

BREVARD COUNTY
FACILITIES ENGINEERING & CONSTRUCTION
AUTHORIZATION TO INITIATE WORK

☐ Construction Change Directive

☒ Construction Contract Change Order

☐ Change Order to Purchase Order

☒ Guaranteed Maximum Price Realignment

AUTH/CHANGE ORDER NO: 04

CONTRACTOR: RUSH Construction, Inc.

PROJECT TITLE: Space View Park Improvements

DATE: 05/14/2021

| | |
|---------------------------------|-----------------|
| ORIGINAL CONTRACT AMT: | \$ 1,798,899.00 |
| COST OF CURRENT CHANGE: | \$ 230,706.26 |
| CHANGE ORDERS APPROVED TO DATE: | \$ 20,373.53 |
| NEW CONTRACT AMOUNT: | \$ 2,049,978.79 |

PO Number: 4500108512

W/O Number:

Fund:

Cost Center:

G/L:

I/O Number:

☐ Owner Requested

☐ A/E Error Omission

☐ Unforeseen Conditions:

☒ Deduct

List Previously Approved Amounts below:

| | | | |
|------------------|--------------|------------------|--------------|
| Authorization #1 | \$ 8,745.30 | Authorization #2 | \$ 23,400.00 |
| Authorization #3 | \$ 32,104.53 | Authorization #4 | |
| Authorization #5 | | Authorization #6 | |

The Contract will have the following changes:

Request funding for cost of change order 04 in the amount of \$230,706.26 for additional scope of work.

RUSH Construction, Inc.

Contractor _____ Date _____

CEG

Architect/Engineer _____ Date _____

Mark Lucas

05/14/21

Project Manager _____ Date _____

Mark Lucas

Engineer _____ Date *6/3/21*

Parks and Recreation Finance _____ Date _____

Contracts Admin _____ Date _____

James Butler *6/7/2021*
Parks and Recreation Construction Manager _____ Date _____

County Manager _____ Date _____

Mary Ellen Somer *6/7/2021*
Parks and Recreation Department Director _____ Date _____

Chair Board of County Commissioners _____ Date _____

**PCO #004**

RUSH Construction, Inc.
6285 Riverfront Center Blvd
Titusville, Florida 32780
Phone: (321) 267-8100
Fax: (321) 267-9944

Project: 2025 - Brevard County -Spaceview Park
10 East Broad Street
Titusville, Florida 32780

Prime Contract Potential Change Order #004: DOCK PILES SOUTH PIER

| | | | |
|-------------------------------|--|---|---|
| TO: | Brevard County 2725 Judge Fran Jamison Way, Melbourne, Florida 32940 | FROM: | RUSH Construction, Inc. 6285 Riverfront Center Blvd Titusville, Florida 32780 |
| PCO NUMBER/REVISION: | 004 / 0 | CONTRACT: | 1 - Brevard County Space View Park |
| REQUEST RECEIVED FROM: | Michael Butcher (Brevard County) | CREATED BY: | Mark Lucas (RUSH Construction, Inc.) |
| STATUS: | Pending - Proceeding | CREATED DATE: | 5/14/2021 |
| REFERENCE: | RFI 16 | PRIME CONTRACT CHANGE ORDER: | None |
| FIELD CHANGE: | No | | |
| LOCATION: | South Side Space View Park | ACCOUNTING METHOD: | Amount Based |
| SCHEDULE IMPACT: | 64 days | PAID IN FULL: | No |
| EXECUTED: | No | SIGNED CHANGE ORDER RECEIVED DATE: | |
| | | TOTAL AMOUNT: | \$230,706.26 |

POTENTIAL CHANGE ORDER TITLE: DOCK PILES SOUTH PIER

CHANGE REASON: Existing Condition - Unforeseen

POTENTIAL CHANGE ORDER DESCRIPTION: *(The Contract Is Changed As Follows)*

CE #007 - DOCK PILES SETTLING SOUTH PIER

SOUTH DOCK WOOD PILINGS HAVE SETTLED AFTER DRIVEN TO ELEVATION.

- RFI #16 submitted and the county and engineer requested soil borings.
- All dock work stopped pending engineering review and direction.
- Geotechnical Engineering Evaluation performed by Ardaman and Associates, Inc.
- Soil conditions were determined to be unacceptable for the dock design.
- A lateral load analysis was performed by Ardaman and Associates, Inc. to determine size of pilings required for soil conditions.
- Longer piles were ordered after size determination.
- Marine Equipment was put on standby after RFI until longer piles were delivered.

ATTACHMENTS:

[RFI 16.pdf](#) , [GC's L .pdf](#) , [GC's M.pdf](#) , [2025 Ardaman & Associates 04.12.21 \\$19594.75.pdf](#) , [RUSH Marine Proposal - Longer Piles 2021-0506.pdf](#) , [Ardaman Invoice C41888.pdf](#) , [Lateral Analysis Report 21-5223A.pdf](#) , [Lateral Analysis Proposal signed.pdf](#) , [Ardaman Proposal Signed 03-22-21.pdf](#)

| # | Budget Code | Description | Amount |
|---|---|---|--------------|
| 1 | 13-02-01.S SPECIALTIES SUBCONTRACTOR.SUBCONTRACT | Additional pilings, bracing and standby costs | \$148,724.00 |
| 2 | 01-90-07.M SOIL TEST.MATERIAL | Soil borings for South Dock | \$19,594.75 |
| 3 | 01-90-23.M DESIGN SERVICES -STRUCTURAL.MATERIAL | Lateral Load Analysis | \$1,500.00 |
| 4 | 01-30-02.G CONTRACTOR FEE.GENERAL | General Conditions "L" | \$4,530.00 |
| 5 | 01-30-40.L SUPERVISION.LABOR | Superintendent | \$16,695.00 |
| 6 | 01-30-36.L SAFETY / QC REP.LABOR | Special Safety and QC Requirement | \$6,720.00 |



PCO #004

| # | Budget Code | Description | Amount |
|--------------|---|-----------------------------|--------------|
| 7 | 01-30-92.M SMALL TOOLS & EXPENDABLES.MATERIAL | Small Tools and Expendables | \$300.00 |
| 8 | 01-51-05.M TELEPHONE USAGE (LAND/CELL).MATERIAL | Field Telephone | \$200.00 |
| 9 | 01-51-21.M DRINKING WATER.MATERIAL | Ice and Water | \$225.00 |
| 10 | 01-51-24.M TEMPORARY SANITARY FACILITIES.MATERIAL | Temporary Toilet | \$250.00 |
| 11 | 01-30-50.L LABOR BURDEN.LABOR | PT and I | \$7,416.00 |
| 12 | 01-30-18.M GENERAL LIABILITY INSURANCE.MATERIAL | GL Insurance rate 0.5% | \$1,030.77 |
| 13 | 01-30-02.G CONTRACTOR FEE.GENERAL | Overhead at 5% | \$10,359.28 |
| 14 | 01-30-02.G CONTRACTOR FEE.GENERAL | Profit 5% | \$10,877.24 |
| 15 | 01-30-22.M CONTRACT BOND.MATERIAL | Bond 1% | \$2,284.22 |
| Grand Total: | | | \$230,706.26 |

David Tom (Construction Engineering Group)

2651 W. Eau Gallie Blvd. Suite A
Melbourne, Florida 32935

Brevard County

2725 Judge Fran Jamison Way,
Melbourne, Florida 32940

RUSH Construction, Inc.

6285 Riverfront Center Blvd
Titusville, Florida 32780

 6-3-21
SIGNATURE DATE

SIGNATURE DATE


SIGNATURE DATE

5.510

9.0 WKS

| LINE NO. | ITEM | UNIT | QTY. | MATER. COST | | LABOR COST | | | OTHER DIR. COST | LINE TOTAL | | | | |
|--------------------|--|------|------|-------------|-------|------------|--------|-------|-----------------|----------------|-----------------------|-----------------------|----|-------|
| | | | | UNIT | TOTAL | HRS. | RATE | TOTAL | | | | | | |
| 1 | PROJECT MANAGER 16 hours per week | WKS | 4.0 | 175.00 | 700 | 64 | 45.00 | 2,880 | - | 3,580 | 01-30-03 General L | | | |
| 2 | ASST PM | WKS | - | - | - | - | 42.00 | - | - | - | | | | |
| 3 | EXECUTIVE LABOR COST | WKS | - | - | - | - | 42.00 | - | - | - | | | | |
| 4 | ESTIMATOR | WKS | - | - | - | - | 42.00 | - | - | - | | | | |
| 5 | OFFICE SECRETARY | WKS | - | - | - | - | 0.00 | - | - | - | | | | |
| 6 | SCHEDULER | WKS | - | - | - | - | 45.00 | - | - | - | | | | |
| 7 | AUTOMOBILES/ TRUCKS | MOS | 2.0 | 300.00 | 600 | - | 0.00 | - | - | 600 | 01-10-03 General L | | | |
| 8 | FUEL & MAINTENANCE | MOS | 2.0 | 175.00 | 350 | - | 0.00 | - | - | 350 | | 01-10-03 General L | | |
| 9 | PM TRAVEL | WKS | - | - | - | - | 0.00 | - | - | - | | | | |
| 10 | WARRANTY EXPENSE (incl. equip. I.D. tags) | LOT | - | - | - | - | 42.00 | - | - | - | | | | |
| 11 | POSTAGE | MOS | - | - | - | - | 0.00 | - | - | - | | | | |
| 12 | OFFICE SUPPLIES | LOT | - | - | - | - | 0.00 | - | - | - | | | | |
| 13 | OFFICE PHONES | MOS | - | - | - | - | 0.00 | - | - | - | | | | |
| 14 | MISC FEES | LOT | - | - | - | - | 0.00 | - | - | - | | | | |
| SUB TOTALS PAGES 1 | | | | | \$ | 1,650 | | | \$ | 2,880 | \$ | - | \$ | 4,530 |
| SALES TAX % | | | | 7 | 116 | | PT&I % | | 30 | 864 | | 980 | | |
| TOTALS | | | | | \$ | 1,766 | | | \$ | 3,744 | \$ | - | \$ | 5,510 |
| | | | | | | | | | | VERIFIED TOTAL | \$ | 5,510 | | |

ATTACHMENT "M"

*Required per Specs

0 SF

TITLE: Space View Park BC FEMA Continuing Services

TRADE : GENERAL CONDITIONS

TOTAL : \$ 31,121

LOCATION: Titusville

SCHEDULE: CONTRACT:

WORK: 2 MOS

9 WKS

| LINE NO. | ITEM | UNIT | QTY. | MATER. | COST | LABOR COST | | | OTHER DIR. COST | LINE TOTAL | |
|----------------------|---------------------|----------|------|--------|----------|------------|-------|-----------|-----------------|------------|--------------|
| | | | | UNIT | TOTAL | HRS. | RATE | TOTAL | | | |
| 1 | SUPERVISION | WKS | 9 | | 175.00 | | | 15,120 | | 16,695 | 01-30-40 |
| 2 | ASST. SUPERINT. | WKS | 0 | - | - | - | 0.00 | - | - | - | |
| 3 | SPECIAL QC REQ. | WKS | 4 | - | - | 160 | 42.00 | 6,720 | - | 6,720 | 01-30-36 |
| 4 | SSHO MANAGER | WKS | 0 | - | - | - | 0.00 | - | - | - | |
| 5 | ESCORT | WKS | 0 | - | - | - | 0.00 | - | - | - | |
| 6 | SAFETY DIRECTOR | WKS | 0 | - | - | - | 42.00 | - | - | - | |
| 7 | CQC MANAGER | WKS | | - | - | - | 42.00 | - | - | - | |
| 8 | ASST QC REP | WKS | | - | - | - | 0.00 | - | - | - | |
| 9 | CLERK | WKS | 0 | - | - | - | 35.00 | - | - | - | |
| 10 | SCHEDULER | WKS | | - | - | - | 0.00 | - | - | - | |
| 11 | OFFICE/STORAGE UNIT | MOS | 0 | 200.00 | - | - | 35.00 | - | - | - | RM |
| 12 | STOR. TRAILERS | 1 UN MOS | 0 | | - | - | 35.00 | - | - | - | |
| 13 | FIELD TELEPHONE | 1 UN MOS | 2 | 100.00 | 200 | - | 0.00 | - | - | 200 | 01-51-05 |
| 14 | POWER | MOS | 2 | - | - | - | 0.00 | - | - | - | |
| 15 | TEMP. WATER | LOT | 0 | - | - | - | 0.00 | - | - | - | |
| 16 | ICE & WATER | WKS | 9 | 25.00 | 225 | - | 0.00 | - | - | 225 | 01-51-21 |
| 17 | TEMP. TOILETS | MOS | 2 | 125.00 | 250 | - | 0.00 | - | - | 250 | 01-51-24 |
| 18 | DROP TANK | 1 UN MOS | | - | - | - | 0.00 | - | - | - | |
| 19 | DUMPSTERS | 1 UN EA | 2 | - | - | - | 0.00 | - | - | - | |
| 20 | WEEKLY CLEANUP | WKS | 0 | - | - | - | 35.00 | - | - | - | |
| 21 | FINAL CLEANUP | SF | 0 | - | - | - | 35.00 | - | - | - | |
| 22 | SURVEYS/C. PNTS. | LOT | 1 | - | - | - | 0.00 | - | - | - | |
| 23 | LAYOUT / B. BOARDS | LOT | 0 | - | - | - | 0.00 | - | - | - | |
| 24 | PROJECT SIGN | EA | 1 | - | - | - | 35.00 | - | - | - | |
| 25 | OWNERS TESTING | LOT | 0 | - | - | - | 0.00 | - | - | - | |
| 26 | TESTING | LOT | 1 | - | - | - | 0.00 | - | - | - | None planned |
| SUB TOTALS THIS PAGE | | | | | \$ 2,250 | | | \$ 21,840 | \$ - | \$ 24,090 | |
| VERIFIED TOTAL \$ | | | | | | | | | | 24,090 | |

RUSH FORM 102 (1/98): EX

RUSH Construction, Inc

COST ESTIMATE BREAKDOWN NO. 1

PAGE 2 OF 2

ATTACHMENT "M"

TITLE: Space View Park BC FEMA Continuing Services

TRADE : GENERAL CONDITIONS

TOTAL : \$ 31,121

LOCATION: Titusville

0

SCHEDULE: CONTRACT:

2

| LINE NO. | ITEM | UNIT | QTY. | MATER. | COST | LABOR COST | | | OTHER DIR. COST | LINE TOTAL | |
|----------|---------------|------|------|--------|-------|------------|-------|-------|-----------------|------------|----------|
| | | | | UNIT | TOTAL | HRS. | RATE | TOTAL | | | |
| 27 | TEMP. FENCING | LF | 0 | 4.50 | - | - | 35.00 | - | - | - | RM |
| 28 | SITE SECURITY | WKS | 0 | - | - | - | 35.00 | - | - | - | |
| 29 | REPRODUCTION | LOT | 0 | - | - | - | 0.00 | - | - | - | |
| 30 | SMALL TOOLS & | MOS | 2 | 150.00 | 300 | - | 0.00 | - | - | 300 | 01-30-92 |

| | | | | | | | | | | | | | |
|------------------------|---|-----|---|---|---|---|----------|--------|-----------|----------------|-----------|-----------|----|
| | SAFETY EQUIPMENT | | | | | | | | | | | | |
| 31 | OFFICE TRAILER FURNITURE | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 32 | OFFICE TRAILER EQUIPMENT | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | RM |
| 33 | AS-BUILT DWGS (Red-lines) | LOT | 0 | - | - | - | 42.00 | - | - | - | - | - | |
| 34 | AS-BUILT DWGS- Elect. | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 35 | CPM SCHEDULE | MOS | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 36 | P.E. CERT. - PERMITS | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 37 | MISC SITE RESTORE | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 38 | GIS SURVEY (With Surveys/C. Points) | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 39 | HURRICANE PREP | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 44 | PARTNERING (Design Review Mtgs) | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 45 | CLOSE OUT EXPENSE | LOT | 0 | - | - | - | 42.00 | - | - | - | - | - | |
| 47 | PAINT JOB TRAILER | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 48 | SAFETY COMPL. | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 49 | COLOR BOARDS | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 50 | I.D. BADGES | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 51 | EQUIP LAYOUT DWGS | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 52 | PROGRESS PHOTOS | MOS | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 53 | BUILDERS RISK | LOT | 1 | - | - | - | 0.00 | - | - | - | - | - | |
| 54 | PERMIT ALLOWANCE | LOT | 1 | - | - | - | 0.00 | - | - | - | - | - | |
| 55 | P&P BOND | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 56 | G/L INSURANCE | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| 57 | ACCESS ROAD | LOT | 0 | - | - | - | 0.00 | - | - | - | - | - | |
| SUB TOTALS PAGES 1 & 2 | | | | | | | \$ 2,550 | | \$ 21,840 | \$ - | \$ 24,390 | | |
| SALES TAX % | | | | 7 | | | 179 | PT&I % | 30 | 6,552 | | 6,731 | |
| TOTALS | | | | | | | \$ 2,729 | | \$ 28,392 | \$ - | \$ 31,121 | | |
| | | | | | | | | | | VERIFIED TOTAL | | \$ 31,121 | |



RUSH Construction, Inc.
6285 Riverfront Center Blvd
Titusville, Florida 32780
P: (321) 267-8100
F: (321) 267-9944

Project: 2025 Brevard County -Spaceview Park
10 East Broad Street
Titusville, Florida 32780

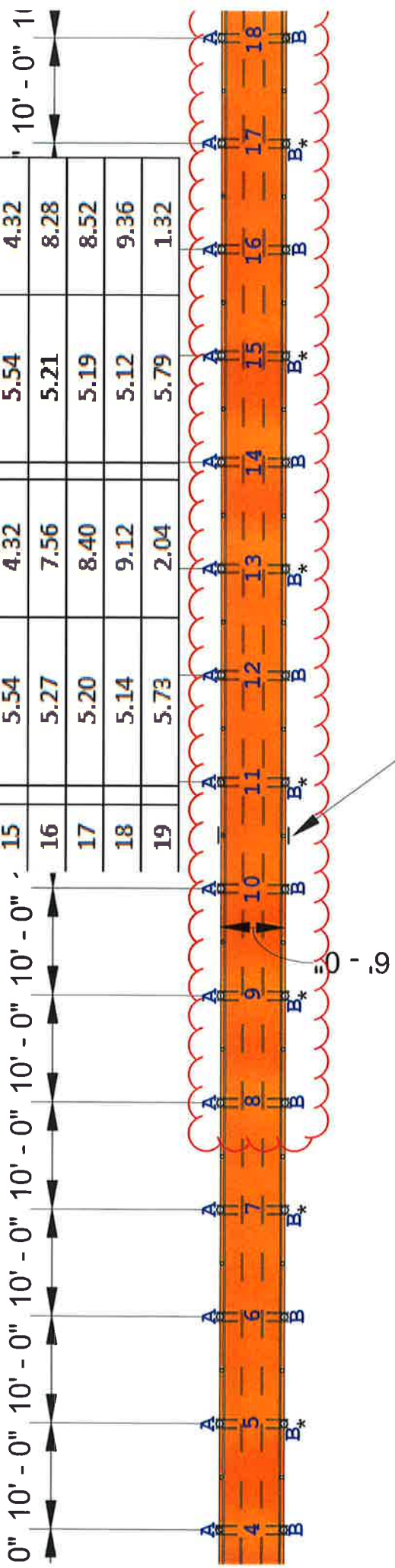
RFI #16: SOUTH DOCK PILE SETTling

| | | | |
|------------------------|--|------------------------|---|
| Status | Closed on 05/12/21 | | |
| To | Michael Butcher (Brevard County) Pete Petterson (Applied Technology & Management) David Tom (Construction Engineering Group) | From | Mark Lucas (RUSH Construction, Inc.) 6285 VectorSpace Blvd. Titusville, Florida 32780 |
| Date Initiated | Mar 12, 2021 | Due Date | Mar 15, 2021 |
| Location | | Project Stage | Course of Construction |
| Cost Impact | Yes (Unknown) | Schedule Impact | Yes (Unknown) |
| Spec Section | | Cost Code | |
| Drawing Number | S1.0, S2.0, S5.0 | Reference | |
| Linked Drawings | | | |
| Received From | Matt Tate (RUSH Marine, LLC) | | |
| Copies To | Ralph Bush (RUSH Construction, Inc.), Tony Landry (RUSH Marine, LLC), Joe Pellegrino (RUSH Construction, Inc.), Matt Tate (RUSH Marine, LLC) | | |

Activity

| | |
|--------------------------|---|
| Question | <p>Question from Mark Lucas RUSH Construction, Inc. on Friday, Mar 12, 2021 at 01:28 PM EST</p> <p>As per our telephone discussion, during construction of the south dock walkway March 9, 2021 we discovered some of the piles had sunk slightly from their installed elevation. On March 10, 2021 we discovered they had sunk significantly more. On March 11, 2021 we made some adjustments and raised the framing back to design elevation. But we are still noticing some settling this day. The problem appears to be limited to the south dock east end of walkway span. See attached drawing which identifies the pile locations, lengths and as-built deck elevations taken on March 12, 2021. Note: The actual pile embedment depths exceed the design requirement of 6' of embedment and in some places is over double the requirement. See also, attached photo of dock taken on March 11, 2021. Please review and advise what course of action we should take.</p> <p>Attachments RFI 16 attachment.pdf, RFI 16 photo attachment.pdf</p> |
| Official Response | <p>Response from David Tom Construction Engineering Group on Monday, Mar 15, 2021 at 02:23 PM EDT</p> <p>I spoke to Ardaman and we think that 3-borings located adjacent to the area of the pier that has dropped at depths between 30'-40' should be sufficient for Ardaman to make their recommendations.</p> <p>Attachments RFI 16 Borings.pdf</p> |
| Official Response | <p>Response from Michael Butcher Brevard County on Monday, Mar 15, 2021 at 07:44 AM EDT</p> <p>Brevard County has contacted Ardaman and requested geotechnical work or soil borings. BCPR request that the engineer designate what areas and what depths they would like the borings taken. There has been no guarantee from Ardaman on a time frame but hopefully Monday 3/15 we will have a better idea.</p> |

| Bent | As-Built Deck | | Difference | | As-Built Deck | | Difference | |
|------|---------------|------|------------|--|---------------|------|------------|--|
| | EL | inch | | | EL | inch | | |
| 8 | 5.86 | 0.48 | | | 5.81 | 1.08 | | |
| 9 | 5.72 | 2.16 | | | 5.74 | 1.92 | | |
| 10 | 5.69 | 2.52 | | | 5.68 | 2.64 | | |
| 11 | 5.88 | 0.24 | | | 5.80 | 1.20 | | |
| 12 | 5.90 | 0.00 | | | 5.87 | 0.36 | | |
| 13 | 5.84 | 0.72 | | | 5.87 | 0.36 | | |
| 14 | 5.77 | 1.56 | | | 5.84 | 0.72 | | |
| 15 | 5.54 | 4.32 | | | 5.54 | 4.32 | | |
| 16 | 5.27 | 7.56 | | | 5.21 | 8.28 | | |
| 17 | 5.20 | 8.40 | | | 5.19 | 8.52 | | |
| 18 | 5.14 | 9.12 | | | 5.12 | 9.36 | | |
| 19 | 5.73 | 2.04 | | | 5.79 | 1.32 | | |



Bents 11 thru 19
30' piles

200'-0"

Bents 1 thru 10
25' piles



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

March 22, 2021
Proposal File No. 2123-048

Rush Construction
6285 Riverfront Center Boulevard
Titusville, Florida 32780

Attention: Mr. Mark Lucas

Subject: Proposal for Subsurface Soil Exploration and
Geotechnical Engineering Evaluation
Brevard County Parks & Recreation Dock Replacement at
Space View Park
Titusville, Florida

Dear Mr. Lucas:

As requested by Mr. Michael Butcher with the Brevard County Parks & Recreation Department, we are pleased to present this proposal for conducting a subsurface soil exploration and geotechnical engineering evaluation for the subject project. Based on our review of information provided by Mr. Butcher, the proposed project consists of the replacement of one wooden dock located at the Space View Park site which was damaged during a previous storm. The subject dock to be replaced is located within the Indian River adjacent to the park facility.

The length of the new dock will be approximately 220 feet. Preliminarily, it is estimated that the wooden pilings for the new dock will be installed to depths of no more than approximately 12 to 20 feet below the mud line within the river.

The scope of our work will include determining if the soil characteristics are suitable to construct the new dock piles. In addition, we will estimate axial pile capacities. Our proposed scope of services and the associated costs are presented below.

FIELD EXPLORATION

The field exploration program would consist of drilling four Standard Penetration Test (SPT) borings within the river in close proximity to the proposed dock location. Barge-mounted drilling equipment will be utilized. Each boring would be drilled to a depth of 40 feet below the mudline in the bottom of the river. We have assumed a depth from barge level to the mudline on the bottom of the river of no more than 10 feet.

The SPT borings will be drilled using a procedure similar to the Standard Penetration Test outlined in ASTM D-1586. To facilitate drilling within the river, solid casing will be set from the barge level to several feet below the mudline on the bottom of the river. The borings will be sampled at 18-inch intervals to 10 feet deep and at 5-foot intervals below 10 feet. Each sample will be removed from the sampler in the field and then examined and visually classified by our crew chief.

1300 N Cocoa Boulevard, Cocoa, FL 32922 Phone (321) 632-2503 FAX (321) 636-4657

Louisiana: Baton Rouge, Monroe, New Orleans, Shreveport

Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port Charlotte, Port St Lucie, Sarasota, Tallahassee, Tampa, West Palm Beach

Representative portions will be sealed and packaged for transportation to our laboratory for further analysis as required.

LABORATORY PROGRAM

Routine laboratory visual classification will be performed along with specific classification tests deemed necessary (i.e., percent fines).

ENGINEERING ANALYSIS AND REPORT

Engineering analysis of all data obtained will be made to evaluate general subsurface conditions and to develop engineering recommendations to guide foundation support for the replacement dock. We will provide estimated axial compressive and uplift capacities for up to two diameters of round timber piles for support of the new dock. Our analyses do not include lateral load analysis.

Our recommendations for the dock piles, together with data developed during the exploration, will be submitted in a written report upon conclusion of the study.

COST ESTIMATE

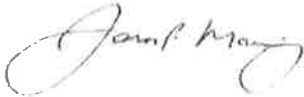
The anticipated cost for the requested scope of services will not exceed **\$18,416.00** without prior approval from the client.

CLOSURE

This proposal is subject to the following conditions: (1) access to boring locations is to be readily available to our barge-mounted drilling equipment, (2) an existing boat ramp that is suitable for launching of the barge is located within close proximity of the project sites, (3) the proposed number of borings and the boring depths will be adequate, (4) undisturbed samples and consolidation tests on fine grained soils are not budgeted into the total cost, (5) Ardaman & Associates will not take responsibility for damages to underground or underwater structures and/or services that are not located by Sunshine One-Call, and (6) exploration or evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface is not included.

We appreciate the opportunity to submit this proposal and look forward to working with you on this project. If this proposal meets with your approval, please indicate your acceptance by signing and returning the attached Proposal/Project Acceptance Form. Please call if you have any questions or require additional information.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

A handwritten signature in cursive script, appearing to read "Jason P. Manning".

Jason P. Manning, P.E.
Branch Manager

JPM/dk



PROPOSAL/PROJECT ACCEPTANCE AND AGREEMENT

PROJECT INFORMATION:

Project Name Space View Park Dock Replacement
Project Location Titusville, Florida
Proposal Number and Date 2123-048; dated March 22, 2021
Description of Services Subsurface Soil Exploration
Estimated Fee \$18,416.00

PROPERTY OWNER IDENTIFICATION:

Name NA
Property Identification Number _____
Address _____
City/State _____ Zip Code _____ Phone _____
Attention _____ Title _____

SPECIAL INSTRUCTIONS:

PAYMENT TERMS:

Payment shall be due within 30 days after date of each periodic invoice. Interest at the rate of 18% per annum (or the highest rate allowable by law) shall accrue on all amounts not paid within 30 days after date of invoice. All attorney fees and expenses associated with collection of past due invoices will be paid by Client. Failure to timely pay any invoice shall constitute a waiver of any and all claims arising from or related to Ardaman & Associates, Inc.'s services, including but not limited to the services described in this Proposal.

PROPOSAL ACCEPTANCE:

By accepting this Proposal, the Terms and Conditions of this Proposal, including the Terms on this page, and Ardaman & Associates, Inc.'s General Conditions appearing on the following page of this Proposal, are incorporated herein by reference. In the event this Proposal Acceptance was received by facsimile, Client hereby confirms that the above described Proposal, the Terms and Conditions of this Proposal, including the Terms on this page, and Ardaman & Associates, Inc.'s General Conditions have been made available and are incorporated in this agreement.

Accepted this 22nd day of March, 2021

RUSH CONSTRUCTION
(Print or type individual, firm or corporate body name)

[Signature]
(Signature of authorized representative)

Mark Lucas RUSH PM.
(Print or type name of authorized representative and title)

**Subsurface Soil Exploration and
Geotechnical Engineering Evaluation
Dock Repairs Project
Space View Park
Titusville, Florida**



Ardaman & Associates, Inc.

CORPORATE HEADQUARTERS

8008 S. Orange Avenue, Orlando, FL 32809 - Phone: (407) 855-3860 Fax: (407) 859-8121

Branch Office Locations

Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, West Palm Beach
Louisiana: Baton Rouge, Monroe, New Orleans, Shreveport

MEMBERS:

ASTM International
American Concrete Institute
Geoprofessional Business Association
Society of American Military Engineers
American Council of Engineering Companies



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

April 7, 2021
File No. 21-23-5223A

Rush Construction
6285 Riverfront Center Boulevard
Titusville, Florida 32780

Attention: Mr. Mark Lucas

Subject: Subsurface Soil Exploration and
Geotechnical Engineering Evaluation
Dock Repairs Project
Space View Park
Titusville, Florida

Dear Mr. Lucas:

As requested, we have completed a subsurface soil exploration and geotechnical engineering evaluation for the subject project. The purposes of performing this exploration were to evaluate the general subsurface conditions within the proposed dock repair areas and to provide recommendations for foundation support for the dock structure. This report documents our findings and presents our engineering recommendations.

SITE LOCATION AND DESCRIPTION

The project site is the existing Space View Park facility located at the east end of Broad Street in Titusville, Brevard County, Florida (Section 3, Township 22 South, Range 35 East). The general site location is shown superimposed on the Titusville, Florida USGS quadrangle map presented as the Site Location Map, Figure 1.

The field exploration program documented in this report was performed within the Indian River adjacent to the new dock that is currently under construction on the east portion of the park facility. This new dock is being constructed to replace the previous dock that suffered significant storm damage.

The new dock that is under construction is a wooden dock that is approximately 220 feet in length. Eight-inch tip diameter timber pilings were previously installed at the project site for support of the dock structure. Information provided by Rush Construction indicates that many of the timber pilings that were installed for the segment of the dock beginning at Bent No. 8 and extending to near the east end of the dock have experienced significant settlement. The pilings in the area of Bent No. 8 to the east end of the dock are reportedly 20 to 35 feet in length, with approximately 10 to 18.5 feet of embedment below the mud line in the river. According to Rush Construction representatives, the existing timber pilings from Bent No. 8 to the west end of the dock have not experienced any notable settlement.

It is our understanding that the client is evaluating remedial measures to address the settlement of the pilings from Bent No. 8 to the east end of the dock. These remedial measures may include extending the existing pilings deeper and/or adding new longer pilings. Larger diameter pilings may be utilized.

FIELD EXPLORATION PROGRAM

SPT Borings

The field exploration program included performing four Standard Penetration Test (SPT) borings within the Indian River adjacent to the new dock that is under construction using barge-mounted drilling equipment. It is noted that Borings B-1 through B-3 were drilled in close proximity to pilings that have reportedly settled (east of Bent No. 8). Boring B-4 was drilled within an area where no obvious settlement of dock pilings has been noted by the Client (west of Bent No. 8). The borings were advanced to depths ranging from 40 to 60 feet below the mud line in the bottom of the river using the methodology outlined in ASTM D-1586. A summary of this field procedure is included in Appendix I. To facilitate drilling within the river, solid casing was set from barge level to several feet below the river bottom.

Split-spoon soil samples recovered during performance of the borings were visually classified in the field and representative portions of the samples were transported to our laboratory in sealed sample jars.

Test Locations

The approximate locations of the borings are schematically illustrated on a site plan shown on Figure 2. These locations were determined in the field by estimating distances from existing site features and should be considered accurate only to the degree implied by the method of measurement used.

LABORATORY PROGRAM

Representative soil samples obtained during our field sampling operation were packaged and transferred to our laboratory for further visual examination and classification. The soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488). The resulting soil descriptions are shown on the soil boring profiles presented in Appendix II.

GENERAL SUBSURFACE CONDITIONS

General Soil Profile

The results of the field exploration and laboratory programs are graphically summarized on the soil boring profiles presented in Appendix II. The stratification of the boring profiles represents our interpretation of the field boring logs and the results of laboratory examinations of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

The results of the SPT borings indicate the following general soil profile:

| Approximate Depth Below River Bottom (feet) | Description (Unified Soil Classification) |
|---|---|
| 0 to 18.5 | Very soft organic muck/silt (OH, ML) and very loose to loose fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), and clayey fine sand (SC) |
| 18.5 to 52.5 | Very loose to medium dense fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), and clayey fine sand (SC). Also soft clay (CL/CH) in Boring B-3 |
| 52.5 to 60 | Medium dense fine sand with silt (SP-SM) and silty fine sand (SM) |

Various amounts of shell were encountered in the samples collected from the borings. The above soil profile is outlined in general terms only. Please refer to Appendix II for soil profile details.

River Water Depths

As indicated on the soil boring profiles in Appendix II, the river water depths approximated at the locations of Borings B-1 through B-4 ranged from 5 to 8 feet.

ENGINEERING EVALUATION AND RECOMMENDATIONS

Based on information provided by the Client, the existing 8-inch tip diameter timber pilings from Bent No. 8 to near the east end of the dock structure have experienced significant settlement. These exiting pilings reportedly have approximately 10 to 18.5 feet of embedment below the mudline in the river. It is likely that the settlement of the pilings that has occurred is due to the pile tips being located in the very soft organic muck/silt soils and/or the pilings not being installed deep enough below the bottom of the very soft soils.

It is our understanding that the Client is evaluating remedial measures to address the settlement of the pilings from Bent No. 8 to the east end of the dock. These remedial measures may include extending the existing pilings deeper and/or adding new longer pilings. Larger diameter pilings may be utilized.

The following are our recommendations for installation of new pilings from Bent No. 8 to near the east end of the dock structure based on the existing soil conditions. The recommendations are made as a guide for the design engineer, parts of which should be incorporated into the project's specifications.

Allowable Axial Compressive Capacity Analysis

Static axial compressive pile capacities were estimated following procedures utilizing SPT N-values obtained from Borings B-2 and B-3. Specifically, the computer software program "FB-Deep", which utilizes procedures developed by Dr. Schmertman originally outlined in

Research Bulletin No. 121-B dated September, 1967, was used. Estimated compressive pile capacities for individual 8-, 10-, and 12-inch tip diameter timber piles for the support of the dock structure are provided in the following table.

| Depth Below Mudline/River Bottom (ft) | Allowable Axial Compressive Capacity (tons) | | |
|---|--|----------------------------------|----------------------------------|
| | 8-Inch Diameter Tip Piles | 10-Inch Diameter Tip Piles | 12-Inch Diameter Tip Piles |
| 40 | 5 | 6 | 8 |
| 45 | 6 | 8 | 10 |
| 50 | 8 | 11 | 13 |
| 55 | 11 | 14 | 18 |

It is noted that scour has not been considered in the pile capacity analyses presented above. If scour is to be considered, we should be provided with the estimated amount of scour. The pile capacities presented above incorporate a factor of safety of 2 for both the side friction and the mobilized end bearing. We note that the estimated axial capacities are for individual piles. Pile spacing should be at least 3.0 pile diameters center to center to prevent reduced capacities caused by pile to pile interaction.

Soils containing a significant amount of shell (identified as "and shell" on the soil boring profiles in Appendix II) were encountered in the SPT borings at depths ranging from approximately 17.5 to 57.5 feet below the mud line in the bottom of the river. These soils may be difficult to penetrate and the contractor should ensure that the pile driving equipment utilized is adequate to achieve the required pile depths. The actual pile lengths will be determined during driving. Uplift capacities on the order of 50 percent of the vertical capacity should be used in design.

It is noted that our scope of work did not include a lateral capacity analysis for the timber piles. Once a final pile configuration is selected, a lateral capacity analysis should be performed by Ardaman & Associates, Inc. to further evaluate pile capacity. The pile lengths may need to be adjusted following the completion of the lateral load analysis.

Pile Installation

As specified in Revised Florida Department of Transportation (FDOT) Specification Section 455, piles should not be driven beyond practical refusal.

Piles should be driven with a steam, air, or diesel hammer delivering not less than the appropriate minimum rated energy per blow. At all times, the hammer should be operated at the chamber pressure and speed recommended by the manufacturer. Pile driving should be as continuous an operation as possible and should proceed without stopping over the last 5 feet of penetration. The piles should be driven with a cap block to prevent brooming.

During driving, pile driving records should be kept for each pile detailing pertinent information such as the pile type, pile length, date driven and blow count per foot. The capacity of each pile

should be reviewed based on its final tip elevation and driving record. For this project, we recommend that pile acceptance be based on driving below the maximum allowable pile tip elevation and attaining capacity based on an accepted dynamic formula (ie, Gates, Modified ENR, etc.). We note that the ENR formula incorporates a relatively high safety factor for axial capacity analysis. The safety factor could be reduced using a static load test.

A representative of Ardaman & Associates, Inc. should monitor the installation of the piles. Their duties should include, but not be limited to, the following:

1. Keep an accurate record of pile installation and driving procedures.
2. Verify that all piles are installed to the proper driving resistance and to a depth indicating that the piles were driven into the desired bearing formation.
3. Inspect the piles prior to installation for defects and confirm that the piles are not damaged during installation.
4. Confirm that the pile driving equipment is operating properly.

QUALITY ASSURANCE

We recommend establishing a comprehensive quality assurance program to verify that all foundation construction is conducted in accordance with the appropriate plans and specifications. Materials testing and inspection services should be provided by Ardaman & Associates. We recommend inspecting and testing the construction materials for the foundations and other structural components. The installation of the pile foundations for support of the dock structure should be monitored full-time by a representative of Ardaman & Associates.

CLOSURE

The analyses and recommendations submitted herein are based on the data obtained from the soil borings presented on Figure 2 and in Appendix II. This report does not reflect any variations which may occur adjacent to or between the borings. The nature and extent of the variations between the boring locations may not become evident until during construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations during the construction period and noting the characteristics of the variations. This study does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

This report has been prepared for the exclusive use of Rush Construction in accordance with generally accepted geotechnical engineering practices. In the event any changes occur in the design, nature, or location of the proposed facility, we should review the applicability of conclusions and recommendations in this report. We recommend a general review of final design and specifications by our office to verify that foundation recommendations are properly interpreted and implemented in the design specifications.

We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.
Certificate of Authorization No. 5950



Dustin M. Cone
Assistance Project Engineer

DMC/JPM/dk



Jason P. Manning, P.E.
Branch Manager
Florida License No. 53265

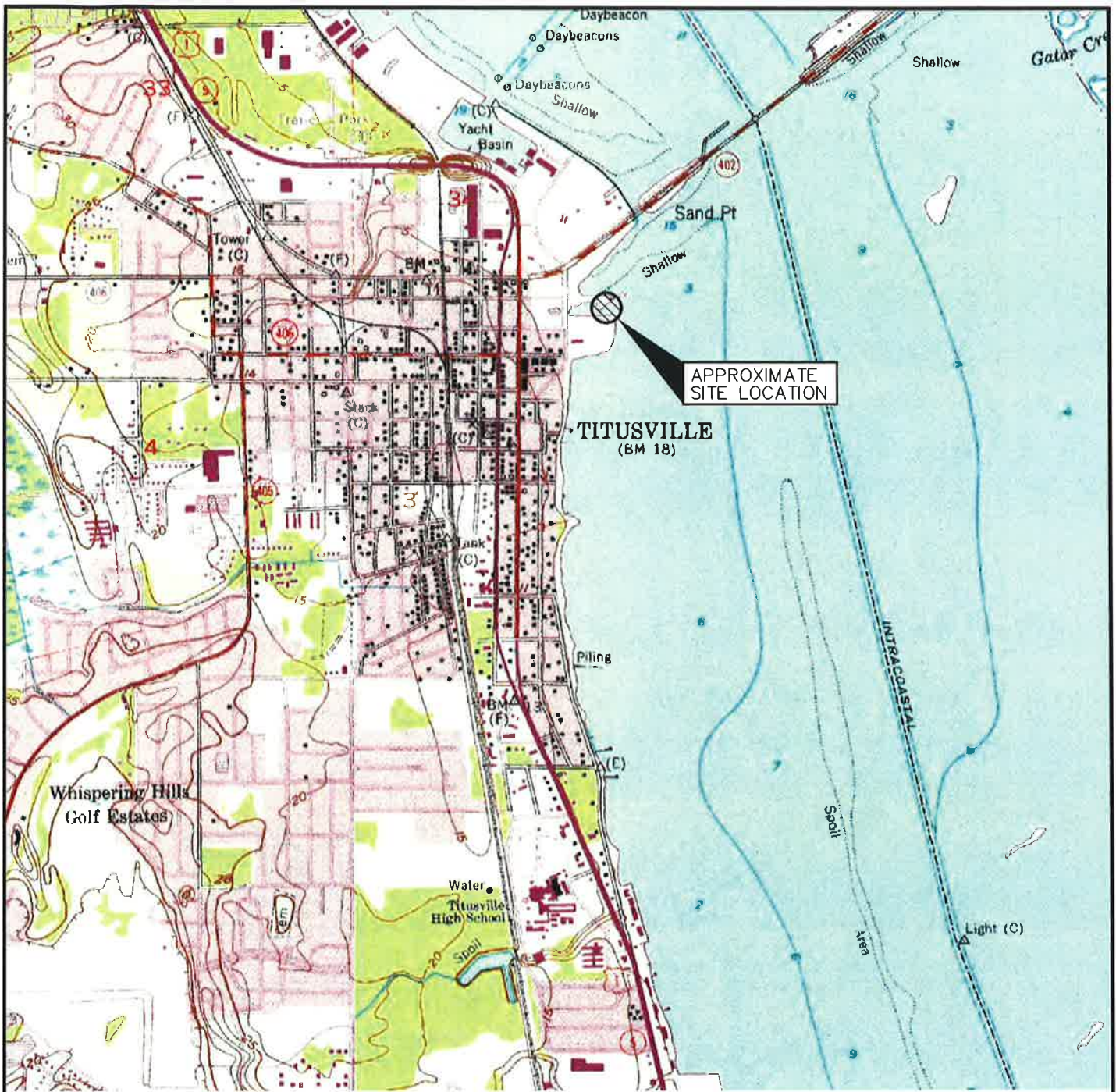
4/7/21



Jason P.

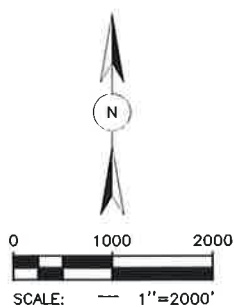
Manning
P.E.

Digitally signed by: Jason P. Manning, P.E.
DN: CN = Jason P. Manning, P.E. email = jmanning@ardaman.
com C = US OU = Ardaman and Associates
Date: 2021.04.07 14:49:30 -05'00'



SECTION 3
TOWNSHIP 22 SOUTH
RANGE 35 EAST

OBTAINED FROM U.S.G.S. QUAD MAP: TITUSVILLE, FLORIDA



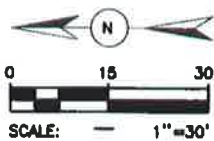
QUADRANGLE LOCATION

SITE LOCATION MAP

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

SUBSURFACE SOIL EXPLORATION
SPACE VIEW PARK DOCK REPLACEMENT
TITUSVILLE, FLORIDA

| | | |
|------------------|--------------|---------------|
| DRAWN BY: TAT | CHECKED BY: | DATE: 3/29/21 |
| FILE NO. 21-5223 | APPROVED BY: | FIGURE: 1 |



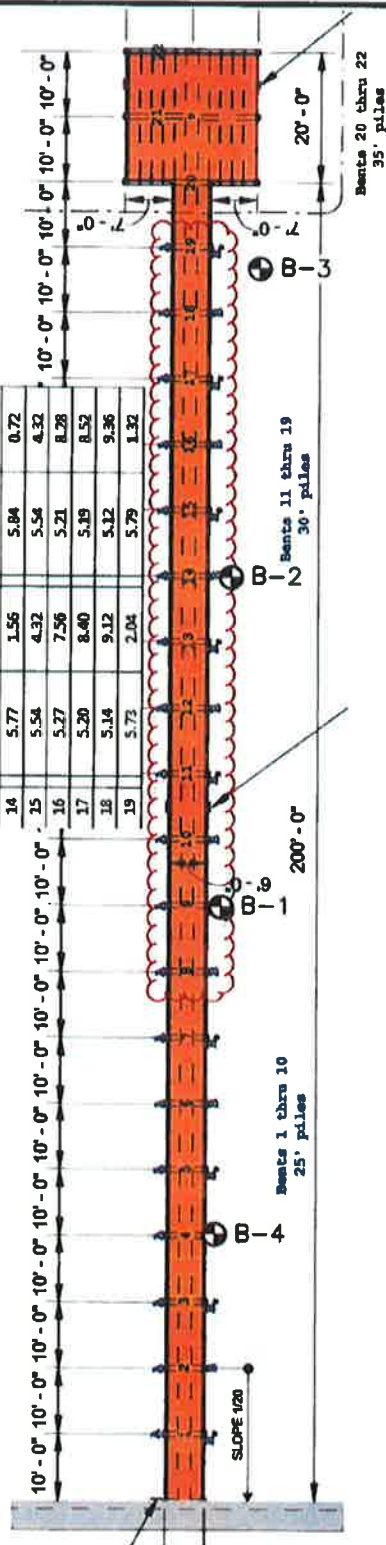
Proposed Deck EL.
5.90

- Notes:
1. As-Built on 3/12/2021
2. Bents 14 thru 17 were adjusted/raised on 3/11/2021

| Bent | Pile A | | Pile B | |
|------|---------------|------------|---------------|------------|
| | As-Built Deck | Difference | As-Built Deck | Difference |
| 8 | EL | Inch | EL | Inch |
| 9 | 5.86 | 0.48 | 5.81 | 1.08 |
| 10 | 5.72 | 2.16 | 5.74 | 1.92 |
| 11 | 5.69 | 2.52 | 5.68 | 2.64 |
| 12 | 5.88 | 0.24 | 5.80 | 1.20 |
| 13 | 5.90 | 0.80 | 5.87 | 0.36 |
| 14 | 5.84 | 0.72 | 5.87 | 0.36 |
| 15 | 5.77 | 1.56 | 5.84 | 0.72 |
| 16 | 5.54 | 4.32 | 5.54 | 4.32 |
| 17 | 5.27 | 7.56 | 5.21 | 8.28 |
| 18 | 5.20 | 8.40 | 5.19 | 8.52 |
| 19 | 5.14 | 9.12 | 5.12 | 9.36 |
| | 5.73 | 2.04 | 5.79 | 1.32 |

LEGEND

- ⊙ B-1 STANDARD PENETRATION TEST (SPT)
BORING LOCATION



BORING LOCATION PLAN



SUBSURFACE SOIL EXPLORATION
SPACE VIEW PARK DOCK REPLACEMENT
TITUSVILLE, FLORIDA

| | | |
|------------------|--------------|---------------|
| DRAWN BY: TAT | CHECKED BY: | DATE: 3/28/21 |
| FILE NO. 21-5223 | APPROVED BY: | FIGURE: 2 |

APPENDIX I

Standard Penetration Test Boring Procedures

STANDARD PENETRATION TEST

The standard penetration test is a widely accepted test method of *in situ* testing of foundation soils (ASTM D 1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load.

The tests are usually performed at 5-foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from the soils at every 5 feet of drilled depth and from every different stratum are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. Samples not used in testing are stored for 30 days prior to being discarded. After completion of a test boring, the hole is kept open until a steady state groundwater level is recorded. The hole is then sealed, if necessary, and backfilled.







APPENDIX II

Soil Boring Profiles

LEGEND

SOIL DESCRIPTIONS

COLORS

| | | |
|---|---------------------------------|---------------------------|
|  | ① ORGANIC MUCK AND SILT (OH,ML) | Ⓐ DARK GRAY OR DARK BROWN |
|  | ② FINE SAND (SP) | Ⓑ LIGHT GRAY TO GRAY |
|  | ③ FINE SAND WITH SILT (SP-SM) | |
|  | ④ SILTY FINE SAND (SM) | |
|  | ⑤ CLAYEY FINE SAND (SC) | |
|  | ⑥ CLAY (CL,CH) | |

B STANDARD PENETRATION TEST (SPT) BORING

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT

WOH SAMPLER ADVANCED BY STATIC WEIGHT OF HAMMER AND RODS ONLY

WOR SAMPLER ADVANCED BY STATIC WEIGHT OF RODS ONLY

SP,SP-SM
SM,SC,CH

UNIFIED SOIL CLASSIFICATION SYSTEM

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

| <u>DESCRIPTION</u> | <u>BLOW COUNT "N"</u> |
|--------------------|-----------------------|
| VERY LOOSE | 0 TO 4 |
| LOOSE | 4 TO 10 |
| MEDIUM DENSE | 10 TO 30 |
| DENSE | 30 TO 50 |
| VERY DENSE | >50 |

II COHESIVE SOILS

| <u>DESCRIPTION</u> | <u>UNCONFINED COMPRESSIVE STRENGTH, QU, TSF</u> | <u>BLOW COUNT "N"</u> |
|--------------------|---|-----------------------|
| VERY SOFT | <1/4 | 0 TO 2 |
| SOFT | 1/4 TO 1/2 | 2 TO 4 |
| MEDIUM STIFF | 1/2 TO 1 | 4 TO 8 |
| STIFF | 1 TO 2 | 8 TO 15 |
| VERY STIFF | 2 TO 4 | 15 TO 30 |
| HARD | >4 | >30 |

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

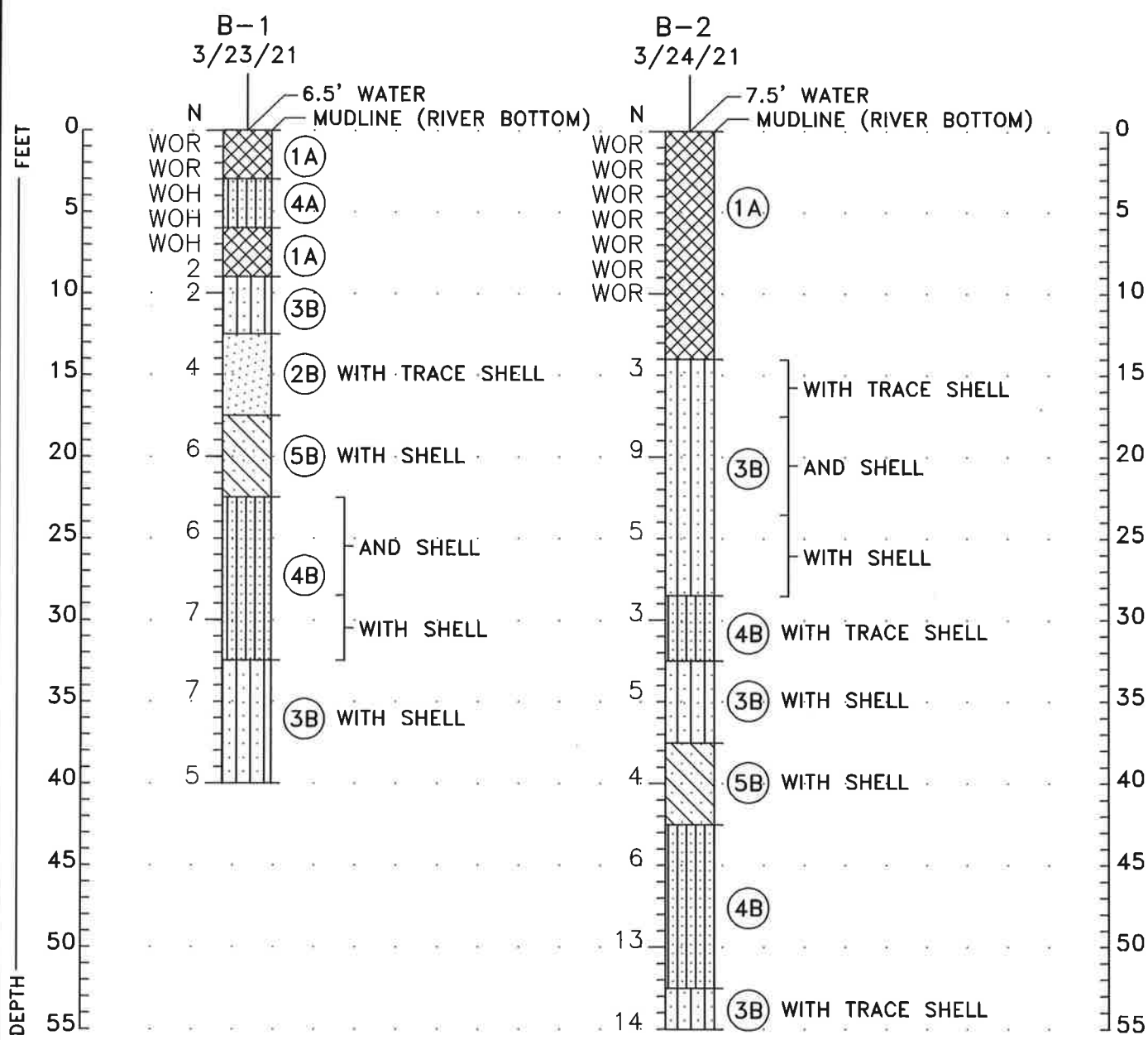
GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR.

SOIL PROFILES LEGEND




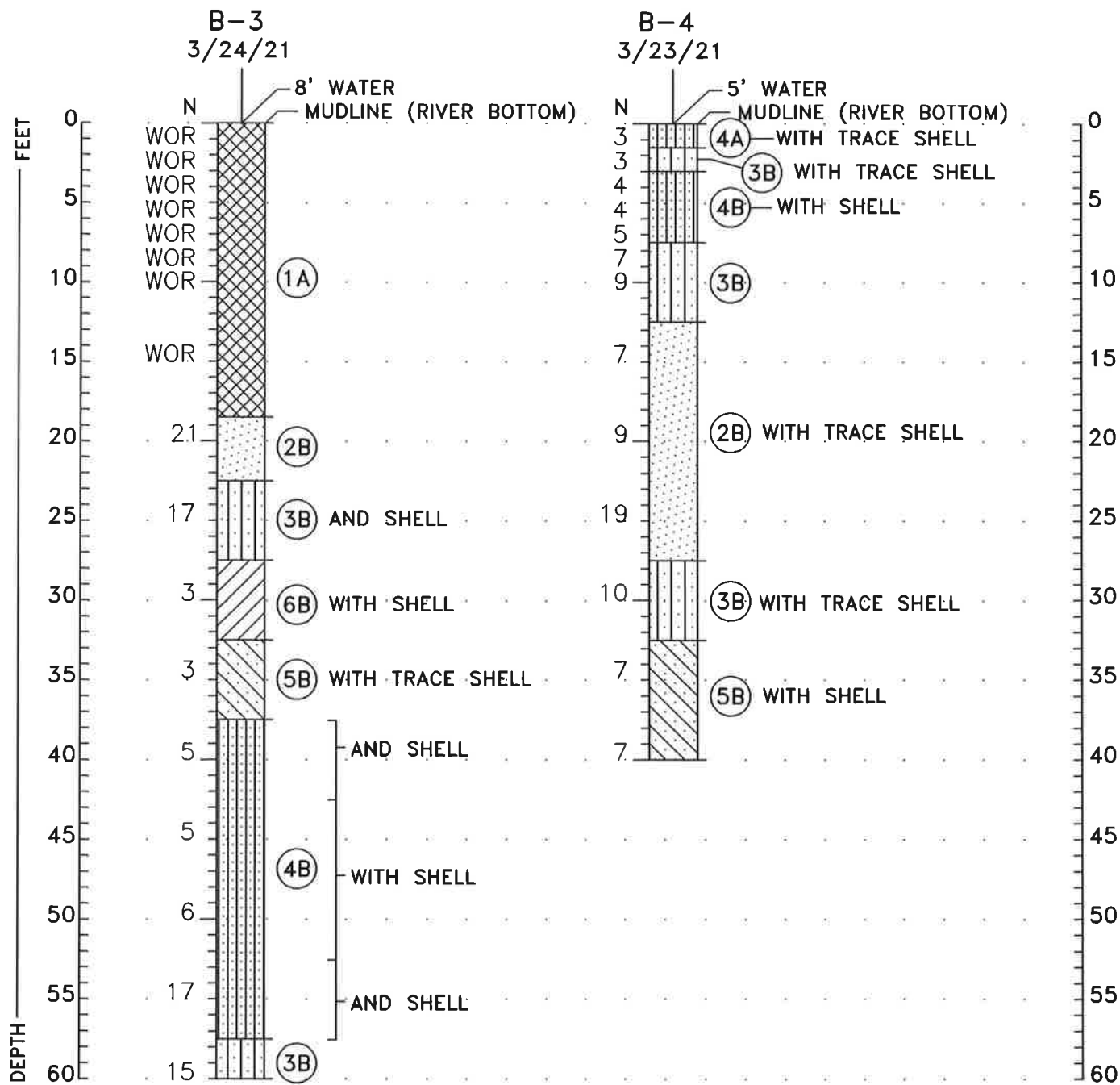
SUBSURFACE SOIL EXPLORATION
SPACE VIEW PARK DOCK REPLACEMENT
TITUSVILLE, FLORIDA

| | | |
|------------------|--------------|---------------|
| DRAWN BY: TAT | CHECKED BY: | DATE: 3/29/21 |
| FILE NO. 21-5223 | APPROVED BY: | FIGURE: |



C:\CAD working files\21-5223\21522301.dwg 3/30/2021 7:35:36 PM Tom Taylor

| | | | |
|---|--------------|---------------|--|
| SOIL BORING PROFILES | | | |
|  Ardaman & Associates, Inc. Geotechnical, Environmental and Materials Consultants | | | |
| SUBSURFACE SOIL EXPLORATION SPACE VIEW PARK DOCK REPLACEMENT TITUSVILLE, FLORIDA | | | |
| DRAWN BY: TAT | CHECKED BY: | DATE: 3/29/21 | |
| FILE NO. 21-5223 | APPROVED BY: | FIGURE: | |



SOIL BORING PROFILES



Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

SUBSURFACE SOIL EXPLORATION
SPACE VIEW PARK DOCK REPLACEMENT
TITUSVILLE, FLORIDA

| | | |
|------------------|--------------|---------------|
| DRAWN BY: TAT | CHECKED BY: | DATE: 3/29/21 |
| FILE NO. 21-5223 | APPROVED BY: | FIGURE: |



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, W. Palm Beach
Louisiana: Baton Rouge, Monroe, New Orleans, Shreveport

**1300 NORTH COCOA BOULEVARD
COCOA, FLORIDA 32922
PHONE: 321.632.2503 FAX: 321.636.4657**

RUSH Construction Job: **2025**
Date: **04/19/21** Cost Code: **01-90-13**
Initials: **mel** Amount: **19,594.75**

DATE: April 12, 2021

04/14/2021 9:21:24 AM

**Rush Construction, Inc.
6285 Riverfront Center Boulevard
Titusville, Florida 32780**

**INVOICE C41860
FILE NO. 113-21-23-5223A
SERVICE Engineering
OFFICE COCOA**

**Attention: Mr. Mark Lucas
accountspayable@rushinc.com**

TERMS: Net 30 Days from date of invoice.

Professional Services Relative to

Subsurface Soil Exploration and
Geotechnical Engineering Evaluation

Dock Repairs Project – Brevard County Parks & Recreation
Space View Park
Titusville, Florida

Original Project Budget:

\$ 18,416.00

Additional Costs for Extending Two Borings Deeper:

Additional Boring Footage (50-100'): 35 linear feet @ \$ 29.25/ft.

\$ 1,023.75

Project Engineer: 1 hour @ \$ 120.00/hr.

\$ 120.00

CADD Draftsman: 0.5 hour @ \$ 70.00/hr.

\$ 35.00

TOTAL INVOICE AMOUNT

\$ 19,594.75

Please send your payment to:

**ARDAMAN & ASSOCIATES INC
PO BOX 911668
Denver CO 80291-1668**

Please write the invoice number on your check. Thank you!



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

April 13, 2021
File No. 21-23-5223

Rush Construction
6285 Riverfront Center Boulevard
Titusville, Florida 32780

Attention: Mr. Mark Lucas

Subject: Lateral Pile Capacity Analysis Costs
Brevard County Parks & Recreation Dock Replacement at
Space View Park
Titusville, Florida

Dear Mr. Lucas:

As discussed during the project team teleconference on April 8, 2021, Ardaman & Associates, Inc. will perform one iteration of lateral load capacity analysis for the final pile configuration selected by the design team. For this analysis, we will need to be provided with the following information:

- total length of the new piles;
- embedment depth below the mud line of the new piles;
- diameter of the new piles;
- location and magnitude of the lateral load to be analyzed for; and
- whether the new piles will be in a "fixed head" or "free head" condition.

The additional cost of the lateral load analysis will not exceed **\$1,500.00** without prior approval from the client. Please provide written approval for these additional costs at your earliest convenience. Feel free to contact us if you have any questions or require additional information.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

Jason P. Manning, P.E.
Branch Manager

Approved RUSH Construction
Mark Lucas P.E.

Mark Lucas

From: Butcher, Michael <michael.butcher@brevardfl.gov>
Sent: Wednesday, April 28, 2021 4:56 PM
To: Mark Lucas; David Tom; Josh Adams
Cc: Matt Tate; Tony Landry; Mike Lapinski; com-inbound-brevard-county-spaceview-park@procoretech.com
Subject: RE: Space View Lateral Load Analysis

Mark,

per our discussion and with the below calculations please place the order for the 50' pilings from bend 8-19 (26) and the 55" pilings for the observation deck platform. (10). Thank you to all involved.

Michael Butcher

Construction Manager

Brevard County Parks Operations

2725 Judge Fran Jamieson Way
Building B Suite 203

P: (321) 633-2046 Cell: (321) 615-8214

Fax(321)633-2198

<http://www.BrevardParks.com>



The comments and opinions expressed herein are those of the author of this message and may not reflect the policies of the Brevard County Board of Commissioners.

From: Mark Lucas <mlucas@rushinc.com>
Sent: Wednesday, April 28, 2021 4:52 PM
To: Butcher, Michael <michael.butcher@brevardfl.gov>; David Tom <dtom@cegengineering.com>; Josh Adams <jadams@cegengineering.com>
Cc: Matt Tate <mtate@rushinc.com>; Tony Landry <tlandry@rushinc.com>; Mike Lapinski <mlapinski@rushinc.com>; com-inbound-brevard-county-spaceview-park@procoretech.com
Subject: FW: Space View Lateral Load Analysis

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Michael/David/Josh,

Hot off the press! Results of the lateral analysis from Ardaman & Associates. For your information and use.

Thank you,

Mark Lucas
Project Manager

RUSH CONSTRUCTION INC.

Performance with Integrity Since 1984

321.267.8100 phone

321.302-2107 mobile

321.267.9944 fax

www.rushinc.com

From: Manning, Jason <JManning@ardaman.com>

Sent: Wednesday, April 28, 2021 4:48 PM

To: Mark Lucas <mlucas@rushinc.com>

Cc: Matt Tate <mtate@rushinc.com>; Tony Landry <tlandry@rushinc.com>; com-inbound-brevard-county-spaceview-park@procoretech.com

Subject: RE: Space View Lateral Load Analysis

Mark,

We have completed the lateral analysis of the 50-foot and 55-foot long piles. Here is a summary of the findings so far:

1. For the 50-foot piles, the 12-inch top of pile diameter is okay as long as the minimum bottom of pile diameter is 8 inches.
2. For the 55-foot piles, the 12-inch top of pile diameter is okay as long as the minimum bottom of pile diameter is 9 inches.
3. For both pile lengths we are calculating approximately 25 inches of deflection of the pile at the mudline due to the 750 pound lateral load acting just below the girder level for a free head condition.
4. To address the excessive deflection in the free head condition, we recommend that adequate bracing be incorporated in to the dock design to create a fixed head condition.
5. For both pile lengths we are calculating approximately 1.2 to 1.5 inches of deflection of the pile at the mudline due to the 750 pound lateral load acting just below the girder level for a fixed head condition.

Please provide this information to the structural engineer for consideration. We will have the written report ready within the next few days.

Jason P. Manning, P.E.
Branch Manager

Ardaman & Associates, Inc.

1300 N. Cocoa Boulevard

Cocoa, Florida 32922

Ph. (321) 632-2503

Fax. (321) 636-4657

jmanning@ardaman.com

From: Mark Lucas [<mailto:mlucas@rushinc.com>]

Sent: Wednesday, April 28, 2021 12:58 PM

To: Manning, Jason <JManning@ardaman.com>

Cc: Matt Tate <mtate@rushinc.com>; Tony Landry <tlandry@rushinc.com>; com-inbound-brevard-county-spaceview-park@procoretech.com

Subject: Space View Lateral Load Analysis

 **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. 

Jason,

Any word on the report today?

Thank you,

Mark Lucas

Project Manager

RUSH CONSTRUCTION INC.

Performance with Integrity Since 1984

321.267.8100 phone

321.302-2107 mobile

321.267.9944 fax

www.rushinc.com



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

May 4, 2021
File No. 21-23-5223A

Rush Construction
6285 Riverfront Center Boulevard
Titusville, Florida 32780

Attention: Mr. Mark Lucas

Subject: Pile Foundation Lateral Load Analysis
Dock Repairs Project
Space View Park
Titusville, Florida

Dear Mr. Lucas:

Ardaman & Associates, Inc. (A&A) recently performed a subsurface soil exploration and geotechnical engineering evaluation for the above referenced project. Recommendations for the installation of 12-inch butt diameter timber pile foundations to support the new dock structure as well as axial pile capacities were presented in our April 7, 2021, Subsurface Soil Exploration report (A&A File No. 21-23-5223A).

Pile foundation design parameters were provided by Rush Construction, Inc. and by Mr. Thomas Adams, P.E. with Adams Engineering, Inc., the project Structural Engineer. The design parameters provided to us and utilized in our analysis are as follows:

- The piles to be used are 12-inch butt diameter (top diameter) pressure treated Southern Yellow Pine timber piles;
- The piles will be 50 feet (dock piles) and 55 feet (gazebo piles) in length with 1-foot of cutoff at the surface;
- Dock piles: top of pile El. +9.40 and pile tip El. -39.60;
- Gazebo piles: top of pile El. +13.90 and pile tip El. -40.10;
- River mudline El. -8.00;
- Design lateral load is 0.75 kips acting approximately 12 inches below dock girder level;

Lateral capacity and deflection of the piles were calculated utilizing the computer software program "L-Pile V2013.7.04". As requested, we analyzed the piles in a "free head" condition. Based on the results of our analyses, we estimate that the 12-inch timber dock piles and gazebo piles installed to approximately 32 feet below the existing mudline within the river would experience approximately 25 inches of deflection at the mudline in the "free head" condition.

We also analyzed the piles in a "fixed head" condition. Based on this additional analysis, we estimate that the 12-inch timber dock piles and gazebo piles installed to approximately 32 feet below the existing mudline within the river would experience approximately 1¼ to 1½ inches of

deflection at the mudline. To address the excessive deflection in the "free head" condition, we recommend that adequate bracing be incorporated into the dock design to create a "fixed head" condition.

The results of our analyses also indicate that the 50-foot long dock piles should have a minimum tip diameter (bottom diameter) of 8 inches and that the 55-foot long gazebo piles should have a minimum tip diameter of 9 inches.

We note that the analyses presented in this report are for individual piles and do not account for the reduced efficiency of pile groups. Pile spacing should be at least 3.0 pile diameters center to center to prevent reduced lateral capacities caused by the pile to pile interaction. If the pile spacing is closer than 3.0 pile diameters, we should be consulted to provide a lateral capacity reduction factor for the proposed piles.

Should the embedment depth, pile types or any other assumptions from above be different than planned, we must be given the opportunity to review their requirements, since they may impact our recommendations.

The analyses and recommendations submitted herein are based on the data obtained from the soil borings presented in our previous geotechnical report. This report does not reflect any variations which may occur adjacent to or between the borings. The nature and extent of the variations between the borings may not become evident until during construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations during the construction period and noting the characteristics of the variations. This study does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

This report has been prepared for the exclusive use of Rush Construction, Inc. in accordance with generally accepted geotechnical engineering practices. In the event any changes occur in the design, nature, or location of the proposed facility, we should review the applicability of conclusions and recommendations in this report. We recommend a general review of final design and specifications by our office to verify that foundation recommendations are properly interpreted and implemented in the design specifications.

We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any questions, please contact us.

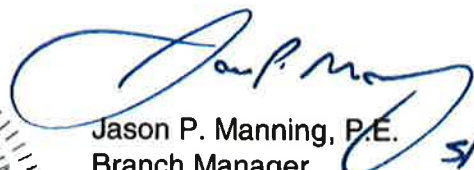
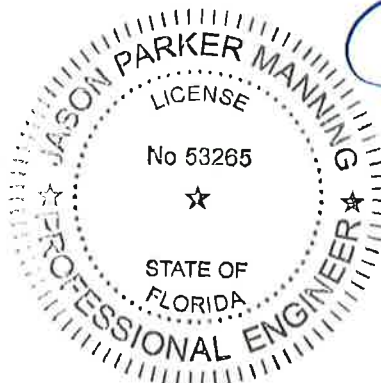
Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Certificate of Authorization No. 5950



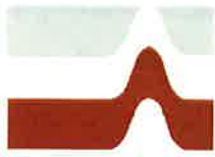
Kevin Ferguson, P.E.
Senior Project Engineer
Florida License No. 60712



Jason P. Manning, P.E.
Branch Manager
Florida License No. 53265

Jason P.
Manning
P.E.

Digitally signed by: Jason P. Manning, P.E.
DN: CN = Jason P. Manning, P.E. email = jmanning@ardaman.
com C = US OU = Ardaman and Associates
Date: 2021.05.04 15:25:28 -05'00'



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, W. Palm Beach
Louisiana: Baton Rouge, Monroe, New Orleans, Shreveport

**1300 NORTH COCOA BOULEVARD
COCOA, FLORIDA 32922
PHONE: 321.632.2503 FAX: 321.636.4657**

DATE: May 7, 2021

**Rush Construction, Inc.
6285 Riverfront Center Boulevard
Titusville, Florida 32780**

**Attention: Mr. Mark Lucas
accountspayable@rushinc.com**

**INVOICE C41888
FILE NO. 113-21-23-5223A
SERVICE Engineering
OFFICE COCOA**

TERMS: Net 30 Days from date of invoice.

Professional Services Relative to

Lateral Load Analyses

Dock Repairs Project – Brevard County Parks & Recreation

Space View Park

Titusville, Florida

TOTAL INVOICE AMOUNT

\$ 1,500.00

Please send your payment to:

**ARDAMAN & ASSOCIATES INC
PO BOX 911668
Denver CO 80291-1668**

Please write the invoice number on your check. Thank you!



May 6, 2021

Mr. Mark Lucas
RUSH Construction, Inc.
6285 Riverfront Center Blvd.
Titusville, FL 32780

Reference: Space View Park Improvements

Subject: Price Proposal for Longer Timber Piles - UPDATED

Mr. Lucas,

RUSH Marine, LLC is pleased to submit this proposal for the above referenced project to provide all supervision, labor, materials, and equipment required to perform the following scope of work at the South Site:

Scope of Work to Include:

Item 1 – Long Pier

1. Replace 26 EA timber piles with new 50' timber piles (8" minimum diameter) with pile wrap at Bents 7 thru 19.
2. Remove Roof Structure.
3. Replace 10 EA timber piles with new 55' timber piles (9" minimum diameter) with pile wrap for Roof Structure.
4. Reinstall Roof Structure.
5. New Stainless Steel Hardware will be required for the larger diameter piles.

Price for Item 1: \$75,776.00

Seventy-Five Thousand Seven Hundred Seventy-Six Dollars



Item 2 – Standby Equipment

Cost of Equipment only to be on standby based on the following timeline:

- Settlement issue identified and RFI sent March 12, 2021
- Start Standby on March 15, 2021
- Submit Proposal on April 14, 2021
- Receive Notice to Proceed on April 28, 2021
- Longer piles deliver to site on May 18, 2021
- Standby from March 15, 2021 thru May 18, 2021 (47 Working Days)

Cost for Item 2: \$62,863.00
Sixty-Two Thousand Eight Hundred Sixty-Three Dollars

Item 3 – Additional Cross Bracing for Long Pier

Install treated 2x6 cross bracing at additional 9 bents of South Long Pier using stainless steel hardware, in accordance with drawings.

Price for Item 3: \$10,085.00
Ten Thousand Eighty-Five Dollars

The total cost for these three items above is \$148,724.00 (One Hundred Forty-Eight Thousand Seven Hundred Twenty-Four Dollars).

Excluded Items:

- Design and Engineering is excluded.
- Pile Load Testing is excluded.
- Any additional work at North Short Pier is excluded.
- Any additional Cross Bracing at North Short Pier is excluded. RUSH Marine reserves the right to request for additional cost if cross bracing is added or modified.



Clarifications:

1. All work shall be performed between 7:00 am – 5:30 pm, Monday through Friday, excluding holidays, weekends, and special events.
2. RUSH Marine shall have unimpeded access to the work area from land and water during the time periods noted above.
3. This proposal is valid for 30 days from the date received.
4. RUSH Marine reserves the right to request additional cost if additional work is required related to cross bracing.

Please do not hesitate to contact us, should you have any questions, regarding this proposal. We would like to thank you for this opportunity, and look forward to working with your team.

Sincerely,
RUSH MARINE, LLC

Matt Tate
Estimator / Sr. Project Manager

Long Pier

Install Longer Piles - Long Pier

| LABOR | Duration | UOM | Reg Rate | Duration | UOM | OT RATE | Burdened Labor |
|-----------------------|----------|-----|----------|----------|-----|----------|----------------|
| Superintendent | 80 | HR | \$ 56.00 | 0 | HR | \$ 84.00 | \$ 6,361.60 |
| Foreman | 80 | HR | \$ 45.00 | 0 | HR | \$ 67.50 | \$ 5,112.00 |
| Operator | 80 | HR | \$ 38.00 | 20 | HR | \$ 57.00 | \$ 5,935.60 |
| Pile Driver/Carpenter | 80 | HR | \$ 25.00 | 20 | HR | \$ 37.50 | \$ 3,905.00 |
| Pile Driver/Carpenter | 80 | HR | \$ 25.00 | 20 | HR | \$ 37.50 | \$ 3,905.00 |
| | | HR | | | HR | \$ - | \$ - |
| | | HR | | | HR | \$ - | \$ - |

320

60

Total \$ 25,219

| Equipment | Duration | UOM | | | | Month RATE | Total |
|-----------------|----------|------|--|--|--|--------------|-------------|
| Barge | 10 | Days | | | | \$ 13,000.00 | \$ 6,955.00 |
| Crane | 10 | Days | | | | \$ 8,500.00 | \$ 4,547.50 |
| Barge Thrusters | 10 | Days | | | | \$ 3,500.00 | \$ 1,872.50 |
| Forklift | 10 | Days | | | | \$ 1,275.00 | \$ 682.13 |
| Pile Hammer | 10 | Days | | | | \$ 2,000.00 | \$ 1,070.00 |
| | | | | | | | \$ - |
| | | | | | | | \$ - |

Total \$ 15,127

| Subcontractor | Qty | UOM | | | | RATE | Total |
|---------------|-----|-----|--|--|--|------|-------|
| | | | | | | | \$ - |
| | | | | | | | \$ - |
| | | | | | | | \$ - |

Total \$ -

| Materials | Qty | UOM | | RATE | Subtotal | Taxes | Total |
|--------------------------------------|-----|-----|--|-----------|--------------|-------------|--------------|
| 50' Treated Timber Piles, 8" minimum | 26 | EA | | \$ 550.00 | \$ 14,300.00 | \$ 1,001.00 | \$ 15,301.00 |
| 55' Treated Timber Piles, 9" minimum | 10 | EA | | \$ 816.00 | \$ 8,160.00 | \$ 571.20 | \$ 8,731.20 |
| Pile Wrap, 5'x300' Roll | 1 | EA | | \$ 458.76 | \$ 458.76 | \$ 32.11 | \$ 490.87 |
| SS Rods, 24" | 72 | EA | | \$ 11.00 | \$ 792.00 | \$ 55.44 | \$ 847.44 |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| Fuel, 50 gallons per day | 500 | GA | | \$ 3.50 | \$ 1,750.00 | \$ 122.50 | \$ 1,872.50 |

Total \$ 27,243

| Freight (No Taxes) | QTY | UOM | | | | RATE | Total |
|--------------------|-----|-----|--|--|--|-----------|-----------|
| 50' Piles | 1 | EA | | | | \$ 150.00 | \$ 150.00 |
| 55' Piles | 1 | EA | | | | \$ 150.00 | \$ 150.00 |
| | | EA | | | | | \$ - |
| | | | | | | | \$ - |

Total \$ 300

| | | |
|------------------------------|-------|------------------|
| SUBTOTAL | | \$ 67,889 |
| RUSH Marine Insurance | 1.24% | \$ 842 |
| RUSH Marine Overhead | 5.00% | \$ 3,437 |
| RUSH Marine Profit | 5.00% | \$ 3,608 |
| TOTAL | | \$ 75,776 |

Standby

Equipment Standby

| LABOR | Duration | UOM | Reg Rate | Duration | UOM | OT RATE | Burdened Labor |
|-----------------------|----------|-----|----------|----------|-----|----------|----------------|
| Superintendent | | HR | \$ 56.00 | 0 | HR | \$ 84.00 | \$ - |
| Foreman | 0 | HR | \$ 45.00 | 0 | HR | \$ 67.50 | \$ - |
| Operator | 0 | HR | \$ 38.00 | | HR | \$ 57.00 | \$ - |
| Pile Driver/Carpenter | 0 | HR | \$ 25.00 | 0 | HR | \$ 37.50 | \$ - |
| Pile Driver/Carpenter | 0 | HR | \$ 25.00 | 0 | HR | \$ 37.50 | \$ - |
| | | HR | | | HR | \$ - | \$ - |
| | | HR | | 0 | HR | \$ - | \$ - |

Total \$ -

| Equipment | Duration | UOM | | | | Month RATE | Total |
|-----------------|----------|------|--|--|--|--------------|--------------|
| Barge | 47 | Days | | | | \$ 13,000.00 | \$ 32,688.50 |
| Crane | 47 | Days | | | | \$ 8,500.00 | \$ 21,373.25 |
| Barge Thrusters | 47 | Days | | | | \$ 3,500.00 | \$ 8,800.75 |
| | | | | | | | \$ - |
| | | | | | | | \$ - |
| | | | | | | | \$ - |
| | | | | | | | \$ - |

Total \$ 62,863

| Subcontractor | Qty | UOM | | | | RATE | Total |
|---------------|-----|-----|--|--|--|------|-------|
| | | | | | | | \$ - |
| | | | | | | | \$ - |
| | | | | | | | \$ - |

Total \$ -

| Materials | Qty | UOM | | RATE | Subtotal | Taxes | Total |
|-----------|-----|-----|--|------|----------|-------|-------|
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |

Total \$ -

| Freight (No Taxes) | QTY | UOM | | | | RATE | Total |
|--------------------|-----|-----|--|--|--|------|-------|
| | | EA | | | | | \$ - |
| | | EA | | | | | \$ - |
| | | EA | | | | | \$ - |
| | | | | | | | \$ - |

Total \$ -

| | | |
|-----------------------|-------|------------------|
| SUBTOTAL | | \$ 62,863 |
| RUSH Marine Insurance | 0.00% | \$ - |
| RUSH Marine Overhead | 0.00% | \$ - |
| RUSH Marine Profit | 0.00% | \$ - |
| TOTAL | | \$ 62,863 |

Cross Bracing

Install Additional Cross Bracing - Long Pier

| LABOR | Duration | UOM | Reg Rate | Duration | UOM | OT RATE | Burdened Labor |
|-----------------------|----------|-----|----------|----------|-----|----------|----------------|
| Superintendent | 16 | HR | \$ 56.00 | 0 | HR | \$ 84.00 | \$ 1,272.32 |
| Foreman | 16 | HR | \$ 45.00 | 0 | HR | \$ 67.50 | \$ 1,022.40 |
| Operator | 16 | HR | \$ 38.00 | 4 | HR | \$ 57.00 | \$ 1,187.12 |
| Pile Driver/Carpenter | 16 | HR | \$ 25.00 | 4 | HR | \$ 37.50 | \$ 781.00 |
| Pile Driver/Carpenter | 16 | HR | \$ 25.00 | 4 | HR | \$ 37.50 | \$ 781.00 |
| | | HR | | | HR | \$ - | \$ - |
| | | HR | | | HR | \$ - | \$ - |

| 64 | | | 12 | | | Total | \$ 5,044 |
|-----------------|----------|------|----|--|--|--------------|-------------|
| Equipment | Duration | UOM | | | | Month RATE | Total |
| Barge | 2 | Days | | | | \$ 13,000.00 | \$ 1,391.00 |
| Crane | 2 | Days | | | | \$ 8,500.00 | \$ 909.50 |
| Barge Thrusters | 2 | Days | | | | \$ 3,500.00 | \$ 374.50 |
| Forklift | 2 | Days | | | | \$ 1,275.00 | \$ 136.43 |
| Pile Hammer | 0 | Days | | | | \$ 2,000.00 | \$ - |
| | | | | | | | \$ - |
| | | | | | | | \$ - |

| Subcontractor | Qty | UOM | | | | RATE | Total |
|---------------|-----|-----|--|--|--|------|-------|
| | | | | | | | \$ |
| | | | | | | | \$ |
| | | | | | | | \$ |

| Materials | Qty | UOM | | RATE | Subtotal | Taxes | Total |
|--------------------------|-----|-----|--|----------|-----------|----------|-----------|
| Treated 2x6x16' | 9 | EA | | \$ 24.71 | \$ 222.39 | \$ 15.57 | \$ 237.96 |
| 5/8" SS Bolts, 18 in | 36 | EA | | \$ 9.18 | \$ 330.48 | \$ 23.13 | \$ 353.61 |
| 3/4" SS Bolts, 18 in | 9 | EA | | \$ 10.24 | \$ 92.16 | \$ 6.45 | \$ 98.61 |
| 5/8" Nuts and Washers | 72 | EA | | \$ 0.58 | \$ 41.76 | \$ 2.92 | \$ 44.68 |
| 3/4" Nuts and Washers | 18 | EA | | \$ 3.73 | \$ 67.14 | \$ 4.70 | \$ 71.84 |
| | | | | | \$ - | \$ - | \$ - |
| | | | | | \$ - | \$ - | \$ - |
| Fuel, 50 gallons per day | 100 | GA | | \$ 3.50 | \$ 350.00 | \$ 24.50 | \$ 374.50 |

| Freight (No Taxes) | QTY | UOM | | | | RATE | Total |
|--------------------|-----|-----|--|--|--|-------|-------|
| | | EA | | | | | \$ - |
| | | EA | | | | | \$ - |
| | | EA | | | | | \$ - |
| | | | | | | Total | \$ - |

| | | |
|------------------------------|-------|------------------|
| SUBTOTAL | | \$ 9,036 |
| RUSH Marine Insurance | 1.24% | \$ 112 |
| RUSH Marine Overhead | 5.00% | \$ 457 |
| RUSH Marine Profit | 5.00% | \$ 480 |
| TOTAL | | \$ 10,085 |

SPL - Rockledge
2135 South US 1
Rockledge, FL 32955
321-632-5566
Fax: 321-632-5171

* QUOTATION *

Sales Invoice:
Ordered by: Matt/Verbal
Order Number: 16340000
P.O. Number: Quote Only

Invoice Date: 05/03/21 03:32 PM
Terms: NET 15 DAYS
Due Date: 05/18/21
Ship VIA:

Bill To: 000643
RUSH MARINE, LLC
6285 Riverfront Center Blvd
Titusville FL 32780

Ship To:
Quote Only

| SHIP | BKO | DESCRIPTION | BRD FT | UNIT PRICE | EXTENSION |
|------|-----|--------------------------|--------|------------|-----------|
| 26 | | Poles | 0 | 550.00 | 14,300.00 |
| | | 8" Top 50ft 2.5 MP | | | |
| 10 | | Poles | 0 | 816.00 | 8,160.00 |
| | | 9" Top 55ft 2.5 MP | | | |
| 1 | | Delivery Charge | 0 | 300.00 | 300.00 |
| | | 2 Direct Truck From Mill | | | |

| | | | |
|---|---------------|-----------|-----------|
| ALL SALES FINAL, NO RETURNS | | Subtotal | 22,760.00 |
| \$50.00 Fee will apply on Returned Checks | 6.00% | Sales Tax | 1,347.60 |
| Above prices are discounted for cash or check | 1.00% | Surtax | 50.00 |
| Picked by: _____ Driver: _____ Date: _____ | | | |
| Total Brd/Ft: 0 | Total Weight: | Total | 24,157.60 |



Orlando
5790 Beggs Rd.
Lockhart, FL

Quotation

Quote No
Quote Date

256510
05/05/2021

Invoice Address
RUSH Marine, LLC
6285 Riverfront Center Blvd.
Titusville, FL, 32780

Delivery Address
10 East Broad Street
Titusville, FL, 32796

Customer RUSH2
Your Ref 8T & 9T Piles
Taken By John Miller
Sales Rep Default

Contact Name Mike Tate
Contact Number 321-474-2560
Contact Fax 321-267-9944



Page 1 of 1

| Special Instructions | | | Notes | | | |
|----------------------|----------------------------------|---|-------------|--------|------|-----------|
| | | | | | | |
| Line | Product Code | Description | Qty/Footage | Price | Per | Total |
| 1 | zz_ \$SOPiling2.5CCA_ 0247 | 8" Top x 50' Piling 2.5 CCA | 34 Each | 586.67 | Each | 19,946.78 |
| 2 | BOOM Charge | Boom Charge - three trucks @ \$150 per truck | | | | 450.00 |
| 3 | Freight | Freight - job site delivery at \$100 per truck load at 3 truckloads | | | | 300.00 |
| 4 | zz_ \$SOPiling2.5CCA_ 0248 | 9" Top x 55' Piling 2.5 CCA | 10 Each | 906.67 | Each | 9,066.70 |

This quote is good for _____ days

| | |
|-----------------|-------------|
| Total Amount | \$29,763.48 |
| Sales Tax | \$1,790.81 |
| Quotation Total | \$31,554.29 |

By your signature below, you are agreeing to the Terms and Conditions set forth on back or attached.

Buyer

Date

Subject to our terms and conditions of sale. Further copies available on request.

Space View Park Improvements



| ID | Task Name | Duration | Start | Actual Start | Finish | Actual Finish | % Complete | Oct 20 | Nov 20 | Dec 20 | Jan 21 | Feb 21 | Mar 21 | Apr 21 | May 21 | Jun 21 | Jul 21 | Aug 21 | Sep 21 | Oct 21 | Nov 21 |
|----|---|-----------|--------------|--------------|--------------|---------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | Notice to Proceed | 2 days | Sun 9/20/20 | Sun 9/20/20 | Tue 9/22/20 | Tue 9/22/20 | 100% | | | | | | | | | | | | | | |
| 2 | Contract Time for Substantial Completion (March 20, 2021) | 121 days | Wed 9/23/20 | Wed 9/23/20 | Tue 3/23/21 | Tue 3/23/21 | 100% | | | | | | | | | | | | | | |
| 3 | Contract Time for Final Completion (April 19, 2021) | 142 days | Wed 9/23/20 | Wed 9/23/20 | Wed 4/21/21 | NA | 94% | | | | | | | | | | | | | | |
| 4 | Submittals | 0 days | Mon 9/21/20 | Mon 9/21/20 | Mon 9/21/20 | Mon 9/21/20 | 100% | | | | | | | | | | | | | | |
| 5 | Procurement | 10 days | Mon 9/28/20 | Mon 9/28/20 | Fri 10/9/20 | Fri 10/9/20 | 100% | | | | | | | | | | | | | | |
| 6 | CONSTRUCTION | 188 days? | Mon 9/21/20 | Mon 9/21/20 | Tue 6/22/21 | NA | 77% | | | | | | | | | | | | | | |
| 7 | Mobilization | 9 days | Mon 9/21/20 | Mon 9/21/20 | Thu 10/1/20 | Thu 10/1/20 | 100% | | | | | | | | | | | | | | |
| 8 | Pressure Grouting Lift Planter | 23 days | Wed 1/27/21 | Wed 1/27/21 | Fri 2/26/21 | Fri 2/26/21 | 100% | | | | | | | | | | | | | | |
| 9 | SOUTH | 172 days | Mon 10/12/20 | Mon 10/12/20 | Mon 6/21/21 | NA | 81% | | | | | | | | | | | | | | |
| 10 | Remove Existing Timber Piers | 20 days | Mon 10/12/20 | Mon 10/12/20 | Fri 11/6/20 | Fri 11/6/20 | 100% | | | | | | | | | | | | | | |
| 11 | Site Demolition | 6 days | Mon 10/19/20 | Mon 10/19/20 | Fri 11/6/20 | Fri 11/6/20 | 100% | | | | | | | | | | | | | | |
| 12 | Install Sheet Pile | 11 days | Mon 11/9/20 | Mon 11/9/20 | Mon 11/23/20 | Mon 11/23/20 | 100% | | | | | | | | | | | | | | |
| 13 | Install Anchors | 11 days | Thu 12/17/20 | Thu 12/17/20 | Tue 1/12/21 | Tue 1/12/21 | 100% | | | | | | | | | | | | | | |
| 14 | Install Flowable Fill | 1 day | Wed 1/13/21 | Wed 1/13/21 | Wed 1/13/21 | Wed 1/13/21 | 100% | | | | | | | | | | | | | | |
| 15 | Construct Concrete Cap | 27 days | Thu 1/14/21 | Thu 1/14/21 | Fri 2/19/21 | Fri 2/19/21 | 100% | | | | | | | | | | | | | | |
| 16 | Cut and Add to Concrete Wall | 15 days | Wed 3/3/21 | Wed 3/3/21 | Tue 3/23/21 | Tue 3/23/21 | 100% | | | | | | | | | | | | | | |
| 17 | Site Work and Yard Drain | 19 days | Mon 3/1/21 | Mon 3/1/21 | Thu 3/25/21 | Thu 3/25/21 | 100% | | | | | | | | | | | | | | |
| 18 | New Timber Piers stop due to settling issue discovered | 54 days | Mon 12/21/20 | Mon 12/21/20 | Mon 3/15/21 | Mon 3/15/21 | 100% | | | | | | | | | | | | | | |
| 19 | Pile Settling Geotechnical Survey & Report | 12 days | Tue 3/23/21 | Tue 3/23/21 | Wed 4/7/21 | Wed 4/7/21 | 100% | | | | | | | | | | | | | | |
| 20 | Engineering Review and New Pile Design | 15 days | Thu 4/8/21 | Thu 4/8/21 | Wed 4/28/21 | Wed 4/28/21 | 100% | | | | | | | | | | | | | | |
| 21 | Determine available pile size & perform lateral analysis | 15 days | Thu 4/8/21 | Thu 4/8/21 | Wed 4/28/21 | Wed 4/28/21 | 100% | | | | | | | | | | | | | | |
| 22 | Continue north dock framing and decking | 10 days | Mon 5/3/21 | Mon 5/3/21 | Fri 5/14/21 | NA | 56% | | | | | | | | | | | | | | |
| 23 | Plywood Deck north dock | 1 day | Mon 5/17/21 | NA | Mon 5/17/21 | NA | 0% | | | | | | | | | | | | | | |
| 24 | Roofing North Dock | 4 days | Tue 5/18/21 | NA | Fri 5/21/21 | NA | 0% | | | | | | | | | | | | | | |
| 25 | Marine Equipment Standby | 46 days | Tue 3/16/21 | Tue 3/16/21 | Tue 5/18/21 | NA | 70% | | | | | | | | | | | | | | |
| 26 | Order and Deliver New Wood Piles | 14 days | Wed 4/28/21 | Wed 4/28/21 | Tue 5/18/21 | NA | 30% | | | | | | | | | | | | | | |
| 27 | Install new wood piles | 12 days | Wed 5/19/21 | NA | Thu 6/3/21 | NA | 0% | | | | | | | | | | | | | | |
| 28 | SideWalk Pavement | 19 days | Mon 3/22/21 | Mon 3/22/21 | Thu 4/15/21 | Thu 4/15/21 | 100% | | | | | | | | | | | | | | |
| 29 | Brick Pavers | 5 days | Wed 4/21/21 | Wed 4/21/21 | Tue 4/27/21 | Tue 4/27/21 | 100% | | | | | | | | | | | | | | |
| 30 | Set trusses and plywood deck south dock | 5 days | Fri 6/4/21 | NA | Thu 6/10/21 | NA | 0% | | | | | | | | | | | | | | |
| 31 | Roofing south dock | 4 days | Fri 6/11/21 | NA | Wed 6/16/21 | NA | 0% | | | | | | | | | | | | | | |
| 32 | Final Landscaping | 3 days | Thu 6/17/21 | NA | Mon 6/21/21 | NA | 0% | | | | | | | | | | | | | | |
| 33 | Approve deliver concrete sphere bollards | 36 days | Mon 4/5/21 | Mon 4/5/21 | Mon 5/24/21 | NA | 90% | | | | | | | | | | | | | | |
| 34 | Install concrete sphere bollards | 10 days | Tue 5/25/21 | NA | Mon 6/7/21 | NA | 0% | | | | | | | | | | | | | | |
| 35 | Paint Bollards and install chain hardware | 3 days | Tue 6/8/21 | NA | Thu 6/10/21 | NA | 0% | | | | | | | | | | | | | | |
| 36 | NORTH | 180 days? | Thu 10/1/20 | Thu 10/1/20 | Tue 6/22/21 | NA | 51% | | | | | | | | | | | | | | |
| 37 | Site Demolition | 4 days | Thu 10/1/20 | Thu 10/1/20 | Tue 10/6/20 | Tue 10/6/20 | 100% | | | | | | | | | | | | | | |
| 38 | Shoreline Revetment | 0 days | Wed 10/7/20 | Wed 10/7/20 | Wed 10/7/20 | Wed 10/7/20 | 100% | | | | | | | | | | | | | | |
| 39 | Select light poles | 5 days | Mon 3/15/21 | Mon 3/15/21 | Fri 3/19/21 | Fri 3/19/21 | 100% | | | | | | | | | | | | | | |
| 40 | Install light pole bases and u.g. conduit. | 2 days | Thu 5/6/21 | Thu 5/6/21 | Fri 5/7/21 | Fri 5/7/21 | 100% | | | | | | | | | | | | | | |
| 41 | Order and deliver light poles (6 weeks) | 51 days | Fri 3/19/21 | Fri 3/19/21 | Fri 5/28/21 | NA | 42% | | | | | | | | | | | | | | |
| 42 | Install light poles | 4 days | Mon 5/31/21 | NA | Thu 6/3/21 | NA | 0% | | | | | | | | | | | | | | |
| 43 | North End Site Work | 25 days? | Wed 2/17/21 | Wed 2/17/21 | Tue 3/23/21 | NA | 80% | | | | | | | | | | | | | | |
| 44 | Brick Pavers | 2 days | Wed 2/17/21 | Wed 2/17/21 | Thu 2/18/21 | Thu 2/18/21 | 100% | | | | | | | | | | | | | | |
| 45 | Landscaping sod and seed | 2 days | Tue 3/16/21 | Tue 3/16/21 | Wed 3/17/21 | Wed 3/17/21 | 100% | | | | | | | | | | | | | | |
| 46 | Substantial Completion | 1 day | Tue 6/22/21 | NA | Tue 6/22/21 | NA | 0% | | | | | | | | | | | | | | |
| 47 | Final Project completion | 1 day | Tue 6/22/21 | NA | Tue 6/22/21 | NA | 0% | | | | | | | | | | | | | | |

Thu 5/13/21