, and Incidental Construction, Project 1A1, Contract No. I-1p-8036, Fort Matanzas National Monument* (St. Johns County, FL: National Park Service, 1937) 17.



Figure 283: 1937 photograph of sidewalk with coquina curb along FOMA VC area loop road, looking north (CASA No. 972)



Figure 284: 1937 photograph, looking northeast, of walkway linking FOMA VC areas loop road parking area to visitor center (CASA No. M786)

at Anastasia Island were informal and sandy. Some walkways were installed during the 1935 construction of the visitor center and utility building, including a herringbone-patterned mortared-brick walkway from the visitor center to the utility building. The landscape improvements installed at the HQ/VC in 1937 included paved pedestrian routes. Sand-asphalt sidewalks in the VC area loop road parking lot led to the visitor center. These sidewalks were built along the back of raised coquina curbs. According to NPS records of the project, these curbs were built on a concrete footer and extended to the "landing stage adjacent to the Administration Building [visitor center]." The placement of the curbs added physical and visual separation between the pedestrian and vehicular-use areas. The NPS constructed the 5-foot-wide sidewalks leading from the parking area to the visitor center using the same methods as the roadway, including the application of a crushed coquina material to the sand-asphalt surface (Figure 283).

The original plans called for the walkways, like the sidewalks, to be sand asphalt topped with crushed coquina. According to NPS records, because of their experience with the road, which remained somewhat soft due to the warm climate, the NPS decided to change the design for the walkway from the "landing stage through the administration building to the pier." When the NPS constructed this walkway, which connected to the edge of the VC area loop road and passed through the building, it omitted the sand asphalt base because of concerns about "possible tracking of sand asphalt into the building." The sidewalk design kept the sand asphalt base but, according to NPS notes, "together with the sand asphalt road surface the asphalt walks are the least successful feature of the system." The NPS was very pleased with the crushed coquina walkways and concluded that "this type of construction is considered superior in every respect to sand asphalt for walks of this type under similar conditions." A crushed-coquina walkway from the parking lot to the visitor center allowed for convenient drop off in front of the building and connected with sidewalks leading from the vehicular-use areas (Figure 284). This walkway extended to the arched opening at the bottom level of the visitor center along the building's eastern façade and connected to the existing brick sidewalk installed during the 1935



Figure 285: 1937 photograph of staircase and walkway leading up slope to ranger residence, looking south from visitor center entrance (CASA No. M1015)

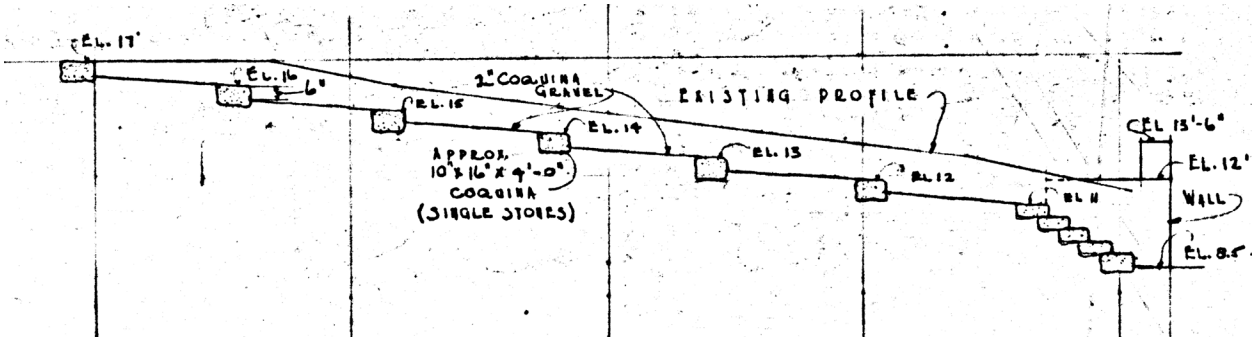


Figure 286: 1936 construction detail of walkway linking visitor center entrance and ranger residence (National Park Service)

construction phase. A small coquina staircase led from this crushed-coquina entrance walkway up the slope along the southeastern side of the visitor center. A walkway began at the top of this staircase and connected to the second-floor entrance of the ranger residence. This crushed-coquina walkway with coquina step treads was constructed of 4-foot-wide coquina pieces buried into the slope with 6 inches of each tread exposed. A 2-inch-deep crushed-coquina surface extended between each step tread (Figure 285 and Figure 286).

Behind the visitor center, people visiting the park were led southwest by a crushed-coquina walkway from the visitor center's breezeway toward the dock at the eastern shore of the Matanzas River. Just beyond the breezeway, a rustic coquina-stone walkway led from the ranger residence at the top of the building and ended at its intersection with the crushed-coquina walkway (Figure 287). This crushed-coquina walkway then extended southwest and ended at a linear walkway from the northwestern corner of the visitor center. This walkway from the visitor center's portico to the dock (Figure 288) was constructed of dry-laid-coquina flagstone.

Formalized pedestrian routes created clear travel ways to and from the visitor center, utility building, and dock. The proximity to the Matanzas River still allowed for informal pathways when accessing the riverfront. The sandy roads remaining from the War Department period led along marshlands and other natural features. These roads were used by those visiting the national monument to explore the natural surroundings.



Figure 287: 1937 photograph of crushed-coquina walkway (left) and coquina-stone walkway (right) behind visitor center, looking southeast (CASA No. M1018)



Figure 288: 1937 photograph of dry-laid coquina flagstone walkway linking dock and visitor center, looking northeast to visitor center (CASA No. M1023)



Figure 289: 1950 photograph of smooth sand-asphalt sidewalk and paver walkway leading to visitor center, looking southwest. (CASA No. M210)



Figure 291: 1978 photograph of barge being used to board Matanzas Queen northwest of utility building, looking north (CASA No. M1489)



Figure 290: 1979 photograph of walkways behind visitor center, looking north. (CASA No. M1833)



Figure 292: 1979 photograph of wheelchair ramp installed along sidewalk, looking west from parking area to visitor center (CASA No. M1290)

Post Historic and Existing Condition: Headquarters and Visitor Center

The layout of the pedestrian routes has generally remained the same but the materials have been changed since the period of significance. Similar to the treatment of the roads, the NPS did not maintain the crushed coquina originally spread over the sand-asphalt sidewalks leading from the parking lot to the visitor center. The NPS converted a crushed-coquina walkway leading to the visitor center archway from the parking lot to a square-paver surface (Figure 289). The NPS also used these pavers to replace the original dry-laid coquina flagstone and crushed coquina walkway surface in the area behind the visitor center (Figure 290). Visitor use has established informal pathways to the eastern bank of the Matanzas River since the period of significance. In 1978, as repairs were being made to the dock behind the visitor center, guests were detoured from the rear of the building, around the front of the utility building, and down one of these routes. This pathway led to a barge, which provided access to the Matanzas Queen ferry, which transported guests to Fort Matanzas (Figure 291).

In 1979, the NPS removed sections of the original coquina curbing along the sidewalks in the parking area for the installation of access ramps (Figure 292). These ramps extended out from the sidewalks into the travel and parking lanes. The NPS applied a similar treatment to the walkways



Figure 293: 1983 photograph of seating area near Ribault Massacre marker along nature trail, looking northwest with Fort Matanzas visible through opening in cedar tree (CASA No. M1954)



Figure 294: 2016 photograph of boardwalk south of FOMA VC area loop road, looking southeast (WLA Studio)

leading to and from the arched breezeway at the base of the visitor center. Below the breezeway, the NPS constructed small concrete ramps to smooth the grade change at the confluence of the landing and connecting walkways.

In 1983, the NPS constructed an interpretive nature trail thatl led from the visitor center area southeast along Anastasia Island. The NPS constructed the elevated trail of pressure-treated timbers. It was ramped at its beginning and was constructed as a wheelchair-accessible boardwalk. The trail led through the native forest and dunes of Anastasia Island. The NPS placed interpretive signs and seating areas along the route (Figure 293).

The NPS enlarged sidewalks on the eastern side of the FOMA VC area loop road to provide access to the comfort station, constructed in 1989. By this time the sidewalks and walkways that were originally crushed coquina, sand asphalt, or dry-laid coquina stone were poured-in-place concrete. This includes the crushed-coquina surface installed between the coquina step treads leading from the front walkway of the visitor center to the entrance of the second-story ranger residence.

The NPS converted the historic utility building to a law enforcement ranger office in 1990. During the building renovations, the NPS removed garage doors on the northwestern side of the building, closed in the openings, and added a door. As a result, pedestrian access was needed. To match the original brick walkway that connected the visitor center and utility building, the NPS constructed a new brick walkway along the eastern face of the historic utility building. This new walkway wrapped around the northern corner of the building and connected with the original brick walkway on the building's southeastern side.

The NPS last updated the wheelchair-accessible boardwalk that begins near the southeastern corner of the parking lot in 2008. It was determined that the old boardwalk had become too dangerous for guests to use. The construction of the new boardwalk utilized the existing post holes from the old elevated nature trail. The NPS used pressure-treated-pine timbers and wood-alternative composite decking to construct the improved boardwalk (Figure 294). Enola Contracting Services, Inc., built the project, and they worked in collaboration with the national monument's maintenance team, led by Dan Matteson.[490]

Summary

During the early Colonial period, the Matanzas River was the only circulation feature that allowed access to Rattlesnake Island and Fort Matanzas. The landscape evolved after the fort became a national monument during the War Department period. The NPS added circulation features to the landscape over time to accommodate increased visitation during the NPS period. The fort site is still accessed by traveling along the Matanzas River by boat. While some original materials exist at the HQ/VC and beach ramp landscape on Anastasia Island, most have been replaced since the period of significance. The parking areas and sidewalks have expanded but the general layout remains consistent with the original 1937 landscape.

490. National Park Service, "Nature Trail Boardwalk," Fort Matanzas National Monument, June 6, 2017, https://www.nps.gov/foma/learn/management/naturetrailboardwalk.htm

Landscape Features

- Matanzas River
  - Contribution Status: Contributing
  - Condition: Good
- Informal sand roads (War Department period)
  - Contribution Status: Contributing
  - Condition: Good
- Ocean Shore Boulevard (now State Road A1A)
  - Contribution Status: Contributing
  - Condition: Good
- Entrance road west from Ocean Shore Boulevard to FOMA VC area loop road
  - Contribution Status: Contributing
  - Condition: Good
- FOMA VC area loop road
  - Contribution Status: Contributing
  - Condition: Good
- Road from the FOMA VC area loop road to the historic utility building
  - Contribution Status: Contributing
  - Condition: Good
- Parking areas along the VC area loop road
  - Contribution Status: Contributing
  - Condition: Good
- Brick walkway from the visitor center to the utility building
  - Contribution Status: Contributing
  - Condition: Good
- Sidewalks along the VC area loop road parking lot
  - Contribution Status: Contributing
  - Condition: Good
- Walkway from the parking lot to the visitor center
  - Contribution Status: Contributing
  - Condition: Good
- Coquina staircase
  - Contribution Status: Contributing
  - Condition: Fair
- Walkway with coquina step treads
  - Contribution Status: Contributing
  - Condition: Poor
- Walkway from the visitor center's breezeway toward the dock
  - Contribution Status: Contributing
  - Condition: Good
- Coquina flagstone step treads
  - Contribution Status: Contributing
  - Condition: Good
- Walkway from the visitor center's portico to the dock
  - Contribution Status: Contributing
  - Condition: Good
- Road leading east to the Atlantic beachfront
  - Contribution Status: Contributing
  - Condition: Good
- Beach ramp
  - Contribution Status: Contributing
  - Condition: Good
- Parking area north of the beach access road
  - Contribution Status: Contributing
  - Condition: Good
- Pathway from dock to fort
  - Contribution Status: Contributing
  - Condition: Good
- Wooden staircase to terreplein of fort
  - Contribution Status: Noncontributing
  - Condition: Fair
- Dirt access road to maintenance area
  - Contribution Status: Noncontributing
  - Condition: Good
- Informal pathways to the eastern bank of the Matanzas River
  - Contribution Status: Contributing
  - Condition: Good
- Elevated interpretive nature trail
  - Contribution Status: Noncontributing
  - Condition: Good
- Walkway extension from utility building parking area to brick walkway
  - Contribution Status: Noncontributing
  - Condition: Good
- Southern parking area at the beach ramp
  - Contribution Status: Noncontributing
  - Condition: Good

Topography

Historic Condition: Fort Matanzas

During the Colonial period, Fort Matanzas was surrounded by Rattlesnake Island's low, marshy terrain. As previously described, by the early 1900s the size and shape of the landforms and waterways near the Matanzas Inlet started to change substantially. At this time, Fort Matanzas was in extremely poor condition. Erosion near the southeastern corner of the fort contributed to the shearing of the scarp wall. During the period of



Figure 295: 1936 photograph of bulkhead with stone pavers between wall and northeastern scarp of Fort Matanzas, looking southeast (CASA No. M821)



Figure 296: 1967 photograph of groin, installed in 1966. Note the graded and sodded space between the groin and the southeastern scarp of Fort Matanzas (CASA No. M444)

significance, the War Department repaired the fort. In 1924, after the fort had been stabilized, the War Department placed 3,825 barrels of oyster shells around the fort's walls to defend against erosion.[491] This project began a period of alterations to the topography of the fort site in an effort to protect Fort Matanzas. By 1935, the construction of canals and the connections of landforms by dikes changed the current of the Matanzas River. The river washed away the oyster shells placed at the southeastern corner of the fort, and erosion exposed the fort's foundation. At that point, the national monument was under NPS ownership. The NPS decided to install a steel bulkhead. By 1937, the NPS had completed the steel bulkhead around the fort excluding the southwestern face, with stone pavers located between the bulkhead and the fort's scarp. The NPS placed riprap in front of the bulkhead (Figure 295).[492]

Post-Historic and Existing Condition: Fort Matanzas

The NPS constructed and backfilled a coquina sea wall in 1940. The NPS also constructed groins as part of this project. In 1942, it was determined that the paving stones between the bulkhead and the seawall were too visually intrusive, and the NPS removed this paving. The shoreline stabilization system received heavy damage between 1944 and 1947. Storms destroyed the seawall. By 1949, the NPS had once more replaced the area behind the bulkhead wall, after previous storms removed the backfill material, and the NPS installed a large riprap groin at the southeastern corner.[493] In 1966, the NPS installed a timber-sheet piling at the southeastern corner of the fort site. They covered the piling with coquina riprap. The NPS backfilled the void between this new feature and the fort with dredge material and sodded the area (Figure 296). The topography seen at Fort Matanzas today is generally the same as 1966. The backfilled shoreline stabilization systems have allowed for the establishment of level grades and a somewhat formalized landscape immediately surrounding the fort.

Historic Condition: Headquarters and Visitor Center

By the late 1800s, property owners established a home site with a field and garden on the western side of Anastasia Island. Sandy roads and footpaths provided circulation. These features worked around the topographic conditions that would have been present since the beginning of the period of significance. These include low-lying areas near the marshland along the Matanzas River's eastern edge, the transitional areas near the river's shore, and the established dunes that created the greatest topographic relief found at the site. In response to these landforms, the owners installed the home

491. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 280.
492. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 301.
493. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 170.

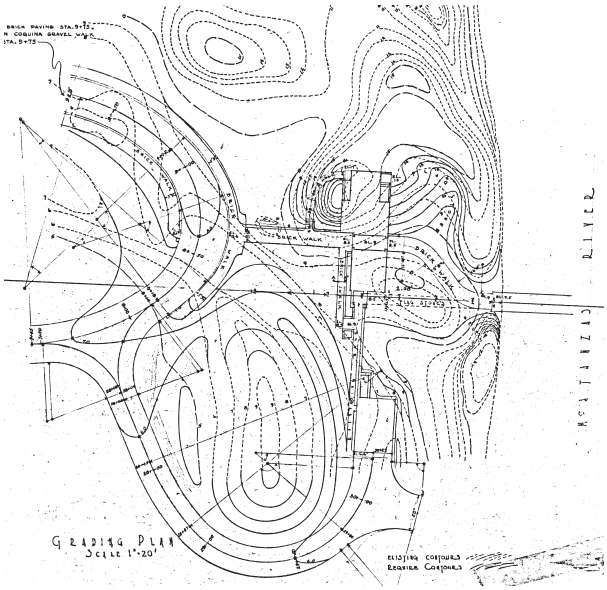


Figure 297: 1936 grading plan for HQ/VC area (National Park Service)



Figure 298: 1934 photograph of proposed location for HQ/VC parking area (CASA No. M638)

site's field and garden in a zone between the old, tall dunes and the low-lying areas of the property. During the planning and construction of the HQ/VC in the mid-1930s, a similar approach was taken. The NPS did not level the slope along the Matanzas River, but instead designers incorporated this topography into the design of the buildings and pedestrian routes (Figure 297). The open, flat spaces where the field and garden were previously located became the site of the FOMA VC area loop road (Figure 298). The entrance road to the visitor center and utility building curved around a large slope along the southeastern side of the tract. Drainage from the newly paved areas was funneled to a preserved green space at the center of the loop road. Stormwater was directed to a culvert, which extended north from this low-lying zone to the marshland on the opposite side of the loop road. While the NPS made alterations to the natural topography as required to accommodate visitation to the national monument site, "the intention of the plans was to provide a profile of the western section of the road that would require the least possible cutting through the sand dunes."[494]

Post-Historic and Existing Condition: Headquarters and Visitor Center

Since the period of significance, the topographic character of the HQ/VC has remained steady for the most part. Shortly after the construction of the HQ/VC, groins were installed along the western side of the island. These stabilization structures helped to curb the erosion of the western bank in the study area. The slopes down to the eastern shore of the Matanzas River are now gentler than before the installation of the groins. The area at the center of the loop road has slowly infilled with the wash of debris to this low-laying space. The change is only minor but the buildup of sediment can be seen near the coquina headwall that protects the culvert leading from the drainage area to the marshland north of the loop road.

Historic Condition: Beach Ramp

The area east of Ocean Shore Boulevard was undeveloped prior to the donation of land from Ada D. Corbett to the NPS. Planned during the mid-1930s as part of the overall HQ/VC development, the layout of this entrance road and parking area reflects the principles seen in the area west of Ocean Shore Boulevard. The natural topography consisted of dunes near the entrance to the beach ramp area, newly established dunes near the Atlantic beachfront, and the sandy beach adjacent to the Atlantic Ocean. While grading was necessary in order to provide a vehicular route to the beach, the design avoided taller slopes where possible. This is evident in the construction of the original parking area on the northern side of the entrance road to the beach ramp. The NPS avoided

494. National Park Service, *Grading, Surfacing, and Incidental Construction, Project 1A1, Contract No. I-1p-8036, Fort Matanzas National Monument*, 2.

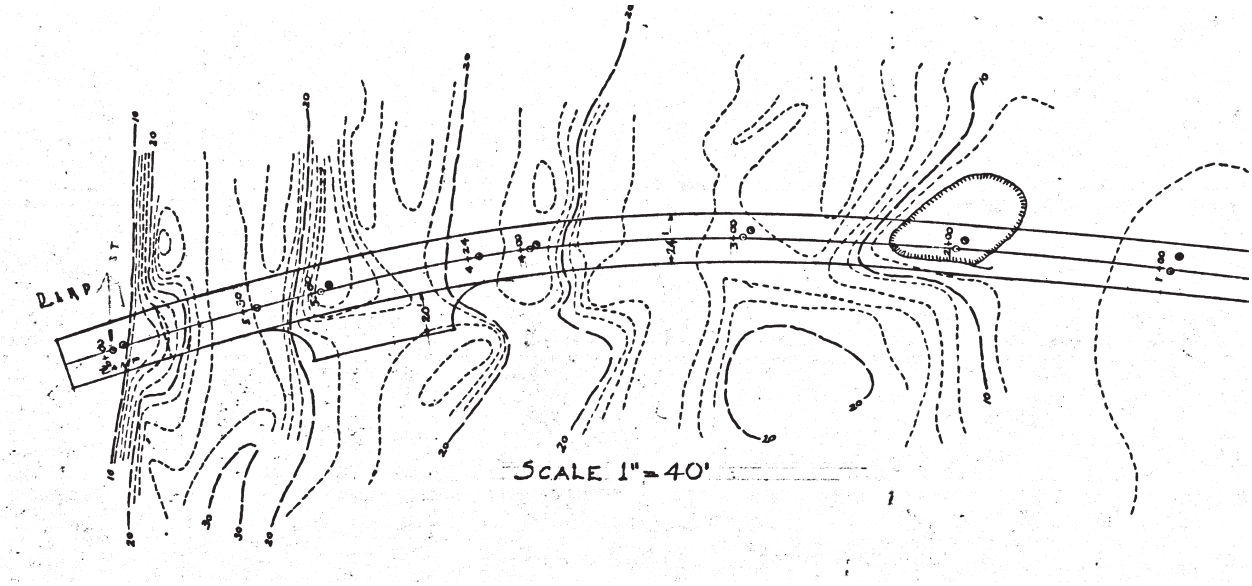


Figure 299: 1936 grading plan for beach ramp area. Note the attempt to avoid steep slopes (National Park Service)

constructing a second parking area on the southern side of the road to avoid disturbing the dunes to the south, which were steeper than those to the north (Figure 299).

Post-Historic and Existing Condition: Beach Ramp

Since the period of significance, the NPS has added a second parking area to the beach ramp landscape. This required further grading into the existing dune area at the beach ramp, which created steeper slopes. The NPS expanded both the northern parking area, installed during the period of significance, and the southern parking to the west, which required additional grading. Retaining walls lining these parking spaces were in place by 1998.

Summary

The materials and structures installed to battle erosion at the southeastern corner of Fort Matanzas have resulted in a backfilled, leveled space surrounding much of the fort. The site terrain during the Colonial period and most of the War Department period was much more dynamic, which nearly caused the collapse of the fort. While the stabilization of the landscape has changed the topographic character that existing during the period of significance, the area outside of this leveled turf space is similar to the landscape seen during that time. The topographic character of the HQ/VC and beach ramp areas has not significantly changed since the period of significance. The natural topographic features are still present and the influence of these features on the layout of the built environment is legible in the landscape today.

Landscape Features

- Rattlesnake island's low, marshy terrain
    - Contribution Status: Contributing
    - Condition: Good
- Steel bulkhead
    - Contribution Status: Contributing
    - Condition: Good
- Low-lying areas (at the HQ/VC)
    - Contribution Status: Contributing
    - Condition: Good
- Transitional areas near the river's edge (at the HQ/VC)
    - Contribution Status: Contributing
    - Condition: Good
- Old, established dunes (at the HQ/VC)
    - Contribution Status: Contributing
    - Condition: Good
- Dunes near the entrance to the beach ramp area
    - Contribution Status: Contributing
    - Condition: Good
- Established dunes near the Atlantic beachfront
    - Contribution Status: Contributing
    - Condition: Good
- Sandy beach adjacent to the Atlantic Ocean
    - Contribution Status: Contributing
    - Condition: Good
- Timber-sheet piling
    - Contribution Status: Noncontributing
    - Condition: Good

- Slopes down to the eastern shore of the Matanzas River
    - Contribution Status: Contributing
    - Condition: Good
- Further grading into the existing dune area at the beach ramp
    - Contribution Status: Noncontributing
    - Condition: Good

Vegetation

Historic Condition: Fort Matanzas

During the Colonial and War Department periods, Rattlesnake Island was not the expansive landform it is today. From the fort's construction until the early 1900s, the island was a small marshland filled with plant material that appreciated the brackish water brought in by the tide of the Matanzas River. In 1885, Lt. George I. Scriven was ordered to visit Fort Matanzas and prepare a report on the outpost's condition. In his report, Lt. Scriven describes Rattlesnake Island as a "small, low, and marshy island" that was covered with "coarse grass and mangrove bushes."[495] By the time repair efforts to stabilize the fort were underway in 1916, a "jungle of cedar, oak, and myrtle" had grown along the building's terreplein and parapets.[496]

The restructuring of Rattlesnake Island and the Matanzas River during the early 1900s resulted in the placement of spoil from dredging operations being deposited on the island, thus raising the elevation of the ground plane where this sediment was placed. This brought areas of the island away from tidal waters and allowed an expanded palette of plants to become established. Maritime hammock plant communities began to establish outside of the fort site between the dredge spoil and the marshlands. At the fort site, native grasses were the primary land cover, punctuated by plants such as cabbage palm (*Sabal palmetto*), red cedar (*Juniperus virginiana*), and southern wax myrtle (*Myrica cerifera*).

Post-Historic and Existing Condition: Fort Matanzas

Shoreline stabilization efforts continued after the period of significance. The southeastern section of the shoreline between the fort and the Matanzas River was the focus of these efforts. To stabilize the earth on which the fort stood, it was necessary to build structures around the fort's footing. In doing so, the area between these structures was backfilled and graded up to the base of the fort. To deter erosion on these newly backfilled areas, a groundcover was needed. In 1966, after the NPS installed timber piling and coquina riprap cover at the southeastern corner of the site, a large area needed to be backfilled and covered to prevent erosion. The NPS sodded this area and seeded the areas between the 4-foot-wide sod strips with Italian rye grass.[497] This cover has persisted at the site since installation (Figure 300). The NPS maintains the sodded area, while the space outside of the immediate fort grounds exists in the same manner described during the period of significance—an expanse of native grasses with several specimen of cabbage palm, red cedar, or southern wax myrtle.



Figure 300: 1975 aerial photograph of Fort Matanzas landscape, looking northwest. Note the formalized turf area adjacent to the natural landscape of Rattlesnake Island (CASA No. M1158)

Historic Condition: Headquarters and Visitor Center

Historically, the vegetation on the western side of Anastasia Island was predominantly maritime hammock forest cover consisting of plants such as live oak (*Quercus virginiana*), cabbage palm (*Sabal palmetto*), redbay (*Persea borbonia*), red cedar (*Juniperus virginiana*), southern wax myrtle (*Myrica cerifera*), saw palmetto (*Serenoa repens*), and Spanish bayonet (*Yucca aloifolia*). Grasses

495. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 95.
496. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 117.
497. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 176.



Figure 301: 1935 photograph of wrapped and protected trees adjacent to HQ/VC building construction (CASA No. M997)



Figure 302: 1937 photograph of grasses and perennials in coquina planter along front of visitor center, looking northwest (CASA No. M1025)

and sedges such as Atlantic cordgrass (*Spartina alternifolia*) and marshhay cordgrass (*Spartina patens*) were located in marshlands.

During the development of the HQ/VC area, the NPS planned the visitor center, utility building, and circulation network in a way that preserved a large amount of the native vegetation. Near construction areas, they wrapped and protected the trunks of trees (Figure 301). These planning and preservation efforts aligned with the practices discussed in *Park Structures and Facilities*, the 1935 NPS publication that describes the NPS rustic approach to planning and design. The book states that "preferably, structures will be so located with reference to the natural features of the landscape that it is unnecessary to plant them out."[498] Due to the amount of vegetation that was preserved during construction, the NPS introduced few species during the period of significance. Planting did occur in disturbed areas after grading in order to stabilize bare soil. These areas were "mucked

498. National Park Service, *Park Structures and Facilities* (Washington, D.C.: National Park Service, 1935), 4.



Figure 303: 1980 photograph of coontie (Zamia floridana), left, and shrimp plant (Justicia brandegeana), right, looking northwest from visitor center to utility building. (CASA No. M3247)

and sprigged with Bermudagrass."[499] The NPS installed plants for aesthetic purposes below the wall that connected the visitor center and utility building and in the coquina planters near the visitor center. This practice is also referenced in *Park Structures and Facilities*. The book states that "the proper introduction of vegetation along the foundations will gracefully obliterate the otherwise unhappy line of demarcation between building and ground."[500] Low coquina planters were installed to create a planting space at the base of the eastern side of the visitor center. The NPS originally planted Spanish bayonet (*Yucca aloifolia*) in the square planter just northeast of the building. A mixture of native grasses and perennials was in place in the long planters at the base of the visitor center by 1937 (Figure 302). This mix was likely naturally occurring and was soon after replaced by the NPS with Spanish bayonet, consistent with adjacent plantings.

Post-Historic and Existing Condition: Headquarters and Visitor Center

Few plants have been introduced since the period of significance, continuing the treatment established during construction. Originally, the NPS placed a mix of native grasses in the planters along the visitor center and utility building foundations. The NPS planted Spanish bayonet in the individual planter northeast of the visitor

499. The description of this is contained in the caption of a photograph of the stabilized slope at the southeastern corner of the visitor center, near the coquina staircase (CASA FOMA Archives, No. M833).

500. National Park Service, *Park Structures and Facilities* (Washington, 5.

center. By 1980, the NPS had filled the coquina planters at the foundation of the visitor center and the area in front of the screening wall linking the visitor center to the utility building with coontie (*Zamia floridana*). The NPS planted a shrimp plant (*Justicea brandegeana*) in the coquina planter northeast of the visitor center (Figure 303). Site managers have planted foundation shrubs along the foundation of the visitor center at times, but these have always been informal plantings and never dense groupings of shrubs. The NPS built two coquina planters at the foundation of the comfort station and planted them with coontie when the building was constructed in 1989.

The NPS established a semicircular clearing at the entrance to the site from SR A1A by 1971. This clearing was lined by cabbage palm trees on the west. The design is mirrored across SR A1A at the entrance drive to the beach ramp. The clearing included a mix of grass types, maintained as turf. This treatment is presently seen at the entrance to the national monument site.

The trees between the original buildings at the HQ/VC and the FOMA VC area loop road have thinned over time. The site is more open than seen during the period of significance. When planned, the visitor center and utility building were more screened from the entrance drive and the FOMA VC area loop road. As trees have aged, the space below the canopy has remained clear, establishing clearer views to the surrounding landscape and buildings. As the trees that were originally preserved during the site's construction become older, they are at greater risk of damage, as seen during the loss of old-growth live oaks and red cedars during storm events. In recent years, the NPS has worked to underplant the aging live oak trees with younger specimens. Success with these younger trees has been limited. While the space east of the visitor center and utility building has thinned, the vegetation along the edge of the Matanzas River, has become denser since the period of significance, which has created a buffer between the river and visitor center.

Historic Condition: Beach Ramp

The eastern section of the study area near the Atlantic Ocean historically consisted of a cross section composed of—from east to west—the Atlantic beach, a foredune, a back dune, and the established older dunes near the center of Anastasia Island. The younger dunes near the beachfront consisted of grasses and other plants from the palmetto scrub community. The older dunes were similar to the older areas seen at the western side of the island and included plants from the maritime hammock community. Only naturally occurring plants existed at the site during the period of significance. No plants were introduced.

Post-Historic and Existing Condition: Beach Ramp

Few changes have occurred to the vegetation at the beach ramp landscape since the period of significance. Grading for the expansion of on-site parking has impacted existing vegetation. A semicircular clearing is located at the entrance to the beach ramp landscape near SR A1A, mirroring the form seen at the national monument's western entrance. The open space is lined with cabbage palm trees along its eastern edge on both sides of the beach ramp's access road. This clearing and the cabbage palms lining the perimeter of the form were in place by 1971. This semicircular form is still maintained and cabbage palms are still found at the eastern edge of the clearing.

Summary

Historically, the vegetation at Fort Matanzas included large expanses of plants accustomed to being inundated with the saltwater from the surrounding estuary. The human-influenced changes made to the shoreline in order to repair and stabilize the fort have altered the vegetation of the site. These changes have led to the formalization of the landscape immediately surrounding the fort. There is no mention of a planned landscape or planted vegetation around Fort Matanzas during the Colonial period. Likewise, War Department records do not indicate any conscious effort to plant vegetation. The NPS has maintained the landscape immediately surrounding the fort as turf. The cultural vegetation at the fort is not a character-defining feature of the historic landscape. The existing vegetation does not contribute to the historic significance of the site. While the character of the space immediately surrounding the fort site is a result of human influence, the surrounding area of native grasses, shrubs, and trees outside of the maintained turf zone does relay a sense of the historic vegetation that surrounded the fort during the period of significance. The native vegetation surrounding the immediate fort site is a character-defining feature of the historic landscape.

East of Fort Matanzas at the western side of the HQ/VC complex, most of the vegetation currently found on site is a result of preservation efforts taken during the site construction conducted between 1935 and 1937. Because these naturally-occurring plants were consciously incorporated into the design of the complex, it is reasonable to consider them part of the cultural landscape. The trees growing around the buildings and in the FOMA VC area loop road island are character-defining features of the complex's design. These plants are contributing features that reflect the historic significance of the site design. The existing foundation and accent plants around the buildings were not part of the original design. Therefore, these plantings are not contributing resources.

The plants near the beach ramp were preserved to the extent possible during the construction of the access road and parking areas. These preserved dune plantings are part of the cultural landscape of the site. The circular open space lined by cabbage palms near SR A1A is not a character-defining feature of the historical landscape. This was installed at the entrance area to the western and eastern sections of the national monument site after the period of significance.

Landscape Features

- Turf area at fort site
    - Contribution Status: Noncontributing
    - Condition: Good
- Natural vegetation at fort site
    - Contribution Status: Contributing
    - Condition: Good
- Foundation plantings at HQ/VC
    - Contribution Status: Noncontributing
    - Condition: Good
- Preserved vegetation at HQ/VC
    - Contribution Status: Contributing
    - Condition: Fair
- Preserved dune plantings at beach ramp
    - Contribution Status: Contributing
    - Condition: Good
- Circular clearing at national monument entrance from SR A1A
    - Contribution Status: Noncontributing
    - Condition: Fair

Buildings and Structures

Historic Condition: Fort Matanzas

British maps of the Matanzas Inlet area from 1740 show a building located on Rattlesnake Island labeled *barracks*. Because the 1740 British siege of St. Augustine was the catalyst for the construction of Fort Matanzas, it is likely that this was not the fort but an older structure. It is known that convicts worked the quarries at El Peñón, near the southern end of Matanzas Inlet. It is possible that the barracks structure shown on these maps functioned as housing for these workers.[501] The Spanish constructed Fort Matanzas between 1740 and 1742 as a response to repeated attempts by the British to overtake St. Augustine. Each side of the L-shaped, four-sided tower is 48 feet wide along the fort's base. The Spanish constructed the fort using locally quarried coquina stones. They sited the tower at the southeastern end of Rattlesnake Island, which was much smaller during the time of the fort's original construction in order to defend Matanzas Inlet, known as "the backdoor to St. Augustine." By 1805, Spain could no longer afford to maintain the fort, and it was abandoned.[502] The fort was left unmaintained until 1916 (Figure 304). By this time, the many requests to the War Department to intervene in the fort's continuing deterioration were successful and repairs to the fort were underway. By 1924, the fort was repaired and stabilized (Figure 305). The repaired sentry box was reportedly breaking away from the fort and, after two reconstructions, was successfully repaired by 1929.[503] The NPS replaced the small dock used at the site during the War Department period with a larger wooden dock in 1935. The NPS installed a steel bulkhead around the fort in 1936. They placed riprap on the river side of the bulkhead wall.

501. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 408-409.
502. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 408.
503. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 287.



Figure 304: c. 1885 photograph of Fort Matanzas, looking north. Note the cracks along the scarp and the vegetation covered the gun deck and tower (CASA No. M109)

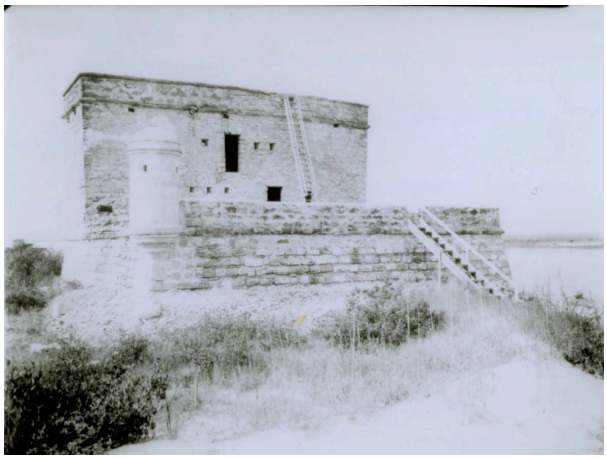


Figure 305: 1929 photograph of Fort Matanzas after reconstruction, looking north (CASA No. M117)

Post-Historic and Existing Condition: Fort Matanzas

Most of the construction after the period of significance focused on efforts to stabilize the Rattlesnake Island shoreline to curb damage caused by the current of the Matanzas River. In 1940, the NPS constructed a coquina seawall around the eastern section of the fort and constructed two groins in this area. Between 1948 and 1949, a large groin was built at the southeastern corner of the site to counteract storm damage caused to the 1940 coquina seawall. In 1964, Hurricane Dora damaged the structures along the shoreline, removing much of the riprap from the site and exposing the face of the 1936 steel bulkhead. In 1966, the NPS built a timber-sheet piling at the southeastern corner of the site. The NPS placed riprap around the



Figure 306: 1972 aerial photograph of eastern section of Fort Matanzas site. The shoreline stabilization efforts between 1936 and 1966 created the leveled space seen at the fort's southeastern corner (CASA No. M1152g).

1966 structure and backfilled the area between this wall and the fort. The 1936 bulkhead wall and the structures built as part of the 1966 shoreline stabilization project remain on site (Figure 306). The NPS first replaced the 1935 dock in 1956, and the structure has since been updated multiple times. A metal dock supported by concrete piers is currently in place at Fort Matanzas.

Historic Condition: Headquarters and Visitor Center

As part of the coastal defense system of Florida, the Spanish constructed a series of wooden watchtowers along the Matanzas River in 1569. One such watchtower was constructed on Anastasia Island near where the HQ/VC complex sits today. Other documented buildings and structures in or near the study area include those constructed in the late 1800s by the Allen and Corbett families. These include a cabin, hotel building, boathouses, and other miscellaneous wood-frame structures.

In 1935, after the 1934 donation of land from Ada D. Corbett to the federal government, the NPS approved plans for constructing a visitor center on the newly acquired tract across the river from Fort Matanzas. Charles Peterson, Deputy Chief Architect, and Oliver Taylor, Deputy Chief Engineer approved the plans, drafted by staff with the NPS Eastern Division, Branch of Plans and



Figure 307: c. 1940 photograph of visitor center, looking southwest from parking area. Sand-asphalt sidewalks and the crushed-coquina walkway are visible (CASA No. M864)



Figure 308: c. 1937 photograph of utility building and screening wall, looking west from area north of visitor center entrance (CASA Archives, No. M835)



Figure 309: 1950 photograph of garage doors at northwestern end of utility building, looking south (CASA, No. M192)



Figure 310: 1934 photograph of unidentified man standing near future site of 1935 dock construction, looking west. Note the old dock pilings and stone groin visible to the right and Fort Matanzas to the left (CASA No. M593)

Design. The improvements included an access road from Ocean Shore Boulevard, a headquarters and visitor center complex, a parking lot, and a dock for a ferry to Fort Matanzas. In August 1935, the NPS contracted O.P. Woodcock Company of Jacksonville to construct the visitor center and utility building (Figure 307 and Figure 308).

The NPS partially built the two-story visitor center building into a sandy hill near the western edge of Anastasia Island. It had the main visitor contact station on the lower story with an open, arched breezeway in the center of the building; a ranger residence occupied the second story. The lower-level exterior walls of the main visitor center building were built of coquina-block masonry veneer. The upper story was wood frame with wood siding. The wooden exterior was painted silver gray. A portico with arched openings on the northwestern end of the building connected to the utility building by a mortared-brick walkway backed by a coquina screening wall. The walls of the utility building were solid coquina block. The NPS built two garage doors into the northwestern side of the utility building (Figure 309). Water service extended to the two buildings from a well outside of the northeastern end of the FOMA VC area loop road. A septic tank was located behind the utility building. Electrical service was extended to the buildings from an electrical pole and transformer located southeast of the visitor center, near where the Johnson House sits today.

The construction of the circulation routes around the HQ/VC in 1937 required slight alterations to the structures completed in 1936 but no major alterations to the visitor center and utility building occurred. In April 1937, to allow for the construction of a coquina staircase and walkway leading from the visitor center entrance to the ranger residence at the upper floor of the building, the NPS removed a section of the original retaining wall on the northeastern side of the visitor center at the arched entrance into the building on the lower level. The extended wall projected out towards the parking area and wrapped around to retain the hill on the southern side of the building.

Wooden pilings from an old dock are seen in photographs taken in 1934 during the early planning period for the HQ/VC complex (Figure 310). The construction of the HQ/VC



Figure 311: 1935 photograph of completed visitor center dock, looking northwest. Fort Matanzas is visible across the Matanzas River to the right (CASA No. M1044)



Figure 312: c. 1936 photograph of groin south of visitor center dock, looking northwest. Fort Matanzas is visible across the Matanzas River to the left (CASA No. M1072)

provided a place from which people visiting the national monument site could depart Anastasia Island and travel to Fort Matanzas. To facilitate this transportation, new docks on the western and eastern sides of the Matanzas River were constructed in 1935 under a PWA contract awarded by the NPS. Construction of the docks was completed on October 19, 1935, and the NPS approved both structures the following day (Figure 311).[504] The NPS built the dock on Anastasia Island just behind the visitor center site, southeast from the wooden pilings remaining from an older dock.

Similar to the erosion control efforts at Rattlesnake Island, the NPS has installed shoreline stabilization structures in the study area along the eastern bank of the Matanzas River. After the construction of a dike closed the channel between what is now the northern and southern ends of Rattlesnake Island on November 9, 1934, erosion began to degrade both the western and eastern shore of the Matanzas River. By August of 1935, severe erosion to the southwestern corner of Fort Matanzas prompted the NPS to investigate possible stabilization efforts along the national monument's riverbanks. As part of this study, United States Corps of Engineers District Engineer P.A. Feringa visited the site in November of 1935 and recommended actions at Anastasia Island and Fort Matanzas. At Anastasia Island, Feringa found the remnants of three of the original five groins, built about 20 years earlier. Two of the groins were north and one was south of the newly constructed dock. The War Department and the NPS had not maintained groins, and their poor condition no longer allowed for adequate erosion control. Feringa recommended that 10 coquina-rock groins be installed to preserve the shoreline and limit erosion resulting from the newly constructed dike on Rattlesnake Island.[505] Due to lack of funding, only two of these 10 recommended groins were built between October 19, 1936 and December 22, 1936. The first "was located 120 feet south of the dock and extended 97 feet into the river and the other groin was located 150 feet north of the dock and extended 78 feet into the river (Figure 312)."[506]

Post-Historic and Existing Condition: Headquarters and Visitor Center

In 1938, shortly after the period of significance, the NPS installed additional groins along the eastern shore of the Matanzas River. These structures were built of coquina riprap and joined the previously installed groins in trapping sediment and building up the eastern bank of the Matanzas River. The groins were successful in limiting erosion along the river's edge and the riverbank west of the visitor center became a popular destination at the site (Figure 313). The Youth Conservation Corps



Figure 313: 1972 photograph of people fishing from groins along eastern shore of Matanzas River, looking northwest from visitor center dock (CASA No. M680).

504. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 152.

505. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report,* 152-154.

506. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 157.



Figure 314: 1973 photograph of visitor center dock, looking west from western edge of Anastasia Island. A boat lift and shade structure have been added to the original dock. (CASA No. M1525).



Figure 315: 1979 photograph of newly constructed visitor center dock, looking northeast from Matanzas River (CASA No. M3258c).

reconstructed the groins in 1976. The structures continue to provide erosion control at the western edge of Anastasia Island.

By 1973, the NPS had retrofitted the dock behind the visitor center with a temporary shade structure and a covered boat lift for smaller vessels (Figure 314). The NPS replaced the dock between December of 1978 and January of 1979. This new dock was constructed as a ferry boat dock, which was much more suitable to accommodate loading and unloading of groups visiting the fort site (Figure 315). Since then, the NPS has expanded the dock, and it currently features additional space for awaiting ferry service to the fort beneath a canopy as well as increased docking capacity with dry and wet docking for ferry boats.



Figure 316: 2016 photograph of comfort station, looking east from visitor center parking area (WLA Studio).

In 1989, the NPS added a comfort station to the site at the eastern side of the FOMA VC area loop road. This building housed two restrooms and a covered area intended for vending machines. The structure was built using concrete blocks. The NPS faced the lower portion of the building with coquina-block veneer. They covered the upper portion with wood siding and painted it to match the visitor center. The NPS built two coquina planters at the base of the building's western side and a small alcove for a water fountain at the center of the building (Figure 316).

The NPS converted the utility building to the law enforcement ranger office in 1990. This building originally contained a two-car garage, workroom, and a generator room. The building has operated as a ranger office and has housed law enforcement services for the park since its conversion. During the building updates, the NPS removed the original garage doors from the northwestern face. They filled the void left by the removal of the garage doors with coquina blocks to match the original material of the building's walls and the NPS added a door to this end of the building to provide pedestrian access.

Historic Condition: Beach Ramp

The NPS constructed no buildings or structures at the beach ramp site during the period of significance.

Post-Historic and Existing Condition: Beach Ramp

Since the period of significance, two types of structures have been constructed at the beach ramp site. These include modular concrete-block

retaining walls and a wooden portable toilet enclosure. According to aerial photographs of the site, the retaining walls were in place by 1998. These walls line each row of parking along the road leading east to the beach ramp from SR A1A. The walls are used to retain the dune slopes. The NPS uses the wooden portable toilet enclosure to house two portable toilets and screen these from view in the parking area. The structure is placed at the western corner of the northern row of parking. It is not permanently fixed to the ground.

Summary

The preservation projects at Fort Matanzas have generally maintained the same materials and workmanship of the original construction. The fort is a character-defining feature of the site and contributes to the landscape's historic significance. The NPS has replaced or covered the War Department period features when installing new seawalls. The bulkhead wall, dating to the period of significance, is still visible in the landscape. The visitor center and utility building (now park offices) at the HQ/VC and the landscape walls near these buildings date to the period of significance. Changes to the buildings have not detracted from their historic significance. Two of the existing five groins on the eastern shore of the Matanzas River date to the period of significance. These features, which were integral in establishing control of the shoreline erosion at the site, are contributing.

Landscape Features

- Fort Matanzas
  - Contribution Status: Contributing
  - Condition: Fair
- Steel bulkhead wall at Fort Matanzas
  - Contribution Status: Contributing
  - Condition: Good
- Dock at Fort Matanzas
  - Contribution Status: Noncontributing
  - Condition: Good
- Visitor center
  - Contribution Status: Contributing
  - Condition: Good
- Utility building
  - Contribution Status: Contributing
  - Condition: Good
- Coquina retaining walls at visitor center
  - Contribution Status: Contributing
  - Condition: Good
- Coquina screening wall between visitor center and utility building
  - Contribution Status: Contributing
  - Condition: Good
- Coquina planters at visitor center and utility building
  - Contribution Status: Contributing
  - Condition: Good
- Comfort Station
  - Contribution Status: Noncontributing
  - Condition: Good
- Two stone groins on either side of HQ/VC dock
  - Contribution Status: Contributing
  - Condition: Good
- Dock behind visitor center
  - Contribution Status: Noncontributing
  - Condition: Good
- Retaining walls at beach ramp
  - Contribution Status: Noncontributing
  - Condition: Good
- Portable toilet enclosure at beach ramp
  - Contribution Status: Noncontributing
  - Condition: Good

Views and Vistas

Historic Condition: Fort Matanzas

Builders from the Colonial period sited the wooden watchtowers that preceded the fort in locations that allowed clear views to Matanzas Inlet. In 1742, Fort Matanzas took the place of these watchtowers. The Spanish sited the fort at the southeastern tip of Rattlesnake Island. From this vantage point, soldiers garrisoned at the fort had a direct view to Matanzas Inlet where the Matanzas River meets the Atlantic Ocean. Unlike the watchtowers, Fort Matanzas was armed. This open view to the inlet was important for establishing clear firing lanes rather than simply alerting the town of St. Augustine and Castillo de San Marcos of invading ships. During the Colonial period, the view to the inlet remained clear. Midway through the War Department period, the shifting landforms and waterways had moved the inlet south. By 1922, the southern shift of the inlet resulted in the Atlantic Ocean being hidden from view by the dunes of Anastasia Island.[507] The construction of the first bridge across Matanzas Inlet significantly altered this view in 1925. The bridge opened in 1927 (Figure 317). The construction of the HQ/VC complex would change the view from the fort slightly, but care was taken to retain vegetation around the site. While the complex was visible across the Matanzas River, a partial buffer was retained at the river's edge.

Post-Historic and Existing Condition: Fort Matanzas

The view to Matanzas Inlet remains close to that seen during the later portion of the period of significance. The bridge across the inlet is visible, and there is not a clear line of sight to the Atlantic Ocean. Views to the west are uninterrupted by development (Figure 319). These are mostly views to preserved land. This includes Rattlesnake Island, the widened channel of the Intracoastal Waterway, and preserved vegetation of Faver-Dykes State Park and Matanzas State Forest. The views to the east, other than NPS property, feature rooftops and beachfront condominiums along the Atlantic Ocean.



Figure 317: 1970s photograph of southeastern view to Matanzas Inlet from terreplein of Fort Matanzas (CASA No. M1427).



Figure 318: 1983 photograph of western view to Rattlesnake Island and Intracoastal Waterway channel from top of Fort Matanzas (CASA No. M1887)

Historic Condition: Headquarters and Visitor Center

The NPS constructed the HQ/VC complex because of its proximity to Fort Matanzas. The site at the western side of Anastasia Island not only allowed for direct access to Fort Matanzas by boat but also allowed for easy views across the Matanzas River to the fort (Figure 318). These views were critical before consistent ferry service was established to and from the fort, because early interpretive programs at the national monument depended on this visual connection.

It has been noted in this report that methods described in *Park Structures and Facilities*, published in 1935, which describes the NPS rustic style, are seen in the design and construction of the HQ/VC complex. The planning for the complex occurred around the same time as the publication of this book. It is likely that during the development of the HQ/VC complex an entrance sequence was created that used vistas along the entrance route to establish the hierarchy of the

507. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 119.



Figure 318: 1968 photograph of northwestern view to Fort Matanzas from visitor center dock (CASA No. M471)

natural environment over the built environment. The book states that "although a park structure exists solely for the use of the public, it is not required that it be seen from some distance. In its most satisfying expression, the park structure is designed with a view subordinating it to its environment and located so that it may profit from any natural screening that may exist." The book goes on to encourage the "subordination of a structure to environment" and states that "signs marking the way to a particular park building which has been appropriately retired are to be preferred to the shock of finding a building intruding at a focal point or visible for great distance."[508] The retention of natural vegetation and the layout of the entrance road and the FOMA VC area loop road did not feature long axial views to buildings but instead hid these buildings from sight. At the time of the HQ/VC complex's opening in 1937, the vegetation remaining on site was denser than seen today. The view from the entrance road ended at the vegetative buffer between the road and the utility building. The visitor center was only visible to motorists just before the building was reached along the loop road. This controlled visual experience continued from the sidewalks to the walkway entering the arched breezeway that passed through the visitor center building to the eastern shore of the Matanzas River. The reveal of the landscape at the river's edge and the views across the river to Fort Matanzas were even more impactful because of the restrained vistas along the entrance sequence.

508. National Park Service, *Park Structures and Facilities* (Washington, D.C.: National Park Service, 1935), 4.



Figure 320: 2016 photograph of trees between FOMA VC area loop road and LE ranger office, looking east from brick walkway linking the LE ranger office and visitor center. Note the open character of the site as trees have been removed since the site's original construction (WLA Studio, 2016)

Another section where this entrance vista opened up to a wider, natural view was along the dirt road leading from the utility building along the northern portion of the property. This view included the planted slopes along the Matanzas River's eastern shore and the marsh north of the FOMA VC area loop road. The open character was a sharp contrast to the maritime hammock forest lining the parking area and the entrance drive. Close to the northwestern limit of the study area, the vegetation thinned, the dune receded, and a view west to Fort Matanzas was revealed.

Post-Historic and Existing Condition: Headquarters and Visitor Center

The views from the HQ/VC to Fort Matanzas are relatively unchanged. No development has occurred near the site as Rattlesnake Island is owned by the NPS, which manages the site as an undeveloped natural area. Views and vistas in and around the park have changed. Older trees have shaded and thinned out the canopy below, creating open views across the landscape as opposed to the controlled vistas originally designed for the site. Trees have also been removed by age or storms, which has had an impact on the character of views and vistas, specifically the screening in front of the utility building (Figure 320). The forested areas outside of the entrance drive and FOMA VC area loop road remain dense. The vegetation at the eastern shore of the Matanzas River near the visitor center is not as open as seen during the period of significance.

Historic Condition: Beach Ramp

The entrance sequence to the beach ramp landscape was fairly simple. The only vertical element, other than the dunes lining the road and parking areas, was a timber guardrail. The tallest feature was the top of the vegetated dunes on either side of the road. After arriving at the beach, the natural view north and south along the Atlantic Ocean was relatively unobstructed. Other than a few buildings along the northern side of the beach, which are too far away to have a major visual impact, the views from the end of the beach ramp out to the ocean and along the beachfront were unimpeded by development.

Post-Historic and Existing Condition: Beach Ramp

The views at the beach ramp landscape have been altered not by changes in vegetation but by the development of condominiums and beach front property. Immediately north of the beach ramp landscape, the Summer House condominiums, constructed in 1982, can be seen above the dunes north of the original parking area. At the beach, views are like those during the period of significance but are impeded to the north by the eastern ends of the buildings and the steps leading from the condominiums and beachfront homes to the Atlantic beachfront.

Summary

Views along the Matanzas River and across to adjacent landmasses are character-defining features dating to the historic period. One of the reasons the Spanish constructed the fort in this location was that it provided strategic views. The views available from the fort site remain relatively consistent from the Colonial period. There are modern intrusions along the river that diminish the integrity of the views. These intrusions are minor compared to the otherwise natural appearance of the viewshed. Today, the views from Fort Matanzas are among the most important contributing resources at the national monument.

The view to Rattlesnake Island serves two purposes. One, it provides a visual connection to the primary cultural resource in the national monument, the 1742 masonry fort. The view also provides a visual connection to the site's natural resources, which is a vital component of the national monument's current mission. These natural features also provide modern visitors with a direct link to the landscape that the Spanish would have encountered during their occupation of the site during the period of significance. The controlled vistas inside and from the HQ/VC complex were created in keeping with the NPS rustic style of architecture and are character-defining features of the site.

Landscape Features

- View from Fort Matanzas to Matanzas Inlet
    - Contribution Status: Contributing
    - Condition: Good
- View from Fort Matanzas to surrounding natural resources
    - Contribution Status: Contributing
    - Condition: Good
- View from HQ/VC to Fort Matanzas
    - Contribution Status: Contributing
    - Condition: Good
- Vistas along HQ/VC entrance sequence
    - Contribution Status: Contributing
    - Condition: Fair
- View along dirt road north of utility building to natural resources
    - Contribution Status: Contributing
    - Condition: Good
- View along dirt road north of utility building to Fort Matanzas
    - Contribution Status: Contributing
    - Condition: Good
- View from east of beach ramp south along Atlantic beachfront
    - Contribution Status: Contributing
    - Condition: Good
- View from east of beach ramp north along Atlantic beachfront
    - Contribution Status: Contributing
    - Condition: Fair

Constructed Water Features

Historic Condition: Fort Matanzas

There were no known constructed water features at the Fort Matanzas site during the period of significance.

Historic Condition: Headquarters and Visitor Center

The NPS constructed utilitarian water features at the headquarters and visitor center during the period of significance. The preliminary road plans for the HQ/VC complex dated January 6, 1936 and drafted by staff with the NPS Eastern Division, Branch of Plans and Design identify two water

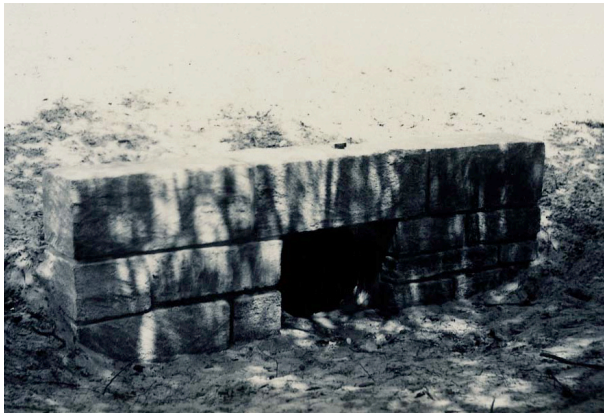


Figure 321: 1937 photograph of coquina-masonry headwall, looking northwest from preserved area at center of FOMA VC area loop road (CASA No. M970)

wells northeast of the FOMA VC area loop road. The plans call for water service to be delivered to the visitor center and utility building from the wells by a 2-inch copper pipe. This pipe extends beneath the FOMA VC area loop road and the preserved natural area at the center of the loop road before arriving at the two buildings.

During the construction of the FOMA VC area loop road, the NPS designed a stormwater system to divert water to the western side of the vegetated area at the center of the loop road. Designers diverted stormwater from the surrounding vehicular-use area, and it was directed to an 18-inch culvert. This culvert extended below the loop road and drained northwest into the marsh. The NPS constructed a coquina headwall around this culvert to protect the drainage feature.

Historic Condition: Beach Ramp

There were no known constructed water features at the beach ramp site during the period of significance.

Post-Historic and Existing Condition: Fort Matanzas

The NPS did not construct any water features at the Fort Matanzas site after the period of significance.

Post-Historic and Existing Condition: Headquarters and Visitor Center

On October 6, 1938, Superintendent Herbert E. Kahler approved the plans for installing utilities at the HQ/VC complex. This map shows a similar scenario as seen on the 1936 site plan, with a 2-inch copper pipe extending to the buildings from a pumping station and well near the eastern boundary of the study area. This well continued to serve as the main water source for the complex for approximately 30 years. On January 10, 1966, the Anastasia Sanitary District of St. Johns County issued a Letter of Authority allowing the installation and maintenance of a 6-inch water line across SR A1A into the national monument site.[509] This water line entered the site where the maintenance road intersected with SR A1A, southeast of the public entrance to the national monument. The water line followed this road and extended to the visitor center and utility building. The NPS now purchases water for the visitor center and utility building from the St. Johns County Water Department.[510]

Post-Historic and Existing Condition: Beach Ramp

The NPS did not construct any water features at the beach ramp site after the period of significance.

Summary

The pump system installed during the period of significance provided the facility with much-needed water service to accommodate visitation to the national monument site. It is a significant feature in the history of the HQ/VC complex. The drainage system installed worked with the natural topography of the site and used local materials to construct the headwall that protected the culvert that extended below the loop road. This drainage system at the FOMA VC area loop road is remains in place and is a character-defining feature of the site. The water line extension that occurred in 1966 is not a significant historic feature of the site.

Landscape Features

- Pump and well system
    - Contribution Status: Contributing
    - Condition: Good
- Drainage system from HQ/VC parking area to marsh
    - Contribution Status: Contributing
    - Condition: Good

Small-Scale Features

Historic Condition: Fort Matanzas

There were no known small-scale features at the Fort Matanzas site during the period of significance.

509. National Park Service, *Fort Matanzas National Monument Draft Master Plan* (Denver, CO: Denver Service Center, 1976), 41.
510. National Park Service, *Fort Matanzas National Monument Draft Master Plan*, 27.

Post-Historic and Existing Condition: Fort Matanzas

Access to the Fort Matanzas site is only allowed to NPS staff and ranger-led groups. The need for site furnishings and other small-scale features is limited. Since the period of significance, the NPS has introduced few small-scale features to the fort site. Most have been modern regulatory signs placed by the NPS. These have been located to keep unwanted guests off the property and to keep ranger-led groups from wandering into the native vegetation surrounding the maintained area of the fort site. The NPS has also added other features, such as waste receptacles, to the site the site over the years.

Historic Condition: Headquarters and Visitor Center

The NPS installed several small-scale features in the study during the construction of the HQ/VC and beach ramp landscapes. At the HQ/VC, workers constructed a total of six coquina-masonry headwalls along the entrance road and FOMA VC area loop road (Figure 321). The NPS placed these headwalls on each side of the roadway at approximately stations 5+00, 7+00, and 13+50. The purpose of the headwalls was to protect 18-inch vitrified clay drain pipes buried along the entrance route. According to NPS records of the project, "the materials and workmanship used in the construction of each of the six headwalls was of the highest order."[511]

The NPS installed a peeled-cypress-log guard rail "of Park Service standard design" at the entrance road's intersection with Ocean Shore Boulevard (Figure 322). The guard rails extended from the newly graded entrance road to the HQ/VC area and beach ramp site. The NPS constructed an additional guard rail at the intersection of the FOMA VC area loop road and the road extension leading to the utility building (Figure 323). This guard rail lined the fill slope along the northern side of this road extension.[512]

The NPS constructed the original entrance sign in a triangular space in the middle of the entrance road west of Ocean Shore Boulevard. They constructed the base for the sign of coquina-block masonry. The sign itself was natural cypress. The

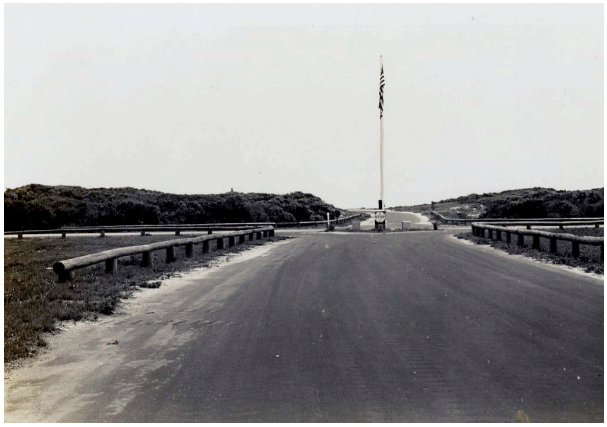


Figure 322: 1937 photograph of guard rails at entrance from Ocean Shore Boulevard, looking east from western entrance road (CASA No. M178c)

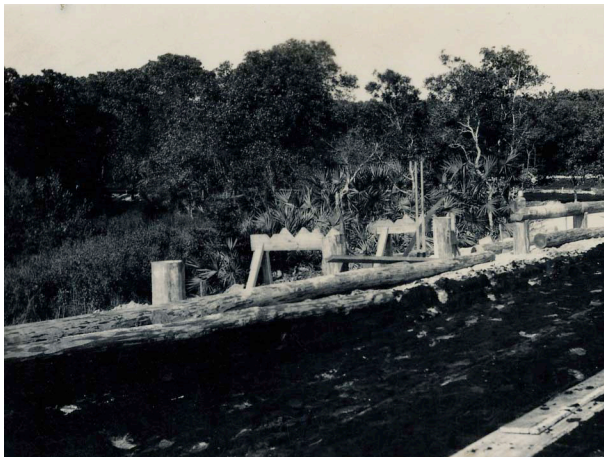


Figure 323: 1937 photograph of guard rail construction along road extension linking utility building with FOMA VC area loop road, looking east from road extension to loop road and parking area (CASA No. M965)

NPS created the lettering by hand carving of the sign around the individual letters to a depth of 1/16 of an inch. The NPS then painted letters white and applied linseed oil to the remainder of the cypress sign (Figure 324 and Figure 325).[513] The NPS placed a flag pole just east of the entrance sign.

Post-Historic and Existing Condition: Headquarters and Visitor Center

The NPS has added many small-scale features at the HQ/VC area since the period of significance. New small-scale features include regulatory and road signs, which the NPS has replaced as needed. The NPS has also replaced the entrance sign and

511. National Park Service, *Grading, Surfacing, and Incidental Construction, Project 1A1, Contract No. I-1p-8036, Fort Matanzas National Monument*, 8.
512. National Park Service, *Grading, Surfacing, and Incidental Construction, Project 1A1*, 21.
513. National Park Service, *Grading, Surfacing, and Incidental Construction, Project 1A1*, 33.



Figure 324: 1949 photograph of original entrance sign, installed in 1937, looking south (CASA No. M1515)



Figure 326: 1957 photograph of entrance sign, looking south from western entrance to HQ/VC (CASA No. M267)



Figure 325: c. 1940 photograph of western entrance to HQ/VC from Ocean Shore Boulevard (SR A1A) (CASA No. M86)



Figure 327: 1987 photograph of entrance sign installation, looking southwest from SR A1A (CASA No. M3381_1)



Figure 328: c. 1990 photograph of entrance sign, looking northwest from SR A1A (CASA No. M3142_2)

moved the sign to the south side of the intersection prior to the 1950 repaving of the highway, which had become known as State Road A1A (SR A1A). The NPS replaced the relocated sign in 1957. The new sign was installed in the same location, southeast of the entrance road's intersection with SR A1A. The NPS constructed this new sign with a coquina-masonry base, which extended vertically at the sign's eastern end. Workers attached a routed NPS arrowhead emblem to the face of this vertical pillar. Workers also mounted a painted sign with the text "Fort Matanzas" and a painted arrow that pointed west to the coquina base (Figure 326). The NPS removed this sign in 1987 and replaced it with a similar feature on the opposite side of the entrance road. The NPS fashioned the foundation with four vertical metal beams (Figure 327). They constructed a vertical coquina column, like the extension seen on the previous sign, west of the beams. This vertical piece did not have the NPS arrowhead emblem attached to it. Workers mortared coquina blocks in place along the bottom of the vertical beams, creating an L-shaped sign base. The sign mounted to the base displayed a routed image of Fort Matanzas with the Matanzas River below (Figure 328). Around the time of this sign's installation, the NPS placed wooden bollards at the intersection of the

western and eastern entrance drives and SR A1A. Since the period of significance, the HQ/VC has provided site amenities beyond the scope seen at Fort Matanzas and the beach ramp landscape. Guests are expected to visit the HQ/VC for longer periods of time than the other two character areas. Because of this, the NPS provided features such as benches, water fountains, vending machines, and picnic tables. The style and materials of these features have evolved over time but the function of providing access and comfort to those visiting the site has remained constant. Contemporary small-scale features include an updated entrance sign, regulatory signs, interpretive panels, composite benches, wooden bollards, picnic tables, ground-mounted and overhead lighting, wild-life proof waste receptacles, metal dumpsters, a bike rack, an entrance gate, and mailboxes.

Historic Condition: Beach Ramp

The NPS installed peeled-cypress-log guard rails at the entrance to the beach ramp area in 1937. These were installed at the same time as the matching guard rails west of Ocean Shore Boulevard. The railings extended along Ocean Shore Boulevard and east along the entrance road toward the beach ramp site. The NPS also placed a guard rail in front of the parking area at the eastern end of the entrance road, near the timber beach ramp. The guard rail lined the sides and front of the parking area, only leaving the area along the entrance road open, thus limiting encroachment into the sand dune just north of the vehicular-use area.

Post-Historic and Existing Condition: Beach Ramp

No small-scale features from the period of significance exist at the beach ramp site. The area has been updated as necessary to be as efficient as possible. The NPS treats the landscape as a transitional area for travelers between SR A1A and the beachfront. Regulatory and interpretive signs provide information for beachgoers as needed. The NPS has placed other features at the site including waste receptacles, a pet waste station, and wooden bollards threaded with metal cables used to separate the timber beach ramp and the dunes along the beachfront.

Summary

The guard rails installed in 1937 at the HQ/VC and beach ramp site are no longer present. The NPS has moved the national monument's original entrance sign and has updated the sign since the repaving of SR A1A in 1950. There are no small-scale features from the period of significance at Fort Matanzas or the beach ramp landscapes. The coquina-masonry headwalls installed at the drain pipe leading under the entrance drive and FOMA VC area loop road are the sole historically significant small-scale features found in the study area.

Landscape Features

- Coquina-masonry headwalls
    - Contribution Status: Contributing
    - Condition: Good
- Peeled-cypress-log guard rail
    - Contribution Status: Missing
    - Condition: N/A
- Coquina-masonry and cypress entrance sign
    - Contribution Status: Missing
    - Condition: N/A
- Regulatory and road signs in study area
    - Contribution Status: Noncontributing
    - Condition: Good
- Interpretive signs in study area
    - Contribution Status: Noncontributing
    - Condition: Good
- Site amenities, i.e. benches, waste receptacles, etc.
    - Contribution Status: Noncontributing
    - Condition: Good

Evaluation of Landscape Integrity

Landscape integrity refers to a cultural landscape's ability to convey its historic significance. *National Register of Historic Places Bulletin 16A* defines historic integrity as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's prehistoric or historic period." The National Register of Historic Places identifies seven aspects that define the integrity of a historic property. These include: location, design, setting, materials, workmanship, feeling, and association. The National Register of Historic Places defines these aspects as follows:

> **Location** is the place where the historic property was constructed or the place where the historic event occurred;
>
> **Setting** is the physical environment within and surrounding a property;
>
> **Design** is the combination of elements that create the form, plan, space, structure, and style of a property;
>
> **Materials** are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
>
> **Workmanship** is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
>
> **Feeling** is a property's expression of the aesthetic or historic sense of a particular period of time; and
>
> **Association** is the direct link between an important historic event or person and a historic property.

The analysis of landscape integrity in this CLR compares the historic character of landscape features with the present ability of these features to convey historic significance. In order to retain historic integrity, a property must possess at least several of these seven aspects of integrity. Evaluating historic integrity involves first determining the historic significance of a property and then identifying the existing features that contribute to our ability to recognize and understand this significance. Character-defining features are the physical qualities that make a property unique. They are the individual parts that make the whole place worthy of recognition as a historic site.

Cultural landscapes reflect the continuum of history. As such, the accumulation of historic features includes those that date to the period of significance as well as those features added subsequently but that have retained historic significance in their own right.

Location

Location is the place where the historic property was constructed or the place where the historic event occurred. While Rattlesnake Island has expanded, Fort Matanzas remains in its original location. The layout of buildings and circulation routes installed east of the fort on Anastasia Island between 1936 and 1937 remains intact. Overall, the cultural landscape retains integrity of location to the period of significance.

Design

Design is the combination of elements that create the form, plan, space, structure, and style of a property. The design of Fort Matanzas reflects the design of similar Spanish fortifications of the time and retains a high level of integrity. The location of the building and its relationship to the river is still legible, though its integrity is diminished by the addition of new shoreline stabilization structures. The design of the HQ/VC is intact and retains integrity to the period of significance.

Setting

Setting is the physical environment of a historic property. The setting of Fort Matanzas has changed since its completion in 1742. Rattlesnake Island has expanded over time due influences. The development of adjacent properties has altered the viewshed, but the visual intrusion does not overly detract from the natural setting. The undeveloped character of Rattlesnake Island and views along the Matanzas River continue to convey the character of the landscape during the Colonial period. The goal when constructing the HQ/VC was to disturb the sand dunes and existing forest cover as little as possible. This progression through a constructed

landscape that embraces its natural setting is a critical part of the experience at the Fort Matanzas National Monument. The setting at Fort Matanzas retains integrity to the period of significance.

Materials

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The use of coquina stone for building construction is one of the character-defining features of the site. The materials used to repair Fort Matanzas are consistent with the original construction of the fort. The historic buildings at the HQ/VC have maintained their original materials since the period of significance. Most circulation routes at the HQ/VC, while still in their original locations, have been rebuilt using new materials. This has adversely impacted the integrity of materials but enough original material remains on site for there to be an overall retention of integrity in the materials found in the study area to the period of significance.

Workmanship

Workmanship is the physical evidence of the crafts of a particular culture of people during any given period of history or prehistory. Workmanship in the cultural landscape is visible in the planning and construction of both the fort and HQ/VC complex, though the loss of site features has resulted in diminished integrity. Similarly, the reconstruction of features, like the sentry box at Fort Matanzas, results in a loss of integrity of workmanship dating from the Colonial period of significance. These preservation projects, however, utilized similar materials and construction methods and relied upon extensive research of Spanish colonial construction methods. After the completion of the HQ/VC complex in 1937, the excellent workmanship seen in the construction of the buildings and landscape features was commented upon several times by NPS landscape architect James T. Swanson. The features that remain from this time continue to reflect this quality of workmanship from the period of significance.

Feeling

Feeling evaluates a cultural landscape's ability to express the aesthetic or historic character of a particular time. The overall feeling at both Fort Matanzas and the HQ/VC complex is similar to the aesthetic character from the period of significance. Development has increased, Rattlesnake Island has expanded, and Matanzas Inlet has moved southward, but the built environment and physiographic features in and surrounding the study area contributes to the feeling at the site. Overall, the feeling of the site retains integrity to the period of significance.

Association

Association refers to the link between historic events or persons and the cultural landscape. The landscape features remaining in the study area from the period of significance provide a link to the military, social, and architectural history of the region and immediate study area. The site has been altered to defend against erosion and weathering at Fort Matanzas and to accommodate increased visitation at the HQ/VC complex, however, the association with the history of the study area is still legible when visiting the site. The fort continues to reflect the construction methodology and form of a Spanish fort. The visitor center continues to reflect an association with WPA-era park design and construction. Overall the association at the site retains integrity to the period of significance.

Integrity of the Site as a Whole

The cultural landscape at Fort Matanzas National Monument retains integrity of location, association, feeling, setting, materials, and design. The integrity of materials and craftsmanship are diminished because of the extensive restoration required to preserve these fragile resources and the introduction of modern materials along circulation routes. Noncontributing resources present at the national monument include small-scale and circulation features that have been introduced to the site to accommodate increased visitation. However, these additions do not undermine the national monuments' eligibility for listing in the National Register.

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
Fort Matanzas National Monument					
Natural Systems and Features					
	Atlantic Ocean		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933)
	Matanzas Inlet		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Matanzas River		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Anastasia Island		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Rattlesnake Island		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Sand Dunes		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
Spatial Organization					
	Development along the Matanzas River	c. 1569	Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Response to dune locations	Late 1800s	Contributing	Good	War Department Period (1821-1933) NPS Period (1933-Present)
	Access to Atlantic beachfront	1936-1937	Contributing	Good	NPS Period (1933-Present)
Land Use					
	Military	c. 1565	Contributing		Colonial Period (1500-1821) War Department Period (1821-1933)
	Tourism	Late 1800s	Contributing		War Department Period (1821-1933) NPS Period (1933-Present)
	Residential	Late 1800s	Contributing		War Department Period (1821-1933) NPS Period (1933-Present)
	Environmental interpretation	1936-1937	Contributing		NPS Period (1933-Present)
	Historical interpretation	1936-1937	Contributing		NPS Period (1933-Present)
	Recreational	Late 1800s	Contributing		War Department Period (1821-1933) NPS Period (1933-Present)
	Natural conservation	1936-1937	Contributing		NPS Period (1933-Present)

Table 4.2: Fort Matanzas National Monument Cultural Resources Table

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
Cultural Traditions					
	Expansion of religious ideologies	c. 1565	Contributing		Colonial Period (1500-1821)
	Maintenance of shipping channels	c. 1565	Contributing		Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Military traditions	c. 1565	Contributing		Colonial Period (1500-1821) War Department Period (1821-1933)
	NPS rustic design approach	1936-1937	Contributing		NPS Period (1933-Present)
	Historical tourism	1936-1937	Contributing		NPS Period (1933-Present)
	Natural preservation	1936-1937	Contributing		NPS Period (1933-Present)
	Passive recreation	Late 1800s	Contributing		War Department Period (1821-1933) NPS Period (1933-Present)
Cluster Arrangement					
	Headquarters and visitor center	1936-1937	Contributing		NPS Period (1933-Present)
	Beach ramp	1936-1937	Contributing		NPS Period (1933-Present)
Circulation- Vehicular and Pedestrian					
	Matanzas River				
	Informal sand roads	Late 1800s	Contributing	Good	War Department Period (1821-1933) NPS Period (1933-Present)
	Ocean Shore Boulevard (now State Road A1A)	1927	Contributing	Good	War Department Period (1821-1933) NPS Period (1933-Present)
	Road west from Ocean Shore Boulevard	1936-1937	Contributing	Good	NPS Period (1933-Present)
	FOMA VC area loop road	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Road from the FOMA VC area loop road to utility building	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Parking areas along the FOMA VC area loop road	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Brick walkway from the visitor center to the utility building	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Sidewalks along the FOMA VC area loop road parking lot	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Walkway from the parking lot to the visitor center	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Coquina staircase	1936-1937	Contributing	Fair	NPS Period (1933-Present)
	Walkway with coquina step treads	1936-1937	Contributing	Fair	NPS Period (1933-Present)

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
	Walkway from the visitor center's breezeway toward the dock	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Rustic coquina-stone walkway	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Walkway from the visitor center's portico to the dock	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Road leading east to the Atlantic beachfront	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Beach ramp	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Parking area north of the beach access road	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Pathway from dock to fort	1976	Noncontributing	Good	NPS Period (1933-Present)
	Wooden staircase to terreplein of fort	1980	Noncontributing	Fair	NPS Period (1933-Present)
	Dirt access road to maintenance area	c. 1989	Noncontributing	Good	NPS Period (1933-Present)
	Informal pathways to the eastern bank of the Matanzas River	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Elevated interpretive nature trail	1983	Noncontributing	Good	NPS Period (1933-Present)
	Walkway extension from utility building parking area to brick walkway	1990	Noncontributing	Good	NPS Period (1933-Present)
	Southern parking area at the beach ramp	1949	Noncontributing	Good	NPS Period (1933-Present)
Topography					
	Rattlesnake island's low, marshy terrain		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Steel bulkhead	1936	Contributing	Good	NPS Period (1933-Present)
	Low-lying areas (at the HQ/VC)		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Transitional areas near the river's edge (at the HQ/VC)		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Old, established dunes (at the HQ/VC)		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Dunes near the entrance to the beach ramp area		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Established dunes near the Atlantic beachfront		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Sandy beach adjacent to the Atlantic Ocean		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
	Timber-sheet piling	1966	Noncontributing	Good	NPS Period (1933-Present)
	Slopes down to the eastern shore of the Matanzas River		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Further grading into the existing dune area at the beach ramp	1949	Noncontributing	Good	NPS Period (1933-Present)
Vegetation					
	Turf area at fort site	1966	Noncontributing	Good	NPS Period (1933-Present)
	Natural vegetation at fort site		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Foundation plantings at HQ/VC	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Preserved vegetation at HQ/VC		Contributing	Fair	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Preserved dune plantings at beach ramp		Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Circular clearing at national monument entrance from SR A1A	c. 1970	Noncontributing	Fair	NPS Period (1933-Present)
Buildings and Structures					
	Fort Matanzas	1740-1742	Contributing	Fair	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	Ravelin	1760s	Contributing	Good	Colonial Period (1672-1821)
	Steel bulkhead wall at Fort Matanzas	1936	Contributing	Good	NPS Period (1933-Present)
	Dock at Fort Matanzas	1935	Noncontributing	Good	NPS Period (1933-Present)
	Visitor center	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Utility building	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Coquina retaining walls at visitor center	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Coquina screening wall between visitor center and utility building	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Coquina planters at visitor center and utility building	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Comfort station	1989	Noncontributing	Good	NPS Period (1933-Present)
	Two stone groins on either side of HQ/VC dock	1936	Contributing	Good	NPS Period (1933-Present)
	Dock behind visitor center	1935	Noncontributing	Good	NPS Period (1933-Present)
	Retaining walls at beach ramp	c. 1998	Noncontributing	Good	NPS Period (1933-Present)

Landscape Characteristic	Resource Name	Date of Construction	CLR Contributing Status	General Condition	Period
Views and Vistas					
	View from Fort Matanzas to Matanzas Inlet	1742	Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	View from Fort Matanzas to surrounding natural resources	1742	Contributing	Good	Colonial Period (1500-1821) War Department Period (1821-1933) NPS Period (1933-Present)
	View from HQ/VC to Fort Matanzas	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Vistas along HQ/VC entrance sequence	1936-1937	Contributing	Fair	NPS Period (1933-Present)
	View along dirt road north of utility building to natural resources	Late 1800s	Contributing	Good	War Department Period (1821-1933) NPS Period (1933-Present)
	View from east of beach ramp south along Atlantic beachfront	1936-1937	Contributing	Good	NPS Period (1933-Present)
	View from east of beach ramp north along Atlantic beachfront	1936-1937	Contributing	Fair	NPS Period (1933-Present)
Constructed Water Features					
	Pump and well system	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Drainage system from HQ/VC parking area to marsh	1936-1937	Contributing	Good	NPS Period (1933-Present)
Small-Scale Features					
	Coquina masonry headwalls	1936-1937	Contributing	Good	NPS Period (1933-Present)
	Peeled-cypress-log guard rails	1936-1937	Missing	NA	NPS Period (1933-Present)
	Coquina-masonry and cypress entrance sign	1936-1937	Missing	NA	NPS Period (1933-Present)
	Regulatory and road signs	2000s	Noncontributing	Good	NPS Period (1933-Present)
	Interpretive signs	2000s	Noncontributing	Good	NPS Period (1933-Present)
	Site amenities, i.e. benches, waste receptacles, etc.	2000s	Noncontributing	Good	NPS Period (1933-Present)

Treatment and Use

Introduction

The treatment recommendations for this Cultural Landscape Report (CLR) propose a preservation strategy for long-term management of the cultural landscape based on research, inventory, and analysis. The appropriate preservation approach considers the evolution of the landscape alongside significance, existing conditions, and current use. The CLR combines the site history and analysis with input from the current site managers to formulate an appropriate treatment and management philosophy.

Consistent with the rest of this document, the treatment recommendations are divided into two sections: Castillo de San Marcos and Fort Matanzas.

Recommendations follow National Park Service policy, including the Director's Orders No. 28: *Cultural Resource Management Guidelines* and *the Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. These documents identify four types of treatment: preservation, rehabilitation, restoration, and reconstruction. Each treatment ranges by level of physical intervention and includes specific guidelines and standards.

Preservation is the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the on-going maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Rehabilitation is the act or process of making possible a compatible use of a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

Restoration is the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other historic periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make the property functional is appropriate within a restoration project.

Reconstruction is the act or process of depicting, by means of new construction, the form, features, and details of a non-surviving site, landscape, building, or objects for the purpose of replicating its appearance at a specific period of time in its historic location.[509]

Secretary of the Interior's Standards for Treatment

Standards for Preservation:

A property will be used as it was historically or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close

inspection, and properly documented for future research.

Changes to a property that have acquired historic significance in their own right will be retained and preserved.

Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

Standards for Rehabilitation:

A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

Changes to a property that have acquired historic significance in their own right will be retained and preserved.

Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be supported by documentary and physical evidence.

Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Standards for Restoration:

A property will be used as it was historically or be given a new use that reflects the property's restoration period.

Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period will not be undertaken.

Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

Materials, features, spaces, and finishes that characterize other historical periods will be documented prior to their alteration or removal.

Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.

Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials.

Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.

Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

Archeological resources affected by a project will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

Designs that were never executed historically will not be constructed.

Standards for Reconstruction:

Reconstruction will be used to depict vanished or non-surviving portions of a property when sufficient documentary and physical evidence is available to allow for accurate reconstruction with minimal conjecture and when such reconstruction is essential to the public understanding of the property.

Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken.

Reconstruction will include measures to preserve any remaining historic materials, features, and spatial relationships.

Reconstruction will be based on the accurate duplication of historic features and elements supported by documentary or physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property will re-create the appearance of the non-surviving historic property in materials, design, color, and texture.

A reconstruction is clearly identified as a contemporary re-creation. Designs that were never executed historically will not be constructed.

Castillo de San Marcos National Monument Management Philosophy

Castillo de San Marcos was listed in the National Register of Historic Places on October 15, 1966. In 1977, the water battery and City Gate were added as contributing resources. In 1996, the moat, covered way, glacis, ravelin, hot shot furnace, seawall, and Cubo Line were added to the list of contributing resources.

The National Park Service prepared a *Final General Management Plan and Environmental Impact Statement* (GMP/EIS) for Castillo de San Marcos National Monument in March 2007. That document considers four alternatives for managing the park "for the next 15 to 20 years."[510]

The NPS's preferred alternative was Alternative C, which the document described as:

> Alternative C … would implement a phased removal of some modern intrusions from the fort and the landscape. Some administrative functions would be removed from the fort and three casemates would be returned to a more historic appearance and part of the visitor parking lot would be removed (specific size and configuration would be determined in a later planning and design phase). The ticket booth

510. National Park Service, "Final General Management Plan and Environmental Impact Statement Castillo de San Marcos National Monument," March 2007, i.

would be relocated to enhance the view of the fort at the entrance. Administrative offices and maintenance operations would remain in the current locations at the north end of the site.

The visitor center authorized by Public Law 108-480 would be located off-site and convenient to the park and the Spanish Quarter.[511]

The GMP/EIS describes several proposed projects within Alternative C that would have a direct impact on the cultural landscape. One goal of Alternative C was to provide visitors with "an authentic feeling of being in the historical period."" To accomplish this, the park proposed expanding the fort green and glacis by removing a portion of the existing parking lot and "contouring and grassing the area to match existing conditions on the remainder of the site."" While a few accessible parking spaces would remain south of the fort, most visitors would park in a city parking structure and ride the St. Augustine tourist train to the proposed visitor center. Relocating the ticket booth to the proposed visitor center would enhance "the view of the fort at the entrance." Alternative C also proposed widening the sidewalk "from the north end of the site to the south end. . .to improve the safety of an anticipated increase in visitors walking from the new city parking structure to the fort entrance."[512]

The NPS cancelled the visitor center project when the land upon which it was to be built became unavailable. This affected other projects described in Alternative C, including the redesign of the parking lot and relocation of the ticket booth.

The June 2016 *Foundation Document for the Castillo de San Marcos National Monument* lists four fundamental resources and values (FRVs) that are essential to the park's significance. These FRVs include Castillo de San Marcos and its surrounding outworks, the City Gate Pillars and a section of reconstructed Cubo Line, the U.S. Water Battery and Hot Shot Furnace, and the Ledger Art and American Indian Wall Art from the Incarceration Period.

According to the foundation document's purpose statement, Castillo de San Marcos National Monument "preserves the oldest masonry fortification in the continental United States and interprets more than 450 years of cultural intersections." The document identifies four statements of significance:

- Primarily constructed of locally quarried coquina stone, Castillo de San Marcos is a remarkably well-preserved example of Star Fortress military architecture and illustrates Spanish military engineering adaptation in the New World;
- Castillo de San Marcos is a tangible representation of more than 250 years of conflict between European colonial powers in what is now the southeastern United States and Spain's military struggle to protect the vital Gulf Stream trade route;
- Castillo de San Marcos was the principal fortification in the region from 1672 to 1900, having been occupied by the armies of Spain, Great Britain, the Confederate States of America, and the United States, and has meaningful connections to diverse cultures in St. Augustine and the world;
- Castillo de San Marcos, known as Fort Marion at the time, became a military prison for American Indians; including the Seminoles in 1837, Plains Indians from 1875 to 1878, and Apaches from 1886 to 1887.

In addition to the preservation of the most visible historic resources, the national monument's foundation document also identifies the viewshed, artillery collection, and archeological resources as other important resources and values (OIRVs) warranting special consideration in park planning. The interpretive themes, discussed in the foundation document, span from the Spanish colonial presence in North America to more recent preservation and stewardship efforts by the War Department and the NPS. Under "preservation and stewardship," the foundation statement asserts "the stewardship of the oldest masonry fort in the continental U.S. requires careful preservation methods and techniques to maintain and safeguard the Castillo, its surrounding defensive structures, and its landscape features for the purpose of providing an authentic place for reflecting on

511. National Park Service, "GMP/EIS 2007," iv.
512. National Park Service, "GMP/EIS 2007," 28.

our nation's past. These structures, originally built to protect people, are now in need of our protection."[513]

Neither the GMP/EIS nor the Foundation Document assigns a management category to the park. While the Foundation Document emphasizes preservation of historic resources, preferred Alternative C of the GMP/EIS is consistent with the Standards for Rehabilitation.

Additionally, the NPS Cultural Resource Inventory System for CASA includes ten certified listings for historic structures, including Castillo de San Marcos, Water Battery, Glacis, Covered Way, Ravelin, Moat, Seawall, Hot Shot Furnace, Reconstructed Cubo Line, and City Gate Pillars. These are all classified as "Must Be Preserved and Maintained."

The LCS identification numbers for the listed historic structures are: Castillo de San Marcos (000129), Water Battery (007174), Reconstructed Cubo Line (090100), Moat (091415), Covered Way (091416), Ravelin (091418), Hot Shot Furnace (091419), Tricentennial Marker (091420), Seawall (091421).

Previous Treatment Documents

Edwin Bearss and John Paige produced a Historic Structures Report for Castillo de San Marcos in September 1983. It provided a comprehensive history of the building and associated landscape features beginning in 1763 and extending to 1979. It discussed NPS preservation projects, but the report did not provide existing condition descriptions or treatment recommendations. Cécile-Marie Sastre produced a history of the cultural landscape for a Cultural Landscape Report of Castillo de San Marcos National Monument in 2000. This report also did not provide treatment recommendations.

In 1986, C. Craig Frazier and Randall Copeland, Historical Architects with the Denver Service Center, and Luis Arana with Castillo de San Marcos National Monument, prepared a Draft Volume 2 of a Historic Structures Report that provided more condition analysis and preservation treatment recommendations than contained in the Bearss report. It proposes two treatment strategies: "stabilization of the fort through replacement of the terreplein, and preservation of all resources by first making some immediate repairs and then conducting ongoing preservation maintenance."[514]

This document also states, "All existing fabric is deemed worthy of preservation—whether a Spanish scarp, a War Department seawall, or an NPS replica tabby floor—wherever such work contributes to resource protection and conservation."[515]

In 1993, NPS commissioned a report by Grieves Worrall Wright and O'Hatnick, Inc. that provided stabilization recommendations for Castillo de San Marcos and Fort Matanzas. This report intended to update the 1986 HSR based on technical studies that had occurred after that year. While the authors agree with many of the 1986 HSR treatment recommendations, they disagree with Frazier and Copeland on several topics.

For example, the 1993 report agreed with previous recommendation to place lime parging on horizontal coped surfaces to provide a sacrificial layer over coquina stone. It also agreed to feather back existing stucco on walls to limit water penetration. The 1993 report diverged with the 1986 HSR by recommending a lime based parge coat over the entire surfaces of exposed coquina to preserve the material.[516] Additionally, whereas the 1996 HSR recommend maintenance to the covered way walls, the 1993 report recommends reconstruction of walls prior to failure. It is not clear if either of these documents is officially guiding the preservation treatment at Castillo de San Marcos, which makes it even more important for the national monument to prepare a new Historic Structure Report. This recommendation listed below in the Recommendations for Future Study on page 333.

513. National Park Service, "Foundation Document Castillo de San Marcos National Monument," 2016. 9.

514. Luis Arana, Craig Frazier, and Randall Copeland, "Draft Historic Structure Report Volume 2 Castillo De San Marcos National Monument Stabilize Fort Pkg 116, U.S. Department of the Interior/National Park Service, 1986, 8.

515. Frazier and Copeland, Historic Structure Report-1986, 15.

516. Grieves Worrall Wright and O'Hatnick, "Recommendations for Monument Stabilization Castillo de San Marcos National Monument and Fort Matanzas National Monument" (Baltimore, MD, 1993), 17.

Period of Significance

The 1976 National Register of Historic Places Nomination Form establishes two periods of significance for Castillo de San Marcos historic district: 1672 to 1821 and 1821 to 1924. The first period begins with the construction of Castillo de San Marcos and ends with the transfer of the site to the United States. The second period begins with that transfer and ends when Presidential Proclamation 1713, signed on October 15, 1924, which designated Castillo de San Marcos (then called Fort Marion) as a National Monument.

The War Department, however, continued to manage the site until 1933. A recommendation to extend the period of significance to 1933 appears in the Recommendations for Further Study. Recent scholarship on the historic significance of the NPS Mission 66 program would pertain to the national monument. In addition to constructing an administration building (currently called Park Headquarters and Maintenance Facility), the NPS also reconstructed historic features, including the Cubo Line and City Gate moat, which are contributing features to the National Register-listed district. A recommendation to evaluate the integrity of the Park Headquarters and Maintenance Facility is included in the Recommendations for Future Study, but this report suspects that significant changes to the building have made it ineligible for inclusion in the National Register.

Specific Treatment Concerns

In addition to providing treatment recommendations for overall management objectives for the site, the following management issues were either included in the statement of work or provided by staff at the national monument.

Management of the site to address landscape issues related to high visitation. These include turf related issues, where heavy traffic has damaged turf and created social paths through historic resources. This also includes addressing issues of erosion across the site.

Improvement of the Castillo de San Marcos approach experience. This includes both damage to turf along the entrance walkway and the appearance of the concrete plaza at the entrance, near the ticket booth.

Identification and design ideas for visitor areas. This includes both the entrance plaza at Castillo de San Marcos and at Fort Matanzas where visitors wait for the ferry.

Recommendations for Small-Scale Features. This includes recommendations on type of site furnishings needed to serve visitors and their placement.

Addressing the Resilience to Natural Hazards. This includes planning for impacts to the cultural landscape related to sea level rise and tropical storms.

Treatment Recommendations Castillo de San Marcos National Monument

Primary Treatment:

This CLR recommends rehabilitation as the primary treatment of Castillo de San Marcos National Monument, which is consistent with both the park's 2016 Foundation Document and 2007 GMP/EIS. Rehabilitation protects the significant historic features that contribute to the integrity of the property while allowing for necessary improvements. Like preservation, rehabilitation involves identifying, retaining, and preserving character-defining features. Additionally, when the landscape's historic character is diminished because an important landscape feature is missing, rehabilitation provides strategies to accurately and faithfully return the missing feature to the landscape. Rehabilitation provides for the continued use of the property through alterations and additions that do not damage the character-defining features. Additions are sometimes necessary to facilitate a new use at a historic landscape, but the rehabilitation guidelines emphasize that new additions should only occur when there is no viable alternative.

The goal of treatment is to improve the interpretation of Castillo de San Marcos by preserving and/or rehabilitating the character-defining elements of the national monument

present during the historic period of significance. Another goal is to improve the ability of the landscape to withstand the pressures associated with high volume of visitation and the impact that visitation has on the vegetation and circulation system at the national monument. Rehabilitating Castillo de San Marcos' landscape involves preserving the existing features that contribute to the historic significance of the site. Rehabilitation also involves introducing non-historic features that will improve the site's resiliency and visitor experience.

Treatment Period 1672-1924

Changes to the cultural landscape over time reflect the different periods of management and use of the site. From its initial construction in 1672 until the United States removed its garrison in 1900, the site was used for military purposes. Beginning in the 1880s, the United States War Department made significant changes to the landscape, converting the area around Castillo de San Marcos into a public park, with park-related amenities including walkways, ornamental plantings, and site furnishings. Even though Castillo de San Marcos became a national monument in 1924, the War Department continued to administer the property until NPS management of the site began in 1933. Since 1933, the NPS has replaced many of the features related to the public use of the site, including replacing walkways and site furnishings. The NPS has also introduced new features, including new walkways, parking lots, and interpretive signage. The NPS has restored and preserved many of the historic features of the site, including repairs to historic walls. The NPS has also reconstructed missing features, including the Cubo Line. To be consistent with the National Register of Historic Places, this document uses the period between 1672 and 1924 for consideration of treatment, though it is recommended to extend the period of significance to 1933. This recommendation appears in the Recommendations for Further Study on page 333.

Characteristics of the cultural landscape that existed during the Spanish occupation of the site between 1672 and 1821 include:

- Castillo de San Marcos;
- The series of outworks extending out from the fort designed as military defense features, including the City Gate and reconstructed Cubo Line;
- An open area surrounding the north, west, and south sides of the fort that provided sight lines and fields of fire for the soldiers stationed in the fort.

Characteristics of the cultural landscape that existed during the War Department period of management of the site between 1821 and 1924 include:

- A seawall extending south and north of the fort to stabilize the banks of Matanzas Harbor and protect the town of St. Augustine from flooding;
- The water battery and hot shot furnace;
- Concrete walkway alignments, including two from Water Street, one along top of south covered way wall, and entrance walkway.

Treatment Objectives and Recommendations

The following are general treatment goals for Castillo de San Marcos, which are followed by more specific recommendations. Recommendations are provided with the objective of protecting historic resources and improving visitor experience. The recommendations themselves are organized by landscape characteristics, including circulation, vegetation, buildings and structures, views and vistas, and small-scale features. Some recommendations may be applicable to two or more characteristics. These are noted.

See also Table 5.1 on page 261 for a complete list of treatment recommendations. Also see Illustrations 5.1, 5.2, and 5. 3, found after page 262. Descriptions and technical drawings for products discussed in this chapter are in Appendix D.

Proposed PMIS statements follow the treatment recommendations.

General treatment objectives include:

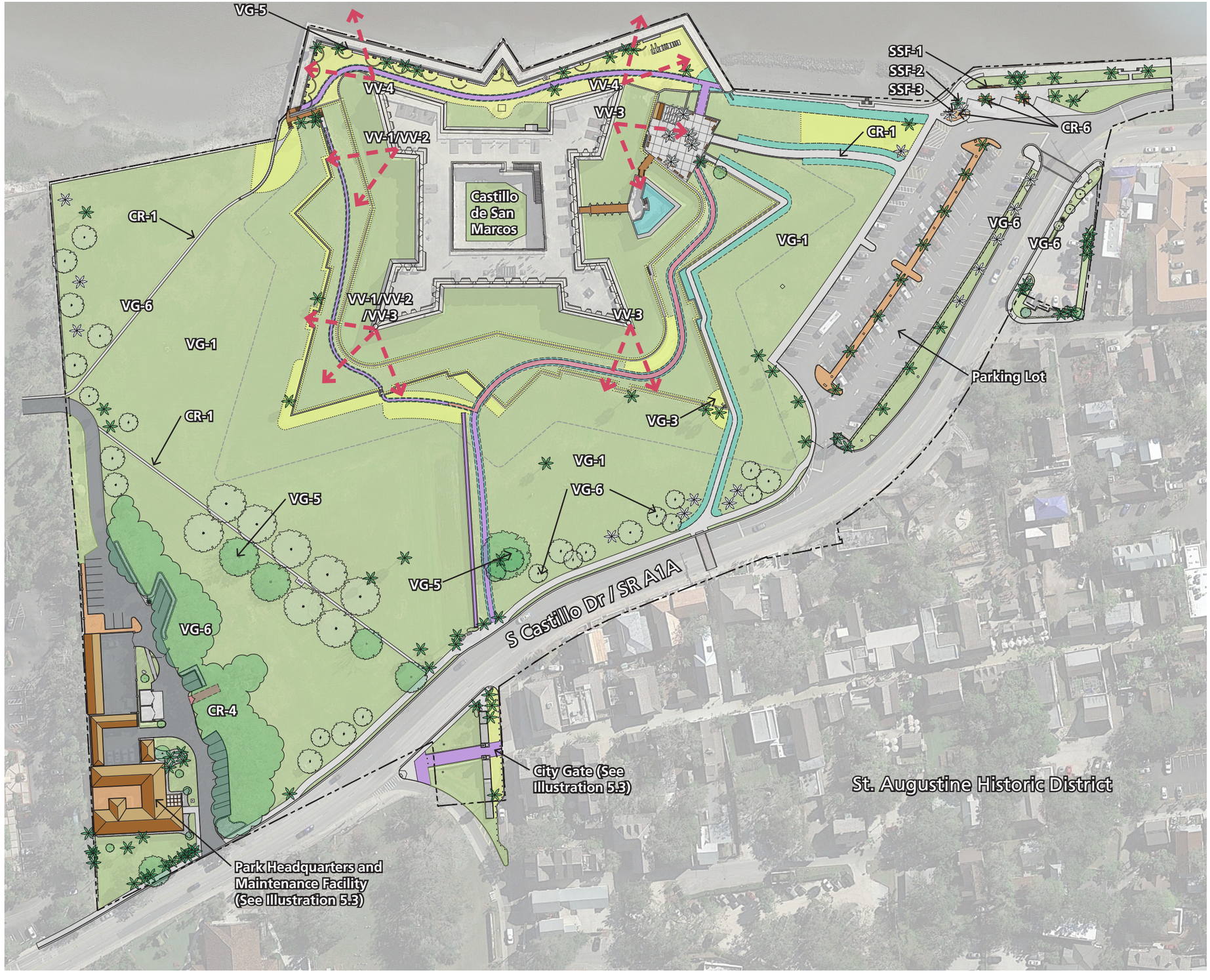
- Maintain the spatial organization and landscape features that contribute to the significance of the landscape, including the historic buildings and structures;
- Maintain the historic structures and buildings to their appearance during the Spanish Colonial period or War Department period depending upon the time of their construction;
- Use materials compatible with historic materials when repairing historic structures and buildings;
- Adhere to methods per the Architectural Barriers Act Accessibility Standards (ABAAS) and Director's Order #42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* to the greatest extent possible while not damaging historic resources;
- Maintain the overall appearance of the current landscape keeping the fort green as an open lawn area;
- Provide vegetative buffers to screen undesirable views that detract from the visitor's experience;
- Provide small-scale features, including benches and interpretive signs, to assist the visitor's experience and navigation through the site in a way that minimizes the impact on the viewshed.

Task ID	Castillo de San Marcos NM Treatment Task	Page #	Related Tasks
Buildings and Structures			
BS-1	Begin crack monitoring program	270	
BS-2	Remove plant growth from masonry surfaces	270	
BS-3	Replace missing coping stones, repair mortar and parge coat	271	
BS-4	Clean and coat metal components	271	SSF-6
BS-5	Inspect and repair drains as necessary in moats	272	BS-6
BS-6	Replace drain line in moat	273	
BS-7	Install wooden staircase at covered way wall	274	CR-9
Vegetation			
VG-1	Maintain lawn areas	280	
VG-2	Vegetation protection zones	280	
VG-3	Reinforced grid turf areas	280	CR-3, CR-4
VG-4	Fiber reinforced turf areas	281	
VG-5	Replant historic trees in-kind	282	VV-1 - VV-4
VG-6	Tree plantings for visual buffer and shade	282	VV-1 - VV-4
Circulation			
CR-1	Preserve historic circulation alignments	285	
CR-2	Establish standard concrete detail for new walkways	285	
CR-3	Convert high traffic paths to resin-bound stabilized aggregate	286	VG-3
CR-4	Reinforced service vehicle paths	286	VG-3
CR-5	Repave entrance plaza	287	SSF-1, SSF-3
CR-6	Pervious pavers in parking lot	288	
CR-7	Install bollards to control vehicular traffic	288	
CR-8	Maintain concrete pavers in courtyard	288	
CR-9	Maintain wood stairs and install stairs to replace unsafe stairs	288	BS-7
Views and Vista			
VV-1	Park headquarters visual buffer	289	VG-5, VG-6
VV-2	Screen residential lots north of fort	289	VG-5, VG-6
VV-3	Buffer views of South Castillo Drive/SR A1A and modern development	289	VG-5, VG-6
VV-4	Buffer views of modern development across Matanzas Bay	289	VG-5, VG-6
Small-Scale Features			
SSF-1	Provide benches for visitor use	290	CR-5
SSF-2	Provide bike racks	291	
SSF-3	Provide other site furnishings necessary for visitors' experience	291	CR-5
SSF-4	Prepare wayside to interpret evolution of cultural landscape	291	

Table 5.1: Treatment Tasks

Task ID	Castillo de San Marcos NM Treatment Task	Page #	Related Tasks
SSF-5	Continue use of regulatory and directional signage to protect historic resources	291	
SSF-6	Maintain metal features	291	
SSF-7	Screen utilities	292	VG-1
SSF-8	Relocate flood lights	292	

Table 5.1: Treatment Tasks (continued)



Property Line

Existing Building

Concrete Paving

Unit Pavers

Reinforced Service Vehicle Paths

Existing Trees

Proposed Trees

Resin-Bound Stabilized Aggregate

Reinforced Grid Turf Areas

Fiber Reinforced Turf Areas

Notes:
This legend provides only treatment recommendations specific to this illustration. Please see Table 5.1 for a complete list of treatment recommendations. Also see Illustrations 5.2 and 5.3.

Circulation
CR-1: Preserve historic circulation alignments
CR-4: Reinforced service vehicle paths
CR-6: Pervious pavers in parking lot

Vegetation
VG-1: Maintain lawn areas
VG-3: Reinforced grid turf areas
VG-5: Replant historic trees in-kind
VG-6: Tree plantings for visual buffer and shade

Views and Vistas
VV-1: Park Headquarters visual buffer (see also VG-6)
VV-2: Screen residential lots north of fort (see also VG-6)
VV-3: Buffer views of South Castillo Drive/SR A1A and modern development (see also VG-5 and VG-6)
VV-4: Buffer views of modern development across Matanzas Bay

Small-Scale Features
SSF-1: Provide benches for visitor use
SSF-2: Provide bike racks
SSF-3: Provide other site furnishings necessary for visitors experience

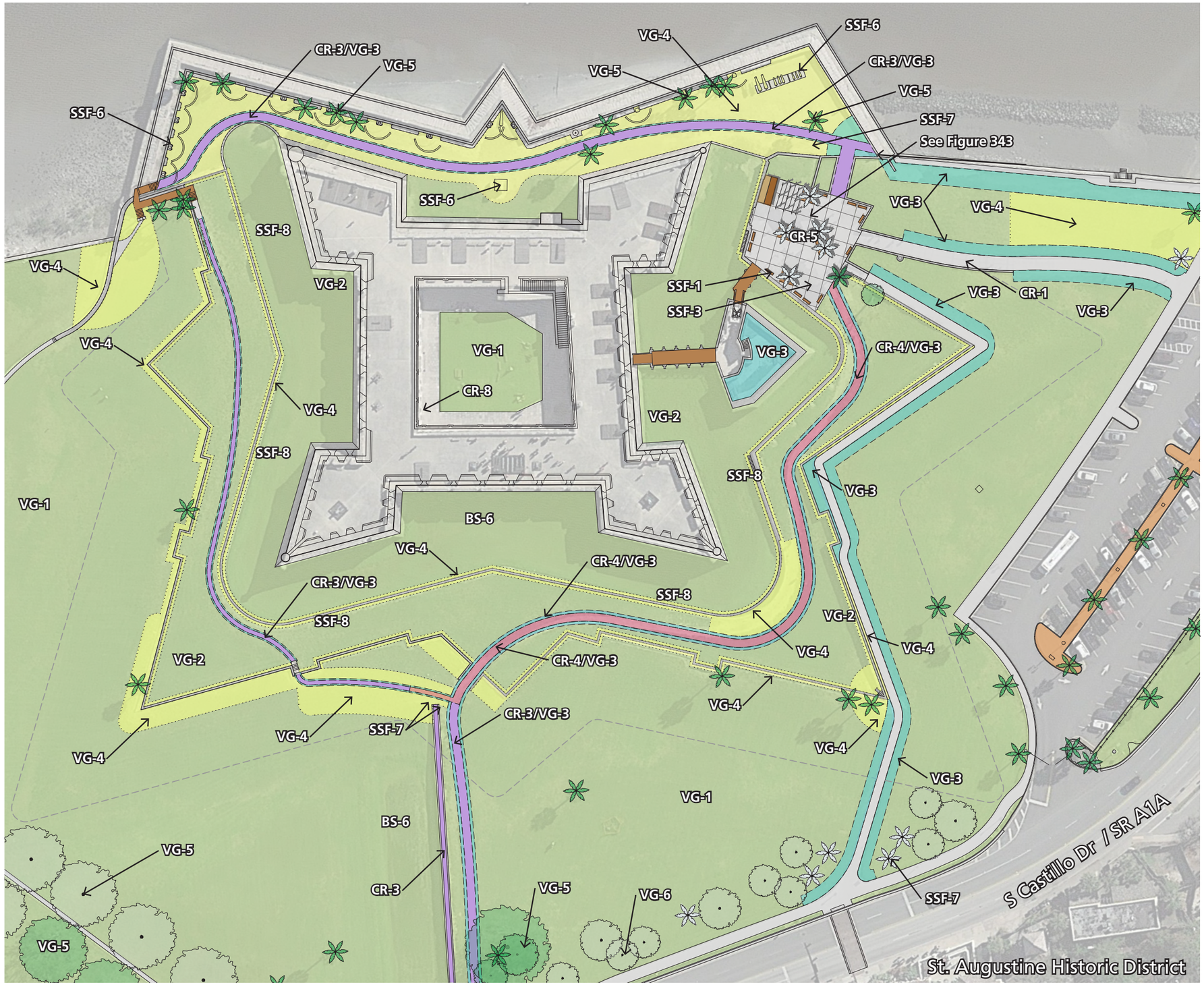
Notes
1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Credits
In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.1
Treatment Recommendations: Overall Site
Castillo de San Marcos National Monument

November 2019

0′ 120′ 240′ North



Key

- Property Line
- Existing Trees
- Existing Building
- Proposed Trees
- Concrete Paving
- Resin-Bound Stabilized Aggregate
- Unit Pavers
- Reinforced Grid Turf Areas
- Reinforced Service Vehicle Paths
- Fiber Reinforced Turf Areas

Notes:
This legend provides only treatment recommendations specific to this illustration. Please see Table 5.1 for a complete list of treatment recommendations. Also see Illustrations 5.1 and 5.3.

Buildings and Structures
BS-6: Replace drain line in moat

Circulation
CR-1: Preserve historic circulation alignments
CR-3: Convert high traffic paths to resin-bound stabilized aggregate
CR-4: Reinforced service vehicle paths
CR-5: Repave entrance plaza
CR-8: Maintain concrete pavers in courtyard

Vegetation
VG-1 Maintain open lawn areas
VG-2 Vegetation protection zones
VG-3 Reinforced grid turf areas
VG-4: Fiber reinforced turf areas
VG-5: Replant historic trees in-kind
VG-6: Tree plantings for visual buffer and shade

Small-Scale Features
SSF-1: Provide benches for vistor use
SSF-3: Provide other site furnishings necessary for visitors' experience
SSF-6: Maintain metal features
SSF-7: Screen utilities
SSF-8: Relocate flood lights

Notes
1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Credits
In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.2

Treatment Recommendations: Castillo De San Marcos

Castillo de San Marcos National Monument

November 2019

0' 70' 140'

North



Property Line

Existing Building

Concrete Paving

Reinforced Service Vehicle Paths

Existing Trees

Proposed Trees

Resin-Bound Stabilized Aggregate

Reinforced Grid Turf Areas

Fiber Reinforced Turf Areas

Notes:
This legend provides only treatment recommendations specific to this illustration. Please see Table 5.1 for a complete list of treatment recommendations. Also see Illustrations 5.1 and 5.2.

Circulation
CR-3: Convert high traffic paths to resin-bound stabilized aggregate
CR-4: Reinforced service vehicle paths (see also VG-3)
CR-7: Install bollards to control vehicular traffic

Vegetation
VG-3 Reinforced grid turf areas
VG-4: Fiber reinforced turf areas
VG-6: Tree plantings for visual buffer and shade (see also VV-1)

Views and Vistas
VV-1: Park Headquarters visual buffer

Small-Scale Features
SSF-1: Provide benches for visitor use
SSF-3: Provide other site furnishings necessary for visitors' experience
SSF-7: Screen utilities

Notes
1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Credits
In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.3
Treatment Recommendations:

Park Headquarters, Maintenance Facility, City Gate

Castillo de San Marcos National Monument

November 2019

0′ 70′ 140′

North

Buildings and Structures

Buildings and Structures present during the periods of historic significance

As conveyed in the site history section of this document, Castillo de San Marcos included both the fort and several other structures constructed as part of a complex system to defend the fort and the town of St. Augustine. These included defensive earthworks around the fort and town and earthworks extending out from St. Augustine to defend against attack along various potential approaches. Castillo de San Marcos is the result of different building campaigns, beginning with the initial construction phase between 1672 and 1695. During this period, construction of the first ravelin, moat, and earthworks around the fort also began. Beginning in 1738, the Spanish made extensive modifications to the fort, raising the height of its walls, installing new bombproof chambers, and began construction of the covered way and first seawall. By 1762, the Spanish had rebuilt the ravelin and reconfigured the moat. British troops occupied Castillo de San Marcos between 1763 and 1784. During this time, they repaired deteriorated earthworks, including the Cubo Line, and added earthwork structures in the covered way. The Spanish returned to Castillo de San Marcos in 1784. Between 1784 and 1821, the Spanish made improvements to several features, including adding the palisade walls of the covered way. In 1808, while making repairs to the Cubo Line, the Spanish constructed the coquina pillars of the City Gate.

The United States took possession of Castillo de San Marcos in 1821. In 1833, the U.S. Corps of Engineers began reconstructing the seawall. By the 1840s, several of the earthworks, including the glacis and Cubo Line, were in poor condition. Between 1842 and 1844, the U.S. Corps of Engineers reconstructed the water battery, widening it by filling in the moat on the east side of the fort, and added the hot shot furnace. During the War Department period, the army added several buildings to the landscape around the fort, including a boathouse in the water battery and a cottage for the ordnance-sergeant in the covered way south of the fort.



Figure 329: Mortar ledges on coquina walls (WLA Studio 2016)

Current Conditions

Castillo de San Marcos is the primary historic building remaining at the national monument. Several historic outworks surround the fort. These include historic structures, retaining walls, and earthwork features, including the moat, ravelin, covered way, water battery, seawall, and glacis. A historic hot shot furnace stands near the middle of the water battery. The City Gate is separated from the national monument by South Castillo Drive but is another important historic structure at the national monument. There is also the Reconstructed Cubo Line and moat, which are also considered contributing resources.

According to the 1986 draft Historic Structure Report for Castillo de San Marcos National Monument, the condition of the fort's masonry varied upon location. Despite the deterioration of the coquina stone, a result of surface and internal erosion, the historic resources at the national monument appeared at the time of the HSR's preparation, and during the preparation of this CLR, to be structurally stable.[517]

The 1986 HSR's assessment of the fort and associated resources' conditions made general observations relevant to all the masonry features at Castillo de San Marcos. The 1986 Historic Structure Report identified erosion of stone and raised joints of mortar as common condition issues. Raised mortar joints create ledges that collect water and dirt, accelerating the deterioration of adjacent stone (Figure 329). The HSR states that while these raised mortar joints had negative impact on stone removing

517. Frazier and Copeland, *Historic Structure Report*-1986, 44–45.



Figure 330: Vegetation on fort's scarp walls (WLA Studio 2016)

them "would create a greater loss of fabric than the natural cycle."[518] The HSR also states that the stucco that historically protected the stone had largely fallen off by 1839 and what remained in 1986 was loose and ineffective. While the HSR did recommend maintaining the existing concrete stucco on the seawall, it specifically rejected restoring the stucco coating on the rest of the fort because of a lack of sufficient documentation, the maintenance burden, and the "symbolic ambience of the fort as a weathered relic."[519] Similarly, the coping of the fort and other retaining walls originally had a protective parging that was largely gone by 1986. The report recommended the maintenance of parging on copings to "provide a great deal of protection against almost all the present weathering agents" and to "protect the masonry from visitor impact."[520]

As mentioned above, the NPS Cultural Resource Inventory System for CASA includes ten certified listings for historic structures, including Castillo de San Marcos, Water Battery, Glacis, Covered Way, Ravelin, Moat, Seawall, Hot Shot Furnace, Reconstructed Cubo Line, and City Gate Pillars. These are all classified as "Must Be Preserved and Maintained."

Treatment recommendations for buildings and structures

Castillo de San Marcos

According to the LCS, the NPS last assessed its physical condition in 2013, when it was in fair condition. The primary impact to the structure was visitation, followed by vegetation and structural deterioration. The general condition observations made in the 1986 HSR are reviewed above in the current conditions description that contains information on common issues with the masonry structures across the national monument. Vegetative growth was observed in 2018, mostly concentrated under the weep holes that drain water from the terreplein (Figure 330).

Cracks present in the scarp walls as of the 2018 site visit were deemed by the 1986 HSR to be the result of differential settlement, but the report concluded that the settlement was not an active problem. The 1986 HSR described the scarp walls of the bastions having a variety of structural issues, including bulges, vertical shear cracks, slippage, and possibly overturning.[521] The 1986 HSR recommended ongoing repointing of the scarp walls and repairs to the walls' parging. It recommended repairing areas of excessive wear and a partial soft mortar pack in large cracks to prevent nesting and excessive vegetation growth.[522] The report did not recommend repairing the cracks in the walls because the repairs "will almost certainly reappear as natural expansion joints."[523]

It is recommended that the NPS update the HSR on the fort to understand any changes to the fort since 1986. This is included in the Recommendations for Future Studies section below.

BS-1: Begin crack monitoring program

Install movement gauges over the major cracks in masonry walls and establish a cyclical monitoring program. This information will assist the preparation of an HSR in the future.

BS-2: Remove plant growth from masonry surfaces

Remove all plant growth from walls, ramparts and cordon, and terreplein surfaces. Clean all stone masonry surfaces with D/2 Biological Solution or

518. Frazier and Copeland, *Historic Structure Report*-1986, 45.
519. Frazier and Copeland, *Historic Structure Report-1986, 145.*
520. Frazier and Copeland, *Historic Structure Report-1986*, 49.
521. Frazier and Copeland, *Historic Structure Report-1986, 112.*
522. Frazier and Copeland, *Historic Structure Report-1986, 50.*
523. Frazier and Copeland, *Historic Structure Report-1986*, 124.



Figure 331: Water Battery wall (WLA Studio 2016)

another appropriate cleaner. Test patches should be prepared to evaluate the effects of any cleaner before use on the entire structure.

Water Battery

The NPS last assessed the condition of the water battery in 2015, when it was in good condition. Visitation was the main impact, followed by vegetation and structural deterioration. The 1986 HSR recommended periodic preservation of the cement stucco protecting the seawall section of the water battery. It also recommended repairs to the tabby slab coping that sheds water from the top of the wall. It made a similar recommendation to repair the cement stucco of the firing steps.[524] As of 2018, the cement stucco of the firing step was largely gone, exposing the stone to pedestrian traffic and the elements. The cement stucco on the interior side of the wall was mostly gone. A few coping stones along the top of the wall are missing. Also, open gaps between the coping and the tabby slab coping of the water battery seawall offers a route for water infiltration. An updated HSR of this wall would identify an appropriate material to fill this gap (Figure 331).

A limited amount of vegetation was observed growing along the top of the wall. This report recommends removing all plant growth from walls and coping. Clean all stone masonry surfaces with D/2 Biological Solution or another appropriate cleaner. Test patches should be prepared to evaluate the effects of any cleaner before use on the entire structure. See treatment recommendation BS-2.

BS-3: Replace missing coping stones, repair mortar and parge coat

Missing coping stones should be replaced and mortar joints maintained. This is consistent with the recommendations of the 1986 HSR.[525]

BS-4: Clean and coat metal components

The 1986 HSR also recommended cleaning and painting the metal components of the traverse rings and pintles on the gun emplacements. Because the rusting metal was negatively affecting the adjacent masonry, they recommended caulking the interfaces between the two materials. This treatment appears to have been implemented. The recommendation is to continue inspections of the metal components and maintain the protective coating to protect against rusting.

City Gate

The LCS lists the City Gate in good condition, with the last assessment made in 2015. Visitation was the main impact, followed by vegetation and weather. The 1986 HSR concluded the City Gate "is in sound condition; however, the masonry surfaces exhibit typical deterioration." These "typical" conditions are described above in the overall existing conditions at the beginning of this section. It was this HSR that recommended replicating the stone finial caps, which the NPS did circa 2000. As of 2018, the City Gate was in good condition, with no observed problems with the stone, mortar, or parge coat.

It is recommended to stabilize the aggregate walkway between the gate and install bollards to prevent unauthorized vehicular access. See also circulation treatment recommendations CR-3 and CR-7. It is also recommended to install fiber reinforced turf along the south side of the walls to protect the turf and encourage water to shed away from the City Gate. See also vegetation treatment recommendations VG-4. It is also recommended

524. Frazier and Copeland, *Historic Structure Report-1986*, 66.

525. Frazier and Copeland, *Historic Structure Report-1986*, 62–63.



Figure 332: Cubo Line with utilities in foreground (WLA Studio 2016)

to raise the grade of the reconstructed Cubo Line section at the City Gate, installing fiber and turf to hide exposed structural components and to shed water. See vegetation treatment recommendations VG-4.

BS-5: Inspect and repair drains as necessary in moats

The City Gate moat occasionally fills with water after heavy rains. It can be addressed by installing a drain which connects to the city storm water system or replacing the existing soil with one with a higher percolation rate. There is a catch basin shown on a 1964 construction drawing for the City Gate (ETIC CASA 343_3030). It was located near the middle of the eastern half of the moat. It had a submersible sump that pumped the water to the existing city storm drain line. It is unclear if this system is still working. The pump should be inspected and replaced if inoperable. Regrade floor of the moat by adding sterile fill dirt to ensure positive drainage to the catch basins.

Reconstructed Cubo Line

The NPS last assessed the condition of the Cubo Line in 2015, when it was in good condition. Visitation was the main impact, followed by vegetation and weather. The top of the Cubo Line has loose aggregate on top of the concrete. This poses a safety hazard. The aggregate can be consolidated into a firmer surface using a resin soil stabilizer or it can be coated with shell aggregate concrete. See treatment recommendation CR-3. Signs should be installed discouraging visitors from climbing. These can be small signs, mounted low to the ground, at either end of the Cubo Line. Raising the aggregate or correct positioning of low-mounted signs can help hide an irrigation valve box on the east end of the Cubo Line. See treatment recommendation SSF-7 (Figure 332).

The Cubo Line moat holds water after a rainstorm. A 1964 "Sprinkler and Storm Drain Systems" map in the park's archives shows three proposed catch basins in the Cubo Line moat. These connected to an existing drain pipe in the north fort green, which conveyed water to the bay. One catch basin was observed during site visits. Drainage of the Cubo Line moat can be improved by adding additional catch basins or a French drain with a perforated pipe that connect to the existing catch basin. It is also recommended to inspect the existing pipe to confirm that it is not blocked. Regrade floor of the moat by adding sterile fill dirt to ensure positive drainage to the catch basins. See treatment recommendation BS-5 above.

Moat

The NPS last assessed the condition of the moat in 2015, when it was in good condition. The moat includes the grassy area and the coquina retaining wall. The walls have been repointed and are in good condition as of 2018, even though they have many of the same condition concerns described above in the general conditions of masonry features. For example, the mortar ledges, which were a concern in the 1986 HSR, are prevalent throughout the moat wall. Additionally, the parge coat of the coping was cracked in a few places. The current route of service vehicles that pass close to the top of the moat wall near San Pedro Bastion likely increases forces pushing on the wall and potentially risks damaging the wall. Consistent with recommendations from the 1986 HSR, it is recommended to move vehicular and pedestrian traffic away from the top of the wall. See treatment recommendations CR-4 and VG-3.

To protect against water penetration, it is recommended to repair missing coping stones, maintain mortar joints, and maintain the parge coating. See treatment recommendation BS-3. Limited vegetative growth was observed on the walls in 2018, mostly in areas where the grade of the covered way sheds water over the top of the

moat wall. One example of this was behind the ticket booth. The grades should be adjusted to shed water away from historic resources. Remove all plant growth from walls and coping. Clean all stone masonry surfaces with D/2 Biological Solution or another appropriate cleaner. Test patches should be prepared to evaluate the effects of any cleaner before use on the entire structure. See treatment recommendation BS-2.

BS-6: Replace drain line in moat

Some standing water was observed in the moat at Castillo de San Marcos during site visits in 2018. There is a six-inch perforated pipe laid near the centerline of the moat. The route of the drain is unclear, but photographs taken during construction suggest it may connect to a preexisting drain system near the Cubo Line. This drain line appears on a 1964 "Sprinkler and Storm Drain Systems" map in the park's archives; this map also shows a drain pipe extending towards the fort's moat following a path like the one in the construction photograph. The existing perforated pipe was installed in 1996 and it may be clogged or collapsed, preventing it from draining.

It is recommended that this drainage system be inspected and replaced if the pipe has failed. It is also recommended that the moat floor be sloped to shed water to the centerline towards the buried pipe. This would also be an opportunity to interpret the cuvette. It is unknown if archeology discovered the cuvette's historic profile, but recreation of it should be considered as part of this work.

Covered Way

The NPS last assessed the condition of the covered way in 2015, when it was in good condition. The primary impact on its condition was visitation. Other impacts include inappropriate or inadequate preservation/rehabilitation, erosion, and vegetation. Large sections of the wall have been repaired. Sections were dismantled and rebuilt in 2006 and other sections appear to have repointed mortar joints. As of 2018, the coping was mostly in good condition and complete with recent mortar. There are places, for example on the north side of the fort, that lack sections of coping (Figure 333).



Figure 333: Covered way wall coping stones condition (WLA Studio 2016)

Because the coping is important to protect against water infiltration, it is recommended that the coping be regularly inspected, missing stones replaced, and the mortar maintained. This is consistent with the recommendations of the 1986 HSR.[526] See treatment recommendation BS-3.

As further described below in the vegetation section, the turf adjacent to the outside/top of the wall is worn from compaction. This worn path encourages even more pedestrian use, resulting in more compaction. Because this compaction exacerbates the forces pushing against the wall, it is recommended that a reinforced turf system be employed to improve turf conditions and distribute the pressure from pedestrian traffic. The presence of turf will encourage pedestrians to remain on designated walkways. See treatment recommendations CR-3, CR-4, VG-2, and VG-3. The ground adjacent to the top and bottom of the wall should be sloped away from the wall to shed water. These recommendations are consistent with the 1986 HSR, which identified structural issues in the covered way wall, including bulges, vertical shear cracks, slippage and overturning.[527] According to the report, the causes of the wall's structural issues included design, construction, hydrostatic load of fill dirt, and pressure from pedestrian traffic on top of the wall. The document recommended repairing the coping and directing traffic away from the top of the wall.[528]

526. Frazier and Copeland, *Historic Structure Report-1986*, 62–63.
527. Frazier and Copeland, *Historic Structure Report-1986*, 112.
528. Frazier and Copeland, *Historic Structure Report-1986*, 131.

BS-7: Install wooden staircases at covered way wall

It is recommended to add a wooden staircase at the southwest section of the covered way wall. The existing brick and concrete staircases have unusual tread/riser dimensions that pose a safety risk. The wooden stairs can be designed to float over the top of the covered way wall and not anchor itself to historic material. See also treatment recommendation CR-9 (Figure 334).



Figure 334: Brick stairs in covered way (WLA Studio 2016)

Ravelin

The NPS last assessed the ravelin in 2015 when it was in good condition. The primary impact on the structure was visitation. In 2018, the ravelin continued to be in good condition. The mortar and stone appeared to be in better condition than other walls on site, with fewer mortar ledges and fewer signs of deterioration. The 1986 HSR condition assessment observed general masonry issues described above, but it also noted need to install coping to shed water from the tops of the ravelin wall. This appears to have been done. The HSR also recommended maintaining the level of turf inside the ravelin to ensure drainage of rainwater to existing portholes.[529] As of 2018, the turf on the upper level of the ravelin was in poor condition or completely missing. If grass is to be maintained, it is recommended to install a reinforced grid with new Bermuda grass sod. See treatment recommendation VG-3. An alternative would be to cover the entire area with a concrete paver like that already covering portions of the ravelin. This would eliminate the constant maintenance of turf and allow NPS to direct the flow of water to existing drains.

Hot Shot Furnace

The NPS last assessed the hot shot furnace in 2015 when it was in good condition. The primary impact on the structure was exposure to weather and vandalism. Cracks and missing sections of the concrete parging as of 2018 provide a route for rainwater to infiltrate the structure. It is recommended that the parging be repaired. This is consistent with the 1986 HSR which recommended "minimal physical intervention" to address issues with the furnace, including repairing the cracks in the parging and cleaning the coating. The 1986 HSR considered removing and restoring the metal because of their deteriorated condition; but it rejected this treatment as having too great an impact on the structure.[530] The metal was rusted in 2018 but periodic painting would offer a limited amount of protection. Continue maintenance of the rusted components. See treatment recommendation SSF-6.

Seawall

The NPS last assessed the seawall in 2015 when it was in fair conditions. The primary impact on the structure was erosion followed by structural deterioration and visitation. In 2018, the seawall was in fair condition because most of the cement stucco, identified as an important protective feature in the 1986 HSR, was missing. The concrete parging on the section north of the fort had cracks and missing sections. The low wall extending out from the base of the wooden staircase north of the fort is in a similar condition, with sections of broken parging. This coating protects the historic stone from the erosive effects of wind and water. The 1986 HSR recommended periodic maintenance of a cement stucco applied as a protective coat on the side of the wall exposed to the bay. The HSR also recommended periodic repair to the coping.[531]

With the stucco coating essentially gone, the recommendation is to update the Historic

529. Frazier and Copeland, *Historic Structure Report-1986*, 60.

530. Frazier and Copeland, *Historic Structure Report-1986*, 68.

531. Frazier and Copeland, *Historic Structure Report-1986*, 66.

Structure Report on the seawall to assess the appropriateness of restoring the stucco to protect the historic stone. Existing parging should be maintained and repaired. See treatment recommendation BS-3. Because some vegetation was observed on the coping, it is recommended that NPS remove all plant growth from walls and coping of the seawall. Clean all stone masonry surfaces with D/2 Biological Solution or another appropriate cleaner. Test patches should be prepared to evaluate the effects of any cleaner before use on the entire structure. See treatment recommendation BS-2.

Park Headquarters and Maintenance Facility

The Park Headquarters and Maintenance Facility was undergoing renovations during the site visit as the NPS repaired flood damage. The buildings otherwise appeared to be in good condition. The recommendation is to evaluate its potential historic significance using the criteria developed in the 2015 National Register of Historic Places nomination for National Park Service Mission 66 Era Resources.[532]

Additionally, building plans for the Park Headquarters (originally called the Administration and Utility Building) are in park archives (see also ETIC document 3022). It would be possible to recreate the original planting plan around the historic section of the building. Some of the original plant materials remain, including the sabal palms, live oaks, and clumps of zamia. There have been plant losses and replacements over time, including crape myrtles where the plans call for ligustrum. Missing plants include ardisia, raphiolepis, osmanthus, and agave. The most obvious deviation from the original landscape plan is the existing clipped yaupon hedge along the building's foundation that was installed during an expansion of the building in the mid-1990s.

Ticket Booth

The ticket booth is a non-historic and non-contributing structure. It appears to be in good condition. However, it is a visual intrusion into the historic setting. The GMP/EIS recommended eliminating this building by relocating visitor services to a proposed visitor center. Because this project did not happen, the ticket booth remains today. If the NPS redesigns the entrance plaza, it is recommended that they rotate the building approximately forty-five degrees, so the ridgeline of the building's roof is parallel to the scarp walls of the fort. The gable ends of the buildings increase the visibility of the structure from the entrance walkway. Painting the building grey and using a light-colored roof material would help reduce its visibility from the entrance walkway. See treatment recommendation CR-5.

General building and structure maintenance

Coquina is a limestone conglomerate made from the shells of small mollusks and quartz sand that calcium carbonate has cemented together over time. Coquina deposits occur primarily along Florida's eastern coast. According to architect David Ferro, "although coquina is one of the simplest of building materials, issues relating to its preservation are complex."[533] Scholars note, "Deterioration is an inevitable consequence of natural processes and arrest of these changes can be costly, labor-intensive and time consuming."[534] Coquina is susceptible to deterioration by acid due to its alkaline composition. Acid (mostly caused by acid rain) can cause a loss of material over time. Mechanical deterioration of historic coquina can cause spalling and subflorescence. Another type of deterioration identified at Castillo de San Marcos is damage resulting "from corrosion of metal structural elements embedded in a structure. If the corrosion product has a greater volume than the metal, such as is the case with corrosion of iron, the expansion of this corrosion product inside the structure can exert enough pressure on the stone to cause the stone to explode."[535] Metal supports in the structures can leach and discolor the stone. Biological growth such as algae, moss, and fungi can cause discoloration and deterioration to coquina structures. "Acids, which are a byproduct

532. Ethan Carr, et. al., "National Register of Historic Places Multiple Property Documentation Form: National Park Service Mission 66 Era Resources," National Register of Historic Places nomination, 2015.

533. David Ferro, Editor, "The Conservation and Preservation of Coquina," (Division of Historical Resources, Florida Department of State, 2000): i, accessed May 31, 2018, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.8.5698&rep=rep1&type=pdf.
534. Judith J. Bischoff, "The Conservation and Preservation of Coquina," (Division of Historical Resources, Florida Department of State, 2000): 19, accessed May 31, 2018, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.8.5698&rep=rep1&type=pdf.
535. Bischoff, "The Conservation and Preservation of Coquina," 27.

Graffiti	*Removal Method*
Pencil	1. Erase with non-abrasive pencil eraser. 2. Wash with water and non-ionic detergent. 3. Rinse with water.
Chalk/Pastel	1. Brush off with bristle brush. 2. Wash with water and non-ionic detergent. 3. Rinse with water.
Paint (both aerosol spray paint and non-spray paint)	1. Poultice with paint remover*, organic solvent, or petroleum-based compound**. 2. Rinse with water, denatured alcohol or mineral spirits. 3. Wash with water and non-ionic detergent. 4. Rinse with water.
Permanent Marker	1. Wash with water and non-ionic detergent, if necessary. 2. Poultice with bleach such as calcium hypochlorite, paint remover*, and organic solvent. 3. Wash with water and non-ionic detergent. 4. Rinse with water.
Water Soluble Marker	1. Wash with water and non-ionic detergent. 2. Poultice with bleach such as calcium hypochlorite. 3. Wash with water and non-ionic detergent. 4. Rinse with water.
Ballpoint Pen	1. Erase with non-abrasive pencil eraser. 2. Poultice with organic solvent. 3. Wash with water and non-ionic detergent. 4. Rinse with water.
Crayon, Lipstick, Shoe Polish	1. Poultice with denatured alcohol, paint remover*, or organic solvent. 2. Wash with water and non-ionic detergent 3. Rinse with water.
Paint Remover based on N-methl-2-pyrrolidone (NMP).* * Organic solvent such as lacquer thinner.*	

of plant growth, can dissolve limestone (calcium carbonate) and encourage moisture retention in masonry. Root growth can displace stone and break down mortar joints."[536]

Treatment recommendations for coquina are few, but experts give several recommendations for general preservation:

> In repointing, hand chisel tools should be used, unless it can be demonstrated that workmen can use power tools… without damaging the coquina. Only deteriorated mortar joints should be repointed. Mortar should match the appearance, compressive strength and porosity of the ordinal mortar. Joins should be finished to match the original work….
>
> In the absence of extensive testing to determine their effectiveness and long-term effects on coquina, use of waterproof or water repellant coatings is discouraged, as is use of consolidants. Consolidants may have application in localized treatment of failing coquina to slow deterioration of material that will ultimately require replacement…. Because of the porous nature of coquina, waterproof and water repellant coatings are expected to be largely ineffective in preventing water intrusion.…
>
> The most obvious treatment of [rising damp] is to ensure adequate drainage of storm and irrigation water away from the building. Minor regrading may be required to accomplish this. Foundation drains can be effective in "short circuiting" the capillary action that results in rising damp, they must conduct collected water "to the light," to a functional French drain or storm sewer system. . ..
>
> In-kind replacement of severely deteriorated coquina can be accomplished for a permanent repair that is fully compatible in appearance and physical performance with the surrounding historic masonry. In lieu of replacing a full width piece of stone, a veneer or Dutchman can be inserted after the spalling stone is chiseled back to stable material. The Dutchman is adhered

536. Ferro, "The Conservation and Preservation of Coquina," 49.

> to the existing stone on five sides with mortar matching the physical properties of the original mortar….
>
> Typical removal techniques involve application of an herbicide to control biological growth. "Roundup" is one of the proprietary products mentioned as being used with no apparent adverse effect on coquina. Steam has been used by the National Park Service to kill plants growing in the masonry at Fort Frederica in Georgia. It is recommended that plants be killed, allowed to dry and then carefully removed with a bristle brush to avoid damage to the fragile masonry. Pulling live plant material out by the roots should be discouraged because it can damage masonry. Root trimming is routinely undertaken to prevent damage from tree roots. Disadvantages: Runoff of herbicides is a concern, and should be controlled to the extent possible. Steam generators are bulky and may not be feasible for use on larger structures. Aggressive root trimming can affect the health and stability of mature trees, allowing then to be easily toppled by wind. This work should be done under the direction of an arborist. In root trimming, care is required to assure that archaeological resources are not disturbed in the process of exposing the potentially damaging roots.[537]

Graffiti removal

Park staff mentioned during the kick-off meeting wanting guidance on graffiti removal. None was observed during site visits made during the preparation of this report.

According to Preservation Brief 38: *Removing Graffiti from Historic Masonry*, "removing graffiti as soon as it appears is the key to its elimination – *and* recurrence."[538] Leaving graffiti on historic masonry allows the solvents and pigments from graffiti material such as spray paint to penetrate into the surface of the masonry. The use of harsh chemicals to remove graffiti may result in permanent damage to the masonry and/or mortar. "For most paints that have been on the surface for several weeks or months, hardening processes are likely to be complete or well-advanced; the solubility of the paint is proportionately reduced and it will be more difficult to remove."[539] Because coquina is composed predominately of alkaline mineral, the stone is acid-sensitive. Site managers should avoid cleaning agents with high levels of acid for cleaning. The NPS should consult architectural conservators before any treatment takes place; however, quick action is needed to prevent permanent damage.

"Graffiti removal from historic masonry should always begin with the gentlest means possible."[540] Site managers should not use abrasive methods to remove graffiti, though some professional conservators use micro-abrasive techniques under very controlled circumstances. The Florida Division of Historical Resources recommends "all cleaning treatments should utilize gentle hand application or low-pressure spray application and rinses to avoid possible erosion of coquina."[541] The NPS also recommends application of a poultice (absorbent material or power composed of inert clays mixed with a cleaning solution such as water) prior to attempts to brush away the graffiti. An alkaline compound may be added to the poultice to improve its effectiveness in removing the graffiti. Graffiti removal trials indicate success with products such as Dumond Smart Strip Pro™. Before removal begins, "all cleaning materials and techniques for removing graffiti. . . should be tested on mock-ups or areas of the resource that are not highly visible, but which are representative of typical conditions."[542] Preservation Brief 38 includes removal method recommendations for various types of graffiti including paint, chalk, permanent marker, and ballpoint pen.

NPS staff should treat graffiti located on other park surfaces such as waste receptacles, benches, and sidewalks using chemical and water removal methods. Prompt treatment of graffiti on surfaces is key to successful removal. See information on grafitti removal methods on page 276.

537. Ferro, "The Conservation and Preservation of Coquina," 51-55.
538. Martin E. Weaver, "Preservation Brief 38: Removing Graffiti from Historic Masonry," (US Department of the Interior National Park Service, Cultural Resources, 1995): 1, accessed May 31, 2018, https://www.nps.gov/tps/how-to-preserve/preservedocs/preservation-briefs/38Preserve-Brief-Graffiti.pdf.
539. Weaver, "Preservation Brief 38," 2.
540. Weaver, "Preservation Brief 38," 3.
541. David Ferro, Editor, "The Conservation and Preservation of Coquina," (Division of Historical Resources, Florida Department of State, 2000): 51, accessed May 31, 2018, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.8.5698&rep=rep1&type=pdf.
542. Weaver, "Preservation Brief 38," 5.

Vegetation

Vegetation present during the periods of historic significance

Beginning with the Spanish in the 1600s, those managing the area around Castillo de San Marcos have prevented natural succession of vegetation and kept the area around the fort open and mostly clear of vegetation for military purposes. The Spanish used grasses to stabilize earthworks around the fort. It is unclear what species of grass the Spanish used. The grass-like species commonly found in the Florida pine flatwoods include wire grass (*Aristida stricta*), dropseed (*Sporobolus curtissi* and *Sporobolus floridanus*), panicgrass (*Dichanthelium spp.)* and broomsedge (*Andropogon spp*.) These grass-like species of the pine flatwoods respond to the fire ecology, forming an herbaceous ground-cover layer after a fire when sunlight was able to reach the forest floor. The Spanish may have used these species, in addition to the documented use of Yucca (*Yucca aloifolia*), in the landscape around Castillo de San Marcos.

The War Department used Bermuda grass (*Cynodon dactylon*) to stabilize banks as early as 1843.[543] War Department records also indicate, according to Bearss, that "marsh grass" grew in the moat during the historic period of significance.[544] This may have been any number of salt marsh species prevalent in the St. Augustine area, including rush (*Juncus roemerianus*), saltmeadow cordgrass (*Spartina patens*), or smooth cordgrass (*Spartina alternifolia*).

During the War Department period of significance, trees and ornamental shrubs grew in the landscape around the fort. The War Department introduced many of these plants during the 1891-1892 period, though some existed prior to that planting effort. Historic photographs of the site in the late 1800s show a few trees growing in the open areas around the fort. There were also trees planted in the covered way south of the fort that appear associated with the sergeant-ordnance cottage. The trees in the covered way and fort green prior to 1891 were mostly cedars (*Juniperus virginiana* or *Juniperus virginiana* var. *silicicola*) and cabbage palm (*Sabal palmetto*). In 1891 and 1892, the War Department planted trees in the fort green during their efforts to beautify the grounds and convert it to a park-like landscape. These trees included cedar, cabbage palm, water oak (*Quercus nigra*), and swamp elm (*Ulmus americana*). These were located along walkways or in informal clusters in the open space west of the fort.

Since 1933, the NPS has removed most of the trees growing around the national monument. In the mid-1960s, the NPS planted oaks along the northern boundary to screen the new headquarters building and to screen adjacent residences. In the 1970s, the NPS removed many large trees growing near historic structures to protect the resources from damage from tree roots. Trees have succumbed to age and damage from storms. There are fewer trees in the landscape today as a result.

Current Conditions

Turf is the dominant vegetation on site today. There are specimen trees and yucca, but turf covers most of the site and exhibits the most problems due to high visitation. The current turf is predominately Bermuda grass (*Cynodon dactylon)* with some St. Augustine grass (*Stenotaphrum secundatum*); but the condition of the turf at Castillo de San Marcos National Monument is highly variable. Large areas of the open lawn around the fort are in good condition but there are areas with many weeds, in particular the covered way and moat. These weeds include both perennial weeds and aggressive annuals like burweed (*Soliva sessilis*). Purslane (*Portulaca oleracea*) has invaded large areas along the base of the covered way wall, where there is not a stand of grass.

Additionally, turf areas that receive heavy foot or service vehicle traffic are in poor condition. In many places, there is no turf and only exposed soil remains, resulting in erosion or an uneven walking surface. These uneven walking surfaces are comprised mostly of loose sand and do not provide a stable, accessible, or slip-resistant pedestrian route. These bare spots occur along the sides of walkways, at intersections of walkways, along frequently trafficked areas without walkways, and on the glacis. Constant pedestrian traffic results in soil compaction and the physical wear of the turf. Soil compaction results in loss of space between soil particles decreasing the air and water available to the root zone. Soil compaction leads to a weaker, less resilient stand of turf, which is more susceptible to wear. Soil compaction also increases water run-off. The combination of damaged turf

543. Bearss, *Historic Structure Report*, 217.
544. Bearss, *Historic Structure Report*, 216.



Figure 335: Condition of turf in water battery (WLA Studio 2016)

and increased water run-off results in soil erosion, which is occurring in several locations around the fort (Figure 335).

Erosion is a problem in the water battery, where large areas of the space is bare earth and susceptible to wash during rain events. Water flowing out of the moat and down the ramps from the entrance plaza cuts ruts into the ground. Erosion is also an issue at places in the glacis, in particular near the west wall sortie, a passage through the west covered way wall near the Cubo Line. In these locations, a combination of bare earth, created by foot traffic and soil compaction, combined with the sloped ground result in washed out places. Foot traffic has resulted in multiple "social paths" or "desire lines" through the property, including along the back of the Cubo Line and through the covered way between the entrance plaza and the passage to the Cubo Line. Lastly, foot traffic along the sides of paved walkways has compacted the ground and created long linear bare areas. These include along the side of the walkway at the seawall and along the walkway along the south side of the covered way wall between the entrance plaza and the crosswalk to Fort Alley.

The presence of trees in the landscape is a character-defining feature of the War Department period of significance. Many of these trees became part of the landscape in the late 1800s and early 1900s. However, the aesthetic of this landscape was very different from the military landscape during the Spanish Colonial period, which is the primary period of significance for the site. It is not recommended to recreate the War Department planting scheme across the entire site; however, the NPS should use the War Department plantings to guide plant material selection to maintain the buffer around the perimeter of the site. Additionally, it is recommended to replant trees along the walkway between Water Street and South Castillo Drive since this walkway alignment is a historic feature from the War Department period. Lastly, existing trees from the War Department period should be replanted as they die. This offers an opportunity to interpret the landscape of that period without recreating the park-like landscape from that period. Today, many of the historic trees are in poor condition, succumbing to age or damaged by storm events. It is recommended to propagate from existing historic trees to have available for future planting efforts. Trees have died in the fort green area since the field work for this report.

Turf treatment options

If the primary goal is to replicate the appearance of the landscape in the Spanish colonial period, more information is needed to identify specific species grown around the fort; however, it seems likely that the species available to the Spanish would have been tall warm-season grasses native to this area of Florida (e.g. *Andropogon* or *Distichlis*). Native grasses are discussed below in a section on grass selection options.

If the primary goal is to replicate the appearance of the landscape in the 1800s, also within the historic period of significance, then maintaining an open space filled with low-growing turf is appropriate. The common turf species grown in Florida include Bahiagrass, Bermuda grass, Centipede grass, Seashore Paspalum, St. Augustine grass, and Zoysia grass. Bermuda grass would be most appropriate for replicating the War Department period of significance since that was the species used. Each grass type has its own benefits and deficiencies, but turf is a high-maintenance vegetation type, requiring inputs of pesticide, herbicide, and irrigation. Turf selection options are further discussed below on page 282.

If the desired outcome is to increase biodiversity and improve habitat, then converting turf areas to a native grassland would be a possible treatment alternative. This would require a radically different management regimen. Studies indicate that management of grasslands that mimic natural disturbance regimes are more effective

for maintaining biodiversity. Using traditional management approaches including mowing results in a decreased level of native plants and increased levels of invasive exotics over several years.[545] A second consideration is that managing a native grassland, without using burning or chemicals, will require that the grass be allowed to grow tall enough to shade out annual invasive species and be cut only after the seed has matured. The benefits of a native grassland are numerous, but it is unlikely that Castillo de San Marcos is an appropriate location for a grassland restoration. A list of grassland restoration plants appropriate for this region is provided in a section on Grass/Turf selection on page 282.

Considering the amount of pedestrian traffic on the site, the recommendation is to use common Bermuda grass across the entire site. The advantages of common Bermuda are discussed in more detail below in the Grass/Turf selection section on page 282. Common Bermuda will allow for the NPS to most easily maintain the open character of the fort green while providing a resilient ground plane for pedestrians.

Vegetation Treatment recommendations

VG-1 Maintain lawn areas

Maintain the open lawn areas in keeping with the appearance of the esplanade/fort green during the historic periods of significance. Establish maintenance program, including fertilization, herbicide-application, and aeration to improve existing stand of turf in open area around fort and in the courtyard. Raise grade of turf as necessary to ensure drainage away from historic resources and to hide irrigation valve boxes and other at-grade utilities.

VG-2 Vegetation protection zones

Create a zone immediately adjacent to historic masonry walls that do not receive chemical applications or mowing with heavy equipment to protect historic resources. Have two heights of mowing in covered way and water battery: lower height along desired pedestrian routes and taller height beyond desired pedestrian routes to encourage pedestrians to follow a single route and protect historic resources. In areas adjacent to historic resources, including the walls of the fort, covered way, and water battery, provide a minimum of 2 percent slope to shed water away from structures. Mower damage was not observed during site visits. However, the Chicora Foundation has created best practices for maintenance of historic cemeteries that provides guidelines on protecting historic stone resources. It recommends not mowing within twelve inches of stone features and using trimmers with a light gauge nylon string (no heavier than 0.09 inch).[546]

VG-3 Reinforced grid turf areas

Install soil-stabilizing grid system in high-traffic areas and re-sod with Bermuda grass. Soil-stabilizing grids are plastic modules that protect root zones in areas that receive heavy traffic. The plastic grid holds the soil in place and distributes the point load of foot traffic or vehicles to prevent soil compaction. New sod would lie on top of nutrient-balanced, sterile topsoil that fills the soil-stabilizing grid. This would be a long-term solution, which would result in improved perviousness, resistance to compaction, improved drainage, and reduced erosion. Sterile soil should be used whenever additional soil is needed to protect archeological resources.

Grasspave by Invisible Structures, Inc. and EZ Roll Grass Paver are two examples of widely used products for this application. These products are also ABAAS-compliant and have relatively low profiles. For example, the NDS EZ Roll Grass Paver cell is 2 1/4 inches deep, which would minimize the amount of excavation needed to install the product. On average, the NPS would need to remove approximately 4-6 inches of soil in order to maintain the existing grade when adding a grid system. This would allow for the grid, additional sterile topsoil, and the turf. If archeological resources are known to be in the area, the grid could be laid on top of grade and the entire area raised to protect underground resources. The NPS would need to provide irrigation to the newly sodded areas (Figure 336).

The reinforced turf grid would be applicable in

545. Roger Latham, "Desired Condition of Grasslands and Meadows in Valley Forge National Historical Park, Natural Resource Technical Report NPS/NER/VAFO/NRTR- 2012/638" (Fort Collins: National Park Service, 2012) 107-108.

546. Chicora Foundation, Inc., *Best Practices for Cemetery Lawn Maintenance*, accessed on November 11, 2019: https://www.chicora.org/pdfs/Lawn%20Maintenance.pdf.



Figure 336: Reinforced geogrid for turf (www.ndspro.com)

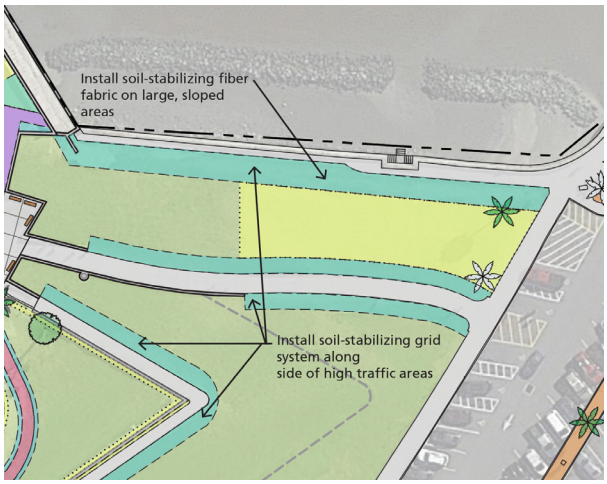


Figure 337: Example of areas to use grid reinforced turf (WLA Studio 2019)

areas where there is heavy foot traffic that has killed the grass, for example, where foot traffic has worn a path along the edge of a walkway. Locations for this treatment include top of the south covered way wall, adjacent to the entrance walkway, along sides of the walkway across the glacis from Fort Alley, and adjacent to the walkway at the seawall. It would be applicable where foot traffic is concentrated at a specific location, including at the bottom of stairs or other landing points. It would be applicable to areas where visitors frequently congregate, for example at the south entrance into the water battery and at the row of benches along the edge of the walkway south of the entrance plaza. This would be applicable to treat desire paths that are not transitioned to a stabilized aggregate path. This treatment would also be applicable for sloped areas susceptible to erosion, for example around the west wall sortie opening in the covered way wall near the reconstructed Cubo Line. It is also recommended to use in coordination with the stabilized aggregate paths to serve as an edge restraint and improve turf conditions. The NPS will need to adjust the grade in some of these locations

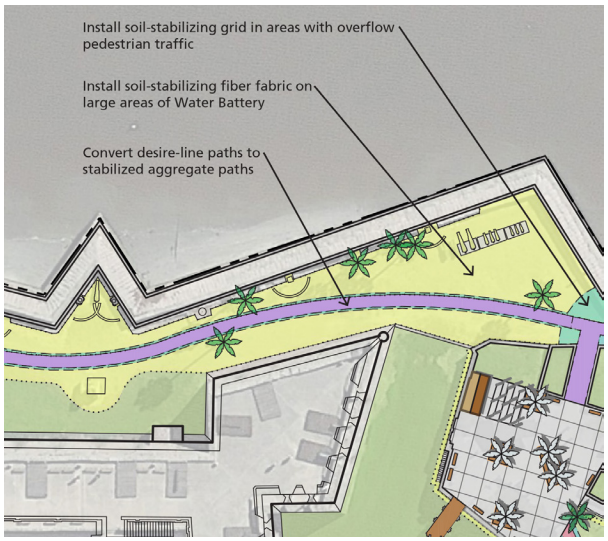


Figure 338: Example of areas to use fiber reinforced turf (WLA Studio 2019)

so that the finished grade of the turf is level with the walkway but does not shed water onto the walkway (Figure 337).

Bermuda grass is the recommended turf for high traffic areas. A discussion of other turf options is discussed below in the section Grass/Turf selection on page 282. A discussion of other options to address soil compaction and erosion appears below in the section Soil Compaction on page 283.

VG-4: Fiber reinforced turf areas

Install soil stabilizing reinforcement fabric in large areas that experience high foot traffic and re-sod with Bermuda grass. Soil-stabilizing reinforcement fabrics have polypropylene fibers that protect the root zone from compaction and prevent erosion of sloped areas. Several products are available, such as StaLok fiber reinforcement. The fiber fabric would be applicable where large areas need reinforcement. This includes the slopes of the glacis, in particular near the entrance walkway and in the water battery. Another area that would benefit from this application is the zone along the top and bottom of the covered way wall to reduce the potential for erosion. It would also be applicable for stabilizing the grass slope and hiding exposed supports on top of the reconstructed Cubo Line at City Gate. It would also help reduce turf wear along the sides of walkways where there is not sufficient room to install a reinforcing turf grid, for example where the concrete walkway comes close to the covered way wall south of the fort (Figure 338).

VG-5: Replant historic trees in-kind

Maintain existing trees. Where loss has occurred or where loss is likely due to age or condition, under-plant existing trees with younger plants of the same species. Trees with a minimum diameter at breast height (DBH) of 2 inches are preferred for new plantings.

Replant cedar trees and American elm trees using in-kind replacements when existing trees die. These remain from the War Department period of significance and provide an opportunity to interpret the landscape of that period. These are found in the fort green west of the fort and outside the covered way wall south of the fort. Consider using Florida elm (*Ulmus americana var. floridana*) because it's native, resistant to Dutch elm disease and moderately salt tolerant. Similarly, Southern red cedar (*Juniperus silicicola*) is an appropriate substitute for Eastern red cedar.

Replace cabbage palms (*Sabal palmetto*) in the water battery when they die, moving them away from historic resources or known archeological resources.

Replacing the trees will also contribute to buffering intrusive views from the fort. See the views and vistas recommendation for additional information.

VG-6: Tree plantings for visual buffer and shade

Plant trees in strategic locations along sidewalk at South Castillo Drive/SR A1A to screen intrusive views and provide shade for visitors. Plant trees in strategic locations along north boundary line to provide visual buffer between park and adjacent residences. An understory of evergreen trees and shrubs would buffer views of the Park Headquarters and Maintenance complex. Plant a mix of mid-size and tall evergreen trees and palms along the west and south perimeter of the park to buffer views of modern development on the opposite side of South Castillo Drive/SR A1A. For example, by planting a cluster of evergreen trees and palms near the intersection of the walkways leading to the crosswalk to Fort Alley, NPS can buffer views of modern buildings from both Bastion San Pablo and Bastion San Pedro.

Replant live oak and elm trees along both sides of the walkway between South Castillo Drive/SR A1A and Water Street. These would provide an opportunity to interpret the landscape from the War Department period and help buffer views to the Park Headquarters and Maintenance complex. See also the treatment recommendations for views and vistas.

When selecting plants, use native species or utilize species from the from the 1890s planting list, including cedars (*Juniperus virginiana* and *J. silicicola*), American elm (*Ulmus americana*), Florida elm (*Ulmus americana* var. *floridana*), wax myrtle (*Morella cerifera*), and cabbage palms (*Sabal palmetto*). Find substitutes for trees on the 1890s planting list known to be susceptible to disease or that have other environmental deficiencies. For example, the American elm is susceptible to several diseases so using Florida elm would be a reasonable substitution.

Grass/Turf selection

Considering the advantages and disadvantages of different commercially available turf species, common Bermuda grass (*Cynodon dactylon*) is the recommended species for Castillo de San Marcos because of its excellent wear tolerance, good salt tolerance, and historic use on the site. Other species were evaluated as part of this study. New cultivars are being introduced that may provide a superior alternative to Bermuda grass in the future. Below is a brief description of available grass species and their potential use. As new cultivars are developed in the future, they can be evaluated using a similar methodology.

There are new varieties of Bermuda grass developed for better wear resistance, disease resistance, and drought tolerance. Using a new variety like TifTuf Bermuda sod (*Cynodon dactylon* [L.] *Pers.* × *Cynodon transvaalensis* Burtt Davy) will provide a drought-tolerant groundcover capable of withstanding large amounts of foot traffic.[547] The major unknown with an improved Bermuda is how it will respond to a less intensive maintenance regimen. These improved varieties were developed for golf courses and high maintenance commercial sites. They are maintained at a height of 2 inches or less, requiring weekly mowing. CASA could plant

547. Laurie E. Trenholm, J. Bryan Unruh, and Travis W. Shaddox, "Bermudagrass for Florida Lawns," *University of Florida IFAS Extension*, original publication date May 1991, revised March 2011 and April 2017, http://edis.ifas.ufl.edu/lh007.

a test plot and experiment with a reduced mowing schedule to see how it responds and looks under a less intense maintenance regimen.

Saltgrass (*Distichlis spicata*) is a native grass that looks like Bermuda and has a similar growth habit. The University of Arizona and Colorado State University have experimented with Saltgrass to determine its potential as an alternative to Bermuda grass. Saltgrass would probably not create as consistent a stand of turf as more traditional grass species, but it is highly salt tolerant and responds favorably to mowing and traffic.[548] Saltgrass is not as widely available as the other species on this list, but may be part of an experimental program to evaluate its effectiveness as a low maintenance alternative to traditional turf grasses. There are nurseries in Florida who specialize in native plants and have this plant available, but many do not carry the plants in large quantities.

Seashore Paspalum (*Paspalum vaginatum)* is another native perennial grass that has become more commercially available as a turf grass. It also looks like Bermuda grass and generally outperforms Saltgrass under normal conditions. Seashore Paspalum would provide a native, salt tolerant, drought resistant, and wear resistant alternative to Bermuda grass. The University of Georgia has done extensive testing of Seashore Paspalum and has introduced numerous cultivars into the market. Most turf guides suggest that Seashore Paspalum has similar maintenance requirements to Bermuda. By testing Seashore Paspalum in a contained area, for example a test plot within the confines of the Water Battery or covered way, the NPS can evaluate its performance and consider it as a potential alternative to Bermuda grass and St. Augustine grass in the open areas around the fort. The argument against Seashore Paspalum is that its maintenance requirements is similar to improved Bermuda. The commercially available cultivars are designed to be frequently mown, but the NPS could experiment to evaluate its performance under a less intensive maintenance schedule.

548. Paul Johnson, "Native Grasses as Drought-Tolerant Turfgrasses of the Future," in *Handbook of Turfgrass Management and Physiology,* ed. Mohammad Pessarakli (Boca Raton, FL: CRC Press, 2008), 606.

St. Augustine grass (*Stenotaphrum secundatum)* has a similar growth habit to Bermuda grass, but it has a wider blade and lighter green color. St. Augustine grass is slightly more salt tolerant than Bermuda grass and is more shade tolerant, but St. Augustine has poor wear tolerance, and the NPS should not use this grass in areas with heavy pedestrian traffic.

Zoysia grass (*Zoysia sp.)* is becoming more widely used in Florida. Its medium blade looks more like Bermuda grass, and it has similar maintenance requirements to St. Augustine grass. Its primary benefit would be that it has better wear tolerance than either St. Augustine or Bermuda grass. Converting to Zoysia grass requires complete elimination of Bermuda grass because Bermuda grass will outcompete and invade Zoysia grass. Native species of grass-like plants suitable for a grassland restoration include:

- *Andropogon glomeratus* (bushy bluestem)
- *Aristida beyrichiana* (wiregrass/threeawn)
- *Bouteloua curtipendula* (sideoats grama)
- *Bothriochloa laguroides* ssp. *torreyana* (silver beardgrass)
- *Carex blanda* (eastern woodland sedge)
- *Carex cherokeensis* (Cherokee sedge)
- *Chasmanthium latifolium* (Inland sea oats)
- *Distichlis spicata* (Coastal salt grass)
- *Eleocharis montevidensis* (sand spikerush)
- *Eragrostis elliotti* (Elliot's lovegrass)
- *Muhlenbergia capillaris* (hairawn muhly)
- *Panicum amarum* (bitter panicgrass)
- *Paspalum floridanum* (Florida paspalum)
- *Schizachyrium scoparium* (little bluestem)
- *Spartina patens* (saltmeadow cordgrass)
- *Tridens flavus* var. *flavus* (purpletop tridens)
- *Uniola paniculata* (seaoats)

Soil compaction

To improve the condition of the turf, the NPS needs to take steps to reduce compaction in high-traffic areas. Treatment alternatives increase in complexity and cost. The least intrusive and least costly option is to replace the top 6-inches of soil, introduce new, nutrient-balanced, sterile topsoil, and re-sod areas. This would result in a short-term fix because future foot traffic would compact the soil in due course.

Another option would be to remove the top 6-inches of soil and heavily aerate the underlying layer, using a plug machine or air spade to create

air spaces that extend 12- 18 inches down. New nutrient-balanced, sterile topsoil would be added prior to re-sodding. This would create a better root zone, but it would eventually be compacted by foot traffic.

The recommended treatment is the introduction of a soil-stabilizing product such as soil reinforcing fabrics and plastic soil-stabilizing grids.

General turf management recommendations

The most important maintenance factors to address soil compaction are discussed above. General turf management recommendations include mowing, fertilization, irrigation, and aeration. A more robust maintenance regime will improve the existing stand of grass while the NPS monitors the performance of alternative native species. The Florida Department of Environmental Protection has prepared Best Management Practices for landscape maintenance that seek to minimize nonpoint pollution of water resources.[549] These should be incorporated into general maintenance practices.

St. Augustine grass and Bermuda grass require frequent mowing. Mowing to a height of 2.5 to 3 inches is recommended for St. Augustine, never removing more than ⅓ of blade length. Mowing to a height of 1.5 inches is recommended for Bermuda grass. Frequent mowing is recommended rather than less frequent mowing that results in removing more than ⅓ of blade length. Grass clippings should not be bagged but allowed to remain and decompose on the turf.

Fertilization is important management practice for turf management, especially in soils with low fertility. A fertilization program is important to improve poor-quality turf and to maintain a high-quality stand of grass that is resistant to disease, pest, or invasive weed species. Perform a soil test to monitor nutrient levels and to identify specific nutrient needs. The University of Florida Extension has general guidelines available for managing turfgrasses.[550] Generally, site managers need to fertilize turfgrass twice to three times a year. Fertilize in early spring, three weeks after grass starts to grow and there is no chance of late frost. Depending upon soil test results, use a complete fertilizer with a 3-1-2 ratio of nitrogen, phosphorus, and potassium. In areas where grass health is most important, continue the fertilization program through summer into early fall. In summer, use fertilizer with higher levels of nitrogen and that is low in phosphorus (e.g. 15-0-15). In fall, reduce the amount of nitrogen and increase the amount of potassium (e.g. 5-10-10), continuing until 4 to 6 weeks before grass is expected to go dormant or first frost.

The pH should be tested in several locations at the base of the coquina walls to determine if the walls and/or mortar has raised the pH of the soil. Turf has failed along the base of most of the retaining walls suggesting that the soil is excessively alkaline.

Aeration should be performed annually using a plug or core aerator. Aeration reduces compaction and introduces space for air and water into the root. A recent study shows that core aeration can increase deep rooting and water extraction by 25%. After aerating, spreading a nutrient-rich compost across the lawn areas will improve soil conditions.

While improving growing conditions will help the turf outcompete invasive weeds, the existing perennial and annual weeds need to be controlled using an herbicide to reduce their populations in order to allow the turf to spread. Weed control will likely require a combination of both preemergence and postemergence herbicides. The University of Florida Extension has weed management guides that should be consulted.[551]

549. See for example, Florida Department of Environmental Protection, "Florida Friendly Best Management Practices for the Protection of Water Resources by the Green Industries," accessed online April 21, 2018, https://fyn.ifas.ufl.edu/pdf/grn-ind-bmp-en-12-2008.pdf.

550. See for example, T.W. Shaddox, "General Recommendations for Fertilization of Turfgrasses on Florida Soils," IFAS Extension, accessed online https://edis.ifas.ufl.edu/pdffiles/LH/LH01400.pdf.

551. See for example, Bryan Unruh, et. al., "Weed Management Guide for Florida Lawns," IFAS Extension accessed online accessed online April 21, 2018, http://edis.ifas.ufl.edu/pdffiles/EP/EP14100.pdf.

Circulation

Circulation during the periods of historic significance

Paths converged at openings in the covered way wall on the west and south side of the fort during the Spanish Colonial period. The War Department formalized these paths by paving them with concrete or compacted coquina. The War Department period featured curvilinear walkways that created a park-like circulation system. The NPS removed most of these walkways beginning in the 1930s and 1940s to restore the historic appearance of the landscape.

Current conditions

There is a large, 115-car parking lot south of the fort off South Castillo Drive near where this road turns south and becomes Avenida Menendez. There is a smaller, fifteen-car lot for NPS employees south of South Castillo Drive on a triangular parcel formed by South Castillo Drive, Charlotte Street, and Cuna Street. As mentioned above, the GMP/EIS recommended removing much of the main parking lot and converting the landscape back to glacis and green; however, when the visitor center project was cancelled this did not happen.

The existing walkway system attempts to provide the most efficient pedestrian connections between parking lots and cross walks between the park and the town of St. Augustine. These include southern routes from the parking lot and along the seawall from Avenida Menendez. These include a concrete walkway from the crosswalk at Fort Alley that crosses the glacis and follows the top of the covered way wall towards the entrance into the fort. There are two concrete walkways that connect to Water Street, north of the fort. There are also several dirt paths, or social-line paths, that cross through the landscape. These include a dirt path that follows the Cubo Line to the opening in the covered way wall west of the fort. These also include paths that cut across the covered way and water battery. A dirt path connects the opening in the covered way wall to the large concrete entrance plaza. The NPS has added pavement areas to the plaza over several years, resulting in a variety of paving materials. The pedestrian circulation in the fort courtyard features large concrete pavers.

Treatment recommendations for circulation

CR-1: Preserve historic circulation alignments

Preserve alignments of existing walkways that follow historic alignments. These include the two walkways from Water Street, the walkway along the south covered way wall, and the main walkway to the entrance from the parking lot. Maintain existing width of walkways from Water Street.

CR-2: Establish standard concrete detail for new walkways

Establish standard detail for new concrete walkways, including a shell-aggregate finish and regular scoring patterns. Walkways should be designed with a cross slope of between .5 and 1 percent to shed water away from historic resources. Walkways less than five feet in width should be increased to minimum of five feet to better accommodate two-way pedestrian traffic and decrease instances of people walking along sides of walkways. The exceptions to this width recommendation are the two walkways from Water Street north of the fort. The current width of these two walkways appears consistent with historic conditions and should remain. Continue practice of having a radius of concrete at intersections of walkways to decrease cutting across intersections.

Consideration was given to developing an accessible route from the Fort Alley crosswalk to the entrance of the fort. It is not possible to create a 5% walkway from Fort Alley to the top of the glacis at the southwest salient of the covered way without cutting into the glacis. There is an elevation change of approximately ten feet between the top of the curb at South Castillo Drive/SR A1A to the southwest salient of the covered way. There are approximately 130 linear feet between the crosswalk landing at Fort Alley and the southwest salient. To maintain a five percent grade along this route, two hundred linear feet would be required. Our recommendation is to maintain the existing accessible route from the main parking lot to the entrance to the fort. (If properly surfaced with an ABAAS-compliant material, the walkway from Cubo Line through the covered way could become a second accessible route; but it is recommended to continue practice of directing traffic to the main entrance walkway.)



Figure 339: Example of stabilized path (WLA Studio 2016)

CR-3: Convert high traffic paths to resin-bound stabilized aggregate

Consider using an ABAAS-compliant walkway of natural crushed stone bound with a binding agent on high traffic paths. The binding agent holds the natural aggregate in place. The best results are achieved using an edge restraint and a hard aggregate like crushed stone or decomposed granite. The NPS could use a native stone that has a similar, whitish color as the native soil. The stabilizer is sprayed onto or mixed into loosened soil or the aggregate, saturating to a depth of approximately two to three inches. There are several products on the market, including a natural binder produced by Stabilizer Solutions, Inc. (Figure 339).

While a soil stabilizer described above is the recommended treatment, an alternative construction method would be to import a premixed aggregate/resin material. These are typically prepared off-site, delivered, and installed like traditional concrete. Blue Green Urban produces a product called Arboresin that creates universally compliant surfaces. The aggregate is typically stone, but the NPS could experiment with a local stone or coquina.

The advantage of having a stabilized walkway is to provide a very legible path through the landscape, concentrating pedestrian traffic onto a desired route and protecting historic resources. This would be applicable along the south side of the Cubo Line and continuing through the covered way both north and south of the fort. It is also recommended that the NPS create a primary route featuring a stabilized walkway through the water battery, from the entrance plaza to the staircase at the north end. The water battery path should follow the existing desire line path near the centerline of the water battery (Figure 340).

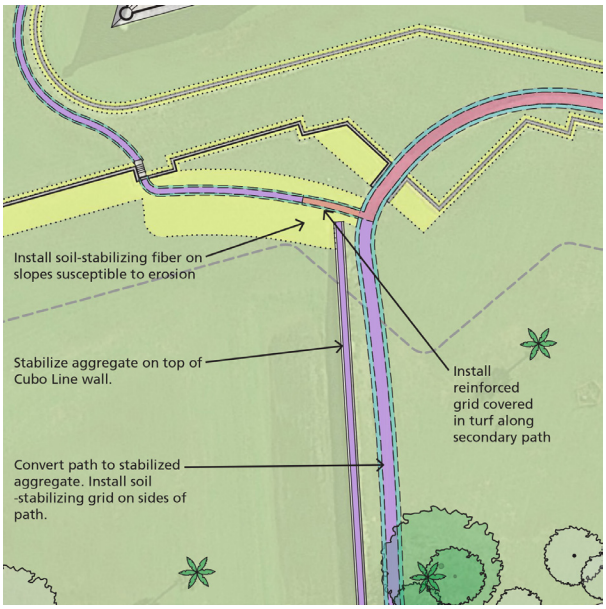


Figure 340: Example of areas to install stabilized aggregate path (WLA Studio 2019)



Figure 341: Gravelpave system by Invisible Structures (www.invisiblestructures.com)

A reinforced turf grid should be used on either side of the stabilized walkways to serve as an edge restraint and to protect the turf on the edges of the walkway. More information on reinforced turf grids is provided in the vegetation recommendations section on page 280, see treatment recommendation VG-3.

CR-4: Reinforced service vehicle paths

A reinforced grid system should be integrated into the stabilized walkways in areas that are used for service vehicles. An example of a grid designed for heavy traffic is Gravelpave. Gravelpave is a reinforced plastic grid designed to hold aggregate

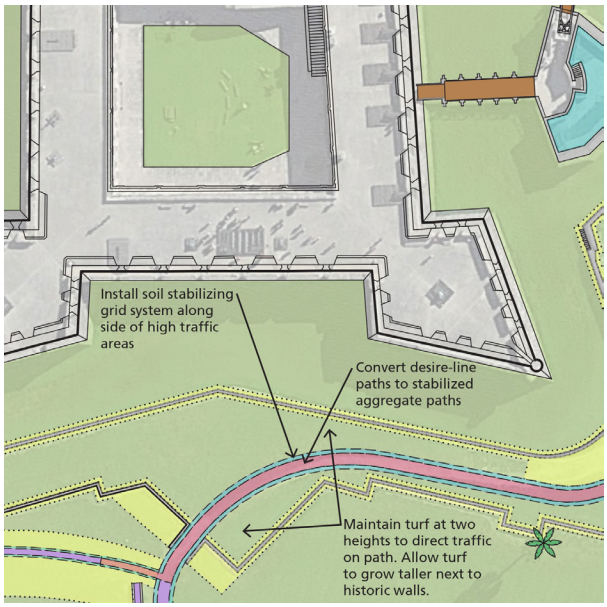


Figure 342: Example of area to use reinforced aggregate service path (WLA Studio 2019)

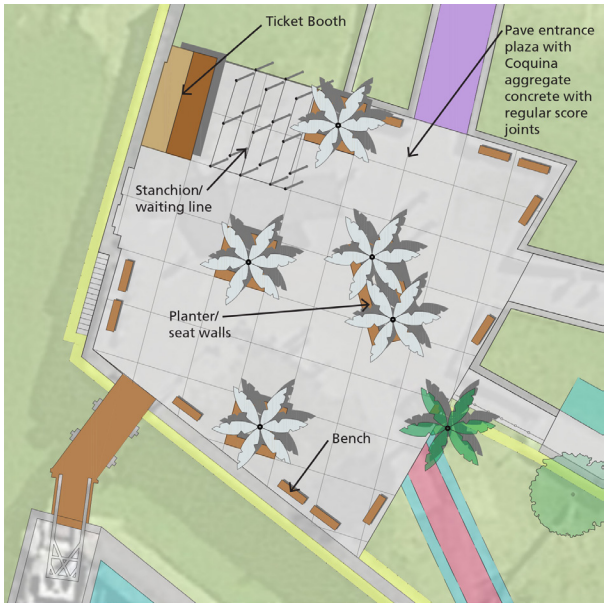


Figure 343: Reorganized entrance plaza (WLA Studio 2019)

in place and distributing the point load of service vehicles (Figure 341). This treatment would be used for the service path between the entrance plaza and the west wall sortie near the Cubo Line (Figure 342). It would also be applicable for areas near the maintenance facility where vehicle traffic has worn a dirt path into the turf.

A reinforced turf grid should be used on either side of the reinforced service vehicle paths to protect the turf on the edges of these paths. More information on reinforced turf grids is provided in the vegetation recommendations section on page 280, also see treatment recommendation VG-3.

CR-5: Repave entrance plaza

Repave entrance plaza either in shell-aggregate concrete or with an at-grade deck constructed from composite lumber (e.g. Trex). The advantage of having an at-grade deck is that it would be clearly distinguishable from historic material; however, it is recommended to install an aggregate concrete plaza because of its durability. During the design of the entrance plaza, consider the integration of removable stanchions that the NPS can install during periods of high visitation. Design of stanchion layout will depend upon location of ticket booth. General guidelines for designing efficient queue lines include use of



Figure 344: Rendering of reconfigured entrance plaza (WLA Studio 2019)

a single entrance/single line layout that serves multiple ticket windows. The queue layout should occupy a minimum amount of space and have the minimum number of turns. It is also preferable to have a system that can be easily adjusted, opening short cuts when crowds are smaller. One way to accomplish this is using a shortcut gate made by ShortcutQ.

The plaza configuration can be improved by relocating the ticket booth. Rotating and moving the ticket booth allows for a separation of spaces, providing a legible area for those purchasing tickets and another area for congregating. Adding raised planters allows for further separation and the addition of shade-giving palm trees. A diagonally-placed planter near the entrance into the plaza helps direct visitors to the queueing area and offers an opportunity for a welcome sign (Figure 343 and Figure 344).

See also recommendations for small-scale features SSF-1 and SSF-3.

CR-6: Pervious pavers in parking lot

Install pervious pavers in the planting islands near the bus parking area in the visitor parking lot. These areas have become worn and compacted because of the high volume of foot traffic. The options are to install a soil-stabilizing grid system and reinstall turf, install curbs to discourage foot traffic, or to pave with a concrete or paver. To avoid having too much concrete, it is recommended to use a paver like those used in the parking lot islands. The sidewalks at the back of curb should be retained; remove remaining concrete between curb and sidewalk; and install permeable pavers to create an unloading/loading zone for buses. Cabbage palm trees can be incorporated into the plaza using flush grates to protect the roots.

CR-7: Install bollards to control vehicular traffic

Coordinate with the City of St. Augustine to install a row of simple wooden or stainless steel bollards at the back of the curb at City Gate to prevent vehicles from driving over the curb and parking in the greenspace behind City Gate (Figure 345). Additionally, install bollards in the walkway at the north end of the walkway to prevent vehicles from driving through the City Gate. Bollards should be

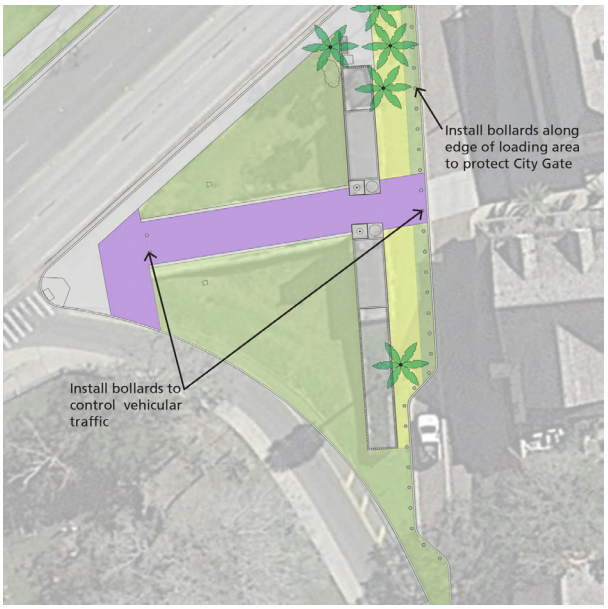


Figure 345: Detail of City Gate area (WLA Studio 2019)



Figure 346: Reliance Foundry R-8902 Stainless Steel Bollard (www.reliance-foundary.com/bollards)

removable, which allows for service vehicle access as necessary for maintenance activities. Reliance Foundry produces a high-quality stainless steel model with multiple mounting options (Figure 346). Bollards mounted in right-of-way must conform with FDOT standards.

CR-8: Maintain concrete pavers in courtyard

Monitor pavers in courtyard and correct pavers that become uneven. The pavers are generally in good condition with minimal instances of raised edges. To avoid creating a tripping hazard, reset pavers to be flush with surrounding pavers. Fill joints as necessary with a fine aggregate.

CR-9: Maintain wood stairs and install stairs to replace unsafe stairs

Monitor and repair existing stair cases. There are



Figure 347: Example of view from fort towards St. Augustine (WLA Studio 2016)

two stairs leading from the glacis into the covered way. These stairs have an unusual tread to riser ratio. Consider installing a wooden staircase in these locations. The stairs should be designed with supports that do not anchor onto historic fabric (Figure 334). See also building and structures recommendation BS-7.

Views and Vistas

Views and Vistas during the periods of historic significance

During the Spanish periods, views from the fort were military assets, helping to alert soldiers of an enemy attack. Important views from the fort included those towards Matanzas Bay and across open ground around the fort, which would be likely routes of an assault. Views to the west and southwest during this period were towards the small town of St. Augustine.

During the War Department period, the town of St. Augustine expanded, and residential and commercial development began filling in much of the open space around the fort, except for an area known as the fort green. The view from the fort towards Matanzas Bay also changed during this period, as residential development began to occur on Anastasia Island.

Current Conditions

Today the open space around the fort is of a similar size, shape, and general condition as during the War Department period. The edge of the open space north of the fort has a line of evergreen trees, similar as it had during the War Department period, which limits views to the north. On the west, and south sides of the fort, several of the buildings forming the edge of the town of St. Augustine have been replaced with modern structures. Like in the War Department period, trees planted in the space between the fort and town provides a visual screen but do not completely block out views of the town. Views of new buildings in St. Augustine are most obvious from the terreplein and bastions on the west side of the fort. The view from the terreplein and bastions on the east side of the fort include Matanzas Bay, St. Augustine Inlet, residential development on Anastasia Island, residential development on Vilano Point, Francis and Mary Usina Bridge to the north, and Bridge of Lions to the south.

Treatment recommendations for views and vistas

VV-1: Park headquarters visual buffer

Buffer view from the fort to the north towards the Park Headquarters and Maintenance complex by planting a combination of evergreen trees of various sizes and evergreen shrubs. Views of the Park Headquarters and Maintenance complex are most conspicuous from Bastion San Pablo, Bastion San Carlos, and the north terreplein. See also vegetation recommendations VG-5 and VG-6.

VV-2: Screen residential lots north of fort

Buffer views from Bastion San Pablo, Bastion San Carlos, and the north terreplein into residential lots north of fort by planting evergreen trees and palms near the park boundary. Consider working with adjacent landowners to prevent a future land use that would introduce a visual intrusion visible from the fort. See also vegetation recommendations VG-5 and VG-6.

VV-3: Buffer Views of South Castillo Drive/SR A1A and Modern Development

Buffer views from Bastion San Pablo, Bastion San Pedro, and from the west terreplein towards the modern buildings on the west side of South Castillo Drive/SR A1A. Recently constructed buildings along South Castillo Drive/SR A1A that are particularly conspicuous from the fort include an inn and retail shops located at 11 St. George Street and 9 St. George Street. The museum at 12 South Castillo Drive is also very visible from most locations along the west side of the fort (Figure 347).

The modern parking lot dominates the view from the south terreplein and from Bastion San Pedro

and Bastion San Agustin. A current security camera system in the parking lot prevents planting of trees to screen this from the fort. A recommendation to study an alternative security system appears in the Recommendations for Future Study on page 333. See also vegetation recommendations VG-5 and VG-6.

VV-4: Buffer views of modern development across Matanzas Bay

Replanting palm trees in the Water Battery will help soften views of modern development towards the east without completely blocking views. The views to the southeast and northeast include houses, roadways, and bridges. The existing palm trees help buffer view of these features from the east side of the fort. See also vegetation recommendations VG-5 and VG-6.

Small-Scale Features

Small-scale features during the periods of historic significance

During the Spanish Colonial period of significance, known small-scale features included gates at passages through the covered way wall and artillery. A lack of specific information prevents restoration of Spanish period small-scale features, however in the Recommendations for Future Studies, a recommendation is made to consider restoring small-scale features upon future discover of information. During the War Department period of significance, small-scale features included fences, benches, signage, lighting, artillery and other features added during the late 1800s and early 1900s as the property transitioned into a historic tourism site. The War Department period small-scale features are better documented; however, it is not recommended to restore these features to highlight the general appearance of the landscape during the Spanish period.

Current conditions

The NPS removed all the War Department small-scale features, with possible exception of the displayed artillery, and replaced them with more contemporary signage and site furnishings.

Many of the small-scale features at the national monument relate to NPS management of the site, with interpretive signage, regulatory and wayfinding signage, benches, waste and recycling receptacles, and stations to control visitor traffic.



Figure 348: Barcoboard Steel Frame Double-Board bench (www.barcoproducts.com)



Figure 349: Central Park Recycled Plastic Bench by JayHawk Plastics (www.parkwarehouse.com)

NPS updated the interpretive signage program at the national monument since the fieldwork for the preparation of this report. NPS installed twenty-two new wayside exhibits, including both low profile exhibits and upright exhibits, to different locations around the site, including at City Gate, Cubo Line, at the main entrance walkway, and various locations around the earthworks around the fort.

Treatment recommendations for small-scale features

SSF-1: Provide Benches for Visitor Use

It is recommended to maintain the practice of providing simple, weather resistant benches for visitors. Those currently located along the south covered way wall are clearly non-historic and a visitor will not easily mistake these as historic resources. These benches at the south covered way wall are particularly visible from the parking lot and entrance walkway. Consider relocating these to the entrance plaza. Additional benches can be



Figure 350: Wide Loop U Bike Rack by Parktastic (www.parkwarehouse.com)

added to the entrance plaza if it was redesigned and expanded. Benches in this location are less visible from the entrance walkway so have a minimal impact on views towards the fort. Other benches should be located near the perimeter of the national monument near entrance points. The most appropriate place for more benches is near the parking lot. Planting islands between the seawall and parking lot offers an opportunity to install additional benches and to plant additional palm trees to provide shade for visitors using the benches. Benches in this location would provide views both towards Matanzas Bay and towards the fort.

Several manufacturs make benches that are constructed from plastic but look like wooden benches. These are durable, low maintenance, and do not splinter. It is recommended to use those with a tan, wood-like color. BarcoBoard manufactures a simple but solid plastic bench mounted on galvanized steel legs. These are appropriate to use in locations where there is a concrete base and where it is preferable to have a permanently mounted bench. Jayhawk Plastics offers a bench made from recycled plastic similar to those currently on site (Figure 348 and Figure 349). These are preferred in locations where the NPS may want to move benches around for programming.

SSF-2: Provide bike racks

To serve visitors approaching the national monument on bicycles, install bicycle racks near the entrance walkway and the parking lot, where they will not detract from historic setting. Consider using a simple design, constructed from a powder coated galvanized steel to provide corrosion protection (Figure 350).

SSF-3: Provide other site furnishings necessary for visitors' experience

Continue the practice of limiting the number of trash and recycling receptacles on site. Place the majority of these in locations on the edge of the national monument near pedestrian entrances to site. This would include near the parking lot and at the west end of Cubo Line. Continue to maintain a receptacle at the entrance plaza, located where it is not visible from the entrance walkway and the approach to the fort.

SSF-4: Prepare wayside to interpret evolution of cultural landscape

According to Director's Order #52C: Park Signs, the development of a standardized signage system, which includes park and facility identification signage, visitor information signs, wayside exhibits, and pathfinder signs, should offer clear, concise and consistent communications to park visitors while not intruding on natural and historic settings; maximize the public's convenience and safety; strengthen the NPS public identity and perception as one organization; and be appropriate in appearance, size, and material to a wide range of park environments.

The park has recently updated their interpretive signage, placing them in appropriate locations across the national monument. It is recommended to develop a sign that provides an overview of the evolution of the landscape, including the changes made during the War Department Period. This would allow an opportunity to interpret this period of significance and highlight some of the interesting activities, including golf, that occurred in the landscape during this period. This may be located along the walkway to Water Street since that is a remnant alignment from the period.



Figure 351: Utilities to be hidden with grade adjustments and turf (WLA Studio 2016)

SSF-5: Continue use of regulatory and directional signage to protect historic resources

NPS should continue use of small signs to discourage walking on historic resources or discourage people from walking on elevated structures that may pose a safety risk. This includes a sign discouraging people from walking on the reconstructed Cubo Line, on top of the covered way and moat walls, and on top of the sea wall at the water battery.

It is also recommended to continue the practice of directing approaching pedestrian traffic towards the main entrance walkway. This will entail small directional signs at the various crosswalks (Cubo Line and Fort Alley) and at the north and south boundaries of the national monument.

SSF-6: Maintain metal features

Continue periodic inspection and maintenance of protective coatings on metal features, including metalwork associated with gun emplacements and hot shot furnace. Continue similar maintenance regime with cannon displayed at park.

SSF-7: Screen utilities

Screen in-ground utilities, like irrigation valve boxes, by raising the grade and resodding to be flush with the top of the valve box. (See also treatment recommendation VG-1). Consider planting vegetation in locations to screen other utilities, i.e. power boxes and back flow preventers, if allowed by local code (Figure 351).

SSF-8: Relocate floodlights

Explore feasibility of relocating floodlights currently attached to historic fabric. Consider mounting these in ground or on low poles.

Proposed PMIS Statements for Castillo de San Marcos National Monument

Castillo de San Marcos Moat Drain Pipe Repair
Project Total Cost: $17,530

- *1,017 Linear Feet (lf) of 8" perforated PVC drain pipe $8.50/lf ($8,645)*
- *247 lf of 8" PVC pipe $20/lf ($4,940)*
- *1-8" wye connection $20/ea ($20)*
- *3,000 Square Feet (sf) Bermuda grass sod $1/sf ($3,000)*
- *3,000 sf of soil improvement, 4 in. depth, $25/cy ($925)*

Description: Replace existing perforated drainpipe to improve drainage in Castillo de San Marcos moat.

Recommendation: Inspect existing drain pipe. If collapsed or clogged, install new 8" perforated pipe that connects to existing drain line in north fort green. The existing pipe was installed in 1996. Its condition is unknown, but life spans of French drains are limited. Reference most recent archeological and construction documentation to determine depth of fill installed in 1996 project and identify depth of potential archeological resources. Install perforated pipe in trench with 1% minimum slope in the approximate centerline of the moat. Backfill trench with loose, washed gravel to protect archeological resources. Use geotextile wrap to prevent material migration and to protect against clogging. Add 4" of soil amendment and re-sod trench. Insure positive drainage to centerline of moat; fine grade as necessary.

Cubo Line Rehabilitation
Project Total Cost: $45,361

- *100 lf of 8" perf. pipe $8.50/lf ($850)*
- *Drainage structures, $1,500/ea ($3,000)*
- *Sump pump, $1,500/ea ($1,500)*
- *1,031 sf area of grid reinforced turf area, $15/sf ($15,465)*
- *1,546 sf area of resin-bound stabilized aggregate, $15/ sf) ($23,190)*
- *1,031 sf sod $1/sf ($1,031)*
- *1,031 sf of soil improvement, 4 in. depth, $25/cy ($325)*

Description: Inspect existing drain and sump pump system at Cubo Line moat, replace if necessary. Replace loose dirt path with a resin-bound aggregate path. Stabilize loose aggregate on top of Cubo Line.

Recommendation: Inspect existing drain system at Cubo Line moat. Sump pump and catch basin system installed around 1964. If sump pump not operable, replace. Consult with archeological reports and construction documents to determine depth of disturbed soil and to predict level of possible archeological resources. Consider adding two additional catch basins connected to basin with sump pump. Connect to the existing drain line in fort green. Improve existing path by replacing bare earth with resin-bound stabilized aggregate path. Edge sides of stabilized path with grid reinforced turf (including 4" soil amendment) to provide hard edge to prevent migration of aggregate. Also use stabilizer on the loose aggregate on top of Cubo Line to prove more stable surface.

Rehabilitation of turf on Ravelin
Project Total Cost: $22,409

- *1,374 sf area of grid reinforced turf area, $15/sf ($20,610)*
- *1,374 sf area of Bermuda grass sod, $1/sf ($1,374)*
- *1,374 sf of soil improvement, 4 in. depth, $25/cy ($425)*

Description: The turf on the upper level of the ravelin is in poor condition or completely missing. If grass is to be maintained, it is recommended to install a reinforced grid with new Bermuda grass sod.

Recommendation: Install soil-stabilizing grid system in high-traffic areas with 4" depth of soil amendment and re-sod with Bermuda grass. Soil-stabilizing grids are plastic modules that protect root zones in areas that receive heavy traffic. The plastic grid holds the soil in place and distributes the point load of foot traffic to prevent soil compaction. New sod would lie on top of nutrient-balanced, sterile topsoil that fills the soil-stabilizing grid. Slope renovated turf to ensure positive water flow to existing drains.

Rehabilitate turf along edges of walkway along South Covered Way wall.
Project Total Cost: $95,961
- *5,554 sf area of grid reinforced turf area, $15/sf ($83,310)*
- *3,568 sf area of fiber reinforced turf areas, $0.20/ sf ($714)*
- *9,122 sf area of Bermuda grass sod, $1/sf ($9,122)*
- *9,122 sf of soil improvement, 4 in. depth, $25/cy ($2,815)*

Description: Repair turf along south covered way walkway by installing combination of grid reinforced turf and fiber reinforced turf to protect against compaction and wear associated with pedestrian traffic.

Recommendation: The turf adjacent to the outside/top of the covered way wall is worn from compaction. This worn path encourages even more pedestrian use, resulting in more compaction and increases forces pushing against the historic resources. A reinforced turf system will distribute the pressure from pedestrian traffic. Soil-stabilizing grids are plastic modules that protect root zones in areas that receive heavy traffic. The plastic grid holds the soil in place and distributes the point load of foot traffic to prevent soil compaction. Installing soil-stabilizing polypropylene fibers that protect the root zone from compaction would protect historic resources. The fibers are incorporated in 4" of sterile, loosened soil and then covered with new Bermuda grass. Bermuda was the type of grass used by the War Department during the period of significance. During this work, ensure that the ground adjacent to historic walls sheds water away from historic resources. The presence of turf will encourage pedestrians to remain on designated walkways.

Renovate paths and turf in North Covered Way
Project Total Cost: $36,155
- *875 sf area of grid reinforced turf area, $15/sf ($13,125)*
- *1,306 sf area of resin-bound stabilized aggregate, $15/ sf ($19,590)*
- *2,137 sf area of fiber reinforced turf areas, $0.20/ sf ($428)*
- *3,012 sf area of Bermuda grass sod, $1/sf ($3,012)*
- *3,012 sf of soil improvement, 4 in. depth, $25/cy ($930)*

Description: Replace existing soil path with resin-bound stabilized aggregate path. Edge path with reinforced turf grid and improve worn areas with fiber reinforced turf.

Recommendation: Pedestrian traffic has worn large areas of the north covered way, both near the bottom of the stairs from the water battery and along a "desire path" from the water battery to the Cubo Line. Improve existing path by replacing bare earth with resin-bound stabilized aggregate path. Edge sides of stabilized path with grid reinforced turf to provide hard edge to prevent migration of aggregate. Soil-stabilizing grids are plastic modules that protect root zones in areas that receive heavy traffic. The plastic grid holds the soil in place and distributes the point load of foot traffic to prevent soil compaction. Installing soil-stabilizing polypropylene fibers that protect the root zone from compaction would protect this historic resource. The fibers are incorporated in 4" of sterile, loosened soil and then covered with new Bermuda grass. Bermuda was the type of grass used by the War Department during the period of significance. During this work, ensure that the ground adjacent to historic walls sheds water away from historic resources.

Water Battery
Project Total Cost: $106,290
- *3,623 sf area of resin-bound stabilized aggregate, $15/ sf ($54,345)*
- *1,406 sf area of grid reinforced turf area, $15/sf ($21,090)*
- *16,660 sf area of fiber reinforced turf areas, $0.20/ sf ($3,332)*
- *21,031 sf area of sod, $1/sf ($21,031)*
- *21,031 sf of soil improvement, 4 in. depth, $25/ cy ($6,492)*

Description: Rehabilitate turf in water battery and replace existing dirt path with resin-bound stabilized aggregate path. A legible, defined path will help concentrate pedestrian traffic along a designated route, protecting historic resources.

Recommendation: Large areas of the water battery are bare earth because foot traffic has worn the turf, leaving an uneven walking surface and resulting in erosion. A desire path follows the center line of the water battery from the entrance plaza on the south to the wooden staircase on the north side of the fort. Replace the dirt path

with a stabilized aggregate path using a resin-bound binder mixed into the soil. Edge with grid reinforced turf to provide a hard edge to prevent migration of aggregate. Install fiber reinforced turf in other bare areas. Soil-stabilizing grids are plastic modules that protect root zones in areas that receive heavy traffic. The plastic grid holds the soil in place and distributes the point load of foot traffic to prevent soil compaction. Installing soil-stabilizing fibers that protect the root zone from compaction would protect this historic resource. The fibers are incorporated in 4" of sterile, loosened soil and then covered with new Bermuda grass. Bermuda was the type of grass used by the War Department during the period of significance. During this work, ensure that the ground adjacent to historic walls shed water away from historic resources.

Tree plantings for visual buffer and shade
Project Total Cost: $26,775
- *16-Cabbage palms-$500 ea ($8,000)*
- *35-Cedars, American elms, Florida elm and live oaks-$500 ea ($17,500)*
- *Soil improvement, 1 cy/tree, $25/cy ($1,275)*

Description: Replant perimeter of the fort green and along walkway to Water Street to provide shade, visual buffer, and interpretation of the cultural landscape.

Recommendation: Plant trees in strategic locations to screen intrusive views and provide shade for visitors. Plant trees in strategic locations along north boundary line to provide visual buffer between park and adjacent residences. An understory of evergreen trees and shrubs would buffer views of the Park Headquarters and Maintenance complex. Plant a mix of mid-size and tall evergreen trees and palms along the west and south perimeter of the park to buffer views of modern development on the opposite side of South Castillo Drive/SR A1A. Add 1 cy of soil amendment per tree.

Replant live oak and elm trees along both sides of the walkway between South Castillo Drive/SR A1A and Water Street. When selecting plants, use native species or utilize species from the from the 1890s planting list, including cedars (*Juniperus virginiana* and *J. silicicola*), American elm (*Ulmus americana*), Florida elm (*Ulmus americana* var. *floridana*), wax myrtle (*Morella cerifera*), and cabbage palms (*Sabal palmetto*).

Install a reinforced service vehicle path in Covered Way and at Headquarters and Maintenance Complex
Project Total Cost: $94,384
- *2,156 sf area of grid reinforced turf area, $15/sf ($32,340)*
- *3,726 sf area of resin-bound stabilized aggregate with reinforced grid, $15/ sf ($55,890)*
- *3,250 sf area of fiber reinforced turf areas, $0.20/ sf ($650)*
- *4,206 sf area of sod, $1/sf ($4,206)*
- *4,206 sf of soil improvement, 4 in. depth, $25/cy ($1,298)*

Description: Replace the existing dirt path in the covered way with a grid reinforced path with stabilized aggregate. Also repair the service vehicle exit from the maintenance complex with a similar reinforced service path.

Recommendation: A dirt path extends from the entrance plaza to the exit in the covered way wall at the Cubo Line. This is a popular route for visitors exploring the site or walking from the fort to St. Augustine. It is also used by park staff as a route for service vehicles. The dirt path is close to the top of the moat wall. The forces applied by the service vehicles and visitors was identified in a 1986 Historic Structure Report as a threat to historic resources. Replace the existing dirt path with a stabilized aggregate path with a reinforced grid to withstand vehicular traffic. The grid will hold the aggregate in place and distribute the weight of vehicles and pedestrians. Route the path away from the top of the moat wall. Install grid reinforced turf on sides of the service path to prevent migration of aggregate. The advantage of having a stabilized walkway is to provide a very legible path through the landscape, concentrating pedestrian traffic onto a desired route and protecting historic resources. Repair large areas of worn turf with fiber reinforced turf. Installing soil-stabilizing polypropylene fibers that protect the root zone from compaction would provide additional protection to historic resources. The fibers are incorporated in 4" of sterile, loosened soil and then covered with new Bermuda grass. Bermuda was the

type of grass used by the War Department during the period of significance. During this work ensure that the ground adjacent to historic walls sheds water away from historic resources.

Repave entrance plaza
Project Total Cost: $66,275
- *4,720 sf concrete, $5/sf ($23,600)*
- *22 cy concrete for seatwalls, $275/cy ($6,050)*
- *5 cabbage palms, $500/ea ($2,500)*
- *200 sf bldg., $100/sf ($20,000)*
- *12 benches, $1,000/ea ($12,000)*
- *Stanchion system ($2,000)*
- *Soil improvement, 1 cy/tree, $25/cy ($125)*

Description: Create a more welcoming experience for visitors to Castillo de San Marcos by redesigning the plaza at the entrance.

Recommendation: The existing entrance plaza features a combination of different paving materials and bare earth. The paving material has been installed over different periods resulting in an unattractive combination of paving materials. Repave entire entrance plaza with a shell-aggregate concrete with regular square score pattern. Construct raised planters approximately two feet tall, which will provide a seating area and a place for a welcome sign. Plant palm trees in the planters. Add 1 cy of soil amendment per tree. Provide benches along the perimeter of the plaza.

Construct a new ticket booth with the integration of a removable stanchion system that the NPS can install during periods of high visitation. Locate new building so the ridgeline is parallel to the scarp walls of the fort. Paint the building a light gray color with light colored shingle roof. This will decrease the visual impact the building has on the view of the fort along the entrance walkway.

Fill planting islands and provide site furnishings in parking lot area
Project Total Cost: $16,149
- *472 sf area of permeable pavers, $12/ sf ($5,664)*
- *2 cabbage palms, $500/ea ($1,000)*
- *3 benches, $1,000/ea ($3,000)*
- *4 bike racks, $1,500/ea ($6,000)*
- *87 sf concrete for pads, $5/sf ($435)*
- *Soil improvement, 1 cy/tree, $25/cy ($50)*

Description: Fill planting islands at the bus drop-off at the parking lot. Install bike rack and benches in this area for visitors.

Recommendation: Install pervious pavers in the planting islands near the bus parking area in the visitor parking lot. These areas have become worn and compacted because of the high volume of foot traffic. To avoid having too much concrete, it is recommended to use a paver similar to that used in the interior islands of the parking lot. Plant two cabbage palms in the island closest to the entrance walkway. Add 1 cy of soil amendment per tree. Replace four bike racks in parking lot area with similar design. Install benches in grass panel between parking lot and walkway along seawall. Pour concrete pad and provide a backless bench to allow visitors to sit viewing the bay or towards the parking lot.

City Gate landscape rehabilitation
Project Total Cost: $45,617
- *100 lf of 8" perf. pipe $8.50/lf ($850)*
- *Drainage structures, $1,500/ea ($1,500)*
- *Sump pump, $1,500/ea ($1,500)*
- *35 bollards, $200/ea ($7,000)*
- *4 in-ground lockable sleeves, $1,000/ea ($4,000)*
- *1,850 sf area of resin-bound stabilized aggregate with reinforced grid, $15/ sf ($27,750)*
- *2,000 sf area of fiber reinforced turf areas, $0.20/ sf ($400)*
- *2,000 sf area of sod, $1/sf ($2,000)*
- *2,000 sf of soil improvement, 4 in. depth, $25/cy ($617)*

Description: Improve surface of City Gate walkway, install bollards to protect historic resources, renovate turf to protect historic resources, and improve drainage of City Gate moat.

Recommendation: Currently the walkway is a loose aggregate that does not provide a safe and stable walking surface. Stabilize the City

Gate walkway with a resin-based binding agent to improve the walking surface. The turf along Orange Street is worn from compaction. This worn path encourages even more pedestrian use, resulting in more compaction and increases forces pushing against the historic resources. Installing soil-stabilizing polypropylene fibers that protect the root zone from compaction would provide additional protection to historic resources. The fibers are incorporated in loosened soil and then covered with new Bermuda grass. Bermuda was the type of grass used by the War Department during the period of significance. During this work ensure that the ground adjacent to historic walls sheds water away from historic resources. Install turf to hide structural elements on Cubo Line portion of City Gate.

Install bollards at the north and south entrance onto City Gate walkway to prevent vehicles from driving on the walkway and through the City Gate. Bollards should be installed in sleeves to be removable to allow for service vehicle access as necessary for maintenance activities. Install simple wooden bollards along the back of the curb along Orange Street to protect historic resources from damage from vehicles pulling onto road shoulder. The City Gate moat has a drain located towards the east side of the feature. Because water collects in the moat, inspect drain and replace if necessary. The drop inlet has a submersible sump pump. Inspect pump and replace if necessary. Regrade bottom of moat to ensure drainage to the drop inlet.

Landscape rehabilitation of entrance walkway area

Project Total Cost: $100,528

- *5,637 sf area of grid reinforced turf area, $15/sf ($84,555)*
- *5,035 sf area* of fiber reinforced turf areas, *$0.20/ sf ($1,007)*
- *2 cabbage palms, $500/ea ($1,000)*
- *10,672 sf area* of sod, $1/sf *($10,672)*
- *10,672 sf of soil improvement, 4 in. depth, $25/ cy ($3,294)*

Description: Rehabilitate the turf areas along the entrance walkway and the walkway along the seawall, both of which serve as primary pedestrian approaches to Castillo de San Marcos.

Recommendation: There are large areas were heavy pedestrian traffic have worn bare the ground. This project intends to renovate the turf areas to improve the appearance and resiliency of the turf in this area. Install grid reinforced turf along the edges of the walkways to protect the turf from compaction from pedestrian traffic. In larger areas, add soil amendment and install fiber reinforced turf. Soil-stabilizing grids are plastic modules that protect root zones in areas that receive heavy traffic. The plastic grid holds the soil in place and distributes the point load of foot traffic to prevent soil compaction. Installing soil-stabilizing polypropylene fibers that protect the root zone from compaction would protect this historic resource. The fibers are incorporated in 4" of sterile, loosened soil and then covered with new Bermuda grass. Bermuda was the type of grass used by the War Department during the period of significance. During this work, ensure that the ground adjacent to historic walls sheds water away from historic resources. Plant two cabbage palms next to the intersection of the entrance walkway and the parking lot sidewalk to provide a visible threshold for the site.

North Glacis fiber reinforced turf areas

Project Total Cost: $15,534

- *12,945 sf area of fiber reinforced turf, $0.20/ sf ($2,589)*
- *12,945 sf of sod, $1/sf ($12,945)*
- *10,672 sf of soil improvement, 4 in. depth, $25/ cy ($3,294)*

Description: Protect the slopes of the glacis by installing fiber reinforced turf to protect against compaction and erosion.

Recommendation: Large areas of the glacis are susceptible to erosion because visitor pedestrian traffic has compacted the soil and worn the turf. Installing soil-stabilizing polypropylene fibers that protect the root zone from compaction would protect this historic resource. The fibers are incorporated in loosened soil and then covered with new Bermuda grass. Bermuda was the type of grass used by the War Department during the period of significance to stabilize the slopes. During this work, ensure that the ground adjacent to historic walls sheds water away from historic resources.

Fort Matanzas National Monument Management Philosophy

On October 15, 1924, under Executive Proclamation No. 1713, President Calvin Coolidge established Fort Matanzas National Monument. The newly created national monument included Fort Matanzas and "one acre comprising within it the site of the old fortification which is situated on a marsh island south of the present channel of the Matanzas River…"[552] Fort Matanzas was listed in the National Register of Historic Places on October 15, 1966. In 1976, the NPS prepared a National Register of Historic Places (NRHP) Nomination Form and other supporting documentation for Fort Matanzas. The Keeper of the National Register certified the inclusion of Fort Matanzas in the National Register on March 4, 1977. The Keeper of the National Register added Fort Matanzas Headquarters and Visitor Center to the National Register on December 31, 2008.

The National Park Service completed a *Final General Management Plan and Environmental Impact Statement* (GMP/EIS) for Fort Matanzas National Monument in 2014. That document "examines three alternatives for managing the National Monument for the next 20 years." [553]

The NPS's preferred alternative is Alternative B, which the document describes as:

> Alternative B … centers around managing the National Monument in a manner consistent with its history as a small military outpost within a sometimes harsh, but beautiful and rich natural environment. There would be minimal development of new facilities or expansion of existing facilities. The primary interpretive themes of the park would continue to be the fort, its construction from locally available coquina stone, and its strategic location relative to the defense of St. Augustine. There would be increased emphasis on the interpretation of the natural environment as well.[554]

In 1938, the earliest year visitation data is available for the national monument and the first full year its Headquarters and Visitor Center (HQ/VC) was in operation, 20,726 people visited the national monument. In 2018, the annual visitation number had risen to 608,103.[555] Alternative B includes recommendations to accommodate more visitors, especially school-aged children. The document notes that the "the visitor center is too small to provide adequate space for orientation and interpretive programs and displays" and suggests that meeting the needs of increased visitation "would be accomplished through adaptive re-use of existing structures on the west side of SR A1A (Johnson House and New Deal era structures)" rather than constructing a new or rehabilitating the historic visitor center. Alternative B recommends the increased capacity of existing parking areas through "redesign, reorientation, and/or restriping."[556]

Alternative B also calls for the increased interpretation of the natural environment and an emphasis on low-impact recreational activities. Alternative B notes the need for expansion of parking areas to facilitate access to nature trails, boardwalks, fishing areas, and other outdoor spaces. The expansion of established parking lot footprints would occur outside of the HQ/VC area and only if "adverse resource impacts (including threatened and endangered species) can be avoided" during construction.[557]

According to the purpose statement contained in its June 2016 foundation document, the Fort Matanzas National Monument "preserves the fortified watchtower, completed in 1742, which defended the southern approach to the Spanish military settlement of St. Augustine, and protects approximately 300 acres of Florida coastal

552. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report*, 127.
553. National Park Service, "Final General Management Plan and Environmental Impact Statement, Fort Matanzas National Monument," (Washington D.C.: National Park Service, 2014), iii.
554. National Park Service, "Final General Management Plan and Environmental Impact Statement, Fort Matanzas National Monument," iii.
555. National Park Service, "Annual Park Recreation Visitation," accessed online on 10/18/2019. (https://irma.nps.gov/Stats/Reports/Park/FOMA).
556. National Park Service, "Final General Management Plan and Environmental Impact Statement, Fort Matanzas National Monument," 41.
557. National Park Service, "Final General Management Plan and Environmental Impact Statement, Fort Matanzas National Monument," 53.

environment." The foundation document identifies four statements of significance:

- Built from coquina, a locally quarried form of limestone, Fort Matanzas is the only example of a Spanish fortified watchtower in the continental United States.
- Fort Matanzas is the best-preserved component of the Spanish outer defense system that once protected St. Augustine.
- Fort Matanzas' setting provides a rare opportunity for visitors to experience the natural landscape as it might have appeared to an 18th-century Spanish soldier.
- Fort Matanzas National Monument preserves an undeveloped portion of an Atlantic barrier island and coastal ecosystem containing dunes, marsh, maritime forest, and associated flora and fauna, including threatened and endangered species.[558]

Fort Matanzas and the historic setting and natural environment of the national monument are the site's two fundamental resources and values (FRVs). The proper stewardship of FRVs is essential to the national monument retaining its significance and/or purpose. The identification of FRVs allows site managers of the national monument to focus their efforts on the conservation and public enjoyment of the most significant attributes. Aside from these two FRVs, the NPS identifies two other important resources and values (OIRVs). These resources and values are not as significant as the FRVs but site managers should consider these attributes during park planning and management efforts. The first of the two listed OIRVs for the site is the collection of cast-iron cannons at the fort. Four cannons are in place today. The second OIRV listed is the group of seven archeological sites listed in the National Register of Historic Places.[559]

Neither the GMP/EIS nor the Foundation Document assigns a management category to the park. While the Foundation Document emphasizes preservation of historic resources, preferred Alternative B of the GMP/EIS is consistent with the Standards for Rehabilitation.

Fort Matanzas is the only certified listing for historic structures included in the NPS Cultural Resource Inventory System for Fort Matanzas National Monument. The management classification for the fort is "Must Be Preserved and Maintained." The Visitor Center/Ranger Residence Garage are listed as shadow structures. Their management classifications are ""Must Be Preserved and Maintained."

The LCS identification numbers for the listed historic structures are: Fort Matanzas (000350) and Visitor Center/Ranger Residence Garage (092440).

Previous Treatment Documents

The Fort Matanzas Stabilization Team, a multi-disciplinary group of NPS staff members and other professionals, produced a Historic Structure Report (HSR) for Fort Matanzas published in October 1980. It provides a comprehensive history of the fort and associated landscape features beginning in 1565 and extends to 1978. The report includes existing condition descriptions and preservation recommendations "aimed at the essential stabilization necessary to preserve the historic structure and its architectural form."[560] Cécile-Marie Sastre produced a history of the cultural landscape for a Cultural Landscape Report of Castillo de San Marcos and Fort Matanzas National Monuments in 2000. The report does not provide treatment recommendations.

Grieves Worrall Wright & O'Hatnick, Inc. and Robert Silman Associates, PC prepared *Castillo de San Marcos National Monument and Fort Matanzas National Monument: Recommendations for Monument Stabilization* published in November 1993. The report focuses on Castillo de San Marcos but includes a short section summarizing the stabilization and preservation efforts at Fort Matanzas from 1916 to 1980. The document includes treatment recommendations to address apparent structural issues. The report describes cracking along the vault and walls of the fort. The cracks along the fort's exterior caused concern that

558. National Park Service, "Foundation Document, Fort Matanzas National Monument" (Washington D.C.: National Park Service, 2016) 5-6.
559. National Park Service, "Foundation Document, Fort Matanzas National Monument," 7-8.
560. The Fort Matanzas Stabilization Team, *Fort Matanzas Historic Structure Report,* 206.

internal structural features were compromised. The treatment recommended by the report focuses on the removal and replacement of rebar and other structural elements.[561]

GWWO, Inc. and Faisant Associates prepared a "Structural Condition Assessment Report" for Fort Matanzas in 2016. It identified areas of structural instability and made recommendations for their remediation. The report recommended repointing damaged mortar, replacing missing stone, and not applying any penetrating coating.

Period of Significance

The 1976 National Register of Historic Places (NRHP) Nomination Form for Fort Matanzas and the 2008 NRHP Registration Form for the headquarters and visitor center (HQ/VC) establish two periods of significance for the national monument site—1500 to 1899 and 1936 to 1937, respectively. The first period begins with the century that includes the Ribault Massacre of 1565. The first period of significance extends through the 1800s to include the abandonment of Fort Matanzas by the Spanish and the transfer of the property to the United States.

The statement of significance from the 1976 NRHP Nomination Form for Fort Matanzas states that the national monument site is significant because of its association with the 1565 Ribault Massacre. The form also states that the fort's representation of Spain's protection of its interests in the New World is significant. The statement of significance ends with a mention of the importance of the fort as an example of the engineering and construction skills of the Colonial Spanish.

The second period of significance includes the construction of the HQ/VC complex. The 2008 NRHP Registration Form for the HQ/VC describes the social history and the link to the New Deal programs such as the Public Work Administration, which subsidized the site's construction, as important to the site's history. The form also identifies the architecture of the site and the use of the NPS rustic approach to design and construction as significant to the site's history.

Specific Treatment Concerns

The following management issues were included in the statement of work and were considered during the preparation of this report along with specific concerns raised by NPS staff members. These treatment issues include:

Management of Fort Matanzas' grounds with specific recommendations for turf management.

Management of high visitor use at the headquarters and visitor complex that results in erosion, traffic and parking issues, and other resource damage.

Identifying and providing design ideas for an area at the HQ/VC where visitors can wait for their boat trip to Fort Matanzas.

Identifying, through coordination with SERO and park staff, where cultural landscape features are adequately identified in the Facilities Management Software System (FMSS) and which FMSS assets might need updating or inclusion.

Addressing potential impacts of rising sea levels and increase in average global temperature.

Treatment Recommendations Fort Matanzas National Monument

Primary Treatment:

This CLR recommends rehabilitation as the primary treatment of Fort Matanzas National Monument, which is consistent with the Foundation Document and General Management Plan. Rehabilitation protects the significant historic features that contribute to the integrity of the property while allowing for necessary improvements. Like preservation, rehabilitation involves identifying, retaining, and preserving character-defining features. Additionally, when an important feature is missing, rehabilitation provides strategies to accurately and faithfully return the missing feature to the landscape.

561. Grieves Worrall Wright & O'Hatnick, Inc. and Robert Silman Associates, PC, "Castillo de San Marcos National Monument and Fort Matanzas National Monument: Recommendations for Monument Stabilization," (New York, New York: National Park Service, 1993) 38.

The ultimate goal of treatment is to improve the interpretation of Fort Matanzas and the conserved natural environment by preserving and/or rehabilitating the character-defining elements of the national monument present during the period of significance.

Another goal is to improve the ability of the landscape to withstand the pressures associated with steadily increasing visitation and the impact it has on the vegetation and circulation system at the national monument. These impacts are present at both Fort Matanzas and at the HQ/VC.

The treatment approach is to rehabilitate the cultural landscape of the HQ/VC as much as is feasible to circa 1937. Period construction and drawings should serve as the basis for site rehabilitation. Rehabilitation will also allow for site improvements, including the substitution of paving materials to improve accessibility and safety. A rehabilitation approach will also allow the NPS to interpret this period of historic significance.

Treatment Period 1740 to 1937

As previously described, this report proposes an expansion of the period of significance in compliance with *NPS Director's Order 28: Cultural Resource Management Guideline, Appendix Q: Preparing National Register Forms*. The order states, "a park's historic properties should be documented in a single National Register form (as opposed to preparing separate forms for properties representing different aspects of the park's history,)" and that this method "will promote an integrated approach to evaluating the park's cultural resources."[562] This report uses the preferred methodology of the NPS, which considers all historic features in a single park unit when establishing a park's period of significance. Therefore, this document suggests an update to the NRHP listing to reflect a unified period of significance for Fort Matanzas National Monument as 1565 to 1937. The expansion of the period of significance proposed by this document incorporates the projects undertaken by the War Department and the NPS to stabilize the fort during the early 1900s. The proposed combined period of significance also includes the 1934 land donation of Ada D. Corbett to the federal government and the planning, design, and construction of the docks and buildings installed prior to the landscape development at the HQ/VC. While this document suggests a general period of significance of 1565 to 1937 it proposes a treatment period of 1740 to 1937. This date range extends from the commencement of Fort Matanzas' construction to the opening of the HQ/VC to the public. The treatments proposed for the national monument site aim to balance the preservation of historically significant landscape characteristics while providing adequate facilities for public access to important site features.

Treatment Objectives and Recommendations

The following section begins with general treatment goals for Fort Matanzas National Monument, which are followed by more specific treatment recommendations. The recommendations are organized by landscape characteristics. Some recommendations may be applicable to two or more characteristics. These are noted.

The numbering of the treatment recommendations for Fort Matanzas is separate from those for Castillo de San Marcos. See also Table 5.2 on page 303 for a complete list of treatment recommendations for Fort Matanzas. Also see Illustrations 5.4 – 5.8, found after page 304. Descriptions and technical drawings for products discussed in this chapter are available in Appendix D.

Proposed PMIS Statements follow the recommendations.

General Treatment Objectives include:

- Maintain the spatial organization and landscape features that contribute to the significance of the landscape, including the historic buildings and structures;
- Avoid the addition of new structures, circulation, or vegetation that detracts from the contributing and non-contributing but compatible features of the site;

562. "NPS-28: Cultural Resource Management Guideline, Appendix Q: Preparing National Register Forms," National Park Service, August 2002, https://www.nps.gov/parkhistory/online_books/nps28/28appenq.htm

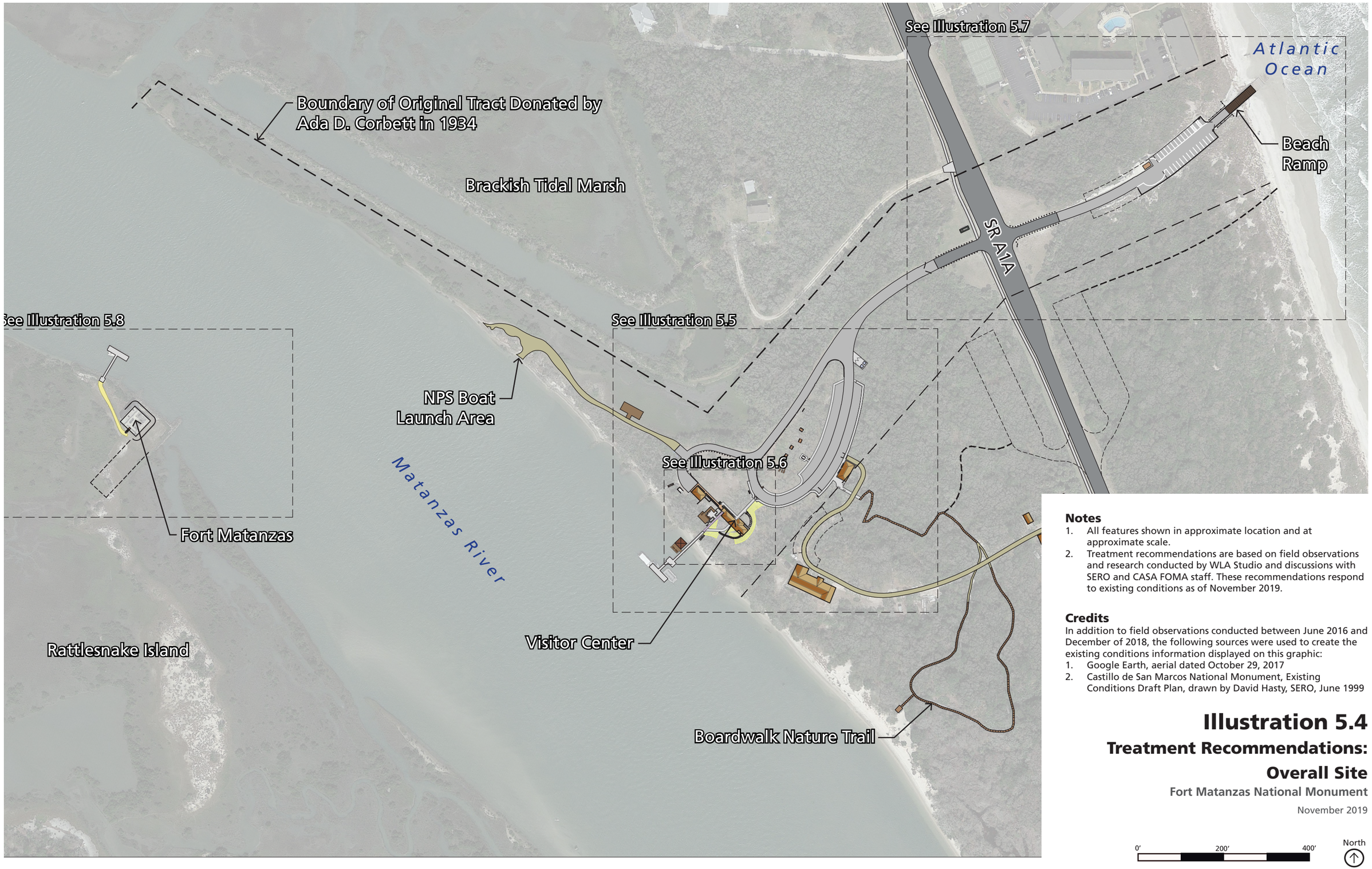
- Maintain Fort Matanzas as it appeared during the Spanish Colonial period;
- Maintain the Visitor Center as it appeared after its original construction in 1937;
- Maintain the utility building as needed to serve as park office space while retaining original aesthetic seen in 1937;
- Use materials compatible with historic features when repairing historic buildings, structures, small-scale features, and circulation routes;
- Adhere to methods per the Architectural Barriers Act Accessibility Standards (ABAAS) and Director's Order #42: Accessibility for Visitors with Disabilities in National Park Service Programs and Services to the greatest extent possible while not damaging historic resources.

Task ID	Fort Matanzas NM Treatment Task	Page #	Related Tasks
Buildings and Structures			
BS-1	Construct new gathering area and viewing platform	316	
BS-2	Install marshland viewing platform	318	
BS-3	Evaluate and maintain shoreline stabilization structures	318	
BS-4	Maintain historic screen walls and retaining walls	319	
Vegetation			
VG-1	Maintain turf areas	319	VG-2 VG-3
VG-2	Reinforced grid turf areas	320	CR-7
VG-3	Fiber reinforced turf areas	320	
VG-4	Maintain existing vegetation	320	
VG-5	Replant HG/VC area	321	
VG-5-1	HG/VC tree density zone one	321	
VG-5-2	HG/VC tree density zone two	322	
VG-6	Plantings for visual buffer	322	VV-1 - VV-2
VG-7	Maintain clearing for cannon demonstration	322	
Circulation			
CR-1	Rehabilitation of historic roads	323	
CR-2	Seal existing asphalt	323	
CR-3	Install 8-inch coquina curb to manage parking and storm water	323	
CR-4	Establish standard concrete detail	324	
CR-5	Reintroduce coquina flagstone	324	
CR-6	Convert Fort Matanzas paths to grid reinforced and resin-bound stabilized aggregate	324	VG-3
CR-7	Grid-reinforced turf system at park entrance	324	VG-2
CR-8	Maintain boardwalk	324	
CR-9	Maintain navigable depth for ferry service	324	
CR-10	Restripe parking area for bus parking	325	
Views and Vistas			
VV-1	Preserve views from Fort Matanzas	325	VG-6
VV-2	Thin vegetation for views to Fort Matanzas	325	VG-6 - VG-7
Small-Scale Features			
SSF-1	Preserve and maintain historic small-scale feature.	326	
SSF-2	NPS sign standardization	326	
SSF-3	Consolidate orientation signage	326	
SSF-4	Relocate waste storage area and containers	327	
SSF-5	Relocate mailboxes	327	

Table 5.2: Treatment Tasks

Task ID	Fort Matanzas NM Treatment Task	Page #	Related Tasks
SSF-6	Relocate bike rack	327	
SSF-7	Maintain benches for programs in loop road island	327	VG-5
SSF-8	Provide other site furnishings necessary for visitors' experience	327	
SSF-9	Relocate utilities to less visible locations	328	
SSF-10	Install bollards to control vehicular traffic	329	
SSF-11	Relocate NPS sign at beach access entrance	329	
SSF-12	Maintain metal features	329	

Table 5.2: Treatment Tasks (continued)



Notes

1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Credits

In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:

1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.4

Treatment Recommendations: Overall Site

Fort Matanzas National Monument

November 2019

0′ 200′ 400′

North



Existing Building

Existing Trees

Proposed Trees

Asphalt

Concrete

Dirt Surface

Notes:
This legend provides only treatment recommendations specific to this illustration. Please see Table 5.2 for a complete list of treatment recommendations. Also see Illustrations 5.6-5.8

Circulation
CR-1: Rehabiltation of historic roads
CR-2: Seal existing asphalt
CR-3: Install 8-inch coquina curb to manage parking and storm water
CR-8: Maintain boardwalk

Vegetation
VG-1 Maintain turf areas

Views and Vistas
VV-2: Thin vegetation for views to Fort Matanzas

Small-Scale Features
SSF-2: NPS sign standardization
SSF-3: Consolidate orientation signage
SSF-4: Relocate waste storage area and containers
SSF-5: Relocate mail boxes
SSF-7: Maintain benches for programs in loop road island
SSF-8: Provide other site furnishings necessary for visitors' experience

Buildings and Structures
BS-1A: Construct new gathering area
BS-1B: Construct new viewing platform
BS-2: Install marshland viewing platform

Notes
1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Credits
In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.5
Treatment Recommendations: Headquarters and Visitor Center
Fort Matanzas National Monument

November 2019

0′ 60′ 120′

North



Key

- Existing Building
- Existing Trees
- Proposed Trees
- VG-5-1 Tree Density Zone One
- VG-5-2 Tree Density Zone Two
- Asphalt
- Concrete
- Reinforced Turf with Geogrid
- Fiber Reinforced Turf Areas
- Resin-Bound Stabilized Aggregate

Notes:
This legend provides only treatment recommendations specific to this illustration. Please see Table 5.2 for a complete list of treatment recommendations. Also see Illustrations 5.5 and 5.7-5.8.

Circulation
CR-5: Reintroduce coquina flagstone

Vegetation
VG-2: Reinforced grid turf areas
VG-3: Fiber reinforced turf areas
VG-4: Maintain existing vegetation
VG-5: Replant HG/VC
VG-5-1: HG/VC tree density zone one
VG-5-2: HG/VC tree density zone two
VG-6: Plantings for visual buffer

Small-Scale Features
SSF-1: Preserve and maintain historic small-scale feature
SSF-2: NPS sign standardization
SSF-3: Consolidate orientation signage
SSF-4: Relocate waste storage area and containers
SSF-5: Relocate mail boxes
SSF-6: Relocate bike rack
SSF-7: Maintain benches for programs in loop road island

Buildings and Structures
BS-1: Construct new gathering area and viewing platform
BS-4: Maintain historic screen walls and retaining walls

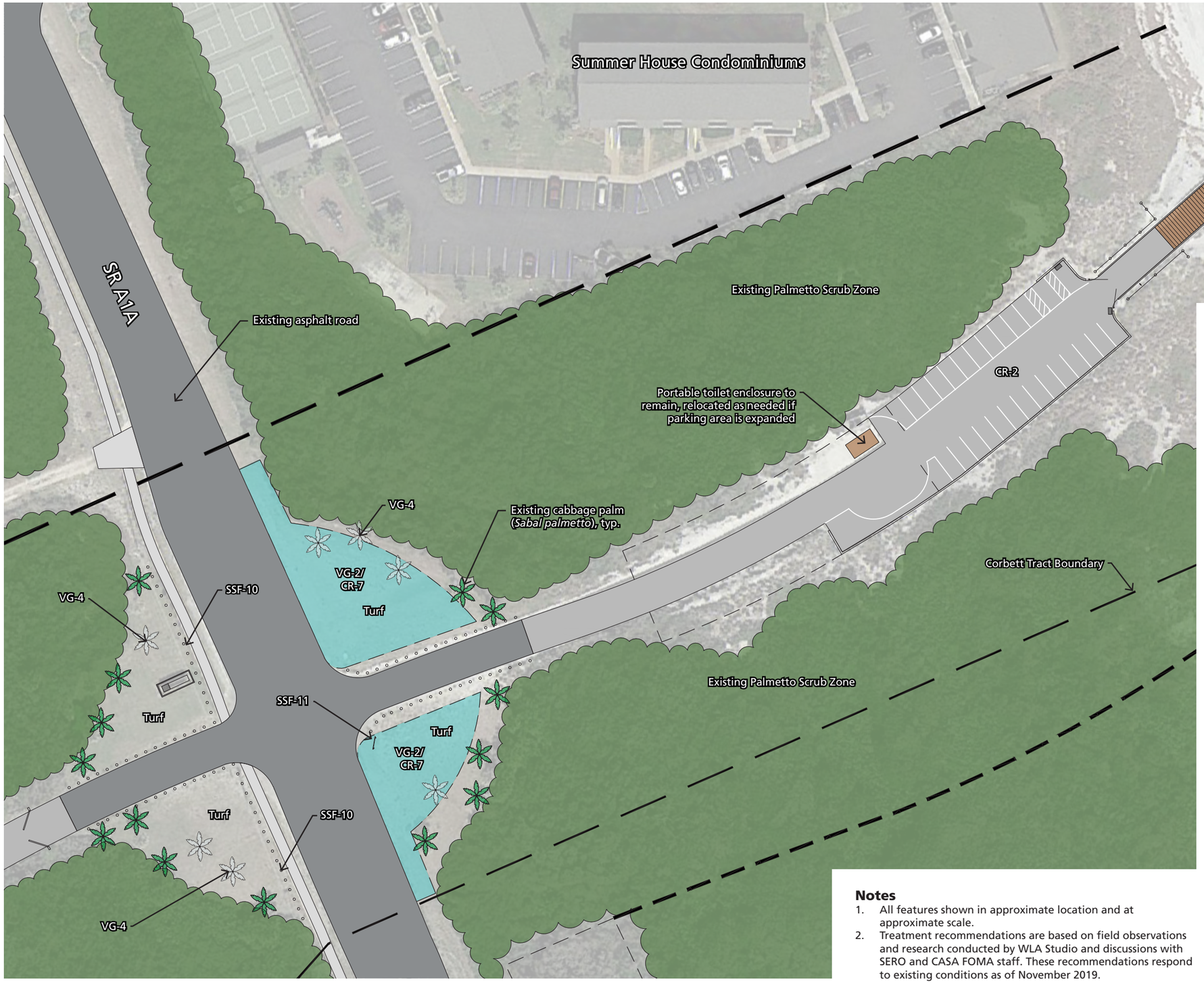
Notes
1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Credits
In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.6
Treatment Recommendations: Headquarters and Visitor Center
Fort Matanzas National Monument

November 2019

0′ 20′ 40′ North



Notes

1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Key

Existing Trees

Reinforced Turf with Geogrid

Proposed Trees

Notes:
This legend provides only treatment recommendations specific to this illustration. Please see Table 5.2 for a complete list of treatment recommendations. Also see Illustrations 5.5-5.6 and 5.8.

Circulation
CR-2: Seal existing asphalt
CR-7: Grid-reinforced turf system at park entrance

Vegetation
VG-2: Reinforced grid turf areas
VG-4: Maintain existing vegetation

Small-Scale Features
SSF-10: Install bollards to control vehicular traffic
SSF-11: Relocate NPS sign at beach access entrance

Credits
In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:

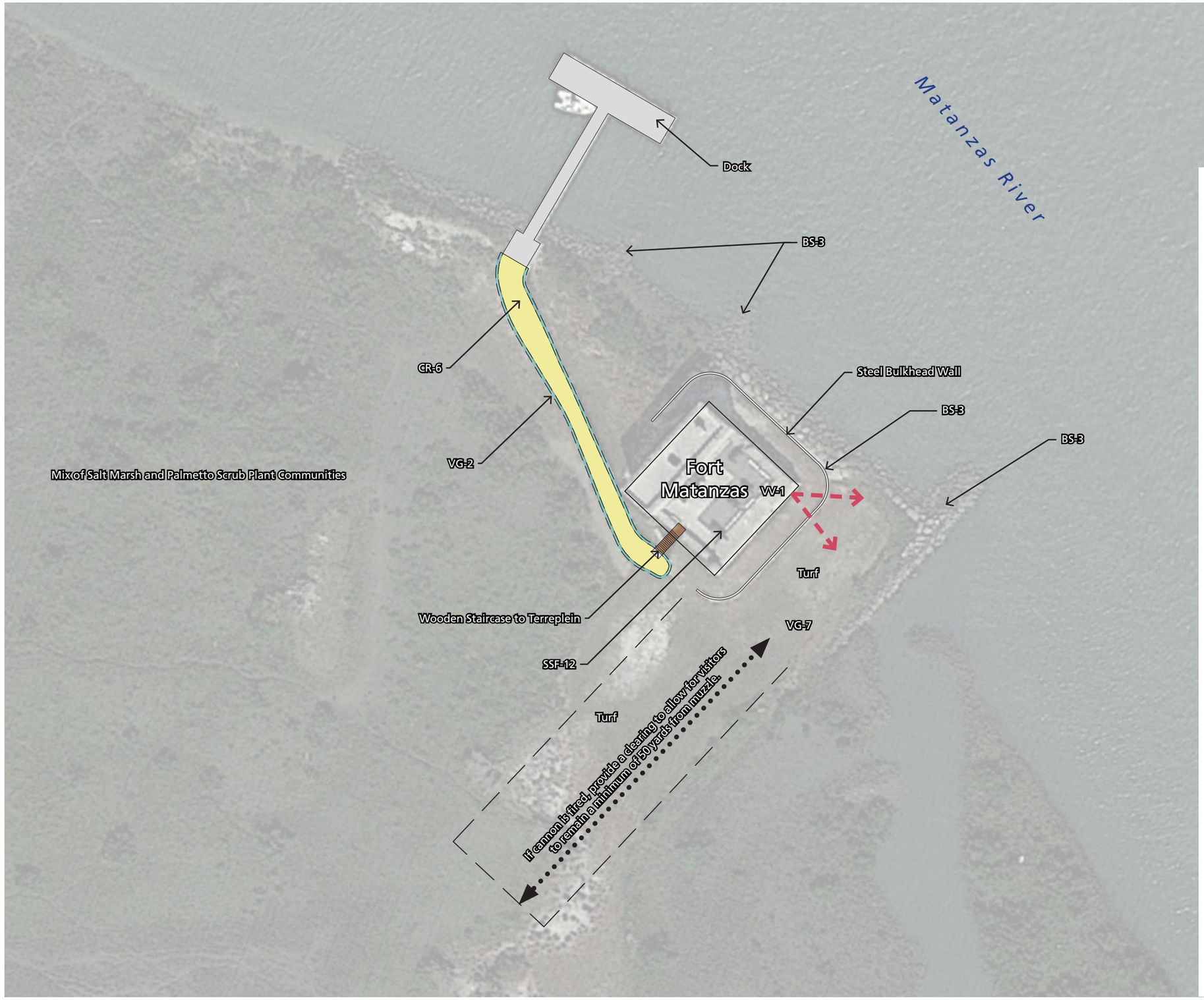
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.7
Treatment Recommendations: Entrance Area and Beach Ramp
Fort Matanzas National Monument

November 2019

0′ 60′ 120′

North



Key

Stabilized Crushed Coquina Walkway

Reinforced Turf with Geogrid

Notes:
This legend provides only treatment recommendations specific to this illustration. Please see Table 5.2 for a complete list of treatment recommendations. Also see Illustrations 5.4-5.7.

Circulation
CR-6: Covert Fort Matanzas paths to grid reinforced and resin-bound stabilized aggregate

Vegetation
VG-2: Reinforced grid turf areas
VG-7: Maintain clearing for cannon demonstration

Small-Scale Features
SSF-12: Maintain metal features

Buildings and Structures
BS-3: Evaluate and maintain shoreline stabilization structures

Views and Vistas
VV-1: Preserve views from Fort Matanzas

Notes
1. All features shown in approximate location and at approximate scale.
2. Treatment recommendations are based on field observations and research conducted by WLA Studio and discussions with SERO and CASA FOMA staff. These recommendations respond to existing conditions as of November 2019.

Credits
In addition to field observations conducted between June 2016 and December of 2018, the following sources were used to create the existing conditions information displayed on this graphic:
1. Google Earth, aerial dated October 29, 2017
2. Castillo de San Marcos National Monument, Existing Conditions Draft Plan, drawn by David Hasty, SERO, June 1999

Illustration 5.8
Treatment Recommendations: Fort Matanzas
Fort Matanzas National Monument

November 2019

0′ 40′ 80′ North

Buildings and Structures

Buildings and Structures present during the periods of historic significance

Fort Matanzas was constructed between 1740 and 1741. The Spanish abandoned the fort in 1805, and the United States War Department assumed ownership of the fort in 1821 after the Spanish ceded ownership of Florida to the United States. After sitting vacant and unmaintained for nearly 100 years, the fort was close to collapse by the early 1900s. The War Department repaired the fort. After taking ownership of the national monument site in 1933, the NPS found the fort once again in poor condition. The tidal patterns of the Matanzas River were washing away the ground below the southeastern corner of the fort. To prevent shearing of the fort walls, the NPS focused on shoreline stabilization efforts during the mid-1930s. The dynamic character of the Rattlesnake Island coastline and the Matanzas River would require other shore stabilization projects in following years. In 1934, the 17.34-acre land donation of Ada D. Corbett to the federal government allowed for the design and construction of the Fort Matanzas National Monument HQ/VC, which opened in 1937.

Current conditions

Today, buildings and structures at the national monument include the historic fort, located on Rattlesnake Island, and the cluster of buildings associated with the HQ/VC, located on Anastasia Island on the opposite side of Matanzas River from the historic fort. Fort Matanzas stands alone on Rattlesnake Island in an open clearing. The HQ/VC complex includes the two-story main building and a one-story building, formerly a garage/utility building now used as park office space. Additional historic structures include groins and bulkheads built as shore stabilization structures, retaining walls, and screen walls. Additional non-historic structures include two docks for the ferry service and a comfort station located near the parking area. The Johnson House is outside the study area for the CLR.

Treatment recommendations for buildings and structures

Fort Matanzas

The NPS assessed Fort Matanzas to be in fair condition in 2015. The primary impact was structural deterioration; secondary impacts were inappropriate or inadequate Preservation/Rehabilitation and Vandalism.

The existing HSR for Fort Matanzas was published in 1980. It is recommended that the HSR be updated. The 1980 HSR does not contain a treatment section. However, there are reports included in the Appendix that do make recommendations. These include improving drainage from the terreplein and repointing the mortar joints. The 1993 *Recommendations for Monument Stabilization Report* Fort Castillo de San Marcos has a brief report on the cracks in the fort's walls. This 1993 report recommends further study of the causes.

As found at Castillo de San Marcos, previous work introduced Portland cement-based mortars, which has accelerated deterioration of the historic coquina. The park submitted a PMIS project statement to begin a multi-year effort to remove Portland cement and repoint mortar joints at Castillo de San Marcos and Fort Matanzas.

The recommendation is to update the HSR for Fort Matanzas and continue stabilization and preservation efforts. This is consistent with the GMP/EIS that calls for ongoing stabilization work. An updated HSR will provide guidance on best practices related to removing and replacing mortar. Because there is conflicting information in previous reports (i.e. the 1986 HSR for Castillo de San Marco versus the 1993 Stabilization Report), a new HSR would provide clear guidance for future work.

Historic bulkhead at Fort Matanzas

The historic bulkhead at Fort Matanzas is buried and only the top of the concrete is visible. Periodically inspect to ensure cracks do not develop in the concrete that would allow for moisture penetration. If cracks develop in the concrete, engage a materials specialist to determine the best remedy, i.e. caulking or re-parging, to prevent water intrusion. An updated HSR would identify the best method of repair.

Headquarters and Visitor Center

The current visitor center has limited space for visitor services. The GMP/EIS considered alternatives to address this issue but concluded that no new visitor center would be constructed and no major renovations would be undertaken.

No immediate preservation needs were observed at the HQ/VC. The building was in good condition. It has been recently painted (circa 2004) and re-roofed (2004). It is recommended in the small-scale features section to remove signs and utilities mounted directly on the building. It is also recommended to maintain trees to prevent roots from undermining the structure's foundation or overhanging the roof. While no significant vegetative growth or mortar deficiencies were observed, it is recommended to continue monitoring mortar and clean vegetation using an approved cleaning agent like D-2.

Historic Utility Building

During site visits, the roof of the historic utility building had storm damage. Otherwise, the building appeared to be in good condition. Evidence of previous mortar repairs were seen. These repairs should be monitored to ensure they do not allow for water infiltration. Discoloration of some of the stones on the southeast wall may be caused by organic growth. This should be investigated and removed using an approved cleaning agent like D-2. Otherwise, ongoing maintenance of the building is recommended.

BS-1: Construct new gathering area and viewing platform

Provide additional gathering space for visitors awaiting ferry service to Fort Matanzas from the HQ/VC. Currently, guests gather at the dock and as the number of people awaiting ferry service increases, the group backs into the landscape between the visitor center and the river's edge. The HQ/VC needs a designated waiting space to reduce the risk of damage to the cultural landscape and the natural environment. The GMP/EIS does not provide for the construction of a new gathering area and viewing platform; it does, in fact, call for adaptive reuse of existing buildings to minimize changes to the natural environment. Constructing a new facility will require studies to ensure endangered native plant communities and archeological resources are not impacted. It will also require a design that minimizes impact on the natural environment.

The proposed concept includes a concrete plaza with benches located southwest of the utility building, behind the existing screening wall. Adjacent to this gathering area, the NPS could build an elevated deck. An elevated structure would allow for little impact to the natural topography of the site. By using a recycled composite material, such as Trex decking, maintenance needs would be less than if pressure treated timber is used. Recycled composite material also would allow more color options to blend the structure into the natural environment without the need for painting or staining. The NPS has used this material at the boardwalk south of the parking area. This material would create a clear delineation from any rehabilitated historic circulation routes. Thin, metal cable railing would allow for views to the Matanzas River and, if site managers regularly trim the vegetation at this location, the fort could be visible from the proposed waiting area (Figure 352). A second option would be to build a covered waiting area off the existing dock. This would allow for clearer views to the fort from the waiting area than available farther east (Figure 353).



Figure 352: Rendering of visitor gathering area and viewing platform (WLA Studio 2016)



Figure 353: Rendering of viewing platform at dock (WLA Studio 2016)



Figure 354: Rendering of marsh platform (WLA Studio 2016)

BS-2: Install marshland viewing platform

Interpretation of the natural environment is a priority in the GMP/EIS. However, it did not identify the need for a viewing platform for the park. This CLR, to address current visitor needs, recommends installing an elevated deck north of the VC area loop similar in character to the structure proposed behind the Visitor Center. The deck near the marshland will serve as an observation deck at the marshland where wading birds and other wildlife are visible. Install the deck northeast of the dirt road leading to the boat launch (Figure 354). This should be designed with a ramp to improve accessibility.

BS-3: Evaluate and maintain shoreline stabilization structures

Because of the dynamic environment, the national monument has dealt with ongoing issues of shoreline erosion. Stabilization structures include seawalls, bulkheads, and rubble mound groins. These should be repaired as necessary. Because sedimentation and erosion patterns are constantly changing, a condition assessment that also addresses the efficacy of the existing structures should be periodically updated. This study is included in Recommendations for Future Study on page 333. Some of these structures are historic, installed by the NPS in the 1930s. If future studies determine the historic structures to be counter-productive to shoreline protection, it is recommended to accurately document these structures prior to modification or removal.



Figure 355: Vegetation growing on coquina retaining wall (WLA Studio 2016)



Figure 356: 1950 photograph showing trees growing around visitor center (CASA no. M217)

BS-4: Maintain historic screen walls and retaining walls

The historic screen wall (between the HQ/VC and historic utility building) and the historic retaining wall (near the entrance walkway) are in good condition. Follow similar monitoring and maintenance for these historic masonry structures as is currently in place for historic masonry structures at both Fort Matanzas and Castillo de San Marcos. Replace or repair missing stones or mortar using material compatible with the original. Remove vegetation growing on the top of the screen wall if demonstrated it is damaging the wall (Figure 355). Manually remove the vegetation, clean with an approved chemical like D-2, and eliminate emergent vegetation using an approved herbicide like Round-Up. See additional discussion on coquina maintenance in the general building and structure maintenance section on page 275.

Vegetation

Vegetation present during the periods of historic significance

During the Colonial period, the natural landscape was largely undisturbed. A series of groins and seawalls installed to protect the fort against erosion leveled the landscape immediately surrounding the fort. The NPS preserved much of the native vegetation during construction of the HQ/VC facility in 1937. The general character of the vegetation immediately surrounding the historic buildings and parking areas at the HQ/VC was denser when the facility opened in 1937 (Figure 356).

Current conditions

By 1966, NPS had expanded the open, level area around Fort Matanzas to the south. The NPS presently maintains the landscape at the fort site as turf. The turf space provides an area for ranger-led groups to gather around Fort Matanzas. The landscape at the HQ/VC is different in character. A marshland is present north of the VC area loop road, but the predominant land cover is maritime hammock forest. A live oak (*Quercus virginiana*) grove is in the center of the VC area loop road. As the trees here and elsewhere at the HQ/VC have grown, they have shaded out many of the understory plantings. Storm events, which have consistently occurred since the complex's construction, have removed cultural and natural vegetation from the site. Since the beginning of this project, several trees were lost in the area between the historic utility building and the loop road.

Treatment recommendations for vegetation

VG-1: Maintain turf areas

Maintain the grass areas at the fort site, HQ/VC, and the clearing near SR A1A.

While not a character-defining feature of the historic landscape, the open lawn space at the fort site allows for visitor circulation around the fort, and it defines the intended visitor gathering space apart from the natural landscape of Rattlesnake Island. It is recommended to transition the grass around the fort to either seashore paspalum (an available, improved form of a native species) or thin paspalum (on park's native list but possibly difficult to attain and maintain.)

The semicircular clearings at SR A1A allow for clear views to the site's entrance and provide a wide sight triangle for motorists leaving the national monument. Areas that receive high



Figure 357: Examples of areas worn by visitor traffic (WLA Studio 2016)

amounts of pedestrian traffic or are to be overflow-parking areas should incorporate a reinforced grid to provide protection to the root zone. Sod with paspalum. Because the park wants the area to appear more natural, consider using thin paspalum in this area. See also VG-2 Reinforced grid turf areas below.

The NPS should continue to cultivate turf on the areas around the HQ/VC to control erosion. The NPS planted grass (common Bermuda) during the period of significance. It is recommended to convert to seashore paspalum or thin paspalum when repairing worn areas. See VG-2 Reinforced grid turf areas and VG-3 Fiber reinforced turf areas below.

In general, NPS staff should maintain the turf areas following the recommendations for best management practices for turf by the University of Florida cooperative extension. At a minimum, the NPS should perform soil tests to identify nutrient deficiencies and take corrective measures through a fertilizer regimen. NPS maintenance staff should aerate the turf areas annually in the spring. If the quality of the existing turf is unsatisfactory after following recommended methods for two growing seasons, replace the existing turf with a drought-tolerant species capable of withstanding large amount of foot traffic.

Considering this location and the national monument's natural history educational programming, it is recommended to use a salt tolerant native species like paspalum where possible. See additional information on alternative turf varieties in vegetation recommendation section for Castillo de San Marcos on page 282.

VG-2: Reinforced grid turf areas

Install a turf reinforcement grid system in high-traffic pedestrian routes and adjacent to walkways where foot traffic consistently degrades the ground plane and compacts underlying soil (Figure 357). This treatment is also applicable for stabilizing an overflow parking area along the side of the road near the park entrance at SR A1A. See circulation treatment CR-7. For additional information on reinforced turf, refer to the discussion of it in Castillo de San Marcos treatment recommendation section found above on page 280.

VG-3: Fiber reinforced turf areas

Install soil stabilizing reinforcement fabric in large areas that experience high foot traffic or erosion and re-sod with paspulum grass. Soil-stabilizing reinforcement fabrics have polypropylene fibers that protect the root zone from compaction and prevent erosion of sloped areas. Several products are available, such as StaLok fiber reinforcement. The fiber fabric would be applicable where large areas need reinforcement. This includes the slopes around the HQ/VC, on the slopes on the south side of the building, and in areas near intersections of walkways where people congregate, including the intersection near the ferry dock. For additional information, refer to discussion of fiber reinforced turf in Castillo de San Marcos treatment recommendation found above on page 281.

VG-4: Maintain existing vegetation

Maintain existing trees. Where loss has occurred or where loss is likely due to age or condition, underplant existing trees with younger plants of the same species. Trees with a minimum diameter at breast height (DBH) of two inches are preferred for new plantings. If possible, relocate trees from other naturalized areas at the national monument site or propagate existing trees and install resulting specimens rather than introducing trees to the HQ/VC area from an off-site source.

Plant live oaks in the interior island of the loop road to maintain full canopy cover. Space trees to allow for continued use of area for visitor services, including educational programming and picnicking (Figure 358).



Figure 358: Circa 1935 photograph showing vegetation growing in loop road island (CASA no. M964)



Figure 359: 1935 photograph showing vegetation growing close to visitor center (CASA no. M1018)

Replant cabbage palms (*Sabal palmetto*) as needed along the perimeter of the semicircular clearings at SR A1A. Approximately seven new palms would complete the perimeter planting in this area.

VG-5: Replant HG/VC area

Replant area around HQ/VC. During the period of historic significance of the HQ/VC, trees and shrubs grew in a thick grove around the building. This was a result of NPS's conscious planning to preserve native vegetation. Much of the plant material has been lost, including in the areas between the historic utility building and the loop road and between the HQ/VC and the shoreline. Historic photographs show the trees growing near the building (Figure 359).

Additionally, loss of historic plant material has resulted in undesired foot traffic in areas not intended as circulation routes. For instance, the sloped area south of the visitor center was once vegetated, but the loss of plant material here has removed this natural vegetative barrier. The lack of vegetation allows informal footpaths to develop by guests walking around the building from the sidewalk along the visitor center area loop road rather than along the intended route past the primary visitor contact station at the base of the visitor center. Replanting this sloped area will reduce unwanted foot traffic, which will limit erosion and the degradation of the natural landscape.

Also replant as necessary the coquina planters at the HQ/VC using a hardy, native evergreen like *Zamia interifolia* or *Zamia pumila*. Yucca appears in historic photographs, but safety concerns about yucca spikes make a substitution appropriate.

In keeping with the GMP/EIS emphasis on protection and restoration of natural resources, the recommended tree species are naturally occurring species expected to have been on site at the time of the HQ/VC construction. Recommended species to consider include paw paw (*Asimina triloba),* yaupon holly (*Ilex vomitoria),* red cedar *(Juniperus virginiana),* red bay *(Persea borbonia),* live oak *(Quercus virginiana),* winged sumac *(Rhus copallinum),* and cabbage palm (*Sabal palmetto).*

In general, large growing trees should not be planted within twenty feet of historic structures to prevent potential damage to the building from roots or limbs. Prune limbs to prevent trees from over-hanging buildings.

The recommendation is to develop two density zones, described below.

VG-5-1: HG/VC tree density zone one:

To reflect historic conditions present during the period of significance, plant young trees (two-inch DBH approximately) ten to fifteen feet apart in a naturalized, non-linear arrangement. Half of the plantings should be young live oak trees, with the remaining half comprised of approximately equal numbers of the other recommended species.

VG-5-2: HG/VC tree density zone two:

To accommodate visitor services by providing open ground plane for circulation and to allow views to the HQ/VC, plant larger growing trees, including live oaks and cabbage palms, approximately twenty feet apart. Place in naturalized, non-linear arrangement, to accommodate existing trees, walkways, and pedestrian traffic.

VG-6: Plantings for visual buffer

Use vegetative buffers to minimize unwanted views from within the historic area. These include screening modern intrusions into the site, including the waste container area and the proposed gathering area/viewing platform (see recommendation BS-1 and recommendation SSF-4). Also, close gaps in the vegetation along the south side of the historic area that allows for views of the Johnson House. Use a combination of native evergreen shrubs and trees, including wax myrtle (*Morella cerifera*), cabbage palm, yaupon holly, and red cedar, in an informal arrangement to fill gaps.

VG 7: Maintain clearing for cannon demonstration

For the NPS to improve visitor viewing of cannon firing demonstrations, a clearing of more than fifty yards on the western side of fort is required. Clear space is currently approximately thirty yards. Nearly doubling this would require encroaching upon the natural features of Rattlesnake Island. Based on field observations it appears that there is space to accommodate this clear zone. Additional clearing should be carefully considered and designed to ensure that "witness trees" and other important vegetation are not adversely impacted. A larger clear zone would require the increased maintenance of a larger turf-type space at the fort site.

Circulation

Circulation during the periods of historic significance

The original circulation at the fort site was informal. Soldiers housed at Fort Matanzas would arrive by boat; they would dock their boats and access the fort's terreplein, using a ladder. NPS constructed walkways, roads, and parking areas during construction of the visitor center and utility building beginning in 1935. Most of the original circulation features date from 1937. The original entrance road was sand asphalt and ended at a loop with two parking areas near the visitor center. The parking areas were constructed from crushed coquina. Pedestrian circulation features included sidewalks, walkways, and stairs. Sand-asphalt sidewalks connected the parking area to the visitor center. A coquina staircase led from the main walkway up a slope along the southeastern side of the visitor center, where it transitioned to a crushed-coquina walkway. A dry-laid coquina flagstone walkway led from the rear of the visitor center towards the river. A brick walkway was installed between the HQ/VC and the historic utility building. In 1937, the NPS also constructed a sand-asphalt road towards the Atlantic beachfront that terminated at a beach ramp.

Current Conditions

Presently, the route from the dock to the fort is an oyster-shell pathway and a wooden staircase. The NPS has altered the original materials used along circulation routes at the HQ/VC and beach ramp areas since the period of significance. However, the layout of the circulation routes from the period of significance remains largely intact.

As visitation to the park continues to rise, consideration of materials and methods used to provide circulation throughout the national monument site becomes more important. Parking availability is a major concern at the national monument site. Parking at the beach ramp exceeds capacity during the warmer months. Parking overflows to the edges of the entrance road. This same issue occurs at the HQ/VC. The HQ/VC provides parking for access to Fort Matanzas, for access to the Matanzas River's shore, and for people visiting the site to explore the boardwalk and marshland outside of the central HQ/VC area. Parking regularly overflows to the edges of the roadway, both along the entrance road and the VC area loop road. Parking in vegetated, undesignated spaces damages understory plantings and creates bare soil that then washes to the center of the VC area loop road and to the marshland to the north. Parking in the center of the loop road damages the old-growth live oak trees by compacting root zones and reducing the ability for the trees to take in nutrients. Heat from car engines can damage the trunks of trees, causing cracking of the trunk's exterior, which exposes the more delicate interior wood of the trunk to infestation and disease.

Current circulation features also include the beach ramp and ferry dock.

Concrete and black asphalt are not reflective of the materials of the historic period; however, these materials are commonly used and usually durable. The original materials were a sand asphalt and crushed coquina, both of which had a light-colored presence in the landscape. The NPS quickly resurfaced several of the circulation features because the sand asphalt and loose aggregate walkways did not perform well. See treatment recommendation CR-1, CR-2, and CR-4, which provide recommendations for recreating the appearance of historic materials with modern materials.

CR-1 Rehabilitation of historic roads

Maintain the historic alignment and width of the historic roads. Shoulders should not be paved unless they were historically. If a pedestrian path is desired along the road edge, construct with a material that blends with the natural environment, such as a stabilized aggregate or grid reinforced turf. The addition of layers of asphalt over the years has raised the level of the road grade. This has resulted in the exposed profile of the coquina curb being significantly less than during the historic period. During future road construction, consider removing existing asphalt to restore the road to its original elevation, in particular at the parking area. The NPS should consider using concrete or a light-colored asphalt to resemble the appearance of the road during HQ/VC period of significance.

Reconfiguration of the historic alignment is discouraged. This is in accord with the GMP/EIS which suggested investigation of expanding parking within the current footprint. The NPS recently repaved the parking areas, which will allow for striping of parking stalls to improve parking efficiency. During the preparation of this report, alternatives for parking expansion were presented but deemed too harmful to the natural environment.

CR-2: Seal existing asphalt

The original pavements, constructed of compacted coquina, were light in appearance. Dark-colored pavement raises ambient temperatures and contributes to the heat island effect. The recommendation is to seal the existing black asphalt to lighten its color and reduce its surface temperature. CoolSeal is an example of this product that meets both LEED and EPA requirements of 33% reflectivity. When the pavement needs to be replaced in the future, consider using a stabilized aggregate pavement that would be less visually intrusive and more in keeping with the historic character of the national monument than black asphalt along roadways.

CR-3: Install 8-inch coquina curb to manage parking and storm water at visitor center

The recommendation is to limit encroachment upon the center of the VC area loop road by installing an 8-inch-tall coquina curb to discourage parking along this edge of the roadway. While a curb was not historically around the north and west perimeter of the loop road island, the recommendation for controlling parking stems from the need to protect the health of the trees in the loop road island. Another option to discourage parking is to replicate the cypress-log guardrails historically used at the site. This treatment would create a more significant barrier with a greater visual impact on the setting than a coquina curb. In 1937, NPS did install cypress-log guardrails at the site's entrance at SR A1A, along the road extension to the utility building, and around the original parking area at the beach ramp (Figure 360).

Installing a curb around the loop road island also provides an opportunity to better control the flow of storm water. Storm water flowing from the north causes erosion and sedimentation. Direct storm water to a curb cut closer to the existing drainage pipe at the northwestern side of the oak grove. If necessary, consider using a drop inlet and pipe system incorporated with the new curb to capture and convey storm water to the marsh.

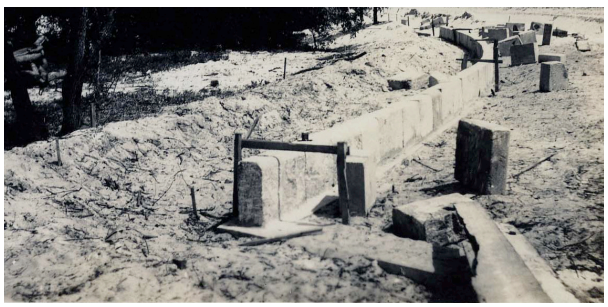


Figure 360: Circa 1935 photograph of coquina curb under construction (CASA no. M967)

CR-4: Establish standard concrete detail

The sidewalks along the visitor center area loop road were historically sand-asphalt sidewalks topped with a crushed coquina surface and edged with coquina curbing. The sidewalk surface is now concrete. For future replacement, create a typical concrete mix with a texture and color similar to the original crushed-coquina surface treatment and replace the existing concrete sidewalks with this material. Concrete can be finished in a way that replicates a coquina walkway by incorporating coquina shells into the surface or including it as part of the aggregate mix.

While this replacement occurs, install access ramps complying with ABAAS and NPS standards where needed. Ramps should not extend into vehicular travel lanes but should generally extend six feet away from the vehicular travel lanes, allowing for a slope no greater than 1:12 when used at a six-inch-tall curb. The coquina curbs remain from the period of significance. Retain historic curbs for reuse if removed.

CR-5: Reintroduce coquina flagstone

Reintroduce the coquina flagstone walkway extending from the Visitor Center to the dock. Historically, this was a dry-laid walkway. Install coquina stone with mortared joints to withstand heavy foot traffic (Figure 361).



Figure 361: 1935 photograph of flagstone walkway at visitor center (CASA no. M1023)

CR-6: Convert Fort Matanzas paths to grid reinforced and resin-bound stabilized aggregate

Convert loose aggregate path between dock and fort to a stabilized walkway utilizing a combination of grid and resin-bound stabilizer. The plastic grid will help keep the material in place and the resin stabilizer will create a more stable walking surface less susceptible to water and wind erosion. See additional information on stabilized walkways in the circulation treatment section for Castillo de San Marcos on page 286.

CR-7: Grid-reinforced turf system at park entrance

Install grid reinforced turf along the edge of SR A1A at the park entrance. This is not an official parking area, but overflow parking uses this area when the designated parking areas are full. Because of current use patterns, it can be assumed that cars will try to park across most of the grass area on the beach side of A1A. It would be preferable to install grid reinforced turf across most of the area. Otherwise, the NPS will need to install bollards or reintroduce cypress log guardrails to delineate the limits of overflow parking. An example of a grid designed for heavy traffic is Gravelpave. Gravelpave is a reinforced plastic grid designed to hold soil in place and distributing the point load of service vehicles. Sod with paspalum. See additional information on reinforced grid systems in the circulation treatment section for Castillo de San Marcos on page 280. See also VG-2 Reinforced grid turf areas above.

CR-8: Maintain boardwalk

Replace the boardwalk decking as necessary due to fallen trees and typical wear. Maintain clear pedestrian routes along the boardwalk.

CR-9: Maintain navigable depth for ferry service

Coordinate with the U.S. Army Corps of Engineers to monitor water depths and dredge as necessary to maintain navigable depth of river for ferry service.

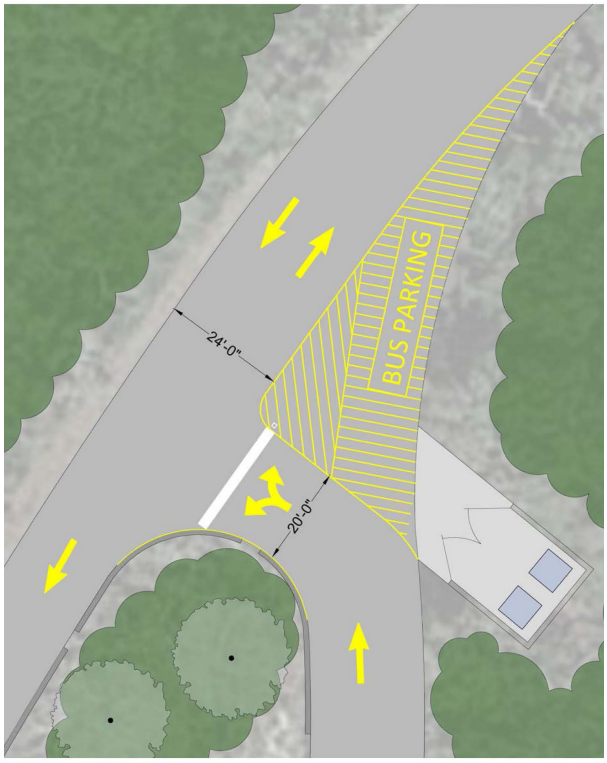


Figure 362: Concept for bus parking (WLA Studio 2019

CR-10: Restripe parking area for bus parking

It is possible to provide a parking space for buses without changing the alignment of the historic roads or eliminating existing parking. It would involve striping the area near the exit of the loop road to create a stopping point for existing traffic. The proposed location for the waste storage area would need to be shifted (Figure 362).

Views and Vistas

Views from the fort to Matanzas Inlet are reflective of the views during the historic period of significance despite the southward shift of the inlet and the development of the Claude Varn Bridge across the inlet. Views in other directions from the top of the fort are similar. Most changes to the viewshed are to the east, where the rooftops of private residences and condominiums along Anastasia Island are visible, and to the north of Rattlesnake Island where a state-owned spoil pile from canal dredging is visible. Views to the fort from the HQ/VC are largely undisturbed, except for the spoil pile north of the fort. The natural environment of Rattlesnake Island surrounding the fort presents a view similar to that seen during the Spanish Colonial and War Department periods. Views from just east of the beach ramp, along the Atlantic beachfront, are unimpeded to the south and imposed upon by the condominium developments to the north. The historic character of the vistas designed by the NPS during the planning of the HQ/VC has diminished with the thinning of the preserved vegetation. Related treatment recommendations are included in the vegetation and buildings and structures sections.

VV-1: Preserve views from Fort Matanzas

Preserve the view from Fort Matanzas towards Matanzas Inlet and the natural setting of Rattlesnake Island. Keep the areas immediately surrounding the fort clear of large-growing trees. The open marshland allows for unobstructed views along the island and across the Matanzas River. Engage with state officials and operators of the spoil pile to revegetate shoreline of the parcel with native vegetation to provide a visual buffer (Figure 363).

VV-2: Thin vegetation for views to Fort Matanzas

Strategically prune vegetation at the eastern shore of the Matanzas River to provide views to Rattlesnake Island and Fort Matanzas while still maintaining a partial screen from the river to the HQ/VC. The proposed elevated platform will provide views between the HQ/VC and the fort. Some selective pruning may be necessary to maintain the view corridor.



Figure 363: View south from Fort Matanzas (WLA Studio 2016)

Small-Scale Features

Small-Scale Features during the periods of historic significance

During the period of significance, no known small-scale features existed at the fort site. Presumably, the fort would have contained items related to its military use and occupation by soldiers. The small-scale features constructed during the period of significance at the HQ/VC and beach ramp include coquina-block headwalls along the western entrance road and VC area loop road, an entrance sign west of SR A1A, cypress-log guardrails at the beach ramp and HQ/VC areas, small planters, and a few smaller NPS signs and directional signs. In general, historic photographs, including those from two decades following the end of the period of significance (1937), show very few site furnishings.

Current Conditions

Site managers have added non-historic features to facilitate visitor use of the property. The large number of contemporary site furnishings includes bollards, benches, picnic tables, signs, interpretive waysides, and waste receptacles. Small-scale features, for example signs, have accumulated on site, sometimes causing a negative impact on the historic setting. In general, small-scale features should avoid cluttering the setting so to not negatively affect the historic landscape character. It is also recommended to establish a standard for each contemporary small-scale feature, for example benches or signs, to minimize visual clutter and provide consistency across the site.

SSF-1: Preserve and maintain historic small-scale feature.

Historic small-scale features include the coquina masonry headwalls and planters at the HQ/VC.



Figure 364: Vegetation growth on historic coquina planter (WLA Studio 2016)

Follow similar monitoring and maintenance for historic masonry small-scale features as is currently followed for historic masonry structures at both Fort Matanzas and Castillo de San Marcos. Replace or repair missing stones or mortar using material compatible with the original. Remove the vegetation growing on the coquina masonry planters using an approved cleaner like D-2 or Round-Up (Figure 364). See additional discussion on coquina maintenance in the general building and structure maintenance section on page 275.

SSF-2: NPS sign standardization

NPS has recently updated interpretive waysides at Castillo de San Marcos and they have recently added new interpretive waysides at Fort Matanzas. The graphic design and construction should be consistent between the two sites and follow the NPS Uniguide Standards.

Waysides should generally be located at the thresholds of historic and natural areas, not where they intrude upon the historic or natural setting. At the HQ/VC, waysides should be located near the parking area, at the beginning of the entrance walkway, or close to the dock. For example, replace signs interpreting the significance of the natural flora to a location closer to the parking area and not in front of the HQ/VC. Update orientation waysides at trailheads to be consistent with new signage standards.

Consider removing signs mounted directly on the building.

The construction of a new visitor gathering area to await ferry service provides an opportunity for the consolidation of interpretive information for Fort Matanzas and the HQ/VC. An elevated wildlife-viewing platform installed adjacent to the marshland north of the VC area loop road offers an opportunity to consolidate interpretive information discussing wading birds and the native flora of the saltmarsh ecosystem.

SSF-3: Consolidate orientation signage

Fort Matanzas National Monument has recently added an upright wayside near the entrance to the HQ/VC. This CLR recommends consolidating the other directional and information signage dispersed along the entrance walkway to the

location of the new wayside. A future wayside in this location could provide all the necessary visitor orientation information (e.g. ferry information) allowing for the removal of the other signs. It is also recommended to rotate the upright wayside ninety degrees to reduce its impact on the view of the HQ/VC.

SSF-4: Relocate waste storage area and containers

Relocate waste storage area and containers to the southeastern section of the loop road along the entrance road. This location improves views of the HQ/VC as a visitor enters the loop road, moves them away from the primary visitor contact area, and improves service access to the containers. After moving the dumpsters, install a simple wooden enclosure with doors to conceal the containers from view. As previously noted, another alternative is to leave the dumpsters in place and to provide a vegetative buffer to shield these from view. Planting new trees in the lawn area next to the HQ/VC area will help to screen views of the waste storage area, but supplementing with a planting of native evergreen shrubs (i.e. yaupon holly or wax myrtle) on the edge of the parking area next to the historic utility building may also be necessary. Leaving them in current location does not solve the issue of poor circulation during waste removal. Currently, waste removal trucks must back out the road from historic utility building after emptying the dumpsters. The existing location of the waste storage area should be revegetated with native species, like those currently growing along the shoreline. This would include oaks, palmettos, pines, and yaupon. See also VG-5: Replant HQ/VC area and VG-6: Planting for visual buffer.

SSF-5: Relocate mailboxes

Relocate mailboxes to the right side of the entrance road immediately before the intersection with the road leading to the historic utility building. This removes the mailboxes from a prominent location that disrupts the view of the HQ/VC during the entry sequence.

SSF-6: Relocate bike rack

Relocate bike rack to interior of loop road close to the crosswalk to the HQ/VC. Use a low-profile model, like the existing rack, to minimize its visual presence in the landscape. Use a galvanized, heavy gauge steel model for durability.

SSF-7: Maintain benches for programs and picnic tables in loop road island

The park has recently relocated the gathering of benches used for educational programs. Keeping the benches in this location removes a modern intrusion close to the historic HQ/VC and allows for revegetation of that area as described above in VG-5: Replant HG/VC area.

Maintain the picnic area in the loop road island. Like with the benches, the 1935 NPS *Park Structures and Facilities* publication showed recommended picnic tables. The one most appropriate for Fort Matanzas is a simple table, like the ones on site today.

See SSF-8 below for more information about bench and picnic table standards.

SSF-8: Provide other site furnishings necessary for visitors' experience

Benches

Simple, durable benches capable of withstanding being outdoors are preferred. The NPS *Park Structures and Facilities* publication from 1935 provides example of benches recommended for parks (Figure 365).[563] A modern bench that has a similar look to the bench in the publication would be preferable at the national monument. The



Figure 365: Bench from 1935 NPS document Park Structures and Facilities

563. National Park Service, *Park Structures and Facilities* (Washington DC: National Park Service, 1935), 74.



Figure 366: Picnic table from 1935 NPS document Park Structures and Facilities



Figure 367: Examples of site furnishings at visitor center (WLA Studio 2016)

benches at the oak grove in the loop road island are light and portable, which provides flexibility for programming. However, mounted benches should also be on site for visitors. Today, benches are located at appropriate places—near the comfort station and near the dock behind the HQ/VC. New benches should be installed at proposed viewing platforms and gathering area for the ferry. It is not recommended to install benches at the fort itself, unless there is room at the dock where it will not interfere with pedestrian circulation.

There are two types of benches currently at the site—wooden and plastic. One bench type should be the standard across the site. Several manufactures make benches that are constructed from plastic but look like wooden benches. These are durable, low maintenance, and do not splinter. It is recommended to use those with a tan, wood-like color. BarcoBoard manufactures a simple but solid plastic bench mounted on steel legs. Jayhawk Plastics offers a bench made from recycled plastic like those currently on site.

Picnic Tables

Maintain the picnic area in the loop road island. Like the benches, the 1935 NPS Park Structures and Facilities publication showed recommended picnic tables (Figure 366). This document includes construction specifications and drawings for the benches.[564] The one most appropriate for Fort Matanzas is a simple table, like the ones on site today. If possible, construct tables to replace existing when necessary following the 1935 plans.



Figure 368: Utilities on rear facade of visitor center (WLA Studio 2016)

Trash and recycling receptacles

Continue the practice of limiting the number of trash and recycling receptacles on site. Most are in the parking area, which is preferable than having them close to historic buildings. If a new waiting area is developed south of the HQ/VC consider relocating the one currently at the walkway in that area to the new facility (Figure 367). To protect against animals entering the receptacles, the NPS should consider installing animal-proof containers like the Paris Double Animal-Proof Trash Can that has animal-resistant laches on the lids.

564. Ibid., 62.

SSF-9: Relocate utilities to less visible locations

Relocate electrical meter and air conditioner unit on the south/southwest side of the HQ/VC. Relocate to east/southeast end of the building, near where another unit is currently installed (Figure 368).

SSF-10: Install bollards to control vehicular traffic

The NPS should install bollards at the back of the sidewalk on the west side of A1A. This will prevent overflow parking in this area. Cars crossing over the sidewalk creates a pedestrian/vehicular conflict that should be avoided. An alternative is to construct cypress-log guardrails like those constructed in 1937.

SSF-11: Relocate NPS sign at beach access entrance

To accommodate overflow parking, relocate the NPS sign to prevent it from automobile damage. Consult local ordinances to confirm horizontal clearance requirements and place outside of the safety zone.

SSF-12: Maintain metal features

Continue periodic inspection and maintenance of protective coatings on metal features, including cannon displayed at fort.

Proposed PMIS Statements for Fort Matanzas National Monument

Construct new gathering area at Fort Matanzas Visitor Center

Project Total Cost: $66,470

- *294 sf concrete*, $5/sf ($1,470)
- *600 sf bldg*., $100/sf ($60,000)
- *5 benches*, $1,000/ea ($5,000)

Description: Construct a new gathering space and viewing area for people waiting for ferry service.

Recommendation: The HQ/VC needs a designated waiting space to reduce the risk of damage to the cultural landscape and the natural environment. Currently, guests gather at the dock. As the number of people awaiting ferry service increases, the group backs into the landscape between the Fort Matanzas Visitor Center and the river's edge. The proposed gathering area includes a concrete plaza with benches located southwest of the utility building behind the existing screening wall. Adjacent to this gathering area, the NPS will build an elevated deck designed to minimize its impact to the natural topography of the site. By using a recycled composite material, such as Trex decking, maintenance needs would be less than if pressure treated lumber is used. Recycled composite material also would allow more color options to blend the structure into the natural environment without the need for painting or staining. Thin, metal cable railing would allow for unobstructed views to the Matanzas River. Constructing a new facility will require studies to ensure native plant communities and archeological resources are not impacted.

Construct marshland viewing platform

Project Total Cost: $111,000

- *1,110 sf bldg., $100/sf ($111,000)*

Description: Construct an elevated deck overlooking the marsh along the road leading north from the VC area loop road.

Recommendation: Interpretation of the natural environment is a priority in the Fort Matanzas NM GMP/EIS. An elevated deck will serve as an observation platform at the marshland where wading birds and other wildlife are visible. Install the deck northeast of the dirt road leading to the boat launch. This deck will include a ramp to improve accessibility. The deck will be designed to minimize its impact to the natural topography of the site. By using a recycled composite material, such as Trex decking, maintenance needs would be less than if pressure treated timber is used. Recycled composite material also allow more color options to blend the structure into the natural environment without the need for painting or staining. Thin, metal cable railing would allow for unobstructed views to the marsh. Constructing a new facility will require studies to ensure native plant communities and archeological resources are not impacted.

Fort Matanzas landscape rehabilitation

Project Total Cost: $33,300

- *37 Live oaks, $500/ea ($18,500)*
- *37 smaller native trees, e.g. cabbage palm, paw paw, yaupon, red cedar, red bay, $350/ea ($12,950)*
- *Soil improvement, 1 cy/tree, $25/cy ($1,850)*

Description: Replant the areas around the HQ/VC to reflect the natural appearance of the site at the time of the building's completion around 1937.

Recommendation: Replant area around the Fort Matanzas Visitor Center. During the period of historic significance of the HQ/VC, trees and shrubs grew in a thick grove around the building. This was a result of NPS's conscious planning to preserve native vegetation. Much of the historic plant material has been lost, including a large number of native trees formerly growing in the areas between the historic utility building and the loop road and between the HQ/VC and the shoreline. Additionally, loss of historic plant material has resulted in undesired foot traffic in areas not intended as circulation routes. The lack of vegetation allows informal footpaths to develop by guests walking around the buildings rather than along the intended route through the visitor center. Replanting these sloped areas will reduce unwanted foot traffic, which will reduce erosion and the degradation of the natural landscape.

In keeping with the GMP/EIS emphasis on protection and restoration of natural resources, the recommended tree species are naturally occurring species expected to have been on site at the time of the HQ/VC construction. Recommended species to consider include paw paw (*Asimina triloba)*, yaupon holly (*Ilex vomitoria)*, red cedar *(Juniperus virginiana)*, red bay *(Persea borbonia)*, yaupon holly (*Ilex vomitoria)*, live oak *(Quercus virginiana)*, winged sumac *(Rhus copallinum)*, and sabal palm (*Sabal palmetto)*.

In general, large growing trees should not be planted within twenty feet of historic structures to prevent potential damage to the building from roots or limbs. Prune limbs to prevent trees from over-hanging buildings.

Rehabilitate Visitor Center road and protect live oak island inside loop road.

Project Total Cost: $41,315

- *59, 701 sf of asphalt seal coat, $0.25/sf ($14,925)*
- *377 lf of coquina curb, $70/lf ($26,390)*

Description: Apply a sealer onto existing asphalt to lighten its color and reduce the heat island effect. Install a curb around presently uncurbed areas of the live oak island inside the loop road to prevent parking and improve stormwater management.

Recommendation: Seal the existing black asphalt to lighten its color and reduce its surface temperature. The original pavements at Fort Matanzas National Monument, constructed using compacted coquina

or asphalt top-dressed with sand, were light in appearance. The current dark-colored pavement raises ambient temperatures and contributes to the heat island effect.

While a curb was not historically around the north and west perimeter of the loop road island, the recommendation for controlling parking stems from the need to protect the health of the trees in the loop road island. Refer to historic construction documents and historic photographs to install an 8-inch-tall coquina curb similar to the historic curbs. This curb will prevent parking along the edge of the VC area loop roadway. Installing a curb around the loop road island also provides an opportunity to better control the flow of storm water. Storm water flowing from the north is causing erosion and sedimentation. Direct storm water to a curb cut created near the existing historic drainage feature at the northwestern side of the oak grove.

Visitor Center rear yard rehabilitation

Project Total Cost: $17,775

- *255 sf of flagstone, $20/ sf ($5,100)*
- *570 sf area of grid reinforced turf area, $15/sf ($8,550)*
- *2,240 sf area* of *Fiber reinforced turf areas, $0.20/ sf ($448)*
- *2,810 sf of sod, $1/ sf ($2,810)*
- *2,810 sf of soil improvement, 4 in. depth, $25/cy ($867)*

Description: Install coquina flagstone path and rehabilitate turf in rear yard of visitor center.

Recommendation: Construct coquina flagstone walkway extending from the alcove entrance on north end of visitor center to the dock. Historically, this was a dry-laid coquina flagstone walkway. Consult historic photographs and construct new coquina flagstone walkway with mortared joints.

Large areas of the rear yard are bare earth caused by pedestrian foot traffic leading to soil compaction and erosion. Erosion is particularly bad on slopes in the rear yard and near the intersection of the two walkways leading to the dock. Install fiber reinforced turf in large areas and reinforced grid turf in areas adjacent to walkways. Soil-stabilizing grids are plastic modules that protect root zones in areas that receive heavy traffic. The plastic grid holds the soil in place and distributes the point load of foot traffic to prevent soil compaction. Installing soil-stabilizing polypropylene fibers that protect the root zone from compaction would protect this historic resource. The fibers are incorporated in 4" of sterile, loosened soil and then covered with new paspalum sod. Paspalum is a grass species native to Florida. During this work, ensure that the ground sheds water away from historic resources.

Overflow parking at entrance to Fort Matanzas National Monument

Project Total Cost: $199,084

- *11,197 sf area of grid-reinforced turf area, $15/ sf ($167,955)*
- *64 bollards, $200/ea ($12,800)*
- *7 cabbage palms, $500/ea ($3,500)*
- *11,197 sf of sod, $1/sf ($11,197)*
- *11,197 sf of soil improvement, 4 in. depth, $25/ cy ($3,457)*
- *Soil improvement, 1 cy/tree, $25/cy ($175)*

Description: Because of current overflow issues at the intersection of the park entrance road and A1A, install a reinforced grid turf to protect the area from degradation caused by vehicular traffic.

Recommendation: Install grid reinforced turf along the edge of SR A1A at the park entrance. This is not an official parking area but overflow parking utilizes this area when the designated parking areas are full. Because of current use patterns, it can be assumed that cars will try to park across most of the grass area on the beach side of A1A. Add 4" of soil amendment and re-sod with a native paspulum grass to maintain the natural appearance of the site. Install bollards at the back of the sidewalk on the west side of A1A. This will prevent overflow parking in this area. Plant cabbage palms to fill in gaps in the existing plantings.

Relocate waste storage area and containers

Project Total Cost: $7,500

- *200 sf concrete for pads, $5/sf ($1,000)*
- *75 lf of wooden fence enclosure, $20/lf ($1,500)*
- *12 native shrubs, $250/ea ($3,000)*
- *200 sf of clearing, $2,000/ls ($2,000)*

Description: Relocate the existing waste storage facility to a less visually intrusive location.

Recommendation: Relocate waste storage area and containers to the northeastern section of the loop road along the entrance road. After moving the dumpsters, provide a simple wooden enclosure with doors and screen with plant material. Relocating waste storage improves views of the HQ/VC as a visitor enters the loop road, moves them away from the primary visitor contact area, and improves service access to the containers. The existing location of the waste storage area should be revegetated with native species, similar to those currently growing along the shoreline. This would include oaks, palmettos, pines, wax myrtle and yaupon.

Rehabilitate path to Fort Matanzas

Project Total Cost: $39,273

- *1,146 sf area of resin-bound stabilized aggregate, $15/ sf) ($17,190)*
- *1,446 sf area of grid reinforced turf area, $15/sf ($21,690)*
- *300 sf of sod, $1/sf ($300)*
- *300 sf of soil improvement, 4 in. depth, $25/cy ($93)*

Description: Convert Fort Matanzas paths to grid reinforced and resin-bound stabilized aggregate.

Recommendation: Convert loose aggregate path between dock and fort to a stabilized walkway utilizing a combination of grid and resin-bound stabilizer. The plastic grid will help keep the material in place and the resin stabilizer will create a more stable walking surface less susceptible to water and wind erosion. Install a grid reinforced turf along the edges of the path to improve the resiliency of the turf. Add 4" of soil amendment and re-sod with paspulum sod.

Recommendations for Further Study

Additional issues that may require further study or action beyond the specific treatment recommendations are as follows:

Castillo de San Marcos

National Register Nomination. Consider amending the National Register listing for the Castillo de San Marcos National Monument to extend the period of significance to 1933. Consider expanding the areas of significance to include the commemoration and preservation aspects of the War Department period of historic significance. Consider also expanding the areas of significance to include the use of the property for recreation (e.g. baseball and golf) during the period of significance.

Evaluate the potential eligibility of Park Headquarters and Maintenance Facility using the criteria developed in the 2015 National Register of Historic Places nomination for National Park Service Mission 66 Era Resources. The modifications to the original structure, including the addition a large wing off the north and additional buildings to the east, may jeopardize its eligibility.

Historic Structure Report. An updated Historic Structure Report on the fort and associated features would help inform future preservation treatments for the structures. The existing HSR's date from 1983 and 1986. If further historic research locates additional information about known features, including the wooden gates that hung at City Gate and at the passages through the covered way wall, NPS should consider reconstructing these features if documentation is sufficient.

Parking Lot Study. The GMP/EIS recommended the removal of much of the parking lot on the south side of the fort. This would allow for restoration of the glacis and fort green in this location and improve views from the south side of the fort. The GMP/EIS predicted visitors would park at a city-owned lot. This possible arrangement should be considered in the future.

Security Study. If the parking lot is to remain, an alternative security system should be considered, which would allow for the planting of a visual buffer between the parking lot and the fort. The parking lot is a significant intrusion into the viewshed from the fort.

Archeological Study. Conduct an archeological study at Castillo de San Marcos National Monument to locate missing War Department features that would allow the NPS to interpret the development of the site more accurately during that period. An archeological study may locate landscape features including walkways, fences, and buildings. Should this study reveal these locations, the NPS might be able to interpret the War Department period landscape more fully.

Fort Matanzas

National Register Nomination. Consider amending the National Register listing for the Fort Matanzas National Monument to provide a revised period of significance and statement of significance that includes the War Department period and early NPS period, as included in the period of significance listed in this report of 1565 to 1937.

Archeological Study. Conduct an archeological study at Fort Matanzas National Monument to locate features in the landscape behind the Visitor Center. Should the study reveal specific locations of features interpret or reconstruct these features at the site.

Study sedimentation buildup along the Matanzas River between Anastasia Island and Rattlesnake Island. If long-term buildup will prohibit ferry access to the fort site, removal of sedimentation will be required. Consult with the U.S. Corps of Engineers who maintain the Intracoastal Waterway.

Periodically evaluate the shoreline stabilization structures at the national monument. The environmental conditions of the river are dynamic and ever changing. For example, recent dredging project upstream from the national monument can change the river's current potentially changing patterns of shoreline erosion.

Ongoing archeological investigation. Since the 1960s, several archeological surveys have been conducted at Fort Matanzas National Monument. There are seven recorded archeological sites at the national monument, which include locations at both Rattlesnake Island and Anastasia Island.

On Rattlesnake Island, most of the archeological resources date to the Spanish and British occupations of Fort Matanzas. Based on the presence of marshland and low-lying terrain, Rattlesnake Island would not have been a desirable place for settlement and is not thought to contain unidentified prehistoric or historic archeological resources. Most archeological resources identified on Anastasia Island date from the 1800s to the 1900s. However, prehistoric items have been discovered and artifact scatter has been noted near the massacre marker south of the HQ/VC. Currently, archeological investigations are conducted alongside improvement projects at the national monument. These construction efforts have included fort stabilization, sewer and power line installations, and boardwalk construction. Past archeological investigations have yielded artifacts such as ceramic and stoneware shards, corked green wine bottles, a Spanish olive jar, British brass button, an archaic stemmed point, and others. An underwater archeological survey was conducted in 1979 in the Matanzas River east of Fort Matanzas. Surveys to date have been extensive and based on the comprehensive nature of previous investigations, it is unlikely that further studies will result in discovery of additional sites. While this document does not recommend specific areas for archeological work to be conducted it recommends that the NPS continues current protection measures and investigations according to regulations and the GMP/EIS.

Climate Adaptation Plan. With rising sea levels, historic coastal resources are particularly sensitive to the effects of environmental changes. In order to properly plan and prepare for possible damage to Fort Matanzas and other features at the national monument site, develop a Climate Adaptation Plan.

The NPS *Climate Change Response Strategy*, released in September 2010, guides all policies related to climate change within the Park System. Since the document's release, the NPS has taken an active role in addressing issues related to environmental changes affecting parks and long-term resource stewardship. These efforts have resulted in the drafting and implementation of park planning documents, regional action plans, and a range of park-level assessments and projects directly related to the study of resiliency.

In 2014, NPS released *Director's Policy Memorandum 14-02, Climate Change and Stewardship of Cultural Resources*, which provides a foundation for the management of cultural resources in the modern era of environmental change. Major points discussed in that document include:

- There are two primary and equal considerations for cultural resources in relation to climate change: "(1) cultural resources are primary sources of data regarding human interactions with environmental change; and (2) changing climates affect the preservation and maintenance of cultural resources";
- As the material components of cultural resources often cannot change with the environment around them, a focus for climate change adaptation is our management of them;
- Management decisions for cultural resources should integrate diverse sources of information, prioritize according to vulnerability and significance, engage a broad array of stakeholders, and recognize the potential for loss; and
- Through the stories and understanding they anchor, cultural resources hold an essential role in climate change communication.

In 2016, the NPS published *Cultural Resources Climate Change Strategy* (hereafter *Strategy*), a comprehensive document with the expressed purpose to "set out the broad scope of cultural resources in relation to climate change and identify major directions of action in cultural resources and climate change for the NPS." The *Strategy* outlines the following four overarching goals:

- Connect Impacts and Information—Set the broad scope of cultural resources and climate change response by connecting the concepts of impacts and information with the four pillars of climate change response: sciences, adaptation, mitigation, and communication;
- Understand the Scope—Coordinate science, management, and communication to identify and improve understanding of the effects of climate change on cultural resources;
- Integrate Practice—Incorporate climate

change into ongoing cultural resources research, planning, and stewardship; and
- Learn and Share—Collaborate with partners to grow and use the body of knowledge and practice for cultural resources and climate change.

The *Strategy* is phrased to speak directly to cultural resource managers and policy-makers at the NPS and provides specific "Directions for Action" as well as support tools including study summaries, tables and figures, and relevant case studies.

The *Strategy* is not intended to serve as a handbook for the development of a park-specific Climate Adaptation Plan, but rather as tool to guide the park through the process of identification, analysis, and planning related to the potential effects of environmental change. As stated in the introduction of the *Strategy*,

> For an overview of the connections between cultural resources and climate change, refer to the introductions of each Goal, particularly Goals 1 and 4. For practical information on how to address climate change within cultural resources management, refer to Goals 2 and 3. For examples of what has been accomplished to date in cultural resources and climate change, review the case studies across Goals 1, 3, and 4 and the central graphic of Goal 2.

According to the NPS website for Policy and Planning, climate variability is creating a new and dynamic decision-making environment in which we cannot assume a continuation of historical patterns. Therefore, effective decision making and planning requires decision support systems that are flexible to shifting conditions. When developing a Climate Adaptation Plan, consider the following six principles adopted from the National Research Council:

- Begin with managers' needs;
- Give priority to process and products;
- Link information providers and users;
- Build connections across disciplines and organizations;
- Enhance institutional capacity; and
- Design for learning.

Further specific guidance for park planning related to Cultural Resource Adaptation see:

https://www.nps.gov/subjects/climatechange/adaptation.htm and

https://www.nps.gov/subjects/climatechange/policyandplanning.htm.

Rising Sea Levels and Environmental Changes

Cultural resources, including historic buildings and small-scale features, "are fixed in place or derive much of their significance from the place within which they were created. Many are non-living, and all are unique. As a result, the capacity of cultural resources to adapt to changing environments is limited."[565] Fort Matanzas derives much of its historical significance from its location at Matanzas Inlet. This location increases Fort Matanzas' exposure to potential damage. The incoming tide breaches the seawall and reaches Fort Matanzas during large storm events. The potential for damage to the fort is likely to increase as sea levels in the region are expected to rise by "more than 0.5 feet by 2050 and more than 2 feet by 2100 due to climate change." [566] The tidal current and inundation of saltwater from the Matanzas River, as proven in the past, is a threat to the structural integrity of Fort Matanzas.

Aside from the buildings and structures, the natural features of the site are at risk with increased storm events and the rise of surrounding waters. An increased frequency of storms threatens the physiographic structure of the coastal sand dunes at the site, which are a critical habitat for threatened and endangered species. Another example of the risk to the natural features of the site is the delicate nature of the salt marsh ecosystem. The health of salt marshes is a balancing act and requires the ebb and flow of tidal waters. If saltwater inundates low-lying areas such as marshlands, which can occur as sea levels increase, the health of the salt

565. National Park Service, "Cultural Resources and Climate Change," (n.p., 2016), accessed December 9, 2016, https://www.nps.gov/subjects/climatechange/upload/06-CCRP-Cultural-Resource-Brief-FEB-2016.pdf.
566. National Park Service, "Foundation Document, Fort Matanzas National Monument," 21.

marshes will be compromised. The biodiversity of the salt marshes will diminish putting not only the marshlands themselves at risk but also endangering wading birds that depend upon the health of these ecosystems for food. With increased sea levels, this and other ecological chains are threatened.

Even the slightest variation in temperature and moisture can affect the health of cultural vegetation. As stated in the Director's Policy Memorandum 14- 02, "NPS cultural resource management must keep in mind that (1) cultural resources are primary sources of data regarding human interactions with climate change; and (2) changing climates affect the preservation and maintenance of cultural resources."[567] The plant communities and old-growth specimens at the national monument site are currently at risk. The effects of changing temperatures and moisture levels paired with the harsh coastal environment significantly threaten the health of the natural and cultural vegetation at the site, as seen during recent storm events.

According to NPS documents, negative impacts to buildings and structures related to extreme temperature and drought include deterioration, conflagration, and desiccation.[568] A loss of resource integrity may occur over time from conditions related to natural hazards and their impacts. Typically, documentation is one of the first mitigation techniques undertaken in response to deterioration. This document, which includes narrative, photographs, drawings, and recommendations, fulfils this first step in the mitigation process. As the temperature and moisture levels change, park managers may consider alternate materials that tolerate the heat and additional moisture forecasted by climate projections. The use of native materials will increase the chances of adaptability to changing environmental conditions.

567. John B. Jarvis to All National Park Service Employees, memorandum, 10 February 2014, *Climate Change and Stewardship of Cultural Resources, Policy Memorandum 14-02*, https://www.nps.gov/policy/PolMemos/PM-14-02.htm.
568. Marcy Rockman, "An NPS Framework for Addressing Climate Change with Cultural Resources," *The George Wright Forum* 32, no. 1 (2015), accessed December 9, 2016, http://www.georgewright.org/321rockman.pdf.

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Appendix A

Glossary

Bastion: a four-side salient work projecting outward from main enclosure of fort, consisting of two faces and two flanks, and so constructed that it is able to defend by flanking fire the adjacent curtain or wall which extends from one bastion to another.

Battery: Any place where cannon or mortar are mounted for attack or defense.

Bonnet: A cap, or V-shaped work, raised in front of a fortification salient to shield it from frontal fire.

Breakwater: Counterscarp (moat) wall, seawall built to exhaust force of waves before it reaches the defensive structure.

Breastwork: A defense work of moderate height, hastily thrown up, of earth or other materials.

Counterscarp: Exterior slope of ditch or moat opposite the scarp; moat wall: see scarp.

Covered way: The area between the moat and the exterior embankment (glasis), protected or "covered" from enemy fire from this embankment.

Embrasure: Opening in a fort wall from which to fire guns.

Emplacement: Position of guns within fortification.

Esplanade: Area beyond glacis kept open for field of fire and could be used as a military training ground.

Gate: A passageway, either open or covered, from the covered way to the country; or a passage under the rampart, usually vaulted, from the interior of a fort to the exterior, primarily to provide for sorties.

Glacis: The embankment or slope that extends downward from the covered way toward the surrounding landscape.

Hot Shot Furnace: Furnace in which round shot was heated. Apparatus within the oven delivered the res hot balls to artillerists which by means of tongs conveyed then to muzzle loading cannon. These missiles could se a wooden vessel on fire or wreak havoc in a magazine. They were capable of skipping upon water several times and still retaining enough heat to start a blaze.

Magazine: Building or room in which powder and explosives are kept in a fortification or a ship.

Moat: Deep ditch around a fort, usually containing water.

Palisade: A high fence or barricade of pole timbers set vertically into the ground in a close row as a means of defense.

Parapet: Wall crowning curtain to protect soldiers from enemy fire.

Pintle: Pivot about which the chassis of the gun carriage swings.

Pintle stone: Stone in which the pintle is set.

Rampart: a mass of earth, usually formed with material excavated from the ditch, to protect the enclosed area from artillery fire and to elevate defenders to a commanding position overlooking the approaches to a fort.

Ravelin: Detached work with two embankments which made a salient angle. It is raised before the curtain on the counterscarp of the fortification.

Redoubt: A small fortification completely closed by a parapet, thus allowing encircling fire.

Revetment: Facing of wood, stone, or any other material, to sustain an embankment when it receives a slope steeper than the natural slope; also a retaining wall.

Salient: An angular defensive work which projects outward from the interior of a fortification.

Scarp: Slope of the protecting ditch or moat which touches the wall or parapet; inner slope of the protecting ditch at the foot of the parapet, nearly perpendicular.

Terreplein: Main upper level of a rampart, where guns, shielded by a parapet, are mounted; roof of the fort.

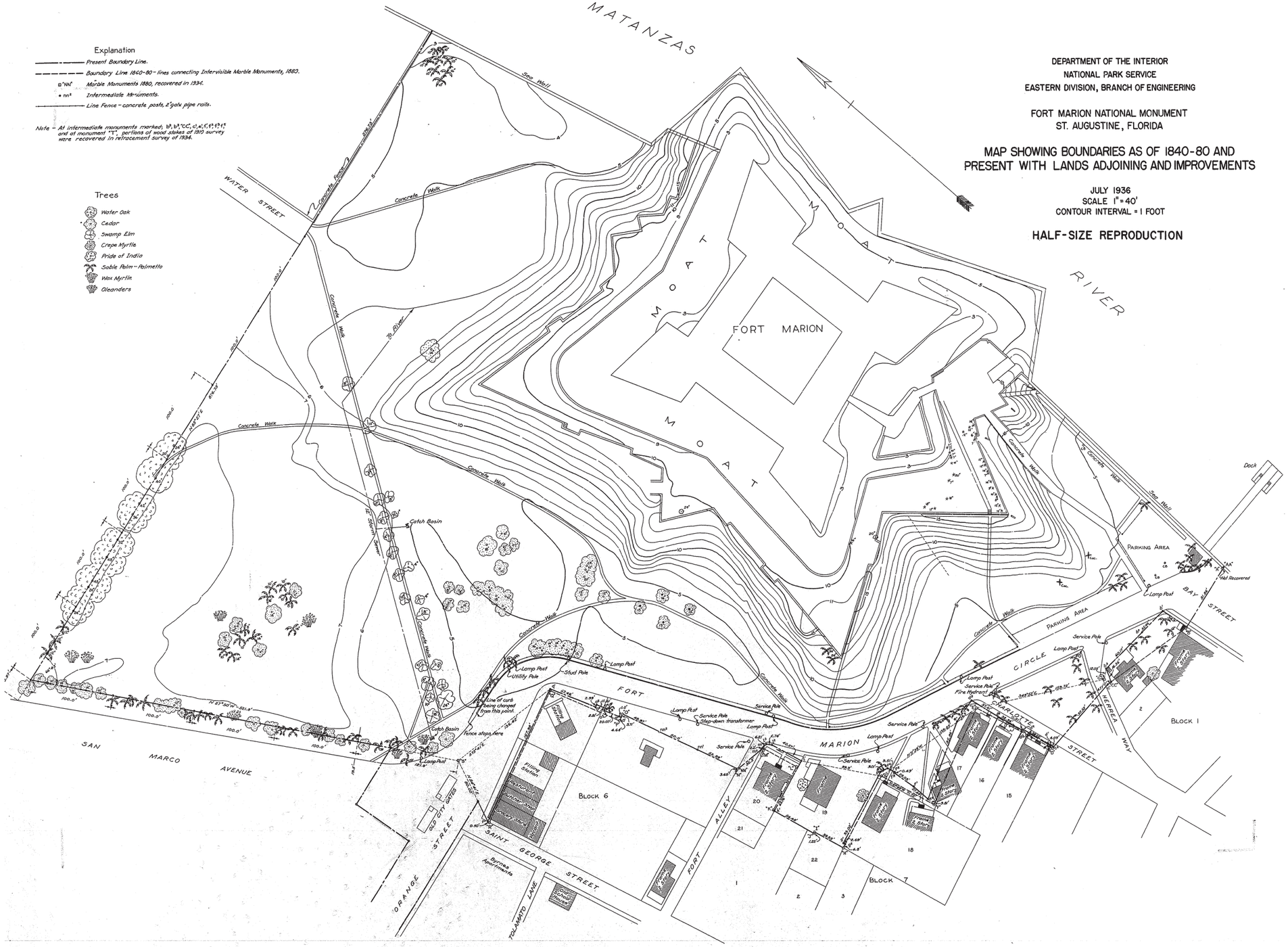
Traverse: A barrier (as a bank of earth) across part of a defensive area, to give protection from enfilade fire.

Traverse Arc: Arc of part of a circle described by movement of gun carriage about the pintle or center point; the stone support and iron track upon which the gun carriage rolls to turn the gun right or left. By traversing the arc, the guns thus command a horizontal range of about ninety degrees. Traverse arcs were laid in casemates and terreplein fronts.

Appendix B

Historic Plans

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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
EASTERN DIVISION, BRANCH OF ENGINEERING

FORT MARION NATIONAL MONUMENT
ST. AUGUSTINE, FLORIDA

MAP SHOWING BOUNDARIES AS OF 1840-80 AND PRESENT WITH LANDS ADJOINING AND IMPROVEMENTS

JULY 1936
SCALE 1" = 40'
CONTOUR INTERVAL = 1 FOOT

HALF-SIZE REPRODUCTION

NM-MAR-6008-IB-I

MAP SHOWING THE BOUNDARIES AS OF 1840-80 AND PRESENT WITH LANDS ADJOINING AND IMPROVEMENTS JULY 1936

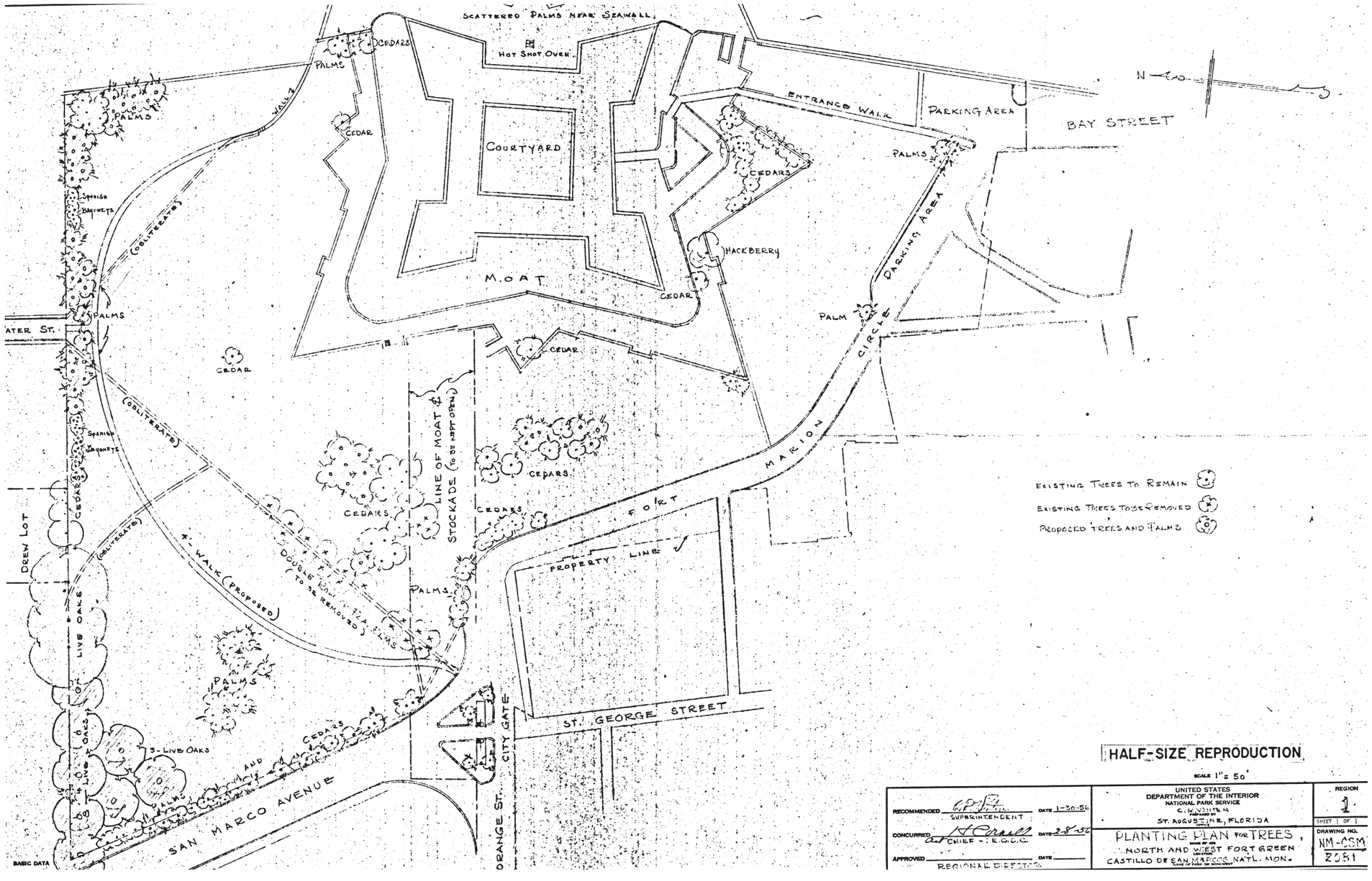
Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_343_6008B



PLANTING PLAN FOR TREES 1956

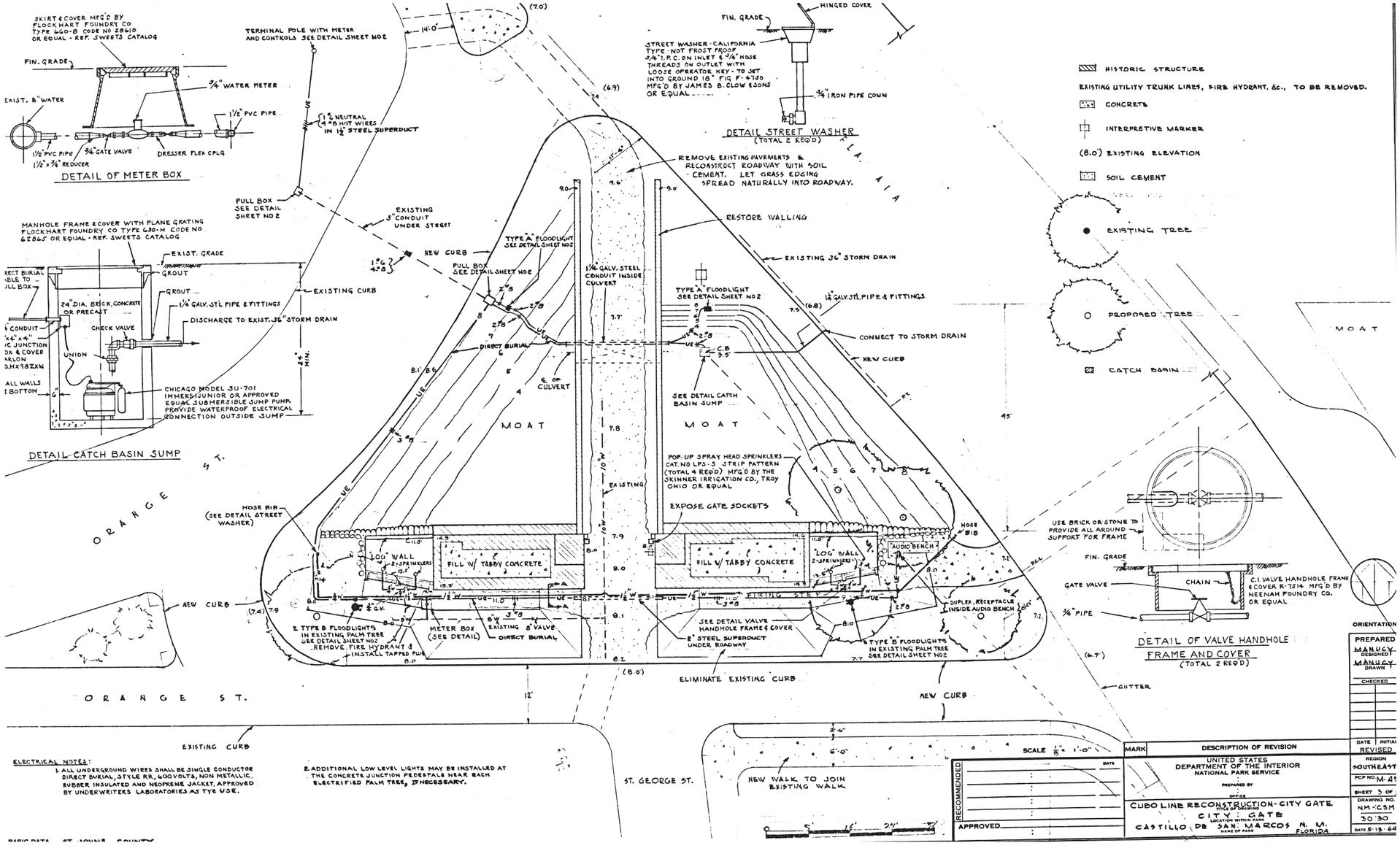
Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_343_2081



CUBO LINE RECONSTRUCTION- CITY GATE
MAY 1964

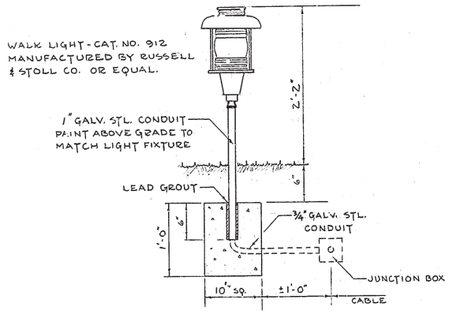
Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

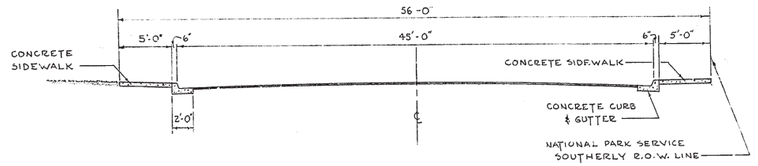
Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_343_3030



PARKING AREA LIGHT



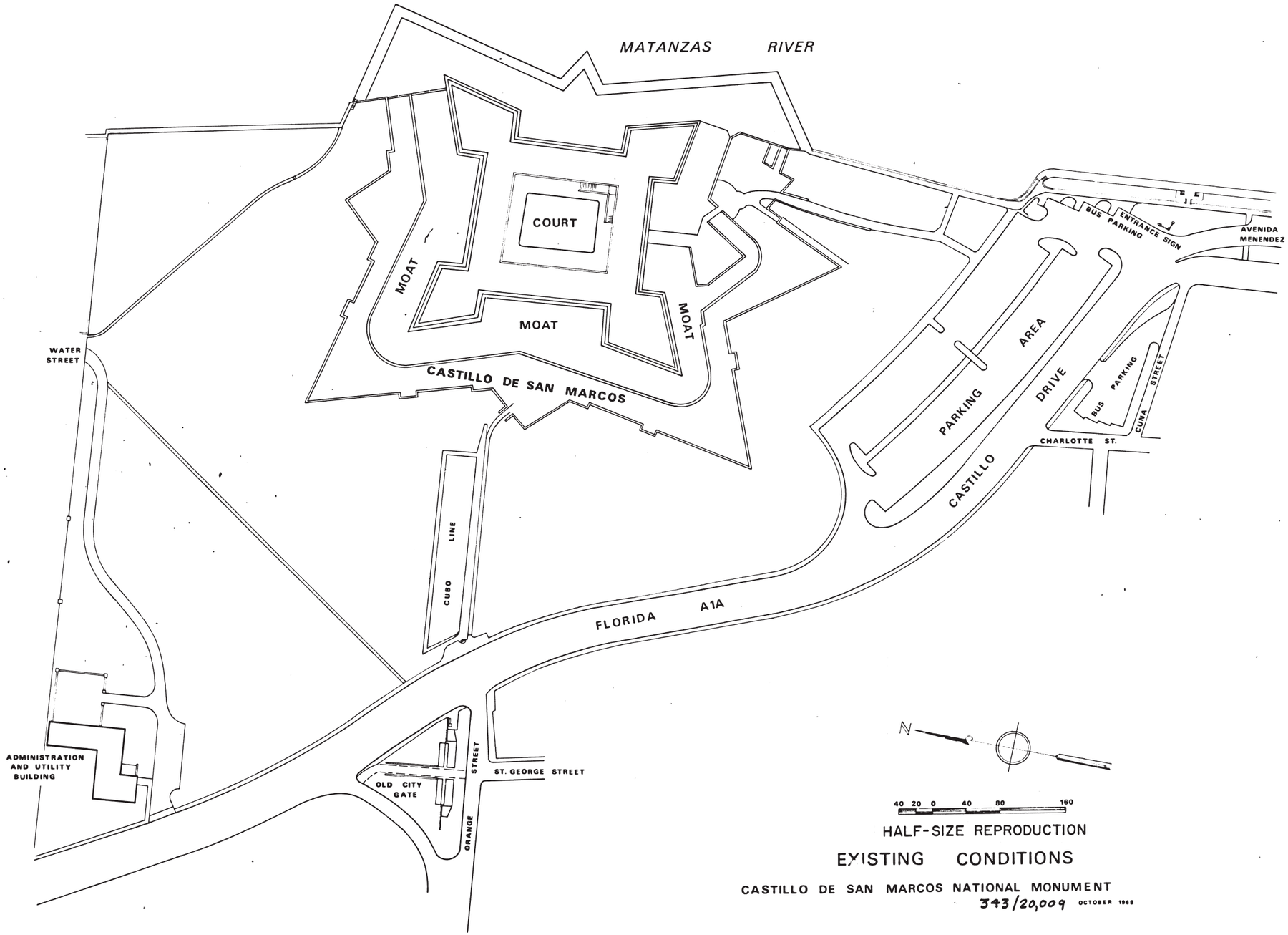
TYPICAL ROAD SECTION
SCALE 3/16" = 1'-0"

CASTILLO DRIVE AND PARKING AREA MAY 1964

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument
Cultural Landscape Report
January 2020

SOURCE: ETIC CASA_343_3025C



EXISTING CONDITIONS OCTOBER 1968

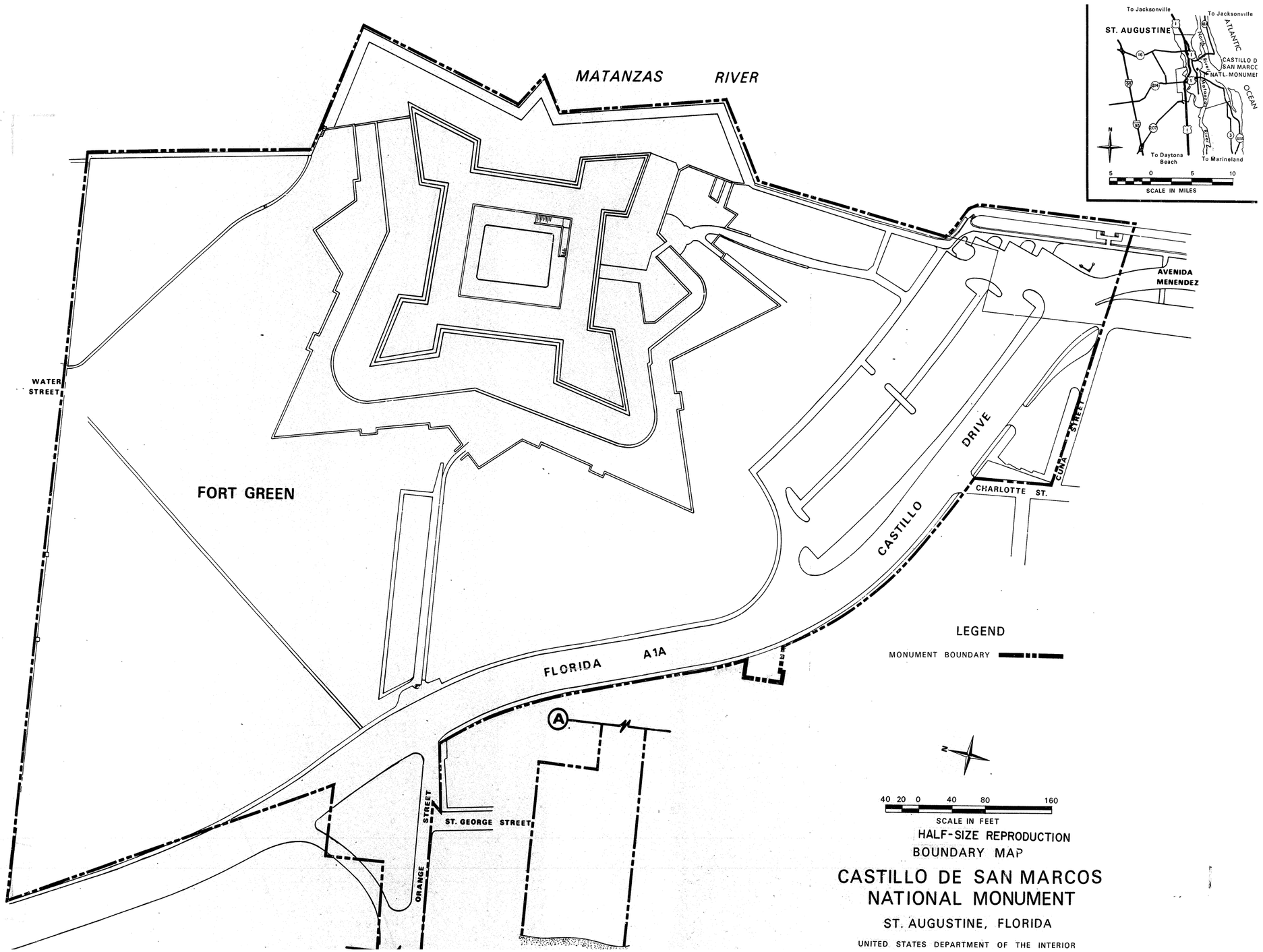
Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_343_20009



BOUNDARY MAP
MAY 1971

Castillo de San Marcos

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_343_40000A



FORT MATANZAS ROAD APPROACH AREA TOPOGRAPHY APRIL 1934

Fort Matanzas

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_347_6002

GENERAL PLAN-PART OF THE MASTER PLAN 1939

Fort Matanzas

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_347_2000

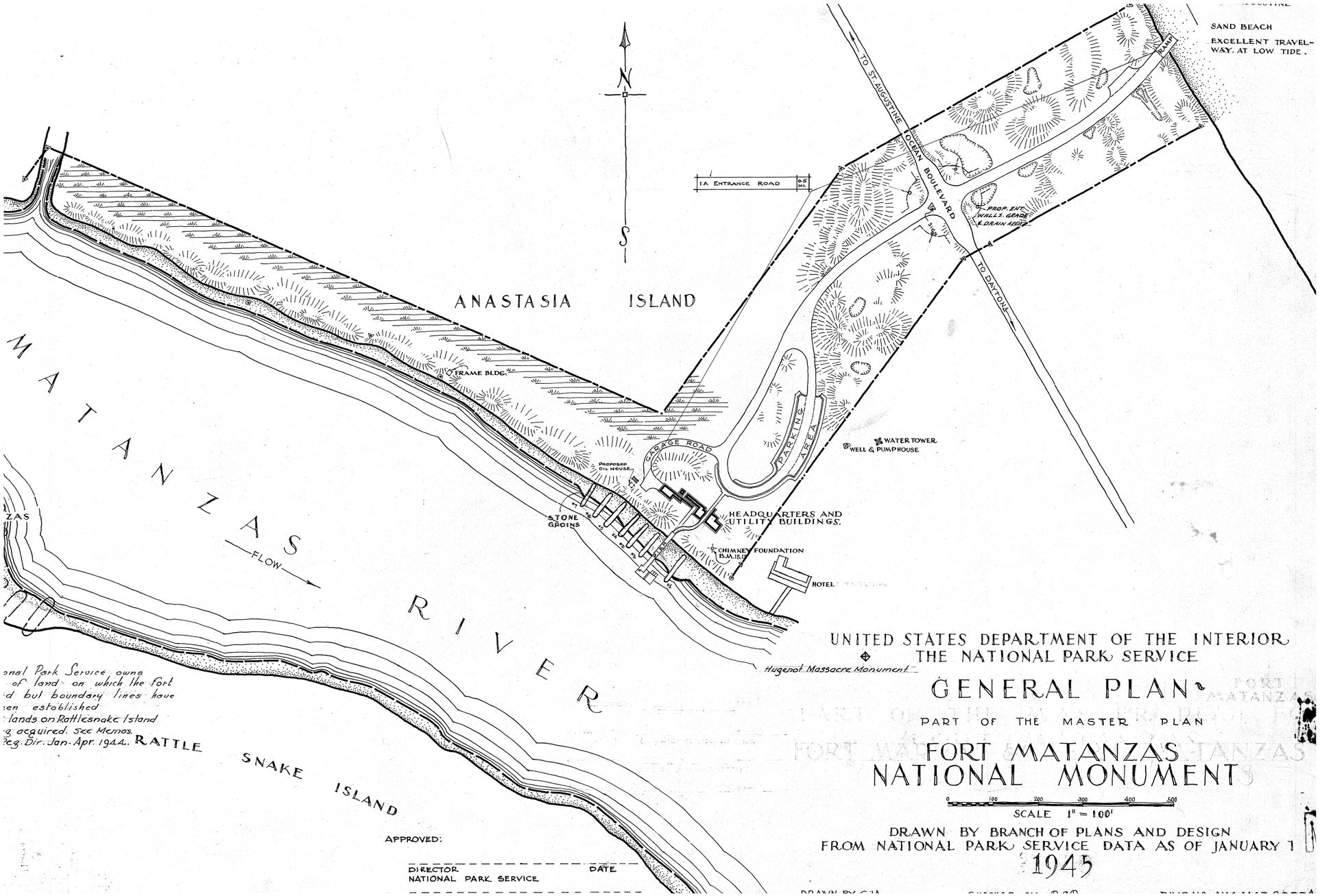
GENERAL PLAN-PART OF THE MASTER PLAN 1945

Fort Matanzas

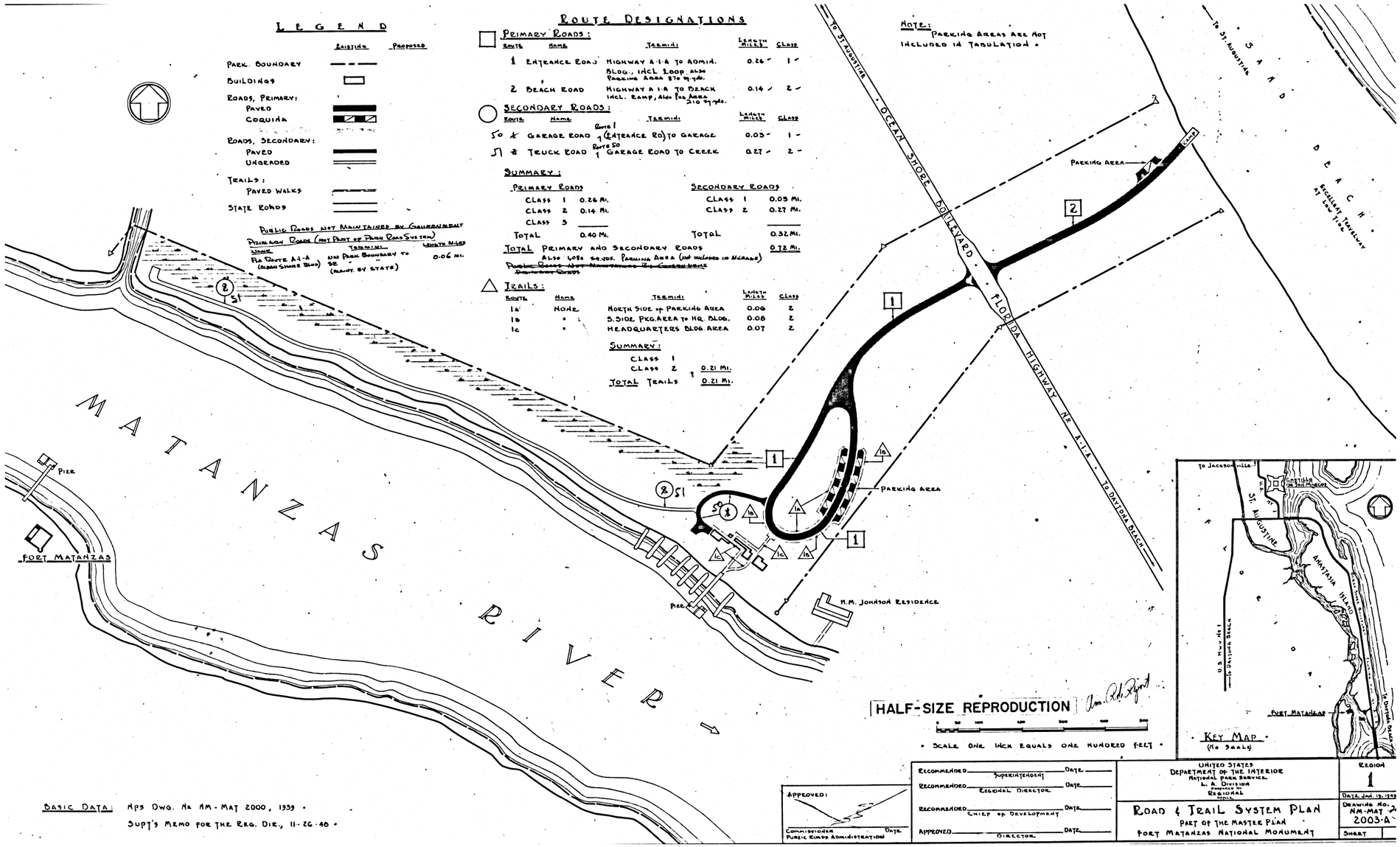
Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020



SOURCE: ETIC CASA_347_2000A



ROAD AND TRAIL SYSTEM JANUARY 1949

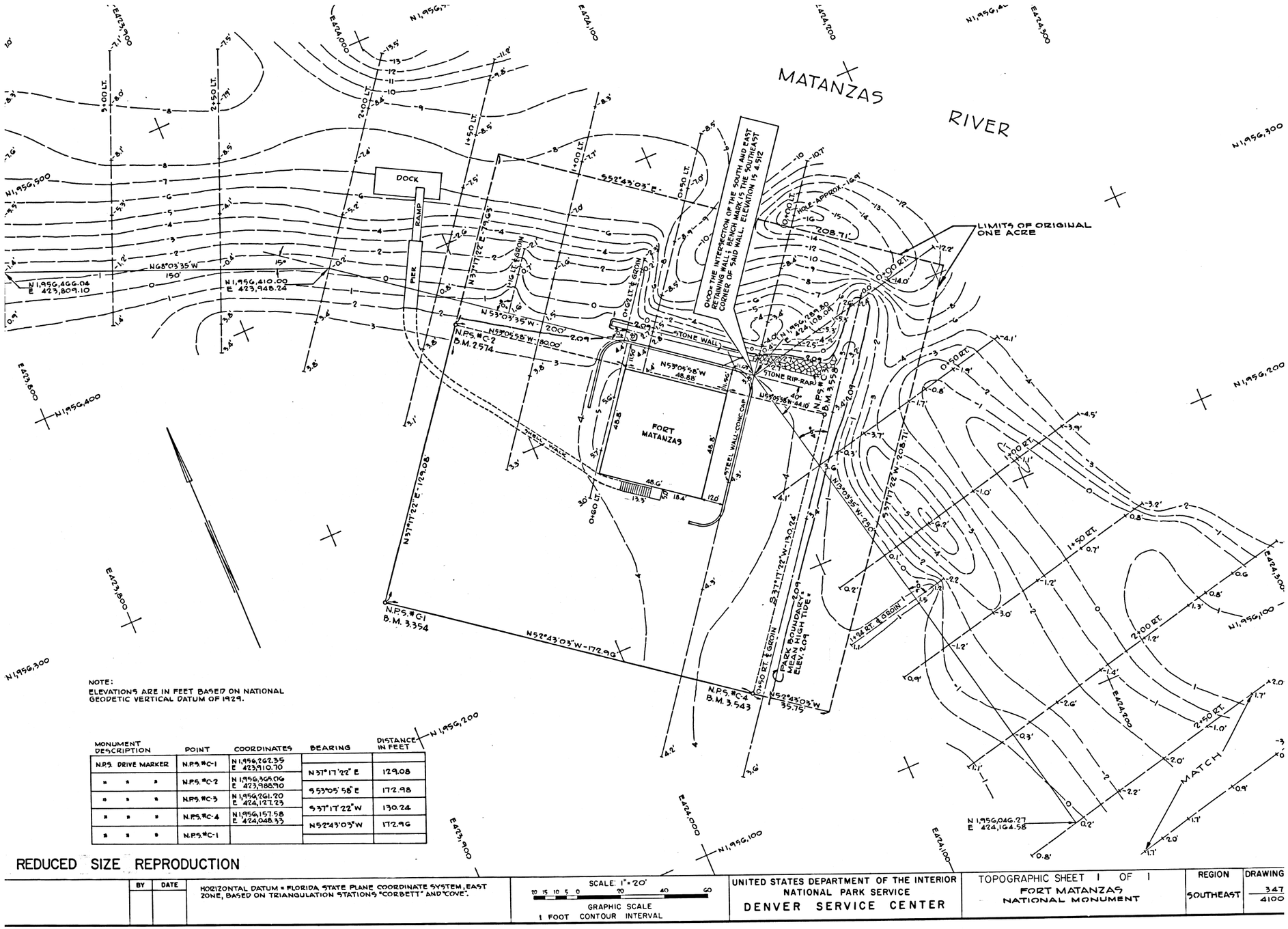
Fort Matanzas

Castillo de San Marcos and Fort Matanzas National Monument

Cultural Landscape Report

January 2020

SOURCE: ETIC CASA_347_2003A



NOTE:
ELEVATIONS ARE IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

MONUMENT DESCRIPTION	POINT	COORDINATES	BEARING	DISTANCE IN FEET
N.P.S. DRIVE MARKER	N.P.S. #C-1	N 1,956,262.35 E 423,910.70		
" " "	N.P.S. #C-2	N 1,956,368.06 E 423,988.90	N 37° 17' 22" E	129.08
" " "	N.P.S. #C-3	N 1,956,261.70 E 424,127.23	S 53°05' 58" E	172.98
" " "	N.P.S. #C-4	N 1,956,157.58 E 424,048.33	S 37° 17' 22" W	130.24
" " "	N.P.S. #C-1		N 52°43'03" W	172.96

REDUCED SIZE REPRODUCTION

BY	DATE	
		HORIZONTAL DATUM = FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, BASED ON TRIANGULATION STATIONS "CORBETT" AND "COVE".

SCALE: 1" = 20'
20 15 10 5 0 20 40 60
GRAPHIC SCALE
1 FOOT CONTOUR INTERVAL

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DENVER SERVICE CENTER

TOPOGRAPHIC SHEET 1 OF 1
FORT MATANZAS
NATIONAL MONUMENT

REGION: SOUTHEAST

DRAWING: 347 / 4100

TOPOGRAPHIC SHEET 1980

Fort Matanzas

Castillo de San Marcos and Fort Matanzas National Monument
Cultural Landscape Report
January 2020

SOURCE: ETIC CASA_347_41006

Appendix C

Vegetation

The vascular plants listed in the NPSpecies database, part of the NPS' IRMA (Integrated Resource Management Applications) Portal, for Castillo de San Marcos and Fort Matanzas National Monuments are listed below. This is mean to supplement observed species noted previously in this report.

Vascular plans present at Castillo de San Marcos National Monument:[536]

Scientific Name	Common Name
Acalypha gracilens	slender copperleaf
Adiantum capillus-veneris	common maidenhair
Amaranthus hybridus	green pigweed
Amaranthus viridis	slender amaranth
Ambrosia artemisiifolia	annual ragweed
Andropogon glomeratus	bushy bluestem
Andropogon virginicus	broomsedge
Asparagus aethiopicus	asparagus fern
Baccharis halimifolia	east baccharis
Bacopa monnieri	coastal waterhyssop
Bidens alba var. *radiata*	bidens, romerillo
Boerhavia diffusa	red spiderling
Capsella bursa-pastoris	shepherdspurse
Carya illinoinensis	nogal morado
Catharanthus roseus	Madagascar periwinkle
Celtis laevigata	sugar hackberry
Cephalanthus occidentalis	buttonbush
Chamaecrista nictitans var. *aspera*	partridge pea
Chamaesyce hirta	pillpod sandmat
Chamaesyce hypericifolia	graceful sandmat
Chamaesyce maculata	large spurge
Chamaesyce prostrata	blue weed
Chenopodium ambrosioides	Mexican tea
Cinnamomum camphora	camphor laurel
Cissus trifoliata	sorrelvine
Commelina erecta	erect dayflower
Conyza canadensis var. *canadensis*	Canadian horseweed
Conyza canadensis var. *pusilla*	Canadian horseweed
Coronopus didymus	lesser swinecress
Cycas revoluta	sago palm
Cynodon dactylon	bermudagrasspoule

Cyperus compressus	poorland flatsedge
Cyperus polystachyos	manyspike flatsedge
Cyperus retrorsus	pine barren flatsedge
Cyperus rotundus	chaguan humatag
Cyperus strigosus	stawcolored flatsedge
Cyperus surinamensis	tropical flatsedge
Dactyloctenium aegyptium	crowfoot grass
Desmodium incanum	tickclover
Dichondra carolinensis	Carolina ponysfoot
Digitaria bicornis	Asian crabgrass
Diodia virginiana	Virginia buttonweed
Drymaria cordata	chickweed
Eclipta prostrata	eclipta
Eleocharis flavescens	yellow spikerush
Eleusine indica	crowsfoot grass
Emilia sonchifolia	lilac tasselflower
Eragrostis elliottii	field lovegrass
Erigeron quercifolius	oakleaf fleabane
Eupatorium capillifolium	dogfennel
Eustachys petraea	pinewoods fingergrass
Forestiera segregata	Florida privet
Galactia volubilis	downy milkpea
Galium uniflorum	oneflower bedstraw
Gamochaeta purpurea	spoonleaf purple everlasting
Gaura angustifolia	south beeblossom
Geranium carolinianum	Carolina crane's-bill
Hedera helix	English ivy
Hemerocallis lilioasphodelus	lemon daylily
Hibiscus syriacus	althea
Houstonia procumbens	roundleaf bluet
Hydrocotyle bonariensis	largeleaf pennywort
Hydrocotyle verticillata	whorled marsh pennywort
Ilex vomitoria	yaupon
Impatiens balsamina	spotted snapweed
Indigofera spicata	creeping indigo
Ipomoea cordatotriloba	cotton morningglory
Juncus megacephalus	bighead rush
Juniperus virginiana	red cedar
Kyllinga brevifolia	shortleaf spikesedge
Lantana montevidensis	trailing shrubverbena
Lepidium virginicum	peppergrass
Linaria canadensis	Canada toadflax

Liquidambar styraciflua	sweetgum
Ludwigia octovalvis	Mexican primrosewillow
Lygodium japonicum	Japanese climbing fern
Magnolia grandiflora	bull-bay
Malvastrum corchorifolium	false mallow
Malvastrum coromandelianum	threelobe false mallow
Medicago lupulina	black medic
Medicago polymorpha	bur clover
Melia azedarach	Chinaberry
Melilotus albus	sweetclover
Melilotus indicus	annual yellow sweetclover
Morus alba	mulberry
Morus rubra	red mulberry
Oldenlandia corymbosa	flattop mille graines
Oplismenus hirtellus	bristle basketgrass
Oxalis corniculata	creeping oxalis,
Oxalis rubra	windowbox woodsorrel
Panicum repens	couch panicum grass
Parietaria floridana	Florida pellitory
Parietaria praetermissa	clustered pellitory
Parthenocissus quinquefolia	American ivy
Paspalum notatum var. *saurae*	bahiagrass
Paspalum urvillei	vasey grass
Phoradendron leucarpum	oak mistletoe
Phyla nodiflora	frog fruit
Phyllanthus tenellus	Mascarene Island leafflower
Phyllanthus urinaria	chamber bitter
Physalis walteri	Walter's groundcherry
Pilea microphylla	rockweed
Pittosporum tobira	Japanese cheesewood
Pleopeltis polypodioides var. *michauxiana*	resurrection fern
Pluchea odorata	marsh fleabane
Poa annua	annual blue grass
Portulaca amilis	Paraguayan purslane
Portulaca oleracea	akulikuli-kula
Portulaca pilosa	chisme
Pteris vittata	chinese brake
Ptilimnium capillaceum	herbwilliam
Pyrrhopappus carolinianus	Carolina desert chicory false dandelion
Quercus virginiana	live oak
Rhaphiolepis indica	Indian hawthorn
Richardia brasiliensis	tropical Mexican clover

Sabal palmetto	cabbage palm
Salvia lyrata	lyreleaf sage
Samolus valerandi ssp. *parviflorus*	seaside brookweed
Sapium sebiferum	chicken tree
Sesuvium portulacastrum	cencilla, shoreline seapurslane
Sideroxylon tenax	tough bully
Smilax auriculata	earleaf greenbrier
Smilax bona-nox	saw greenbrier
Solanum americanum	American black nightshade
Sonchus oleraceus	annual sowthistle
Spergularia marina	salt sandspurry
Spermacoce assurgens	woodland false buttonweed
Sphagneticola trilobata	Bay Biscayne creeping-oxeye
Sphenopholis obtusata	prairie wedgegrass
Sporobolus indicus var. *indicus*	smut grass
Stachys floridana	Florida betony
Stellaria media	chickweed
Stenotaphrum secundatum	St. Augustine grass
Symphyotrichum subulatum	east annual saltmarsh aster
Taraxacum officinale	blowball
Tillandsia recurvata	ballmoss
Tillandsia usneoides	Spanish moss
Tradescantia ohiensis	bluejacket
Trifolium repens	Dutch clover
Ulmus alata	winged elm
Vigna luteola	dalrymple vigna
Vitis aestivalis	summer grape
Youngia japonica	oriental false hawksbeard
Yucca aloifolia	aloe yucca
Zamia pumila	Coontie
Zea mays ssp. *mays*	Corn
Zephyranthes rosea	Cuban zephyrlily

Vascular plans present at Fort Matanzas National Monument:[537]

Scientific Name	Common Name
Ambrosia artemisiifolia	annual ragweed
Ampelopsis arborea	Peppervine
Andropogon glomeratus var. *hirsutior*	bushy bluestem
Andropogon glomeratus var. *pumilus*	bushy bluestem
Asimina parviflora	smallflower pawpaw
Atriplex cristata	crested saltbush
Avicennia germinans	black mangrove
Baccharis halimifolia	groundsel brush
Bacopa monnieri	coastal waterhyssop
Batis maritima	saltwort
Bidens alba var. *radiata*	bidens
Boerhavia diffusa	red spiderling
Borrichia frutescens	bushy seaoxeye
Cakile edentula ssp. *harperi*	Harper's searocket
Callicarpa americana	American beautyberry
Celtis laevigata	sugar hackberry
Cenchrus gracillimus	slender sandbur
Cenchrus spinifex	coastal sandbur
Centrosema virginianum	butterfly pea
Chamaecrista fasciculata	partridge pea
Chamaesyce bombensis	dixie sandmat
Chamaesyce hyssopifolia	hyssop spurge
Chamaesyce maculate	large spurge
Chenopodium ambrosioides	Mexican tea
Cirsium horridulum	yellow thistle
Cnidoscolus stimulosus	finger rot
Conyza canadensis var. *Canadensis*	Canadian horseweed
Croton glandulosus var. *glandulosus*	vente conmigo
Croton punctatus	gulf croton
Cynodon dactylon	bermudagrass
Cyperus esculentus	chufa flatsedge
Cyperus polystachyos	manyspike flatsedge
Cyperus retrorsus	pine barren flatsedge
Dactyloctenium aegyptium	crowfoot grass
Dichanthelium scabriusculum	woolly rosette grass
Digitaria filiformis var. *filiformis*	slender crabgrass
Distichlis spicata	desert saltgrass

537. Accessed online on 7/31/2017, https://irma.nps.gov/NPSpecies/Search/SpeciesList/FOMA.

Eleusine indica	crowsfoot grass
Eragrostis elliottii	field lovegrass
Eragrostis secundiflora ssp. *oxylepis*	red lovegrass
Erechtites hieracifolius	fireweed
Erigeron quercifolius	oakleaf fleabane
Eustachys petraea	pinewoods fingergrass
Fimbristylis spadicea	chestnut sedge
Gaillardia pulchella	firewheel
Galactia volubilis	downy milkpea
Galium hispidulum	coastal bedstraw
Gamochaeta antillana	delicate everlasting
Gaura angustifolia	south beeblossom
Helianthus debilis ssp. *debilis*	cucumberleaf sunflower
Heterotheca subaxillaris	camphorweed
Hydrocotyle bonariensis	largeleaf pennywort
Ilex vomitoria	yaupon
Ipomoea imperati	beach morningglory
Ipomoea pes-caprae	bayhops
Iresine rhizomatosa	Juda's bush
Iva frutescens	bigleaf sumpweed
Iva imbricata	seacoast marsh elder
Juncus dichotomus	forked rush
Juncus roemerianus	needlegrass rush
Juniperus virginiana var. *silicicola*	red cedar
Lantana camara	largeleaf lantana
Limonium carolinianum	American thrift
Medicago lupulina	black medic medic
Medicago polymorpha	bur clover
Melilotus albus	Bokhara-clover
Mikania cordifolia	Florida Keys hempvine
Monarda punctata	spotted beebalm
Muhlenbergia capillaris var. *filipes*	gulf muhly
Muhlenbergia capillaris var. *trichopodes*	cutover muhly
Myrica cerifera	southern wax myrtle
Nephrolepis cordifolia	Tuberous sword fern
Oenothera humifusa	seabeach evening primrose
Oplismenus hirtellus	bristle basketgrass
Opuntia pusilla	cockspur pricklypear
Opuntia stricta	erect pricklypear
Oxalis corniculata	creeping oxalis
Panicum amarum	bitter panicgrass
Parthenocissus quinquefolia	American ivy

Paspalum notatum var. *saurae*	bahiagrass
Paspalum setaceum	fringeleaf paspalum
Persea borbonia	redbay
Phyla nodiflora	frog fruit
Phyllanthus abnormis	abnormal leaflower
Physalis walteri	Walter's groundcherry
Pinus elliottii	slash pine
Pleopeltis polypodioides var. *michauxiana*	resurrection fern
Poa annua	annual blue grass
Polypremum procumbens	juniper-leaf
Prunus serotina var. *serotina*	black cherry
Pteridium aquilinum var. *pseudocaudatum*	tailed bracken
Pteris vittata	Chinese ladder brake
Quercus geminata	sand live oak
Quercus myrtifolia	myrtle oak
Quercus virginiana	live oak
Rhus copallinum	flameleaf sumac
Sabal palmetto	cabbage palm
Salsola kali ssp. *pontica*	Russian thistle
Salvia lyrata	lyreleaf sage
Sambucus nigra ssp. *canadensis*	American black elderberry
Sarcocornia perennis	chickenclaws
Serenoa repens	saw palmetto
Sesuvium portulacastrum	cencilla
Setaria parviflora	knotroot bristlegrass
Sida rhombifolia	arrowleaf sida
Sideroxylon tenax	tough bully
Smilax auriculata	earleaf greenbrier
Smilax bona-nox	saw greenbrier
Spartina alterniflora	Atlantic cordgrass
Spartina patens	marshhay cordgrass
Sphenopholis obtusata	prairie wedgegrass
Sporobolus virginicus	seashore dropseed
Stellaria media	chickweed
Stenaria nigricans var. *nigricans*	diamondflowers
Strophostyles helvola	amberique-bean
Suaeda linearis	annual seepweed
Teucrium canadense	American germander
Tillandsia recurvata	ballmoss
Tillandsia usneoides	Spanish moss
Tradescantia ohiensis	bluejacket
Uniola paniculata	seaoats

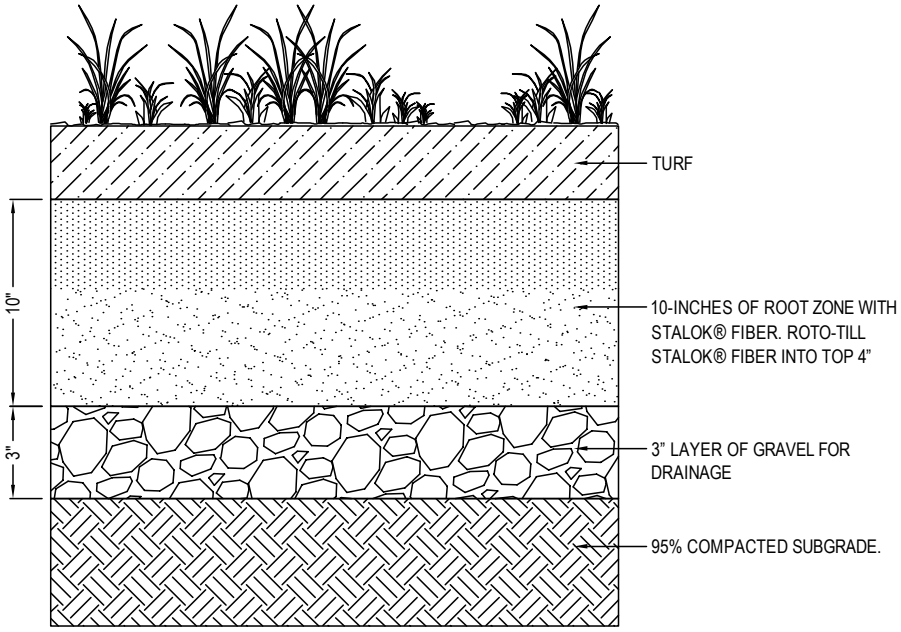
Verbena officinalis ssp. *halei*	Texas vervain
Vigna luteola	dalrymple vigna
Vitis aestivalis	summer grape
Vitis rotundifolia	muscadine
Zamia pumila	coontie
Zanthoxylum clava-herculis	Hercules' club

Appendix D

Product Descriptions and Technical Drawings

The following appendix includes product information for materials referenced in the Treatment and Use section of this document.

STABILIZER SOLUTIONS, INC.
33 S 28TH ST
PHOENIX, AZ 85034
TOLL FREE: 1-800-336-2468
FAX: (602) 225-5902
www.stabilizersolutions.com



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4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 4934-006.

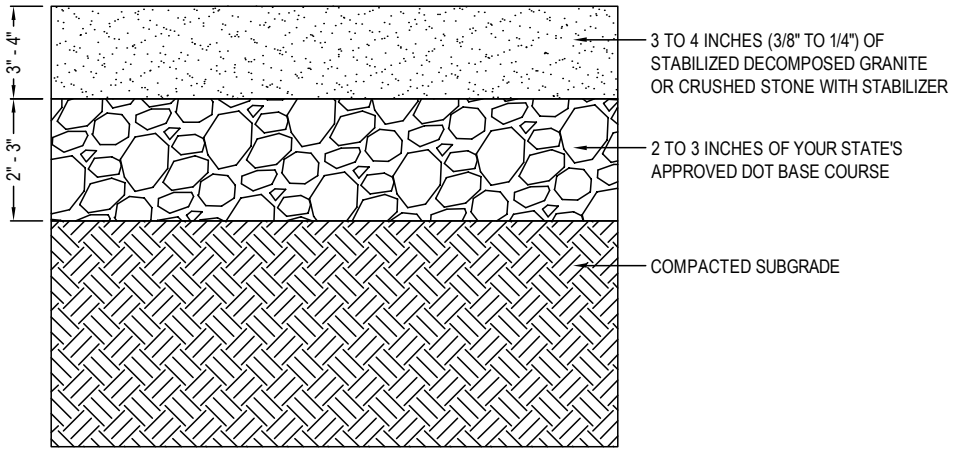
STALOK FIBER

REINFORCEMENT FOR TURF PARKING, FIRELANES, EVENTS

4934-006 REVISION DATE 02/05/2015

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PHOENIX, AZ 85034
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STABILIZED DECOMPOSED GRANITE

PEDESTRIAN ACCESS DETAIL

4934-001 REVISION DATE 02/05/2015

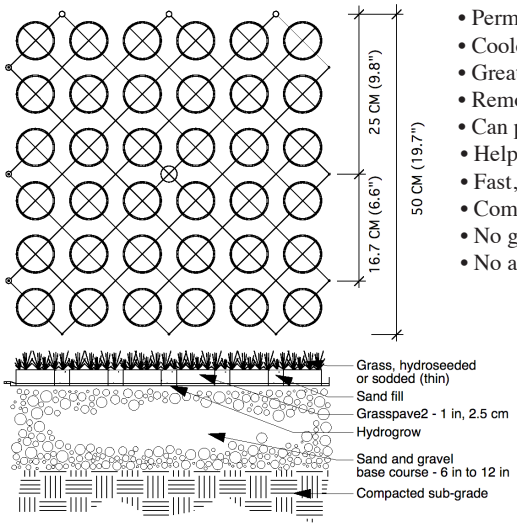
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CADdetails.com

Grasspave2

100% Grass Covered Porous Pavement

Grasspave2 Flexible Plastice Porous Pavement

Grasspave2 protects and enhances the environment in three ways: First, made from 100% recycled plastic, Grasspave2 keeps common consumer and industrial products from going into landfills. Second, grass paving directly improves the environment by recharging water tables on site (reducing flooding hazards downstream), reducing sources of oils and solvents from asphalt, absorbing carbon dioxide, and creating oxygen. Third, it enhances the beauty and quality of the built environment – replacing hot asphalt paved areas with cool, sparking green lawn-like
Product Description



Grasspave2 has thin-walled independent plastic rings connected by an interlocking geogrid structure, which, because it is installed below the surface, is invisible in the completed project. While the rings are rigid, the grid itself is flexible, which makes it easy to install on uneven grades, and reduces usual cut and fill requirements.

The rings transfer loads from the surface to the grid structure and engineered base course material below, thus preventing compaction of the upper root zone of the grass. A single ring supports small loads, such as shoes; several rings support tires and large loads.

The rings also act to contain the root zone medium (sand) and prevent lateral migration away from tires, feet, or other loads. This protects the grass root system, enabling roots to grow deep into the porous base course. The result is healthy, green turf at the surface.

One person can easily install the Grasspave2 rolls at a rate of 70m2 (750 ft2) per hour, plus time for base course preparation and grass installation (seeding, sod or sprigging). Step-by-step instructions are included in our Installation Instructions, which accompany each order.

Features and Benefits

- Allows 100% grass coverage instead of asphalt
- Made from 100% post consumer plastic
- High strength to weight load-bearing capacity
- Supports vehicular and pedestrian traffic
- Maximum porosity
- Low to zero runoff
- Free air/water movement
- Permits more trees
- Cooler site
- Greater oxygen
- Removes air pollutants
- Can preserve existing trees
- Helps to meet “Green Coverage Codes”
- Fast, low cost installation
- Competes in cost with asphalt paving
- No gutter and rain system needed
- No added land required for detention facilities
- Lower life cycle costs

Applications

- Church/employee parking
- Overflow and event parking
- Golf cart paths
- Residential driveways
- Firelanes

Specifications

Unit Size – 20”x 20”x 1” (50 x 50 x 2.5cm)
Unit Weight – 18oz (510 grams)
Strength – 15,940 psi (109,906 kPa)
Connector Pull Apart Strength (Tensile) - 458 lbf/in
Color – Black
Resin – 100% recycled HDPE with 3% carbon black
Shipped in Rolls (431 sq ft standard, other roll sizes available)
92% Void Space (8% plastic by volume)

Invisible Structures, Inc.
1600 Jackson Street, Suite 310
www.invisiblestructures.com
Golden CO, 80401
800-233-1510
Fax: 800-233-1522
©ISI, US Patent
#5,250,340

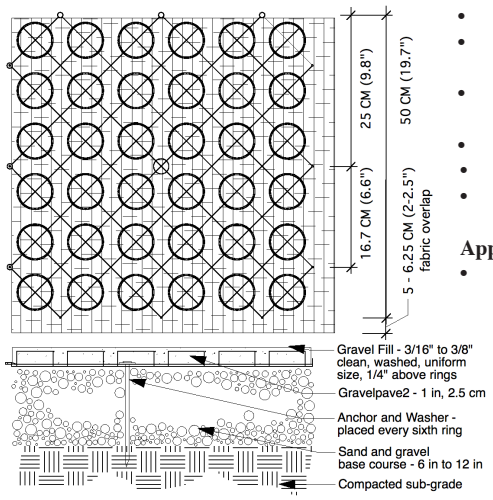


Gravelpave2

Gravel Containment Porous Pavement

Grasspave2 Flexible Plastic Porous Pavement

Gravelpave2 porous pavement allows you to park, drive, walk, or ride on a beautiful decorative gravel surface. Gravelpave2 consists of a geotextile fabric injection molded to the ring and grid structure. Gravelpave2 comes in 4 standard colors to match your aggregate fill. Gravelpave2 also requires a base course.



Gravelpave2 is a structure to provide heavy load bearing support and true containment of gravel to create a porous surface with unlimited traffic volume and/or duration time for parking. The system can be used for storage and filtration of rainwater. For example, a cross-section with an 12" deep base course (at 20% void space) and the one inch of Gravelapve2 (at 35%) would store 2.75" of rain. Although bacteria concentrations are lower than with Grasspave2, polluted runoff and vehicle drippings are consumed prior to reaching the water table.

CSI 32 12 43
Gravelpave2 is listed in the Construction Specifiers Master Spec Format in Section 32 12 43. You may also place it in the 1995 Master Format Version in section 02795.

Base Course
Base thickness is determined by matching bearing capacity of existing soils with design loads. For instance, a golf cart path on sand soils may not need base course, while a fire lane over silt or expansive clay may need 12" of gravel over geogrid. Base must be determined by Engineer, or by site testing.

Fill Material
Choose your gravel fill, from local sources, to match the color of the Gravelpave2 mats, availability, and to meet the following criteria:

- Clean/Washed
- Sharp, hard and angular
- 3/16" to 3/8" uniform

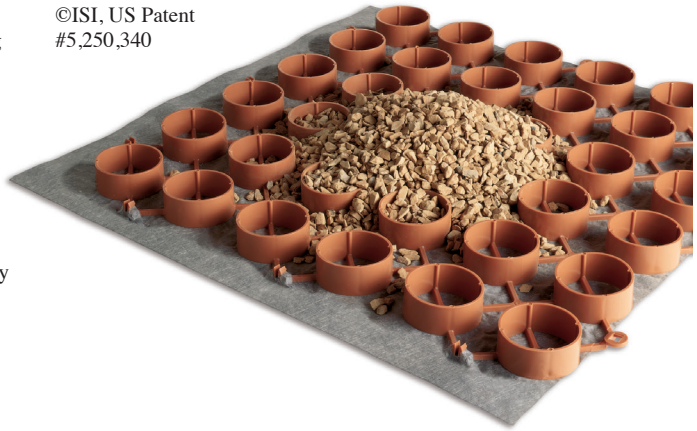
Colors
Gravelpave2 is available in 4 standard colors: Tan, Black, Gray, and Terra Cotta Non-woven geotextile fabric backing may vary depending on the supplier. Custom colors available for an additional price.

Benefits
- Pervious Load Bearing Surface
- Stormwater Pollution Filtration and Treatment
- Heat Energy Reflection Reduction, "Cool" Surface
- Tree Growth within Parking Areas
- 5,721 psi Compressive Strength
- Large Rolls for Easy Installation

Applications
- All Parking Aisles and Bays
- Handicap Parking Spaces
- Automobile and Truck Storage Yards
- All Service and Access Drives
- Loading Dock Areas
- Trails for Multiple Uses
- Boat Ramps
- Outdoor Bulk Storage Areas
- Infiltration Basins
- High-Use Pedestrian Areas

Specifications
Unit Size – 20"x 20"x 1" (50 x 50 x 2.5cm)
Unit Weight – 18oz (510 grams)
Strength – 15,940 psi (109,906 kPa)
Connector Pull Apart Strength (Tensile) - 458 lbf/in
Color – Black
Resin – 100% recycled HDPE
Shipped in Rolls (431 sq ft standard, other roll sizes available)

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1600 Jackson Street, Suite 310
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Golden CO, 80401
800-233-1510
Fax: 800-233-1522
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Product Description

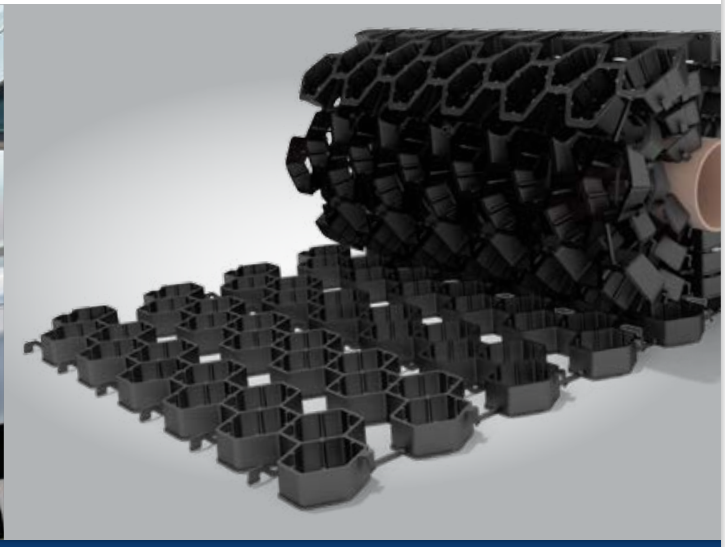
EZ Roll™ Grass Pavers

A turf reinforcement, load transferring paving system designed to be placed directly on an engineer specified compacted road base.

This system is designed to transfer vehicle weight directly to the supportive base course and prevent soil compaction. The web of interconnected honeycomb cells provides resistance from vehicular load as well as lateral containment that prevents the soil compaction that would inhibit healthy root growth. This system also provides a porous condition that allows rapid absorption of storm water. When properly installed according to the instructions in this guide, EZ Roll™ Grass Pavers provide a structural, green surface capable of supporting H-20 loads in a saturated condition. The 1" deep hexagonal cells of the EZ Roll™ Grass Paver are arranged in a double-row configuration that spans the width of the roll. This configuration reduces the risk of grid displacement from the torsional effects of the turning tires of a stationary vehicle. EZ Roll™ Grass Pavers have a compressive strength of 57,888 psf in an empty condition and greater than 500,000 psf when filled. The EZ Roll™ Grass Paver system has been used and accepted across the country for a wide variety of projects including emergency vehicle access purposes.

Additional information, details, and specifications can be found at
http://www.ndspro.com/permeable-pavers/grass-pavers/ez-roll-grass-pavers
For further technical support or assistance, contact: techservice@ndspro.com





NDS® We put water in its place

Visit **ndspro.com/pavers** for specs, detail drawings and case studies 3

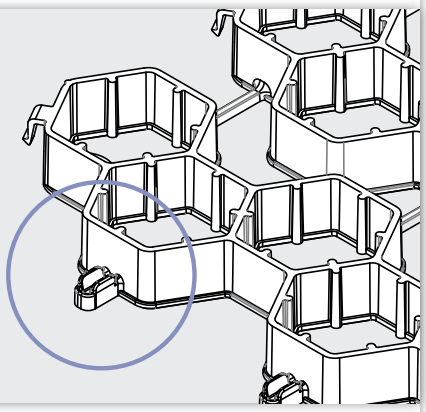
Product Description

Design Theory

The EZ Roll™ Grass Paver comes in pre-assembled rolls, which means it is easy to roll out, decreasing installation time and increasing efficiency.

EZ Roll™ Grass Paver has been tested for compressive strength at 57,888 psf bare product, meaning that EZ Roll™ does not rely on the fill material for load carrying.

Connections between rows of EZ Roll™ are secure due to unique side-to-side and end-to-end clips that minimize the paver mat movement and separation due to lateral and horizontal pressure. These sturdy locking clips prevent paver displacement or mat failure that could result from traffic load movement or changing ground conditions.



Recommended Use

Light Loads:
Golf Cart Paths
Jogging Tracks
Bike Paths
ATV Paths
Equestrian Parks
Trail Reinforcements
Runoff Areas

Medium Loads:
Roadway Shoulders
Residential Driveways
Parking Lots
Overflow Parking Area
Truck & Cart Wash-Down Areas
RV and Boat Access

Heavy Loads/Fire Lane:
Emergency Vehicle Access Roads
Service Vehicle Utility Roads
Equipment Yards

Non-load Applications:
Erosion Control on Slopes (staking recommended)
Erosion Control in Swales (staking recommended)

Not Recommended for the Following:
Traffic on slopes exceeding a 10% grade
To support tread driven vehicles





NDS® We put water in its place

Visit **ndspro.com/pavers**

Product Description

The EZ Roll™ Grass Pavers from NDS is the latest and most advanced product of its type on the market. NDS has used its years of experience in the landscaping industry to create a product with all of the most desirable features.

The EZ Roll™ Grass Paver has a combined series of 72 nested hexagonal cells per paver cell with 24 connecting clips. This unique combination provides superior stability and durability.

Product Specifications

Material. 100% recycled HDPE plastic (50% pre-consumer 50% post-consumer). HDPE is rugged, flexible and ideally suited for outside exposure and longevity. NDS uses UV inhibitors in the polymer structure to prevent breakdown in the strength of the paver.

Manufacturing. Manufactured in Lindsay, CA.

Recyclability. 100% recyclable. Please recycle whenever possible.

Paver Size. Each 24" x 24" panel contains 72, 2¼" nested hexagonal cells. Panels are integrated with crosslinks and clips to form rolls. Part No. EZ4X24 has dimensions of 4' x 24' per roll and EZ4X150 has dimensions of 4' x 150'. Custom size rolls available upon request.

Weight Per Unit. 2.31 pounds per 24" x 24" section.

Paver Details. The top surface of the hexagonal cell walls is smooth and devoid of notches or grooves. The bottom surface of the paver mat has over 80% open area for increased permeability.

Assembly Mechanism. 12 lateral snap locks per panel.

Chemical Resistance. EZ Roll™ Pavers have superior chemical resistance and are totally inert.

Compressive Strength. 57,888 lbs. (psf.) which is equal to 414 lbs. (psi.) For detailed specs see the Technical Specification part of this guide.

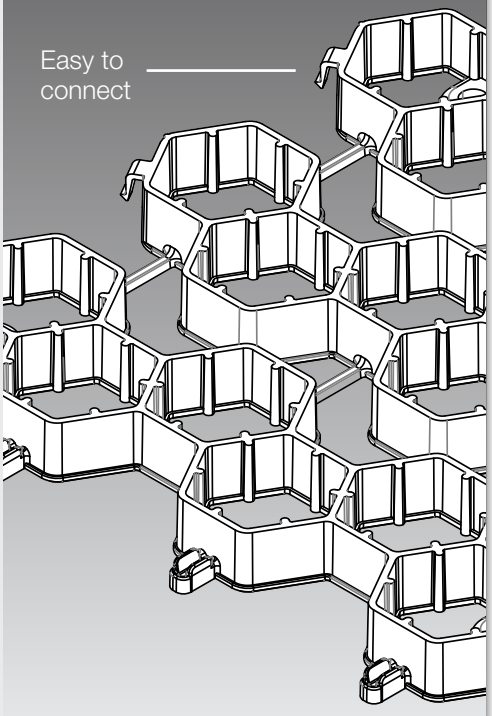
Unique Product Features. EZ Roll™ Pavers feature an easy to install top down locking feature. This locking mechanism allows pavers to be installed quickly and easily.

Empty cells have a compressive strength of

57,888 psf

Product ships in large rolls for easy rollout

Easy to connect



Installation Guidelines

Base course options

NDS®
We put water in its place

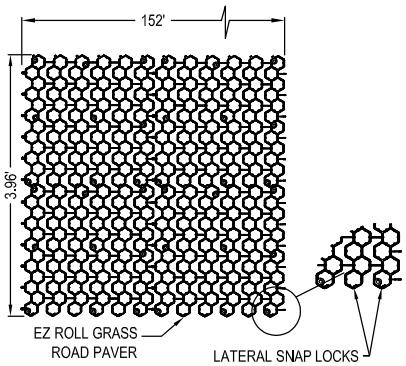
NDS, INC.
851 NORTH HARVARD AVE.
LINDSAY, CA 93247
TOLL FREE: 1-800-726-1994
PHONE: (559) 562-9888
FAX: (559) 562-4488
www.ndspro.com

EZ ROLL GRASS PAVER PRODUCT DESCRIPTION

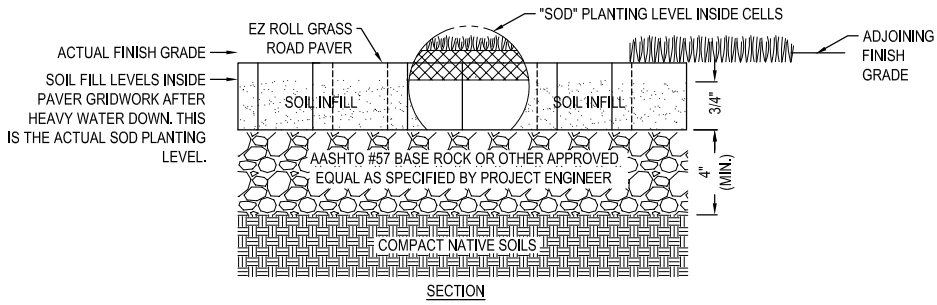
STOCK ROLL SIZE'S:	3.96'W X 24'L (95.1 SF) 3.96'W X 152'L(601.6 SQ. FT.)
CUSTOM SIZES AVAILABLE UPON REQUEST:	1'-6" X 152' (228 SQ. FT.) 2' X 152' (304 SQ. FT.)
NESTED HONEYCOMB CELL:	57, 888 PSF
LAYOUT COMPRESSIVE	402 PSI
STRENGTH (OPEN CELL NO FILL)	EXCEEDS H2O LOADING

GRASS SEED OR SOD: TYPE TO BE AS SPECIFIED IN THE CONTRACT DOCUMENTS OR BY DESIGN LANDSCAPE ARCHITECT.

SOIL INFILL: THE COMPOSITION OF THE MATERIAL WILL BE BASED ON LOCAL CONDITIONS AND DETERMINED BY THE LANDSCAPE ARCHITECT OR AS SPECIFIED IN THE CONTRACT DOCUMENTS



PLAN VIEW



SECTION

NOTES:
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EZ ROLL GRASS PAVERS

LIGHT LOAD

NDS S5
KEY COMPONENT
www.ndspro.com/s5

REVISION DATE 8-24-2015

Base course options (cont.):

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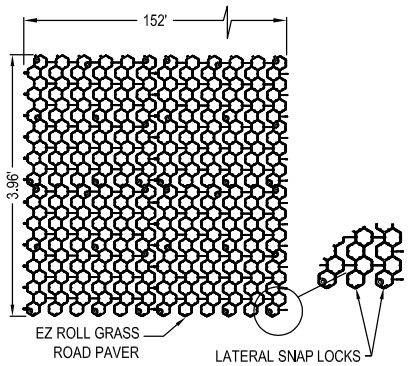
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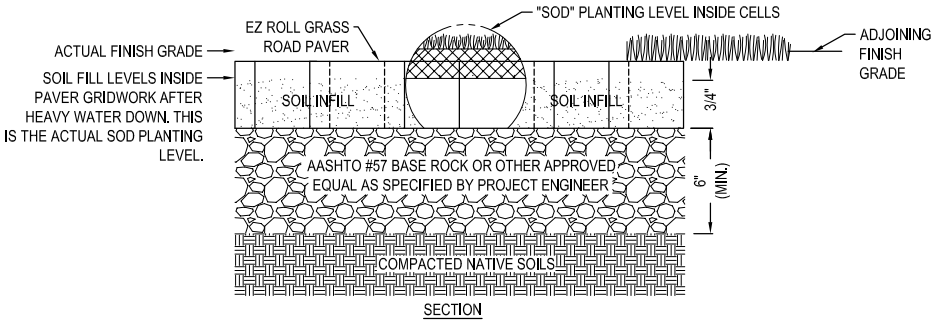
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NESTED HONEYCOMB CELL:	57, 888 PSF
LAYOUT COMPRESSIVE STRENGTH (OPEN CELL NO FILL)	402 PSI EXCEEDS H2O LOADING

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EZ ROLL GRASS PAVERS
MEDIUM LOAD

NDS S5
KEY COMPONENT
www.ndspro.com/s5

REVISION DATE 8-24-2015

Installation Guidelines

Base course options (cont.):

NDS
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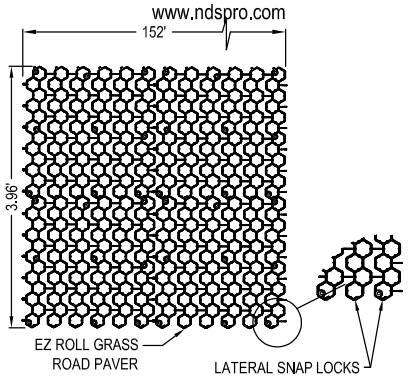
NDS, INC.
851 NORTH HARVARD AVE.
LINDSAY, CA 93247
TOLL FREE: 1-800-726-1994
PHONE: (559) 562-9888
FAX: (559) 562-4488
www.ndspro.com

EZ ROLL GRASS PAVER PRODUCT DESCRIPTION

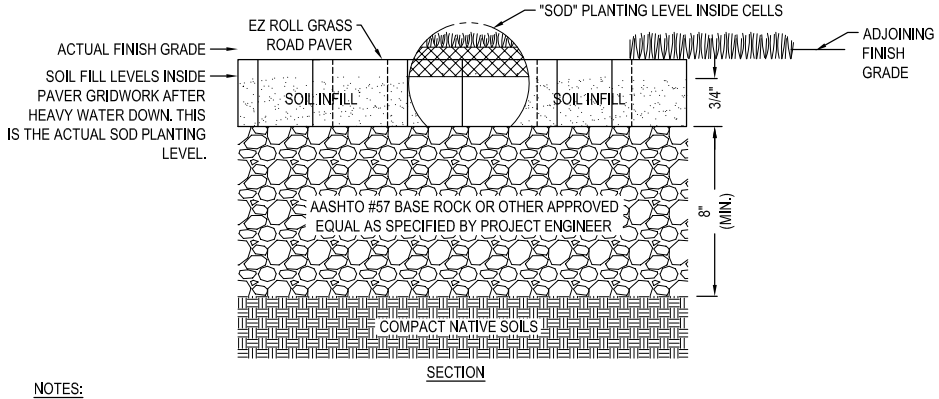
STOCK ROLL SIZE'S:	3.96'W X 24'L (95.1 SF) 3.96'W X 152'L(601.6 SQ. FT.)
CUSTOM SIZES AVAILABLE UPON REQUEST:	1'-6" X 152' (228 SQ. FT.) 2' X 152' (304 SQ. FT.)
NESTED HONEYCOMB CELL:	57, 888 PSF
LAYOUT COMPRESSIVE STRENGTH (OPEN CELL NO FILL)	402PSI EXCEEDS H2O LOADING

GRASS SEED OR SOD: TYPE TO BE AS SPECIFIED IN THE CONTRACT DOCUMENTS OR BY DESIGN LANDSCAPE ARCHITECT.

SOIL INFILL: THE COMPOSITION OF THE MATERIAL WILL BE BASED ON LOCAL CONDITIONS AND DETERMINED BY THE LANDSCAPE ARCHITECT OR AS SPECIFIED IN THE CONTRACT DOCUMENTS



PLAN VIEW



SECTION

NOTES:
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EZ ROLL GRASS PAVERS
FIRE/HEAVY LOAD

NDS S5
KEY COMPONENT
www.ndspro.com/s5

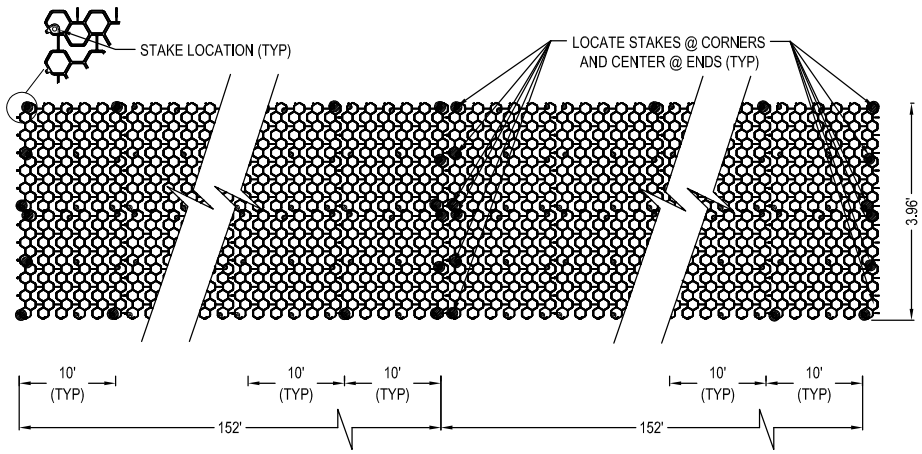
REVISION DATE 8-24-2015

Installation Guidelines

Staking Recommendations

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www.ndspro.com



PLAN VIEW

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2. THE DIAGRAM ABV. IS DESIGNED FOR STRAIGHT LINE RUNS. MITERS, CUTS AND DIRECTIONAL CHANGES MAY REQUIRE ADDITIONAL STAKES. CONSULT YOUR LOCAL NDS DISTRIBUTOR, NDS REPRESENTATIVE OR CONTACT NDS TECHNICAL SERVICES @ NUMBER LISTED BLW.
3. STAKES ARE NOT INCLUDED, STAKES ARE REQUIRED TO BE ORDERED SEPARATELY THROUGH YOUR AUTHORIZED NDS REPRESENTATIVE USING PART # GP STAKE
4. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
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EZ ROLL GRASS PAVERS
STAKING

NDS S5
KEY COMPONENT
www.ndspro.com/s5

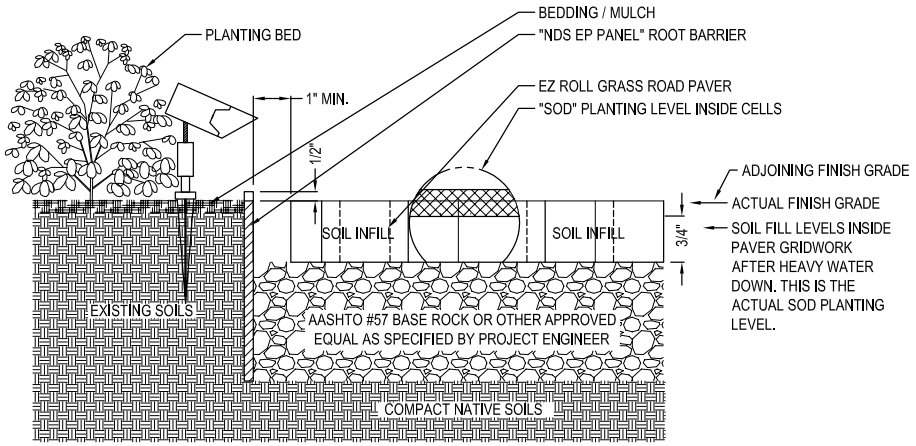
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Installation Guidelines

Paver Assembley and Installation

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FAX: (559) 562-4488
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SECTION

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5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.caddetails.com/info AND ENTER REFERENCE NUMBER 558-136A.

EZ ROLL GRASS PAVERS
EDGING, TYPE 2

NDS S5
KEY COMPONENT
www.ndspro.com/s5

REVISION DATE 8-24-2015

Product Description

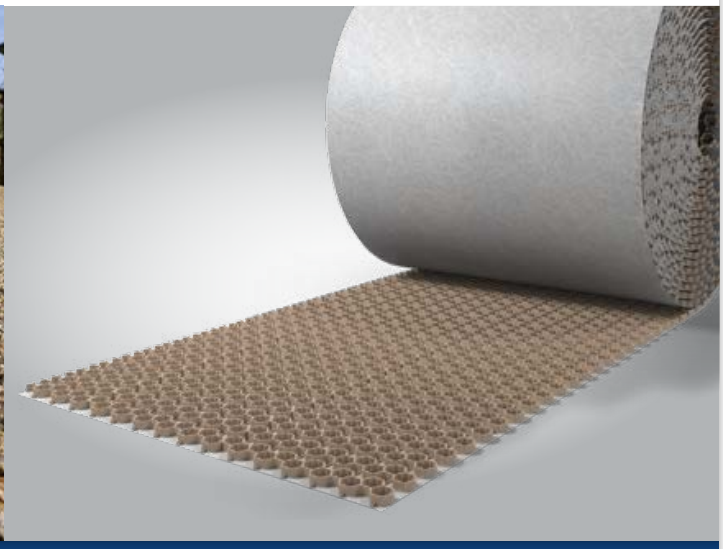
EZ Roll™ Gravel Pavers

A turf reinforcement, load transferring paving system designed to be placed directly on an engineer specified compacted road base.

This system is designed to transfer vehicle weight directly to the supportive base course and prevent soil compaction. The web of interconnected honeycomb cells provides resistance from vehicular load as well as lateral containment that prevents soil compaction. This system also provides a porous condition that allows rapid absorption of storm water. When properly installed according to the instructions in this guide, EZ Roll™ Gravel Pavers provide a structural surface capable of supporting H-20 loads in a saturated condition. The 1" deep hexagonal cells of the EZ Roll™ Gravel Paver are arranged in a double-row configuration that spans the width of the roll. This configuration reduces the risk of grid displacement from the torsional effects of the turning tires of a stationary vehicle. EZ Roll™ Gravel Pavers have a compressive strength of 57,888 psf in an empty condition and greater than 500,000 psf when filled. The EZ Roll™ Gravel Paver system has been used and accepted across the country for a wide variety of projects including emergency vehicle access purposes.

Additional information, details, and specifications can be found at
http://www.ndspro.com/permeable-pavers/Gravel-pavers/ez-roll-gravel-pavers
For further technical support or assistance, contact: techservice@ndspro.com





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Visit **ndspro.com/pavers** for specs, detail drawings and case studies 3

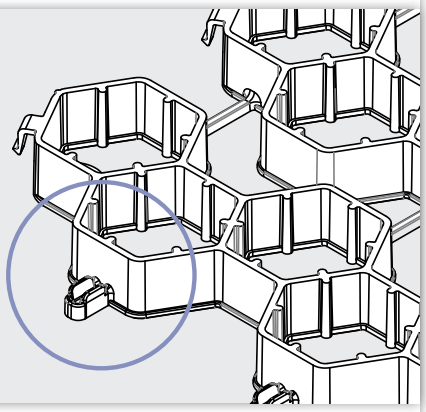
Product Description

Design Theory

The EZ Roll™ Gravel Paver comes in pre-assembled rolls, which means it is easy to roll out, decreasing installation time and increasing efficiency.

EZ Roll™ Gravel has been tested for compressive strength at 57,888 psf bare product, meaning that EZ Roll™ does not rely on the fill material for load carrying.

Connections between rows of EZ Roll™ are secure due to unique side-to-side and end-to-end clips that minimize the paver mat movement and separation due to lateral and horizontal pressure. These sturdy locking clips prevent paver displacement or mat failure that could result from traffic load movement or changing ground conditions.



Recommended Use

Light Loads:
Golf Cart Paths
Jogging Tracks
Bike Paths
ATV Paths
Equestrian Parks
Trail Reinforcements

Medium Loads:
Roadway Shoulders
Residential Driveways
Parking Lots
Overflow Parking Area
Truck & Cart Wash-Down Areas
RV and Boat Access

Heavy Loads/Fire Lane:
Emergency Vehicle Access Roads
Service Vehicle Utility Roads
Equipment Yards

Non-load Applications:
Erosion Control on Slopes (staking recommended)
Erosion Control in Swales (staking recommended)

Not Recommended for the Following:
Traffic on slopes exceeding a 10% grade
To support tread driven vehicles





Product Description

The EZ Roll™ Gravel Pavers from NDS is the latest and most advanced product of its type on the market. NDS has used its years of experience in the landscaping industry to create a product with all of the most desirable features.

The EZ Roll™ Gravel Paver has a combined series of 72 nested hexagonal cells per paver cell with 24 connecting clips. This unique combination provides superior stability and durability.

Product Specifications

Material. 100% recycled HDPE plastic (50% pre-consumer 50% post-consumer). HDPE is rugged, flexible and ideally suited for outside exposure and longevity. NDS uses UV inhibitors in the polymer structure to prevent breakdown in the strength of the paver.

Color. EZ Roll™ Gravel is available in tan, black, brick red, and gray to provide design flexibility.

Manufacturing. Manufactured in Lindsay, CA.

Recyclability. 100% recyclable. Please recycle whenever possible.

Paver Size. Each 24" x 24" panel contains 72, 2¼" nested hexagonal cells. Panels are integrated with crosslinks and clips to form rolls. Part No. EZ4X150 has dimensions of 4' x 150' per roll. Custom size rolls available upon request.

Weight Per Unit. 2.31 pounds per 24" x 24" section.

Paver Details. The top surface of the hexagonal cell walls is smooth and devoid of notches or grooves. The bottom surface of the paver mat has over 80% open area for increased permeability.

Assembly Mechanism. 12 lateral snap locks per panel.

Chemical Resistance. EZ Roll™ Pavers have superior chemical resistance and are totally inert.

Compressive Strength. 57,888 lbs. (psf.) which is equal to 414 lbs. (psi.) For detailed specs see the Technical Specification part of this Guide.

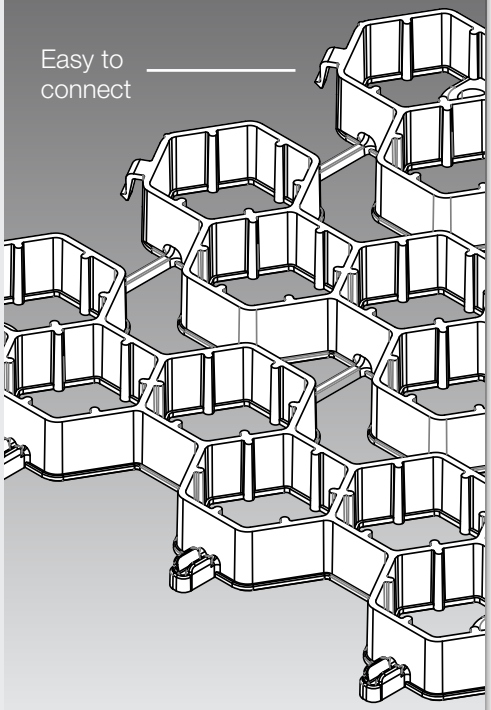
Unique Product Features. EZ Roll™ Pavers feature an easy to install top down locking feature. This locking mechanism allows pavers to be installed quickly and easily.

Empty cells have a compressive strength of

57,888 psf

Product ships in large rolls for easy rollout

Easy to connect



Installation Guidelines

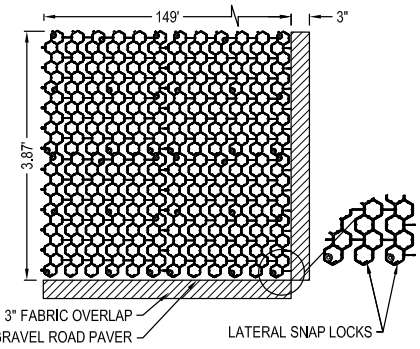
Base course options

NDS®
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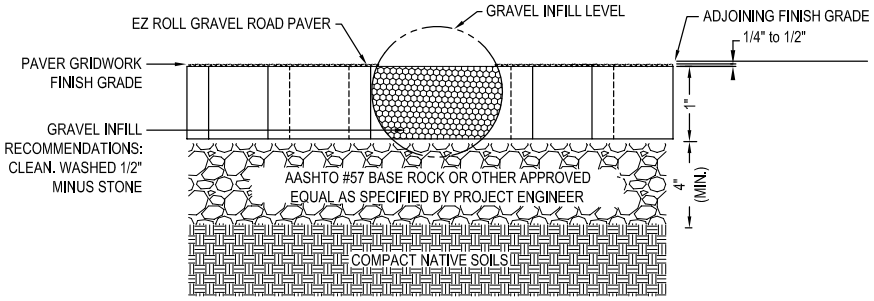
NDS, INC.
851 NORTH HARVARD AVE.
LINDSAY, CA 93247
TOLL FREE: 1-800-726-1994
PHONE: (559) 562-9888
FAX: (559) 562-4488
www.ndspro.com

EZ ROLL™ GRAVEL PAVER PRODUCT DESCRIPTION

CELL SIZE:	2-1/4" HEXAGONAL CELLS
STOCK ROLL SIZE'S:	3.87'W X 149'L (577 SQ. FT.)
NESTED HONEYCOMB CELL:	57, 888 PSF
LAYOUT COMPRESSIVE STRENGTH (OPEN CELL NO FILL)	402 PSI EXCEEDS H2O LOADING



PLAN VIEW



SECTION

NOTES:
1. EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.
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EZ ROLL GRAVEL PAVERS
LIGHT LOAD

NDS S5
KEY COMPONENT
www.ndspro.com/s5

REVISION DATE 8-24-2015

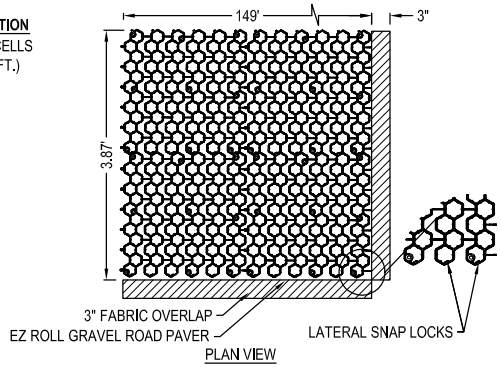
Base course options (cont.):

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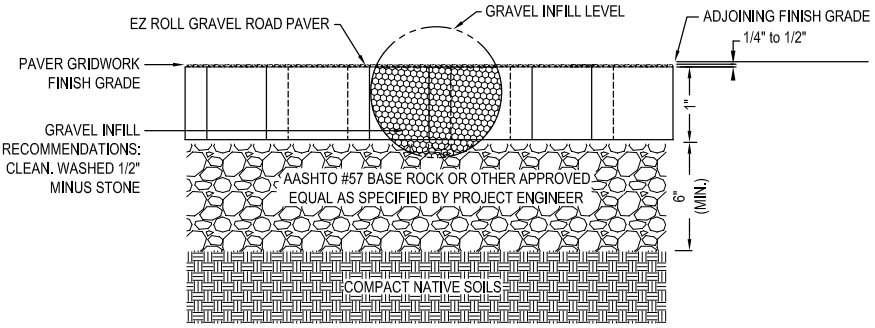
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LAYOUT COMPRESSIVE	402 PSI
STRENGTH (OPEN CELL NO FILL)	EXCEEDS H2O LOADING



PLAN VIEW



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EZ ROLL GRAVEL PAVERS
MEDIUM LOAD

NDS S5
KEY COMPONENT
www.ndspro.com/s5

REVISION DATE 8-24-2015

Installation Guidelines

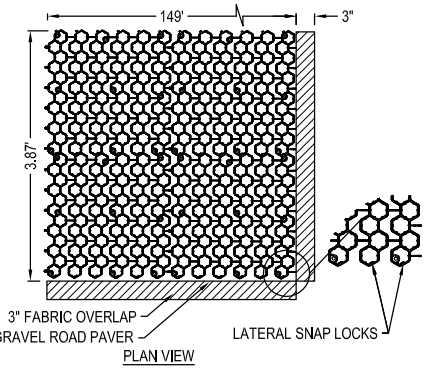
Base course options (cont.):

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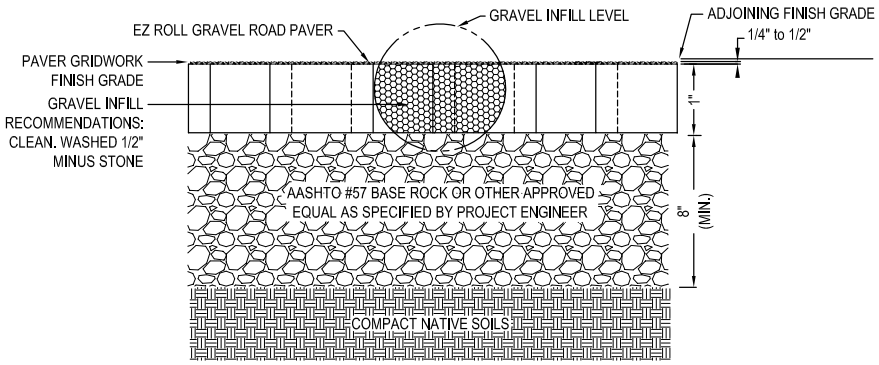
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EZ ROLL GRAVEL PAVERS
FIRE/HEAVY LOAD

NDS S5
KEY COMPONENT
www.ndspro.com/s5

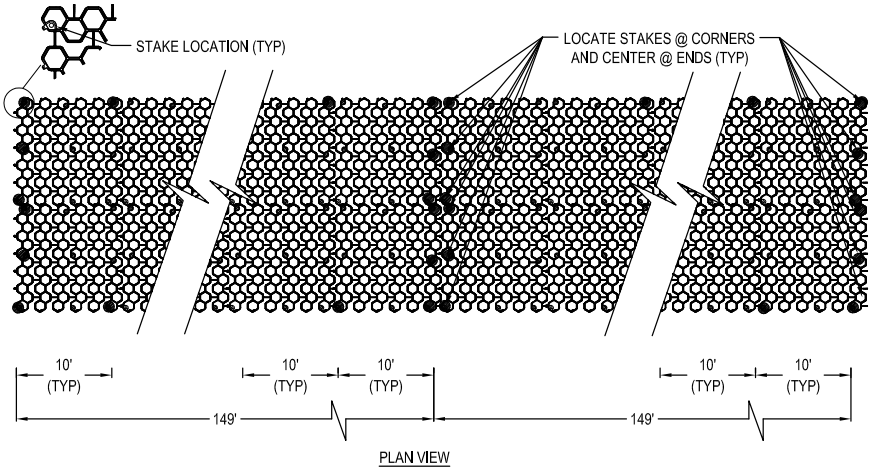
REVISION DATE 8-24-2015

Installation Guidelines

Staking Recommendations

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PLAN VIEW

NOTES:
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3. STAKES WILL BE PROVIDED BY NDS AT A QUANTITY OF 40 PER 3.87' x 149' ROLL. IF ADDITIONAL STAKES ARE REQUIRED ORDER THROUGH YOUR AUTHORIZED NDS REPRESENTATIVE USING PART # GP STAKE.
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EZ ROLL GRAVEL PAVERS
STAKING

NDS S5
KEY COMPONENT
www.ndspro.com/s5

REVISION DATE 8-24-2015

Arboresin

Porous tree pit surface

Benefits

- Surface allows free flow of air and water to the root zone
- Will support light vehicular traffic (when laid to a minimum depth of 75mm)
- Avoids problems associated with loose gravel
- A choice of different aggregates available
- Can be retrofitted around existing trees reducing trip hazards
- Detailed installation specification available on request



Compatible 'Arborsystem' Products

- Root management. See page 30
- Tree pit irrigation. See page 59
- Underground root ball guying. See page 71

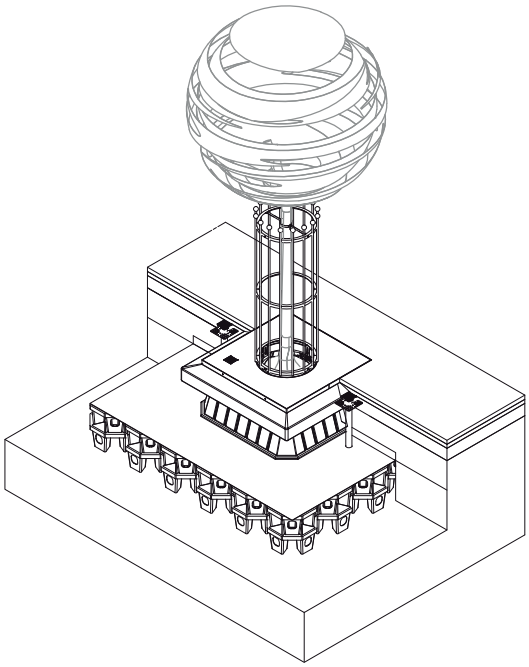
Arboresin is a well proven hard wearing, attractive porous tree pit surface. Loose stones are a nuisance in pedestrian environments and tarmacadam or conventional paving has the effect of an impervious cap over the tree pit.

With **Arboresin**, the stone is bound together using a very high strength resin which prevents the gravel migrating beyond the tree pit. The nature of the resin bond results in a highly porous tree friendly surface immediately adjacent to the tree.



Tree pit using Arboresin

Click here to view our website



Product specification

- Triple washed and dried stone graded to 10mm, supplied in 25kg bags.
- **Arboresin** two part resin system. (Colour UV stabilized resin available as an option).
- **Arboresin** installation kit.
- **Arboresin** solvent cleaner.
- Standard galvanised frames are available to provide a paving/bound gravel edge and help support paving loading for light traffic.



Standard Tree pit details

To clearly illustrate correct product application, please refer to our standard tree pit details which are in the tree product packages section ref: **GBU1007** and **GBU1013**

GreenBlue URBAN

Sales and Service: +44 (0) 1580 830 800
E-mail: enquiries@greenblueurban.com
Website: greenblueurban.com

Precast Arboresin

Porous tree pit surface

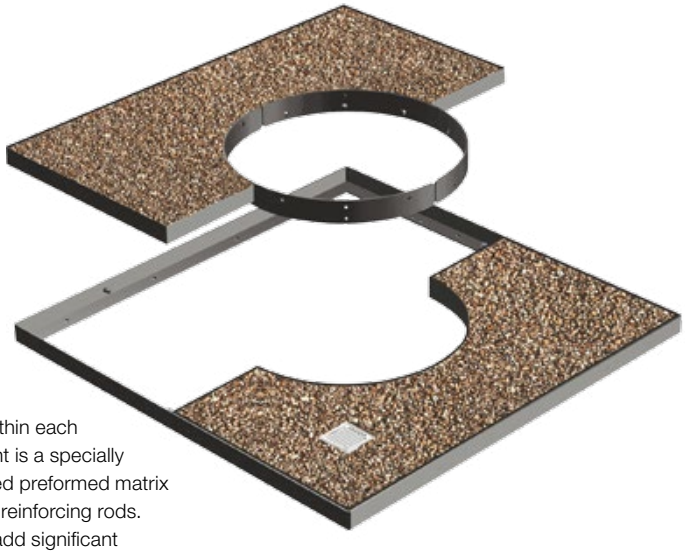
Benefits

- Simple and clean installation
- Can be installed in cold and damp conditions
- Strong construction to support tree guard
- Resists light vehicle overrun
- Grille is part of our DTS fully integrated system



Precast Arboresin

Precast Arboresin is a significant new development from **GreenBlue Urban**. This system consists of precast resin bound segments which are manufactured off site in a quality controlled environment. This does away with any on site mixing as the segments are already cast and simply locate into our standard 1200mm square DTS tree grille frame.



Cast within each segment is a specially designed preformed matrix of steel reinforcing rods. These add significant strength to the segments as well as providing a fixing point for the inner ring. A **GreenBlue Urban** vertical steel tree guard can then be bolted to the inner ring. Also cast into one half of the precast segments is a **GreenBlue Urban** **Arborvent** irrigation inlet. This durable cast aluminium inlet is simply connected to the 60mm diameter perforated pipe system surrounding the root ball.

Click here
to view our website

Standard colour range

GreenBlue Urban's Precast Arboresin can be supplied in any of the following standard aggregate colours.



Brittany Bronze



Dorset Gold



Silver Grey



Red Granite

Product specification

- 1200mm two part DTS galvanised outer edge frame
- 2 No. 1200 x 600mm Precast steel reinforced **Arboresin** segments (colour of aggregate to be specified)
- **Arborvent** cast aluminium irrigation inlet – precast into one half segment
- Irrigation pipe grip bracket ensuring correct alignment of pipe with **Arborvent** inlet
- 2 No half rings for internal connection of precast segments

Standard Tree pit details

To clearly illustrate correct product application, please refer to our standard tree pit details which are in the tree product packages section ref: **GBU1015, GBU1013**

GreenBlue URBAN

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E-mail: enquiries@greenblueurban.com
Website: greenblueurban.com

COOLSEAL BY GUARDTOP® VS. OTHER COOL PAVEMENTS

Not all cool pavements are created equal. CoolSeal by GuardTop is an asphalt-based sealcoat that provides a clear advantage compared to alternative cool pavement options.



GO GREENER WITH COOLSEAL BY GUARDTOP®

Our commitment to sustainability has guided the development of CoolSeal by Guardtop, a high-performance asphalt-based sealcoat designed to achieve lower surface temperatures through its lighter color and reflectivity. CoolSeal is perfect for playgrounds, parks, parking lots, driveways, residential areas, schools, bike paths and LEED-certified building projects.

- Light grey asphalt-based sealcoat
- Energy savings and emission reductions[1]
- Lasts longer than conventional sealcoats
- Meets LEED and EPA requirements of 33% reflectivity
- Environmentally friendly and contains recycled materials
- Does not cause glare for drivers or pedestrians
- Has been shown to meet skid safety requirements
- Dries to a matte finish
- Normal street cleaning is recommended to best maintain reflectance

National Park Service
U.S. Department of the Interior

Castillo de San Marcos National Monument
1 South Castillo Drive
Saint Augustine, FL 32084
www.nps.gov/casa

Fort Matanzas National Monument
8635 A1A South
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