



**Technical  
Specifications for**

**Three Sisters Springs  
Canal Shoreline  
Stabilization**

**Project (W431)**

**TWA NO: 19TW0002078**

**January 2023**

Prepared for:

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Management District  
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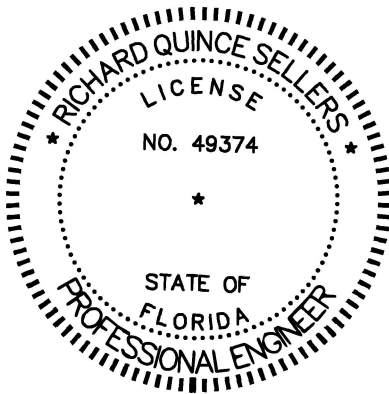
**January 2023**

**INDEX FOR PROFESSIONAL REGISTRATION**

**Sign and Seal Sheet**

**For**

**Three Sisters Springs Canal Shoreline Stabilization Project (W431)**



This item has been digitally signed and sealed by Richard Quince Sellers on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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**SPECIFICATIONS**

**R. Quince Sellers, P.E. #49374**

Division I – General Requirements

Division II – Technical Specifications



**Three Sisters Springs Canal Shoreline Stabilization Project (W431)**

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## SECTION 01005

### GENERAL REQUIREMENTS

#### PART I – GENERAL

##### 1.01 SCOPE OF WORK

###### A. Description

The Work to be completed consists of the furnishing of all labor, materials and equipment, and the performance of all Work included in this Contract for the bank stabilization and ecological enhancement of the Three Sisters Canal Shoreline Stabilization project. As the Work will be performed in an environmentally sensitive area, all Work on this site shall be performed in a manner to avoid unnecessary impacts to wetlands, vegetation, and animals.

###### B. Work Included

The CONTRACTOR shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies and other means of construction necessary or proper for performing and completing the Work. He shall perform and complete the Work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the DISTRICT Representative, and in strict accordance with the Contract Documents. The CONTRACTOR shall clean up the Work and maintain it during and after construction, until accepted, and shall do all Work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the Work.

The cost of incidental Work described in these General Requirements, for which there are no specific Contract Pay Items, shall be considered as part of the general cost of doing the Work and shall be included in the prices for the various Contract Pay Items. No additional payment will be made therefore.

The CONTRACTOR shall provide and maintain such modern plant, tools, and equipment as may be necessary, to perform in a satisfactory and acceptable manner all the Work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The CONTRACTOR shall be solely responsible for the adequacy of his workmanship, materials and equipment.

### GENERAL REQUIREMENTS

C. Public Utility Installation and Structures

Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto whether owned or controlled by the DISTRICT, other governmental bodies or privately owned by individuals, firms or corporations, used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage, water or other public or private property which may be affected by the Work shall be deemed included hereunder.

The CONTRACTOR shall protect all public utility installations and structures from damage during the Work in accordance with Section 01530. Access across any buried public utility installation, or structure, shall be made only in such locations and by means to protect existing utilities. The CONTRACTOR shall so arrange his operations as to avoid any damage to these facilities. All required protective devices and construction shall be provided by the CONTRACTOR at his expense. All existing public utilities damaged by the CONTRACTOR, which are shown on the Plans or have been located in the field by the utility, shall be repaired by the CONTRACTOR, at his expense, as approved by the utility owner and the DISTRICT Representative. No separate payment shall be made for such protection or repairs to public utility installations or structures.

Public utility installations or structures owned or controlled by the DISTRICT or other governmental body, which are shown on the Plans to be removed, relocated, replaced or rebuilt by the CONTRACTOR shall be considered as a part of the general cost of doing the Work and shall be included in the prices bid for the various Contract Pay Items. No separate payment shall be made therefore.

Where public utility installations or structures owned or controlled by the DISTRICT or other governmental body are encountered during the course of the Work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the DISTRICT Representative, removal, relocation, replacement or rebuilding is necessary to complete the Work under this Contract, such Work shall be accomplished by the utility having jurisdiction, or such Work may be ordered, in writing by the DISTRICT Representative, for the CONTRACTOR to accomplish. If such Work is accomplished by the utility having jurisdiction it will be carried out expeditiously and the CONTRACTOR shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required. If such Work is accomplished by the CONTRACTOR, it will be in accordance with the General and Supplemental General Conditions.



The CONTRACTOR shall give written notice to DISTRICT and other governmental utility departments and other owners of public utilities of the locations of his proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the Work.

The maintenance, repair, removal, relocation or rebuilding of public utility installations and structures, when accomplished by the CONTRACTOR as herein provided, shall be done by methods approved by the DISTRICT Representative.

## 1.02 DRAWINGS AND SPECIFICATIONS

### A. Drawings

When obtaining data and information from the Construction Drawings, figures shall be used in preference to scaled dimensions, and large scale drawings in preference to small scale drawings.

### B. Copies Furnished to Contractor

The CONTRACTOR shall furnish each of the subcontractors, manufacturers, and suppliers such copies of the Contract Documents as may be required for their Work.

### C. Supplementary Drawings

When, in the opinion of the DISTRICT Representative, it becomes necessary to explain more fully the Work to be done or to illustrate the Work further or to show any changes which may be required, Drawings known as Supplementary Drawings, with Specifications pertaining thereto, will be prepared by the DISTRICT Representative and prints thereof will be given to the CONTRACTOR.

### D. Contractor to Check Drawings and Data

The CONTRACTOR shall verify all dimensions, quantities and details shown on the Shop Drawings, Construction Drawings, Supplementary Drawings, Schedules, Specifications or other data received from the DISTRICT Representative and shall notify him of any errors, omissions, conflicts and discrepancies found therein. The CONTRACTOR shall submit to the DISTRICT Representative a Request for Information (RFI), consecutively numbered in a format provided by or acceptable to the DISTRICT Representative, detailing all errors, omissions, conflicts and discrepancies. DISTRICT Representative shall promptly provide a response to all RFIs submitted by the CONTRACTOR. CONTRACTOR will not be allowed to take advantage of any errors or omissions, as full

instructions will be furnished by the DISTRICT Representative, should such errors or omissions be discovered.

E. Specifications

The Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements that govern the Work. Products and Execution modify and supplement these by detailed requirements for the Work and shall always govern whenever there appears to be a conflict.

F. Intent

All Work called for in the Specifications applicable to this Contract, but not shown on the Construction Drawings in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Construction Drawings or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the Work, is required and shall be performed by the CONTRACTOR as though it were specifically delineated or described, and shall be in accordance with the project's Construction Drawings and Specifications as well as DISTRICT and City of Crystal River Standards. If there is any discrepancy between these documents, the most stringent requirements will apply.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

The inclusion of the Related Requirements (or Work specified elsewhere) in the General part of the specifications is only for the convenience of the CONTRACTOR and shall not be interpreted as a complete list of all related Specification Sections.

### 1.03 INSPECTION AND TESTING

A. General

For tests specified to be made by the CONTRACTOR, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. One hard printed copy and one pdf digital copy of the reports shall be submitted, and certification thereof must be furnished to the

DISTRICT Representative as a prerequisite for the acceptance of any material or equipment.

If, in the making of any test of any material or equipment, it is ascertained by the DISTRICT Representative that the material or equipment does not comply with the Contract, the CONTRACTOR will be notified thereof and will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the Work and replace it with acceptable material, without cost to the DISTRICT.

The CONTRACTOR shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage that may occur to equipment prior to the time when the DISTRICT formally takes over the operation thereof.

**B. Costs**

All inspection and testing of materials furnished under this Contract will be performed by the CONTRACTOR or duly authorized inspections ENGINEER or inspection bureaus with all costs to the CONTRACTOR, unless otherwise expressly specified. The testing laboratory shall be approved by the DISTRICT.

The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the CONTRACTOR and such costs shall be deemed to be included in the Contract Price.

**C. Final Field Tests**

Upon completion of the Work and prior to final payment, all pavement and piping installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The CONTRACTOR shall furnish labor, fuel, energy, water and all other materials, equipment and instruments necessary for all acceptance tests, at no additional cost to the DISTRICT. The equipment supplier or appropriate subcontractor shall assist in the final field tests as applicable.

**D. Failure of Tests**

Any defects in the materials and equipment or their failure to meet the tests, guarantee or requirements of the Contract Documents shall be promptly corrected by the CONTRACTOR by replacements or otherwise as directed by the DISTRICT Representative. The decision of the DISTRICT Representative as to whether or not the CONTRACTOR has fulfilled his

obligations under the Contract shall be final and conclusive. If the CONTRACTOR fails to make these corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees or specified requirements, the DISTRICT, notwithstanding its partial payment for Work, and materials and equipment, may reject the materials and equipment and may order the CONTRACTOR to remove them from the site at his own expense.

E. Final Inspection

During such final inspections, the Work shall be clean. In no case will the final estimate be prepared until the CONTRACTOR has complied with all requirements set forth and the DISTRICT Representative has made the final inspection of the entire Work and is satisfied that the entire Work is properly and satisfactorily constructed in accordance with the requirements of the Contract Documents.

#### 1.04 TEMPORARY STRUCTURES

A. Temporary Fences

If, during the course of the Work, it is necessary to remove or disturb any fence or part thereof, the CONTRACTOR shall, at his own expense, if so ordered by the DISTRICT Representative, provide a suitable temporary fence, which shall be maintained until the permanent fence is replaced. The DISTRICT Representative shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

B. Temporary Driveways

At its own expense, the CONTRACTOR shall furnish, install, maintain and remove all temporary driveways and access roads (including temporary signage and storm culvert) and be responsible for the permitting as required to provide access to the Work and through the site of the Work to maintain existing operations and to allow construction of other projects in the area. The CONTRACTOR shall fully cooperate with the DISTRICT and City of Crystal River in providing this access.

#### 1.05 LINES AND GRADE

A. Grade

All Work under this Contract shall be constructed in accordance with the lines and grades shown on the Construction Drawings, or as given by the

DISTRICT Representative. The full responsibility for keeping alignment and grade rests upon the CONTRACTOR.

The CONTRACTOR, prior to commencing of construction, shall have established benchmarks and base line controlling points. The CONTRACTOR shall so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. He shall remove any obstructions placed by him contrary to this provision.

B. Surveys

The CONTRACTOR shall furnish and maintain, at his own expense, stakes and other such materials to establish all working or construction lines and grades, as required, and shall be solely responsible for the accuracy thereof. All surveying shall be performed in accordance with Specification 01050.

C. Safeguarding Marks

The CONTRACTOR shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the Work, bear the cost of re-establishing them if disturbed, and bear the entire expense of rectifying Work improperly installed due to not maintaining, protecting, or removing without authorization such established points, stakes, and marks.

The CONTRACTOR shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the Work and, if required, shall bear the cost of re-establishing them if disturbed or destroyed.

1.06 ADJACENT STRUCTURES AND LANDSCAPING

- A. The CONTRACTOR shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the Work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the Work, whether or not shown on the Construction Drawings or specified shall be included in the various Contract Items and no separate payments will be made therefore. Where such public and private property or structures of any kind and appurtenances thereto are not shown on the Construction Drawings and in the opinion of the DISTRICT Representative are damaged or required to be removed in order to avoid interference with the Work, payment will be made as provided for in the Agreement.

CONTRACTOR is expressly advised that the protection of buildings structures, tunnels, tanks, pipelines, etc. and related Work adjacent to and in the vicinity of his operations, wherever they may be, is solely his responsibility. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the CONTRACTOR. CONTRACTOR shall, before starting operations, make an examination of the interior and exterior of the adjacent structures, buildings, facilities, etc., and record by noting, measurements, photographs, etc., conditions which might be aggravated by open excavation and construction. Repairs or replacement of all conditions disturbed by the construction shall be made to the satisfaction of the DISTRICT Representative. This does not preclude conforming to the requirements of the insurance underwriters. Copies of surveys, photographs, reports, etc., shall be given to the DISTRICT Representative.

Prior to the beginning of any excavations the CONTRACTOR shall advise the DISTRICT Representative of all building or structures on which he intends to perform Work or which performance of the project Work will affect.

B. Protection of Trees

1. The bank stabilization project requires placement of fill materials within the drip line of some protected trees. CONTRACTOR shall use due care to protect the trunks, limbs, and exposed roots of trees within limits of construction.
2. The CONTRACTOR shall adequately protect all trees and shrubs with barricades as shown on the drawings in accordance with ordinances governing the protection of trees. No excavated or imported fill materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed through negligence of the CONTRACTOR or his employees shall be replaced with new stock of same varieties and largest sizes that can be practicably planted, in the proper season and at the sole expense of the CONTRACTOR.
3. Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.
4. Any canopy trimming deemed necessary for equipment clearance at the entrance into the spring pool must be approved by DISTRICT Representative prior to the trimming taking place.

C. Lawn Areas

Lawn areas shall be left in as good condition as before the starting of the Work. Where sod is to be removed, it shall be carefully removed, and later replaced, or the area where sod has been removed shall be restored with new sod in the manner described in the Division II of these Contract Documents.

D. Restoration of Fences

Any fence, or part thereof, that is damaged or removed during the course of the Work shall be replaced by the CONTRACTOR and shall be left in as good a condition as before the starting of the Work. The manner in which the fence is repaired or replaced, and the materials used in such Work shall be subject to the approval of the DISTRICT Representative. The cost of all labor, materials, equipment, and Work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or items, or if no specific Item is provided therefore, as part of the overhead cost of the Work, and no additional payment will be made therefore.

E. Restoration of Boardwalks

Unless otherwise agreed upon by the DISTRICT, any boardwalk, or part thereof, that is damaged or removed during the course of the Work shall be replaced by the CONTRACTOR and shall be left in as good a condition as before the starting of the Work. The manner in which the boardwalk is repaired or replaced, and the materials used in such Work shall be subject to the approval of the DISTRICT Representative. The cost of all labor, materials, equipment, and Work for the replacement or repair of any boardwalk, or part thereof, shall be deemed included in the appropriate Contract Item or items, or if no specific Item is provided therefore, as part of the overhead cost of the Work, and no additional payment will be made therefore.

1.07 PROTECTION OF WORK AND PUBLIC

A. Barriers and Lights

During the prosecution of the Work, the CONTRACTOR shall put up and maintain at all times such barriers and lights as will effectively prevent accidents. The CONTRACTOR shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the Work causes obstructions to the normal traffic or constitutes in any way a hazard to the public.

B. Smoke Prevention

The CONTRACTOR shall use hard coal, coke, oil or gas as fuel for equipment generating steam. A strict compliance with ordinances regulating the production of emission of smoke will be required. No open fires will be permitted.

C. Noise

The CONTRACTOR shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencer and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The CONTRACTOR shall strictly observe all local regulations and ordinances covering noise control.

Except in the event of an emergency, no Work shall be done between the hours of 5:00 P.M. and 8:00 A.M., or on Saturdays and Sundays. If the proper and efficient prosecution of the Work requires operations during the night, the written permission of the DISTRICT Representative shall be obtained before starting such items of the Work.

D. Access to Public Services

Neither the materials excavated, nor the materials or plant used in the construction of the Work shall be so placed as to prevent free access to all fire hydrants, valves or manholes.

E. Dust Prevention

The CONTRACTOR shall prevent dust nuisance from his operations or from traffic by keeping the roads and/or construction areas sprinkled with water at all times. Water for dust prevention shall be provided by the CONTRACTOR.

## 1.08 CLEANING

- A. During construction of the Work, the CONTRACTOR shall, at all times, keep the site of the Work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the DISTRICT Representative, such material, debris, or rubbish constitutes a nuisance or is objectionable.

The CONTRACTOR shall remove from the site all of his surplus materials and temporary structures when no further need therefore develops.

B. Final Clearing



At the conclusion of the Work, all erection plant, tools, temporary structures and materials belonging to the CONTRACTOR shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The CONTRACTOR shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished and new operating condition.

## 1.09 MISCELLANEOUS

### A. Protection Against Siltation and Bank Erosion

1. The CONTRACTOR shall arrange his operations to minimize siltation and bank erosion on the construction site(s) and on existing or proposed water courses, drainage ditches, wetlands and other areas of concern.
2. The CONTRACTOR, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the DISTRICT Representative that results from his construction operations.
3. The CONTRACTOR shall be solely responsible for paying any fines resulting from the encroachment of any environmentally protected areas not previously permitted or shown on the construction plans.

### B. Protection of Wetland Areas

The CONTRACTOR shall properly dispose of all surplus material, including soil, in accordance with Local, State and Federal regulations and the permits issued for this project. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Florida Department of Environmental Protection (Florida Department of Environmental Protection), Southwest Florida Water Management District (DISTRICT), U.S. Army Corps of Engineers (USACE), etc.

### C. Existing Facilities

The Work shall be so conducted to maintain existing facilities in operation insofar as is possible.

### D. Use of Chemicals

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or

of other classification, must show approval of either EPA (Environmental Protection Agency) or USDA (U.S. Department of Agriculture). Use of all such chemicals and disposal of residues shall be in strict conformance with manufacturer's instructions and in accordance with the product's Safety Data Sheet (SDS).

E. Tree Relocation

The CONTRACTOR shall be required to notify the DISTRICT Representative forty-eight (48) hours in advance of any relocation of trees on the project. No clearing shall occur and no earth moving equipment shall be placed onsite until after the notice has been issued. The CONTRACTOR shall provide maintenance of the tree barricades and other preventive measures to protect the trees that are to remain. The CONTRACTOR shall conform to all local ordinances, rules and regulations as well as the FDEP General Permit Conditions regarding the removal of any trees from the site of the Work.

F. Related Permits

The CONTRACTOR recognizes that the DISTRICT has applied for, and may have received, certain permits pertaining to the Work as outlined in Section 01065. At the sole discretion of the DISTRICT, the DISTRICT may assign said permits to the CONTRACTOR and the CONTRACTOR shall accept said assignments upon such request from the DISTRICT.

All Work in the vicinity of open waters, wetlands or any jurisdictional area is to be performed in strict accordance with the environmental permits and their conditions. Permits supersede technical specifications if any conflicts are identified. Erosion barriers, when shown on the construction Drawings, are the minimum required. If the CONTRACTOR's construction methods require that additional erosion control is necessary to satisfy these permits, such controls shall be supplied, installed and maintained throughout the construction process by the CONTRACTOR at no additional cost to the DISTRICT.

It is the sole responsibility of the CONTRACTOR to submit, in a timely manner, any information, data, etc. that is required as a condition of a permit. Required information, data, etc. shall be submitted directly to the permitting agency by the CONTRACTOR with copies to the DISTRICT Representative. The CONTRACTOR will be held responsible for any fine(s) or other action resulting from a violation of permit conditions.

G. Coordination With Other Site Contractor

The DISTRICT anticipates that repair work on areas internal portions of Three Sisters Springs will occur during the same time period as the Canal

Shoreline Stabilization work. It is anticipated that the repair work on the internal portions of Three Sister Springs will be performed by a separate contractor under a separate contract with the DISTRICT. The Canal Shoreline Stabilization work CONTRACTOR shall coordinate with the Internal Springs Repair work Contractor and DISTRICT to minimize potential conflicts and facilitate the completion of work on the site.

#### 1.10 RESTORATION OF PROPERTY

- A. Responsibility. All damage resulting from construction Work on existing structures, wetland areas, roadway pavement, driveways, other paved areas, fences, utilities, traffic control devices and any other obstruction not specifically named herein, shall be repaired, restored or replaced by the CONTRACTOR unless otherwise specified.
- B. Temporary Repairs. All damage named in Paragraph A above shall be at least temporarily repaired, restored or replaced immediately following construction efforts at that location. Temporary restoration shall mean putting the affected area back into a safe, usable condition.
- C. Permanent Repairs. All damage shall be permanently repaired, restored, or replaced not later than the 30th calendar day following the completion of construction at that location unless otherwise stipulated. Permanent repairs will be accomplished in a professional workmanship-like manner in accordance with Specifications contained herein, or contract documents, if addressed. The CONTRACTOR may be relieved of the 30-day time limit above only by specific written agreement with the DISTRICT Representative.
- D. Owner Retribution. In the event that the CONTRACTOR fails to make the permanent repairs within the time specified, the DISTRICT, at its option, will, with its own resources or by contract with others, cause the repair, restoration, or replacement of the affected area to be accomplished. The costs of such Work will be deducted either from the next pay request or from any other monies owed the CONTRACTOR.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

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## SECTION 01015

### CONTROL OF WORK

#### PART I - GENERAL

##### 1.01 WORK PROGRESS

The CONTRACTOR shall provide equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of Work and a rate of progress which will ensure the completion of the Work within the time stipulated in the Agreement.

##### 1.02 PRIVATE LAND

The CONTRACTOR shall not enter or occupy private land outside of easements, except by permission of the DISTRICT and landowner.

##### 1.03 WORK LOCATIONS

Construction limits shall be located specifically in the locations indicated on the Drawings. The DISTRICT Representative reserves the right to make such modifications in those locations as may be found desirable to avoid interference with existing structures, facilities, other construction activities or for other reasons not specifically addressed herein. Where fittings are noted on the Drawings, such notation is for the CONTRACTOR's convenience and does not relieve him from laying and jointing different or additional items where required.

##### 1.04 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The CONTRACTOR shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by DISTRICT's personnel, pedestrians and workmen. Bridges provided for access to private property during construction shall be removed when no longer required. The length of open trench will be controlled by the particular surrounding conditions, but shall always be confined to limits which minimize interference with surrounding properties and does not endanger existing facilities. If the excavation becomes a hazard, or if it excessively restricts traffic, construction procedures such as limiting the length of open trench, prohibiting stacking excavated material in the street or access road, and requiring that the trench shall not remain open overnight shall be completed by the CONTRACTOR.

### CONTROL OF WORK

- B. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles, which could be dangerous to the public, shall be well lighted at night.

#### 1.05 CARE AND PROTECTION OF PROPERTY

- A. The CONTRACTOR shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work on the part of the CONTRACTOR, such property shall be restored by the CONTRACTOR, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the DISTRICT Representative.
- B. All sidewalks that are disturbed by the CONTRACTOR's operations shall be restored to their original condition with the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the best modern practice.
- C. Along the location of the Work all fences, walks, bushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the CONTRACTOR shall be replaced in the location indicated by the DISTRICT Representative as soon as conditions permit. All grass areas beyond the limits of construction that have been damaged by the CONTRACTOR shall be restored to original conditions.
- D. Trees close to the Work shall be barricaded or otherwise protected against injury. The CONTRACTOR shall trim all branches that are susceptible to damage because of his operations, but in no case shall any tree be cut or removed without prior notification of the appropriate tree authority. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting, and painting in accordance with approved methods, using only approved tools and materials.
- E. The protection, removal, and replacement of existing physical features shall be part of the Work under the Contract and all costs in connection therewith shall be included in the unit and/or lump sum prices established.

#### 1.06 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. The CONTRACTOR shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone cables, whether or not they are shown on the Drawings. The CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the CONTRACTOR's operations shall be repaired by him at his expense.
- B. The CONTRACTOR shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines, and sewers). Services shall be maintained and all costs or charges resulting from damage thereto shall be paid by the CONTRACTOR.

#### 1.07 DISTRIBUTION SYSTEMS AND SERVICES

- A. The CONTRACTOR shall interrupt water, telephone, cable TV, sewer, gas, or other related utility services and disrupt the normal functioning of the system as little as possible, and shall notify the DISTRICT Representative and public well in advance of any requirement for dewatering, isolating, or relocating a section of a utility, so that necessary arrangements may be made with the appropriate agency.

#### 1.08 PROTECTION OF CONSTRUCTION AND EQUIPMENT

- A. All newly constructed Work shall be carefully protected from injury or damage in any way. No wheeling or walking or placing of heavy loads shall be allowed. Any portion of the Work injured or damaged shall be reconstructed by the CONTRACTOR at his own expense.
- B. It is CONTRACTOR's responsibility to protect all structures. Should any of the floors or other parts of the structures become heaved, cracked, or otherwise damaged, all such damaged portions of the Work shall be completely repaired by the CONTRACTOR at his own expense and to the satisfaction of the DISTRICT Representative. If, in the final inspection of the Work, any defects, faults, or omissions are found, the CONTRACTOR shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labor required. Further, the CONTRACTOR shall be fully responsible for the satisfactory maintenance and repair of the construction and other Work undertaken herein, for the guarantee period.

#### 1.09 WATER FOR CONSTRUCTION PURPOSES

- A. The CONTRACTOR is responsible for providing all water required for construction purposes. The CONTRACTOR shall pay for all water used for construction purposes. Bid prices shall include the anticipated costs to be incurred for water usage.

#### 1.10 MAINTENANCE OF FLOW

- A. The CONTRACTOR shall at his own cost, provide for the flow of drains and water courses interrupted during the progress of the Work, and shall immediately remove all offensive matter. The entire procedure for maintaining existing flows shall be approved by the facility owner (City of Crystal River and DISTRICT) and USFWS in advance of the interruption of any flow.

#### 1.11 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any Work under this Contract shall cooperate with the Prime CONTRACTOR and his subcontractors or trades and shall assist in incorporating the Work of other trades where necessary or required.

#### 1.12 CLEAN-UP

- A. During the course of the Work, the CONTRACTOR shall keep the site of his operations in as clean and neat a condition as is possible. He shall dispose of all residue resulting from the construction Work and, at the conclusion of the Work, he shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures, and any other refuse remaining from the construction operation, and shall leave the entire site of the Work in a neat and orderly condition.
- B. CONTRACTOR shall restore all temporary access drives, staging areas, trails, and stockpile areas to the pre-construction grades and conditions at the conclusion of the Work.

#### PART II - PRODUCTS (Not Used)

#### PART III - EXECUTION (Not Used)

END OF SECTION



## SECTION 01050

### FIELD ENGINEERING AND SURVEYING

#### PART I - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The CONTRACTOR shall provide and pay for field engineering and survey service required. Such Work shall include survey Work to establish in the field right of way lines, base lines, benchmarks (elev.), center lines, stationing, and grades and to locate and lay out site improvements, structures, and controlling lines and levels required for the construction of the Work. Also included are such engineering services as are specified or required to execute the CONTRACTOR's construction methods. Engineers and surveyors shall be licensed professionals registered in the State of Florida.
- B. The accuracy of any method of staking shall be the responsibility of the CONTRACTOR. All surveying for vertical and horizontal control shall be the responsibility of the CONTRACTOR.
- C. The CONTRACTOR shall be held responsible for the preservation of all stakes and marks. If any stakes or marks are carelessly or willfully disturbed by the CONTRACTOR, the CONTRACTOR shall not proceed with any Work until he has established such points, marks, lines and elevations as may be necessary for the prosecution of the Work.
- D. Once the project is complete, the CONTRACTOR shall provide the DISTRICT with a complete Record Drawing survey of all project improvements.

##### 1.02 SURVEY REFERENCE POINTS

- A. Existing basic horizontal and vertical control points for the project are those designated on the Construction Drawings. The CONTRACTOR shall locate and protect control points prior to starting site work and shall preserve all permanent reference points during construction. In working near any permanent property corners or reference markers, the CONTRACTOR shall use care not to remove or disturb any such markers.

Two such markers are located within or directly adjacent to the project work area and are identified as Southwest Florida Water Management District Benchmarks 780043A and 780043B. In the event that Benchmarks 780043A and/or 780043B must be removed or are disturbed due to the proximity of construction Work, the CONTRACTOR shall be responsible

### FIELD ENGINEERING AND SURVEYING

for hiring a Florida registered professional surveyor, at CONTRACTOR'S expense, to replace the monuments in the same fashion as they were originally set - aluminum rod driven to refusal with District logo cap stamped with the same number as the marker destroyed and additional stamping of "reset" with reset date, rod and logo cap will be incased in concrete.

The elevation of the reset marks will be based on a closed level loop from a minimum two NGS/SWFWMD benchmarks. These efforts will result in a data sheet submitted to the District for each reset mark. (A blank BM form for consultants is included as an attachment to this section). Methodologies and procedures will be consistent with those outlined in the attachment document. The required accuracy will match that as listed on the data sheet for the destroyed mark.

- B. CONTRACTOR shall verify horizontal and vertical control point locations and elevations prior to start of Work or use of control points.

### 1.03 PROJECT SURVEY REQUIREMENTS

- A. The CONTRACTOR shall engage the services of a Florida Registered Land Surveyor to establish all lines and grades on the Drawings necessary to fully construct the Work in accordance with Chapter 61G17-6 of the Florida Administrative Code.
- B. The Registered Land Surveyor shall establish a temporary benchmark system in accordance with Chapter 61G17-6 F.A.C. and shall provide a written list to the CONTRACTOR for his use.

### 1.04 RECORDS

- A. Surveyor shall maintain a complete, accurate log of all control and survey Work as construction progresses. Surveyor shall keep survey notes indicating the information and measurements used in establishing locations and grades in notebooks and furnished to the DISTRICT with the Record Drawings.

### 1.05 SUBMITTALS

- A. CONTRACTOR shall submit name and address of surveyor to the DISTRICT Representative.
- B. On request of the DISTRICT Representative, CONTRACTOR shall submit documentation to verify accuracy of field engineering Work.

## PART II - PRODUCTS

(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

## ATTACHMENT A

**[Insert JPG image of Company Logo Here or Company name in text format]**

## VERTICAL CONTROL SURVEY DATA SHEET

**PROJECT TITLE: X**  
**WORK ORDER: XX-XXX**

NAVD88 SITE BENCHMARK INFORMATION	
BENCHMARK DESIGNATION (STAMPING):	NAVD88 ELEVATION (U.S. FEET): XX.XXX
NORTHING: X,XXX,XXX LATITUDE: N XX° XX' XX.XX"	EASTING: XXX,XXX LONGITUDE: W XX° XX' XX.XX"
BENCHMARK DESCRIPTION: Set ¾" aluminum rod driven to refusal at a rod depth of x feet with 3¼" aluminum disc inscribed, "Southwest Florida Water Management District NAVD 1988 Survey Control Station" stamped "xxxxx" Date "20xx", encased in concrete.	

SITE INFORMATION			
SITE NAME: xxxxxxxx (from WMIS)	SITE I.D. (SID): xxxxx		
SITE TYPE: (per GIS layer)	DATE OF SURVEY: xx-xx-xxxx		
COUNTY: xxxxxxxx	SECTION: XX	TOWNSHIP: XX S	RANGE: XX E

BENCHMARK AND SITE PHOTOS	
Facing xxxxx	Close-up

- Continued on next page -

[Insert JPG image of Company Logo Here or Company name in text format]

**VERTICAL CONTROL SURVEY DATA SHEET**

**BENCHMARK XXXXXXXXXX / SURVEYOR'S FIELD SKETCH**

- Continued on next page –

Page **2** of **5**

Work Order: XX-XXX (This info provided by District Survey Staff if applicable, if not delete)

Form Rev. 08-02-2021

[Insert JPG image of Company Logo Here or Company name in text format]

**VERTICAL CONTROL SURVEY DATA SHEET**

**BENCHMARK XXXXXXXX / SITE LOCATION AERIAL OVERLAY**

- Continued on next page –

## VERTICAL CONTROL SURVEY DATA SHEET

### SURVEYOR'S NOTES:

1. (Insert access (to reach) information if necessary).

Insert further access information here. (References etc.)

2. Elevations are based on vertical control that conforms to the standards for vertical accuracy defined under Chapter 5J-17.051, Florida Administrative Code (F.A.C.). Units are in U.S. survey feet and reference the North American Vertical Datum of 1988 (NAVD 88). OR GPS derived Bench Marks were verified by redundant measurements resulting in a vertical misclosure accuracy of 0.0 feet at the 95% confidence level. The vertical values shown herein are derived from Real Time Kinematic – Global Navigation Satellite System (RTK-GNSS) measurements using the Trimble VRS Real Time Network (RTN), the RTN network is based on direct ties to the National Geodetic Survey (NGS) Continuously Operated Reference Stations (CORS). The vertical accuracies are validated with direct measurements to the following NGS Control Stations [designation] (PID#) and [designation] (PID#). Elevations were derived and verified by redundant measurements resulting in a vertical misclosure accuracy of +/- 0.01. The elevations originate from National Geodetic Survey (NGS) vertical control stations [designation] (PID #), published NAVD 88 elevation 00.000 feet and [designation] (PID #), published NAVD 88 elevation 00.000 feet.

**(If the above is for a monitoring project use the Vertical Control statement.**

3. Horizontal coordinates of features located have an expected accuracy of 0.0 foot. Horizontal values shown herein are based on North American Datum (NAD 1983/2011), Florida State Plane Coordinate System (FSPCS), West Zone (902) units are in U.S. survey feet.

4. The horizontal values of newly-established features shown herein are derived from Real Time Kinematic – Global Navigation Satellite System (RTK-GNSS) measurements, using the Trimble VRS Real Time Network (RTN). The RTN network is based on direct ties to NGS control stations. The horizontal accuracies are validated using direct RTK-GNSS measurements to the NGS/ FPRN control stations [Designation] (PID#XXXX) and [Designation] (PID#XXXX). The applied control station coordinate values are based on an independent static GPS network adjustment with direct ties to NGS CORS stations [Designation] (PID#XXXX), and [Designation] (PID#XXXX).

OR

The horizontal values of newly-established features shown herein are derived from Real Time Kinematic – Global Navigation Satellite System (RTK-GNSS) measurements, using the Leica VIVA NRTK-GPS with the Florida Permanent Reference Network (FPRN). The FPRN network is based on direct ties to NGS Continuously Operated Reference Stations (CORS). The horizontal accuracies are validated using direct RTK-GNSS measurements to the NGS/ FPRN control stations Designation (PID#XXXX) and Designation (PID#XXXX). The applied control station coordinate values are based on an independent static GPS network adjustment with direct ties to NGS CORS stations [Designation] (PID#XXXX), and [Designation] (PID#XXXX).

OR

The horizontal values of newly established features shown herein are derived from static observations using the Global Navigation Satellite System (GNSS) with direct ties to the following NGS Continuously Operated Reference Stations (CORS), [designation] (PID #) and [designation] (PID #), the applied control station coordinate values are based on an independent static GPS network adjustment with direct ties to NGS CORS stations [designation] (PID #) and [designation] (PID #).

OR

The horizontal values of newly-established features shown herein are derived from Real Time Kinematic – Global Navigation Satellite System (RTK-GNSS) measurements, using the Trimble VRS Real Time Network (RTN). The RTN network is based on direct ties to NGS Continuously Operated Reference Stations (CORS) [designation] (PID #) and [designation] (PID #).

OR

The horizontal values of newly-established features shown herein are derived from Real Time Kinematic – Global Navigation Satellite System (RTK-GNSS) measurements, using the Trimble VRS Real Time Network (RTN) and the Florida Permanent Reference Network (FPRN). The RTN and FPRN networks are based on direct ties to NGS control stations. The horizontal accuracies are validated using direct RTK-GNSS measurements to the NGS/ FPRN control stations Designation (PID#XXXX) and Designation (PID#XXXX). The applied control station coordinate values are based on an independent static GPS network adjustment with direct ties to NGS CORS stations [Designation] (PID#XXXX), and [Designation] (PID#XXXX).

5. This survey map, data and/or report or the copies thereof are not valid without the original signature and raised seal of a Florida licensed Surveyor and Mapper. Any additions or deletions to these maps, data, or reports by other than the signing party or parties is prohibited by law without the written consent of the signing party or parties. When data is delivered in digital form only, neither the data nor the report is full and complete without the other.

- Continued on next page –



[Insert JPG image of Company Logo Here or Company name in text format]

## VERTICAL CONTROL SURVEY DATA SHEET

### **SURVEYOR'S CERTIFICATION:**

This vertical control survey is certified as meeting or exceeding, in quality and precision, the standards of practice applicable for this work, as set forth in Chapter 5J-17, of the Florida Administrative Code, pursuant to Chapter 472 of the Florida Statutes.

---

(Licensed Surveyor Name here) PSM                      Date of Signature  
Florida Professional Surveyor and Mapper No. #####  
(Your company name here)  
(Your company street address here)  
(Your company City, State and zip code here)  
(Your company phone numbers here)

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## SECTION 01065

### PERMITS

#### PART I - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The CONTRACTOR shall be responsible to ensure that the construction of the project adheres to City, County, State, and Federal standards and regulations, and to all permits and easements acquired for the project.
- B. The CONTRACTOR shall coordinate all Work within rights-of-way or easements with the agency having jurisdiction, including all road/lane closures, road/lane narrowing and detours.
- C. Copies of Permits 09-0412330-001-EG (Florida Department of Environmental Protection) and SAJ-2012-00212 (LP-JED) are included in the bid documents. Copies of all Deeds, Easement Agreements or License Agreements that the DISTRICT has obtained will be provided to the bid awardee. The CONTRACTOR shall conduct all operations in accordance with the requirements of all Permits, Easements and License Agreements.
- D. Where Permits, Deeds, Easement Agreements, or License Agreements require that certain Work is to be performed only in the presence of a representative of the permitting entity, the CONTRACTOR shall provide all coordination and notification required to assure full compliance with the permit conditions.
- E. The DISTRICT has obtained or will obtain certain Permits, Deeds, Easement Agreements, or License Agreements required for construction of the project. A listing of those Permits, Deeds, Easement Agreements, or License Agreements that the DISTRICT has obtained or applied for is listed below. The CONTRACTOR shall be responsible for obtaining all other Permits, Easement Agreements, or License Agreements necessary for the proper execution of the Work not specifically noted to be obtained by the DISTRICT.
- F. The CONTRACTOR shall comply with all terms, conditions, provisions and requirements of all permits issued or to be issued for the Project. Should the CONTRACTOR's failure to comply with said permits lead to enforcement action by any of the permitting or jurisdictional agencies, any resultant costs in the forms of repairs, fines, penalties, administrative costs, attorney's fees or consultant fees shall be deducted from the Contract Price

or shall be otherwise collectible from the CONTRACTOR and its Surety, jointly and severally.

- G. The CONTRACTOR shall notify the DISTRICT a minimum of 30 days prior to the expiration of a permit if said expiration occurs prior to completion of the Work.
- H. Prior to any land clearing or tree removal, the CONTRACTOR shall construct a soil tracking device in accordance with current Florida Department of Transportation (FDOT) design standards.

## 1.02 PERMITS

- A. Permits obtained by, or applied for by, the DISTRICT, City of Crystal River, or U.S. Fish and Wildlife Service (FWS) for the construction of this project are as follows:

Permit Title	Agency	Permit/ File Number	Expiration Date
62-330.631 General Permit	Florida Department of Environmental Protection (FDEP)	09-0412330-001-EG	November 10, 2026
Letter of Permission	U.S. Army Corps of Engineers	Permit No. SAJ-2012-00212(LP-JED)	May 31, 2027

- B. Each bidder shall be familiar with the requirements of the permit conditions that relate to construction activities and shall include the cost of satisfying these permit conditions in developing a bid for the project.
- C. At a minimum, the CONTRACTOR shall register with appropriate authorities, obtain the following permits and comply with their respective conditions and submit copies of all applications and final permits to the DISTRICT.
- D. The CONTRACTOR shall obtain all required construction permits. No clearing shall occur and no earth-moving equipment shall be placed on-site until after the permits have been issued.
- E. The CONTRACTOR shall obtain, implement and comply with all local and state permits required for dewatering, including consumptive or water use permitting, if required for construction from the Southwest Florida Water Management DISTRICT.
- F. The CONTRACTOR shall be responsible for obtaining, and complying with, all required permits relating to discharges from dewatering and shall obtain

a State of Florida Department of Environmental Protection Generic Permit for the Discharge of Produced Ground Water From Any Non Contaminated Site Activity in accordance with 62-621.300(2) F.A.C., if required for construction.

G. The CONTRACTOR shall obtain, implement and comply with the requirements of a Generic Permit for Storm Water Discharge from Large and Small Construction Activities (CGP), in accordance with 62-621.300(4) F.A.C. The CONTRACTOR shall submit a CGP Notice of Intent (NOI) to the Florida Department of Environmental Protection (FDEP) and develop and submit a Storm Water Pollution Prevention Plan (SWPPP) as part of the CGP. The CONTRACTOR shall:

1. Obtain the CGP form and NOI Application Form from the FDEP or its website, DEP Documents 62-621.300(4)(a) and 62-621.300(4)(b), respectively.
2. Develop an SWPPP in compliance with FDEP storm water permitting rules that shall include, at a minimum, the following:
  - a. A site evaluation of how and where pollutants may be mobilized by storm water.
  - b. A site plan for managing storm water runoff.
  - c. Identification of appropriate erosion and sediment controls including Best Management Practices to reduce erosion, sedimentation, and storm water pollution.
  - d. A maintenance and inspection schedule.
  - e. Plan and procedures for record keeping.
  - f. A map depicting storm water exit areas.
3. Complete and submit the NOI Application, including all attachments, to the local FDEP office along with the appropriate application fee.
4. The CONTRACTOR shall furnish a copy of the FDEP Notice of Permit, along with a copy of the SWPPP, to the DISTRICT.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

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## SECTION 01150

### MEASUREMENT AND PAYMENT

#### PART I - GENERAL

##### 1.01 SCOPE

- A. All pay items under this contract shall be lump sum.
- B. Contingency Allowance: The CONTRACTOR shall not use the Contingency Allowance without written approval from the DISTRICT.
- C. The CONTRACTOR shall accept compensation provided under the terms of this Contract as full payment for furnishing all materials and for performing all Work contemplated and embraced under this Contract. Such compensation shall also be for any and all loss or damage arising out of the nature of the Work, or from the action of the elements, or from any unforeseen difficulties or obstruction encountered during the Contract period until final acceptance by the DISTRICT.
- D. Any Work or items not included in a lump sum pay item on the Bid Form, but shown on the plans or required by the Contract Documents, shall be included as part of the lump sum bid price for Bid Item "Miscellaneous Work" and identified in the CONTRACTOR's Schedule of Values.
- E. It is the CONTRACTOR's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The DISTRICT will not be responsible for quantities ordered in excess of those installed and constructed.
- F. The CONTRACTOR shall prepare and submit a Schedule of Values and Progress Schedule to the DISTRICT's representative for approval in accordance with the Contract Documents. The Schedule of Values and Progress Schedule shall be the primary means of control of the Work and will be the basis for scheduling all Work and for determination of Contract progress payments. The Schedule of Values shall subdivide the total lump sum bid price for the Work into its component parts for each lump sum pay shown on the Bid Form in sufficient detail to serve as the basis for estimating percent complete to support progress payments during construction. The total sum of the individual values in the Schedule of Values for each of the activities shall equal the total lump sum Contract price minus contingency.
- G. No extra payment will be made to the CONTRACTOR for construction extending over a greater area than authorized, nor for material moved from

### MEASUREMENT AND PAYMENT

outside of stakes and data shown on the plans, except when such Work is authorized in writing by the DISTRICT.

- H. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original Contract quantities, and the Work added or decreased/eliminated is of the same general character as that called for on the plans, the CONTRACTOR shall accept payment in full at the original Contract prices for the actual quantity of Work performed, with no allowance for any loss or anticipated profits.
- I. Restoration is considered an integral part of the Work, and all bid prices shall include the cost of restoration necessitated by the Work related to that Bid Item. All existing structures and property including, but not limited to, paving, stabilized roads, trails, drainage piping and ditches, catch basins, head walls, adjacent docks and seawalls, yard culverts, lawns, fences, boardwalks, submerged aquatic vegetation, trees, shrubs, ground areas, walkways, sidewalks, driveways, alleys, curbs, gutters and irrigation systems that are altered, removed or damaged during construction shall be restored to the same or better condition than existed prior to construction at no additional cost to the DISTRICT. The bidder shall hereby be advised that cleanup is an integral part of the restoration process.
- J. The CONTRACTOR shall be responsible for any additional maintenance of traffic necessitated by the proposed Work, including in-water navigation adjacent to the work area(s). The cost for this shall be included as part of the lump sum quantity for Mobilization.
- K. All required inspection and testing of materials shall be included in the Contract Price for each Bid Item.

## PART II - PRODUCTS (Not Used)

## PART III - EXECUTION

### 3.01 MEASUREMENT AND PAYMENT

#### A. Mobilization

- 1. Measurement: The work included under this Section consists of the preparatory work and operations in mobilizing to begin site work components of the projects, including but not limited to operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, project signage, audio-visual documentation of pre-construction project conditions, preparation of a Stormwater Pollution Prevention Plan (SWPPP), submittal of the

## MEASUREMENT AND PAYMENT

SWPPP to DISTRICT's representative for review, submittal of Notice of Intent (NOI) and Notice of Termination (NOT) to the state pursuant to federal NPDES regulations, obtaining miscellaneous permits, as needed, safety equipment and first aid supplies, sanitary and other facilities as required by the Contract Documents, and state and local laws and regulations. The cost of bonds and required insurance, any other pre-construction expenses necessary for the start of work, excluding the cost of construction materials, shall also be included in under this Bid Item.

2. Payment: The work specified under this section shall be paid for at the Contract lump sum price for Mobilization and shall be in accordance with the following schedule:

PERCENT OF ORIGINAL CONTRACT AMOUNT EARNED	ALLOWABLE PERCENT OF THE LUMP SUM PRICE FOR MOBILIZATION
5	25
25	50
50	75
100	100

The work specified under this Section shall be paid for under the Lump Sum Pay Item:

Item 1: Mobilization

#### B. Site Preparation and Site Work

1. Measurement: The work included under this Section consists of furnishing all labor, materials, equipment, and incidentals necessary to perform all proposed Work as outlined in the Contract Documents. The site preparation and site work shall include, but is not limited to, all installation and maintenance of erosion control measures, clearing, grubbing, excavation, filling, backfilling, compaction, testing, final grading, disposal of surplus and unsuitable materials, soil stabilization for access roads, temporary storm culverts and signage, riprap, sod, seed/mulch, plantings, and plant maintenance as necessary to complete the Work described in the drawings and Contract Documents.



2. Payment: The work specified under this Section shall be paid for under the Lump Sum Pay Item:

Item 2:	Staked Silt Fence
Item 3:	Plastic Construction Barricade Fence
Item 4:	Construction Signage, Furnish and Install
Item 5:	Tree Barricade
Item 6:	Floating Turbidity Barrier
Item 7:	Turbidity Monitoring
Item 8:	Dust, Sedimentation, Erosion and Turbidity Control Maintenance
Item 9:	Construction Access Drive Maintenance and Restoration
Item 10:	Clearing and Grubbing
Item 11:	Excavation and Disposal
Item 12:	Filter Stone (Including Filter Fabric) Furnish and Install
Item 13:	Envirolok™ Bags or Approved Alternate Furnish & Install
Item 14:	Burlap Soil Bags Furnish and Install
Item 15:	Limestone Riprap Furnish and Install
Item 16:	Gravel Staging Pad Furnish, Install, Maintain & Restore
Item 17:	Sod
Item 18:	Seed and Mulch
Item 19:	Plantings Installed (Items 19A – 19Y)
Item 19A:	<i>Juniperus virginiana</i> (Eastern Red Cedar)
Item 19B:	<i>Quercus virginiana</i> (Live Oak)
Item 19C:	<i>Pinus elliotii</i> (Slash Pine)
Item 19D:	<i>Morella cerifera</i> (Wax Myrtle)
Item 19E:	<i>Forestiera segregate</i> (Florida privet)
Item 19F:	<i>Sambucus nigra</i> (Elderberry)
Item 19G:	<i>Magnolia virginiana</i> (Sweetbay Magnolia)
Item 19H:	<i>Baccharis halimifolia</i> (Saltbush)
Item 19I:	<i>Quercus laurifolia</i> (Laurel Oak)
Item 19J:	<i>Acrostichum danaeifolium</i> (Leather Fern)
Item 19K:	<i>Lyceum carolinianum</i> (Christmas Berry)
Item 19L:	<i>Crinum americanum</i> (Southern Swamp Lily)
Item 19M:	<i>Distichlis spicata</i> (Saltgrass)
Item 19N:	<i>Iva frutescens</i> (Marsh Elder)
Item 19O:	<i>Paspalum vaginatum</i> (Seashore Paspalum)
Item 19P:	<i>Sesuvium portulacastrum</i> (Sea Purslane)
Item 19Q:	<i>Solidago sempervirens</i> (Seaside Goldenrod)
Item 19R:	<i>Tripsacum dactyloides</i> (Fakahatchee Grass)
Item 19S:	<i>Bacopa monnieri</i> (Water Hyssop)
Item 19T:	<i>Cladium jamaicense</i> (Sawgrass)
Item 19U:	<i>Mulenbergia capillaris</i> (Gulf Muhly Grass)

#### MEASUREMENT AND PAYMENT

- Item 19V     *Acer rubrum* (Red Maple)
- Item 19W     *Juniperus virginiana* (Eastern Red Cedar)-If needed
- Item 19X     *Taxodium distichum* (Bald Cypress)-If needed
- Item 19Y     Pine Needle Mulch
- Item 19Z     Tree Staking
- Item 19AA    Removal of Felled Limbs
- Item 20:      Boardwalk Remove/Barricade End
- Item 21:      Sections Manatee Watch Services
- Item 22:      Plant Maintenance

C. Contingency Allowance

1.     General: The work specified under this section consists of performing additional work beyond the original contract scope as authorized by the DISTRICT.
  
2.     Payment: Payment for miscellaneous work outside of the original contract scope will be made only for work specifically authorized by the DISTRICT in writing. Prior to beginning the work, the DISTRICT and CONTRACTOR will agree on a unit price or lump sum price for the additional work. Any work paid for under Contingency must be authorized in writing in accordance with the Contract Documents. The work specified under this section shall be paid for under the Pay Item:
  - Contingency Allowance

END OF SECTION

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## SECTION 01300

### SUBMITTALS

#### PART I - GENERAL

##### 1.01 CONSTRUCTION SCHEDULE

- A. Within 10 days after the Notice of Award, CONTRACTOR shall submit to DISTRICT Representative for review a schedule of the proposed construction operations. The construction schedule shall indicate the sequence of the Work, the time of starting and completion of each part, and the installation date for each major item of equipment, and the time for making connections to existing piping, structures, or facilities.
- B. An updated schedule must be submitted with each pay application to reflect changes in the progress of the Work. Schedule updates may not adjust Substantial or Final Completion.
- C. DISTRICT may require CONTRACTOR to add to his equipment, or construction forces, as well as increase the working hours, if operations fall behind schedule at any time during the construction period.

##### 1.02 PRELIMINARY SCHEDULE

- A. Prior to the pre-construction conference, the CONTRACTOR shall submit the following items to the DISTRICT Representative for review:
  - 1. A preliminary schedule of Shop Drawing submittals.
  - 2. A preliminary list of all permits and licenses the CONTRACTOR shall obtain showing the permitting agency, the type of permit, the expected date of application for the permit, required date for receipt of the permit, and permit fee.

##### 1.03 PROGRESS REPORTS

- A. A progress report shall be furnished to DISTRICT Representative with each application for progress payment. If the Work falls behind schedule, CONTRACTOR shall submit additional progress reports at such intervals as DISTRICT Representative may request.
- B. Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effect on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is

### SUBMITTALS

not readily apparent to DISTRICT Representative, must be substantiated with satisfactory evidence.

- C. Each progress report shall also include the accepted graphic schedule marked to indicate actual progress.

#### 1.04 SCHEDULE OF VALUES

- A. Within 10 days after the Notice of Award, CONTRACTOR shall submit to the DISTRICT Representative for review a schedule of values. The schedule of values, showing the value of each kind of work, shall be acceptable to DISTRICT Representative before execution of construction agreement is processed.
- B. The sum of the items listed in the schedule of values shall equal the Contract Price. Such items as Bond premium, temporary construction facilities, may be listed separately in the schedule of values, provided the amounts can be substantiated. Overhead and profit shall not be listed as separate items.
- C. In addition to those items listed in Paragraph B, items that shall also be included on the Schedule of Values include O&M manuals (including electronic format), Record Drawings and any other individualized component that the CONTRACTOR would like to separately itemize for payment.
- D. An unbalanced Schedule of Values providing for overpayment of CONTRACTOR on items of Work that would be performed first will not be accepted. The Schedule of Values shall be revised and resubmitted until acceptable to DISTRICT Representative. Final acceptance by DISTRICT Representative will indicate only consent to the Schedule of Values as a basis for preparation of applications for progress payments and shall not constitute an agreement as to the value of each indicated item.

#### 1.05 SURVEY DATA

- A. All field books, notes, and other data developed or obtained by the CONTRACTOR in performing the surveys required by the Work shall be available to the DISTRICT Representative for examination throughout the construction period. All such data shall be submitted to the DISTRICT with all other Project Record Documents required for Final Completion of the Work in accordance with Section 01720.

## 1.06 LAYOUT DATA

- A. CONTRACTOR shall keep neat and legible notes of measurements and calculations made by him in connection with the layout of the Work. Copies of such data shall be furnished to the DISTRICT Representative.
- B. CONTRACTOR's layout as provided under Lines and Grades. All such data considered of value to DISTRICT will be transmitted to DISTRICT Representative with other records upon completion of the Work.

## 1.07 COMPLIANCE SUBMITTALS

### A. Schedule and Log of Compliance Submittals:

1. Prepare for the DISTRICT, a schedule and log for submission of all Compliance Submittals specified or necessary for DISTRICT's review of the use of Equipment and Materials proposed for incorporation in the WORK or needed for proper installation, operation or maintenance. Submit the schedule and log with the procurement schedule and WORK progress schedule. Schedule submission of all Compliance Submittals to permit review, fabrication, and delivery in time so as to not cause a delay in the WORK of CONTRACTOR or his Subcontractors or any other contractors as described herein.
2. In establishing schedule for Compliance Submittals, allow fifteen (15) working days in DISTRICT's office for reviewing original Submittals and ten (10) working days for reviewing resubmittals.
3. The schedule shall indicate the anticipated dates of original submission.
4. Schedule all Compliance Submittals required prior to fabrication or manufacture for submission within 90 days of the Notice to Proceed. Schedule Compliance Submittals pertaining to storage, installation and operation at the Site for DISTRICT's acceptance prior to delivery of the Equipment and Materials.
5. Resubmit Compliance Submittals the number of times required for DISTRICT's "Submittal Accepted." However, any need for resubmittals in excess of the number set forth in the accepted schedule, or any other delay in obtaining acceptance of Submittals, will not be grounds for extension of the Contract Time, provided the DISTRICT completes its reviews within the times stated above.

### B. Transmittal of Compliance Submittals:

1. All Compliance Submittals and related correspondences shall be submitted to the DISTRICT by CONTRACTOR.
2. All Compliance Submittals of Equipment and Materials furnished by Subcontractors, MANUFACTURERS, and Suppliers shall be submitted to the DISTRICT by CONTRACTOR electronically in PDF format or in written format.
3. After checking and verifying all field measurements, transmit all Compliance Submittals to the DISTRICT for acceptance as follows:
  - a. Identify each Compliance Submittal by Submittal Number, Project name and number, Contract title and number, and the Specification SECTION and article number marked thereon or in the letter of transmittal. Unidentifiable Submittals will be returned for proper identification.
  - b. Check and stamp Compliance Submittals of Subcontractors, Suppliers, and MANUFACTURERS with CONTRACTOR's approval prior to transmitting them to the DISTRICT. CONTRACTOR's stamp of approval shall constitute a representation to the DISTRICT that CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or he assumes full responsibility for doing so, and that he has coordinated each Compliance Submittal with the requirements of the WORK and the Contract Documents.
  - c. At the time of each submission, call to the attention of DISTRICT in the letter of transmittal any deviations from the requirements of the Contract Documents.
  - d. Make all modifications noted or indicated by DISTRICT and return revised prints, copies, or samples until accepted. Direct specific attention in writing, or on revised Submittals, to changes other than the modifications called for by the DISTRICT on previous Submittals. After Submittals have been accepted, submit copies thereof for final distribution. Prints of accepted drawings transmitted for final distribution will not be further reviewed and are not to be revised. If errors are discovered during manufacture or fabrication, correct the Submittal and resubmit for review.
  - e. Following completion of the WORK and prior to final payment, furnish those drawings necessary to indicate "as constructed" conditions, including field modifications, in the number of copies specified. Furnish additional copies for insertion in equipment instruction books as

## SUBMITTALS

required. All such copies shall be clearly marked "AS BUILT DRAWING."

- f. WORK requiring a Compliance Submittal shall not be commenced or shipped until the Submittal has been stamped "Submittal Accepted" or "Submittal Accepted as Noted" by the DISTRICT.
- g. Keep a copy or sample of each Compliance Submittal in good order at the Site.

B. DISTRICT's Review:

- 1. The DISTRICT will review and return Compliance Submittals to CONTRACTOR with appropriate notations. Instruction books and similar Submittals will be reviewed by the DISTRICT for general content but not for substance.
- 2. The DISTRICT's acceptance of Compliance Submittals will not relieve CONTRACTOR from his responsibility as stated in the Contract Documents.

D. Compliance Submittal Action Stamp:

- 1. The DISTRICT's review action stamp or designation, appropriately completed, will appear on all Compliance Submittals of CONTRACTOR when returned by the DISTRICT. Review status designations listed on DISTRICT's action stamp are defined as follows:
  - a. "ACCEPTED AS SUBMITTED": Signifies Equipment or Material represented by the Submittal conforms with the design concept and complies with the intent of the Contract Documents and is acceptable for incorporation in the WORK. CONTRACTOR is to proceed with fabrication or procurement of the items and with related WORK.
  - b. "ACCEPTED AS NOTED": Signifies Equipment and Material represented by the Submittal conforms with the design concept and complies with the intent of the Contract Documents and is acceptable for incorporation in the WORK subject to the condition that as constructed it shall be in accordance with all notations and/or corrections indicated. CONTRACTOR is to proceed with fabrication or procurement of the items and with related WORK in accordance with DISTRICT's notations.
  - c. "RETURNED FOR REVISION": Means that deviations from the requirements of the Contract Documents exist in the submittal. CONTRACTOR is to resubmit revised information responsive to



DISTRICT's annotations on the returned Submittal or written in the letter of transmittal. Fabrication or procurement of items represented by the Submittal and related WORK is not to proceed until the Submittal is approved.

- d. "NOT ACCEPTABLE (SUBMIT ANEW)": Signifies Equipment and Material represented by the Submittal does not conform with the design concept or comply with the intent of the Contract Documents and is disapproved for use in the WORK. CONTRACTOR is to resubmit Compliance Submittals responsive to the Contract Documents.
- d. "PRELIMINARY SUBMITTAL": Signifies Submittals of such preliminary nature that a determination of conformance with the design concept or compliance with the intent of the Contract Documents must be deferred until additional information is furnished. CONTRACTOR is to submit such additional information to permit layout and related activities to proceed.
- e. "FOR REFERENCE ONLY": Signifies Submittals which are for supplementary information only; pamphlets, general information sheets, catalog cuts, standard sheets, bulletins and similar data, all of which are useful to the DISTRICT in design, operation, or maintenance, but which by their nature do not constitute a basis for determining that items represented thereby conform with the design concept or comply with the intent of the Contract Documents. The DISTRICT reviews such Submittals for general content but not for substance.
- f. "DISTRIBUTION COPY (PREVIOUSLY ACCEPTED)": Signifies Submittals which have been previously accepted and are being distributed to CONTRACTOR, DISTRICT, Resident Project Representative, and others for coordination and construction purposes.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

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## SECTION 01320

### CONSTRUCTION VIDEO AND PHOTOGRAPHS

#### PART I - GENERAL

##### 1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for construction photographs.

##### 1.02 SUBMITTALS

- A. Submit photographs and video electronically as specified in PART 3 of this Section.

##### 1.03 QUALITY ASSURANCE

- A. Photographs and video shall be clear and sufficient to show significant detail, not blurred, or taken in shadow, nor too distant. The DISTRICT may require that the photographs or video be retaken should the quality be insufficient. Costs for such re-takes are the CONTRACTOR's responsibility at no extra cost to the DISTRICT.

#### PART II - PRODUCTS

##### 2.01 PHOTOGRAPHIC REQUIREMENTS

- A. Specified in PART 3, this Section.

#### PART III - EXECUTION

##### 3.01 COLOR AUDIO VIDEO DVD RECORDING OF CONSTRUCTION AREA

- A. The CONTRACTOR shall prepare a color audio video recording of all the areas to be affected by construction including haul route from U.S. 19 to project area and adjacent seawalls, shorelines, and docks prior to beginning of any construction to document existing conditions prior to construction.
- B. The audio video recording shall be prior to placement of materials or equipment on the construction area and furnished to DISTRICT one week prior to the start of construction. The audio video recording shall be done with a DISTRICT Representative present.
- C. To preclude the possibility of tampering or editing in any manner, all video recordings shall, by electronic means, generate and display continuously

### CONSTRUCTION VIDEO AND PHOTOGRAPHS

and simultaneously on the screen digital information to include the date and time of recording. The time information shall consist of hours, minutes and seconds, separated by colons (i.e., 10:35:18).

- D. The audio video recording shall consist of one video and one audio track which shall be recorded simultaneously. All tracks shall consist of original live recordings and thus shall not be copies of other audio and video recordings. The audio track shall contain the narrative commentary.
- E. The rate of speed in the general direction of travel of the conveyance used during recording shall be controlled to provide a usable image. Panning rates and zoom-in, zoom-out rates shall be controlled sufficiently such that playback will produce clarity of the object viewed.
- F. All recording shall be done during times of good visibility. No recording shall be done during periods of visible precipitation, unless otherwise authorized by the DISTRICT.
- G. The DISTRICT shall have the authority to designate what areas may be omitted or added for audio video coverage.
- H. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be less than eight feet to insure perspective.
- I. In some instances, audio video coverage will be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance by the DISTRICT.
- J. Areas covered shall include offsite roadways that will be subjected to heavy usage such as for haul routes or delivery of heavy components or equipment.
- K. The CONTRACTOR shall furnish all equipment, accessories, materials and labor to perform this service.

### 3.02 PROGRESS SITE PHOTOGRAPHS

- A. The CONTRACTOR shall be responsible for photographs of the Site to show the existing and general progress of the Work. The DISTRICT's representative will advise as to which views are of interest. Photographs shall be taken of the following areas and at the following times.
  - 1. Existing Site conditions before Site Work is started. Number of views shall be adequate to cover the Site.

2. Progress of the Work from beginning and throughout construction. Progress photos must be provided with each pay request. Pay requests will not be considered acceptable until photographs are provided. Number of views shall be adequate to cover the Site.
  3. Finished Project after completion of Work. Number of views shall be adequate to show the finished Work.
  4. If Project is not completed during the Contract Time, or authorized extensions, photographs shall continue to be taken at no increase in Contract Price.
- B. Photographs shall be taken with three (3) megapixel minimum resolution.
- C. Provide copies of all photographs and video taken through a file share site to be established by the DISTRICT. Photographic images should be in JPG format and video should be in MP4 format. Label the shared files and folders with the name and Contract number of Project, name of CONTRACTOR, description of view, and date photographs were taken.
- D. Deliver photographs and videos to the DISTRICT file share site concurrent with submittal of pay applications.

END OF SECTION

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## SECTION 01370

### SCHEDULE OF VALUES

#### PART I - GENERAL

##### 1.01 DESCRIPTION

###### A. Scope of Work

1. The CONTRACTOR shall submit to the DISTRICT Representative a proposed Schedule of Values allocated to the various lump sum price items of the Work, within ten (10) days after the issuance of the Notice of Award.
2. Upon request of the DISTRICT Representative, the CONTRACTOR shall support the Schedule of Values with data that shall substantiate their correctness.
3. The Schedule of Values will be used by the DISTRICT or Representative for the purpose of reviewing lump sum price items and Payment Applications.

##### 1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. The Schedule of Values shall be typed on 8½-inch x 11-inch white paper; CONTRACTOR's standard forms and computer printout will be considered for approval by the DISTRICT Representative upon CONTRACTOR's request. The schedule shall identify:
1. Project name and location
  2. Project number
  3. Name and address of the CONTRACTOR
  4. DISTRICT Representative's name
  5. Date of submission
- B. The Schedule of Values shall list the installed value of the component part of the Work in sufficient detail to serve as a basis for computing values for partial payments during construction.
- C. Each line item shall be identified with the number and title of the respective major section of the Specifications.

### SCHEDULE OF VALUES

- D. For each major line item, the Schedule of Values shall list sub-values of major products or operations under the item.
- E. For items on which partial payments will be requested for stored materials, the value shall be broken down into:
  - 1. The cost of the materials, delivered and unloaded
  - 2. Paid invoices shall be required for materials upon request by the DISTRICT.
  - 3. The total installed value.

#### 1.03 SUB-SCHEDULE OF UNIT MATERIAL VALUES

- A. The CONTRACTOR shall submit a Sub-Schedule of Unit Material Values, including costs and quantities, for products on which partial payments will be requested for stored products.
- B. The form of submittal shall parallel that of the Schedule of Values, with each item identified the same as the line item in the Schedule of Values.
- C. The unit quantity for bulk materials shall include an allowance for normal waste.
- D. The unit values for the materials shall be broken down into:
  - 1. Cost of the material, delivered and unloaded at the site, with taxes paid.
  - 2. Copies of paid invoices for component material shall be included with the payment request in which the material first appears.
- E. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

#### 1.04 REVIEW AND RESUBMITTAL

- A. After review by DISTRICT, the CONTRACTOR shall revise and resubmit the Schedule of Values and Sub-Schedule of Unit Material Values as required.
- B. The CONTRACTOR shall resubmit revised schedules in the same manner.



PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

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## SECTION 01505

### MOBILIZATION

#### PART I - GENERAL

##### 1.01 DEFINITION AND SCOPE

- A. Mobilization shall include the obtaining of all permits, insurance, and bonds; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary facilities, and other construction facilities; all as required for the proper performance and completion of the Work. Mobilization may include, but not be limited to, the following principal items:
1. Move onto the site all materials and equipment required for first month's operations.
  2. Install temporary construction power, wiring, and lighting facilities.
  3. Establish fire protection plan, hurricane preparedness plan and safety program.
  4. Secure construction water supply.
  5. Provide on-site sanitary facilities and potable water facilities.
  6. Arrange for and erect CONTRACTOR's Work and storage yard and employees' parking facilities.
  7. Obtain all required permits.
  8. Post all OSHA, Environmental Protection Agency, Department of Labor, Endangered and Threatened Species Protection Measures, and all other required notices.
  9. Have superintendent at the job site full time.
  10. Erect project construction sign(s).
  11. Submit a finalized schedule of submittals approved by the DISTRICT Representative.
  12. Construct, maintain, and restore temporary access and haul roads.

### MOBILIZATION

13. Provide a continuous color audio-videotape recording of existing conditions.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

## SECTION 01530

### TEMPORARY BARRIERS AND CONTROLS

#### PART I - GENERAL

##### 1.01 SUMMARY

A. This Section includes General Requirements for:

1. Protection of Work
2. Protection of existing property
3. Barriers
4. Security
5. Environmental controls
6. Access roads and parking areas
7. Traffic control and use of roadways

B. Related Work Specified Elsewhere:

1. Section 02435 Turbidity Control and Monitoring

#### PART II - PRODUCTS

(Not Used)

#### PART III - EXECUTION

##### 3.01 SAFETY AND PROTECTION OF WORK AND PROPERTY

A. General:

1. Provide for the protection of the Work. Provide protection at all times against rain, wind, storms, frost, freezing, condensation, or heat so as to maintain all Work and Equipment and Materials free from injury or damage. At the end of each day all new Work likely to be damaged shall be appropriately protected.
2. Notify DISTRICT immediately at any time operations are stopped due to conditions which make it impossible to continue operations or to obtain proper results.
3. Construct and maintain all necessary temporary drainage and do all pumping necessary to keep excavations, pits, and trenches dewatered sufficiently to permit continuous construction. CONTRACTOR is responsible for obtaining Dewatering Permits.

### TEMPORARY BARRIERS AND CONTROLS

B. Property Other than the DISTRICT's

1. Provide for the protection of property as follows. Report immediately to the DISTRICT's representative and owner thereof and promptly repair damage to existing facilities resulting from construction operations.
2. The applicable requirements specified for protection of the Work shall also apply to the protection of existing property of others.
3. Restore all property affected by CONTRACTOR's operations to the original or better condition.

3.02 BARRIERS

A. General:

1. Furnish, install, and maintain suitable barriers as required to prevent public entry, protect the public, equipment, and to protect the Work, existing facilities, trees, and plants from construction operations. Remove barriers when no longer needed or at completion of Work.
2. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards or regulatory agencies.
3. Barriers shall be of a neat and reasonable uniform appearance, structurally adequate for the required purposes.
4. Maintain barriers in good repair and clean condition for adequate visibility.
5. Relocate barriers as required by progress of Work.
6. Repair damage caused by installation and restore area to original or better condition. Clean the area.

3.03 ENVIRONMENTAL CONTROLS

A. Dust Control:

1. If appropriate to the site location, and at the discretion of the DISTRICT, provide positive methods and apply dust control materials to minimize raising dust from construction operations.

TEMPORARY BARRIERS AND CONTROLS

2. Cover materials transported to and from site as necessary to prevent depositing material on offsite roadways or creating dust.

B. Water and Erosion Control:

1. Provide methods to control surface water to prevent damage to the Project, the site, or adjoining properties as specified in Section 02435.
2. Plan and execute construction and earthwork by methods to control surface drainage from cuts and fills, and from borrow areas, to prevent erosion and sedimentation.
  - a. Hold the areas of bare soil exposed at one time to a minimum.
  - b. Provide temporary control measures such as berms, dikes, and drains
3. Control fill, grading, and ditching to direct surface drainage away from excavations and other construction areas, and to direct drainage to proper runoff.
4. Provide, operate, and maintain hydraulic equipment of adequate capacity to control surface and ground water.
5. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site, Three Sisters Springs, or to adjoining areas.

C. Debris Control

1. Keep the premises free at all times from accumulations of debris, waste materials, and rubbish caused by construction operations and employees. Responsibilities shall include:
  - a. Adequate trash receptacles about the site, emptied promptly when filled.
  - b. Periodic cleanup to avoid hazards or interference with operations at the site and to maintain the site in a reasonably neat condition.
  - c. The keeping of construction materials neatly stored.

- d. Immediate cleanup to protect the Work and environment by removing splattered concrete, oil, corrosive liquids, and cleaning solutions.
2. Prohibit overloading of trucks to prevent spillages on access and haul routes. Provide periodic inspection of traffic areas to enforce requirements- clean street when dirt is tracked onto the roadways.
3. All debris shall be removed from the sites and all environmental impacts addressed prior to final approval by the DISTRICT.

D. Pollution Control:

1. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of hazardous or toxic substances from construction operations.
2. Provide equipment and personnel and perform emergency measures required to contain any spillages; and to remove contaminated soils or liquids. Excavate and dispose of any contaminated earth off-site in approved locations, and replace with suitable compacted fill and topsoil.
3. Take special measures to prevent harmful substances from entering public waters, sanitary, or storm sewers.
4. If hazardous materials are discharged, report to authorities as required by Law or Regulations and notify DISTRICT.

### 3.04 TRAFFIC CONTROL, USE OF ROADWAYS AND NAVIGATION

A. Traffic Control and Navigation:

1. Provide, operate, and maintain equipment, services, and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow on haul routes, at site entrances, on-site access roads, adjacent in-water navigation, and parking areas. This includes barricades and other devices or personnel as necessary to adequately protect the public. Prepare and submit Traffic Control Plan to DISTRICT for acceptance.
2. Remove temporary equipment and facilities when no longer required. Restore grounds to original, better, or specified conditions.
3. Provide and maintain suitable detours or other temporary expedients if necessary.

### TEMPORARY BARRIERS AND CONTROLS



4. Consult with governing authorities to establish public thoroughfares which will be used for site access. All operations shall meet the approval of owners or agencies having jurisdiction.

B. Maintenance of Roadways:

1. Repair roads, off-site roads, trails, swales, and drainage facilities damaged by operations. Keep traffic areas as free as possible of excavated materials and maintain in a manner to eliminate dust, mud, and hazardous conditions.
2. All operations and repairs shall meet the approval of owners or agencies having jurisdiction.

### 3.05 SECURITY

- A. The CONTRACTOR is solely responsible for initiating and maintaining security at the construction site. CONTRACTOR shall take all necessary precautions for the security of, and shall provide the necessary protection to:
1. Materials and equipment incorporated into the Work or stored on-site prior to incorporation into the Work.
- B. The CONTRACTOR shall replace, in kind, any materials or equipment lost, damaged or destroyed at its own expense.

END OF SECTION

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## SECTION 01531

### MANATEE PROTECTION

#### PART I - GENERAL

##### 1.01 SUMMARY

The scope of this Section is to instruct all personnel associated with the Project of the potential presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).

##### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 01530 - Temporary Barriers and Controls
- B. Section 02435 - Turbidity Control and Monitoring

##### 1.03 REFERENCES

- A. Marine Mammal Protection Act of 1972
- B. Endangered Species Act of 1973
- C. Florida Manatee Sanctuary Act of 1978

#### PART II - PRODUCTS (Not Used)

#### PART III - EXECUTION

##### 3.01 Manatee Protection

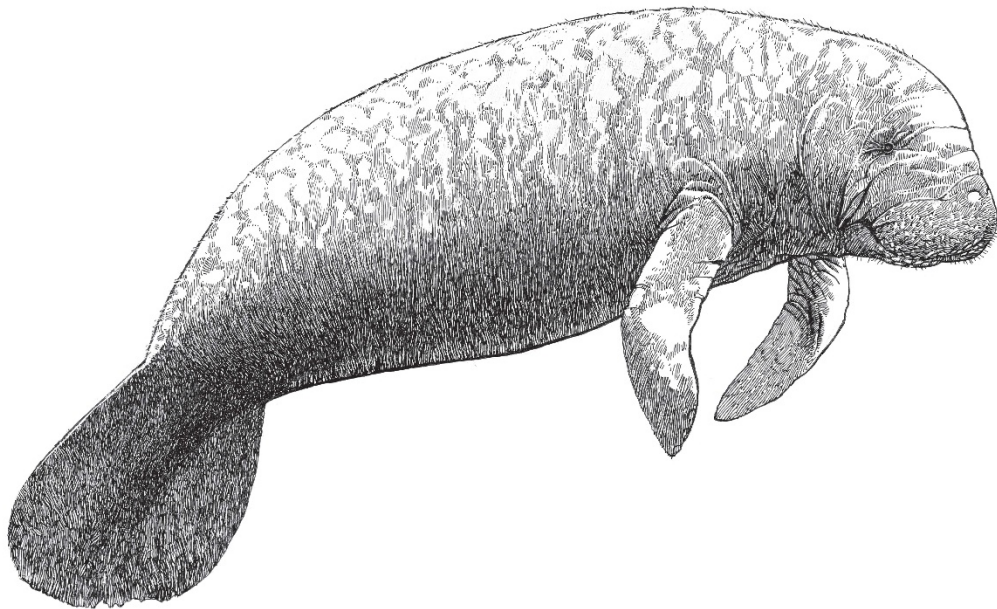
- A. The CONTRACTOR shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act of 1978. The CONTRACTOR may be held responsible for any manatee harmed, harassed, or killed as a result of construction activities.
- B. Siltation barriers shall be installed and shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be monitored regularly to avoid manatee entanglement or entrapment. Barriers shall not impede manatee movement or block manatee entry to or exit from essential habitat.

- C. All vessels associated with the project shall operate at “No Wake/Idle” speeds at all times while in the immediate area and while in water where the draft of the vessel provides less than four feet clearance from the bottom. All vessels shall follow routes of deep water whenever possible.
- D. If a manatee is sighted within 100 yards of the project area, all appropriate precautions shall be implemented by the CONTRACTOR to ensure protection of the manatee. All in-water operations, including vessels, must be shut down if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- E. Any collision with and/or injury to a manatee shall be reported immediately to the DISTRICT’s representative and to the “Florida Fish and Wildlife Conservation Commission (FWC) Manatee Hotline” at 1-888-404-FWCC (1-888-404-3922). Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-561-562-3909) in South Florida.
- F. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities, including construction/dredging activities. Awareness signs that have already been approved for this use by the FWC must be used. Samples of manatee signage are included at the end of this specification. All signs shall be removed by the CONTRACTOR upon completion of the project. One (1) sign measuring at least three (3) feet by four (4) feet which reads “Caution Boaters: Watch for Manatees” shall be posted in a location where it is prominently visible to water related construction crews. A second sign shall be posted if vessels are associated with the construction, and shall be placed in a location that is prominently visible to the vessel operator. The second sign shall be at least 8½ inches by 11 inches and read:

“Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shut down if a manatee comes within 50 feet of the operation. A collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-888-404-FWCC (1-888-404-3922) and the U.S. Fish and Wildlife Service at (1-904-232-2580) for north Florida or (561-562-3909) for south Florida.”

Sign 1: Caution Manatee Area

# Caution Boaters Watch for Manatees



**Report collisions, sick, dead or injured manatees  
and any wildlife or boating law violations to:**



**FWC's Wildlife Alert Hotline  
888-404-FWCC (3922)**

**cell \*FWC or #FWC**



Sign 2: Idle Speed/No Wake

**CAUTION: MANATEE HABITAT**

**All project vessels  
IDLE SPEED / NO WAKE**  
When a manatee is within 50 feet of work  
all in-water activities must  
**SHUT DOWN**



Report any collision with or injury to a manatee to:

FWC's Wildlife Alert Hotline  
**1-888-404-FWCC (3922)**  
cell \*FWC or #FWC



END OF SECTION

## SECTION 01580

### PROJECT IDENTIFICATION AND SIGNS

#### PART I - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Furnish, install prior to construction, and maintain one project identification sign at location to be determined by the DISTRICT.
- B. Remove signs on completion of construction.
- C. Allow no other signs to be displayed.

##### 1.02 INFORMATIONAL SIGNS

- A. Painted signs with painted lettering, or standard products.
  - 1. Size of signs and lettering: as required by the DISTRICT, or as appropriate to usage.
  - 2. Colors: as required by the DISTRICT, otherwise of uniform colors throughout Project.
- B. Erect at appropriate locations, as directed by the DISTRICT or Representative, to provide required information.
- C. Project identification sign shall comply with standards shown at the end of this Section.
  - 1. Project identification sign will be provided and installed by the CONTRACTOR.

##### 1.03 QUALITY ASSURANCE

- A. Sign Painter: Professional experienced in type of work required.
- B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

## PART II - PRODUCTS

### 2.01 SIGN MATERIALS

- A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate and suitable for specified finish.
- B. Sign Surfaces: 4' x 8' heavy duty 10mm colorplast.
  - 1. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.
- C. Rough Hardware: Galvanized.
- D. Lettering: Black vinyl.
- E. The project sign shall be fabricated in accordance with the detail provided at the end of this Section.
- F. DISTRICT will provide an electronic file or standard decal of SWFWMD.

## PART III - EXECUTION

### 3.01 PROJECT IDENTIFICATION SIGNS

- A. Paint exposed surface of supports, framing and surface material; one coat of primer and one coat of exterior paint.

### 3.02 MAINTENANCE

- A. Maintain signs and supports in a neat, clean condition; repair damages to structures, framing or sign.

### 3.03 REMOVAL

- A. Remove signs, framing, supports and foundations at completion of project.



# THREE SISTERS SPRINGS CANAL SHORELINE STABILIZATION PROJECT

**Managed and funded by:**

The Southwest Florida Water Management District

**Project Partners:**

U.S. Fish & Wildlife Service  
Crystal River National Wildlife Refuge  
and  
City of Crystal River

DESIGNED BY:



CONSTRUCTED BY:

LOGO

INFO... INFO... INFO

END OF SECTION

PROJECT IDENTIFICATION AND SIGNS

01580 - 3

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## SECTION 01600

### MATERIAL AND EQUIPMENT

#### PART I - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Material and equipment incorporated into the Work shall:
  - 1. Conform to applicable specifications and standards.
  - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the DISTRICT Representative.
- B. For manufactured and fabricated products:
  - 1. Design, fabricate and assemble in accord with the best engineering and shop practices.
  - 2. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
  - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
  - 4. Products shall be suitable for service conditions.
  - 5. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
- C. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

##### 1.02 APPROVAL OF MATERIALS

- A. All materials and equipment furnished by the CONTRACTOR shall be subject to the inspection and approval of the DISTRICT Representative. Shop drawings shall include CONTRACTOR's certification of materials meeting project specifications. No material shall be delivered to the Work without prior review of the DISTRICT Representative.
- B. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the CONTRACTOR. If the DISTRICT Representative requires, either prior to beginning or during the progress of

### MATERIAL AND EQUIPMENT

the Work, the CONTRACTOR shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the CONTRACTOR's expense. Except as otherwise noted, the DISTRICT Representative will make arrangements and the DISTRICT will pay for the tests.

- C. The CONTRACTOR shall submit data and samples sufficiently early to permit consideration and review before materials are necessary for incorporation in the Work. Any delay resulting from the CONTRACTOR's failure to submit samples or data promptly shall not be used as a basis of claims against the DISTRICT or its Representative.
- D. The materials and equipment used on the Work shall correspond to the approved samples or other data previously submitted to the DISTRICT Representative for review.

#### 1.03 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

- A. When Contract Documents require that installation of Work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including four (4) copies to the DISTRICT Representative.
  - 1. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
  - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with DISTRICT Representative for further instructions.
  - 2. Do not proceed with Work without clear instructions.
- C. Perform Work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.
- D. Upon completion of installation, the CONTRACTOR shall obtain from the manufacturer a signed certification that the equipment has been properly installed in accordance with the manufacturer's recommendations.

#### 1.04 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with Work and conditions at the site.
  - 1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
  - 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

#### 1.05 STORAGE AND PROTECTION

- A. The CONTRACTOR shall furnish a covered, weather-protected storage structure providing a clean, dry, noncorrosive environment for all special equipment to be incorporated into this project. Storage of equipment shall be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including connection of heaters, placing of storage lubricants in equipment or climate-controlled facilities, etc. The CONTRACTOR shall furnish a copy of the manufacturer's instructions for storage to the DISTRICT Representative prior to storage of all equipment and materials. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the project. Equipment and materials not properly stored will not be included in a payment application.
- B. Store products in accord with manufacturer's instructions, with seals and labels intact and legible.
  - 1. Store products subject to damage by the elements in weather tight enclosures.
  - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
  - 3. Store fabricated products above the ground on blocking or skids to prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
  - 4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

- C. All materials and equipment to be incorporated in the Work shall be handled and stored by the CONTRACTOR before, during, and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft or damage of any kind whatsoever to the material or equipment.
- D. Cement, sand and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All miscellaneous steel and reinforcing steel shall be stored off the ground and covered or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Precast concrete sections shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking, and spilling to a minimum.
- E. All materials that, in the opinion of the DISTRICT Representative, have become so damaged as to be unfit for the use intended or specified shall be promptly removed from the site of the Work, and the CONTRACTOR shall receive no compensation for the damaged material or its removal.
- F. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- G. To ensure protection after installation:  
  
Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.
- H. The CONTRACTOR shall be responsible for all material, equipment, and supplies sold and delivered to the DISTRICT under this Contract until final inspection of the Work and acceptance thereof by the DISTRICT. In the event any such material, equipment, and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the CONTRACTOR shall replace same without additional cost to the DISTRICT.
- I. Should the CONTRACTOR fail to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so has been given, the DISTRICT retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the

#### MATERIAL AND EQUIPMENT

Contract Price. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, and engineering and any other costs associated with making the necessary corrections.

## 1.06 SUBSTITUTIONS AND PRODUCT OPTIONS

### A CONTRACTOR's Options:

1. For products specified only by reference standard, select any product meeting that standard.
2. For products specified by naming several products or manufacturers, submit the products or manufacturers named in the Proposal, which complies with the specifications.
3. For products specified by naming one or more products or more products or manufacturers and "or approved alternate", CONTRACTOR shall submit a request as for substitutions for any product or manufacturer not specifically named.

### B. Substitutions:

1. After the Effective Date of the Agreement, the DISTRICT Representative will consider written requests from CONTRACTOR for substitution of products.
2. Submit a separate request for each product, supported with complete data, with drawings and samples as appropriate, including:
  - a. Comparison of the qualities of the proposed substitution with that specified.
  - b. Changes required in other elements of the Work because of the substitution.
  - c. Effect on the construction schedule.
  - d. Cost data comparing the proposed substitution with the product specified.
  - e. Any required license fees or royalties.
  - f. Availability of maintenance service, and source of replacement materials.

3. The DISTRICT Representative will solely determine the acceptability of the proposed substitution.

C. CONTRACTOR's Representation:

1. A request for a substitution constitutes a representation that CONTRACTOR:
  - a. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
  - b. Will provide the same warranties or bonds for the substitution as for the product specified.
  - c. Will coordinate the installation of an accepted substitution into the Work and make such other changes as may be required to make the Work complete in all respects.
  - d. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION



## SECTION 01670

### SUBSTITUTIONS AND PRODUCT OPTIONS

#### PART I - GENERAL

##### 1.01 DESCRIPTION

###### A. General:

1. This section covers the furnishing of all labor, materials, tools, equipment, and performance of all Work and services for furnishing, submitting, processing and handling of requests for substitution and product options. See items as indicated on Drawings and as specified. Any substitution or option shall be in accord with the provisions of Contract Documents, and completely coordinated with Work of other trades.
2. Although such Work is not specifically indicated, furnish all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
3. See appropriate sections for specific items specified. See Agreement and RFB for additional information.

###### B. Procedure:

1. For equipment and materials that are listed in the Bid Form, observe procedures outlined in Instructions to Bidders.
2. For products, equipment, and materials that are named in Drawings or Specifications for which a request for substitution is made, observe procedures outlined in these specifications.

###### C. Costs:

1. Cost incurred by requestor in providing information, catalogs, and samples - including but not limited to labor, materials, freight postage, and transportation - are sole cost of "Requestor" with no cost assessed to the DISTRICT or its Representative.

###### D. Related work specified elsewhere:

1. Section 01600 Material and Equipment

### SUBSTITUTIONS AND PRODUCT OPTIONS

## 1.02 REQUESTS FOR SUBSTITUTION - GENERAL:

- A. Base all bids on materials, equipment and procedures specified.
- B. Certain types of equipment and kinds of material are described in specifications by means of trade names and catalog numbers and/or from consideration such types of equipment and kinds of material bearing other trade names, catalog numbers and/or manufacturer's names, capable of accomplishing purpose of types of equipment or kinds of material specifically indicated.
- C. Other types of equipment and kinds of material may be acceptable to DISTRICT or its Representative.
- D. Types of equipment, kinds of material and methods of construction, if not specifically indicated, must be approved in writing by DISTRICT or its Representative.

## 1.03 SUBMISSION OF REQUESTS FOR SUBSTITUTION:

- A. Within no more than 30 (thirty) days after award of the Contract, the DISTRICT Representative will consider requests for substitutions of products, materials, systems or other items. Requests must be received by DISTRICT Representative within 30 (thirty) calendar days after the Notice to Proceed. All requests for substitution shall be completed as specified below.
- B. Substitute items must comply with color and pattern of base specified items unless specifically approved otherwise.
- C. Submit two (2) copies of request for substitution. Include in request:
  - 1. Name of product located by Drawing No. or Specification No., followed by a detail or line number the particular item(s) for which request for substitution is initiated.
  - 2. Complete data substantiating compliance of proposed substitution with Contract Documents.
  - 3. For products, include:
    - a. Product identification by schedule or tag no., including manufacturer's name.

- b. Manufacturer's literature, marked to indicate specific model, type, size, and options to be considered:
      - 1) Product Description
      - 2) Performance and test data
      - 3) Reference standards
      - 4) Difference in power demand
      - 5) Dimensional differences for specified unit
    - c. Submit samples, full size if so required. The DISTRICT Representative reserves the right to impound samples until physical units are installed on project for comparison purposes. All costs of furnishing and return of samples shall be paid by requester. DISTRICT Representative is not responsible for loss of or damage to samples.
    - d. Name and address of similar projects where product was used, date of installation, and field performance data on installation.
  - 4. For construction methods, include:
    - a. Detailed description of proposed method.
    - b. Drawings illustrating methods.
  - 5. Itemized comparison of proposed substitution with product or method specified.
  - 6. Data relating to changes in construction schedule.
  - 7. Accurate cost data on proposed substitution in comparison with product or method specified.
  - 8. Include with any request a specific statement defining changes in contract time or amount.
- D. In making request for substitution, or in using an approved substitute item, Supplier/Manufacturer represents:
- 1. He has personally investigated proposed product or method, and has determined that it is equal or superior in all respects to that specified, and that it will perform function for which it is intended.

#### SUBSTITUTIONS AND PRODUCT OPTIONS

2. Will provide same or better warranty for substitute item as for product or method specified.
  3. Will coordinate installation of accepted substitution into Work, to include but not be limited to the following:
    - a. Building and structure modifications as necessary;
    - b. Additional ancillary equipment to accommodate change;
    - c. Piping, valving, mechanical, electrical, or instrumentation changes, and,
    - d. All other changes required for Work to be complete in all respects to permit incorporation of substitution into project.
  4. Waives all claims for additional costs related to substitution which subsequently become apparent.
- E. Written acceptance or rejection of items presented for substitution will be given within two (2) weeks of receipt of request.
- F. In the event the acceptance of a substitute results in a change in Contract Price or Time, or is a deviation from the Contract Documents, a change order will be issued to reflect such change. In the event the acceptance of an alternate does not result in a change in Contract Price or Time, a field order will be issued.
- G. Substitutes may be rejected for the following reasons:
1. Acceptance will require substantial revision of Contract Documents or building spaces.
  2. If they are in DISTRICT Representative's opinion, not equal to base product specified, or will not adequately perform function for which intended.
  3. If request is not initiated by the CONTRACTOR in accordance with this specification section.

#### 1.04 SUBSTITUTION DUE TO UNAVAILABILITY

- A. Unavailability of specified item due to strikes, lockouts, bankruptcy, discontinuance of production, proven shortage, or similar occurrences are reasons for substitution after Contract award.

#### SUBSTITUTIONS AND PRODUCT OPTIONS

- B. Notify DISTRICT Representative in writing, as soon as condition of unavailability becomes apparent; include substantiating data. Submit request for substitution sufficiently in advance to avoid delays.
- C. Submit data as required in paragraph 1.03 above.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

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## SECTION 01700

### CONTRACT CLOSEOUT

#### PART I - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

Comply with requirements stated in General Conditions and in Specifications for administrative procedures in closing out the Work.

##### 1.02 SUBSTANTIAL COMPLETION

- A. When CONTRACTOR considers the Work is substantially complete, CONTRACTOR shall submit to the DISTRICT Representative:
  - 1. A written notice that the Work is substantially complete.
  - 2. A list of items to be completed or corrected.
  - 3. A copy of all applicable, executed:
    - Record Drawings
- B. Within a reasonable time after receipt of such notice, the DISTRICT Representative will make an inspection to determine the status of completion.
- C. Should the DISTRICT Representative determine that the Work is not Substantially Complete:
  - 1. The DISTRICT Representative will promptly notify the CONTRACTOR, in writing, giving the reasons, therefore.
  - 2. CONTRACTOR shall remedy the deficiencies in the Work and send a second written notice of substantial completion to the DISTRICT Representative.
  - 3. The DISTRICT Representative will re-inspect the Work.
- D. When the DISTRICT Representative finds that the Work is Substantially Complete, DISTRICT Representative will:
  - 1. Prepare and deliver to DISTRICT a tentative Certificate of Substantial Completion with a tentative list of items to be completed or corrected before final completion.

### CONTRACT CLOSEOUT

2. After consideration of any objections made by the DISTRICT as provided in Conditions of the Contract, and when the DISTRICT Representative considers the Work Substantially Complete, DISTRICT will execute and deliver to the CONTRACTOR a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

#### 1.03 FINAL INSPECTION

- A. When CONTRACTOR considers the Work to be complete, CONTRACTOR shall submit written certification that:
  1. Contract Documents have been reviewed.
  2. Work has been inspected for compliance with Contract Documents.
  3. Work has been completed in accordance with Contract Documents.
  4. Work is completed and ready for final inspection.
- B. The DISTRICT Representative will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should the DISTRICT Representative consider that the Work is incomplete or defective:
  1. The DISTRICT Representative will promptly notify the CONTRACTOR in writing, listing the incomplete or defective work.
  2. CONTRACTOR shall take immediate steps to remedy the stated deficiencies and send a second written certification to the DISTRICT Representative that the Work is complete.
  3. The DISTRICT Representative will re-inspect the Work.
- D. When the DISTRICT Representative finds that the Work is acceptable under the Contract Documents, he shall request the CONTRACTOR to make closeout submittals.

#### 1.04 REINSPECTION FEES

- A. Should the DISTRICT Representative perform additional re-inspections beyond those described above, due to failure of the Work, to comply with the claims of status of completion made by the CONTRACTOR:



1. DISTRICT will deduct the amount of such compensation from the final payment to the CONTRACTOR.

#### 1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS TO DISTRICT

- A. Evidence of compliance with requirements of governing authorities.
- B. Project Record Documents and Record Drawings.
- C. Evidence of Payment and Release of Liens.
- D. Certificate of Insurance for Products and Completed Operations.
- E. CONTRACTOR's Final Affidavit.
- F. Lien Waivers from Subcontractors and Suppliers.
- G. Consent of Surety from the bonding company.
- H. CONTRACTOR's Guarantee.

#### 1.06 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the DISTRICT.
- B. Statement shall reflect all adjustments to the Contract Sum:
  1. The original Contract Sum.
  2. Additions and deductions resulting from:
    - a. Previous Change Orders.
    - b. Unit Prices.
    - c. Deductions for uncorrected Work.
    - d. Penalties and Bonuses.
    - e. Deductions for liquidated damages.
    - f. Deductions for re-inspection payments.
    - g. Other adjustments.

3. Total Contract Sum, as adjusted.

4. Previous payments.

5. Sum remaining due.

C. DISTRICT Representative will prepare a final Change Order, reflecting approved adjustments to the Contract Price, which were not previously made by Change Orders.

#### 1.07 FINAL APPLICATION FOR PAYMENT

A. CONTRACTOR shall submit the final Application for Payment in accordance with procedures and requirements stated in the General Conditions.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

## SECTION 01720

### RECORD DRAWINGS

#### PART I - GENERAL

##### 1.01 GENERAL

- A. The DISTRICT shall provide, at the pre-construction conference, a reproducible set of plans and applicable CAD files. The record information shall be transferred from the CONTRACTOR's construction drawings to the reproducible drawings with waterproof drawing ink or via CAD updates. All changes shall be noted in red block lettering or typed and/or indicated with a clouded marking around the change detail.
- B. CONTRACTOR's record drawings shall be maintained in accordance with the contract documents, all specific directions in the specifications and the Special Conditions.
- C. On the Record drawings, the CONTRACTOR shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. CONTRACTOR shall record on the record drawings all items called out and specified by the Engineer of Record for updating on the original plans during construction.

Said record drawings shall be supplemented by any detailed sketches or typewritten changes to the specifications, as necessary or directed to indicate fully the Work as actually constructed. These master record drawings of the CONTRACTOR's representation of as-built conditions, including all revisions made necessary by addenda, change orders, and the like shall be maintained up-to-date during the progress of the Work.

- D. Record drawings shall be accessible to the DISTRICT Representative or the Engineer of Record at all times during the construction period.
- E. Applications for Payment will not be approved if the record drawings are not kept current and not until the completed record drawings showing all variations between the Work as actually constructed and as originally shown on the Contract Drawings or other Contract Documents have been inspected and accepted by the DISTRICT Representative. Prior to the submission of the CONTRACTOR's periodic application for payment, CONTRACTOR shall provide to the DISTRICT for review and approval,

### RECORD DRAWINGS

one (1) set of relevant record drawing sheets, showing red lined changes of as-built conditions.

- F. Upon completion of the project and prior to the approval of final payment, the CONTRACTOR shall submit for approval four (4) sets of record drawings for review and approval by the DISTRICT or its Representative. The record drawing sheet size shall be 24" X 36". Once the record drawings are approved by the DISTRICT Representative the CONTRACTOR shall compile and certify the record drawings and provide four (4) copies of record drawings, one (1) set of reproducible record drawings and four (4) digital pdf formatted (CD) copies of the record drawings. CONTRACTOR shall leave all clouds, mark ups, and line outs on the one (1) set of reproducible record drawings.
- G. The CONTRACTOR's final pay request shall not be accepted by the DISTRICT until the reproducible record drawings are approved by the DISTRICT Representative.

## 1.02 MINIMUM REQUIREMENTS

- A. All as-built conditions must be noted as follows:
  - 1. Horizontal and vertical locations of other public and private utilities when they are encountered during construction.
  - 2. Surface Water Features: Cross-sectional surveys every 50 feet through all segments of the shoreline stabilization, grading limits, and limits of rip rap stabilization to verify that final grades are in accordance with project permits and the contract documents.
  - 3. Accurate horizontal and vertical location of the restored shoreline upon completion of construction.
- B. All changes and significant deviations from the original design plans must be included as described below:
  - 1. Elevations and dimensions of rip rap, top of bank at limit of 4:1 slope shoreline cut-back, and restored boardwalk (if boardwalk restoration by Contractor is included in Contract).

All deviations must be highlighted on the record drawings using a "cloud". If any revisions to the original plans required a Change Order, the "cloud" shall include the Change Order number.

- \* A significant deviation is defined as follows:

- 1) Horizontal - 1 foot
- 2) Vertical - More than 1 inch for ground surface above the mean high water line.
- 3) More than 6 inches for the top of limestone rip rap upper layer.

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION  
(Not Used)

END OF SECTION

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## SECTION 02110

### CLEARING AND LAND PREPARATION

#### PART I – GENERAL

##### 1.01 SCOPE

- A. Summary of Work: The CONTRACTOR shall include the removal of trees and other vegetation as shown on the plans. This section also includes land preparation activities for excavation and fill areas.

- 1. Section 02220 Excavation and Backfilling

##### 1.02 SUBMITTALS

- A. Prior to beginning the Work, CONTRACTOR shall submit a detailed plan for clearing and grubbing in conformance with permits.

##### 1.03 RESPONSIBILITIES

- A. The CONTRACTOR shall ensure the safe passage of persons around areas of clearing and land preparation. The CONTRACTOR shall conduct its operations to prevent injury to adjacent structures, vegetation designated to remain, and persons.

- B. TRAFFIC

- 1. The CONTRACTOR shall conduct its operations and the removal of cleared materials to ensure minimum interference with existing access roads and other adjacent occupied or used facilities.
  - 2. The CONTRACTOR shall not block or otherwise obstruct access roads.

- C. The CONTRACTOR may commence clearing or land preparation within portions of the project falling within the limits of temporary construction easements only with specific permission from the DISTRICT for each activity and location. All requirements under A and B above apply within these limits.

##### 1.04 INSPECTION COORDINATION

The CONTRACTOR shall provide access to the Work for the DISTRICT as requested for inspection. The CONTRACTOR shall provide 48 hours' notice of its intention to begin new Work activities.

### CLEARING AND LAND PREPARATION

PART II - PRODUCTS  
(Not Used)

PART III - EXECUTION

3.01 GENERAL CLEARING

- A. The CONTRACTOR shall remove the majority of the above grade non-native vegetative matter in the supplemental planting areas indicated on the plans. The CONTRACTOR shall complete the Work of Clearing and Land Preparation as outlined below.
1. Mowing or the use of a bush-hog may be required in areas of heavy weeds, or woody-stalked vegetation.
  2. Completely remove all designated exotic/hazardous trees within the designated project boundaries as directed by DISTRICT Representative in consultation with USFWS staff prior to removal.
  3. All woody debris that measures over three-quarters inch- in diameter and longer than 18-inches shall be removed from staging and access area.
  4. Remove to an offsite location any garbage or other waste debris recovered during clearing.
  5. Clearing and land preparation shall proceed sufficiently ahead of earthwork activities to minimize disruption and allow time for determination of the adequacy of the clearing procedure.
  6. All Work shall be performed in accordance with approved principles of modern arboricultural methods and in compliance with all permits and local ordinances.
  7. All Work shall be performed without damage to existing amenities, including trees and shrubs. The CONTRACTOR shall be responsible for repair and replacement of existing amenities to the satisfaction of the DISTRICT. The CONTRACTOR shall protect all vegetation, habitats, or amenities on the project location and adjacent areas.
- B. No burning is permitted onsite. The CONTRACTOR will be required to collect and haul all cleared materials to an approved site for disposal.



### 3.02 CLEARING WITHIN AREAS OF NATIVE VEGETATION

- A. The CONTRACTOR shall remove exotic trees/plants, hazardous material, trash, and debris and leave the site clean with a smoothly raked finish grade. Every reasonable effort shall be made to protect native vegetation designated to remain. Areas disturbed by Work operations shall be restored to original or better condition, including, but not limited to, filling, grading, sodding, and seeding/mulching as approved by the DISTRICT.

END OF SECTION

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## SECTION 02220

### EXCAVATION AND BACKFILLING

#### PART I - GENERAL

##### 1.01 SCOPE OF WORK

###### A. Description

The CONTRACTOR shall furnish all labor, materials, and equipment to perform the excavation and backfilling as shown on the drawings. It should be noted that the majority of the excavation and backfilling Work will be sub-aqueous.

##### 1.02 SUBMITTALS

- A. The CONTRACTOR shall submit, prior to the start of Work, the planned method of construction for the excavation toe of the riprap system and backfilling of the cutback areas shown on the drawings, or as specified herein, for the DISTRICT's review. This plan shall also indicate the intended construction sequence for the backfilling operation.
- B. The CONTRACTOR shall submit, prior to the start of Work, the planned method of construction for the excavation/removal of the stumps and roots of trees shown on the drawings to the DISTRICT for review and approval prior to the start of Work. This plan shall also indicate the intended construction sequence for the backfilling of these excavations.

##### 1.03 WARRANTY

- A. The Manufacturer shall warrant the Materials and Products specified in this Section against defective materials and workmanship with the Manufacturer's standard warranty.
- B. The CONTRACTOR shall warrant the Work against defects for one (1) year from the date of Substantial Completion.

#### PART II - PRODUCTS

##### 2.01 CUTBACK BACKFILL

The cutback backfill shall consist of granular bedding (filter stone) and Envirolok® bags, or approved alternate, filled with satisfactory fill material.

### EXCAVATION AND BACKFILLING

The Envirolok® bags, or approved alternate, will be provided by CONTRACTOR. Satisfactory fill material shall consist of granular material as specified below free of muck, stumps, rocks, or other material considered unacceptable by the DISTRICT. The CONTRACTOR shall utilize excavated material as long as it meets or exceeds AASHTO Soil Classification A-1, A-2, or A-3.

Stone for use in granular bedding (filter stone) shall weigh not less than 135 lbs/cf (saturated surface dry). The material shall be composed of tough, durable particles, shall be reasonably free from thin, flat and elongated pieces, and shall contain neither organic matter nor soft, friable particles in quantities greater than five percent. Filter stone shall be placed within the limits shown on the drawings and shall be reasonably well graded within the following limits:

<u>Sieve Size</u>	<u>% Finer by Weight</u>
3"	100
1½"	65-95
¾"	50-80
No. 4	30-55
No. 20	13-20
No. 40	5-20
No. 80	0-5

### PART III - EXECUTION

#### 3.01 SITE PREPARATION

- A. The CONTRACTOR shall perform clearing and grubbing in accordance with the following provisions.
1. Perform only in areas where earthwork or other construction operations are to be performed or otherwise shown on the Drawings.
  2. Protect tops, trunks, and roots of existing trees that are to remain on the site.
  3. Minimally trim trees or roots as necessary for access and clear areas and dispose of other trees, brush and vegetation before starting construction.
  4. Remove only those stumps and roots of trees and backfill resulting excavations shown on the Drawings or as approved by the DISTRICT Representative.
  5. All tree or root trimming or removal shall be approved by the DISTRICT Representative prior to performance.

### EXCAVATION AND BACKFILLING

- B. The CONTRACTOR shall coordinate with DISTRICT for delivery and acceptance of the Envirolok® bags.
- C. The CONTRACTOR shall fill bags with satisfactory undercut area backfill material in accordance with the 2.01 above and the Envirolok® bags (or approved alternate) detail on the Drawings.

### 3.02 DISPOSAL OF SURPLUS AND UNSUITABLE MATERIAL

The CONTRACTOR shall dispose of all excess or unsuitable material off-site or in areas approved by the DISTRICT.

### 3.03 STOCKPILE OF EXCAVATED MATERIAL

The CONTRACTOR shall stockpile excavated materials in the staging area shown on the Drawings or in areas approved by the DISTRICT.

### 3.04 PLACEMENT OF CUTBACK BACKFILL

The CONTRACTOR shall place backfill true to the lines, grades and cross-sections shown in the Drawings or as approved by the DISTRICT Representative.

- A. Due to the sub-aqueous nature of the cutback backfill areas, CONTRACTOR shall use filled Envirolok® bags or soil bags and filter stone bedding material for backfill.
- B. Envirolok® bags or soil bags shall be hand placed in layers not exceeding six inches in depth and hand compacted to fill voids.
- C. Filter stone bedding material shall be used in cutback areas for leveling of bottom of cutback areas for placement of Envirolok® bags or soil bags and fill in voids in cutback area between Envirolok® bags / soil bags and tree roots.
- D. Compaction other than hand compaction of the bedding material will not be required, but material shall be finished to a reasonably even surface free of excessive voids.
- E. Tolerance shall be  $\pm 0.3$  feet provided this tolerance is not continuous over an area greater than 200 square feet when placed in the above mean high water level, or greater than 400 square feet when placed sub-aqueous.
- F. CONTRACTOR shall maintain the cutback backfill material until the riprap is in place.

### 3.05 MAINTENANCE

The CONTRACTOR shall maintain the cutback backfill material until the riprap is in place and accepted. The CONTRACTOR shall replace cutback backfill material displaced by any cause prior to acceptance.

END OF SECTION

SECTION 02370  
RIPRAP SYSTEM

PART I - GENERAL

1.01 SCOPE OF WORK

A. Description

The CONTRACTOR shall furnish stone riprap and filter stone for construction of shoreline riprap where indicated on plans.

1.02 APPLICABLE PUBLICATIONS

The following standard specification shall apply to the Work of this Section:

A. American Society for Testing and Materials (ASTM):

1. C127 - Standard Test Method for Density, Relative Density (Specific Gravity) and Absorption of Course Aggregate;
2. C535 - Standard Test Method for Resistance to Degradation of Large Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

B. American Association of State Highway and Transportation Officials (AASHTO)

1. T 85 Standard Method of Test for Specific Gravity and Absorption of Coarse Aggregate;
2. T 120 Method of Test for Aggregate Durability Index.

1.03 SUBMITTALS

- A. Furnish submittals in accordance with SECTION 01300 Submittals. The CONTRACTOR shall furnish testing certificates from a qualified testing agency prior to acceptance of the rock source to verify the conformity to the requirements of the Contract Documents.
- B. The CONTRACTOR shall submit, prior to start of Work, the planned method of construction for the riprap system shown on the drawings to the DISTRICT for review and approval.

## 1.04 CERTIFICATIONS

### A. Test Reports

The CONTRACTOR shall submit certified test reports prepared by a qualified independent testing laboratory selected and compensated by CONTRACTOR for the following:

1. Bulk specific gravity of stone, saturated surface-dry basis determined in accordance with ASTM C127;
2. Average absorption in percent of stone determined in accordance with ASTM C127;
3. Results of soundness tests conducted in accordance with ASTM C88;
4. Stone gradation based on a representative sample of not less than 2.0 cy. Each stone in the sample shall be individually weighed, and a cumulative plot of percent lighter (by weight) versus stone weight in pounds shall be submitted.
5. Inspection Coordination

The CONTRACTOR shall provide access to the Work for the DISTRICT as requested for inspection. The CONTRACTOR shall provide 48 hours' notice of its intention to begin new Work activities.

## 1.05 WARRANTY

- A. The Manufacturer shall warrant the Equipment, Materials and Products specified in this Section against defective materials and Workmanship with the Manufacturer's standard warranty.
- B. The CONTRACTOR shall warrant the Work against defects for one year from the date of Substantial Completion.

## PART II - PRODUCTS

### 2.01 RIPRAP – LIMESTONE (FURNISHED BY CONTRACTOR)

The CONTRACTOR shall furnish stone for riprap that shall be limestone, and shall be sound, durable and angular in shape. No more than 10% of the stone for any gradation shall have an elongation (ratio of greatest dimension to least



dimension) greater than 3:1, and no stone shall have an elongation greater than 4:1. The riprap material shall conform to the following additional requirements:

- A. Material shall be free from cracks, seams, non-mineralized or other defects that would tend to increase its deterioration from natural causes.
- B. Stone for riprap shall have the following properties:
  - 1. Bulk specific gravity (saturated surface-dry basis) not less than 135 lbs/cu.ft when tested by ASTM C127 for all gradations;
  - 2. Absorption of not more than 2% (when tested by ASTM C127);
  - 3. Soundness: Soundness of stone for all riprap gradations shall be determined in accordance with ASTM C88, modified as specified herein. Weight loss in 5 cycles shall be not more than 10% when sodium sulfate is used or 15% when magnesium sulfate is used. Native stone riprap shall conform to the following requirements.
- C. Riprap shall conform to the size types as follows:

Average Diameter (Length x Width)	Average Dimensions	
	Length x Width Range	Thickness
24" to 36"	±24"-36" x ±18"-30"	±18" to ±24"
12" to 24"	±7"-24" x ±7"-18"	±7" to ±12"

- D. The greatest dimension of 50 percent of the stones shall be at least two-thirds but not more than 1-½ times the diameter of the average size. Neither the breadth nor thickness of any piece of riprap shall be less than one-third its length. Material shall be of shapes that will form a stable protection structure of required depth. Rounded boulders or cobbles shall not be used.
- E. The acceptability of the stones will be determined by the DISTRICT prior to placement.

## 2.02 GRANULAR BEDDING

Stone for use in granular bedding (filter stone) shall weigh not less than 135 lbs/cf (saturated surface dry). The material shall be composed of tough, durable particles, shall be reasonably free from thin, flat and elongated pieces, and shall contain neither organic matter nor soft, friable particles in quantities considered objectionable by the DISTRICT. Filter stone shall be placed within the limits shown on the drawings and shall be reasonably well graded within the following limits:

<u>Sieve Size</u>	<u>% Finer by Weight</u>
3"	100
1½"	65-95
¾"	50-80
No. 4	30-55
No. 20	13-20
No. 40	5-20
No. 80	0-5

### PART III - EXECUTION

#### 3.01 FIELD QUALITY CONTROL

- A. The CONTRACTOR shall recombine the riprap stone sample used for gradation analysis, transport to the project site, and place in a location acceptable to the DISTRICT. Field control of riprap gradation will be by visual comparison of the representative sample to arriving loads. Arriving loads not bearing reasonable similarity to the sample will be rejected.
  1. CONTRACTOR may, at his option, arrange for gradation analysis of rejected loads at the project site. Should the analysis indicate the rejected stone meets the requirements of this specification; all reasonable costs for such analysis will be reimbursed to the CONTRACTOR. In no instance will stone of a coloration or appearance dissimilar to that in the sample be accepted.
  2. Riprap shall be placed in accordance with drawings and the CONTRACTOR's approved submittal.
  3. Riprap placed by the CONTRACTOR shall not encroach waterward beyond the limits shown on the drawings.
  4. CONTRACTOR shall remove and re-install riprap that does not conform with the drawings or approved submittal.

### 3.02 SUBGRADE PREPARATION:

#### A. Dry Installation

The CONTRACTOR shall prepare the subgrade to the lines, slopes and elevations indicated. The CONTRACTOR shall clear the subgrade of sticks, stones, debris and other materials. The finished subgrade shall not vary from design grade by more than 2" at any location.

#### B. Sub aqueous Installation

The CONTRACTOR shall excavate the subgrade to the lines and grades shown. Tolerance shall be plus 0.0 feet to minus 0.25 feet in the canal/spring invert, and plus or minus 0.25 feet on the canal/spring banks.

### 3.03 GRANULAR BEDDING

The CONTRACTOR shall place filter stone bedding material beneath those areas to receive riprap, to a nominal depth of six (6) inches.

- A. Filter stone bedding material shall be spread uniformly over bottom of the excavated toe and along the shoreline slope to the mean high water elevation as shown on the drawings. Placement shall not commence until the DISTRICT has approved subgrade preparation.
- B. Placement methods, which segregate the bedding particles, will not be permitted.
- C. Compaction of the bedding material will not be required, but material shall be finished to a reasonably even surface.
- D. Tolerance shall be  $\pm 0.3$  feet provided this tolerance is not continuous over an area greater than 200 square feet when placed in the above mean high water level, or greater than 400 square feet when placed sub-aqueous.
- E. CONTRACTOR shall maintain the bedding material until the riprap is in place.

### 3.04 RIPRAP PLACEMENT

The CONTRACTOR shall proceed placing the riprap upon completion of filter stone bedding material and after receiving approval of the DISTRICT to proceed. The CONTRACTOR shall place riprap in accordance with the following.

- A. Stone shall be placed in such a manner as to produce a reasonably well-graded mass with the minimum practicable percentage of voids.

1. Stone shall be individually placed in layers such that the top of the stone is level or is sloping 0 to  $-5^{\circ}$  toward the bank. Place individually to full course thickness in a manner to avoid displacing filter stone.
2. Stone shall be placed such that the larger stone is used on the base of the riprap section.
3. Stone shall be securely bedded with the larger stones firmly in contact onto another without bridging.
4. Spaces between the larger stones shall be filled with smaller stones and spalls such the minimum void space is no greater than 4 inches in diameter.
5. Smaller stones shall not be used as a substitute for larger stones.
6. Finished riprap shall be free from voids in the exterior face greater than 4 inches in diameter and 6 inches in depth. Adjust if necessary to secure the desired results.

B. Surface Tolerances:

1. The top of the finished stone surface shall be at or above elevation 1.28' except where noted on Plans.

### 3.05 MAINTENANCE

The CONTRACTOR shall maintain riprap until accepted. The CONTRACTOR shall replace riprap displaced by any cause prior to acceptance.

END OF SECTION

## SECTION 02435

### TURBIDITY CONTROL AND MONITORING

#### PART I - GENERAL

##### 1.01 SCOPE OF WORK

###### A. Description

The CONTRACTOR shall furnish all necessary equipment, labor and materials and utilize appropriate means and methods of turbidity controls necessary and sufficient to ensure that the more restrictive and protective of the following are achieved at all times: (1) all applicable State water quality standards, as prescribed in Chapter 62-302.530, Florida Administrative Code (F.A.C.), incorporated by reference, (2) all applicable environmental permit conditions, as prescribed in the permits appended to the Contract, and (3) all stormwater and erosion control shall be in accordance with the Florida Department of Environmental Protection (FDEP) Florida Stormwater Erosion and Sedimentation Control Inspector's Manual, July 2008 Edition.

##### 1.02 SUBMITTALS

The CONTRACTOR shall make submittals for the turbidity control and monitoring system in accordance with Section 01300 and the requirements herein.

- A. Provide a copy of approved CGP and a copy of the SWPPP in accordance with Section 01065.
- B. Provide details of the silt screens proposed.
- C. Provide proposed layout of turbidity control and monitoring system.
- D. Monitoring data and reports in accordance with Paragraph 3.02.

##### 1.03 INSPECTION COORDINATION

The CONTRACTOR shall provide access to the Work for the DISTRICT as requested for inspection. The CONTRACTOR shall provide 48 hours' notice of its intention to begin new Work activities.

#### PART II - PRODUCTS

##### 2.01 FABRIC

### TURBIDITY CONTROL AND MONITORING

The CONTRACTOR shall provide fabric that is flexible and impermeable or of sufficiently fine mesh to prevent passage of suspended material through the fabric. Fabric shall provide not less than 60 inches vertical depth of barrier where existing water depths are six feet or greater. Where existing water depths are less than six feet, the fabric depth may be decreased in 12-inch increments to not less than 12 inches to conform to the existing bottom depths.

## 2.02 FLOATS

The CONTRACTOR shall provide floats for barriers of sufficient buoyancy to prevent the top of the barrier from submerging under any water and wind conditions. If the top of the barrier becomes submerged for any reason, the CONTRACTOR shall suspend construction operations until the condition is corrected.

## 2.03 ANCHORS AND WEIGHTS

The CONTRACTOR shall provide and maintain an anchor system to secure the barrier in position. Attach weights to the barrier as necessary to keep the fabric at an angle to the vertical of 30 degrees or less. Fabric material shall not be attached to the canal/spring bottom.

# PART III - EXECUTION

## 3.01 TURBIDITY BARRIERS

- A. The CONTRACTOR shall install and maintain turbidity barriers as noted in the Drawings and where necessary to maintain turbidity releases at or below permit compliance levels. Barriers shall be installed prior to any filling, backfilling, dredging, or excavation and maintained in place until construction is complete and turbidity from construction has dissipated. All barriers shall be adequately marked and appropriate signage erected to identify them as obstructions to navigation.
- B. Any rips or tears that occur in the turbidity barrier material during use shall be repaired or replaced immediately by the CONTRACTOR at its expense. Rips or tears that occur in the turbidity barrier material in use that are not repaired or replaced immediately by the CONTRACTOR will result in a suspension of excavation and/or construction operations and shall require repairs and replacements as a prerequisite to the resumption of Work.
- C. The CONTRACTOR shall keep in place and maintain all barriers until the Work is complete and turbidity levels return to background levels based on turbidity sampling and inspection. Upon completion of use, the CONTRACTOR shall remove the turbidity barriers and associated items to an off-site location at its own expense.

- D. The CONTRACTOR shall conduct its operations at all times in a manner that minimizes turbidity. The CONTRACTOR is required to conform to State water quality standards as prescribed in F.A.C. Chapter 63-302, and to meet the special requirements of any environmental permits that have been issued.

### 3.02 MONITORING

- A. The CONTRACTOR shall conduct turbidity monitoring at minimum twice (2) daily during Work within the project area during in-water Work and will comply with the associated permits for this project. The DISTRICT can request additional turbidity monitoring at any time.
1. Background Monitoring Location: 500 feet upstream (or as specified in the applicable environmental permit) of the construction area at mid-depth in the water column within the unnamed canal connecting to Kings Bay and outside of any visible turbidity plume.
  2. Compliance Monitoring Location: Within five feet beyond the project limit within the active work area(s) (or as specified in the applicable environmental permit) of any construction locations that may generate turbidity, at mid-depth in the water column, in the densest portion of any visible plume. Most of this project location is within an Outstanding Florida Water.
  3. Sampling Time: Turbidity monitoring shall be performed at the same time(s) every day, on a schedule approved by the DISTRICT, unless otherwise specified.
- B. The CONTRACTOR shall submit turbidity monitoring data to DISTRICT weekly and shall maintain and make available all monitoring records for inspection by the DISTRICT or FDEP for the period of in-water Work construction and an additional 90 days beyond in-water construction. Documents submitted shall contain the following information.
1. Permit number
  2. Dates of sampling and results
  3. A map indicating the sampling locations
  4. Identify make and model of instrument used for turbidity monitoring readings.

5. A statement describing the methods used in collecting turbidity readings including instrument calibration in accordance with manufacturer's specifications.
  6. A statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.
- C. The CONTRACTOR shall submit monitoring reports that also include the following information for each sample that is taken.
1. Time of day samples taken
  2. Depth of water body
  3. Depth of sample
  4. Antecedent weather conditions
  5. Direction of flow
  6. Tide stage
- D. If at any time monitoring reveals the turbidity levels at the compliance sampling station are greater than 29 NTUs above the corresponding background sample in Class I or III receiving waters, or greater than 0 NTU above background samples in receiving waters classified as OFW (Outstanding Florida Waters), construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. Turbidity violations and corrective measures shall be documented in the monitoring reports.
- E. The CONTRACTOR must notify the DISTRICT Construction Manager and the DISTRICT's Permitting and Compliance Staff immediately who then, per the Environmental Resource Permit, must notify the Florida Department of Environmental Protection (FDEP) of the exceedance. If known, the CONTRACTOR may also contact the assigned FDEP Permitting and Compliance Staff for the Project directly.

END OF SECTION



## SECTION 02486

### GRASSING

#### PART I - GENERAL

##### 1.01 SUMMARY

- A. The WORK covered by this SECTION consists of furnishing all the necessary equipment, materials and labor associated with the establishment and maintenance of grass in all areas as specified herein and in the drawings. These include, but are not limited to seeding, mulching, and fertilizing newly grassed areas and maintenance.

##### 1.02 SUBMITTALS:

- A. Certificates:  
Seed and fertilizer shall be certified that they meet requirements of these specifications, stating botanical name, percentage by weight, percentage of purity, germination, and weed seed for each grass seed species.

##### 1.03 WARRANTY:

- A. The MANUFACTURER shall warrant the EQUIPMENT, MATERIALS and PRODUCTS specified in this SECTION against defective materials and workmanship with the MANUFACTURER's standard warranty, but for no less than one (1) year from the date of Substantial Completion.
- B. The CONTRACTOR shall warrant the WORK against defects for one (1) year from the date of Substantial Completion.

#### PART II - MATERIALS

##### 2.01 GRASS SEED

- A. Provide fresh, clean, new crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America and as required below.
- B. Seed shall be labeled according to the U.S. Department of Agriculture Federal Seed Act and shall be furnished in containers with tags showing seed mixture, purity, germination, weed content, name of seller, and date on which seed was tested.

1. Seed Mixtures: Meet the following minimum weight of pure live seed per acre:

Seed Name	Pounds Pure Live Seed
Argentine Bahia	41
Bermudagrass	14
Brown Top Millet	21

NOTE: Pure live seed (PLS) is determined by multiplying the % pure seed by the % germination. Therefore, if the pure seed is 80% and the germination is 70% the PLS is .80 X .70 or 56%. At 56% it would take 53.5 pounds to equal 30 pounds of PLS.

2. Moldy seed or seed that has been damaged in storage will not be accepted.
3. When seasonal conditions mandate, substitute a winter grass such as rye grass for the brown top millet.

## 2.02 FERTILIZER:

- A. Supply commercial fertilizer in accordance with City of Crystal River Code of Ordinances Chapter 19 Article III - Florida-Friendly Use of Fertilizer on Urban Landscapes and Chapter 5E-1.003 Florida Administrative Code. Fertilizer containing phosphorus is not acceptable.
- B. Deliver to site in unopened, labeled bags or containers.

## 2.03 MULCH:

- A. Vegetative Anti-Erosion Mulch: Seed free, salt hay, rye, or oats, or of coastal Bermuda or Bahia grass hay.
- B. Only undeteriorated mulch that can readily be cut into the soil shall be used.
- C. Green mulch will not be accepted.

## PART III - EXECUTION

### 3.01 SOIL PREPARATION:

- A. Any growth, rocks, or other obstructions which might interfere with tilling, seeding, or later maintenance operations shall be removed and disposed

of properly. Remove stones over two (2) inches in any dimension and sticks, roots, rubbish, and other extraneous matter.

- B. Areas to be seeded are to be graded to a smooth, even surface with loose, uniformly fine texture. Roll and rake, remove ridges and fill depressions, to meet finish grades. Limit fine grading to areas which can be planted within immediate future.
- C. Moisten prepared areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting.
- D. If prepared areas are eroded or otherwise disturbed after fine grading and prior to planting they shall be restored to specified condition prior to planting.
- E. Immediately upon completion of construction, grass shall be planted in all disturbed areas and as designated in the drawings. Method of planting shall be either hydroseeding or dry seeding.

### 3.02 FERTILIZING:

- A. Apply fertilizer in accordance with MANUFACTURER's recommendations.
- B. Incorporate fertilizer into the soil to a depth of at least two (2) inches by discing, harrowing, or raking, except on slopes steeper than two (2) horizontal to one (1) vertical.

### 3.03 SEEDING:

- A. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.
- B. Do not seed when wind velocity exceeds five (5) miles per hour. Distribute seed evenly over entire area by sowing equal quantity in two directions at right angles to each other.
- C. Sow not less than a rate of 76 pounds of pure live seed per acre.
- D. Rake seed lightly into top 1/8-in of soil, roll lightly, and water with fine spray.
- E. Methods of Application:
  - 1. Dry Seeding: Spreader or seeding machine.

### 3.04 MULCHING

- A. Apply a mulch covering to all seeded areas.
- B. Apply vegetative mulch to loose depth of two (2) inches, by means of a mechanical spreader or other approved methods.
- C. Mulch material shall be cut into the soil so as to produce a loose-mulched thickness of three to four inches. The use of harrows will not be permitted.
- D. Immediately following the application of the mulch, water the seeded area in one watering, in sufficient amount to penetrate the seedbed to a minimum depth of two (2) inches. Perform so as not to cause erosion or damage to the seeded surface.
- E. Protect seeded areas against hot, dry weather or drying winds by applying mulch not more than 24 hours after completion of seeding operations.

### 3.05 MAINTENANCE

- A. Perform maintenance until eight (8) weeks after all areas have been seeded.
- B. Requirements:
  - 1. The CONTRACTOR shall water all newly grassed areas a minimum of once a week until satisfactory grass growth is attained.
  - 2. Repair any portion of the seeded surface which becomes gullied or otherwise damaged, or the seeding becomes damaged or destroyed.
  - 3. Replace mulch when washed or blown away.
- C. If, at the end of the 8-week maintenance period, a satisfactory stand of grass has not been produced, renovate and reseed the grass or unsatisfactory portions thereof immediately.

### 3.06 ACCEPTANCE OF GRASSING

- A. When grassing work is substantially completed, including maintenance, the DISTRICT will, upon request, make an inspection to determine acceptability.
  - 1. Seeded areas may be inspected for acceptance in parts agreeable to the DISTRICT, provided WORK offered for inspection is complete, including maintenance.

- B. Replant rejected WORK and continue specified maintenance until reinspected by the DISTRICT and found to be acceptable.
1. A satisfactory stand is defined as a grass or section of grass that has:
    - a. No bare spots larger than three (3) square feet.
    - b. Not more than five (5) percent of total area with bare spots larger than six (6) inches.
    - c. Not more than ten (10) percent of total area with bare spots larger than two (2) inches square.
  2. If the grassing is still unsatisfactory upon inspection of replanted area, the CONTRACTOR shall sod those areas that are unacceptable. Acceptance of the sodded areas is dependent upon satisfactory coverage criteria established in 3.06.B.1 above.

END OF SECTION

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## SECTION 02900

### PLANTING

#### PART I - GENERAL

##### 1.01 SUMMARY

- A. Install, establish and maintain plantings as indicated in the Contract Documents.
- B. Upon completion of the last day of the planting operation, the plant establishment period for maintaining installed plant material in a healthy growing condition shall commence and shall be in effect for 365 days. Written calendar time period shall be furnished for the plant establishment period. Plants will be provided supplementary watering as necessary to insure the plant's survival during the 365 day establishment period.

#### PART II - PRODUCTS

##### 2.01 MATERIALS

- A. All plant material shall be nursery grown and purchased from a Florida based Nurseryman Stock that complies with all required inspection, grading standards, and plant regulations in accordance with the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants".
- B. Sound, healthy, vigorous, with normal top and root systems, free from disease, insect pests or their eggs, grown in same climatic zone as project.
- C. Unless otherwise specified, minimum grade for all plants shall conform to Grade No. 1 or better as referenced in "Grades and Standards for Nursery Plants Parts I and II"; Division of Plant Industry, Florida Department of Agriculture and Consumer Services (FDACS) and the current American Association of Nurserymen (AAN) Standards.
- D. All plant material will consist of containerized material or bare root as specified in the Plant Schedule and shall be inspected and approved by the DISTRICT Representative prior to installation.
- E. All native coastal plant species requested here will have their seed or stock plants originating from the west central coast of Florida, within a one hundred (100) mile radius of the project site.

- F. If field harvested, all plant materials are to be freshly dug and installed within forty-eight (48) hours of harvest. All plant materials shall be Florida #1 of species and size as indicated in the Planting Schedule.
- G. Container grown plants (CG): roots well established in soil, grown in container for at least one growing season
- H. A minimum of two (2) plants of each species must be shipped with tags stating the botanical nomenclature and common name. Should discrepancies arise between nomenclatures, the botanical name will take precedence.
- I. CONTRACTOR will provide all other materials necessary to install and maintain survival of the planted material for the 365-day warranty period.

### PART III - EXECUTION

#### 3.01 DELIVERY

- A. All materials must be available for inspection before installation and will be subject to approval or rejection by DISTRICT Representative. Materials shall be protected from deterioration during delivery and while stored prior to installation.

#### 3.02 LAYOUT

- A. CONTRACTOR shall examine areas for conditions under which the Work is to be performed and shall report in writing to the DISTRICT Representative all conditions contrary to those shown on the plans and all other conditions that will affect satisfactory execution of the work.
- B. CONTRACTOR shall clearly demarcate proposed planting zone elevations with flagged survey lathe as indicated in the planting schedule for the DISTRICT Representative's review prior to plant installation.

#### 3.03 INSTALLATION OF PLANTS

- A. CONTRACTOR shall install the designated plant species at the specified planting elevations and density for each zone within 48 hours after delivery to the site.
- B. CONTRACTOR shall lay Envirolok® bags (or approved alternate) within the transitional zone as shown in the cross sections prior to planting. CONTRACTOR shall be aware that plantings within the transitional zone will occur on natural ground as well as between the bags as indicated in the



general planting notes on the drawings. Plants will be installed between Envirolok® bags and the bags shall not be cut to facilitate installation.

- C. CONTRACTOR shall refer to the Planting Schedule attached herein regarding the specified plant species, number of units, planting elevations and densities for each zone as shown in the plans.

### 3.04 CLEAN UP

- A. All surplus material including trash, debris and undesirable plant material not needed after plant installation per the Contract Documents shall be removed from the site and disposed of in an acceptable manner determined by the CONTRACTOR and accepted by the DISTRICT Representative.

### 3.05 MAINTENANCE

- A. CONTRACTOR will be responsible for inspection, maintenance and replacement of installed plant material during the establishment period necessary to maintain 90% survival of planted material, and less than 5% exotic or nuisance vegetation over the 365-day warranty period or upon final acceptance by the DISTRICT Representative.
- B. CONTRACTOR will notify DISTRICT Representative of quarterly inspections a minimum of 72-hours prior to the inspection. Contractor will conduct quarterly inspections and provide the DISTRICT Representative a certified inspection report within seven calendar days following inspection summarizing the condition of the plantings and any corrective actions taken.

### 3.06 WARRANTIES

- A. Warranties shall be in addition to, and not a limitation of, other rights the DISTRICT may have against the CONTRACTOR under the contract documents.
- B. CONTRACTOR will provide all materials necessary to maintain 90% survival of planted material, and less than 5% exotic or nuisance vegetation for the 365-day warranty period or until acceptance by the DISTRICT Representative. The 365-day warranty period commences after the date of substantial completion for the entire project.
- C. During the construction or warranty period, any required plant material replacements shall be made within 30 days of notification from the DISTRICT Representative. A final inspection will be made at the end of the warranty period to determine acceptance or rejection.

## PLANTING SCHEDULE

Est. Total Qty.	Botanical Name	Common Name	Size	Spacing (ft o.c.)
<b>Upland Vegetation &gt; 2.0' Elev.</b>				
2	<i>Juniperus virginiana</i>	Eastern red cedar	25 Gal	25
2	<i>Quercus virginiana</i>	Live oak	45 Gal	25
2	<i>Pinus elliotii</i>	Slash pine	7 Gal	25
14	<i>Morella cerifera</i>	Wax myrtle	3 Gal	10
14	<i>Forestiera segregata</i>	Florida privet	3 Gal	10
14	<i>Sambucus nigra</i>	Elderberry	3 Gal	10
2	<i>Magnolia virginiana</i>	Sweetbay magnolia	7 Gal	25
14	<i>Baccharis halimifolia</i>	Saltbush	1 Gal	10
1	<i>Quercus laurifolia</i>	Laurel Oak	45 Gal	25
<b>Transitional Zone 1.28' to 2.0' Elev. Range</b>				
9	<i>Acrostichum danaeifolium</i>	Leather fern	1 Gal	3
4	<i>Lyceum carolinianum</i>	Christmas berry	3 Gal	3
9	<i>Crinum americanum</i>	Southern swamp lily	1 Gal	3
4	<i>Distichlis spicata</i>	Saltgrass	2" Liner	3
9	<i>Iva frutescens</i>	Marsh elder	4"	3
9	<i>Paspalum vaginatum</i>	Seashore paspalum	1 Gal	3
9	<i>Sesuvium portulacastrum</i>	Sea purslane	1 Gal	3
9	<i>Solidago sempervirens</i>	Seaside goldenrod	1 Gal	3
9	<i>Tripsacum dactyloides</i>	Fakahatchee grass	1 Gal	3
9	<i>Bacopa monnieri</i>	Water hyssop	Bare root	3
37	<i>Cladium jamaicense</i>	Sawgrass	1 Gal	3
9	<i>Mulenbergia capillaris</i>	Gulf muhly grass	1 Gal	3
<b>Wetland Temporary Impact Area</b>				
4	<i>Acer rubrum</i>	Red maple	15 Gal	20
50	<i>Cladium jamaicense</i>	Sawgrass	1 Gal	3
50	<i>Solidago sempervirens</i>	Seaside goldenrod	1 Gal	3
50	<i>Tripsacum dactyloides</i>	Fakahatchee grass	1 Gal	3
50	<i>Bacopa monnieri</i>	Water hyssop	Bare root	3
<b>Tree Replanting (if needed)</b>				
3	<i>Juniperus virginiana</i>	Eastern Red Cedar	25 Gal	20
2	<i>Taxodium distichum</i>	Bald cypress	25 Gal	20

Note: Plants may be replaced by equivalent species depending upon availability at the time of planting.

END OF SECTION

## SECTION 02920

### SODDING

#### PART I - GENERAL

##### 1.01 SCOPE

- A. This section generally defines CONTRACTOR's responsibilities, unless otherwise indicated, for the following:
  - 1. Preparation of subsoil
  - 2. Placing topsoil
  - 3. Fertilizing
  - 4. Sod installation
  - 5. Maintenance.

##### 1.02 REFERENCES:

- A. FDOT - Florida Department of Transportation - Standard Specifications for Road and Bridge – 2021 (Section 570)

##### 1.03 SUBMITTALS:

- A. Submit sod certification for grass species and location of sod source.

##### 1.04 QUALITY ASSURANCE:

- A. Sod Producer: Company specializing in sod production and harvesting with minimum five years' experience and certified by the State of Florida.
- B. Installer: Company approved by the sod producer.
- C. Sod: Minimum age of 18 months, with root development that will support its own weight, without tearing, when suspended vertically by holding the upper two corners.
- D. The DISTRICT reserves the right to test, reject or approve all materials before application.

##### 1.05 REGULATORY REQUIREMENTS:

- A. Fertilizers shall comply with the State Fertilizer laws and regulatory agency rules.

#### 1.06 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver products to site under provisions of SECTION 01600.
- B. Store and protect products under provisions of SECTION 01600.
- C. Deliver sod on pallets. Protect exposed roots from dehydration.
- D. Do not deliver more sod than can be laid within 48 hours.
- E. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- F. The CONTRACTOR shall furnish the DISTRICT invoices of all materials received in order that the minimum application rate of materials may be determined.

#### 1.07 MAINTENANCE SERVICE:

- A. Maintain sodded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.

#### 1.08 WARRANTY:

- A. The MANUFACTURER shall warrant the EQUIPMENT, MATERIALS and PRODUCTS specified in this section against defective materials and workmanship with the MANUFACTURER'S standard warranty, but for no less than one year from the date of Substantial Completion.
- B. The CONTRACTOR shall warrant the WORK against defects for one year from the date of Substantial Completion.

## PART II - PRODUCTS

### 2.01 MATERIALS

- A. Sod:
  - 1. The sod shall be Argentine Bahia, to closely match existing as directed, with well matted roots.

2. The sod shall be commercial size rectangular measuring 16-inches by 24 inches or larger.
3. The sod shall be sufficiently thick to secure a dense stand of live grass, with a minimum thickness of 2-inches.
4. The sod shall be live, fresh, and uninjured at the time of planting.
5. The sod shall have a soil matt of sufficient thickness adhering firmly to the roots to withstand all necessary handling and be reasonably free of weeds and other grasses.
6. The sod shall be planted as soon as possible after being harvested and shall be shaded and kept moist from the time of harvesting until it is planted.
7. The source of the sod may be inspected and approved by the DISTRICT prior to construction

B. Topsoil:

1. Excavated from site and free of weeds.

C. Fertilizer:

1. Supply commercial fertilizer in accordance with City of Crystal River Code of Ordinances Chapter 19 Article III - Florida-Friendly Use of Fertilizer on Urban Landscapes and Chapter 5E-1.003 Florida Administrative Code. Fertilizer containing phosphorus is not acceptable.
2. Fertilizer shall be delivered to site in unopened, labeled bags or containers.

D. Water:

1. Clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass.

### PART III - EXECUTION

#### 3.01 INSPECTION

- A. Verify that prepared subsoil is ready to receive the work of this Section.

#### 3.02 FERTILIZING:

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to installation of sod.
- C. Apply fertilizer no more than 48 hours before laying sod.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

3.03 LAYING SOD:

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- C. Peg sod at locations where sod may slide, as directed by the DISTRICT.
- D. Roll sod using a lightweight turf roller to provide a true and even surface.

3.04 MAINTENANCE:

- A. Water all newly grassed areas once a week to prevent grass and soil from drying out.
- B. Immediately replace sod in areas which show deterioration or bare spots.
- C. CONTRACTOR shall include in pricing, water, and equipment to insure adequate survival of the sod for sixty days after substantial completion.

END OF SECTION