



WATER-RIGHT DOCKET

Fort Caroline National Memorial

Docket No: 1

VISITORS CENTER WELL

Supporting Hydro Data

07-02-1956: memorandum to chief, eodc from superintendent regarding final cost of fort caroline well

In reply refer to:
D5039

July 2, 1956

Memorandum

To: Chief, EODC

From: Superintendent, Castillo de San Marcos NM

Subject: Final Cost of Fort Caroline Well

Forney	
Logsdone Archt.	
Archit.	
Engineer	
Program	

REGION ONE	
JUL 3 1956	
Reg. Director	
Asst. Dir.	
Ch. Insp.	
Asst. Insp.	
Ch. Insp. (Gen.)	
Ch. Insp. (Spec.)	
Ch. Insp. (Act.)	

The final test of the Fort Caroline well was completed on June 27, 1956. In brief, the results show that we have succeeded in getting a very substantial volume of clear, cold water of very good quality. Details are as follows:

Depth of well 200 feet
Depth of casing 97 feet
Static level of water 33 feet
Top of casing about 12" above ground
(Final level of top of casing to be determined)

Final Pumping Test.

6/27/56. Started 5 A.M., concluded 9:00 p.m. 16 hours
Sustained volume during test 60 gal. per min.
Depth of pump screen (inlet) 44 feet
(11 feet below static level)
Uniform drawdown-constant-8 feet.
(No variation in volume during test.)
Pumping at 5 gal. per min. OK
No air pumped during test.
Pumped through 2" gal. pipe, using 1½ H.P.
submersible Red Jacket Pump.
No sand, lime, or foreign matter in water.
Volume of water produced during test - 57,600 gal.
Chemical analysis by contractor: (1st test)
Hardness 12 grains
pH value 7.5
Iron 0
Color Clear
Odor None
Suspended matter - none

*If correct
this is very
hard water.
Will need softening
for domestic use.*

Bacterial analysis by Florida State Board of Health:

Sample FC-1 (L.B. - 48 hrs. 2. B.G. 48 hrs. 0
MPN 2.2-. Satisfactory)

Sample FC-2 (L.B. - 48 hrs. 0. B.G. hrs. 0
MPN. 2.2-. Satisfactory)

(The above samples were sent for chemical analysis only, but the State Board sent by mistake only bacteriological data. Samples from the final test have been forwarded for chemical analysis and results will be sent when received.) We asked for report of chloride content, when F.C.-3 and F.C.-4 were sent. As the water tastes like cold "spring water," this test seems to be merely precautionary in view of the hardness test of 12 grains.)

Alignment, disinfection, etc. OK

Log of the Well, furnished by Contractor:

Sand	0-8 1/2 feet
Mud	8 1/2-97 feet
Porous Lime Rock	97-102 feet
Rock, sand, gravel	102-200 feet
(Water comes from the 97'-200' strata.)	

A summary of Cheetham's bill for the well is as follows:

Item #1 - Drilling 6" well, 200'	@ \$3.00	= 600.00
Item #2 - 6 I.D. Casing, 97'	@ 2.88	279.36
Item #3 - Testing - (etc.) 10 hrs.	@ 6.00	60.00
		<u>\$ 939.36</u>

Unless the final chemical analysis produces unfavorable data, which hardly seems possible, there is every indication that we have an exceptionally good well for this part of the country.

Please let me have your comments so that the bill may be cleared for payment as promptly as possible.

(SGD) C. R. Vincent

Superintendent.

Copy to: Regional Director, Region One (2)

In reply refer to:
D5039

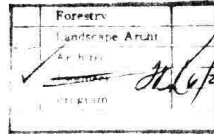
June 21, 1956

Memorandum

To: Chief, EODC

From: Superintendent, Castillo de San Marcos NM

Subject: Test of Fort Caroline 6" Well, for Preliminary Findings



REGION ON	
JUN 22 1956	
Reg. Director	
Asst. Reg. Dir.	
Ch., Operations	
Asst. Ch., Oper.	
Ch., Interpretation	
Ch., Adm.	
Ch., Coop. Act.	

The well at Fort Caroline was tested yesterday. After about 3 hours of preparations, experimenting and intermittent pumping it appears that we have a much better well than we anticipated, but a final test and time alone can prove that.

The attached tabulation of test and analysis results may be used for computing water system demands and proper equipment.

Salinity is an important factor, but as it was not checked by the contractor, I am sending samples to the State Board of Health for this test as well as to confirm other tests of the contractor's analyses. I'll send these data to you.

The top of the 6" casing is being set one foot below ground surface to avoid exposed supply pipes. Final work by the contractor involves a final 16 hour test, chlorination, capping and cleanup. He is now getting set up to do this in a more efficient way than was done yesterday.

(SGD) C. R. Vinten

Superintendent.

Attachment

Copy to: The Director(w/attachment)
Regional Director, Region One(w/attachment)

6/21/56

Fort Caroline Well
Preliminary Test

Depth: 200 feet
Casing 97 feet
Water - static level - 33 feet.
Drawdown, not more than 5 feet.

Test: 1½ H.P. Red Jacket Pump, submersible type, with screen at 43' depth, or 10' below water level.
Capacity of pump 90 g.p.m. at 40' depth.
Delivery - (slow speed) 55 G.P.M. (A portable generator was used and voltage was often below 220v.)
Test for alignment of 6" casing was satisfactory.

Analysis:

Hardness:	12 grains p.g. (average)
PH value	7.5 to 8.0
Iron	Zero
Color	Clear
Odor	None
Suspended Matter	None
Appearance	Clear
Taste	O.K.

(The above analysis was by the contractor. Samples are being sent to the State Board of Health to check salinity and to confirm above factors.)

Test Pump: The test pump was a 1½ H.P. submerged turbine pump, Red Jacket Mfg. Co., Davenport, Iowa. The inlet screen was 42 feet below ground level. Pump was attached to 2" gal. pipe, and lowered into well, with 3 wires attached, as far as 2 length of pipe would reach. This placed the inlet screen of the submerged pump 10' below the static water level.

The contractor, and pump distributor of Jacksonville, both recommended a supply pipe to a depth of 66 feet, and a 2 H.P. Red Jacket pump. They said this would deliver 40 g.p.m. at 60 feet. (What these pumps will do when working under 40 or 50 pound pressure was not discussed. While the pump looks good, the supply line

and pump in the well must be pulled every time repairs are needed. The building specifications call for an offset type of jet pump, so - I recommend that a type be selected which meets the requirements of the system.)

Other Supporting Information



IN REPLY REFER TO:

154-PD

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Philadelphia Planning and Service Center
Design and Construction
143 South Third Street
Philadelphia, Pa. 19106



June 17, 1966

Memorandum

To: Assistant Director, Design and Construction
Attention: Chief, Branch of Water Resources

From: Chief, Project Design

Subject: Well at Fort Caroline

In reference to our discussion in a recent telephone conversation, we have searched our files and found the chemical analysis of well drilled at Fort Caroline.

We are enclosing two copies of the analysis and the transmittal letter from the Assistant Regional Sanitary Engineer of the Florida State Board of Health.

Edward H. Abbuehl

By: E. Gordon Cummings
E. Gordon Cummings, Acting

Enclosures

FLORIDA STATE BOARD OF HEALTH



Florida State Board of Health

WILSON T. BOWDER, M.D., M.P.H. STATE HEALTH OFFICER

JACKSONVILLE 1

March 21, 1964

IN REPLY PLEASE REFER TO

Duval Co. - W. Indv/62
Ft. Caroline National
Memorial

POST OFFICE
BOX 210

DEPT. OF SANITARY ENGINEERING
DAVID S. LEE, M.S. IN ENG.
DIRECTOR

DNEY A. BERKOWITZ, M.S. IN ENG.
ASSISTANT DIRECTOR

254

DIVISION OF WATER SUPPLY
J. B. MILLER, M.P.H.
DIRECTOR

DIVISION OF SPECIAL SERVICES
CHARLES E. COOK, C.E.
DIRECTOR

DIVISION OF WASTE WATER
RALPH H. BAKER, JR., M.S.C.E.
DIRECTOR

DIVISION OF INDUSTRIAL WASTE
VINCENT D. PATTON, M.S.C.E.
DIRECTOR

Fort Caroline National Memorial
Route 1
P. O. Box 310
Jacksonville, Florida - 32211

Gentlemen:

Enclosed please find a chemical analysis of the well at the subject park. This artesian well water is typical of the artesian wells in Duval County. It is non corrosive and probably scale forming. The chemical characteristics meets the U. S. Public Health Service Drinking Water Standards.

Yours sincerely,

T. J. Rouzie, Jr.

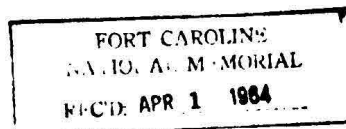
T. J. Rouzie, Jr.
Asst. Regional Sanitary Engineer

TJR:rlab

Enc.

cc: Duval CHD

cc: Division of Water Supply



FLORIDA STATE BOARD OF HEALTH

BUREAU OF LABORATORIES

APPROXIMATE WATER ANALYSIS
(VOLUMETRIC)

Locality, Subdivision, etc. Fort Caroline National Memorial, Ft. L. Box 319
 Nearest Municipality Jacksonville, Florida 32211 County Duval
 Source of Sample Well Date Collected 3-3-64
 Collector National Park Service Date Analyzed 3-12-64
 Raw or treated: Depth 510 feet Appearance Clear

	103°C	P.P.M.		P.P.M.
Total Dissolved Solids	<u>366</u>	<u>366</u>	Color	<u>5</u>
Total Hardness (Versenate) as CaCO ₃	<u>311</u>	<u>311</u>	Odor	<u>None</u>
Alkalinity, as CaCO ₃	<u>150</u>	<u>150</u>	*Carbon Dioxide, as CO ₂	<u>3</u>
*Non-Carbonate Hardness as CaCO ₃	<u>162</u>	<u>162</u>	*Bicarbonate, as CaCO ₃	<u>150</u>
*Bicarbonate, HCO ₃	<u>183</u>	<u>183</u>	*Carbonate, as CaCO ₃	<u>0</u>
Iron, Fe	<u>0.0</u>	<u>0.0</u>	*Hydroxide, as CaCO ₃	<u>0</u>
Sulfate, SO ₄	<u>129</u>	<u>129</u>	Temperature at Collection, °C	<u>Unknown</u>
Chloride, Cl	<u>23</u>	<u>23</u>	pH (Field)	<u>Unknown</u>
Calcium, Ca	<u>60</u>	<u>60</u>	pH (Laboratory)	<u>7.9</u>
*Magnesium, Mg	<u>24</u>	<u>24</u>	*pHs	<u>7.5</u>
Fluoride, F.	<u>0.65</u>	<u>0.65</u>	*Stability Index (2pHs - pH)	<u>7.1</u>
H ₂ S (Field Determination)			*Saturation Index (pH - pHs)	<u>40.4</u>
Detergent (AM)	<u>0.0</u>	<u>0.0</u>	Interpretation: <u>Scale forming</u>	
Detergent (ABS)	<u>0.0</u>	<u>0.0</u>	Scale forming	
Notes:				

*Calculated

Alexander Anderson
 (Signed) ALEXANDER ANDERSON
 Chemist

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE		Work Order No.
FACE SHEET FOR COMPLETION REPORT		Pa-7
Park	Region	Fund Symbol
Fort Caroline National Memorial	Southeast	14X1035
Location in Park	State(s)	Year Programmed
Residence	Florida	1964
Utility area	County or Counties	PCP No.
	Duval	U-5
		Master Plan No.
		NMEM-CAR-3030
		Master Plan Corrected By
		As Built Drawings By
P.O. ☐ Contract ☒ or ☐ Day Labor		Date Started
Work Order Title		11-24-63
Additions to Water System. Construct water and Sewerage Systems - Residence area.		Date Completed
		3-5-64
DESCRIPTION OF FIXED ASSETS (For completion by employee in charge of project)	TOTAL COSTS (For completion by FFO)	
Additions to Water System Fort Caroline National Memorial	4,049.86	
6 inch Well, Pump, Tank and Pump house		
Change Order No. 1, dated 1-14-64		
Change Order No. 2, dated 2-3-64		
Change Order No. 3, dated 3-3-64		
<u>100.8 Utilities, Water System</u> 3,491.26		
Work done by Purchase Orders No. FOCA-11 - 1963 FOCA-19 - 1964 FOCA-17 - 1964		
TOTAL	\$ 4,049.86	
DISTRIBUTION	THE FIXED ASSET DESCRIBED ABOVE HAS BEEN COMPLETED IN ACCORDANCE WITH APPROVED DRAWINGS, SPECIFICATIONS, AND AUTHORIZED CHANGES	
No. To		
	Submitted By: <i>John R. De Weese</i>	Title: Superintendent Date: August 10, 1964
	Approved By: <i>John R. De Weese</i>	Title: Date:
	COSTS VERIFIED BY: <i>T. J. Baer</i>	Title: Regional Accountant Date: 9/29/64

LOG FOR ADDITIONS TO WATER SYSTEM - FORT CAROLINE NATIONAL MEMORIAL

0' - 12' Sandy dirt
12' - 18' Red clay
18' - 32' Fine sand
32' - 42' Coarse sand
42' - 63' Coquina shell streaks of sand
63' - 65' Rock
65' - 69' Fine sand
69' - 75' Soft lime rock with sand
75' - 280' Sandy grey marle
280' - 288' Hard rock
288' - 308' Green marle
308' - 315' Hard rock
315' - 360' Sandy marle
360' - 366' Hard rock
366' - 382' Sandy marle
382' - 387' Hard rock
387' - 422' Sandy marle
422' - 432' Hard lime rock
432' - 510' Water bearing lime rock

*bottom
clay*

Installed 90 feet of 6" galv. casing. Drilled open hole to 432 feet and set 357 feet of 4" galv. casing to 432 feet. Drilled 4" hole 78 feet into water bearing lime rock. 4" casing extends 15 feet up inside 6" casing.

Installed seal between 4" & 6" casing.

3" Jet head on 6" casing

Free flow Capacity 354 G. P. M.

Cheatham Well & Pump Co., Driller

NARRATIVE REPORT**Additions to Water System
Fort Caroline National Memorial**Base Contract:

Invitations To Bid - Seven (7)
 Bids opened - October 9, 1963
 Bids received - One (1)
 Total Base Bid - \$1,471.00
 Notice to proceed - November 12, 1963
 Designated Commencement Date - None
 Actual Commencement Date - November 24, 1963
 Actual Completion Date - March 5, 1964
 Final Inspection Date - March 6, 1964
 Final Acceptance Date - March 9, 1964

Revision of Work Orders

No. 1 - Dated January 14, 1964
 No. 2 - Dated February 3, 1964
 No. 3 - Dated March 3, 1964

Actual Quantities and Payments:

Bid Item No. 1 - Drilling six (6) inch diameter well - 200 ft. @ \$3.00	\$ 600.00
Bid Item No. 2 - Furnish, Install and Seal Six (6) inch galvanized casing @ \$3.00 - 90 ft.	270.00
Bid Item No. 3 - Test for Yield and Drawdown	None
Bid Item No. 4 - Drilling six (6) inch below 200 ft. @ \$2.00 - 310 ft. =	620.00
Cap Well & keep out foreign materials	10.00
	<u>1500.00</u>

Water Pump Systems
Sales and Service

Rock and Arterian
Well Drilling

CHEATHAM WELL & PUMP CO.

2960 SCOTT MILL LANE • AMHERST 8-6491
JACKSONVILLE 7, FLORIDA

TOM D. CHEATHAM
CARROL P. CHEATHAM

January 30, 1964

THOS. H. CHEATHAM

Mr. John R. DeWeese
Fort Caroline National Memorial
Route #1, Box 310
Jacksonville 11, Florida.

Dear Mr. DeWeese:

We are pleased to submit the following proposal to furnish all labor, material and equipment to install the following for the sum of \$1,176.00.

- 1 Fig 200M-7½ Myers Centrifugal pump with 7½ H. P. 220 Volt 3 phase 60 cycle A. C. 3450 RPM Motor, capacity 180 gpm @ 120 ft. head.
- 1 Automatic Magnetic Motor Starter
- 1 Automatic pressure Switch.
- 1 Pressure Gauge
- 1 Vertical Galvanized 525 gallon Pressure Tank
- Pump and Tank Foundation and Pump House
- 1 2½" Fire Hose connection and 2" Valve
- Pipe, Valves and Fittings

The above system will be connected with 3" galvanized pipe and fittings and all necessary brass valves.

Our price does not include the electrical wiring.

Yours very truly,

CHEATHAM WELL & PUMP CO.



Thos. H. Cheatham.

THC:jc

*Water Pump Systems
Sales and Service*

*Rock and Artesian
Well Drilling*

CHEATHAM WELL & PUMP CO.
2960 SCOTT MILL LANE • AMHERST 8-6491
JACKSONVILLE 7, FLORIDA

TOM D. CHEATHAM
CARROL P. CHEATHAM

THOS. H. CHEATHAM

January 30, 1964

Well Log For New Port Project

Port Caroline National Memeorial

0' - 12'	Sandy dirt	382'-387'	Hard rock
12' - 18'	Red clay	387'-422'	sandy marle
18' - 32'	Fine sand	322'-432'	Hard lime rock
32' -42'	Coarse sand	432'-510'	Water bearing lime rock
42' - 63'	Coquina shell streaks of sand		
63' -65'	Rock		
65' - 69'	Fine sand		
69' - 75'	Soft lime rock with sand		
75' - 280'	Sandy grey marle		
280' - 288'	Hard rock		
288'- 308'	Green marle		
308'- 315	Hard rock		
315'-360	Sandy marle		
360'- 366'	Hard rock		
366'-382'	Sandy marle		

Installed 90 feet of 6" galv. casing. Drilled open hole to 432 feet and set 357 feet of 4" galv. casing to 432 feet. Drilled 4" hole 78 feet into water bearing lime rock. 4" casing extends 15 feet up inside 6" casing. Installed seal between 4" & 6" casing.

3" Jet head on 6" casing

Free flow Capacity 354 G. P. M.

12621

Eastern Office
Division of Design and Construction
Philadelphia 6, Pa.

December 8, 1959

Memorandum

To: Chief of Design and Construction

From: Acting Chief, NODC

Subject: Completion Report, Visitor Center and Residence and
Equipment Storage, Fort Caroline National Memorial

Attached are the narrative, chronological and photographic

sections of the subject completion report for attachment to Form 10-174

sent to the Director of the Superintendent with his recommendation dated

December 8, 1959.

Very truly yours,

William E. DeSilva
Acting Chief

cc: [illegible]

Enclosure

Copy to [illegible] [illegible] [illegible]
Fort, Fort Caroline National Memorial

COMPLETION REPORT
NARRATIVE

Visitor Center - Residence and Equipment Storage

FORT CAROLINE NATIONAL MEMORIAL

The preliminary studies for the Visitor Center were begun in September 1955. The newly established Fort Caroline National Memorial commemorated the brief life, in the years 1564 and 1565, of a French Fort in the three-cornered struggle between England, France and Spain for what is now the southeastern part of the United States. Due to the passage of time and the shifting of the St. Johns River to a new channel, there are no visible remains of the French occupation. The new Visitor Center and its museum exhibits, therefore, would be the only key the visitor would have to the vanished past.

The Visitor Center was designed as a low, simple, contemporary structure and would be placed among large Spanish-mossed trees on a commanding bluff beside the St. Johns River. The requirements for the new building included, beside the large museum, an office, an assembly room and rest rooms. In the proposed design the office had an information and control window facing the museum. A lower-roofed element connected to the building contained an open, wall-less assembly area and the rest rooms.

The Preliminary Drawing, NMEM-GAR 3003A, was submitted for review November 18, 1955. Director Wirth approved it December 13. The working drawings were then begun, and they were completed May 2, 1956.

A combination Residence and Equipment Storage Building was studied in EODC so it, and the Visitor Center, could be built as a package under one contract. The three-bedroom residence was designed with a small partially enclosed equipment storage facility attached to it. Preliminary Drawing NMEM-GAR 3006 was distributed for review March 23, 1956 and approved on April 5 by Superintendent C. Raymond Vinton of Castillo de San Marcos National Monument. Mr. Vinton was in charge of the development of Fort Caroline until the appointment of John R. DeWeese as Superintendent of the new National Memorial, which took place after the completion of these new buildings. The working drawings were begun immediately after the approval of the preliminary and were completed May 2, 1956.

Invitation for bids for the Visitor Center and Residence-Equipment Storage Building was issued May 9. Bids were opened May 29. The contract was awarded to the low bidder, McMillen Construction Company, Jacksonville, Florida. The contractor was ordered to proceed July 11, and July 14, 1956 became the first calendar day of the contract period.

A chronological summary of the progress of the construction under this contract has been attached.

The soil at the building site, long stabilized dune sand deeply impregnated with organic material, presented no problem in the construction.

Finished grading and planting were accomplished by May 19, 1957. The museum exhibits were installed in the fall and winter of 1957. Dedication exercises for Fort Caroline National Memorial were held March 30, 1958.

The National Park Service found the contractor, McMillen Construction Company, uniformly capable, conscientious and pleasant. Comments on the completed Visitor Center and its museum exhibits are consistently very favorable. A particularly fine landscape design enhances its appearance. It is felt that this is one of the most successful of the smaller visitor centers.

Fort Caroline possesses an unusually good water supply source in the 200 feet deep, six inch well dug at the Visitor Center in May 1956. Pumping and distribution equipment was added to the building construction contract by a change order in October 1956. The sewage disposal system for the buildings was the subject of Working Drawing NPSM-GAR 3008, and was constructed as part of the building contract. The sewage disposal installation consisted of a separate septic tank, distribution box and leaching trench system for each of the two buildings.

**CHRONOLOGICAL SUMMARY OF
CONSTRUCTION PROGRESS AND
LIST OF CHANGE ORDERS**

The following major events in the course of the construction of the Visitor Center, and the Residence Equipment Storage combination building are arranged in chronological order:

July 14, 1956:	First day of the contract period.
August 1:	<u>Change Order No. 1</u> , removing tree and brush stumps from Residence-Equipment Storage Building site.
August 12:	Footings completed, Visitor Center and Residence.
August 23:	Brickwork started, Residence.
August 24:	Plumbing rough-in completed, Residence.
August 28:	Masonry started, Visitor Center.
August 29:	Perimeter heating rough-in completed, Residence. Plumbing rough-in completed, Visitor Center.
September 10:	<u>Change Order No. 2</u> , making eleven changes including addition of museum case framing and furring, and additional ceiling joists in Residence.
September 11:	<u>Change Order No. 3</u> , changing masonry reinforcement, both buildings.
September 18:	Masonry completed, Visitor Center. Framing and sheathing completed, Residence.
September 29:	<u>Change Order No. 4</u> , adding gate and entrance sign along park road.
October 1:	Structural steel erection completed, Visitor Center. Roofing completed, Residence.

October 2:	Concrete bond beams and canopy poured, Visitor Center.
October 17:	<u>Change Order No. 5</u> , adding pump, pressure tank and piping, and changing the type of electrical service.
October 24:	<u>Change Order No. 6</u> , making four changes in water piping for air conditioning and lawn watering.
November 4:	Roofing completed, Visitor Center.
November 5:	Windows installed, Residence.
December 27:	<u>Change Order No. 7</u> , adding wall and planting box around the assembly area and increasing the depth of the diorama case.
February 27, 1957:	<u>Change Order No. 8</u> , making eight changes including the addition of flagstone landing, draw drapes and utility ceiling, Residence.
March 14:	<u>Change Order No. 9</u> , adding insulation to heating ducts, Visitor Center.
March 22:	Final inspection, Visitor Center and Residence-Equipment Storage Building.

Fort Caroline National Memorial
NATIONAL PARK SERVICE
Route # 1, Box 310
Jacksonville 11, Florida

To: Director

From: Superintendent, Fort Caroline National Memorial

Subject: Completion Report, Project 333.3

Attached is Completion Report for the above numbered project
Grading, Planting and Sprinkler System at Fort Caroline National Memorial.

(SIGNED)

John R. De Weese
Superintendent

Attachment (1)

Copy to: Regional Director, Region One
Chief, EODC

Form 10-174
(Rev. 1-56)UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

REPORT 7 SPL

COMPLETION REPORT OF CONSTRUCTION PROJECT

REGION One	AREA Ft. Caroline National Memorial	COUNTY Duval	STATE Florida
PROJECT OR JOB TITLE Grading, Planting and Sprinkler System		PCP NO. M-10-1, M-9-1, M-11, M-6-1	BUILDING NO.
LOCATION IN AREA Fort Caroline National Memorial		MASTER PLAN NO. N MEM-CAR 3020	
WORKING DRAWING NO. AND TITLE N MEM-CAR 3021A, 3013A, 3015C (2 sheets). Grading, Planting, & Sprinkler Installation			
APPROPRIATION TITLE AND SYMBOL 14 x 1035		ACCOUNT NO. 333.3	
CONTRACT NO. 14-10-131-251		DATE WORK STARTED April 3, 1957	DATE WORK COMPLETED June 13, 1957
NAME OF CONTRACTOR Skaggs Landscape Gardens, Inc.		ADDRESS 7447 Beach Boulevard Jacksonville, Florida	

COST ANALYSIS

CONSTRUCTION ITEMS	QTY	UNIT COST IN PLACE	TOTAL COST IN PLACE
Grading, Planting & Sprinkler System (See Attached Sheets)			17,800.48
Change Order No. 1, dated April 19, 1947			1,180.80
Other			437.60
Facilitating Services			190.00
P/S & S COSTS 15.34%			3,008.00
FAO CLEARANCE CERTIFIED CORRECT.			
(SIGNED) SEP 16 1959 T. J. Beer, Authorized Certifying Officer			
TOTAL			22,616.88
			~~19,608.88~~

SUMMARY OF EXPENDITURES

PERSONAL SERVICES	EQUIPMENT	MATERIALS AND SUPPLIES
~~80,000.00~~		
OTHER	FAO SERVICES 190.00 (PS&S 3,008.00)	
~~80,000.00~~		

CHANGE ORDERS

ORIGINAL CONTRACT AMOUNT	FIRST 1,198.80	SECOND	THIRD
~~\$ 17,800.48~~	~~41,180.80~~		
FINAL CONTRACT AMOUNT	FOURTH	FIFTH	SIXTH
~~\$ 19,418.88~~			

THIS PROJECT OR JOB HAS BEEN COMPLETED IN ACCORDANCE WITH
APPROVED DRAWINGS, SPECIFICATIONS, AUTHORIZED CHANGES

SUBMITTED BY (Name and title) <i>Richard G. Huber</i> Richard G. Huber, Project Supervisor Supvy. Park Landscape Architect	DATE 8/16/57
APPROVED BY (Name and title) <i>John R. DeWeese, Asst.</i>	DATE 9-21-57

(ATTACH NARRATIVE STATEMENT, PHOTOGRAPHS, AND "AS BUILT" DRAWINGS TO THIS FORM)

NARRATIVE REPORTContract No. 44-10-131-251Account No. 333.3Base Contract:

Invitation for Bids Number	None
Bids Opened	Mar. 11, 1957
No. of Bids Received	Two
Total Base Bid	\$17,800.48
Date of Contract	
Notice to Proceed	Mar. 29, 1957
Designated Commencement Date	April 2, 1957
Completion Date	July 10, 1957
Actual Completion Date	June 13, 1957
Final Acceptance Date	June 12, 1957
Final Inspection Date	June 12, 1957
Final Estimate Submitted	June 13, 1957

Sub-Contractors: NoneChange Orders: Change Order No. 1, dated April 19, 1957Actual Quantities and Payments:

<u>Bid Item No. 1 - Magnolia grandiflora,</u> 2" cal., 5 @ \$27.50 each	137.50
<u>Bid Item No. 2 - Prunus laurocerasus,</u> 2" cal., 18 @ \$27.50 each	495.00
<u>Bid Item No. 3 - Quercus virginiana,</u> 3" cal., 9 @ \$55.00 each	495.00
<u>Bid Item No. 4 - Sabal palmetto,</u> 12' - 15' wood, 16 @ \$42.00 each	672.00
<u>Bid Item No. 5 - Washingtonia filifera</u> 15' - 18' wood, 3 @ \$62.00 each	186.00
<u>Bid Item No. 6 - Areca lutescens,</u> 3' - 4' Hg., 3 @ \$10.50 each	31.50
<u>Bid Item No. 7 - Eddlesia officinalis,</u> 8' - 10' Hg., 13 @ \$7.50	97.50
<u>Bid Item No. 8 - Cyperus alternifolius,</u> 3' - 4' Hg., 5 @ \$10.00 each	50.00

<u>Bid Item No. 9 - Ilex vomitoria,</u> 3" - 4" Hg., 98 @ \$6.50 each - - - - -	637.00
<u>Bid Item No. 10 - Ilex vomitoria,</u> 4" - 5" Hg., 13 @ \$8.50 - - - - -	110.50
<u>Bid Item No. 11 - Ligustrum iwata,</u> 2 1/2" - 3" Hg., 3 @ \$6.50 each - - - - -	19.50
<u>Bid Item No. 12 - Ligustrum lucidum,</u> 4" - 5" Hg., 6 @ \$8.50 each - - - - -	51.00
<u>Bid Item No. 13 - Myrica cerifera,</u> 4" - 5" Hg., 69 @ \$7.50 - - - - -	517.50
<u>Bid Item No. 14 - Pittosporum tobira,</u> 3" - 4" Hg., 12 @ \$9.50 - - - - -	114.00
<u>Bid Item No. 15 - Podocarpus macki,</u> 4" - 5" Hg., 26 @ \$9.50 each - - - - -	247.00
<u>Bid Item No. 16 - Pyracantha coccinea lalandi,</u> 4" - 5" Hg., 4 @ \$7.50 each - - - - -	30.00
<u>Bid Item No. 17 - Rhododendron indicum formosa,</u> 2" - 2 1/2" Hg., 28 @ \$6.00 each - - - - -	168.00
<u>Bid Item No. 18 - Caladium bulbosum,</u> 18" - can, 26 @ \$3.50 each - - - - -	91.00
<u>Bid Item No. 19 - Ficus repens, 2 yr.,</u> 2 1/2" pot, 69 @ \$2.00 each - - - - -	136.00
<u>Bid Item No. 20 - Malpighia coccigera, 2 Yr.,</u> 2" pot, 170 @ \$1.00 each - - - - -	170.00
<u>Bid Item No. 21 - Ophiopogon japonicum,</u> 6" - 12" clumps, 2207 @ \$.50 each - - - - -	1,103.50
<u>Bid Item No. 22 - Severinia buxifolia</u> 1 1/2" - 2" Hg., 428 @ \$450.00 each - - - - -	1,926.00
<u>Bid Item No. 23 - Excavation</u> 710 c.y. @ \$1.00/ c.y. - - - - -	710.00
<u>Bid Item No. 24 - Topsoil</u> 684 c.y. @ \$2.50/c.y. - - - - -	1,710.00
<u>Bid Item No. 25 - Seed and Sprig,</u> 87 Units (1000 SF/Unit) @ \$25.00/Unit - - - - -	1,980.00

Bid Item No. 26 - Sprinkler Head and Quick Coupler, 6 @ \$13.33 each - - - - - 79.98

Bid Item No. 27 - Sprinkler Connections, 49 @ \$8.20 each - - - - - 401.80

Bid Item No. 28 - 2" Plastic Pipe, Installed 2140 LF @ \$.97/LF - - - - - 2,075.50

Bid Item No. 29 - 1" Plastic Pipe, Installed 100 LF @ \$.51/LF - - - - - 51.00

Bid Item No. 30 - Drinking Fountain Lump Sum @ - - - - - 250.00

Bid Item No. 31 - Concrete Stepping Stones Lump Sum @ - - - - - 80.00

Bid Item No. 32 - Selective clearing & Thinning, 31 Units (1000 SF/Unit) @ \$25.00/Unit - - - - 775.00

Bid Item No. 33 - Cleanup 48 Units (1000 SF/Unit) @ \$25.00/Unit - - - - 1,200.00

\$ 16,861.08

Additional Plant Material:

Viburnum odoratissimum 2 @ \$8.50 each - - 17.00
Pedocarpus chinensis 1 @ \$9.50 - - - - 9.50
Cornus florida 1 @ \$15.00 - - - - - 15.00
Ilex bullata conv. 352 @ \$2.50 - - - - 880.00
Ilex vomitoria 12 @ \$6.50 each - - - - 78.00
Raphioloopsis hsp. 12 @ \$9.50 each - - - 114.00
Rhododendron indicum formosa 2 @ \$6.00 - 12.00
Sabal palmetto 9 @ \$20.00 each - - - - 180.00

Other Changes:

2" Valve and Case - - - - - 22.50
Flagging Installed - - - - - 15.00
Two P-Traps and Control Valve on Drinking Fountain - - - - - 34.00

1,377.00

Change Order No. 1:

Item No. 1 - Catch Basin, Lump Sum @ - - - - 78.00

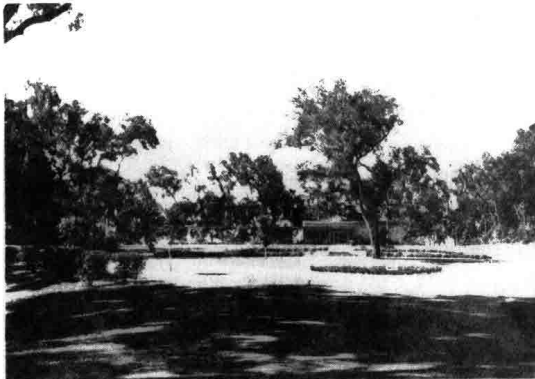
Item No. 2 - 4" CI Pipe, 16 LF - - - - - 44.40

Item No. 3 - 13" x 22" x 16' Culvert - - - - 106.90

Item No. 4 - Flagpole Base and Flagpole Erection - - - - - 248.00

Item No. 5 - <i>Averous virginiana</i> , 3" cal., 8 @ \$55.00 each - - - - -	440.00	
Item No. 6 - <i>Ligustrum ivata</i> , 2 1/2" - 3" Hg., 17 @ \$6.50 each - - - - -	110.50	
Item No. 7 - <i>Rhododendron indica formosa</i> , 2" - 2 1/2" Hg., 15 @ \$6.00 each - - - - -	90.00	
Item No. 8 - <i>Phoenix roebellini</i> 6 @ \$10.50 each - - - - -	63.00	
		<u>\$ 1,180.80</u>
Total Amount of Contract - - - - -		\$19,418.88
Total Base Bid - - - - -	\$17,800.48	
Additional - - - - -	437.60	
Change Order No. 1 - - - - -	<u>1,180.80</u>	
Total Amount of Contract - - - - -		\$19,418.88

AUGUST 1959



GRADING, PLANTING, AND SPRINKLER SYSTEM
FORT CAROLINE NATIONAL MEMORIAL

AUGUST 1959



SPRINKLER OPERATIONS AT VISITOR CENTER

FLORIDA GEOLOGICAL SURVEY

Tallahassee, Florida

November 28, 1955

Mr. C. R. Vinton
Superintendent
Castillo de San Marcos National Monument
St. Augustine, Florida

Dear Ray:

In reply to your letter of November 18, 1955, I am pleased to send to you a number of drillers' logs and geologic logs of the Jacksonville-Duval County area. The best source for water that is free from contamination with an adequate and continuous supply would be from the limestones penetrated at some depth in the Duval County area. Generally, it is customary to case through the Hawthorn formation and younger beds into the underlying white limestones, and the well developed as an open hole below the casing. Wells at more shallow depths can be produced, if large quantities of water are not required. These wells may be completed in porous beds of the Hawthorn formation. I would not recommend the development of a shallow sand point well as a public water supply. If only about 16 gallons of water per minute are required, perhaps the well could be completed at depths above 300 feet. If the more shallow aquifers are developed, I would suggest that the casing be cemented from the base of the setting to the land surface.

The deeper the well, generally the harder the water, and some aeration is required if a high sulfide content is present. The deeper wells will flow at the land surface throughout much of Duval County and the water level would rise to near the ground surface where the elevation exceeds 50 feet. Filtering is rarely required on waters produced from the limestone aquifers, but softening may be necessary.

If we can be of further assistance, please let us know.

Sincerely yours,

/s/ Herman Gunter

Herman Gunter

HG:vmm

Enc: Logs W-896, 741, 2207, 3120, 3068, 2990, 2757 C
2603, 2558

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05039 L5d

Castillo de San Marcos National Monument
St. Augustine, Florida

November 21, 1955

REGION ONE	
NOV 21 1955	
Reg. Director	
Asst. Reg. Dir.	
Asst. Ch., Oper.	
Ch., Interpretation	
Ch., Adm.	
Ch., Coop. Act.	

Mr. Herman Gunter
State Geologist
Florida Geological Survey
Tallahassee, Florida

For	
File	
Asst. Dir.	
Encl.	
Program	

Dear Herman:

This is a very welcome opportunity to renew our pleasant association of past years which has been interrupted for too long a period. The problem of finding a satisfactory water supply at Fort Caroline National Memorial, in Duval County, seems to be a good subject for accomplishing that purpose; so here are the details.

The principle water system for the Memorial area will be located at the Z. Kingsley Grant - (Section 44) Twp 1-S, Range 28 E. The proposed well will be near the southeast corner of the grant, at about elevation 20, above mean low water datum. A secondary supply will be needed later on at a small overlook park at the high point of St. Johns Bluff, about 2000 feet east of the Kingsley Grant. This second area is at elevation 100. Both tracts are on the south bank of the St. Johns River, east of the town of Fulton.

If your records of wells in this high "sand dune" locality point to a solution of our water problem, we shall be grateful to you for the following advice:

For an adequate and dependable water supply should we plan for shallow or deep wells?

What depths should be anticipated?

We shall also be interested in water levels, potability, maximum pumping rate, draw down, and need for treatment by aeration, filter, or softening.

As the two areas concerned vary in elevation from 20 to 100 feet we shall need to know the reference datum which any elevations or depths are related.

I hope your records for this locality will produce answers
to some of the above questions; and that all goes well with you.

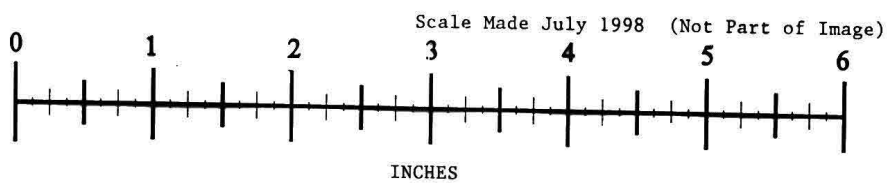
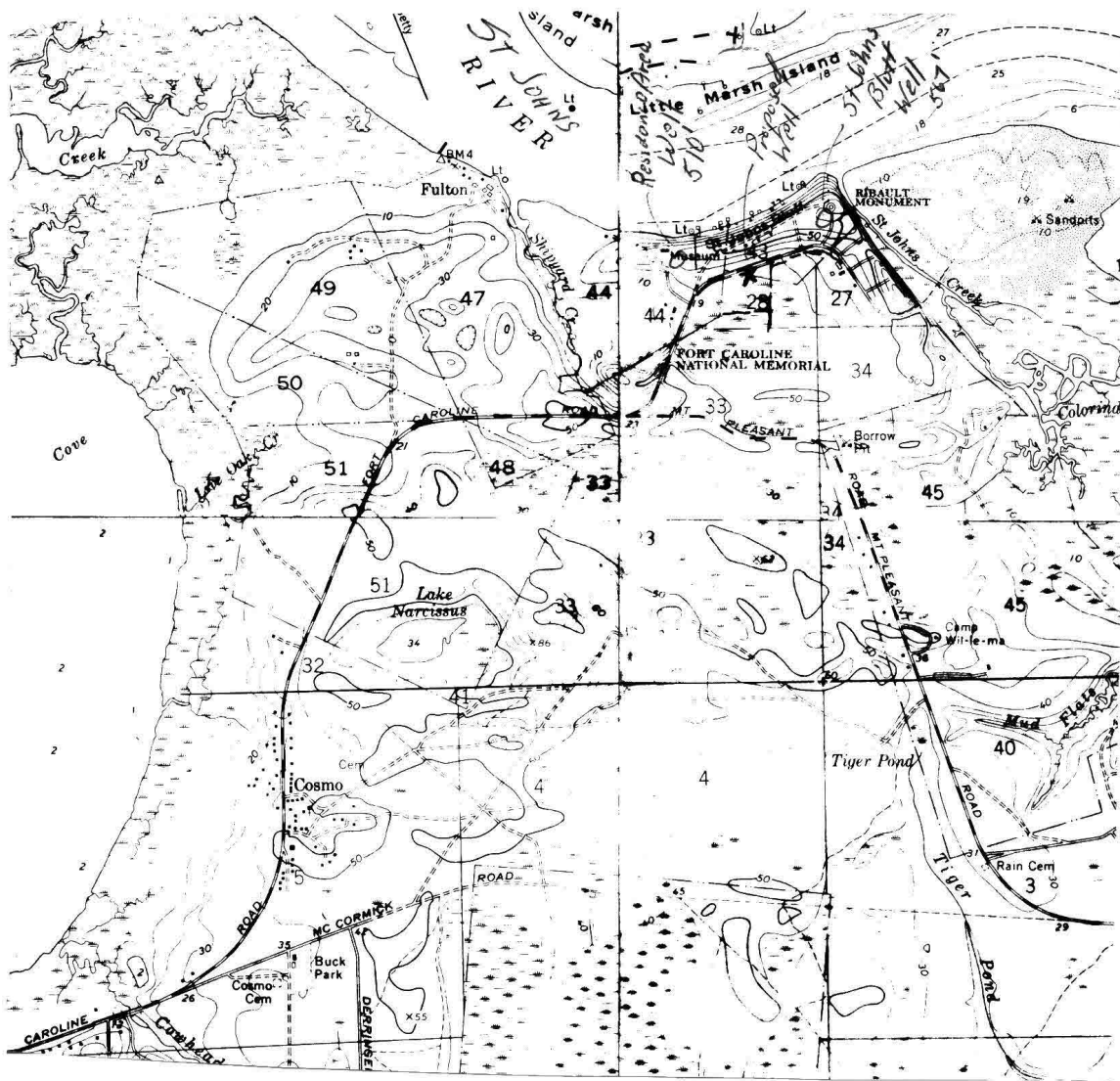
With warmest personal regards,

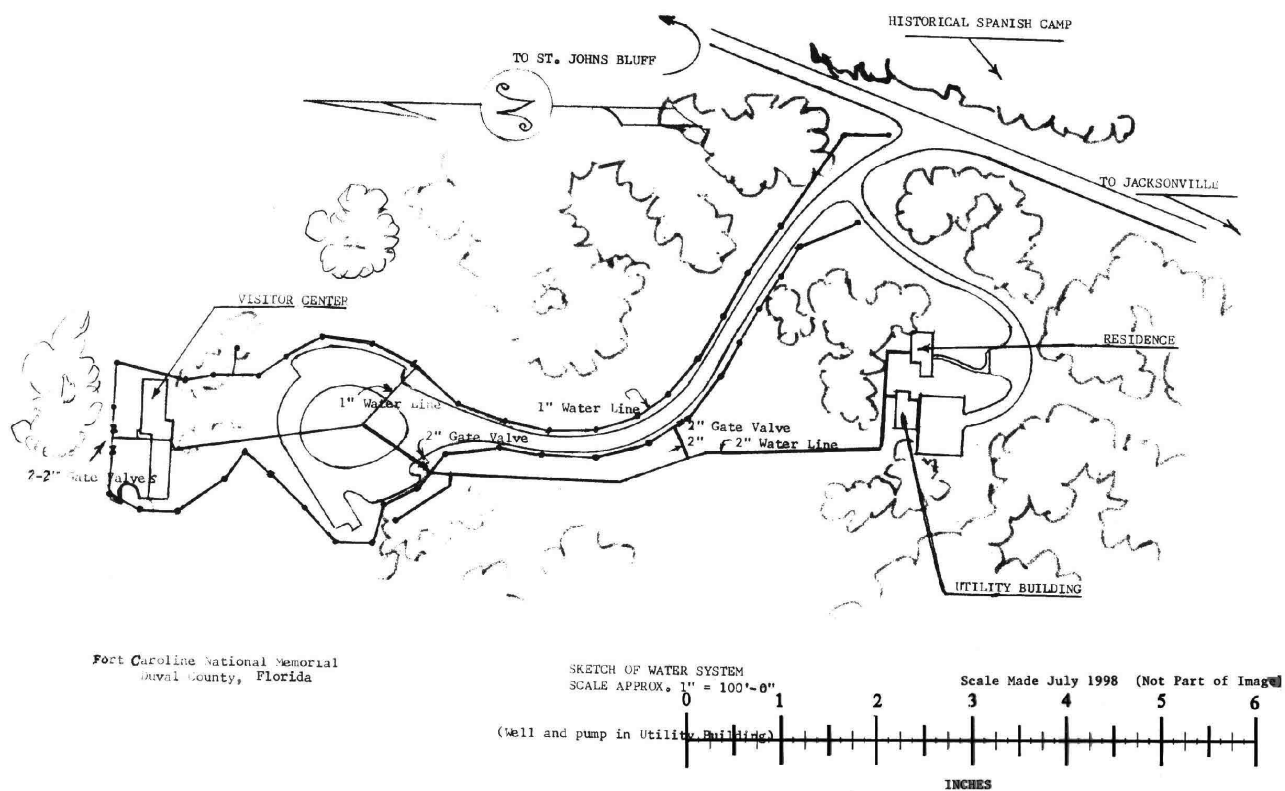
Cordially yours,

(SGD) C. R. Vinten

C. R. Vinten
Superintendent

Copy to: Regional Director, Region One
Chief, E.O.D.C.





Docket Information

Number of Documents in Docket 31

Documents Dated from 11/15/1955 to 6/17/1966

Docket Compiled: 3/21/2011