

100% TECHNICAL SPECIFICATIONS
For
Cape Haze Ecosystem Restoration (W563)



OWNER

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
SURFACE WATER IMPROVEMENT AND MANAGEMENT PROGRAM (SWFWMD SWIM)
7601 US HIGHWAY 301 NORTH
TAMPA, FL 33637

DESIGN PROFESSIONALS

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Lake Mary, FL 32746
BID DOCUMENTS
December 2025

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Index for Professional Registrations
Sign and Seal Sheet
for

Cape Haze Ecosystem Restoration (W563)

Michael Stephenson, State of Florida, Professional
Engineer License Number 96269

This item has been digitally signed and sealed by
Michael Stephenson on the date indicated here.

Signature must be verified on any electronic copies.

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Division I

General Requirements

SECTION 01005 GENERAL REQUIREMENTS

PART 1 – 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.

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. The CONTRACTOR 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. They shall repair or restore all structures and property which may be damaged or disturbed during performance of the Work to the satisfaction of the District or in compliance with state standards in the event the disturbance includes regulated contaminations.

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, in the opinion of the District Representative, to perform in a satisfactory and acceptable manner all the work required by this Contract. Only equipment of established reputation, condition, and proven efficiency shall be used. The CONTRACTOR shall be solely responsible for the adequacy of their workmanship, materials and equipment, prior approval of the District Representative notwithstanding.

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 approved by the appropriate utility representative. The CONTRACTOR shall so arrange their operations as to avoid any damage to these facilities. All required protective devices and construction shall be provided by the CONTRACTOR at their own 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 their expense, as approved by the utility owner. 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 a written authorization.

All Owners, governmental utility departments, and owners of public utilities that may be affected by the Work will be informed in writing by the District Representative within two weeks after the execution of the Contract or Contract covering the work. Such notice will set out, in general, and direct attention to, the responsibilities of the DISTRICT and other governmental utility departments and other owners of public utilities for such installations and structures as may be affected by the work and will be accompanied by one set of Plans and Specifications covering the work under such Contract or Contracts.

In addition to the general notice given by the District Representative, the CONTRACTOR shall give written notice to the DISTRICT and other governmental utility departments and other owners of public utilities of the locations of their proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the work. The Contractor will give notice to the District of any communication with any or all utility owners.

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 the CONTRACTOR

The CONTRACTOR shall furnish each of the subcontractors, manufacturers, and suppliers with 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. The District Representative shall promptly provide a response to all RFIs submitted by the CONTRACTOR. The 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 FDOT 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. Five copies 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 engineers 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 their 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 their own expense.

E. Final Inspection

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 their 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 provide a suitable temporary fence at their own expense, which shall be maintained until the permanent fence is replaced, if so, ordered by the District Representative. 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 their own expense, the CONTRACTOR shall furnish, install, maintain, and remove all temporary driveways and access roads 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 in providing and maintaining 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 construction, shall have established benchmarks and baseline controlling points. The CONTRACTOR shall so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. They shall remove any obstructions they have placed contrary to this provision.

B. Surveys

The CONTRACTOR shall furnish and maintain, at their 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 benchmarks 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. General

The CONTRACTOR shall also be entirely responsible and liable for all damage or injury as a result of their 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.

The contractor is expressly advised that the protection of any buildings, structures, tunnels, tanks, pipelines, etc. and related work adjacent to and in the vicinity of their operations, wherever they may be, is solely their 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. The 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 buildings or structures on which he intends to perform work or which performance of the project work will affect.

B. Protection of Trees

1. The CONTRACTOR shall adequately protect all trees and shrubs outside the limited construction area with boxes or otherwise in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs.
2. 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.
3. The DISTRICT may order the CONTRACTOR, for the convenience of the DISTRICT, to remove trees in the area(s) of the work. If so ordered, the CONTRACTOR will obtain any permits required for removal of trees.

C. Lawn Areas

Lawn areas shall be left in as good a condition as before the start 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 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 or repaired by the CONTRACTOR and shall be left in as good a condition as before the start 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.

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. Strict compliance with ordinances regulating the production of emission of smoke will be required. Unless called for in the Construction Drawings, 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 silencers 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 7:00 P.M. and 7:00 A.M., or on 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 their 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 CUTTING AND PATCHING

The CONTRACTOR shall do all cutting, fitting or patching of their portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the District Representative and in accordance with the Construction Drawings and Specifications. The work shall be performed by competent workers skilled in the trade required by the restoration.

1.09 CLEANING

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 their surplus materials and temporary structures when no further need therefore develops.

A. Final Clearing

At the conclusion of the work, all erection plans, tools, temporary structures and materials belonging to the CONTRACTOR shall be promptly taken away, and the CONTRACTOR 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.

1.10 MISCELLANEOUS

A. Protection Against Siltation and Bank Erosion

1. The CONTRACTOR shall arrange their 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 their own expense, shall remove any siltation deposits and correct any erosion problems as directed by the District Representative that result from their 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, Southwest Florida Water Management District, U.S. Army Corps of Engineers, etc.

C. Protection of Archeological Areas

Under no circumstances shall any portions of known archeological areas be mechanically disturbed. Discoveries of any unknown archaeological sites will result in an immediate work stoppage in the vicinity and the District will notify the State for further investigation.

D. Existing Facilities

The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in the Specific Provisions.

E. 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 or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with manufacturer's instructions.

F. Tree Removal

The CONTRACTOR shall be required to notify the District Representative forty- eight (48) hours in advance of any removal of trees, whether dead (snag) or alive, on the project. No clearing shall occur, and no earth-moving equipment shall be placed on-site until after the notice has been issued. The CONTRACTOR shall provide maintenance of 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 in the removal of any trees from the site of the work.

G. Storm Sewer Systems

The CONTRACTOR shall be entirely responsible for the satisfactory installation of storm sewer in conformance with the approved Construction Drawings, Specifications and Shop Drawings. All storm sewer invert grades shall be verified in the field by the District Representative. The required testing of lines and verification of elevations in no way absolves the CONTRACTOR from any of their contractual obligations, including re-testing of these lines upon completion of backfilling and compaction.

H. Related Permits

The CONTRACTOR recognizes that the DISTRICT has applied for and has certain permits pertaining to the work as outlined in SECTION 01065.

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. 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.

1.11 RESTORATION OF PROPERTY

- A. Responsibility. All damage resulting from construction work on, but not limited to, 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 mentioned 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 to the CONTRACTOR.

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SECTION 01010 SUMMARY OF WORK

PART 1 – GENERAL

1.01 SUMMARY

This SECTION summarizes the WORK of the Project as covered in detail in the complete Contract Documents. This is a general summary and is not intended to be complete and all-inclusive of the required WORK items.

1.02 PROJECT DESCRIPTION

Description of Total Project: The Cape Haze Ecosystem Restoration Project will regrade or fill manmade canals and ditches to restore upland pine flatwood habitat and create or enhance palustrine wetlands and sloughs through excavation. The work consists of furnishing all labor, materials, equipment, and incidentals necessary for construction. Suitable material will be balanced on site. The CONTRACTOR will take possession of any excess material and be responsible for its final disposition, in accordance with all applicable laws, rules, and ordinances.

1.03 RELATED CONTRACT ACTIVITIES

The CONTRACTOR shall provide adequate protection to protect the general public as well as the job site. The CONTRACTOR shall revegetate disturbed areas after grading.

1.04 WORK PERFORMED BY OTHERS

The CONTRACTOR shall provide access to all County facilities.

1.05 CONTRACTOR'S USE OF PREMISES

During construction activities, the CONTRACTOR shall be responsible for maintaining all access roads in good condition, including grading and drainage.

1.06 DISTRICT'S USE OF PREMISES

Partial DISTRICT Occupancy: The Southwest Florida Water Management District (DISTRICT) reserves the right to occupy and to place and install equipment in areas of the Project, prior to Substantial Completion provided that such occupancy does not interfere with completion of the WORK. Such placing of equipment and partial occupancy shall not constitute acceptance of the WORK.

1.07 WORK SEQUENCE, COORDINATION ACTIVITIES AND SCHEDULED DATES

A. General: The CONTRACTOR shall coordinate its WORK with other adjacent contractors, landowners and DISTRICT activities, with specific attention to access and staging areas. Construction sequence shall be determined by CONTRACTOR subject to the following needs for near-continuous access and operation by others.

1. The CONTRACTOR shall provide access to Charlotte County (County) facilities at Harness Road.
2. The CONTRACTOR shall provide pedestrian access to the Cape Haze Pioneer Trail in association with

temporary construction access at Harness Road. Any trail repair shall be conducted in compliance with FDOT Design Guidelines.

B. Scheduled Events: Schedule the WORK to conform to the following events and dates, and to provide for coordination with the WORK performed by others.

1.08 LIST OF DRAWINGS

A. Contract Drawings:

1. Cape Haze Ecosystem Restoration Plans Set dated June 2025 and signed August 2025.

B. Reference Materials:

1. The following reference materials are available: These materials are for reference only, are provided as-is, are not contractual documents, and do not replace the CONTRACTOR's due diligence in bid preparation: Report of Geotechnical Exploration dated December 2022, FL_Peninsular_FDEM_Charlotte_2018 LiDAR Data Validation Report.

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SUMMARY OF WORK
SECTION 01010-3

SECTION 01015 CONTROL OF WORK

PART 1 – 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 Proposal. If at any time such facilities appear to the District Representative to be inefficient, inappropriate, or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, the DISTRICT may require the CONTRACTOR to provide a plan of action to address work progress and meet the schedule and work quality required. Failure of the District Representative to give such an order shall in no way relieve the CONTRACTOR of their obligations to secure the quality of the work and rate of progress required.

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.

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 their own expense, provide suitable and safe bridges and other crossings for accommodating travel by the 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 an 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.
- B. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, of other obstacles which could be dangerous to the public, shall be well lit at night.

1.05 TEST PITS

- A. Test pits for the purpose of locating underground pipelines or structures in advance of the construction shall be excavated and backfilled by the CONTRACTOR so as not to create a hazardous area. Test pits shall be

backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the District Representative.

1.06 MAINTENANCE OF TRAFFIC

- A. Unless permission to close a street is received in writing from the proper authority, all excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the CONTRACTOR's operations cause traffic hazards, he shall repair the road surface, provide temporary ways, erect wheel guards or fences, or take other measures for safety satisfactory to the jurisdictional agency.
- B. The CONTRACTOR shall obtain any necessary permits for maintenance of traffic. Detours around construction will be subject to the approval of the County. Where detours are permitted, the CONTRACTOR shall provide all necessary barricades and signs as required to divert the flow of traffic. While traffic is detoured, the CONTRACTOR shall expedite construction operations and those periods when traffic is being detoured will be strictly controlled by the jurisdictional agency.
- C. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. Night guards may be required where special hazards exist, or police protection provided for traffic while work is in progress. The CONTRACTOR shall be fully responsible for damage or injuries whether or not police protection has been provided.
- D. The CONTRACTOR is responsible for keeping the Cape Haze Pioneer Trail open to pedestrian and bike traffic as much as practicable during construction. The CONTRACTOR shall coordinate with the County on acceptable means, such as a flagger, to ensure public safety while construction traffic crosses the Cape Haze Pioneer Trail.

1.07 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 their own 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 thoroughly. 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 their original conditions.

D. 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.

1.08 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 their own 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.

C. If, in the opinion of the District Representative, permanent relocation of a utility owned by the DISTRICT is required, the District Representative may direct the CONTRACTOR in writing, to perform the work. Work so ordered will be paid for at the bid prices in the Proposal, if applicable, or as extra work under the construction contingency. If relocation of a privately owned utility is required, the DISTRICT will notify the Utility to perform the work as expeditiously as possible. The CONTRACTOR shall fully cooperate with the DISTRICT and Utility, and shall have no claim for delay due to such relocation.

1.09 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.

B. If it appears that utility service will be interrupted for an extended period, the District Representative may order the CONTRACTOR to provide temporary service lines. The inconvenience to the users shall be the minimum, consistent with the existing conditions. The safety and integrity of the system is of prime importance in scheduling work.

1.10 PROTECTION OF CONSTRUCTION AND EQUIPMENT

A. All newly constructed works 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 their own expense.

B. All structures shall be protected in a manner approved by the District Representative. 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 their 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.

C. Further, the CONTRACTOR shall take all necessary precautions to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted by the DISTRICT.

1.11 WATER FOR CONSTRUCTION PURPOSES

The CONTRACTOR is responsible for providing all water required for construction purposes. The CONTRACTOR shall make all connections and other provisions necessary to obtain said water from a local potable and/or reclaimed water system, as required by the County's standard procedures. The CONTRACTOR shall pay for all water used for construction purposes. Bid prices shall include the anticipated costs to be incurred for water usage.

1.12 MAINTENANCE OF FLOW

The CONTRACTOR shall at their own cost, provide for the flow of sewers, 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 District Representative in advance of the interruption of any flow.

1.13 COOPERATION WITHIN THIS CONTRACT

A. All firms or persons authorized to perform any work under this Contract shall cooperate with the General Contractor and their subcontractors or trades and shall assist in incorporating the work of other trades where necessary or required.

B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the District Representative.

1.14 CLEAN-UP

A. During the course of the work, the CONTRACTOR shall keep the site of their operations in as clean and neat a condition as 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.

END OF SECTION

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CONTROL OF WORK
SECTION 01015-5

SECTION 01030 SPECIAL PROJECT PROCEDURES

PART 1 – GENERAL

1.01 WORKMANSHIP, MATERIAL AND EQUIPMENT

- A. When a particular product is specified or called for, it is intended and shall be understood that the proposal tendered by the CONTRACTOR included those products in their bid. Should the CONTRACTOR desire products equal to those specified, the CONTRACTOR shall furnish information as described in the 01300 submittals. The alternate product or products submitted by the CONTRACTOR shall meet the requirements of the Specifications and shall, in all respects, be equal to the products specified by name herein.
- B. All apparatus, mechanism, equipment, machinery, and manufactured articles for incorporation into the Work shall be the new standard products of recognized reputable manufacturers.
- C. The CONTRACTOR shall dispose of all excess materials from the site.

1.02 CONNECTIONS TO EXISTING SYSTEMS

- A. The CONTRACTOR shall perform all work necessary to locate, excavate and prepare for connections to the existing systems, as shown on the Construction Drawings. The cost for this work and for the actual connection to the existing systems shall be included in the price(s) bid for the Work and shall not result in any additional cost to the DISTRICT.

1.03 PROVISIONS FOR CONTROL OF EROSION

- A. Sufficient precautions shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumen, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the state. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 0 nephelometric turbidity units (NTU) above natural background conditions, or as otherwise required by the state or other controlling body. Special precautions shall be taken in the use of construction equipment to prevent operations that promote erosion.
- B. The CONTRACTOR shall apply for and comply with the requirements of the EPA-NPDES general permit for stormwater discharges and the stormwater pollution prevention plan in which the CONTRACTOR shall develop for the project. This includes taking baseline turbidity and water quality readings before the start of construction.

1.04 HURRICANE PREPAREDNESS PLAN

- A. Within 30 days of the date of Notice to Proceed, the CONTRACTOR shall submit to the District Representative a Hurricane Preparedness Plan. The Plan should outline the necessary measures that the CONTRACTOR proposes to perform at no additional cost to the DISTRICT in case of a hurricane warning.
- B. In the event of inclement weather, the CONTRACTOR shall carefully protect the Work and materials against damage or injury from the weather. If, in the opinion of District Representative, any portion of Work or

materials shall have been damaged or injured by reason of failure on the part of the CONTRACTOR or subcontractors to so protect the Work, such Work and materials shall be removed and replaced at the expense of the CONTRACTOR.

1.05 WARRANTIES

The CONTRACTOR and the equipment manufacturers shall warranty all materials supplied under these Specifications for a minimum period of one year unless otherwise specified. Warranty period shall commence on the date that the Work is accepted by the DISTRICT as substantially complete.

- A. The materials shall be warranted to be free from defects in workmanship, design and materials. If any part of the equipment should fail during the warranty period, it shall be replaced and returned to service at no expense to the DISTRICT.
- B. If, within the guarantee period, repairs or changes are required in connection with work which, in the opinion of the District Representative, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the CONTRACTOR shall, promptly upon receipt of notice from the DISTRICT and without expense to the DISTRICT, do the following:
 - 1. Place in satisfactory condition in every particular all of such work and correct all defects herein.
 - 2. Repair or replace all damage to buildings, the site, or equipment or contents thereof, which, in the opinion of the District Representative, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract.
 - 3. Repair or replace any work or material or equipment disturbed in fulfilling any such guarantee.
- C. If the CONTRACTOR, after notice, fails within ten (10) days to proceed to comply with the terms of this guarantee, the DISTRICT may have the defects corrected, and the CONTRACTOR and their surety shall be liable for all expenses incurred, provided, however, that in case of an emergency where, in the opinion of the DISTRICT, delay would cause loss or damage, repairs may be started without notice being given to the CONTRACTOR and the CONTRACTOR shall pay the cost thereof.
- D. All special guarantees or warranties applicable to specific parts of the work, as may be stipulated in the Contract Documents, shall be subject to the terms of this paragraph during the first year following acceptance. All special guarantees and manufacturers' warranties shall be assembled by the CONTRACTOR and delivered to the District Representative, along with a summary list thereof, before the acceptance of the Work.
- E. The manufacturer's warranty period shall run concurrently with the CONTRACTOR's warranty or guarantee period. No exception to this provision shall be allowed. The CONTRACTOR shall be responsible for obtaining material warranties from each of the respective suppliers or manufacturers for all specified. The form of warranty may be included in the Contract Documents or shall otherwise be acceptable to the DISTRICT.
- F. In the event that the manufacturer is unwilling to provide a one-year warranty commencing at the time of the

DISTRICT's acceptance, the CONTRACTOR shall obtain from the manufacturer a two (2) year warranty starting at the time of delivery to the job site. This two-year warranty shall not relieve the CONTRACTOR of the one-year warranty commencing upon the DISTRICT acceptance.

G. The CONTRACTOR's one-year warranty or guarantee period shall be part of the project performance bond.

1.06 CONSTRUCTION CONDITIONS

The CONTRACTOR shall strictly adhere to the specific requirements of the governmental unit or agencies having jurisdiction over the work. Wherever there is a difference in the requirements of a jurisdictional body and these Specifications, the more stringent shall apply.

1.07 PUBLIC NUISANCE

- A. The CONTRACTOR shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.
- B. Sounds generated from construction activities shall be regulated as set forth by the local governing body.
- C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.08 SUSPENSION OF WORK DUE TO WEATHER

During inclement weather, all work that could be damaged or rendered inferior by such weather conditions shall be suspended. During suspension of the work for any cause, the work shall be suitably covered and protected so as to preserve it from injury by the weather or otherwise.

1.10 RELOCATIONS

The CONTRACTOR shall be responsible for the relocation of structures, including but not limited to light poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Construction Drawings. The cost of all such relocations shall be borne by the CONTRACTOR at no additional cost to the DISTRICT.

1.11 PUMPING

- A. The CONTRACTOR with their own equipment shall do all pumping necessary to prevent flotation of any part of the structures during construction operations.
- B. The CONTRACTOR shall, for the duration of the contract and with their own equipment, pump out water that may seep or leak into the excavations or structures. Below grade galleries and other operating areas shall be kept dry at all times. The extent of pumping required in tanks, channels and other non-operating areas will be determined by the DISTRICT.

1.12 NOTIFICATION OF WORK ON EXISTING FACILITIES

A. Before commencing work on any of the existing structures or equipment, the CONTRACTOR shall notify the DISTRICT, in writing, at least 10 calendar days in advance of the date he proposed to commence such work.

END OF SECTION

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SECTION 01040 COORDINATION

PART 1 – GENERAL

1.01 PROJECT COORDINATION

A. The CONTRACTOR shall provide for the complete coordination of the construction efforts. This shall include, but not necessarily be limited to, coordination of the following:

1. The work of subcontractors.
2. The flow of material and equipment from suppliers.
3. The effort of equipment manufacturers during testing and checkout.
4. The interrelated work with public and private utilities companies.
5. The interrelated work with the DISTRICT where tie-ins to existing facilities are required.
6. The effort of independent testing agencies.
7. The CONTRACTOR shall coordinate with the DISTRICT regarding inspections of the Work or site visits.
8. The CONTRACTOR shall coordinate with the Charlotte Harbor Preserve State Park (CHPSP) personnel regarding miscellaneous site activities, including but not limited to site access and security, construction access routes, equipment/material storage, protection of listed species/cultural resources and CHPSP site management activities.

END OF SECTION

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COORDINATION
SECTION 01050-2

SECTION 01050 FIELD ENGINEERING AND SURVEYING

PART 1 – GENERAL

1.01 SCOPE

A. Summary of Work:

1. The CONTRACTOR shall engage a Professional Engineer of the discipline required, registered in the State of Florida, to perform engineering services for temporary facilities including the design of shoring systems, shores, earth and water retaining systems, forms, temporary erection supports, and similar items provided by the CONTRACTOR as part of its means and methods of construction.
2. The CONTRACTOR shall engage a Professional Surveyor and Mapper registered in the State of Florida to perform the necessary layout, survey control and monumentation, and baseline survey.
3. The CONTRACTOR shall provide one set of As-Built Drawings in accordance with SECTION 01305.

B. Related Work Specified Elsewhere:

1. SECTION 01300 – Submittals
2. SECTION 01700 – Contract Closeout

1.02 SUBMITTALS

Submit in accordance with SECTION 01300.

PART 2 – CONTRACTOR CONSTRUCTION STAKING

2.01 DESCRIPTION

In connection with this WORK, CONTRACTOR shall:

- A. Perform all construction layout and reference staking necessary for the proper control and satisfactory completion of the WORK.
- B. Run a level circuit between vertical control points indicated to check plan benchmarks and establish new benchmarks where necessary.

2.02 CONSTRUCTION REQUIREMENTS

- A. The CONTRACTOR's personnel performing the construction staking shall work under the direct supervision of a Florida licensed Professional Engineer or Florida licensed Professional Surveyor and Mapper. Submit name and address of individual responsible for surveying to the DISTRICT prior to start of survey activities.
- B. The CONTRACTOR shall be solely and completely responsible for the accuracy of the line and grade of all features of the WORK. Any errors or apparent discrepancies found in previous surveys, plans, or specifications shall be called to the attention of the DISTRICT by the CONTRACTOR for correction or interpretation prior to proceeding with the WORK.
- C. Field notes shall be kept in standard, bound field notebooks in a clear, orderly, and neat manner consistent with standard engineering and/or surveying practices.

- D. The CONTRACTOR shall be responsible for the placement and preservation of adequate ties and reference to all control points, whether established by him or found on the Project, necessary for the accurate reestablishment of all base lines or centerlines shown on the Drawings. All land ties (i.e., section corners, fractional section corners, and similar items) that may be lost or destroyed during construction shall be carefully referenced and replaced.
- E. The supervision of the CONTRACTOR's construction engineering personnel shall be the responsibility of the CONTRACTOR; any deficient engineering layout or construction WORK which may be the result of inaccuracies in their staking operations or of their failure to report inaccuracies found in WORK previously done by the Design Engineer shall be corrected at the expense of the CONTRACTOR.
- F. In order to expedite the commencement of construction operations, the staking operation may commence prior to the issuance of the Notice to Proceed. The CONTRACTOR shall obtain written approval of the DISTRICT prior to commencing staking.

2.03 SURVEYING STANDARDS for stilling wells and water control structures

- A. A permanent mark shall be established identifying the elevation measuring point on the rim of all stilling wells and water control structures.
 1. All vertical elevations shall commence from a minimum of two (2) National Geodetic Survey (NGS) second order or better published benchmarks.
 2. All elevations shall be established to NGS third order standards and certified to those standards by a Professional Surveyor and Mapper registered in the State of Florida.
 3. All level runs shall be double run (forward and back) or looped into two (2) NGS second order or better published benchmarks.
 4. A Site benchmark shall be set if one does not exist. The benchmark shall consist of a minimum of two (2) 80-pound bags of concrete mix, a ferrous piece of material able to be located with a magnetic locator, and a survey cap (supplied by the DISTRICT) stamped with the Site designation or DISTRICT approved alternative.
 5. Data conversion shall be as described in the Survey Notes on Sheet C1.02 of the construction plans.
 6. State Plane Coordinates (NAD 83/99) shall be established at all stilling well and benchmark locations with a positional accuracy of +/- three feet.
 7. A DISTRICT benchmark description sheet shall be completed for each set benchmark.
 8. If there are no second order or better published benchmarks within six miles of the site, contact the DISTRICT Surveying & Mapping Section representative at (561) 682-6688 prior to commencement.
 9. Contact the DISTRICT Survey & Mapping Section prior to commencement to check for previously established site benchmarks that may be suitable to use.
- B. All structures shall have a permanent benchmark mounted as shown on the Drawings. The marker for the benchmark can be obtained from the DISTRICT Survey & Mapping Section, (352) 796-7211. The CONTRACTOR shall only stamp or engrave the benchmark identification and not the elevation.

2.04 RECORDS AND SUBMITTALS

A. Submittal:

1. Provide the DISTRICT with a copy of the designs described in Paragraph 1.01 signed and sealed by a Florida registered Professional Engineer.
2. Provide DISTRICT the data required for the individual responsible for layout and records as required in Paragraph 2.02 A.
3. Provide the DISTRICT with one (1) copy of the Preliminary Surveyor's Report (MS Word), and two (2) copies of the final signed, sealed and certified Surveyor's Report to the DISTRICT.
 - a. At a minimum, the report shall include: an overall Project description, location sketches, field notes, equipment used, pictures and an NAD 83/99 state plane coordinate (RTK) on each new benchmark (if applicable).
 - b. A thumb drive containing: As-Built Survey, Surveyor's Report, digital pictures, benchmark description sheets and any other associated data.

B. Records: At the end of the Project, submit to the DISTRICT a certified Site survey showing coordinates and elevations of the completed WORK. These are part of the record documents required in SECTION 01300.

END OF SECTION

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SECTION 01065 PERMITS AND FEES

PART 1 – GENERAL

- 1.01 Unless otherwise specified, the CONTRACTOR shall obtain and pay for any permits and licenses related to the work as provided for in the Contract Documents, except as otherwise provided herein.
- 1.02 Permits obtained by the DISTRICT are available to the CONTRACTOR with the Request for Bid package. A copy of the permits shall be posted at the site at all times during construction. The CONTRACTOR shall be responsible for being familiar with the permits and shall abide by the permit conditions at all times.
- 1.03 Work shall be conducted and shall result in construction of the improvements to this project, in full accordance with the conditions of the permits granted for the project.

END OF SECTION

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PERMITS AND FEES
SECTION 01065-2

SECTION 01071 STANDARD REFERENCES

Wherever used in the project manual, the following abbreviations will have the meanings listed:

AA Aluminum Association Incorporated
818 Connecticut Avenue, NW
Washington, DC 20006

AABC Associated Air Balance Council
1518 K Street NW
Washington, DC 20005

AAMA American Architectural Manufacturers Association
2700 River Road, Suite 118
Des Plaines, IL 60018

AASHTO American Association of State Highway and Transportation Officials
444 North Capitol Street, NW, Suite 225
Washington, DC 20001

ABMA American Bearing Manufacturers Association
2025 M Street, NW Suite 800
Washington, DC 20036

ACI American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI, 48331

AEIC Association of Edison Illuminating Companies
600 18th Street N
Birmingham, AL 35203

AFBMA Anti-Friction Bearing Manufacturers Association

AGA American Gas Association
400 N. Capital Street, NW Suite 450
Washington, DC 20001

AGMA American Gear Manufacturer's Association
500 Montgomery Street, Suite 350
Alexandria, VA 22314

AHA American Hardboard Association
1210 West Northwest Hwy
Palatine, IL 60067

AISC American Institute of Steel Construction
One East Wacker Drive, suite 700
Chicago, IL 60601

AISI American Iron and Steel Institute
1000 16th Street, NW
Washington, DC 20036

AITC American Institute of Timber Construction
333 West Hampden Avenue
Englewood, CO 80110

ALSC American Lumber Standards Committee
P. O. Box 210
Germantown, MD 20874

AMCA Air Movement and Control Association, Inc.
30 West University Drive
Arlington Heights, IL 60004

ANSI American National Standards Institute, Inc.
25 West 43rd Street
New York NY 10036

APA American Plywood Association
P.O. Box 11700
Tacoma, WA 98411

API American Petroleum Institute
1220 L Street, NW
Washington, DC 20005

AHRI Air-Conditioning Heating and Refrigeration Institute
1814 North Fort Myer Drive
Arlington, VA 22209

ASCE American Society of Civil Engineers
345 East 47th Street
New York, NY 10017

ASCII American Standard Code for Information Interchange United States of America Standards Institute
10 East 40th Street
New York, NY 10016

ASE American Standard Safety Code for Elevators, Dumbwaiter and Escalators American National Standards Institute/ASME A17.1/CSA B44
1430 Broadway
New York, NY 10018

ASHRAE American Society of Heating, Refrigeration and Air Conditioning Engineers
United Engineering Center
1791 Tullie Circle, N.E.
Atlanta, GA 30329

ASME American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016

ASTM American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

AWPA American Wood Preservers Association
P.O. Box 361784
Birmingham, AL 35236

AWPB American Wood Preservers Bureau

AWPI American Wood Preservers Institute
1945 Old Gallows Road, Suite 150
Vienna, VA 22182

AWI Architectural Woodwork Institute
46179 Westlake Drive, Suite 120
Potomac Falls, VA 20165

AWS American Welding Society
550 NW Lejune Road
Miami, FL 33126

AWWA American Water Works Association
6666 West Quincy Avenue
Denver, CO 80235

BHMA Builders Hardware Manufacturers Association
355 Lexington Avenue, 17th Floor
New York, NY 10017

BOCA Building Officials and Code Administrators
17926 Halstead
Homewood, IL 60430

CBMA Certified Ballast Manufacturers Association
2120 Keith Building
Cleveland, OH 44115

CMAA Crane Manufacturers Association of America (Formerly called: Overhead Electrical Crane Institute) (OECl)
8720 Reds Oak Boulevard, Suite 201
Charlotte, NC 28217

CRSI Concrete Reinforcing Steel Institute
933 North Plum Grove Road
Schaumburg, IL 60173

CSA Canadian Standards Association
155 Queen Street, Suite 1300
Ottawa, Ontario, CA K1P6L1

DEMA Diesel Engine Manufacturer's Association
122 East 42nd Street
New York, NY 10017

DHI Door Hardware Institute
14150 Newbrook Drive, Suite 200
Chantilly, VA 20151

DIS Division of Industrial Safety
California Department of Industrial Relations
2422 Arden Way
Sacramento, CA 95825

EEI Edison Electric Institute
701 Pennsylvania Avenue, NW
Washington, DC 20004

EIA Electronic Industries Alliance
2001 Eye Street, NW
Washington, DC 20006

EJMA Expansion Joint Manufacturer's Association
25 North Broadway
Tarrytown, NY 10591

EPA Environmental Protection Agency Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104

ESO Electrical Safety Order, California Administrative Code, Title 8, Chap. 4, Sub article5
Office of Procurement, Publications Section
P. O. Box 20191
8141 Elder Creek Road Sacramento, CA 95820

FAC Florida Administrative Code

FDEP Florida Department of Environmental Protection
3900 Commonwealth Boulevard, M.S. 49
Tallahassee, Florida 32399

FEDSPEC Federal Specifications
General Services Administration Specification and Consumer Information Distribution Branch
Washington Navy Yard,
Bldg. 197
Washington, DC 20407

FEDSTDs Federal Standards (see FEDSPECS)

FM Factory Mutual Research
1151 Boston-Providence Turnpike
Norwood, MA 02062

FWC Florida Fish and Wildlife Conservation Commission
Farris Bryant Building
620 S. Meridian St.
Tallahassee, FL 32301

GANA Glass Association of North America
800 SW Jackson Street, Suite 1500
Topeka, Kansas 66612

HEI Heat Exchange Institute
1300 Summer Avenue
Cleveland, OH 44115

HI Hydraulic Institute
1230 Keith Building
Cleveland, OH 44115

HPVA Hardwood Plywood and Veneer Association
1825 Michael Faraday Drive
Reston, VA 20190

IAPMO International Association of Plumbing and Mechanical Officials
5001 E. Philadelphia Street
Ontario, CA 91761

ICBO International Conference of Building Officials
5360 South Workman Mill Road
Whittier, CA 90601

ICEA Insulated Cable Engineers Association
P. O. Box P
South Yarmouth, MA 02664

ICRI International Concrete Repair Institute
10600 West Higgins Road, Suite 607
Rosemont, IL 60018

IEEE Institute of Electrical and Electronics Engineers, Inc.
3 Park Avenue, 17th Floor
New York, NY 10016-5997

IES Illuminating Engineering Society c/o United Engineering Center
120 Wall Street Floor 17
New York, NY 10005

ISA Instrument Society of America
67 Alexander Drive
Research triangle Park, NC 27709

ISO International Organization for Standardization
1, ru de Varembé,
Case Postale 56
CH-1211 Genna 20,
Switzerland

JIC Joint Industrial Council
7901 Westpark Drive
McLean, VA 22101

MFMA Metal Framing Manufacturers Association
401 Michigan Avenue
Chicago, IL 60611

MILSPEC Military Specifications
Naval Publications and Forms Center
5801 Tabor Avenue
Philadelphia, PA 19120

MSS Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.
127 Park Avenue, N.E.
Vienna, VA 22180

NAAMM National Association of Architectural Metal Manufacturers
800 Roosevelt Rd
Bldg. C, Suite 312
Glen Ellyn, IL 60137

NACE National Association of Corrosion Engineers
P. O. Box 986
Katy, TX 77450

NEC National Electrical Code
National Fire Protection Association
470 Atlantic Avenue
Boston, MA 02210

NECA National Electrical Contractors Association
3 Bethesda Metro Center, Suite 1100
Bethesda, MD 20814

NELMA Northeastern Lumber Manufacturers Association, Inc.
272 Turtle Road
P. O. Box 87A
Cumberland Center, ME 04021

NEMA National Electrical Manufacturer's Association
1300 N. 17th Street, Suite 1752
Rosslyn, VA 22209

NESC National Electric Safety Code
American National Standards Institute
1430 Broadway
New York, NY 10018

NETA InterNational Electrical Testing Association
3050 Old Centre Avenue, Suite 102
Portage, MI 49024

NFP National Forest Products Association (Formerly National Lumber Manufacturer's Association)
1619 Massachusetts Avenue
Washington, DC 20036

NFPA National Fire Protection Association
Batterymarch Park
Quincy, MA 02269

NHLA National Hardwood Lumber Association
P. O. Box 34518
Memphis, TN 38184-0518

NIST National Institute of Standards and Technology
100 Bureau Drive, Suite 1070
Gaithersburg, MD 20899-1070

NSF National Sanitation Foundation
P.O. Box 130140
789 N. Dixoboro Road
Ann Arbor, MI 48113

OSHA Occupational Safety and Health Act
U.S. Department of Labor
Occupational and Health Administration San Francisco Regional Office
200 Constitution Avenue
Washington, DC 20210

PCI Prestressed Concrete Institute
200 W. Adams Street, Suite 2100
Chicago, IL 60606

PPIC The Plumbing & Piping Industry Council, Inc.
135 Calle Catalina Place
Houston, TX 77007

RFI Request for Information

RIS Redwood Inspection Service
California Redwood Association
818 Grayson Road, Suite 201
Pleasant Hill, CA 94523

RLM Reflector and Lamp Manufacturers Standard Institute

RMA Rubber Manufacturers Association
1400 K Street
Washington, DC 20005

SAE Society of Automotive Engineers
400 Commonwealth Drive
Warrendale, PA 15096

SBC Standard Building Code Published by SBCCI

SMC Standard Mechanical Code Published by SBCCI

SBCCI Southern Building Code Congress International
1116 Brown-Marx Building
Birmingham, AL 35203

SCMA Southern Cypress Manufacturers Association
805 Sterick Bldg.
Memphis, TN 38103

SDI Steel Door Institute
30200 Detroit road
Westlake, OH 44145

SMACNA Sheet Metal and Air Conditioning Contractors National Association, Inc.
4201 Lafayette Center Drive
Chantilly, VA 20151

SPC Society for Protective Coatings
40 24th Street, 6th Floor
Pittsburgh, PA 15222

SPI Society of the Plastics Industry, Inc.
1667 K Street, NW Suite 1000
Washington, DC 20006

SPIB Southern Pine Inspection Bureau
P.O. Box 10915
Pensacola, FL 32524

SSPC The Society for Protective Coatings (formerly called: Steel Structures Painting Council)
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656

SSPWC Standard Specifications for Public Works Construction Building News, Inc.
3055 Overland Avenue
Los Angeles, CA 90034

TEMA Tubular Exchanger Manufacturer's Association
3251 Corte Malpaso, Suite 507
Camarillo, CA 93012

UL Underwriters Laboratories Inc.
2600 NW Lake Road
Camas, WA 98607

USBR Bureau of Reclamation
U.S. Department of Interior
Engineering and Research Center
Denver Federal Center, Building 67
Denver, CO 80225

USACE United States Army Corps of Engineers Jacksonville District
P. O. Box 4970
Jacksonville, FL 32232-0019

WCLIB West Coast Lumber Inspection Bureau
6980 SW Varns Street
P. O. Box 23145
Tigard, OR 97223

WWPA Western Wood Products Association (Formerly called: West Coast Lumbermen's Association (WCLA))
522 SW 5th Avenue, Suite 500
Portland, OR 97204

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STANDARD REFERENCES
SECTION 01071-11

SECTION 01150 MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 **GENERAL**

- 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. The CONTRACTOR shall prepare and submit a Schedule of Values and Progress Schedule to the DISTRICT for approval. 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 progress payments. The Schedule of Values shall subdivide the work into its component parts for each lump sum pay item below in sufficient detail to serve as the basis for estimating percent complete to support progress payments during construction. An unsupportable or unreasonable allocation of the contract lump sum price to any one of the activities and/or work items shall be justification for the rejection of the Schedule of Values. 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.
- E. Any item not indicated in the Bid Response Form but shown on the plans or technical specifications, shall be included as part of the lump sum quantity for Mobilization.
- F. It is the CONTRACTOR's responsibility to satisfy itself as to the volume of material that will be excavated or placed prior to submitting its lump sum bid. The survey information provided on the construction plans is based on LiDAR topography collected in 2018 and a specific-purpose survey of canal bottom elevations collected in July 2022. The FL_Peninsular_FDEM_Charlotte_2018 LiDAR Data Validation Report is available from USGS. The CONTRACTOR shall conduct such pre-bid survey it deems necessary to determine the anticipated sediment material volume, so its lump sum bid incorporates all required excavation and fill to meet the specified design.
- G. 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.
- H. No extra payment will be made to the CONTRACTOR for construction extending over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans.

- I. Restoration is considered an integral part of the Work, and all Schedule of Values shall include the cost of restoration necessitated by the Work related to that major work item. All existing structures and property including, but not limited to, paving, stabilized roads, drainage piping and ditches, catch basins, head walls, yard culverts, lawns, fences, 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 all maintenance of traffic necessitated by the proposed Work.
- K. All required inspection and testing of materials shall be included in the Contract Price.
- L. The DISTRICT shall withhold a retainage on each progress payment in accordance with the contract documents. Retainage shall be released to the CONTRACTOR upon satisfaction of all contractual obligations and the final acceptance of the completed work by the DISTRICT.
- M. The CONTRACTOR shall consider both the construction plan set in conjunction with the technical specifications and contract documents in developing their bid. As specified in 1.1.E above, the cost for any item that is identified on the construction plans or technical specifications, but not included in the Bid Response Form shall be included in the lump sum quantity for Mobilization.

1.02 PAY ITEM DESCRIPTIONS

A. Mobilization

General: The work specified under this section shall consist of the preparatory work and operations necessary to mobilize and begin work on the project. This shall include, but is not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; the establishment of temporary offices, buildings, safety equipment and first-aid supplies, sanitary and other facilities required by these Contract documents; compliance with all applicable federal, state and local regulations; preparation and implementation of a stormwater pollution prevention plan; and all project documentation, including but not necessarily limited to video photography and aerial photography, specified by these Contract documents. This item also includes installation of project signage. Maintenance of traffic will be incidental to mobilizations.

The cost of Bonds and any other required insurance, consideration for indemnification to the Owner and the Engineer, and any other pre-construction expenses necessary for the start of the work, excluding the cost of construction materials, shall also be included in this section.

Payment: The pay quantity for Mobilization 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
10	50
25	75
50	100

Mobilization is subject to retainage. Any remaining amount will be paid upon completion of all work on the project, including the final punch list work items. The applicable work specified under this section shall be paid for under the Lump Sum Pay Item:

Item 1 Mobilization

B. Clearing and Land Preparation

General: The work specified in this section shall consist of preparing the work area as indicated in the plans per Section 02100, 02110, and 02910.

Payment: The pay quantity for Clearing and Grubbing shall be Lump Sum and include all work and materials described in the related section mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 2 Clearing and Grubbing

Item 3 Non-Native Vegetation Removal

C. Earthwork

General: The work specified in this section shall consist of performing the work as indicated in the plans per Section 02200.

Payment: The pay quantity for Earthwork shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 4 Earthwork

D. Turbidity Control and Monitoring

General: The work specified in this section shall consist of performing the work as indicated in the plans per Sections 02435, 02436, and 02514.

Payment: The pay quantity for Erosion Control Devices and Turbidity Barrier shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 5 Soil Tracking Prevention Device

Item 6 Staked Silt Fence

Item 8 Floating Turbidity Barrier

E. Gopher Tortoise Fence

General: The work specified in this section shall consist of placing and maintaining Gopher Tortoise exclusionary fencing as indicated in the plans per Section 02436.

Payment: The pay quantity for Gopher Tortoise Fence shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Item:

Item 7 Gopher Tortoise Fence

F. Temporary Dewatering

General: The work specified in this section shall consist of performing the work as indicated in the plans per Section 02140.

Payment: The pay quantity for Dewatering shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 9 Dewatering

G. Low Water Crossings

General: The work specified in this section shall consist of performing the work as indicated in the plans per Section 02240 and 05000.

Payment: The pay quantity for Low Water Crossings shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 10 Cellular Confinement for Soil Stabilization

Item 11 No. 57 Stone

Item 12 Geosynthetic Reinforced Foundation Over Soft Soil

H. Fencing

General: The work specified in this section shall consist of performing the work as indicated in the plans per Section 05000.

Payment: The pay quantity for Fencing shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 13 Fencing, Type A

Item 14 Fence Gate Type A

I. Tree Removal and Planting

General: The work specified in this section shall consist of removing and replacing the two (2) Live oak (*Quercus virginiana*) trees identified in the Harness Road Construction entrance in the plans per Section 02110 and 02900.

Payment: The pay quantity for Tree Removal and Planting shall be unit price per each and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 15 Tree Removal

Item 16 Tree Planting

J. Wetland/ Upland Plantings

General: The work specified in this section shall consist of performing the work as indicated in the plans per Section 02900.

Payment: The pay quantity for Wetland/Upland Plantings shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 17 Zone 1 Plantings

Item 18 Zone 2 Plantings

Item 19 Zone 3 Plantings

Item 20 Zone 4 Plantings

Item 21 Zone 5 Plantings

Item 22 Zone 6 Plantings

Item 23 Zone 7 Plantings

K. Performance Turf and Hydroseeding

General: The work specified in this section shall consist of performing the work as indicated in the plans per Section 02570.

Payment: The pay quantity for Hydroseeding shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Items:

Item 24 Hydroseeding

L. Plant Maintenance, Replacement, and Invasive Control

General: The work specified in this section shall consist of performing the work as indicated in the plans per Section 02900.

Payment: The pay quantity for Quarterly Vegetation Maintenance shall be Lump Sum and include all work and materials described in the related sections mentioned above. The applicable work specified shall be paid for under the following Pay Item:

Item 25 Plant Maintenance, Replacement, and Invasive Control

M. As-Built Certification

General: The work specified under this section consists of performing As-Built surveys and certifications per Sections 01050, 01305, 01700, and 02200.

Payment: Payment for As-Built Certification shall be Lump Sum and include all work and materials described in the related sections mentioned above. The pay quantity for As-Built Certification shall be paid for at the Contract lump sum price for the following Pay Item and shall be in accordance with the following schedule:

Item 26 As-Built Certification

As-Built Certification Payment Schedule		
REQUIREMENTS	PERCENT OF TOTAL CONTRACT PRICE	PAYMENT FOR COMPLETED WORK
Grading As-Built Certification	No greater than 60% of the total payment will be paid upon approval of the Grading As-Built Certification submittals	Upon approval by District
Final As-Built Certification	No greater than 40% of the total payment will be paid upon approval of the Final As-Built Certification submittal	Upon approval of the Final As-Built Certification by the District

N. Contingency Allowance

General: The work specified under this section consists of performing additional work beyond the original contract scope as authorized by the Owner in accordance with the Contract Documents and specifically Section 01153 of these Technical Specifications.

Payment: Payment for miscellaneous work outside the original contract scope will be made only for work

specifically authorized by the Owner in writing. Prior to beginning the work, the Owner and Contractor will agree on a unit price or lump sum price for the additional work. The applicable work specified shall be paid for under the following Pay Items:

Item 27 Contingency Allowance

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MEASUREMENT AND PAYMENT
SECTION 01150-8

SECTION 01153 CHANGE WORK AUTHORIZATION PROCEDURES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Promptly implement Change Order procedures.
- 1. Provide full written data required to evaluate changes.
- 2. Maintain detailed records of work done on a time and material/force account basis.
- 3. Provide full documentation to District Representative on request.

1.02 DEFINITIONS

- A. Change Order: A written order to the CONTRACTOR, signed by the CONTRACTOR and the DISTRICT, that authorizes the CONTRACTOR to proceed with a change that affects the Contract Sum or the Contract Time.
- B. Field Directive: A written order to the CONTRACTOR, signed by the CONTRACTOR and the DISTRICT, that authorizes minor changes in the work that do not extend the Substantial or Final Completion dates, do not increase cost, and are not inconsistent with the purpose of the work.
- C. Administrative Approval: A written order to the CONTRACTOR, signed by the CONTRACTOR and the DISTRICT, that authorizes administrative approvals that do not impact cost or time. An Administrative Approval authorizes extensions to project task deadlines with no impact to Substantial or Final Completion or cost; or authorizes an expenditure of specific purpose allowances identified in the Bid Form and Schedule of Values.

1.03 PRELIMINARY PROCEDURES

- A. The DISTRICT may initiate changes by submitting a written request to the CONTRACTOR. Request will include:
 - 1. Detailed description of the change, products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and/or Specifications.
 - 3. Any other information needed in support of the change.
- B. The CONTRACTOR may initiate changes by submitting a written notice to the DISTRICT, prior to the work being performed, containing:
 - 1. Description of the proposed changes.
 - 2. Statement of the reason for making the changes.
 - 3. Statement of the effect on the Contract Sum and the Contract Time.
 - 4. Statement of the effect on the work of separate contractors.
 - 5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.04 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow the DISTRICT to evaluate the quotation. Established unit prices will be utilized for unit price work.
- B. On request, provide additional data to support time and cost computations:
 - a. Labor required.
 - b. Equipment required.
 - c. Products required.
 - i. Recommended source of purchase and unit cost.
 - ii. Quantities required.
 - d. Taxes, insurance, and bonds.
 - e. Credit for work deleted from Contract, similarly documented.
 - f. Overhead and profit.
 - g. Justification for any change in Contract Time.

1.05 PROCESSING OF CONTINGENCY WORK REQUEST

- A. Project District Representative will prepare each Contingency Work Request.
- B. Contingency Work Request will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. CONTRACTOR provides cost estimate and schedule to complete the requested work.

1.06 CONTINGENCY AUTHORIZATION VIA CHANGE ORDER

- A. Following acceptance of the cost and schedule associated with the Contingency Work Request, the DISTRICT initiates the Change Order form, including a description of the changes involved and attachments based upon documents and proposals submitted by the CONTRACTOR.
- B. Once the DISTRICT has completed the form, all copies should be sent to the CONTRACTOR for approval. After approval by the CONTRACTOR, all copies should be sent to the DISTRICT for approval. District Representative should make distribution of executed copies.

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CHANGE WORK AUTHORIZATION PROCEDURES
SECTION 01153-3

SECTION 01200 PROJECT MEETINGS AND REPORTS

PART 1 – GENERAL

1.01 SUMMARY

This Section includes the following administrative and procedural requirements:

A. Project Meetings:

1. Preconstruction conference
2. Progress meetings
3. Public meetings

B. Schedules and Reports:

1. Initial coordination submittals
2. Construction progress schedule (See SECTION 01310 Construction Schedules)
3. Special reports

1.02 PROJECT MEETINGS

A. Preconstruction Conference

1. The DISTRICT will administer a meeting within 10 days after the Effective Date of the Agreement, to review items stated in the following agenda and to establish a working understanding between the parties as to their relationships during conduct of the Work.
2. Preconstruction conference shall be attended by:
 - a. CONTRACTOR and their superintendent
 - b. Representatives of principal Subcontractors and Suppliers
 - c. ENGINEER and their Resident Project Representative if any
 - d. DISTRICT or its representative
 - e. Other affected parties determined by the DISTRICT
3. Agenda:
 - a. Projected construction schedules
 - b. Critical Work sequencing
 - c. Designation of responsible personnel
 - d. Project coordination
 - e. Procedures and Processing of:
 - i. Field decisions
 - ii. Substitutions
 - iii. Submittals
 - iv. Change Orders
 - v. Applications for payment
 - f. Procedures for testing
 - g. Procedures for maintaining record documents
 - h. Use of Premises:
 - i. Office, work and storage areas
 - ii. DISTRICT'S requirements
 - i. Construction facilities, controls, and construction aids

- j. Temporary utilities
- k. Safety and first aid
- l. Security
- m. Requirements of any permits obtained by the DISTRICT

4. Location of Meeting: to be determined.

B. Progress Meetings:

- 1. The DISTRICT will administer a meeting a minimum of twice each month (every two weeks) and at other times requested by the DISTRICT. CONTRACTOR, ENGINEER and all Subcontractors active on the site shall be represented at each meeting. CONTRACTOR may request attendance by representatives of their Suppliers and other Subcontractors, or other entities concerned with current program or involved with planning, coordination or performance of future activities. All participants in the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.
- 2. CONTRACTOR and each Subcontractor shall be prepared to discuss the current construction progress report, any anticipated future changes to the schedule and advise if their current progress or future anticipated schedules are compatible with the Work.
- 3. If one Subcontractor is delaying another, the CONTRACTOR shall direct such changes as are necessary for those involved to mutually agree on schedule changes in the best interest of construction progress.
- 4. Agenda
 - a. Review of construction progress since the previous meeting
 - b. Field observations, interface requirements, conflicts
 - c. Problems that impede construction schedule
 - d. Off-site fabrication
 - e. Delivery schedules
 - f. Submittal schedules and status
 - g. Site utilization
 - h. Temporary facilities and services
 - i. Hours of Work
 - j. Hazards and risks
 - k. Housekeeping
 - l. Quality and Work standards
 - m. Change orders
 - n. Documentation of information for payment request
 - o. Corrective measures and procedures to regain projected schedule if necessary
 - p. Revisions to construction schedule
 - q. Progress and schedule during succeeding Work period
 - r. Review proposed changes for:
 - i. Effect on construction schedule and on completion date
 - ii. Effect on other contracts of the Project
 - s. Other business
- 5. Location of Meetings: to be determined.

C. Public Meetings:

- 1. The DISTRICT may administer meetings for the general public at various times during the Project and the CONTRACTOR will be requested to attend. The CONTRACTOR may request attendance by

representatives of their Suppliers and other Subcontractors, or other entities concerned with the current program or involved with planning, coordination or performance of future activities. All participants in the meeting shall be familiar with the Project and authorized to discuss matters relating to the Work.

2. Agenda

The meeting agenda will vary and will be provided by the DISTRICT in advance of each scheduled public meeting

3. Location of Meetings: to be determined.

D. Special Reports:

1. When an event of an unusual and significant nature occurs at the site, a special report shall be prepared and submitted by the CONTRACTOR. List the chain of events, persons participating, response by CONTRACTOR'S personnel, an evaluation of the results or effects, and similar pertinent information. Advise the DISTRICT in advance when such events are known or predictable.

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PROJECT MEETINGS AND REPORTS
SECTION 01200-4

SECTION 01300 SUBMITTALS

PART 1 – GENERAL

1.01 SCOPE

- A. This SECTION includes definitions, descriptions, transmittal, and review of "Compliance" and "Miscellaneous" Submittals.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01310 –Construction Schedules

1.02 GENERAL INFORMATION

A. Definitions:

- 1. Compliance Submittals include Shop Drawings, product data, and samples which are prepared by the CONTRACTOR, Subcontractor, MANUFACTURER, or Supplier and submitted by the CONTRACTOR to the DISTRICT as a basis for approval of the use of Equipment and Materials proposed for incorporation in the WORK or needed to describe installation, operation, maintenance, or technical properties.
 - a. Shop Drawings include custom-prepared data of all types including drawings, diagrams, performance curves, material schedules, templates, instructions, and similar information not in standard printed form applicable to other projects.
 - b. Product data includes standard printed information on materials, products and systems not custom-prepared for this Project, other than the designation of selections from available choices.
 - c. Samples include both fabricated and unfabricated physical examples of materials, products, and WORK; both as complete units and as smaller portions of units of WORK; either for limited visual inspection or (where indicated) for more detailed testing and analysis. Mock-ups are a special form of samples which are too large to be handled in a specified manner for transmittal of sample Submittals.
- 2. Miscellaneous Submittals are those technical reports, administrative Submittals, certificates, and guarantees not defined as Shop Drawings, product data, or samples.
 - a. Technical reports include laboratory reports, tests, technical procedures, technical records, CONTRACTOR's design analysis and CONTRACTOR's survey field notes for construction staking, before cross-sections and after cross-sections.
 - b. Administrative Submittals are those nontechnical Submittals required by the Contract Documents or deemed necessary for administrative records. These Submittals include maintenance agreements, workmanship bonds, Project photographs, physical work records, statements of applicability, copies of industry standards, as-constructed data, security/protection/safety data, and similar type Submittals.
 - c. Certificates and guarantees are those Submittals on Equipment and Materials where a written certificate or guarantee from the MANUFACTURER or Supplier is called for in the Specifications.
 - d. Reports as required by Contract describing CONTRACTOR's means and methods for items such as dewatering, earth and water retaining, erosion/turbidity control, and safety plans.
- 3. Refer to ARTICLE 1.03 and 1.04 of this Part for detailed lists of documents and specific requirements.

B. Quality Requirements:

- 1. The CONTRACTOR shall submit all Project related correspondences including but not limited to Request for Information (RFI), Submittals, miscellaneous correspondences, etc. in writing and/or in

digital PDF format by electronic transmission to the DISTRICT Project Manager. Submittals that require a professional or corporate seal or certification shall provide one signed and sealed original as well as a copy in digital format.

2. Submittals such as Shop Drawings and product data shall be of the quality for legibility and reproduction purposes. Every line, character, and letter shall be clearly legible. Drawings such as reproducibles shall be useable for further reproduction to yield legible hard copy.
3. Documents submitted to the DISTRICT that do not conform to these requirements shall be subject to rejection by the DISTRICT, and upon request by DISTRICT, CONTRACTOR shall resubmit conforming documents. If conforming Submittals cannot be obtained, such documents shall be retraced, redrawn, or photographically restored as may be necessary to meet such requirements. CONTRACTOR's (or their Subcontractor's) failure to initially satisfy the legibility quality requirements will not relieve CONTRACTOR (or their Subcontractors) from meeting the required schedule for Submittal of Shop Drawings and product data.

C. Language and Dimensions:

1. All words and dimensional units shall be in the English language.
2. Metric dimensional unit equivalents may be stated in addition to the English units.

D. Submittal Completeness:

1. Submittals shall be complete with respect to dimensions, design criteria, materials of construction, and other information specified to enable the DISTRICT to review the information effectively.
2. Where standard drawings are furnished which cover a number of variations of the general class of equipment, each such drawing shall be individually annotated to describe exactly which parts of the drawing apply to the equipment being furnished. Use hatch marks to indicate variations that do not apply to the Submittal. The use of "highlighting markers" is not an acceptable means of annotating Submittals. Such annotation shall also include proper identification of the Submittal permanently attached to the drawing.
3. Reproduction or copies of Drawings or portions thereof will not be accepted as complete fabrication or erection drawings. The CONTRACTOR may use a reproduction of the Contract Drawings for erection drawings such as to indicate information on erection or to identify detail drawing references. Where the Drawings are revised to show this additional CONTRACTOR information, the title block shall be replaced with a CONTRACTOR's title block and the professional seal shall be removed from the Drawing. The CONTRACTOR shall revise these erection drawings for subsequent DISTRICT revisions to the Contract Drawings.

1.03 COMPLIANCE SUBMITTALS

A. Items shall include, but not be limited to, the following:

1. Narrative plans required by the Contract Documents.
2. Design Plans required by the Contract Documents.
3. MANUFACTURER's specifications
4. Catalogs, or parts thereof, of manufactured equipment
5. Shop fabrication and erection drawings
6. General outline drawings of equipment showing overall dimensions, location of major components, weights, and location of required building openings and floor plates

7. Detailed equipment installation drawings, showing foundation details, anchor bolt sizes and locations, baseplate sizes, and all clearances required for erection, operation, and disassembly for maintenance.
8. Schematic diagrams for electrical items, showing external connections, terminal block numbers, internal wiring diagrams, and one-line diagrams
9. Bills of material and spare parts list
10. Instruction books and operating manuals
11. Material lists or schedules
12. Performance tests on equipment by MANUFACTURERS
13. Concrete mix design information
14. Samples and color charts
15. All drawings, calculations, catalogs or parts thereof, MANUFACTURER's specifications and data, samples, instructions, and other information specified or necessary:
 - a. For DISTRICT to determine that the Equipment and Materials conform with the design concept and comply with the intent of the Contract Documents.
 - b. For the proper erection, installation, operation and maintenance of the Equipment and Materials which the DISTRICT will review for general content but not for substance.
 - c. For the DISTRICT to determine what supports, anchorages, structural details, connections, and services are required for the Equipment and Materials, and the effects on contiguous or related structures and Equipment and Materials.

B. 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 their 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 and shall be prepared in accordance with SECTION 01310.
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.

C. Transmittal of Compliance Submittals:

1. All Compliance Submittals and related correspondence 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 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.
4. Copies of the equipment CONTRACTOR's erection drawings and other Compliance Submittals required for the installation of equipment furnished by others under separate Contract for installation under this Contract will be transmitted to CONTRACTOR by the DISTRICT in the final distribution of such Submittals.
5. Information to MANUFACTURER's District Office: MANUFACTURERS and Suppliers of Equipment and Materials shall furnish copies of all agreements, drawings, specifications, operating instructions, correspondence, and other matters associated with this Contract to the MANUFACTURER's district office servicing the DISTRICT. Insofar as practicable, all business matters relative to Equipment and Materials included in this Contract shall be conducted through such local district offices.

D. 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 their responsibility as stated in the Contract Documents.

E. 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.
 - e. "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.
 - f. "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.
 - g. "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.

F. Instruction Books / Operation & Maintenance Manuals:

1. Equipment instruction books and manuals shall be prepared by the MANUFACTURER and shall include the following:
 - a. Index and tabs
 - b. Instructions for installation, start-up, operation, inspection, maintenance, parts lists and recommended spare parts, and data sheets showing model numbers
 - c. Applicable drawings
 - d. Name of contact person, phone number, and address of the nearest authorized service facility
 - e. Attached to the above shall be a notice of the exact warranty effective dates, beginning and ending.

- f. All additional data specified
- 2. Information listed above shall be submitted electronically in a PDF file format and also be bound into hard-back binders of three-ring type. Sheet size shall be 8-1/2 inches x 11 inches. The binder color shall be yellow for Electrical and Electronics and brown for Miscellaneous Equipment. Capacity shall be a minimum of 1-1/2 inches, but sufficient to contain and utilize sheets with ease.
 - a. Instruction Books/Operation & Maintenance Manuals shall contain the following:
 - i. Equipment name
 - ii. MANUFACTURER's name
 - iii. Project name
 - iv. Contract number
 - v. Reference to applicable Drawing No. & Technical Specifications Section
 - b. Format: The overall manual should be constructed around certain types of structures or equipment in the Project, and not merely assembled by technical specification section, so that all pertinent data needed by personnel to operate or maintain the equipment or structure is in one (1) manual (as far as is practical). The CONTRACTOR shall coordinate with the DISTRICT as to how the manuals are to be assembled.

G. Samples:

- 1. Office samples shall be of sufficient size and quantity to clearly illustrate the following:
 - a. Functional characteristics of the product, with integrally related parts and attachment devices
 - b. Full range of color, texture, and pattern

1.04 MISCELLANEOUS SUBMITTALS

A. Miscellaneous Submittals are comprised of technical reports, administrative Submittals, and guarantees which relate to the WORK, but do not require DISTRICT's approval prior to proceeding with the WORK. Miscellaneous Submittals may include but are not limited to (at DISTRICT's discretion):

- 1. Field test reports
- 2. Concrete cylinder test reports
- 3. Certification on Materials:
 - a. Steel mill tests
 - b. Paint lab tests
 - c. Cement tests
- 4. Soil test reports
- 5. Temperature records
- 6. Shipping or packing lists
- 7. Job progress schedules
- 8. Equipment and Material delivery schedules
- 9. Progress photographs
- 10. Warranties and guarantees
- 11. Surveying field notes, preliminary and final Surveyor's Reports
- 12. Pump tests
- 13. Traffic control plan

B. Transmittal of Miscellaneous Submittals:

1. All Miscellaneous Submittals furnished by Subcontractors, MANUFACTURERS, and Suppliers shall be submitted to DISTRICT by CONTRACTOR electronically in PDF format where practical, unless otherwise specified.
 - a. Identify each miscellaneous Submittal by 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 Miscellaneous 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 information, or he assumes full responsibility for doing so, and that he has coordinated Miscellaneous Submittal with the requirements of the WORK and the Contract Documents.
 - c. At the time of each submission, call to the attention of the 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, or copies 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.
2. Test Reports:
 - a. Responsibilities of CONTRACTOR and DISTRICT regarding tests and inspections of Equipment and Materials and completed WORK are set forth elsewhere in these Contract Documents.
 - b. The party specified responsible for testing or inspection shall in each case, unless otherwise specified, arrange for the testing laboratory or reporting agency to distribute test reports in an electronic PDF file format to the following in addition to submitting test reports electronically to the DISTRICT:
 - i. DISTRICT's ENGINEER
 - ii. DISTRICT Project Manager
 - iii. CONTRACTOR
 - iv. MANUFACTURER or supplier

C. DISTRICT'S Review:

1. DISTRICT will review Miscellaneous Submittals for indications of WORK or material deficiencies within fifteen (15) working days in DISTRICT's office for original Submittals and ten (10) working days for reviewing resubmittals.
2. DISTRICT will respond to CONTRACTOR on those Miscellaneous Submittals which indicate WORK or material deficiency.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 SUBMITTAL LOG

A. CONTRACTOR shall maintain an accurate Submittal Log and a Distribution List for the duration of the WORK, showing current status of all Submittals and Distributees at all times in a form acceptable to the DISTRICT. The CONTRACTOR shall make the Submittal Log available to the DISTRICT for its review on request and shall bring a copy of the Submittal Log to all Progress Meetings.

END OF SECTION

SUBMITTALS
SECTION 01300-8

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SUBMITTALS
SECTION 01300-9

SECTION 01305 AS-BUILT DOCUMENTATION

PART 1 – GENERAL

1.01 SCOPE

- A. Do not use record documents for construction purposes. Protect hard copies (paper) of record documents from deterioration and/or degradation from the elements. Soft copies (digital) shall be kept up-to-date and backed up to prevent the loss of documentation. Provide access to record documents for the DISTRICT's reference during normal working hours.
- B. As-Built Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Drawings and Shop Drawings. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set. Mark the set to show the actual installation where the installation varies substantially from the WORK as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Call attention to each entry by drawing a "cloud" around the areas affected. As-Built plans will be submitted in two (2) phases
 1. Grading As-Builts – To be submitted for approval after all grading has been completed
 2. Final As-Builts – To include all the same information as the Grading As-Builts and include all the planting information necessary to show completion of the required planting/ seeding. The source for all plantings and seed shall be indicated.
- C. The DISTRICT will make electronic copies of whatever electronic versions of the Drawings exist, available to the CONTRACTOR for As-Built purposes. The CONTRACTOR must obtain concurrence of the DISTRICT as to form and content of record information provided in electronic format prior to proceeding, but in general, information similar to that shown below needs to be similarly provided.
 1. Record information concurrently with construction progress.
 2. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the WORK. Mark each document "AS-BUILT DRAWINGS" in neat, large, printed letters.
 3. Mark As-Built invert elevations for all water control structures, pipes, culverts, etc. Refer to SECTION 01050 for structures which require a permanent benchmark.
 4. As per SECTION 02200, the CONTRACTOR shall provide field measured cross-sections and profiles of the "As-Built" conditions to the DISTRICT, plotted at the same stations as the detailed cross-sections and profiles shown on the plans.
 5. As-built contours shall be displayed in plan view using one-foot contour intervals. Spot shots, enough to convey accuracy of grading, will be allowed in lieu of or in addition to contours.
 6. Mark new information that is important to the DISTRICT that is not shown on Drawings or Shop Drawings.
 7. Note related change-order numbers where applicable.
 8. Construction tolerances are indicated in Section 02200.
 9. Include the following:
 - a. Where Submittals (like Shop Drawings) are used for mark-up, record a cross- reference at the corresponding location on Drawings.

- b. Field changes of dimension and detail.
- c. Changes made by Change Order or other Modifications.
- d. Details not on original Contract Drawings.
- e. As-Built shall include a plot of the actual excavation cross sections and profiles shown on the plans.
- f. Give particular attention to concealed elements that would be difficult or expensive to locate at a later date.
- g. GPS (global positioning system) coordinates of major structures using the format lat/long DD (decimal/degree) NAD83 (North American Datum).

10. Record Specifications: Maintain one (1) complete copy of the Contract Documents including addenda. Include with the Contract Documents one (1) copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

11. Mark these documents to show substantial variations in actual WORK performed in comparison with the text of the Specifications and modifications.

12. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.

13. Note related As-Built information and Product Data.

14. Upon completion of the WORK, submit record Specifications to the DISTRICT for the DISTRICT's records electronically in PDF format.

15. Include the following:

- a. MANUFACTURER, trade name, catalog number, and Supplier of each product and item of equipment actually installed, including optional and substitute items
- b. Changes made by Addendum, Change Order, or other Modifications
- c. Related Submittals

D. Warranties and Bonds: Submit original documents as specified in the contract documents.

END OF SECTION

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SECTION 01310 CONSTRUCTION SCHEDULES

PART 1 – GENERAL

1.01 SCOPE

- A. CONSTRUCTION SCHEDULE: The WORK under this Contract shall be planned, scheduled, executed, and reported by the CONTRACTOR. The CONTRACTOR shall adhere to established technical standards for CPM (Critical Path Method) scheduling. The CONTRACTOR is required to provide all Construction Schedules in electronic format.
- B. The CONTRACTOR shall submit a detailed Construction Baseline Schedule (Baseline Schedule) showing all WORK required under the Contract and scheduled within the time constraints set forth under the Contract. Upon acceptance, the CONTRACTOR shall not change the accepted Baseline Schedule without prior concurrence of the DISTRICT. The Baseline Schedule shall be updated to show actual progress. Any proposed changes in the schedule activities, original duration, logic, activity constraints, other than progress, shall be incorporated into a request for a revision to the accepted Baseline Schedule and submitted for review and acceptance.
- C. The CONTRACTOR shall be responsible for coordinating its own schedules (including subcontractors) as well as the construction activities of others as required to fully execute the WORK.

1.02 SOFTWARE/INTERFACE REQUIREMENTS

- A. The CONTRACTOR shall use the latest version of Microsoft Project or approved equivalent for creating and updating all Construction Schedules and reports.

1.03 QUALITY ASSURANCE

- A. The CONTRACTOR shall perform the WORK covered by this SECTION with personnel having substantial experience in the use of the scheduling software on construction projects which required the development and maintenance of the schedule throughout the Project duration.
- B. It is the responsibility of the CONTRACTOR to work with each subcontractor and supplier to obtain information pertinent to the planning and updating of their respective activities in the schedules.

1.04 DEALING WITH SUBSTITUTES

- A. All versions of the CONTRACTOR's Construction Schedule shall be based solely on the WORK as awarded, and shall exclude any substitute proposals, even if the CONTRACTOR pursues a substitution in accordance with the provisions of the Contract.
- B. The DISTRICT's final determination on any proposed substitutions may not be made until after the CONTRACTOR's Construction Schedule is prepared and accepted. Accepted proposed substitutions shall be identified in the schedule as Change Orders.

1.05 USE OF FLOAT

A. Total Float is the amount of time a scheduled activity can be delayed without delaying the completion of the WORK beyond the contractually required end date. Contract Float is the number of days between the CONTRACTOR's anticipated date for early completion of the WORK, or specified part, and the corresponding Contract Time. Total Float and Contract Float belong to the Project and are not for the exclusive benefit of any party. Contract Float and Total Float shall be available to the DISTRICT, consultants, or the CONTRACTOR to accommodate changes in the WORK or to mitigate the effect of events which may delay performance or completion. The DISTRICT will monitor and optimize the use of float for the benefit of the Project.

1.06 EARLY COMPLETION

A. An early completion schedule is one which anticipates completion of all or a specified part of the WORK ahead of the corresponding Contract Time. Since Contract and Total Floats belong to the Project, the CONTRACTOR shall not be entitled to any extension in Contract Time or recovery for any delay incurred because of extensions in an early completion date until all Contract Float is used or consumed and performance or completion of the WORK extends beyond the Contract Time. The accepted Baseline Schedule must have a single longest path with zero Total Float. Multiple longest paths are not acceptable.

1.07 NON-COMPLIANCE

A. The DISTRICT may refuse to recommend/authorize a progress payment in the event of the CONTRACTOR's failure, refusal or neglect to provide the required schedule information, since this will preclude the proper evaluation of the CONTRACTOR's progress. Remedies for the CONTRACTOR's failure, neglect or refusal to comply with the requirements of this SECTION are in addition, and not limited to, those provided under other sections of the Contract.

PART 2 – PRODUCTS

2.01 GENERAL CRITERIA

A. All Construction Schedules shall be prepared by the CONTRACTOR and reflect the CONTRACTOR's plans, means and methods, techniques and sequences for performing the WORK.

B. The Construction Schedules shall break down the WORK into distinct activities with interdependencies to the extent required to clearly depict the planned approach for completion of the WORK and to effectively manage the execution of the WORK.

1. The Construction Schedules shall divide the WORK into manageable and logical segments and specify the progression from the Notice to Proceed (NTP) to Substantial Completion (SC) to Final Completion (FC) within Contract Time.
2. The Construction Schedule is to include, at minimum, appropriate time allowances for submittals, procurement, coordination with others, construction, start-up/check-out (if applicable), operational and performance testing (if applicable), commissioning (if applicable), and Contract Close-Out.
3. Site-related activities shall not reflect a combination of work located in separate structures, work corresponding to different divisions of the specifications, work performed by first and second tier

subcontractors or rough-in and finish work of the same trade.

- 4. The NTP activity shall be the first activity in the schedule and shall be a Start Milestone, with an assigned 7-day, no holiday calendar. The SC and FC activities shall be Finish Milestones, with assigned “Finish on or Before” constraints, with the Contract SC and FC dates assigned to the constraints, with a 7-day, no holiday calendar.
- 5. The CONTRACTOR’s Construction Schedule shall include preparation, review and acceptance of Shop Drawings, material fabrication and material deliveries. The first submittal review and acceptance activity durations shall be fifteen (15) working days. Resubmittal review and acceptance cycles shall have activity durations of ten (10) working days. The CONTRACTOR shall include only the first submittal review and acceptance cycle for each submittal in the Construction schedule. If more than one cycle for a submittal occurs, the CONTRACTOR shall add that cycle to the schedule at the time it occurs. Additional submittal, review and acceptance cycles will require a revision to the Baseline Schedule.

C. The CONTRACTOR shall schedule any requirements (such as submittal reviews) of the DISTRICT, the ENGINEER and others (performing WORK for the DISTRICT) indicated in or required by the Contract Documents. The Construction Schedule shall incorporate appropriate activities and WORK sequences based upon the Contract Documents.

2.02 CONSTRUCTION SCHEDULE SUBMITTAL

- A. The Construction Schedule submittal, which refers to both the Baseline Schedule and all Schedule Updates, are to consist of the following items:
 - 1. An electronic file containing PDF formats of all required reports and graphics, including a written narrative.
 - 2. An electronic backup of the Construction Schedule in Microsoft Project format or approved equal.
 - 3. For Schedule Updates, a copy of the payment application is required. The Period Ending date in the DISTRICT Application for Payment must match the Data Date of the corresponding Schedule Update.
- B. The Schedule Narrative Report for the Construction Schedule shall consist of a written description of how the WORK will be accomplished in accordance with the planned Construction Schedule. The Schedule Narrative accompanying each Schedule Update shall, at a minimum, compare current progress and cost performance to the accepted baseline schedule for all milestones and activities, including longest path activities. If there are potential or actual delays, the narrative shall state the cause of the delay and impact to the Construction Schedule and define steps that have been taken or intend to be taken to mitigate delay impacts. The CONTRACTOR shall list any proposed changes in network activities and logic that will need to be incorporated into a revision to the Baseline Schedule. The narrative shall provide sufficient detail to allow the DISTRICT to verify the progress of the WORK, compare actual versus planned activities, and identify assumptions made in scheduling work, including Change Order work. The CONTRACTOR shall direct specific attention, in writing, to adjustments or corrections made, either in response to the DISTRICT’s comments on the previous submittal or otherwise. A Schedule Narrative Report must be provided for all Baseline Schedules and Schedule Updates even if there are no detailed comments for each sub-heading.
 - 1. Schedule Narrative Report
 - a. The Schedule Narrative Report shall show the following sub-headings with detailed comments:
 - i. Progress, issues, delays, and claims
 - ii. Schedule changes, including out-of-sequence work

- iii. Milestones
- iv. Critical submittals and Procurement items
- v. Response to DISTRICT Review comments from previous submittal on an item-by-item basis.

b. It shall be an electronic color PDF – 8 ½ x 11 portrait format file.

PART 3 – EXECUTION

3.01 MONTHLY UPDATE CYCLE

A. Schedule Update Submittals are due every 30 days and are to be attached to each Application for Payment. The Schedule Update Total Actual Cost to Date must match the Application for Payment WORK Completed and Stored to Date amount. The DISTRICT will advise the CONTRACTOR of any change to the due dates.

3.02 CHANGES

A. Within ten (10) days after a scheduling problem is identified by either CONTRACTOR or DISTRICT, the CONTRACTOR shall submit a Construction Recovery Schedule that identifies the cause of the Change and any actions required by the CONTRACTOR to recover the schedule and complete the WORK within Contract Time. The CONTRACTOR shall promptly undertake appropriate action, at no additional cost to the DISTRICT, to recover the schedule whenever the current schedule shows that the CONTRACTOR did not or cannot achieve a milestone established in the Contract.

B. Appropriate recovery actions include, but are not limited to, assignment of additional labor, subcontractors, equipment, shift or overtime work, expediting of submittal or deliveries, or any combination thereof. Overlapping of activities or sequencing changes shall be deemed appropriate only if properly substantiated in the submittal. Recovery plans that are accepted by the DISTRICT that add, delete, or change activities, activity relationships, and durations or constraints must be submitted as a Revision to the Baseline Schedule with zero Total Float in accordance with this specification. Once the DISTRICT accepts the revised baseline, the CONTRACTOR must prepare a Schedule Update of the Baseline Schedule with all actuals to date and submit it for acceptance.

END OF SECTION

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CONSTRUCTION SCHEDULES
SECTION 01310-5

SECTION 01320 CONSTRUCTION VIDEO AND PHOTOGRAPHS

PART 1 – GENERAL

1.01 SCOPE

- A. Summary of Work: This SECTION specifies administrative and procedural requirements for construction photographs.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals

1.02 SUBMITTALS

- A. Submit photographs electronically as specified in SECTION 01300 and in PART 3, 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 2 – PRODUCTS

2.01 PHOTOGRAPHIC REQUIREMENTS

- A. Specified in PART 3, this SECTION.

PART 3 – EXECUTION

3.01 COLOR AUDIO VIDEO TAPING OF CONSTRUCTION AREA

- A. Prior to beginning any construction, the CONTRACTOR shall prepare a digital color audio video recording of all the areas that may be subject to damage from construction activities, including but not limited to trails, driveways, roadways, culverts, utilities, drainage ways, and public facilities.
- B. The audio video recording shall be done within the two-week period prior to placement of materials or equipment on the construction area and furnished one week prior to the start of construction. CONTRACTOR shall provide 48-hour notice prior to recording video.
- C. All video recordings shall, by electronic means, generate and display continuously and simultaneously on the screen digital information to include the date and time of recording to preclude the possibility of tampering or editing in any manner. 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 several instances, audio video coverage will be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or by watercraft.
- 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. CONTRACTOR shall include all project areas including storage areas, access areas, laydown areas, access roads, gates, fences, and project drainage boundaries.

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 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. The number of views shall be adequate to show the finished WORK.
 - 4. If the Project is not completed during the Contract Time, or authorized extensions, photographs shall continue to be taken at no increase in Contract Price.
- B. Electronic versions of photographs will be in “.jpg” format with a five (5) megapixel minimum resolution. Each photograph shall contain metadata including the date, time, and geolocation (latitude/longitude) where the photograph was taken.
- C. Provide a digital copy of all photographic images in JPG format. Label each photo with the contract number of the Project, name of Contractor, description of view, and date photograph was taken. Image names shall follow the following convention: #####_ContractorName_Description_MM/DD/YY.
- D. Deliver digital media to DISTRICT with pay applications.

3.03 AERIAL PHOTOGRAPHS

- A. The CONTRACTOR shall engage the services of a professional aerial photography company to photograph project phases of construction: pre-, during, and post-construction. The first set of aerial photos shall be taken prior to the commencement of construction activity. Photo orientations shall be discussed and approved by the DISTRICT Representative prior to taking of the photographs, with the intent of replicating the same orientation and altitude for the series of successive photographs.
 - 1. Aerial photos will be taken prior to commencing work, but not by more than 45 days. These photos include: 1) one vertical series of overlapping photos covering the project area, 1) one vertical aerial of the Cape Haze Pioneer Trail entrance and 1) vertical aerial of any other properties used for staging, storing, or access by the CONTRACTOR. Image orientation and height above the project area shall be approved by the DISTRICT Representative.

2. After initial pre-construction aerial photos, aerial photos will be taken on a monthly basis and only for the project area(s) actively used by the CONTRACTOR.
3. A last and full set of aerial photos at all identified locations shall be taken after completion and final acceptance of the project by the DISTRICT.

B. The DISTRICT Representative shall have the authority to reject all or any portion of the aerial photography not conforming to specifications, and order that it be redone at no additional charge. The CONTRACTOR shall reschedule unacceptable coverage within 5 days after being notified. The DISTRICT Representative shall designate those areas, if any, to be omitted from or added to the aerial photography coverage. All aerial photography becomes property of DISTRICT.

C. Project photographs shall be submitted in electronic formats. Electronic versions of photographs will be in “.jpg” format. Each photograph shall contain metadata including the date, time, and geolocation (latitude/longitude) where the photograph was taken.

D. The aerial photographs shall contain coverage of all surface features located within the construction’s zone of influence in a specific project area. The surface features within the construction’s zone of influence shall include, but not be limited to, all roadways, pavement, filter marsh, walls, railroad tracks, curbs, driveways, sidewalks, culverts, headwalls, retaining walls, building, landscaping, trees, shrubbery, and fences. Of particular concern shall be the existence or non-existence of any faults, fractures, or defects and private property lines and structures.

E. All photographs shall be performed during times of good visibility. The photography shall only be done when sufficient sunlight is present to illuminate the subject properly and to produce bright, sharp pictures of those subjects.

END OF SECTION

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CONSTRUCTION VIDEO AND PHOTOGRAPHS
SECTION 01320-4

SECTION 01410 TESTING AND QUALITY CONTROL

PART 1 – GENERAL

1.01 **CONTRACTOR QUALITY CONTROL:** The CONTRACTOR shall provide and maintain an effective quality control program that fulfills the requirements of the Contract Documents.

A. Establish a quality control system to perform sufficient inspection of all items of Work, including that of Subcontractors, to insure conformance to the Specifications and Drawings with respect to the materials, workmanship, construction, equipment performance, and identification.

B. The CONTRACTOR's job supervisory staff may be used for quality control, supplemented as necessary by additional personnel for surveillance or special technicians to provide capability for the controls required by the Technical Specifications. The CONTRACTOR's quality control plan must clearly identify the quality control leader and personnel organizational system. The leader must have the authority to direct the removal and replacement of work.

C. After the Contract is awarded and before construction begins, the CONTRACTOR shall meet with the DISTRICT or its representative to discuss quality control requirements. The meeting shall develop mutual understanding relative to details of the system, including the CONTRACTOR's forms to be used for recording the quality control operations, inspections, administration of the system, and the interrelationship of CONTRACTOR and DISTRICT inspection.

D. All compliance inspections shall be recorded on appropriate forms, including but not limited to the specific items required in each section of the Technical Specifications. Those forms, including a record of corrective actions taken, shall be furnished to the DISTRICT. The DISTRICT's quality control representative shall maintain a check-off list of all deficiencies which are not corrected the same day as they are discovered.

E. Should recurring deficiencies in an item or items indicate that the quality control system is not adequate, the CONTRACTOR shall take such corrective actions as may be required to comply with the Contract Documents.

F. CONTRACTOR shall submit their written quality control plan for review, describing the activities and listing those inspection and testing activities that the CONTRACTOR will perform prior to beginning the Work. The CONTRACTOR's Quality Control Plan shall describe how he will communicate timely notification to allow for test and inspection activities performed by the DISTRICT, or its representatives, for on and off-site construction activities.

1.02 **TESTING LABORATORY SERVICES:** All tests which require the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to DISTRICT. The laboratory shall be staffed with experienced technicians, properly equipped, ACI certified, and fully qualified to perform the tests in accordance with the specified standards.

1.03 **TESTING LABORATORY SERVICES FURNISHED BY CONTRACTOR:** All testing laboratory services in connection with tests (which are identified as the CONTRACTOR's responsibility in the Contract Documents) shall be performed and paid for by the CONTRACTOR, and a certified copy of the results will be furnished to the DISTRICT within 5 days of the test.

The CONTRACTOR is also responsible for testing and inspection services required to achieve an effective quality control program, to assure that the work strictly complies with the contract requirements. The CONTRACTOR shall pay all costs for such services. The CONTRACTOR shall also pay for any tests performed by DISTRICT which do not meet Specifications, as described below.

1.04 TESTING LABORATORY SERVICES FURNISHED BY DISTRICT:

- A. The DISTRICT may secure the services of a materials testing company, for field and laboratory tests, for certain items of work for quality assurance.
 - 1. DISTRICT shall be reimbursed by CONTRACTOR for the cost of any tests or inspections, or tests on an item purported to be ready, which fails to meet Specification requirements. DISTRICT may withhold such amounts from payments otherwise due CONTRACTOR.
- B. Arrangements for delivery of samples and test specimens to the testing laboratory under this paragraph will be made by the DISTRICT. The testing laboratory shall perform all laboratory tests within a reasonable time consistent with the specified standards and shall furnish a written report of each test.
- C. CONTRACTOR shall furnish all sample materials and cooperate in the sampling and field-testing activities, interrupting the Work when necessary.
- D. When sampling or testing activities are performed in the field by testing laboratory personnel, CONTRACTOR shall furnish personnel and facilities to assist in the activities.

1.05 TRANSMITTAL OF TEST REPORTS:

Written reports of test and engineering data furnished by CONTRACTOR shall be submitted as specified in SECTION 01300.

END OF SECTION

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SECTION 01510 TEMPORARY UTILITIES AND FACILITIES

PART 1 – GENERAL

1.01 SUMMARY

- A. This SECTION includes requirements of a temporary nature not normally incorporated into final WORK. It includes the following:
 - 1. Construction and support facilities
 - 2. Construction aids

- B. Related Work Specified Elsewhere:
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 01530 – Temporary Barriers and Controls

1.02 APPLICABLE STANDARDS AND PUBLICATIONS

- A. Standards or Codes: The edition of the publications of the organizations listed below in effect at the time of the advertisement for bids form a part of this specification to the extent referenced. See the various paragraphs for the specified standard. In the case of a conflict between the requirements of this SECTION and those of the listed document, the requirements of this SECTION shall prevail.
 - 1. American National Standards Association (ANSI):
 - a. A10 Series - Safety Requirements for Construction and Demolition
 - b. ANSI/ASME PTC 19.1-1998 Test Uncertainty, Instrument and Apparatus
 - 2. National Electrical Contractors Association (NECA):
 - a. Electrical Design Library - Temporary Electrical Facilities
 - 3. National Fire Protection Association (NFPA):
 - a. NFPA 10 - Portable Fire Extinguishers
 - b. NFPA 70 - National Electrical Code
 - c. NFPA 241 - Safeguarding Construction, Alterations, and Demolition Operations
 - 4. National Electrical Manufacturers Association (NEMA)
 - 5. Underwriters Laboratories (UL)
 - 6. Florida Department of Transportation Standard Specifications for Road and Bridge Construction
 - 7. Florida Trench Safety Act (90-96, Laws of Florida)

1.03 SUBMITTALS

- A. Submit in accordance with SECTION 01300.

- B. Site Plan: Submit to the DISTRICT a Site Plan indicating CONTRACTOR's facilities, which may include:
 - 1. Trailers
 - 2. Equipment Yard
 - 3. Parking
 - 4. Traffic Control

1.04 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
 - 1. Building Code requirements
 - 2. Utility company regulations
 - 3. Police, Fire Department, and rescue squad rules
 - 4. Environmental protection regulations
- B. Standards: NOT USED
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

PART 2 – PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Provide new materials and equipment. If acceptable to the DISTRICT, undamaged previously used materials and equipment in serviceable condition may be used. Provide materials and equipment suitable for the use intended, of capacity for required usage, and meeting applicable codes and standards. Comply with requirements of DIVISIONS 2 through 16.

PART 3 – EXECUTION

3.01 TEMPORARY UTILITIES: NOT USED

3.02 TEMPORARY ELECTRICITY AND LIGHTING: NOT USED

3.03 TEMPORARY HEAT AND VENTILATION: NOT USED

3.04 TEMPORARY SANITARY FACILITIES

A. CONTRACTOR-Furnished Facilities:

- 1. Furnish, install and maintain temporary sanitary facilities for use through construction period. Remove on completion of WORK.
- 2. Provide for all construction workers under this Contract and representatives at the Site.
- 3. Toilet facilities shall be of the chemical-aerated recirculation or combustion type, properly vented and fully enclosed with a glass- fiber-reinforced polyester shell or similar nonabsorbent material.

3.05 TEMPORARY CONSTRUCTION AIDS

A. General:

- 1. Provide construction aids and equipment required by personnel, available for DISTRICT observers' use,

and to facilitate the execution of the WORK; scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other such facilities and equipment.

2. Materials may be new or used, must be suitable for the intended purpose and meet the requirements of applicable codes, regulations and standards.
3. When platform stair framing is in place, provide temporary treads, platforms, and railings for use by construction personnel.

3.06 INSTALLATION AND REMOVAL

- A. Relocation: Relocate construction aids as required by progress of construction, by storage or WORK requirements, and to accommodate requirements of DISTRICT and other CONTRACTORs at the Site.
- B. Removal: Remove temporary materials, equipment and services when construction needs can be met and allowed by use of permanent construction, or at completion of the Project.
- C. Repair: Clean and repair damage caused by installation or by use of temporary facilities.
 1. Remove foundations and underground installations for construction aids.
 2. Grade the areas of the Site affected by temporary installations to required elevations and clean the area.

END OF SECTION

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TEMPORARY UTILITIES AND FACILITIES
SECTION 01510-4

SECTION 01530 TEMPORARY BARRIERS AND CONTROLS

PART 1 – 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

1.02 REFERENCES:

A. Florida Department of Transportation Standard Specifications for Road and Bridge Construction (FDOT)

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 SAFETY AND PROTECTION OF WORK AND PROPERTY

A. General:

1. Provide for the protection of the Work as set forth in the Contract Documents. 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 when operations are stopped due to conditions that make it impossible to continue operations or 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.
4. Protect floors from damage by proper covering and care when handling heavy equipment, painting, or handling mortar or other such materials. Use proper cribbing and shoring to prevent overloading of floors while moving heavy equipment. Provide metal pans under pipe-threading machines and other machines that may leak oil and clean such pans daily, keeping oil off floors. Restore floors to former condition where damaged or stained.
5. Concrete floors less than 28 days old shall not be loaded without written permission from the DISTRICT.
6. Restrict access to roofs except as required by the Work. Where access is required, provide protection with plywood, boards, or other suitable materials.

B. Property Other than DISTRICT's:

1. Provide for the protection of property as set forth in the Contract Documents. Report immediately to

the owners thereof and promptly repair damage to existing facilities resulting from construction operations.

2. Names and telephone numbers of representatives of the power company having jurisdiction over power lines in the Work area can be obtained from the DISTRICT. CONTRACTOR shall contact the power company a minimum of 7 calendar days prior to performing Work within 500' of power transmission line property, right-of-way or easement lines.
3. The applicable requirements specified for protection of the Work shall also apply to the protection of existing property of others.
4. Restore all property affected by CONTRACTOR's operations to the original or better condition.

3.03 BARRIERS

A. General:

1. Furnish, install, and maintain suitable barriers as required to prevent public entry, protect the public, and to protect the Work, existing facilities, trees, and plants from construction operations. Remove 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 the 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 the area to its 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.
2. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
3. Schedule operations so that dust and other contaminants will not fall on wet or newly-coated surfaces.
4. 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 and waste disposal 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

groundwater.

5. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas.

C. Debris Control and Clean-Up:

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. Keeping construction materials such as forms and scaffolding neatly stacked.
 - d. Immediate cleanup to protect the Work by removing splattered concrete, oil, paint, corrosive liquids, and cleaning solutions from walls, floors, and metal surfaces before surfaces are marred.
2. Prohibit overloading of trucks to prevent spillage on access and haul routes. Provide periodic inspection of traffic areas to enforce requirements.
3. Final cleanup is specified in SECTION 01700 Contract Closeout.

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 spillage, 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 AND USE OF ROADWAYS

A. Traffic Control:

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, and parking areas. This includes barricades and other devices or personnel as necessary to adequately protect the public.
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.
4. Bridge over open trenches where necessary to maintain traffic.
5. 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 off-site roads, water control and DISTRICT levees damaged by operations. Keep traffic areas as free as possible of excavated materials and maintain them 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.
 2. Temporary field offices and sheds, and their contents.
 3. Plant and equipment including any equipment furnished for use by the DISTRICT.
- 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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TEMPORARY BARRIERS AND CONTROLS
SECTION 01530-5

SECTION 01540 SECURITY

PART I – GENERAL

1.01 DESCRIPTION

- A. The CONTRACTOR shall insure that each employee, representative, subcontractor, supplier, and others working for the CONTRACTOR use designated access roads and parking areas.
- B. The CONTRACTOR shall employ guards on the Work when necessary and shall erect and maintain such strong and suitable barriers and such lights as shall effectually prevent the happening of any accident to health or to property or to any partially completed Work or to any materials stored on or adjacent to the site of the Work.
- C. The CONTRACTOR shall employ temporary fencing and gates to adequately protect the Work and shall provide all access required by the DISTRICT or Representative, and others requiring access to the Work.
- D. Stored materials shall be kept in a neat and orderly manner. Materials that are subject to deterioration by exposure to the sun, rain or other elements shall be kept adequately covered and protected.
- E. The CONTRACTOR shall be responsible for protecting all stored materials and the Project site safe from theft and vandalism. The CONTRACTOR shall employ security personnel and erect fences as necessary at no additional cost to the DISTRICT.
- F. All security measures shall be provided at no additional cost to the DISTRICT.

END OF SECTION

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SECURITY
SECTION 01540-2

SECTION 01580 PROJECT IDENTIFICATION AND SIGNS

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section includes basic requirements for temporary Project identification and informational signs required during construction.
- B. Related Work Specified Elsewhere:
 - 1. SECTION 1300 Submittals.

1.02 QUALITY ASSURANCE

- A. Design signs and structures to withstand wind and environmental conditions of locality. Provide with finish adequate to withstand weathering, fading, chipping, and peeling for duration of construction.

1.03 SUBMITTALS

- A. Submit as specified in SECTION 01300.
- B. Includes, but not limited to, the following:
 - 1. Shop Drawings and product data as applicable.
 - 2. Show content, layout, lettering, colors, structure, and foundation.

PART 2 – PRODUCTS

2.01 PRODUCTS IDENTIFICATION SIGNS

- A. Project Identification:
 - 1. Construct structure and framing of wood or metal, structurally adequate to resist design requirements of locality.
 - 2. Construct sign surface of minimum 3/4-inch thickness exterior grade plywood with medium density overlay. Panels shall be of size to minimize joints. Overall size shall be 48 inches by 96 inches.
 - 3. Rough hardware shall be galvanized or aluminum.
 - 4. Coating: Paint shall be suitable for outdoor applications and shall be resistant to weathering, peeling, chipping and fading. Sign colors shall be approved by the DISTRICT.
 - 5. Information Content:
 - a. Project title, logo, and name of DISTRICT as shown on Contract Documents
 - b. Names of cooperating entities
 - c. Recognition of NOAA grant funding in accordance with grant requirements
 - d. Names and titles of authorities
 - e. Name and title of Design Engineer
 - f. Name of prime CONTRACTOR and major Subcontractors
- B. CONTRACTOR Identification: If not part of Project identification sign, provide and install CONTRACTOR's standard sign.

C. Design Engineer Identification: Design Engineer will provide, install and maintain their own signs.

2.02 INFORMATIONAL SIGNS

A. Construction:

1. This includes signs for traffic, construction workers, and general public in regard to directions, warnings, hazards, locations of areas, facilities, equipment, and others of a similar nature.
2. Provide signs of design, size, color, and lettering as required by regulatory agencies. Signs shall be painted metal, wood, plastic, or fiberglass and of materials suitable for the conditions in which it is placed, such as weathering and fading.
3. Construct structure and framing of wood or metal, structurally adequate to resist design requirements of area of Project.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Project and Contractor Identification Sign:

1. Install in a location acceptable to the DISTRICT. Install so as not to obstruct traffic or construction operations.
2. Erect on framing or foundation, and rigidly brace.
3. Maintain sign in good repair, in a clean and neat condition.
4. Remove upon completion of Project.

B. Informational Signs:

1. Install at appropriate locations and in sufficient quantities to assure visibility. Relocate as required by progress of Work.
2. Maintain signs in good repair, in a neat, clean, readable condition.
3. Remove all signs, framing, supports, and foundations upon completion of Project.

END OF SECTION

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PROJECT IDENTIFICATION AND SIGNS
SECTION 01580-3

SECTION 01600 EQUIPMENT AND MATERIALS

PART 1 – GENERAL

1.01 SUMMARY

This section includes general requirements for Equipment and Material transportation and handling, delivery, storage, and protection of CONTRACTOR and DISTRICT - furnished Equipment and Materials.

A. Related Work:

1. SECTION 01630 Product Options and Substitutions
2. SECTION 01300 Submittals

1.02 DEFINITIONS

Definitions used in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including such terms as "systems," "structure," "finishes," "accessories," "furnishings," "special construction," and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.

- A. Products:** Items purchased for incorporation in the Work, regardless of whether they were specifically purchased for the Project or taken from the previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and other terms of similar intent.
- B. Equipment:** A product with operational or non-operational parts, regardless of whether motorized, manually operated, or fixed. Equipment may require service connections such as wiring or piping.
- C. Materials:** Products that must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form parts of Work.

1.03 QUALITY ASSURANCE

- A. Equipment and Material Incorporated into the Work:** Provide products that comply with the requirements of the Contract Documents, are undamaged, and unless otherwise indicated, are unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and for the intended use and effect.
- B. Standard Products:** Where they are available and comply with Specifications, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- C. Continued Availability:** Where, because of the nature of its application, the DISTRICT is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard products for which the manufacturer has published assurances that the products and its parts are likely to be available to the DISTRICT at a later date.
 1. Conform to applicable Specifications, codes, standards, and regulatory agencies.
 2. Comply with size, make, type, and quality specified, or as specifically approved in writing by the DISTRICT.
 3. Manufactured and Fabricated Products:
 - a. Design, fabricate, and assemble in accordance with the best engineering and shop practices.

- b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
- c. Equipment and Materials shall be suitable for service conditions intended.
- d. Equipment capacities, sizes, and dimensions indicated or specified shall be adhered to unless variations are specifically approved in writing.
- e. Provide labels and nameplates where required by regulatory agencies or to state identification and essential operating data.
- f. Two or more items of the same kind shall be identical, supplied by the same manufacturer.

4. Do not use equipment and material for any purpose other than that for which it is designed or is specified.

D. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

1.04 TRANSPORTATION AND SHIPMENT

- A. Shipment Preparation: CONTRACTOR shall require manufacturers and suppliers to prepare Equipment and Materials for shipment in a manner to facilitate unloading and handling, and to protect against damage or unnecessary exposure in transit and storage, for CONTRACTOR supplied equipment. Provisions for protection shall include the following:
 - 1. Crates or other suitable packaging materials
 - 2. Covers and other means to prevent corrosion, moisture damage, mechanical injury, and accumulation of dirt in motors, electrical equipment, and machinery
 - 3. Suitable rust-preventive compound on exposed machined surfaces and unpainted iron and steel
 - 4. Grease packing or oil lubrication in all bearings and similar items
 - 5. Precast concrete components shall be transported, lifted and stored as specified by the precast supplier. Precast supplier shall provide written instructions to the CONTRACTOR as to the above. The CONTRACTOR shall provide a copy to the DISTRICT.
- B. Marking: Each item of Equipment and Material shall be tagged or marked as identified in the delivery schedule or on Submittals. Complete packing lists and bills of material shall be included with each shipment. Each piece of every item need not be marked separately, provided that all pieces of each item are packed or bundled together, and the packages or bundles are properly tagged or marked.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery:
 - 1. Arrange deliveries of Equipment and Materials in accordance with construction schedules, in ample time to facilitate inspection prior to installation, and to avoid delay of the Work.
 - 2. Deliver, store and handle Equipment and Materials in accordance with manufacturer's recommendations using means and methods that will prevent damage, deterioration, and loss, including theft.
 - 3. Control delivery schedules to minimize long term storage at the site and to prevent overcrowding of construction spaces. In particular, coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.
 - 4. Avoid conflict with the Work of the DISTRICT or other contractors.
 - 5. Deliver Equipment and Materials to the site in manufacturer's sealed containers or other packaging system with identifying labels and instructions for handling, storing, unpacking, protecting, and installing.

6. Mark deliveries of component parts of equipment to identify the equipment, to permit easy accumulation of parts, and to facilitate inspection and measurement of quantity or counting of units.
7. Immediately on delivery, inspect shipment to assure:
 - a. Product complies with requirements of Contract Documents and reviewed Submittals.
 - b. Quantities are correct.
 - c. Containers and packages are intact, labels are legible.
 - d. Equipment and Materials are properly protected and undamaged.

B. Storage:

1. Store Equipment and Materials immediately on delivery and protect until completion of the Work. Store in accordance with manufacturer's instructions with seals and labels intact and legible.
2. Store Equipment and Materials in a manner that will not endanger the supporting construction.
3. Store Equipment and Materials that are subject to damage by elements in weathertight enclosures.
4. Maintain temperature and humidity within ranges required by manufacturer.
5. Protect motors, electrical equipment, plumbing fixtures, and machinery of all kinds against corrosion, moisture deteriorations, mechanical injury, and accumulation of dirt or other foreign matter.
6. Protect exposed-machined surfaces and unpainted iron and steel as necessary with suitable rust-preventive compounds.
7. Protect bearings and similar items with grease packing or oil lubrication.
8. Handle and store steel plate, sheet metal, and similar items in a manner to prevent deformation.
9. Exterior Storage:
 - a. Provide substantial platforms, blocking, or skids to support fabricated products aboveground; and to prevent soiling or staining. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - b. Store loose granular materials on solid surface areas to prevent mixing with foreign matter.
 - c. Provide surface drainage to prevent flow or ponding of rainwater.
10. Equipment and Materials shall not show any pitting, rust, decay, or other deleterious effects of storage prior to final acceptance of Work.
11. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to ensure that products are maintained under specified conditions, and free from damage or deterioration.

C. Handling:

1. Provide equipment and personnel necessary, to unload and handle Equipment and Materials, by methods to prevent damage or soiling to Equipment and Materials, or packaging.
2. Handle by methods to prevent bending or overstressing. Where lifting points are designated, lift components only at those points.
3. Provide additional protection to surrounding surfaces as necessary to prevent damage.

D. Maintenance of Storage:

1. Inspect stored Equipment and Materials on a scheduled basis.
2. Verify that storage facilities comply with manufacturer's product storage requirements, including environmental conditions continually maintained.
3. Verify that surfaces of products exposed to elements are not adversely affected; that any weathering of finishes is acceptable under the requirements of Contract Documents.

4. For mechanical and electrical equipment in long-term storage, provide manufacturer's service instructions to accompany each item, with notice of enclosed instructions on exterior of package. Service Equipment on a regularly scheduled basis.
- E. Protection after installation: Provide substantial coverings as necessary to protect installed Equipment and Materials from damage from subsequent construction operations. Remove when no longer needed or as specified.

PART 2 – PRODUCTS

2.01 PRODUCTS AND MANUFACTURERS
Specified in each applicable Section of Specifications

2.02 PRODUCT SELECTION AND SUBSTITUTIONS:
Specified in Instructions to Bidders and General Terms & Conditions

PART 3 – EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Installation:

1. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions if not a part of Submittals, containers, or packaging to parties involved in the installation, including a copy to the DISTRICT.
2. Maintain one complete set of instructions at the job site during installation and until completion.
3. Handle, install, connect, clean, condition, and adjust products in accordance with such instructions and in conformance with specified requirements. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with DISTRICT for further instructions.
4. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents or approved in writing by manufacturer and the DISTRICT.
5. Accurately locate and align with other Work and anchor Equipment and Materials securely in place except as required for proper movement and performance.
6. Clean and protect exposed surfaces as necessary to ensure freedom from damage and deterioration at time of acceptance.

END OF SECTION

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EQUIPMENT AND MATERIALS
SECTION 01600-5

SECTION 01630 PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 – GENERAL

1.01 SUMMARY

This SECTION covers the DISTRICT's review procedures for CONTRACTOR's requests of acceptable substitute items of material and equipment. All requests for substitution shall be made no earlier than the Effective Date of the Contract. Requests received prior to the date established above will not be considered. Substitutions may be approved at the DISTRICT's sole discretion where one or more of the following conditions apply:

- A. The substitution must be required for compliance with final interpretation of code requirements or regulations.
- B. The substitution must be due to the unavailability of the specified products, through no fault of the CONTRACTOR.
- C. The substitution may be requested when subsequent information discloses the inability of the specified products to perform properly or to fit in the designated space.
- D. The substitution may be requested when in the judgment of the DISTRICT a substitution would be substantially to the DISTRICT's best interests in terms of cost, time or other considerations.

1.02 SUBSTITUTION REQUEST

A. Submit as required in SECTION 01300 - Submittals:

1. Complete data substantiating compliance of the proposed substitution with the Contract Document
 - a. Product identification including MANUFACTURER's name and address
 - b. MANUFACTURER's literature including product description, performance and test data, and reference standards
 - c. Name and address of similar projects on which product was used and dates of installation
2. Itemized comparison of proposed substitution with product or method specified
3. Data relating to changes in the construction schedule
4. Accurate cost data on proposed substitution in comparison with product or method specified

B. In submitting the request for substitution, the CONTRACTOR makes the following representations:

1. The CONTRACTOR has investigated the proposed product and has determined that it is equal to or superior in all respects to that specified.
2. The CONTRACTOR will provide the same warranty or guarantee for the substitution as for the product specified.
3. The CONTRACTOR will coordinate installation of the accepted substitution into the WORK, making such changes as may be required for the WORK to be completed in all respects.
4. The CONTRACTOR waives all claims for additional costs related to substitution that subsequently becomes apparent.
5. Cost data is complete and includes all related costs under the Contract.

1.03 DISTRICT ENGINEER'S REVIEW

The DISTRICT, in evaluating the request for substitution, will consider all variations of the proposed substitute

from that specified to determine the acceptability of the proposal. The DISTRICT may require the CONTRACTOR to furnish additional data about the proposed substitute necessary to make such a determination. The DISTRICT will be the sole judge of acceptability, and no substitute will be ordered or installed without the DISTRICT's prior written acceptance. The DISTRICT may require the CONTRACTOR to furnish, at the CONTRACTOR's expense, a special performance guarantee or other surety with respect to any substitute. Substitutions will not be considered if:

- A. Substitutions are indicated or implied on Shop Drawings or product data submittals without a request submitted in accordance with this SECTION.
- B. Acceptance will require substantial revision to the Contract Documents.

END OF SECTION

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PRODUCT OPTIONS AND SUBSTITUTIONS
SECTION 01630-3

SECTION 01700 CONTRACT CLOSEOUT

PART 1 – GENERAL

1.01 SCOPE

- A. Summary of Work: This SECTION includes administrative and procedural requirements for Contract Closeout including, but not limited to, the following:
 - 1. Inspection procedures
 - 2. Project record document submittal
 - 3. Final cleaning
 - 4. CONTRACTOR's Certification
- B. Closeout requirements for specific construction activities are included in the appropriate Sections.
- C. Related Work Specified Elsewhere:
 - 1. SECTION 01300 - Submittals

1.02 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, the CONTRACTOR shall satisfy the following:
 - 1. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents. Submit in accordance with SECTION 01300.
 - 2. Obtain and submit releases enabling the DISTRICT unrestricted use of the WORK and access to services and utilities. Include Certificates of Occupancy (C.O.), operating certificates, and similar releases, as required.
 - 3. Submit Record Documents, Project photographs and video, damage or settlement surveys, property surveys, and similar record information as specified in Paragraph 1.04. All drawings shall be scanned and submitted in accordance with SECTION 01300, and in hard copy form, 24-inch by 36-inch plan size. All other documents shall also be scanned and submitted in accordance with SECTION 01300.
 - 4. The CONTRACTOR shall provide one (1) set of As-Built Drawings in accordance with SECTION 01305
 - 5. Complete final cleanup requirements.
 - 6. Touch up and otherwise repair and restore marred, exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the DISTRICT will either proceed with inspection or advise the CONTRACTOR of unfilled requirements. The DISTRICT will prepare the Certificate of Substantial Completion following an inspection or advise the CONTRACTOR of WORK that must be completed or corrected before the certificate will be issued.
 - 1. The DISTRICT will reschedule the inspection when, in its opinion, the WORK is substantially complete.

1.03 FINAL ACCEPTANCE

- A. Preliminary Procedures: Submit certification by CONTRACTOR that WORK has been completed in accordance with the Contract Documents to the knowledge of the CONTRACTOR. Before requesting final

inspection, complete the following:

1. Submit the final payment request with releases and supporting documentation. Include insurance certificates for products and completed operations where required.
2. Submit a certified copy of the DISTRICT's final inspection list of items to be completed or corrected. The certified copy of the list shall state that each item has been completed.
3. Submit consent of surety to final payment.
4. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
5. Submit Release of Liens.
6. The above shall be submitted in accordance with SECTION 01300.

B. Reinspection Procedure: The DISTRICT will reinspect the WORK upon receipt of notice that the WORK, including inspection list items from earlier inspections, has been completed.

1. Upon completion of reinspection, the DISTRICT will advise the CONTRACTOR of WORK that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, reinspection will be repeated.

Return all keys furnished by the DISTRICT.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 FINAL CLEANING

A. General: The Contract Documents require general cleaning during construction. Regular Site cleaning is included in SECTION 01530.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with MANUFACTURER's instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
 - a. Clean the Site of rubbish, litter, and other foreign substances. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
 - b. Remove temporary structures, tools, equipment, supplies, and surplus materials.
 - c. Remove temporary protection devices and facilities which were installed to protect previously completed WORK.

C. Removal of Protection: Remove temporary protection and facilities installed for protection of the WORK during construction.

D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the DISTRICT's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the Site and dispose of them lawfully.

1. Where extra materials of value remain after completion of associated WORK, they become the

DISTRICT's property upon approval of the DISTRICT. Dispose of these materials of no value to the DISTRICT as directed by the DISTRICT.

E. Repairs:

1. Repair damaged protective coated surfaces.
2. Repair roads and other items damaged or deteriorated because of construction operations, including those damaged but not located within the Project limits.
3. Restore all ground areas affected by construction operations.

END OF SECTION

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CONTRACT CLOSEOUT
SECTION 01700-4

Division II

Technical Specifications

SECTION 02100 SITE PREPARATION

PART 1 – GENERAL

1.01 SCOPE

- A. Summary of Work: The CONTRACTOR shall furnish all labor, materials, and equipment necessary for complete and proper site preparation within the areas shown on the Drawings and specified herein and observe permit conditions.
- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 02200 – Earthwork
 - 3. SECTION 02436 – Environmental Protection

1.02 APPLICABLE PUBLICATIONS

- A. Applicable Standards:
 - 1. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition (FDOT)

1.03 RESPONSIBILITIES

- A. The CONTRACTOR shall make all excavations for piping and appurtenant structures in any material encountered to the depth and grades required, shall backfill such excavations and dispose of excess or unsuitable materials from excavation, and shall provide and place necessary borrow material to properly backfill excavations, all as indicated on the drawings, specified herein, or as directed by the DISTRICT.
- B. Excavation, dewatering, sheeting and bracing required shall be carried out so as to prevent any possibility of undermining or disturbing the foundations of any existing structure or work, and so that all work may be accomplished and inspected in the dry, except as directed by the DISTRICT. Aqueous construction may be performed only with prior approval of the DISTRICT.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 TRAFFIC CONTROL

The CONTRACTOR shall provide proper warning devices and barriers for the protection of the public and workers according to SECTION 01015 (1.06), FDOT Specification SECTION 102 Maintenance of Traffic, and local regulations.

3.02 STANDARD CLEARING AND GRUBBING

Standard site clearing and grubbing, in accordance with SECTION 02110 and FDOT Specification SECTION 110, shall be performed within the areas shown on the Drawings or otherwise noted in the above referenced specification.

3.03 EROSION CONTROL

The CONTRACTOR shall prevent and control erosion and water pollution as per SECTION 02435, FDOT Specification Sections 104-1, 2, 3, 4, 6 and 7, and Florida Department of Environmental Protection (FDEP) regulations and permit conditions.

3.04 PROTECTION AND/OR RELOCATION OF EXISTING FACILITIES

Existing facilities such as storm drains, roadways, water lines, light poles, conduits, fences, utility and telephone lines, etc. are to be carefully protected from damage during all phases of the construction. The CONTRACTOR shall make all necessary arrangements with the owner of the facility and be responsible for all costs involved in the proper protection, relocation or other work that such owners deem necessary.

3.05 UNDERGROUND UTILITIES

The CONTRACTOR shall provide all necessary liaisons with other utilities (underground) by notification, 48 hours in advance, of any digging by telephoning the appropriate Utility Notification Center and local utilities.

END OF SECTION

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SECTION 02110 CLEARING AND LAND PREPARATION

PART 1 – GENERAL

1.01 SCOPE

- A. Summary of Work: The CONTRACTOR shall include the removal of trees and other vegetation from areas where earthwork or other construction operations specified herein are to be performed.
- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 02100 – Site Preparation
 - 3. SECTION 02200 – Earthwork
 - 4. SECTION 02436 – Environmental Protection

1.02 APPLICABLE PUBLICATIONS

- A. Florida Department of Transportation (FDOT) Standard Specifications (latest edition) section:
 - 1. 104 – Prevention, Control, and Abatement of Erosion and Water Pollution
 - 2. 110 – Clearing and Grubbing

1.03 SUBMITTALS

- A. Prior to beginning the WORK, CONTRACTOR shall submit a detailed plan for clearing and land preparation in conformance with SECTION 01300. The plan shall detail the sequence of WORK and describe the CONTRACTOR's planned method of clearing and land preparation activities.

1.04 RESPONSIBILITIES

- A. The CONTRACTOR shall ensure the safe passage of people around areas of clearing and land preparation. The CONTRACTOR shall conduct its operations to prevent injury to adjacent structures, vegetation designated to remain, other facilities 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 or other occupied or used facilities without permission from the DISTRICT.
- C. The CONTRACTOR may commence clearing or land preparation within portions of the project falling within the limits of temporary construction easements or utility Right-of-Way only with specific permission from the DISTRICT for each activity and location. All requirements under A and B above apply within these limits.

1.05 INSPECTION COORDINATION

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

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 GENERAL CLEARING

- A. The CONTRACTOR shall remove vegetation as necessary to complete work within the Limited Construction Area (LCA) indicated on the plans. Best efforts shall be made to limit clearance of native vegetation where not necessary to complete grading and access operations. Refer to Section 02910 for Melaleuca removal. 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 grass, weeds, or woody-stalked vegetation.
 2. Completely remove all vegetation within the designated earthwork boundaries. CONTRACTOR may burn the exotics onsite in accordance with 3.01 C. or properly dispose of the exotic vegetation in an offsite disposal, energy, or mulching facility permitted to receive such materials.
 3. Remove any garbage, pipes, or other waste debris recovered during clearing.
 4. Remove all existing non-native slope revetment, i.e., riprap stone, concrete or rocks, and textiles, i.e., geotextile fabrics, designated for removal.
 5. On completion of the clearing, remove all sticks, rubbish and other extraneous material and rake the ground surface in order to leave a smooth and clean appearance.
 6. 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.
 7. All tree removal shall be performed in accordance with approved principles of modern arboricultural methods.
 8. All trees to remain in the project area, as designated by the DISTRICT, shall be protected from damage by tree barricades.
 9. All WORK shall be performed without damage to existing amenities, including landscaping. 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 as indicated on the plans and in accordance with SECTION 02436 Environmental Protection Plan.
- B. The CONTRACTOR may burn combustible products of the clearing operation on the site with the written approval of the DISTRICT and with permission of the local authorities. Where burning of such material is permitted, perform all such burning in accordance with the applicable laws, ordinances, and regulations. Perform all burning at locations where trees and shrubs adjacent to the cleared area will not be harmed. The CONTRACTOR shall comply with all local ordinances or regulations for burn locations and methods, including methods for preventing uncontrolled spread of the burn. The CONTRACTOR shall provide the DISTRICT with copies of permits prior to burning.
- C. The CONTRACTOR may not burn cleared materials within the limits of any utility Right-of-Way without written permission of the controlling agency. The CONTRACTOR will be required to collect and haul all cleared materials to an approved site for burning and disposal.
- D. The CONTRACTOR shall haul all organic materials and residues left from burning operations to an approved landfill or disposal site.

3.02 CLEARING AND GRUBBING WITHIN EXISTING CANALS

A. Within the existing canals, the CONTRACTOR shall only remove the vegetation as required to perform the identified work. If work is to only occur on one side, then only remove vegetation on one side. Similarly, if there is only grading on the side slope, then vegetation can remain along the canal bottom. Where backfilling is to occur, the entire canal would require clearing and grubbing. These are to serve as examples of work encountered within the project area. It is the contractor's responsibility to fully understand the plans and perform the appropriate level of clearing.

3.03 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, such as, but not limited to, access points beyond the Limited Construction Access, shall be restored to original or better condition, including, but not limited to, filling, grading, and seeding/mulching as directed by the DISTRICT.

3.04 TREE REMOVAL

A. This section pertains to the two (2) Live oaks identified in the plans at the Harness Road construction entrance. One tree will require removal per general clearing requirements to build the construction entrance. The second tree is to remain provided the root zone is not impacted as outlined below during construction activities. If the root zone cannot be protected as outlined below or does not survive through the construction period, the tree shall be removed per general clearing requirements and replaced.

1. No more than one-half (1/2) of the radius of the tree canopy is impacted. This encroachment shall occur on no more than one (1) side of the tree.
2. No more than one-third (1/3) of all tree roots found at the outermost limits of the tree's drip line are encroached upon.
3. The remaining area of the tree's roots shall be protected by barriers at the drip line throughout construction and shall remain until after the access area has been restored and accepted by the District.
4. Supplemental irrigation may be required through construction to mitigate tree stress induced by the encroachment.
5. Tree limbs shall be trimmed as required only to allow access for heavy equipment and construction materials. Limbs shall be trimmed by an Arborist certified by the International Society of Arboriculture (ISA).

EROSION CONTROL

A. The CONTRACTOR shall prevent and control erosion and water pollution as per SECTION 02435, FDOT Specification Sections 104 -1, 2, 3, 4, 6 and 7 and Florida Department of Environmental Protection (FDEP) regulations and permit conditions.

END OF SECTION

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CLEARING AND LAND PREPARATION
SECTION 02110-4

SECTION 02140 TEMPORARY DEWATERING

PART 1 – GENERAL

1.01 DESCRIPTION

The Work to be performed includes the furnishing of all equipment, materials and labor necessary to remove surface or subsurface waters from excavation areas in accordance with the requirements set forth and as shown on the Drawings or as specified.

1.02 QUALITY ASSURANCE

The dewatering of any excavation areas and the disposal of the water produced shall be in strict accordance with the latest revision of all Laws and Regulations; with the local, State and Federal permits for the project.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 TEMPORARY DEWATERING

- A. Prior to commencing work, the CONTRACTOR shall submit to the District Representative for review the CONTRACTOR's plans for dewatering. The dewatering system shall be in conformity with the overall construction plan.
- B. The CONTRACTOR shall provide adequate equipment for the removal of surface or subsurface waters that may accumulate in the excavation. Flotation and migration of fines shall be prevented by the CONTRACTOR by maintaining a positive and continuous operation of the dewatering system. The CONTRACTOR shall be fully responsible and liable for all damage that may result from the operation and/or failure of this system.
- C. If subsurface water is encountered, the CONTRACTOR shall utilize suitable equipment to adequately dewater the excavation so that it will be dry to a depth of 12-inches below the pipeline subgrade compaction level or over-excavation level, whichever is lower, but not more than 5-feet, to facilitate effective subgrade compaction and to provide for a stable trench bottom. A wellpoint system, trench drain, sump pump operation, or other dewatering method shall be utilized to maintain the excavation in a dry condition for preparation of the trench bottom and until the fills, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels. No water shall be allowed to contact masonry or concrete within 24 hours after being placed.
- D. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation and to preserve the integrity of adjacent structures and utilities. Well or sump installations shall be constructed and operated continuously with proper sand filters to prevent drawing of finer grained soil from the surrounding ground. Dewatering by trench pumping shall not be permitted if migration of fine-grained natural material from bottom, side walls, or bedding material may occur.
- E. In the event that satisfactory dewatering cannot be accomplished due to subsurface conditions, or where dewatering could damage existing structures, the CONTRACTOR shall obtain the District Representative's approval of wet trench construction or procedure before commencing construction.

- F. Engine-driven dewatering pumps shall be equipped with residential type mufflers. Where practical and feasible, electrical "power drops" and electric motor-driven equipment shall be used in lieu of portable generators.
- G. The CONTRACTOR shall take all additional precautions to prevent uplift of any structure during construction.
- H. The CONTRACTOR shall take all precautions to preclude the accidental discharge of fuel, oil, etc. to prevent adverse effects on groundwater quality. All costs associated with any such adverse effects shall be borne by the CONTRACTOR.
- I. The CONTRACTOR shall, at no expense to the DISTRICT, be required to excavate below grade and refill with approved fill material if the District Representative determines that adequate drainage has not been provided.

3.02 DISPOSAL

- A. All product water from dewatering shall be pumped from the trench or other excavation and shall be disposed of in strict accordance with the Permits. The CONTRACTOR will be allowed to discharge product water from dewatering offsite into storm sewers, or ditches having adequate capacity, canals or suitable disposal pits, or other surface waters in accordance with the Dewatering Plan, provided that the water has been sampled and tested by the CONTRACTOR, is in compliance with the concentration limits specified in 62- 621.300(2) FAC (Florida Administrative Code), and the CONTRACTOR has obtained a Generic Permit for the Production of Groundwater. The frequency of water sampling and testing shall be determined by the regulator and permit requirements.
- B. Permission to use any storm sewers, or drains, for water disposal purposes shall be obtained from the authority having jurisdiction. Any requirements and costs for such use shall be the responsibility of the CONTRACTOR. However, the CONTRACTOR shall not cause flooding by overloading or blocking the flow in the drainage facilities and shall leave the facilities unrestricted and as clean as originally found. Any damage to existing facilities shall be repaired or restored as required by the authority having jurisdiction, at no cost to the DISTRICT.
- C. The CONTRACTOR shall be responsible for acquiring and complying with all permits required to discharge the product water from dewatering and shall protect waterways from turbidity during the operation.
- D. In areas where adequate disposal sites are not available, partially backfilled trenches may be used for water disposal only when the CONTRACTOR's plan for trench disposal is approved in writing by the District Representative. The CONTRACTOR's plan shall include temporary culverts, barricades and other protective measures to prevent damage to property or injury to any person or persons.
- E. No flooding of streets, roadways, driveways or private property shall be permitted.

3.03 EQUIPMENT REMOVAL

- A. Removal of dewatering equipment shall be accomplished after the system is no longer required. All materials and equipment constituting the system shall be removed by the CONTRACTOR.

END OF SECTION

TEMPORARY DEWATERING
SECTION 02140-3

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TEMPORARY DEWATERING
SECTION 02140-4

SECTION 02200 EARTHWORK

PART 1 – GENERAL

1.01 SCOPE

- A. Summary of Work: The CONTRACTOR shall furnish all labor, equipment, and materials for all excavating, trenching, filling, construction of embankment, backfilling, compacting, grading, and all related items of earthwork necessary to complete the WORK indicated or specified. Material displaced by the drainage structures is not included in the earthwork quantities shown in the Plans.
- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 01410 – Testing and Quality Control
 - 3. SECTION 02110 – Clearing and Land Preparation
 - 4. SECTION 02436 – Environmental Protection

1.02 APPLICABLE PUBLICATIONS

- A. American Society of Testing Materials (ASTM):
 - 1. D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using the Standard Effort (12,400 ft-lbf/ ft³ (600 kN-m/m³)).
 - 2. D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by Sand- Cone Method.
 - 3. D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using the Modified Effort (56,000 ft-lbf/ ft³ (2,700 kN-m/m³)).
 - 4. D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
 - 5. D2937 – Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method.
 - 6. D3740 – Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - 7. D4253 – Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
 - 8. D4254 – Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
 - 9. D4564 – Standard Test Method for Density and Unit Weight of Soil in Place by the Sleeve Method.
 - 10. D4914 – Standard Test Methods for Density and Unit Weight of Soil and Rock in Place by the Sand Replacement Method in a Test Pit.
 - 11. D5030 – Standard Test Method for Density of Soil and Rock in Place by the Water Replacement Method in a Test Pit.
 - 12. D6938 – Standard Test Method for In-place Density and Water Content of Soil and Soil-Aggregate by Nuclear Method Shallow Depth.
 - 13. E329 – Standard Specification for Agencies Engaged in Construction Inspection and/or Testing.
- B. Florida Department of Transportation (FDOT):
 - 1. Standard Specifications for Road and Bridge Construction (latest edition).

- C. American Association of State Highway Transportation Officials (AASHTO):
 - 1. AASHTO T 27 – Sieve Analysis of Fine and Coarse Aggregates.
 - 2. AASHTO T 99 - Standard Method of Test for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop.
- D. Florida Method (FM) of Test:
 - 1. FM T-1 011 – Florida Method of Test for Sampling Aggregates.
- E. Miscellaneous Project Data:
 - 1. Limited geotechnical investigations were performed. Refer to *Report of Geotechnical Exploration, Cape Haze Restoration, Charlotte County, Florida, December 14, 2022*.

1.03 DEFINITIONS

- A. Unified Soil Classification System (USCS): USCS is a two-letter classification system used to describe the texture and grain size of a soil. In the USCS system, letters are representative as follows: G stands for gravel, S stands for sand, M stands for silt, C stands for clay, O stands for organic, P stands for poorly graded, W stands for well graded, H stands for high plasticity, and L stands for low plasticity. Excavation: Excavation shall be the removal of all materials within the defined configuration to the limits of excavation shown on the Project Drawings, excluding stripping material.
- B. Unsuitable Fill: Soil/materials that does not meet the requirements for select backfill or random backfill as defined below in this SECTION shall be considered unsuitable fill.
- C. Cohesionless materials: These materials include gravels, gravel-sand mixtures, sands, and gravelly sands and are generally exclusive of clayey and silty materials (clayey and silty materials are free-draining, so impact compaction does not produce a well-defined moisture-density relationship curve).
- D. Cohesive materials: These materials include silts and clays and are generally exclusive of sands and gravel (sands and gravel are materials for which impact compaction produces a well-defined moisture-density relationship curve).
- E. Select Backfill: Select backfill shall be clean, well-graded material free from debris, peat, roots, organic material, clods, and stones with a diameter greater than 3 inches (76 mm) in any direction. Select backfill shall have an average organic content of not more than 2%. Select backfill shall be placed where indicated on the Drawings. Select backfill is required where higher control of materials and placement is needed such as embankments, and adjacent to structures. Select backfill may be material excavated for the WORK (native) or may be imported. The CONTRACTOR may blend native materials to achieve a material that meets the requirements for select backfill. Select backfill shall meet the following Unified Soil Classification System (ASTM D2487) designations: SW, SP, SP-SM, SP-SC, and SM. Materials classified as SP may be used only where the existing excavated and surrounding materials are confirmed by laboratory testing to be SP.
 - 1. Berm and Water Retaining Embankments: CL, ML (These are fine-grained soils with - 50-75% by dry weight passing through a No. 200 sieve; CL and ML are inorganic clay and silt, respectively, with a liquid limit less than 50%.) Levee fill material shall not contain any particles larger than 3 inches (76 mm) in diameter, and the upper 1-foot of the levee shall not contain particle sizes larger than 2 inches (51 mm)

in diameter.

2. Structure Backfill: SW, SP (These are coarse-grained soils with greater than 50% by dry weight retained on a No. 200 sieve; SP and SW have less than 5% finer than a No. 200 sieve)
3. Select backfill, where indicated on the plans, shall be compacted to not less than 95% maximum dry density as measured by ASTM D1557.

The following table displays select backfill maximum lift thickness and maximum particle size.

SELECT BACKFILL		
STRUCTURE TYPE	MAXIMUM PARTICLE SIZE	MAXIMUM LOOSE LIFT THICKNESS
Water Bearing Berm	3 inches	6 inches
Non-Water Bearing Berm	3 inches	12 inches
Dam/Embankment	3 inches	12 inches

Select Backfill shall meet the following FDOT gradation limits (AASHTO T27 and FM 1-T 011):

BACKFILL GRADATION LIMITS	
SIEVE SIZE	PERCENT PASSING (%)
3 1/2 inches [90 mm]	90-100
3/4 inch [19 mm]	70-100
No. 4 [4.75 mm]	30-100
No. 40 [425 µm]	15-100
No. 100 [150 µm]	5-65
No. 200 [75 µm]	0-15

F. Random Backfill: Random backfill shall be clean, well-graded material, meeting one of the following Unified Soil Classification System (ASTM D2487) designations: SW, SP, SM, SC, SW-SM, SW-SC, SP-SM, and SP-SC, that is thoroughly mixed and free from debris, clods, and stones with a diameter in any direction greater than those specified in the below table. Random backfill shall have an organic content of less than 5% by weight. Random backfill is required where stable backfill is needed to maintain slopes and grades, but shall not retain water or be adjacent to structures. Random backfill may be material excavated for the WORK (native) or may be imported. If there is insufficient native fill, the CONTRACTOR shall contact the DISTRICT for guidance on where random backfill can be reduced. The CONTRACTOR may blend native materials to achieve a material that meets the requirements for random backfill.

Random backfill shall meet the requirements below with the largest particle diameter not exceeding 0.9 of the compacted layer thickness.

RANDOM BACKFILL		
MAXIMUM PARTICLE SIZE	SURFACE DEPTH	MAXIMUM COMPACTED LIFT THICKNESS
3 1/2 inches	< 12 inches	6 inches
6 inches	12-24 inches	12 inches
12 inches	> 24 inches	12 inches

1. Random backfill, where indicated on the plans, shall be compacted to not less than 80% maximum dry density as measured by ASTM D1557.

1.04 SUBMITTALS

The CONTRACTOR shall submit field measured cross-sections at each design cross-section for record purposes for excavations and embankments as described in this SECTION. The submittal of the field measured cross-sections shall be signed and sealed by a State of Florida licensed land surveyor. The CONTRACTOR shall submit to the DISTRICT detailed Work Plans for all work indicated or specified in this SECTION at least 14 days before the work is scheduled to begin.

1.05 RESPONSIBILITIES

- A. The CONTRACTOR shall excavate any material encountered to the depth and grades required, shall backfill such excavations as required, and shall dispose of excess or unsuitable materials from excavation as approved by the DISTRICT. The CONTRACTOR shall provide and place necessary borrow material to properly backfill excavations as indicated on the Drawings, specified herein, or as directed by the DISTRICT.
- B. Excavation, dewatering, sheeting, and bracing required shall be carried out so as to prevent any possibility of undermining or disturbing the foundations of any existing structure or WORK, and so that all WORK may be accomplished and inspected in the dry, except as directed by the DISTRICT. Aqueous construction may be performed only with prior written approval of the DISTRICT.
- C. The CONTRACTOR shall furnish the services of a State of Florida licensed land surveyor for the field layout of all work indicated or specified in this section. The CONTRACTOR'S licensed land surveyor shall perform all initial site layout and shall provide follow-up verification of all work underway at a frequency of no less than once a week.

1.06 CERTIFICATIONS AND TESTING

CONTRACTOR shall furnish, at their own expense, all field density testing required to establish and maintain individual Quality Control (QC) processes required or specified in this SECTION. Field density tests shall be in accordance with ASTM Standards (some referenced herein) appropriate to each type of material used in backfilling. Failure to meet the specified density will require the CONTRACTOR to recompact and retest, at their own expense, those areas directed by the DISTRICT.

1.07 INSPECTION COORDINATION

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

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 Final Completion, and as described in the General Conditions.
- B. The CONTRACTOR shall warrant the WORK against defects for one year from the date of Final Completion and as described in the General Conditions.

PART 2 – PRODUCTS

2.01 MATERIALS ENCOUNTERED

- A. The CONTRACTOR shall excavate all materials encountered which may include, but not necessarily be limited to: poorly graded granular sandy soils with variable percentages of finer materials, i.e., SP, SW, SP-SM, SP-SC, SM, SC, CH, CL-ML, CL to the lines, grades, dimensions and elevations as shown in the Drawings.
- B. The CONTRACTOR shall consider all materials encountered in excavations as suitable for use in random fill, provided that they achieve the required compaction as specified in this SECTION.
- C. Clay material is not anticipated based on the NRCS web soil survey and limited geotechnical exploration. If clay material is discovered it is not to be used as a surface layer for final grade or topsoil layer. Exposed clays are to be excavated out to a depth of 0.25 feet and backfilled with the appropriate soil type based on location to final grade. Clay materials may be used as Random backfill in existing canals designated for backfill in the plans.
- D. Any encountered Muck may be used as a surface layer in the proposed wetland areas to meet final grade requirements. Muck is not to be used as Select or Random backfill.
- E. Paved asphalt and/or concrete is to be disposed of offsite at no cost to the District.
- F. The CONTRACTOR shall consider all materials encountered, regardless of type, character, composition and condition thereof unclassified other than as indicated in Article 1.03 Definitions. The CONTRACTOR shall estimate the quantity of various materials included prior to submitting the Bid Form. Rock encountered shall be handled by the CONTRACTOR at no additional cost to DISTRICT.

2.02 UNIDENTIFIED AREAS OF CONTAMINATION:

- A. When encountering or exposing any abnormal condition indicating the presence of contaminated materials, cease operations immediately in the vicinity and notify the District Representative. The presence of tanks or barrels; discolored earth, metal, wood, ground water, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions that appear abnormal may indicate the presence of contaminated materials and must be treated with extreme caution.
- B. Make every effort to minimize the spread of contamination into uncontaminated areas. Immediately provide for the health and safety of all workers at the job site and make provisions necessary for the health and safety

of the public that may be exposed to any potentially hazardous conditions. Ensure provisions adhere to all applicable laws, rules or regulations covering potentially hazardous conditions and will be in a manner commensurate with the gravity of the conditions.

- C. The District Representative will notify the District Contamination Impact Coordinator (DCIC) who will coordinate selecting and tasking the District's Contamination Assessment/Remediation Contractor (CAR). Provide access to the potentially contaminated area. Preliminary investigation by the CAR Contractor will determine the course of action necessary for site security and the steps necessary under applicable laws, rules, and regulations for additional assessment and/or remediation work to resolve the contamination issue.
- D. The CAR Contractor will delineate the contamination area(s), any staging or holding area required, and, in cooperation with the Prime Contractor and District Representative, develop a work plan that will provide the CAR Contractor's operations schedule with projected completion dates for the final resolution of the contamination issue. The CAR Contractor will maintain jurisdiction over activities inside any outlined contaminated areas and any associated staging holding areas. The CAR Contractor will be responsible for the health and safety of workers within the delineated areas. Provide continuous access to these areas for the CAR Contractor and representatives of regulatory or enforcement agencies having jurisdiction. Both Contractors will use the schedule as a basis for planning the completion of both work efforts. The District may grant the Contract Time extensions in accordance with the Contract Documents.
- E. Cooperate with the CAR Contractor to expedite integration of the CAR Contractor's operations into the construction project. The Prime Contractor is not expected to engage in routine construction activities, such as excavating, grading, or any type of soil manipulation, or any construction processes required if handling of contaminated soil, surface water or ground water is involved. All routine construction activities requiring the handling of contaminated soil, surface water or groundwater will be by the CAR Contractor. The District Representative will direct the Prime Contractor when operations may resume in the affected area.

2.03 BORROW

- A. Materials for Borrow:
 - Do not open borrow pits or initiate spoil pile removal until the District Representative has approved their location and limits of work.
 - Do not provide borrow materials that are polluted as defined in Chapter 376 of the Florida Statutes (oil of any kind and in any form, gasoline, pesticides, ammonia, chlorine, and derivatives thereof, excluding liquefied petroleum gas) in concentrations above any local, State, or Federal standards.
 - Prior to placing any borrow material that is the product of soil incineration, provide the District Representative with a copy of the Certificate of Materials Recycling and Post Burn Analysis showing that the material is below all allowable pollutant concentrations.
- B. Furnishing of Borrow Areas
 - To obtain the District Representative's approval to use an off-site construction activity area that involves excavation such as a borrow pit or local aggregate pit, request in writing, a review for cultural resources involvement. Send the request to the Division of Historical Resources (DHR), Department of State, State Historic Preservation Officer, Tallahassee, FL. As a minimum, include in the request the Project Identification Number, the County, a description of the property with Township, Range, Section, etc., the dimensions of the area to be affected,

and a location map. Do not start any work at the off-site construction activity area prior to receiving clearance from the DHR that no additional research is warranted.

- For certain locations, the DHR will require a Cultural Resources Assessment Survey before approval can be granted. When this is required, secure professional archaeological services to complete an historical and archaeological survey report. Submit the report to the DHR with a copy to the District. The District Representative will determine final approval or rejection of off-site construction activity areas based on input from the DHR.
- Before receiving approval or before use of borrow areas, obtain written clearance from the District Representative concerning compliance with the Federal Endangered Species Act and other Wildlife Regulations.
- The District will adjust Contract Time for any suspension of operations required to comply with this Article. The District will not accept any monetary claims due to delays or loss of off-site construction activity areas.
- Except where the Plans specifically call for the use of a particular borrow, spoil or dredging area, the Contractor may substitute borrow or dredging areas of his own choosing provided: (1) the District Representative determines the materials from such areas meet the District's standards and other requirements for stability for use in the particular sections of the work in which it is to be placed, and (2) the Contractor absorbs any increase in hauling or other costs. Stake the corners of the proposed borrow area and provide the necessary equipment along with an operator in order for the District Representative to investigate the borrow area. The District Representative will determine test locations, collect samples, and perform tests to investigate the proposed borrow area based on soil strata and required soil properties. The District Representative will approve use of materials from the proposed area based on test results and project requirements.
- Before using any borrow material from any substitute areas, obtain the District Representative's approval, in writing, for the use of the particular areas, and, where applicable, ensure that the District Representative has cross-sectioned the surface. Upon such written approval by the District Representative, consider the substitute areas as designated borrow areas.
- When furnishing the dredging or borrow areas, supply the District with evidence that the necessary permits, rights, or waivers for the use of such areas have been secured.
- Do not excavate any part of a Contractor furnished borrow area which is less than 300 feet from the right-of-way of the project or any State Road until the District Representative has approved a plan for landscaping and restoring the disturbed area. Perform this landscaping and land restoration at no expense to the District, prior to final acceptance of the project. Do not provide a borrow area closer than 25 feet to the right-of-way of any state road. In furnished borrow pits, do not excavate material within 5 feet of adjacent property lines.
- Upon completion of excavation, neatly shape, dress, grass, vegetate, landscape, and drain all exposed areas including haul roads, as necessary so as not to present an objectionable appearance.

C. Haul Routes for Borrow Pits

- Provide and maintain, at no expense to the District, all necessary roads for hauling the borrow material. Where borrow area haul roads or trails are used by others, do not cause such roads or trails to deteriorate in condition.
- Arrange for the use of all non-public haul routes crossing the property of any railroad. Incur

any expense for the use of such haul routes. Establish haul routes which will direct construction vehicles away from developed areas when feasible, and keep noise from hauling operations to a minimum. Advise the District Representative in writing of all proposed haul routes.

D. Authorization for Use of Borrow

- Use borrow only when sufficient quantities of suitable material are not available from onsite excavation and designated spoil piles to properly construct canal backfills and any necessary backfilling. Do not use borrow material until so ordered by the District Representative, and then only use material from approved borrow pits.

2.04 Materials for Backfill

A. The CONTRACTOR assumes responsibility for determining the suitability of excavated material for use on the project in accordance with the material designated in the plans and the material as defined in this Section 1.03 Definitions. Consider the sequence of work and maintenance of traffic phasing in the determination of the availability of this material.

PART 3 – EXECUTION

3.01 SITE PREPARATION

A. Clearing and Demolition: The CONTRACTOR shall perform clearing, and demolition as specified in SECTION 02110 - Clearing and Land Preparation.

B. Stripping: The CONTRACTOR shall remove topsoil from areas within limits of excavation and areas designated to receive compaction as shown on the Drawings, required and as provided below:

1. Scrape area clean of all brush, grass, weeds, roots, and other material.
2. Strip to a minimum depth of approximately six (6) inches or to a sufficient depth to remove excessive roots in heavy vegetation or brush areas and as required segregating topsoil. All roots and branches 1/2 inch in diameter or greater shall be removed.
3. Stockpile topsoil in areas where it will not interfere with construction operations or existing facilities. Stockpiled topsoil shall be reasonably free of subsoil, debris and stones larger than two inches in diameter.

3.02 EXCAVATION AND TRENCHING

A. Sheeting and Bracing: The CONTRACTOR shall provide sheeting and bracing as required or shown in accordance with the following provisions.

1. Use when required by the specifications or Drawings and where resulting slopes from excavation or trenching might endanger the structural integrity of in-place or proposed structures.
2. Provide materials on site prior to start of excavation. Adjust spacing and arrangement as required by conditions encountered.
3. Remove sheeting and bracing as backfill progresses. Fill voids left after withdrawal with sand or other approved material.
4. In-place structures damaged by sheeting and bracing activities shall be repaired by the CONTRACTOR at no additional cost to the DISTRICT.
5. Comply with all applicable sections of OSHA.
6. Comply with all requirements of the Florida Trench Safety.

B. Blasting: Blasting will not be permitted.

C. Excavation for Structures: The CONTRACTOR shall perform excavation for structures as shown, required and specified below:

1. Excavate area adequate to permit efficient erection and removal of forms.
2. Excavate by hand in areas where confined space and access restricts the use of machines.
3. Notify the DISTRICT immediately when excavation has reached the depth indicated on plans.

D. Primary Excavation: The CONTRACTOR shall perform Primary excavation by any method meeting the requirements of these specifications and the Drawings. Transitions in bottom width and elevation shall be uniform. The excavated slopes and bottom of the created wetlands and streambed shall be left as smooth as skilled use of the excavating equipment will permit.

1. A construction tolerance of 0.20 foot above or below the lines and grades indicated shall be permitted, except for identified fish nursery entrances and structures, where a construction tolerance of 0.10 feet above or below the lines and grade indicated shall be permitted.
 - a. The CONTRACTOR shall provide field measured cross-sections of the "As-Built" conditions to the DISTRICT, plotted at the same stations as the detailed cross-sections shown on the plans to show the above specified tolerance has been met.
2. Sufficient quantities of peat or topsoil may be placed near the limits of fill for use in final dressing of fill side slopes.

E. Demucking: The CONTRACTOR shall remove all organic soils from areas below structures, piping, and road subgrades to the lines and grades as shown in the Drawings. Materials excavated shall not be used for backfilling of structures or pipes and shall be placed in random fill zones only. Organic soils (including peat) shall be used in random fill in the top layer of the final dressing.

F. Excavation of Existing Embankments: The CONTRACTOR shall perform excavation by any method acceptable to the DISTRICT and by meeting the requirements of these specifications and the Drawings. All materials removed from embankments shall be suitable for reuse as random fill. Excavation limits shall be clearly identified and approved by the DISTRICT prior to initiation of the WORK.

G. Cross-Sections: For payment and record purposes, the CONTRACTOR shall submit field measured cross-sections as required by the DISTRICT as part of the Grading As-Built in Section 01305.

3.03 BACKFILLING

A. Dry Fill Method:

1. Construct canal backfills to meet compaction requirements. Restrict the compacted thickness of the last canal backfill lift to 6 inches maximum prior to placement of the 6" of flatwoods top soil to achieve finish grades. Construct canal backfill in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering.
2. Equipment and Methods:
 - a. Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps, and

siphons.

b. When normal dewatering does not adequately remove the water, the District Representative may require the canal backfill material to be placed in the water or on low swampy ground in accordance with the Hydraulic Method (this Section 3.03 B).

3. Placing in Unstable Areas:

a. Where depositing the material in water, or on low swampy ground that will not support the weight of hauling equipment, construct the canal backfill by dumping successive loads in a uniformly distributed layer of a thickness not greater than necessary to support the hauling equipment while placing subsequent layers. Once sufficient material has been placed so that the hauling equipment can be supported, construct the remaining portion of the canal backfill in layers in accordance with the applicable guidance in this Section.

4. Placing on Steep Slopes:

a. When constructing a canal backfill from a sloped bank more than 20 degrees from the horizontal, before starting the fill, deeply plow or cut into steps the surface of the original ground on which the Canal Backfill is to be placed.

5. Placing Outside Standard Minimum Slope:

a. Where material that is unsuitable for normal canal backfill construction is to be used in the canal backfill outside the standard minimum slope (approximately one to two), place such material in layers of not more than 18 inches in thickness, measured loose. The Contractor may also place material which is suitable for normal canal backfill, outside such standard minimum slope, in 18 inch layers.

b. Maintain a constant thickness for suitable material placed within and outside the standard minimum slope, unless placing in a separate operation.

B. Hydraulic Method:

1. Method of Placing:

a. When the hydraulic method is used, as far as practicable, place all dredged material in its final position in the canal backfill area by such method. Place and compact any dredged material that is re-handled, or moved and placed in its final position by any other method, as specified in this Section 3.03-C. The Contractor may use baffles or any form of construction they may select provided the slopes of the canal backfills are not steeper than indicated in the Plans. Remove all timber used for temporary bulkheads or baffles from the canal backfill and fill and thoroughly compact the holes thus formed. When placing fill on submerged land, construct dikes prior to beginning of dredging, and maintain the dikes throughout the dredging operation.

2. Excess Material:

a. Do not use excess material placed outside the prescribed slopes, below the normal high-water level, to raise the fill. Remove only the portion of this material required for dressing the slopes.

C. Compaction Requirements:

1. General: Uniformly compact each layer, using equipment that will achieve the required density, and as compaction operations progress, shape and manipulate each layer as necessary to ensure uniform density throughout the canal backfill.

2. Moisture Content: Compact the materials at a moisture content such that the specified density can be attained. If necessary to attain the specified density, add water to the material, or lower the moisture content by manipulating the material or allowing it to dry, as is appropriate.

3. Compaction Over Unstable Foundations: Where the canal backfill material is deposited in water or on low swampy ground, and in a layer thicker than 12 inches (as provided in this Section 3.03-A-3), compact

the top 6 inches (compacted thickness) of such layer to the density required by backfill type as defined in this Section 1.03.

4. Compaction of Planted Areas: Where plant growth will be established, do not compact the final topsoil layer. Leave this layer in a loose condition to a minimum depth of 6 inches for the subsequent seeding or planting operations.
5. Compaction for Structures: Compact the backfill of trenches to the densities specified for select backfill as defined in this Section 1.03.

D. Construction Tolerances:

1. Shape the earthwork to match adjacent grades. Shape the bottom of ditches so that the ditch impounds no water.
2. Shape the surface of the earthwork to conform to the lines, grades, and cross-sections shown in the Plans. In final shaping of the surface of earthwork, maintain a tolerance of
 - a. 0.1 foot above or below the plan cross-sections and profiles for Fish Nursery Entrances and structures
 - b. 0.2 feet above or below the plan cross sections and profiles for all other areas

3.04 DISPOSAL OF SURPLUS AND UNSUITABLE MATERIAL

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

3.05 STOCKPILE OF EXCAVATED MATERIAL

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

3.06 MAINTENANCE

- A. While construction is in progress, maintain adequate drainage at all times.
- B. Maintain all earthwork construction throughout the life of the Contract, and take all reasonable precautions to prevent loss of material due to the action of wind or water. Repair, at no expense to the District, except as otherwise provided herein, any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work. Perform maintenance and protection of earthwork construction in accordance with the Erosion and Sediment control details in the plans.
- C. Maintain all channels excavated as a part of the Contract work against natural shoaling or other encroachments to the lines, grades, and cross-sections shown in the Plans, until final acceptance of the project.
- D. The CONTRACTOR shall fill, repair, and re-establish grades to the required elevations and slopes for any area that shows settling or erosion occurring prior to finishing.

END OF SECTION

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EARTHWORK
SECTION 02200-12

SECTION 02240 CELLULAR CONFINEMENT SYSTEM (GEOWEB)

PART 1 - GENERAL

1.01 SCOPE

- A. Work Included: This Section includes providing all material, labor, tools and equipment for installation of Cellular Confinement System as shown in the Contract Documents and as specified in this Section.
- B. The Cellular Confinement System shall be used as indicated on plans for low water crossings, boat ramps, and slope protection.

1.02 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO)
 - 1. AASHTO M 218 - Steel Sheet, Zinc-Coated (Galvanized) for Corrugated Steel Pipe.
 - 2. AASHTO M 288 - Geotextile Specification for Highway Applications
- B. American Society of Testing and Materials (ASTM)
 - 1. ASTM D 792 – Standard Test for Density and Specific Gravity (Relative Density) of Plastics by Displacement
 - 2. ASTM D 1505 - Density of Plastics by the Density-Gradient Technique.
 - 3. ASTM D 1603 - Standard Test for Carbon Black in Olefin Plastics
 - 4. ASTM D 1693 - Environmental Stress-Cracking of Ethylene Plastics.
 - 5. ASTM D 5199 - Measuring Nominal Thickness of Geotextiles and Geomembranes.
 - 6. ASTM E 41 - Terminology Relating to Conditioning.

1.03 SUBMITTALS

- A. Submit Manufacturer's shop drawings in accordance with Section 01300, including Manufacturer's product data, samples and section layout.
- B. Submit manufacturer's certification of polyethylene used to make Geoweb material including
 - 1. Manufacturer's certification of percentage of carbon black.
 - 2. Resin manufacturer's certification of polyethylene density and Environmental Stress Crack Resistance (ESCR).
- C. No material will be considered as an equivalent to the material specified herein unless it meets all requirements of this specification, without exception. Manufacturers seeking to supply what they represent as equivalent material must submit records, data, independent test results, samples, certifications, and documentation deemed necessary by the District Representative to prove equivalency. The District Representative shall approve or disapprove other Manufacturer's materials in accordance with the General Conditions after all information is

submitted and reviewed. Any substitute materials submitted shall be subject to independent lab testing at the Contractor's expense.

D. Contractor must notify the District a minimum of 10 days prior to commencement of installation to allow inspection/observation of installation.

1.04 QUALITY ASSURANCE AND CONTROL

A. The cellular confinement system material shall be provided from a single Manufacturer for the entire project.

B. The Manufacturer's Quality management system shall be certified and in accordance with ISO 9001:2008 and CE certification. Any substitute materials submitted shall provide a certification that their cellular confinement manufacturing process is part of an ISO program and a certification will be required specifically stating that their testing facility is certified and in accordance with ISO. An ISO certification for the substitute material will not be acceptable unless it is proven it pertains specifically to the geocell manufacturing operations.

C. The Manufacturer shall provide certification of compliance to all applicable testing procedures and related specifications upon the customer's written request. Request for certification shall be submitted no later than the date of order placement. The Manufacturer shall have a minimum of 20 years experience producing cellular confinement systems.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in Manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and Manufacturer.

B. The materials shall be stored in accordance with Manufacturer's instructions. The materials shall be protected from damage and out of direct sunlight.

C. The materials shall be delivered, unloaded and installed in a manner to prevent damage.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. Presto Geosystems, PO Box 2399, Appleton, Wisconsin 54912 2399.
Toll Free (800) 548 3424. Phone (920) 738 1328. Fax (920) 738 1222.
E Mail info@prestogeo.com. Website www.prestogeo.com.

2.02 GEOWEB CELLULAR CONFINEMENT SYSTEM

B. Base Materials – Presto GEOWEB GW20V Geocells

1. Polyethylene Stabilized with Carbon Black
a) Density shall be 58.4 to 60.2 pound/ft³ in accordance with ASTM D1505 or D792.

- b) Environmental Stress Crack Resistance (ESCR) shall be greater than 5000 hours in accordance with ASTM D1693.
- c) Resistance to Oxidation shall be minimum of 100 years in accordance with EN ISO 13438.
- d) 100% of original strip tensile strength shall be retained following exposure to accelerated weathering in accordance with EN 12224.
- e) The Flexural Storage Modulus shall be a minimum of 800 MPa in accordance with ISO 6721.
- f) Ultra-Violet light stabilization with carbon black.
- g) Carbon Black content shall be 1.5 to 2 percent by weight, through addition of a carrier with certified carbon black content.
- h) Carbon black shall be homogeneously distributed throughout material.
- i) The manufacturer must have an in-place quality control to prevent irregularities in strip material.

C. Cell Properties

- 1. Individual cells shall be uniform in shape and size when expanded.
- 2. Individual cell dimensions (nominal) shall be plus or minus 10%.
- 3. GW20V-Cell
 - a) Length shall be 8.8 inches.
 - b) Width shall be 10.2 inches.
 - c) Nominal area shall be 44.8 in² plus or minus 1%.
- 4. Nominal cell depth shall be 8 inches.

D. Strip Properties and Assembly

- 1. Perforated Textured Strip/Cell
 - a) Strip sheet thickness shall be 50 mils, minus 5 percent, plus 10 percent in accordance with ASTM D 5199. Determine thickness flat, before surface disruption.
 - b) Polyethylene strips shall be textured surface with a multitude of rhomboidal (diamond shape) indentations.
 - c) Textured sheet thickness shall be 60 mils, plus or minus 6 mils.
 - d) Indentation surface density shall be 140 to 200 per in².
 - e) Perforated with horizontal rows of 0.4 inch diameter holes.
 - f) Perforations within each row shall be 0.75 inches on-center.
 - g) Horizontal rows shall be staggered and separated 0.50 inches relative to hole centers.
 - h) Edge of strip to nearest edge of perforation shall be a minimum of 0.3 inches.
 - i) Centerline of spot weld to nearest edge of perforation shall be a minimum of 0.7 inches.
 - j) A slot with a dimension of 3/8 inch x 1-3/8 inch is standard in the center of the non-perforated areas and at the center of each weld.
- 2. Assembly of Cell Sections
 - a) Fabricate using strips of sheet polyethylene each with a length of 142 inches and a width equal to cell depth.
 - b) Connect strips using full depth ultrasonic spot-welds aligned perpendicular to longitudinal axis of strip.
 - c) Ultrasonic weld melt-pool width shall be 1.0 inch maximum.
 - d) Weld spacing for GW20V-cell sections shall be 14.0 inches plus or minus 0.10 inch.

E. Cell Seam Strength Tests

- 1. Minimum seam strengths are required by design and shall be reported in test results. Materials submitted

with average or typical values will not be accepted. Written certification of minimum strengths must be supplied to the District Representative at the time of submittals.

2. Short-Term Seam Peel-Strength Test
 - a) Cell seam strength shall be uniform over full depth of cell.
 - b) Minimum seam peel strength shall be 640 lbf for 8 inch depth.
3. Long-Term Seam Peel-Strength Test
 - a) Conditions: Minimum of 7 days in a temperature-controlled environment that undergoes change on a 1-hour cycle from room temperature to 130 degrees F (54 degrees C).
 - b) Ambient room temperature shall be in accordance with ASTM E41.
 - c) Test samples shall consist of two, 4 inch (100 mm) wide strips welded together.
 - d) Test sample consisting of 2 carbon black stabilized strips shall support a 160 pound (72.5 kg) load for test period.
4. Internal Junction Efficiency
 - a) Internal junction efficiency (seams) shall be determined as a ratio of junction performance to perforated strip performance, as determined by EN ISO 10319 and EN ISO 13426.
 - b) Internal junction efficiency (factor of safety) shall be calculated for peel, shear and separation.
 - c) Minimum internal junction efficiency shall be ≥ 100 percent.
5. Mechanical Junction Efficiency
 - a) Mechanical junction efficiency (panel to panel connection) shall be determined as a ratio of junction performance to perforated strip performance, as determined by EN ISO 10319 and EN ISO 13426.
 - b) Mechanical junction efficiency (factor of safety) shall be calculated for peel, shear and separation.
 - c) Minimum mechanical junction efficiency shall be ≥ 100 percent.
 - d) Panel connection device shall be with integral components as designed by the Manufacturer.
6. 10,000-hour Seam Peel Strength Certification
 - a) Provide data showing that the high-density polyethylene resin used to produce the geocell sections has been tested using an appropriate number of seam samples and varying loads to generate data indicating that the seam peel strength shall survive a loading of at least 209 lbf (95 kg) for a minimum of 10,000 hours.

2.03 INTEGRAL COMPONENTS

A. ATRA® Clip

1. The ATRA Clip is a molded, high-strength polyethylene device available in standard (0.5 inch) and metric (10-12 mm) versions.
2. ATRA clips can be installed as an end cap on standard (0.5 inch) and metric (10-12 mm) steel reinforcing rods to form ATRA Anchors.

B. ATRA® Key

1. ATRA keys shall be constructed of polyethylene and provide a high strength connection.
2. ATRA keys shall be used to connect Geoweb panels together at each interleaf and end to end connection.
3. ATRA keys shall provide minimum break strength of 265 lbf.

2.04 STAKE ANCHORAGE

A. ATRA® Glass Fiber Reinforced Polymer (GFRP) Anchors

1. Anchors shall consist of No. 4 (0.5 inch) or metric (10–12 mm) steel reinforcing rod with a stake clip attached as an end cap.
2. Anchors shall be assembled by inserting the stake clip onto the rebar so that the end is flush with the top of the stake clip. Prior to attaching the stake clip, the rebar shall be beveled and free from all burrs.
3. The anchor length and placement shall be as shown in the Contract Documents.

4.

2.05 CELL INFILL MATERIALS

- A. Where rock-filled Geoweb is called out on the construction plans, cell infill material shall be gravel, crushed aggregate or stone with a particle size of 1.5 to 3 inches (FDOT Size No. 57 Stone).
- B. Infill material shall be free of any foreign material.
- C. Clays and silts are not acceptable infill material.
- D. Infill material shall be free-flowing and not frozen when placed in the Geoweb sections.

2.06 ADDITIONAL COMPONENTS

A. Surface Protection

1. Surface protection shall consist of a 1-inch layer of No 57 stone (Wear layer) where indicated in the plans.

B. The geotextile underlayer shall be Mirafi 500x or approved equal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify site conditions are as indicated on the drawings. Notify the District Representative if site conditions are not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.
- B. Verify layout of structure is as indicated on the drawings. Notify the District Representative if layout of structure is not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.

3.02 INSTALLATION

- A. Prepare subgrade and install Geoweb protection system in accordance with Manufacturer's recommendations.
- B. Subgrade Preparation:

1. Excavate or fill foundation soils so top of installed Geoweb section is slightly lower than final grade as indicated on the drawings or as directed by the District Representative.
2. Install geotextile underlayer on prepared surfaces ensuring required overlaps are maintained and outer edges of geotextile are buried in accordance with the Manufacturer's recommendations.

C. Section Anchorage and Connection

1. Position collapsed Geoweb sections along the edge of the placement area indicated in the plans.
2. Drive ATRA anchors to secure the Geoweb sections in place and allow expansion of the Geoweb sections into position.
3. After the Geoweb sections are expanded as desired, drive ATRA Anchors so the arm of the stake clip engages with the top of the cell wall.
4. Anchorage shall be placed such that the Geoweb does not move, twist, or otherwise deform while placing and securing any additional sheets needed to cover the designated area in the plans or while placing and manipulating the infill.
5. Connect the sections with keys at each interleaf and end-to-end connection. Insert the key through the cell wall I-slot before inserting through the adjacent cell. Turn the key 90 degrees to lock the sections together.
6. Geoweb that twists or deforms during infill shall be removed, subgrade reset per specifications, and placed again.
 - a) Damaged Geoweb shall not be placed if damage has occurred due to improper securing and infill process or improper storage and handling

D. Aggregate Infill Placement (No 57 stone)

1. Place specified infill in expanded cells with suitable material handling equipment.
2. Infill material shall be free-flowing and not frozen when placed into the Geoweb sections.
3. Limit drop height to a maximum of 3 feet to avoid damage/ distortion or displacement of the cell walls.
4. Evenly spread infill and ensure the infill is flush with the Geoweb cell walls.
5. Overfill cells and compact to provide a 1-inch wear surface where indicated in the plans. Maintain the wear surface over the sections to prevent damage to the cell walls.

END OF SECTION

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CELULAR CONFINEMENT SYSTEM (GEOWEB)
SECTION 02240-7

SECTION 02435 TURBIDITY CONTROL AND MONITORING

PART 1 – GENERAL

1.01 SCOPE

- A. Summary of Work: 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 FDEP Florida Stormwater Erosion and Sedimentation Control Inspector's Manual.
- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 01410 – Testing and Quality Control
 - 3. SECTION 02436 – Environmental Protection

1.02 APPLICABLE PUBLICATIONS

The environmental protection rules and standards in the applicable sections of the F.A.C. incorporated herein by reference are:

- A. <http://www.dep.state.fl.us/legal/Rules/rulelistnum.htm>.
- B. Design and Performance Standards - 62-25.025 F.A.C.
- C. Quality Assurance - 62-160 F.A.C.
- D. Surface Waters of the State - 62-301 F.A.C.
- E. Surface Water Quality Standards - 62-302 F.A.C. F. Generic Permits - 62-621.300(2) & (4) F.A.C.
- G. Florida Department of Environmental Protection
 - 1. Florida Stormwater Erosion and Sedimentation Control Inspector's Manual

1.03 SUBMITTALS

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

- A. Provide details of the turbidity controls proposed.
- B. Provide proposed layout of turbidity controls and monitoring system on the site plan.
- C. Obtain monitoring data and prepare quarterly reports in accordance with Paragraph 3.03B.

1.04 QUALIFICATIONS:

The CONTRACTOR shall have on-site at least one (1) employee certified by the Florida Department of Environmental Protection as a Stormwater Erosion and Sedimentation Control inspector. The certification shall be submitted to the DISTRICT for review prior to the installation, inspection, maintenance, repair or replacement of any erosion or sedimentation control Best Management Practices, including but not limited to turbidity controls. The turbidity monitoring shall be conducted according to FDEP-approved procedures.

1.05 INSPECTION COORDINATION

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

PART 2 – PRODUCTS

2.01 FABRIC

The CONTRACTOR shall provide fabric that is flexible and impermeable or of sufficiently fine mesh to prevent the 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 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 bottom.

PART 3 – 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 backfilling, clearing and grubbing, pipe placement, 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 (construction areas stabilized with vegetation) and turbidity levels return to background levels based on monitoring results. 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 Chapter 62-302.530, F.A.C., and to meet the special requirements of any environmental permits that have been issued.
- E. Turbidity controls shall be inspected by the CONTRACTOR every workday, after every rainfall event of 0.5 inches or greater in a 24-hour period, and after every extreme weather event that could dislodge or damage the

turbidity controls, to assure that the turbidity controls remain properly installed, undamaged, and fully functional at all times.

3.02 EROSION CONTROL

A. The CONTRACTOR shall prevent and control erosion and water pollution as per Florida Department of Transportation (FDOT) Specification Sections 104-1, 2, 3, 4, 6 and 7 and FDEP regulations and permit conditions.

3.03 MONITORING

A. The CONTRACTOR shall conduct and record the results of turbidity monitoring if required by the associated construction permits. An FDEP approved Turbidity Monitoring Log is attached (Appendix A) for the CONTRACTOR's use. If monitoring is required by permit but the methods are not dictated by the permit, then at a minimum the contractor will:

1. Check the turbidity at the nearest aquatic exit from the construction area being disturbed.
2. Sampling Time:
 - a. During Activities or Environmental Conditions that Can Generate Construction-related Turbidity: Water samples for turbidity measurement shall be collected beginning no sooner than one hour after and no later than two hours after construction activity commences and every four hours thereafter until the workday ends.
3. Equipment: The turbidity monitoring equipment shall meet the specifications and be calibrated, maintained, repaired, and replaced according to the methods, procedures, and frequencies set forth in Chapter 62-160, F.A.C.
4. Records Management: The individual conducting the turbidity monitoring shall transcribe the readings to the approved Turbidity Log Form (Appendix A) and sign and date the form at the close of each monitoring day. The notebook containing the signed and dated daily turbidity log forms shall be accessible at the construction site during the workday.
5. The CONTRACTOR shall submit quarterly monitoring data (Turbidity Log Forms), to the DISTRICT. Documents submitted shall contain the following information:
 - a. Permit number
 - b. Project name
 - c. Dates of sampling and analysis
 - d. A statement describing the methods used in the collection, handling, storage and analysis of the samples
 - e. A map indicating the sampling locations
 - f. A statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.
6. The CONTRACTOR shall submit monitoring reports that also include the following information for each sample that is taken:
 - a. Time of day samples taken
 - b. Depth of water body
 - c. Depth of sample
 - d. Antecedent weather conditions
 - e. Water level stage

f. Direction of flow

3.04 EXCEEDANCES OF WATER QUALITY STANDARDS

- A. Turbidity shall not exceed [29] Nephelometric Turbidity Units (NTUs) above background in Class III receiving waters, or greater than 0 NTU above background samples in receiving waters classified as OFW (Outstanding Florida Waters). If monitoring reveals project-generated turbidity that exceeds the applicable turbidity standard, construction activities shall cease immediately and not resume until corrective measures have been taken, turbidity has returned to acceptable levels, and activities can be conducted in compliance with the turbidity standards.
 - 1. The Contractor shall submit a turbidity exceedance report to the District within 24 hours of any exceedance(s). The report shall include a copy of the monitoring data sheets, which indicate the exceedance(s) and a description of the corrective actions taken or proposed.

TURBIDITY MONITORING LOG

A site map depicting sampling locations must accompany the quarterly turbidity monitoring reports

Project Name:	Permit No.:
Collector Name:	Date:

Water Observations	Weather Observations
Water Level Stages	Temperature:
Direction of Flow	Conditions:
Water Depth	

Activities Taking Place During Sampling		
Activity	Yes	No
Excavation or Filling within 50 ft of Water Body?		
Other In-Water Work? (e.g., dewatering; installing piling or forms; injecting concrete; sand blasting; painting)		
Other Activity? (e.g., materials transfer; washdown; interim stabilization)		

Background Station Data	A.M. Mid-Depth	Mid-Day Mid-Depth	P.M. Mid-Depth
Describe Location:			
Collection Time			
Analysis Time			
Turbidity (NTU)			
Analysis Date			

Compliance Station Data	A.M. Mid-Depth	Mid-Day Mid-Depth	P.M. Mid-Depth
Describe Location:			
Collection Time			
Analysis Time			
Turbidity (NTU)			
Analysis Date			
Was Compliance Sample more than 0 NTU's above Background Sample?	Yes No	Yes No	Yes No
If the 0 NTU limitation was exceeded, please describe cause (e.g., excessive rainfall; interim stabilization failure; BMP capacity exceedance, short-circuiting, or other causes), location(s) (depicted on attached site map), and corrective actions taken describe on reverse side.			

Comments (on reverse side of this form):
--

Statement of Authenticity

I certify this test was conducted with a calibrated device and that the results are complete and accurate.

Signature:

Date:

Comments:

Explanation of Exceedances of Turbidity Water Quality Standard (>29 NTU above background or >0 NTU above background for a water body classified as an Outstanding Florida Water (OFW). Turbidity source activities must be depicted on attached site map.

END OF SECTION

TURBIDITY CONTROL AND MONITORING
SECTION 02435-7

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TURBIDITY CONTROL AND MONITORING
SECTION 02435-8

SECTION 02436 ENVIRONMENTAL PROTECTION

PART 1 – GENERAL

1.01 SCOPE

- A. Summary of Work: The CONTRACTOR shall provide labor, equipment and materials for the prevention of environmental damage as the result of construction operations under this contract and for those measures set forth in other technical requirements of these specifications.

- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 01300 – Submittals
 - 2. SECTION 02100 – Site Preparation
 - 3. SECTION 02110 – Clearing and Land Preparation
 - 4. SECTION 02200 – Earthwork
 - 5. SECTION 02435 – Turbidity Control and Monitoring

1.02 APPLICABLE PUBLICATIONS

Numerous environmental laws and regulations may apply. At the federal level, the contractor shall comply with the Clean Water Act (CWA); Clean Air Act (CAA), Safe Drinking Water Act, Coastal Zone Management Act (CZMA); Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Endangered Species Act (ESA); Fish and Wildlife Coordination Act (FWCA); National Environmental Policy Act (NEPA); National Pollution Discharge Elimination System (NPDES); National Historic Preservation Act (NHPA); Native American Graves Protection and Repatriation Act (NAGPRA); Resource Conservation and Recovery Act (RCRA); Toxic Substance Control Act (TSCA); Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); Code of Federal Regulations (CFR); Executive Orders and Environmental Protection Agency (EPA) requirements, as appropriate; and all general and specific Federal Permit Conditions as applicable. Additionally, the CONTRACTOR shall comply with state and local codes, permits, regulations and ordinances as applicable.

1.03 DEFINITIONS

For the purpose of this specification, environmental damage is defined as the presence of hazardous, physical, or biological elements or agents which alter the physical, chemical or biological integrity of the environment in such a way that it represents an unacceptable risk to public health, safety or welfare; unfavorably alter ecological balances; affect other species, biological communities, or ecosystems; or degrade the quality of the environment for aesthetic, cultural, and/or historical purposes. The control of environmental damage requires consideration of land, water, and air, and includes management of visual aesthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants.

1.04 SUBMITTALS

Within 20 calendar days after the Notice to Proceed, the CONTRACTOR shall submit an Environmental Protection Plan for review and acceptance by the DISTRICT. Approval of the plan shall not relieve the CONTRACTOR of its responsibility for adequate and continuing control of pollutants and appropriate environmental protection measures. Approval of the plan is conditional and predicated on satisfactory performance during construction. The DISTRICT reserves the right to require the CONTRACTOR to modify the Environmental Protection Plan if it is determined that environmental protection requirements are not being met. No physical work at the site shall begin prior to acceptance of the Environmental Protection Plan. The plan shall include, but not be limited to the following:

- A. A list of the Federal, State and Local laws, regulations and permits concerning environmental protection,

pollution control and abatement that are applicable to the CONTRACTOR's proposed operations and the requirements imposed.

- B. Plan detailing methods for complying with permit conditions regarding threatened species, including Gopher Tortoise, Eastern Indigo Snake, and Florida Bonneted Bat. Permit conditions for the Florida Bonneted Bat are attached in Appendix B.
- C. Methods for protection of features to be preserved within the authorized WORK areas: The CONTRACTOR shall prepare a listing of methods to protect resources needing protection (trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil and historical, archeological and cultural resources).
- D. Procedures to comply with applicable laws and regulations. The CONTRACTOR shall provide written assurance that immediate corrective action will be taken to correct any environment damage due to accident, natural causes or failure to follow the procedures set out in accordance with the Environmental Protection Plan.
- E. Environmental monitoring plans, if appropriate.
- F. Traffic control plan, if appropriate.
- G. Drawings showing locations of proposed temporary activities, such as material storage areas or stockpiles of excess spoil or materials.
- H. Erosion and sediment control methods, for protecting surface waters, wetlands, and groundwater during construction. All stormwater and erosion control methods shall be in accordance with the FDEP Florida Stormwater Erosion and Sedimentation Control Inspector's Manual, July 2008 Edition. The CONTRACTOR shall prevent and control erosion and water pollution as per SECTION 02435, FDOT Specification Sections 104-1, 2, 3, 4, 6 and 7, and FDEP regulations and permit conditions.
- I. Spill Prevention Methods: The CONTRACTOR shall identify any hazardous or potentially hazardous substances to be used on the job site and indicate intended actions to prevent accidental or intentional introduction of these materials into the air, ground, water, wetlands or drainage areas. The plan shall specify the actions that will be taken to meet the federal, state and local laws regarding labeling, storage, removal, transport and disposal of all hazardous or potentially hazardous substances.
- J. Spill Contingency Plan for hazardous, toxic or petroleum material.
- K. A WORK area plan, showing proposed activities and identifying areas of limited use or non-use, and including measures that will be taken for field identification of these areas.
- L. Identification of the person who shall be responsible for the implementation of the Environmental Protection Plan. This person shall have authority to respond for the CONTRACTOR in all environmental protection matters.

M. A recycling and waste management plan. The CONTRACTOR shall include waste minimization efforts in the Plan.

1.05 QUALIFICATIONS

CONTRACTOR shall supply qualified staff to comply with permit conditions regarding threatened species, including Gopher Tortoise, Eastern Indigo Snake, and Florida Bonneted Bat.

1.06 RESPONSIBILITIES

- A. Quality Control: The CONTRACTOR shall establish and maintain quality control for the environmental protection of all items set forth herein. The CONTRACTOR shall record on daily quality control reports or attachments thereto, any problems in complying with laws, regulations and ordinances, and corrective action taken.
- B. Permits and Authorizations: The CONTRACTOR shall obtain all needed permits or licenses unless the DISTRICT has already acquired them. The CONTRACTOR shall be responsible for implementing the terms and requirements of all permits issued for construction of the project. The CONTRACTOR shall install speed limit signs for off-road and improved road travel for construction equipment and employee vehicles that identify speeds protective of wildlife. The CONTRACTOR shall also provide all necessary signage describing Threatened and/or Endangered species which are identified in applicable environmental permits.

1.07 CERTIFICATIONS AND TESTINGS

All physical, chemical, and biological measurements and analyses that are necessary to comply with the monitoring requirements in all applicable permits or in this contract must be performed according to approved methods and procedures by a commercial laboratory that is certified to perform the required analyses according to the approved methods and procedures by the National Environmental Laboratory Accreditation Conference (NELAC).

1.08 INSPECTION COORDINATION

The CONTRACTOR shall provide access to the WORK for the DISTRICT as requested for inspection. The CONTRACTOR shall provide the DISTRICT with at least 48 hours of advance notice of its intention to begin new WORKactivities.

PART 2 – ENVIRONMENTAL PROTECTION PLAN

2.01 NOTIFICATION

In the event that the DISTRICT notifies the CONTRACTOR of any non-compliance with federal, state or local laws, permits or other elements of the CONTRACTOR's Environmental Protection Plan, the CONTRACTOR shall inform the DISTRICT of the proposed correction action and take such action as approved.

The CONTRACTOR shall notify the DISTRICT immediately of any warnings or notices of noncompliance, fines, citations or tickets issued directly to the contractor by any federal, state, or local environmental protection, waste management, code enforcement, or fire, police, or public health agency.

If the CONTRACTOR fails to comply, the DISTRICT may order all WORK to cease until corrective action has been taken. No time extensions shall be granted, or damages allowed for the suspension of WORK under this circumstance. A Notice of Termination (NOT) shall be sent to the applicable federal, state, and local

permit-issuing authorities with copy to the DISTRICT within fourteen (14) days of final stabilization

2.02 SUMMARY

The CONTRACTOR shall submit a written report within 30 days of completion of the project. This report shall delineate the absence, or occurrence, of reported or unreported environmental incidents during the course of the project.

2.03 TRAINING

The CONTRACTOR shall train its personnel in relevant phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, and careful installation and monitoring of the project to ensure continuous environmental pollution control.

Due to the probability that wildlife species of concern, including but not limited to Threatened and/or Endangered species and Protected Migratory Bird species may be present within or adjacent to construction sites, prior to initiation of construction activities, the CONTRACTOR(s) shall train its personnel on how to identify and implement appropriate protection measures for each species. The Standard Protection Measures for the Eastern Indigo Snake dated March 23, 2021 are attached in Appendix A.

PART 3 – PROTECTION OF ENVIRONMENTAL RESOURCES

3.01 GENERAL

During the entire period of the Contract, the CONTRACTOR shall protect environmental resources within the project boundaries and those affected outside the limits of construction. The CONTRACTOR shall confine its activities to the areas defined by the drawings and specifications. Any deviations from the plans (borrow areas, disposal areas, staging areas, and alternate access routes) will require additional review by the DISTRICT to ensure compliance with environmental rules and regulations prior to implementation/or commencement of those deviations.

3.02 PROTECTION OF LAND RESOURCES

Prior to the beginning of any construction the CONTRACTOR shall identify all land resources that are to be preserved or avoided within the WORK area. The CONTRACTOR shall not remove, cut, deface, injure, or destroy any land resources (trees, shrubs, vines, grasses, topsoil, or landforms) unless indicated in the plans or specifically authorized by the DISTRICT. All damaged areas shall be restored to their original or better condition.

3.03 DISTURBED AREAS

The CONTRACTOR shall effectively prevent erosion and control sedimentation through approved materials and methods as identified in the Environmental Protection Plan. Disturbed areas will include areas of ingress and egress, construction materials storage, staging, washdown areas, and toxic, hazardous, and solid materials/waste storage areas. Disturbed areas shall be temporarily stabilized within seven (7) days of cessation of phased construction activity and permanently stabilized within fourteen (14) days of cessation of all phases of construction activity. Temporary BMPs shall remain in place and in effect until the final site inspection is complete and the construction site is certified as stabilized.

3.04 PROTECTION OF WATER RESOURCES

The CONTRACTOR shall conduct all activities in a manner to avoid pollution of surface and ground water and wetlands. The CONTRACTOR's construction methods shall protect wetland and surface water areas from damage due to mechanical grading, erosion, sedimentation and turbid discharges. No storage or stockpiling of equipment shall be allowed within any wetland area unless specifically authorized under permit. Water directly

derived from construction activities shall not be allowed to directly discharge to water areas but shall be collected in retention areas to allow settling of suspended materials. The CONTRACTOR shall monitor water quality of dewatering discharge into water bodies or leaving the site in accordance with applicable environmental permits. All monitoring of any water areas that are affected by construction activities shall be the responsibility of the CONTRACTOR.

3.05 OIL, FUEL AND HAZARDOUS SUBSTANCE SPILL PREVENTION

The CONTRACTOR shall prepare a spill contingency plan in accordance with 40CFR, Part 109. The CONTRACTOR shall prevent oil, fuel or other hazardous substances from entering the air, ground, drainage, and local bodies of water or wetlands. In the event that a spill occurs, despite design and procedural controls, the CONTRACTOR shall take immediate action to contain and clean up the spill and report the spill immediately to the DISTRICT and to other appropriate federal, state, and local agency contacts. Reportable quantities (> 25 gallons) of petroleum-based fluids must be reported within 1 hour to the National Response Center (800-424-8802) and State Warning Point (800-320-0519) if it reaches the waters of the state or, if not, within 24 hrs to State Warning Point. Toxic and hazardous substances spilled directly into the waters of the state, in any quantity, must be reported immediately to the DISTRICT and those federal and state points of contact listed above.

The CONTRACTOR shall submit a written report to the DISTRICT and to the State of Florida Bureau of Emergency Response providing certification of commitment of labor, equipment and materials necessary to prevent the spread and effect expeditious cleanup and disposal. This report shall be submitted within 48 hours of the spill event.

3.06 MATERIALS AND WASTE MANAGEMENT

For sanitary waste management, the CONTRACTOR shall ensure that portable restrooms will be anchored on level ground with at least a 15-foot set-back from water bodies or banks or slopes thereto. For solid waste management, dumpster(s) will either be outfitted with a water-tight cover or be covered with a tarpaulin when not in use to minimize infiltration and leaching of rain with at least a 15-foot set-back from water bodies, conveyances thereto, or banks or slopes thereto. Hazardous materials storage areas and liquid refuse and hazardous waste collection and storage areas shall be denoted on a BMP Site Plan.

The CONTRACTOR shall ensure toxic substances and hazardous materials are stored in a locked, blast-resistant shed anchored to a bermed concrete or asphalt pad on level ground with at least a 15- foot setback from any water bodies, conveyances thereto, or banks or slopes thereto.

For solid & hazardous waste disposal involving lead-based paint, the CONTRACTOR shall ensure containers with TCLP TPb concentrations in excess of the RCRA action level will be transported by a licensed hazardous waste hauler to a licensed hazardous waste disposal facility within the time limit appropriate to the generation rate and accumulated volume of hazardous waste material. Containers with TCLP TPb concentrations less than the RCRA action level will be transported by a licensed solid waste hauler to a licensed Class I solid waste disposal facility. In either case, the contractor will obtain and transmit signed and dated copies of the transport and disposal manifests to the DISTRICT for records retention.

The CONTRACTOR is prohibited from the on-site burning of hazardous wastes (aerosol cans, oil filters, etc.). All hazardous waste will be disposed of as required by law. Copies of relevant Material Safety Data Sheets (MSDSs) shall be appended to the Environmental Protection Plan, Safety Plan, Spill Prevention Plan, and SWPPP.

The CONTRACTOR is responsible for the materials and processes where waste may be generated under the contracted activities. CONTRACTOR is responsible for providing the materials in order to implement the contract and is responsible for operating and maintaining any processes from which waste material may be generated.

The CONTRACTOR is deemed to be the “generator” as defined in 40 CFR 261.10 for any hazardous wastes or spill residue that is generated during the activities encompassed in this contract. It is recognized that it is the CONTRACTOR’S or a subcontractor of the CONTRACTOR whose act first causes a hazardous waste to become subject to regulation. The CONTRACTOR is a different legal entity from the owner/operator of the physical location/property where the contracted activities will be conducted. CONTRACTOR is a “person” within the meaning of SECTION 403.031(5), Florida Statutes.

The CONTRACTOR is responsible for compliance with applicable standards of 40 CFR 260-268 and 40 CFR 273 and 279 and state regulations which adopt or reference these federal standards.

The CONTRACTOR is responsible for the generation and retention of records associated with waste management practices and disposition. All records shall be maintained for a minimum of three years from the date of generation. All records will be made available to the DISTRICT or regulatory agencies upon request.

In the event of any chemical discharges associated with CONTRACTOR’S or subcontractor’s activities, CONTRACTOR will be responsible for reporting, assessment and remediation of such discharges in accordance with applicable federal, state or local regulations and/or guidelines including, but not limited to, 40 CFR 264/265, Chapter 62-770, F.A.C. and Chapter 62-780, F.A.C.

3.07 FISH AND WILDLIFE RESOURCE PROTECTION

The CONTRACTOR shall control and minimize interference with, disturbance to, and damage of fish and wildlife resources.

If adverse impacts occur to fish and wildlife species of concern, including but not limited to Threatened and/or Endangered Species and Protected Migratory Bird Species, the CONTRACTOR shall immediately notify the DISTRICT and provide details of adverse impacts for determination of further action that may be required. Adverse impact is defined as any harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such activity. Threatened and/or Endangered species that require specific protection measures as identified in the environmental permits shall be listed in the Environmental Protection Plan.

In the event that the DISTRICT determines that an adverse impact to species of concern, including but not limited to Threatened and/or Endangered Species and Protected Migratory Bird Species, has occurred as a result of the construction activities, the DISTRICT shall notify the Corps of Engineers and the U.S. Fish and Wildlife Service for determination of further action and possibly to determine if seasonal or daily timing restrictions on construction activities is needed.

The person designated as responsible for the Environmental Protection Plan shall be able to identify the threatened and endangered species listed in the Environmental Protection Plan; including, but not limited to, the Florida manatee, eastern indigo snake, gopher tortoise, and Florida bonneted bat. Any activity observed by

the CONTRACTOR that may result in adverse impact to threatened or endangered species shall be reported immediately to the DISTRICT, who shall have sole authority for any WORK stoppages, creation of a buffer area, or restart of construction activities.

Any Threatened and/or Endangered species and species of concern observed at the site will be recorded and logged. The logs shall be provided to DISTRICT on a bi-weekly basis. If nesting activity is detected within and/or adjacent to the project site, the CONTRACTOR shall immediately contact DISTRICT for determination of further action and possibly to determine if seasonal or daily timing restrictions on construction activities is needed.

Gopher Tortoise Fence has been specified for use in/along certain areas of the project. Fence shall be installed in accordance with the silt fence details in the plans and general notes sheet.

3.08 ENVIRONMENTAL PROTECTION RETENTION RECORD RETENTION

The CONTRACTOR shall retain a copy of all required permits, the EPP, the SWPPP, the Spill Prevention Plan, and all associated reports, records and documentation required by these permits or the contract at the construction site or an appropriate alternative location as specified in the NOI from Notice to Proceed (NTP) through Notice of Termination (NOT). Such documentation includes but is not limited to soil disturbance and stabilization logs, inspection and corrective action logs, turbidity monitoring logs, wildlife observation logs and reports, TCLP and SPLP assay results, sanitary, solid, and hazardous waste transport and disposal manifests, spill reports, material safety data sheets, and any warnings, citations or notices of noncompliance, or fees, levees, fines or penalties. A copy of all such records shall be submitted to the DISTRICT at the time of contract close-out.

3.09 PROTECTION OF AIR RESOURCES

The CONTRACTOR shall minimize pollution of air resources. All activities, equipment, processes and work operated or performed in accomplishing the specified construction shall be in strict accordance with the applicable air pollution standards of the State of Florida (F.S. Chapter 403 – Environmental Control and F.A.C. SECTION 200 – Recirculation Chiller) and all Federal emission and performance laws and standards as appropriate. This includes control of particulates, dust generated by or incidental to construction activity, burning, and odors.

3.10 PRESERVATION AND RECOVERY OF HISTORIC, ARCHEOLOGICAL, AND CULTURAL RESOURCES

If applicable, known historic, archeological and cultural resources within the CONTRACTOR's WORK area(s) will be designated as a "sensitive environmental area" on the contract drawings or other documents. If so designated, the CONTRACTOR shall install protection for these resources and shall be responsible for their preservation during the contract's duration. The CONTRACTOR shall not distribute maps or other information on these resource locations except for distribution among the CONTRACTOR's staff with a "need to know" technical responsibility for protecting the resources.

- A. Inadvertent Discoveries: If, during or after construction activities, the CONTRACTOR observes items that may have historic or archeological value, such observations shall be reported immediately to the DISTRICT so that the appropriate staff may be notified and a determination for what, if any, additional action is needed. Examples of historic, archeological and cultural resources are bones, remains, artifacts, shells, midden, charcoal or other deposits, rocks or coral, evidence of agricultural or other human activity, alignments, and constructed features. The CONTRACTOR shall cease all activities that may result in the destruction of these resources and shall prevent CONTRACTOR'S employees from further removing, or otherwise damaging, such resources.

B. Claims for Downtime due to Inadvertent Discoveries: Upon discovery and subsequent reporting of a possible inadvertent discovery of cultural resources, the CONTRACTOR shall seek to continue WORK well away from, or otherwise protectively avoiding, the area of interest, or in some other manner that strives to continue productive activities in keeping with the contract. Should an inadvertent discovery be of the nature that substantial impact(s) to the WORK schedule are evident; such delays shall be handled in accordance with the contract documents.

APPENDIX A

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

U.S. Fish and Wildlife Service March 23, 2021

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida and Georgia for use by applicants and their construction personnel. At least 30 days prior to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: jaxregs@fws.gov; South Florida Field Office: verobeach@fws.gov; Panama City Field Office: panamacity@fws.gov; Georgia Field Office: gaes_assistance@fws.gov). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or “approval” from the USFWS is needed and the applicant may move forward with the project.

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or approval from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via email, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see Poster Information section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see Pre-Construction Activities and During Construction Activities sections below).

POSTER INFORMATION

Posters with the following information shall be placed at construction entrances around the site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11” x 17” or larger paper and laminated, is attached):

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat.

These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely

bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida and Georgia. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas and often move seasonally between upland and lowland habitats, particularly in the northern portions of its range (North Florida and Georgia). Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and aboveground refugia, such as other animal burrows, stumps, roots, and debris piles. Reliance on xeric sandhill habitats throughout the northern portion of the range in northern Florida and Georgia is due to the dependence on gopher tortoise burrows for shelter during winter. Breeding occurs during October through February. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION UNDER FEDERAL AND STATE LAW: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. Taking of eastern indigo snakes is prohibited by the Endangered Species Act without a permit is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of \$25,000 for civil violations and up to \$50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a SECTION 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference.
- Personnel must NOT attempt to touch or handle snakes due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, and the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant's designated agent, and the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office: (904) 731-3336

Panama City Field Office: (850) 769-0552

South Florida Field Office: (772) 562-3909

Georgia Field Office: (706) 613-9493

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.
2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC or GADNR websites.
3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e., burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.
3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.

APPENDIX B

Best Management Practices for Land Management Activities, Development Activities, and Actions within Critical Habitat

These BMPs consist of actions intended to avoid, minimize, or offset impacts to Florida bonneted bats. BMPs required to reach a "may affect, but is not likely to adversely affect" (MANLAA) determination are listed below. If the applicant is unable or does not want to incorporate the required BMPs into the project, this Consultation Key cannot be followed and further coordination and consultation with the Service is required. In these cases, formal consultation may not be required, but further evaluation of the project and discussions with the Service are needed.

Best Management Practices for Land Management Activities

The BMPs LM1 through LM6 are required for MANLAA projects keying out to 3b in the FBB Consultation Key (see note), no further consultation is required:

LM1. Conduct tree removal in areas with known or suspected roosting activity from November 15 to April 15. From April 16 to November 14, visual, peeping, and emergence surveys must be done prior to removal of trees 7.4 in (19 cm) dbh or greater with cavities (or snag height) at 15 ft or higher.

LM2. When feasible, roost surveys are recommended year round prior to removal of trees 7.4 inch (19 cm) dbh or greater with cavities (or snag height) at 15 ft or higher, especially for slash and longleaf pine, royal palm, and cypress.

LM3. Conduct prescribed burns in areas of known or suspected roosting activity from November 15 to April 15.

LM4. Protect known and suspected roost trees by raking and/or manually clearing vegetation around the base (150-ft (46 m) buffer) of identified trees prior to prescribed burning.

LMS. In areas of suitable FBB roosting habitat, plan to conduct only low intensity prescribed burns.

LM6. Avoid conducting frequent or sustained loud land management activities (generally above 80 decibels, such as chainsaw or heavy equipment) within 100 ft (15 m) of known or suspected roosts during the FBB breeding season (April 15 to November 15).

LM7. When possible, protect trees or snags 7.4 in (19 cm) dbh or greater with cavities (or snag height) at 15 ft or higher. These efforts may consist of avoiding removal of trees with these characteristics, raking and/or manually clearing vegetation around the base of known or potential roost trees to remove fuel prior to prescribed burning.

LM8. Forestry practices: Follow/Establish forest management efforts to maintain tree species and size class diversity to ensure long-term supply of FBB potential roost sites. Preserve large snags in open canopy when possible.

END OF SECTION

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SECTION 02514 PLASTIC FILTER FABRIC (GEOTEXTILE)

PART 1 – GENERAL

1.01 SCOPE

A. Work Included: This Section includes providing all material, labor, tools and equipment for installation of plastic filter fabric as shown in the Contract Documents and as specified in this Section.

PART 2 – PRODUCT

2.01 FABRIC

A. General: Geotextiles shall be woven or nonwoven fabrics that will allow the passage of water. Geotextiles shall be packaged in a protective covering sufficient to protect it from sunlight, dirt, and other debris during shipment and storage, upon which the manufacturer's name, product name, style number, roll dimensions and LOT numbers are clearly labeled.

B. Application: The applications of geotextile fabrics are divided into the following three main classes:

1. Drainage- under all rubble riprap, including cyclopean stone and under gabions; wrapped around drains, pipe joints, and edge- drains; filter behind walls, etc.
2. Erosion Control- silt fence, staked silt barrier, plastic erosion mat.
3. Gopher Tortoise Fence
4. Stabilization- separator between embankment and soft subsoil, reinforcement and pipe bedding.

2.02 PHYSICAL REQUIREMENTS

Unless restricted in the Plans or Specifications, the geotextile fabric shall be a woven or non-woven fabric consisting of long-chain polymeric filaments or yarns such as polypropylene, polyethylene, polyester, polyamides or polyvinylidene chloride formed into a stable network such that the filaments or yarns retain their relative position to each other. The base plastic shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration due to ultraviolet light (except for subsurface and stabilization classification), heat exposure and potential chemically damaging environment. The fabric shall be free of any treatment which may significantly alter its physical properties. The edges of the fabric shall be salvaged or otherwise finished to prevent the outer yarn from pulling away from the fabric. The fabric shall conform to the physical requirements of Design Standards, Index No. 199 according to its application.

2.03 OVERLAPS AND SEAMS

Overlaps shall be as specified in the Plans, Specifications, or Design Standards for each particular application. To reduce overlaps, the geotextile fabric may be sewn together. Seams of the fabric shall be sewn with thread meeting the chemical requirements and minimum seam strength requirements given for the fabric and application as shown in Design Standards, Index No. 199.

2.04 CERTIFICATION

Furnish two certified copies of a test report from the manufacturer certifying that the geotextile to be incorporated into the completed project meets the requirements of this Specification and the Design Standards, Index No. 199. The certified test reports shall be attested to by a person having legal authority to bind the manufacturing company. Also, furnish two (4 inch by 8 inch) samples of the geotextile for product identification. The manufacturer shall maintain test records as required by this Specification. These records shall be made available to the DISTRICT upon request.

PART 3 – EXECUTION

3.01 GENERAL

Place the fabric in the manner and locations as shown on the construction drawings, in accordance with the manufacturer's directions, and as specified in these Specifications. Place the fabric on areas with a uniform slope that are reasonably smooth, free from mounds and windrows, and free of any debris or projections which might damage the fabric.

Loosely lay the material. Do not stretch the material. Replace or repair any fabric damaged or displaced before or during placement of overlying layers to the satisfaction of the District Representative and at no expense to the DISTRICT.

When overlapping is necessary, the CONTRACTOR may sew the seams to reduce overlaps as specified in SECTION 02514-2.

Schedule work so that covering the fabric with the specified material does not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the District Representative determines the exposure time was exceeded, the CONTRACTOR shall replace the fabric at no expense to the DISTRICT.

3.02 SUBSURFACE DRAINAGE

When indicated in the Plans, place the fabric with the long dimension parallel to the trench. Place the fabric to provide a minimum 12-inch overlap for each joint. Do not drop the filter material from heights greater than 3 feet.

3.03 STABILIZATION AND REINFORCEMENT

Overlap adjacent strips of fabric a minimum of 24 inches.

3.04 RIPRAP FILTER

Overlap adjacent strips of fabric a minimum of 24 inches and anchor them with securing pins (as recommended by the manufacturer) inserted through both strips of fabric along a line through the midpoint of the overlap and to the extent necessary to prevent displacement of the fabric.

Place the fabric so that the upstream (upper) strip of fabric overlaps the downstream (lower) strip.

Stagger vertical laps a minimum of 5 feet. Use full rolls of fabric whenever possible in order to reduce the number of vertical laps.

Do not drop bedding stone or riprap from heights greater than 3 feet onto the fabric.

END OF SECTION

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PLASTIC FILTER FABRIC (GEOTEXTILE)
SECTION 02514-3

SECTION 02570 PERFORMANCE TURF AND HYDROSEEDING

PART 1 – GENERAL

1.01 SCOPE

A. Establish a growing, healthy native turf over all areas designated in the Plans. Use seed, hydroseed, bonded fiber matrix, in all areas designated on the plans. Hydroseeding not to commence until after the District accepts the Grading As-Built Plans.

PART 2 – MATERIALS

2.01 TURF MATERIALS

A. General: All seed shall meet the requirements of the Florida Department of Agriculture and Consumer Services and all applicable state laws and shall be approved by the District Representative before installation.

All seed and mulch shall be free of noxious weeds and exotic pest plants, plant parts or seed listed in the current Category I “List of Invasive Plant Species” from the Florida Invasive Species Council (FISC, <http://www.floridainvasives.org>). Any plant officially listed as being noxious or undesirable by any Federal Agency, any agency of the State of Florida or any local jurisdiction in which the project is being constructed shall not be used. Any such noxious or invasive plant or plant part found to be delivered in seed, or mulch will be removed by the CONTRACTOR at their expense and in accordance with the law.

All materials shall meet plant quarantine and certification entry requirements of Florida Department of Agriculture & Consumer Services, Division of Plant Industry Rules.

B. Seed:

1. The seed shall have been harvested from the previous year's crop. All seed bags shall have a label attached stating the date of harvest, LOT number, percent purity, percent germination, noxious weed certification and date of test.
2. Each of the species or varieties of seed/seed mixes shall be furnished and delivered in separate labeled bags. During handling and storing, the seed shall be cared for in such a manner that it will be protected from damage by heat, moisture, rodents and other causes.
3. Native grass seed shall be purchased from regional native seed vendors. All quantities of seed specified shall be for pure live seed. It is the CONTRACTOR's responsibility to calculate and apply the actual pure live seed poundage based on the label attached to each bag of seed. Shipping tickets shall indicate both pure live seed weight and bulk for each species. The separate types of seeds shall be prepared for germination in accordance with the supplier's recommendations and thoroughly dry mixed.
4. Annual type Ryegrass seed will be used during winter/spring and Millet during summer application in the native seed mixes to provide quick grass cover in the mulch/polymer bonded matrix.
5. All permanent and temporary turf seed shall have been tested within a period of six months of the date of planting.
6. All permanent and temporary turf seed shall have a minimum percent of purity and germination as follows:
 - Annual type Ryegrass seed - Min. pure live seed content of 95% with a min. germination rate of 90%
 - Annual type Brown Millet seed – Min. pure live seed content of 95% with a min. germination

of 90%.

7. Native Seed Mixes are as follows:

- Ernst Seeds FL Wet Meadow Mix (ERNMX-600) or District approved alternative shall be used in Zones 2 and 3 as indicated on the plans
- Ernst Seeds Charlotte County FL Upland Meadow Mix or District approved alternative shall be used in Zone 7 as indicated on the plans and other disturbed areas not already defined with a planting zone ID. This mix is a custom blend by Ernst with the following composition:

% of mix by weight		Latin Name	Common Name	Ecotype
3.5		<i>Chamaecrista fasciculata</i>	Partridge Pea	FL
1.2		<i>Chamaecrista nictitans</i>	Sensitive Pea	NC
0.6		<i>Helianthus angustifolius</i>	Narrowleaf Sunflower	FL
2.0		<i>Monarda punctata</i>	Dotted Mint	FL
86.7		<i>Panicum anceps</i>	Beaked Panicgrass	SC
6.0		<i>Rudbeckia hirta</i>	Black Eyed Susan	Any
100.0	Total			
	59.7	% Grass-like Species by seed count		
	40.3	% Wildflower by seed count		
Apply this mix at 10 lbs PLS/acre with a cover crop				
For a cover crop use one of the following: oats (1 Jan to 30 Apr; 30 lbs/acre), brown top millet (1 May to 31 Aug; 10 lbs/acre), or grain rye (1 Aug to 31 Dec; 30 lbs/acre).				

- Mellow Marsh Farm Salt Tolerant Mix or District approved alternative shall be used in Zone 6 as indicated on the plans

2.01 WATER FOR GRASSING

The water used in the grassing operations may be obtained from any approved source. The water shall be free of any substance which might be harmful to plant growth. Effluent water shall meet all Federal, State and local requirements.

PART 3 – CONSTRUCTION METHODS

3.01 GENERAL

Incorporate turf installation into the project at the earliest practical time.

Shape the areas to be planted to the plan typical sections, lines, and grades shown in the plans

Use the methods and materials necessary to establish and maintain the initial grassing until acceptance of the Contract work. All of the permanent grassing material shall be in place prior to final acceptance.

Complete all grassing on shoulder areas prior to the placement of the friction course on adjacent pavement.

3.02 SEEDING

Use of compost meeting the following requirements as mulch is acceptable unless otherwise specified.

Meet the requirements of Florida Department of Environmental Protection Rule 62.709.550 Type Y (yard waste), Type YM (yard waste and manure), Type A (municipal solid waste compost) or Rule 62.640.850 Type AA (composted biosolids) and have unrestricted distribution.

The compost for use as mulch shall contain no foreign matter, such as glass, plastic or metal shards. The compost shall be slightly coarse to coarse in nature (over half of the solids shall be from particles 1/2 inches in size and no greater than 6 inches). Preference shall be given to compost or mulch made from uncontaminated woody waste materials.

3.03 HYDROSEEDING

Use equipment specifically designed for mixing the mulch, seed, fertilizer, tackifier and dye, and applying the slurry uniformly over the areas to be hydroseeded.

Use mulch that does not contain reprocessed wood or paper fibers. Ensure that 50% of the fibers will be retained on a twenty-five-mesh screen.

Mix fertilizer as required into the hydroseeding slurry.

Ensure that the dye does not contain growth or germination inhibiting chemicals.

When polyacrylamide is used as part of hydroseeding mix, only anionic polymer formulation with free acrylamide monomer residual content of less than 0.05% is allowed. Cationic polyacrylamide shall not be used in any concentration. Do not spray polyacrylamide containing mixtures onto pavement. These may include tackifiers, flocculants or moisture-holding compounds.

3.04 BONDED FIBER MATRIX (BFM)

Meet the minimum physical and performance criteria of this Specification for use of BFM in hydroseeding operations or temporary nonvegetative erosion and sediment control methods.

Provide evidence of product performance testing, manufacturer's certification of training and material samples to the District Representative at least 7 calendar days prior to installation.

Provide documentation to the District Representative of manufacturer's testing at an independent laboratory, demonstrating superior performance of BFM as measured by reduced water runoff, reduced soil loss and faster seed germination in comparison to erosion control blankets.

Use only BFM's that contain all components pre-packaged by the manufacturer to assure material performance. Deliver materials in UV and weather resistant factory labeled packaging. Store and handle products in strict compliance with the manufacturer's directions.

When polyacrylamide is used as part of hydroseeding mix, only anionic polymer formulation with free acrylamide monomer residual content of less than 0.05% is allowed. Cationic polyacrylamide shall not be used in any concentration. Do not spray polyacrylamide containing mixtures onto pavement. These may include

tackifiers, flocculants or moisture-holding compounds.

Meet the following requirements after application of the formed matrix: Ensure that the tackifier does not dissolve or disperse upon re-wetting. Ensure that the matrix has no gaps between the product and the soil and that it provides 100% coverage of all disturbed soil areas after application.

Ensure that the matrix has no germination or growth inhibiting properties and does not form a water-repelling crust.

Ensure that the matrix is comprised of materials which are 100% biodegradable and 100% beneficial to plant growth. Mix and apply the BFM in strict compliance with the manufacturer's recommendations.

Apply the BFM to geotechnically stable slopes at the manufacturer's recommended rates.

Degradation of BFM will occur naturally as a result of chemical and biological hydrolysis, UV exposure and temperature fluctuations. Re-application, as determined by the District Representative, will be required if BFM-treated soils are disturbed or water quality or turbidity tests show the need for an additional application. The work and materials for re-application will be paid for by the CONTRACTOR.

3.05 WATERING

Water all turf areas as necessary to produce a healthy and vigorous stand of turf. Ensure that the water used for turf irrigation meets the requirements of SECTION 02570-2.02.

PART 4 – TURF ESTABLISHMENT

Perform all work necessary, including watering and fertilizing, to sustain an established turf until final acceptance, at no additional expense to the DISTRICT. Provide the filling, leveling, and repairing of any washed or eroded areas, as may be necessary.

Established turf is defined as follows:

1. An established root system (leaf blades break before seedlings can be pulled from the soil by hand).
2. No bare spots larger than one square foot.
3. No continuous streaks running perpendicular to the face of the slope.
4. No bare areas comprising more than 1% of any given 1,000 square foot area.
5. No deformation of the turf areas caused by mowing or other Contractor equipment
6. No pests or noxious weeds.

Monitor turf areas and remove all competing vegetation, pest plants, and noxious weeds (as listed by the Florida Invasive Species Council, Category I “List of Invasive Species”, Current Edition, <http://www.floridainvasives.org/>). Remove such vegetation regularly by manual, mechanical, or chemical control means, as necessary. When selecting herbicides, pay particular attention to ensure use of chemicals that will not harm desired turf. If at the time that all other work on the project is completed, but all turf areas have not met the requirements for established turf set forth in 02570, continuously maintain all turf areas until the requirements for established turf set forth in 02570 have been met.

During the entire establishment period and until turf is established in accordance with this specification, continue inspection and maintenance of erosion and sedimentation control items in accordance with PART 4 of SECTION 02570 Performance Turf. Take responsibility for the proper removal and disposal of all erosion and sedimentation

control items after turf has been established.

END OF SECTION

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SECTION 02900 WETLAND/UPLAND PLANTINGS

PART 1 – GENERAL

1.01 SUMMARY

- A. Planting not to commence until after the District accepts the Grading As-Built plans.
- B. Install, establish, and maintain wetland and upland plantings as indicated in the Contract Documents.
- C. Upon completion of the planting operation, and the acceptance of the planted areas by the District Representative, the plant establishment period for maintaining installed plant material in a healthy growing condition shall commence and shall be in effect for 365 days. The 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.

1.02 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. Grades and Standards for Nursery Plants and Trees "State of Florida, latest edition (FDACS)
 - 2. Control of Non-Native Plants in Natural Areas of Florida, K. A. Langeland and R. K. Stocker, Florida Cooperative Extensions Services, Institute of Food and Agricultural Sciences, University of Florida.
 - 3. American Standard for Nursery Stock (ASNS).
 - 4. Standard Methods of the Association of Official Agricultural Chemists.
 - 5. Federal Specifications (FS):
 - a. A-A-2671, Agricultural Seeds.
 - 6. United States Department of Agriculture, (USDA):
 - a. Federal Seed Act.
 - 7. FDOT Standard Specifications, Latest Edition, as supplemented
 - 8. Florida Pesticides Laws and Rules, Chapter 487, Florida Statutes, Florida Department of Agriculture and Consumer Services, June 1986.

1.03 SUBMITTALS

- A. Shop Drawings: See SECTION 01340.
- B. Product technical data including:
 - 1. Acknowledgement that products submitted meet requirements of standards referenced.
 - 2. Manufacturer's installation instructions.
 - 3. Other documents:
 - a. Delivery schedule.
 - b. Prior to delivery of materials, certificates of compliance attesting that materials meet specified requirements. Certified copies of the material certificates shall include the classification, botanical name, common name, size, quantity by species, and location where grown.
 - c. Maintenance Record.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.
- B. Comply with Referenced Documents and manufacturer's recommendations for delivery, storage and handling of herbicides.
- C. Plant Materials:
 - 1. Protection during delivery: Plant material shall be protected during delivery to prevent desiccation and damage to the branches, trunk, root system, or earth ball. Branches shall be protected by tying-in. Exposed branches shall be covered during transport.
 - 2. Inspection: Plant material shall be well shaped, vigorous and healthy with a healthy, well branched root system, free from disease, harmful insects and insect eggs, sun scald injury, disfigurement or abrasion. Plant material shall be checked by the District Representative for unauthorized substitutions and to establish nursery-grown status. Plant material showing desiccation, abrasion, sunscald injury, disfigurement, or unauthorized substitution shall be rejected. The plant material shall exhibit typical form of branch to height ratio and meet the caliper and height measurements specified. Plant material that measures less than specified, or has been poled, topped off or headed back, shall be rejected. Container-grown plant material shall show new fibrous roots and the root mass shall maintain its shape when removed from the container. Plant material with broken or cracked balls; or broken containers shall be rejected. Except as noted in the plans, bare-root plant material shall be rejected. Other materials shall be inspected for compliance with Part 2 - PRODUCTS.
 - 3. Storage: Plant material not installed on the day of arrival at the site shall be stored and protected in designated areas. Plant material shall not be stored longer than 24 hours. Plant material shall be protected from direct exposure to wind and sun. All plant material shall be kept in a moist condition until installed by watering in a manner acceptable to the District Representative.
 - 4. Handling: Plant material shall not be damaged in handling. Cracking or breaking the earth ball of balled and burlapped plant material shall be avoided. Plant material shall not be handled by the trunk or stems. Materials shall not be dropped from vehicles.

1.05 SEQUENCING AND SCHEDULING

- A. Installation Schedule:
 - 1. The CONTRACTOR shall provide a schedule showing when trees, shrubs, groundcovers and other plant materials are anticipated to be planted.
 - 2. The CONTRACTOR shall indicate the schedule of planting in relation to schedule for finish grading and/or topsoiling if specified in the Construction Plans.
 - 3. The CONTRACTOR shall indicate the anticipated dates when the District Representative will be required to review installation for initial acceptance and final acceptance.

1.06 SPECIAL PROJECT WARRANTY

- A. Furnished plant material shall have a warranty for plant growth to be in a vigorous growing condition and survival of at least 90% of the planted species for one (1) year (365 days) from acceptance of the planted areas by the District Representative. When plant material is determined to be unhealthy and survival is below 90

percent by species in accordance with this specification, it shall be replaced under this warranty.

B. Remove and replace trees, shrubs, or other plants found to be dead or in unhealthy condition during the 365-day establishment period.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Plants:

1. See plant list on Plans.
2. With the exception of two 18-inch southern live oak (*Quercus virginiana*), all other specified plantings will be container grown material. Bare-root plant material shall be rejected unless pre-approved by DISTRICT.
3. Plantings will be sound, healthy, and vigorous, with normal top and root systems, free from disease, insect pests or their eggs, grown in same climatic zone as project. For marsh grasses, all units must have at least 2-3 culms per unit.
4. Unless otherwise specified, minimum grade for all tree, shrub and herbaceous plantings shall conform to Grade No. 2 or better for trees and shrubs with herbaceous plants meeting Wetland Plant standards as referenced in “Grades and Standards for Nursery Plants Parts I and II”; Division of Plant Industry, Florida Department of Agriculture and Consumer Services and the current American Association of Nurserymen Standards.
5. Container grown plants will have roots well established in soil, grown in container for at least one growing season and acclimated to sun exposure (sun/shade) and inundation characteristics (depth/duration) present at the Project site.
6. All plant material will consist of species and sizes indicated on Drawings and shall be inspected and approved by the District Representative prior to installation.
7. A minimum of two 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.
8. The CONTRACTOR will provide all other materials necessary to install and maintain survival of the planted material for the 365-day warranty period.

2.02 PRODUCTS - SPECIAL PROJECT WARRANTY

A. Furnished plant material shall have a warranty for plant growth to be in a vigorous growing condition for the 365-day establishment period subsequent to the completion of plant installation and acceptance by the DISTRICT. When plant material is determined to be unhealthy it shall be replaced under this warranty. Remove and replace plants found to be dead or in unhealthy condition during the 365-day establishment period.

PART 3 – EXECUTION

3.01 SOIL PREPARATION

A. General:

1. Limit preparation to areas that will be planted soon after.
2. Finished soil conditions (texture, composition, moisture, salinity) and grades shall be conducive to plant

- health/survival and shall be free of debris, rock and trash.
- 3. Provide facilities to protect and safeguard all persons on or about premises.
- 4. Verify location and existence of all underground utilities. Take necessary precautions to protect existing utilities from damage due to construction activity. Repair all damage to utility items at CONTRACTOR's sole expense.

3.02 PLANTING TREES, SHRUBS, AND GROUND COVERS

- A. Notification: Notify the DISTRICT of source of plants and plant materials at least 30 days prior to planting to permit District's Project Manager or duly authorized representative to inspect source qualifications.
- B. Preparation:
 - 1. Handle plants so that roots or balls are adequately protected from breakage of balls, from sun or drying winds. Ensure tops or roots of plants are not permitted to dry out.
 - 2. During transportation, protect materials from wind and sun to prevent tops and roots from drying out.
 - 3. Protect the tops of plants from damage. Plants with damaged tops will be rejected.
 - 4. Do not prune trees and shrubs at nursery.
- C. Planting Season: Plant trees, shrubs, and groundcovers any time the ground and moisture conditions are suitable.
- D. Planting Procedure:
 - 1. Plant installation shall not begin until the CONTRACTOR has staked planting zones for planting areas and the staking is in turn accepted by the District Representative. Wetland plantings shall be installed the same workday as delivered. Upland plants shall be installed no later than twenty-four (24) hours after delivery to the site or provisions shall be made for keeping them shaded and watered in a manner acceptable to the District Representative.
 - 2. Material shall be installed at the soil/sediment depths at which it was originally grown.
 - 3. Furnish and apply all other material including water and such accessory items as may be required to facilitate the planting and establishment of all upland plants specified to be installed.
 - 4. Indicate proposed locations of plants for approval by the District Representative before excavating plant locations.
 - 5. In the event that underground construction, utilities, obstructions, or rock are encountered in excavation of plantings, secure alternate locations from District Representative. Make said changes without additional compensation. Where tree locations fall under existing overhead wires, or crowd existing trees, adjust locations as approved by Engineer of Record or authorized representative or District Project Manager.
 - 6. Installation of native plants in the soil shall include pushing soil back away from the installed plant such as to form a "watering bowl" around the circumference of the installed plant. After the plant has been placed into its hole, the CONTRACTOR shall carefully pack soil around the installed plant and form the earthen watering bowl. For upland plants, soils shall be sufficiently watered (> 3 gallons) and/or packed to eliminate air pockets.
 - 7. Shrub and ground cover beds: Plant shrubs and ground covers used in mass plantings in individual holes of required size.
 - 8. Each installed upland plant shall be watered with at least three (> 3) gallons, with the intent that soil

- packing and watering will minimize air pockets around plant roots.
- 9. Staking: Stake trees only as necessary as detailed on Drawings or in accordance with Nursery Standards. If trees are not in peril of falling over, no staking will be necessary.
- 10. Remove dead or damaged branches.
- 11. Furnish and supply all other material including water and accessory items as may be required to facilitate the planting and establishment of all plants specified to be installed, noting that no additional watering should be necessary for intertidal plants.

3.03 PLANT MAINTENANCE, REPLACEMENT, AND INVASIVE SPECIES CONTROL

A. General:

- 2. Begin maintenance of planted areas immediately after each portion is planted and continue until final acceptance or for a specific time period as stated below, whichever is the longer.
- 3. The CONTRACTOR shall guarantee the survival of at least ninety (90) percent of all plant materials per species for a period of 365 days from date of the acceptance of installation by the District Representative; supplementary watering may be necessary to insure survival of the installed plants at no additional cost to the DISTRICT. Plants per species that die in excess of the 10% allowance shall be replaced and maintained by the CONTRACTOR at no additional cost to the DISTRICT.
- 4. Maintenance includes but is not limited to
 - a. watering when necessary
 - b. removing dead or dying branches
 - c. removing sprouts and suckers
 - d. tightening, and repairing or replacing tree stakes
 - e. weeding plant beds and pits
 - f. control of invasive species within the newly planted areas.
- 5. The CONTRACTOR shall clean up and remove from the premises all surplus and discarded materials and rubbish.
- 6. Protection of new materials: Provide barricades, coverings or other types of protection necessary to prevent damage to existing improvements indicated to remain. Repair and pay for all damaged items.
- 7. Replace unacceptable materials with materials and methods identical to the original specifications unless otherwise approved by the District Representative.

B. Plant Establishment and Maintenance Period:

- 1. Commencement:
 - a. Upon completion of the planting operation and approval by District Representative, the plant establishment period for maintaining installed plant material in a healthy growing condition shall commence and shall be in effect for 365 days. The written calendar time period shall be furnished for the plant establishment period. Plants will be provided supplementary watering as necessary to ensure the plant's survival during the 365-day establishment period.
 - b. The engineer will review completed planting for acceptability of installation. Approval of planting denotes initial acceptance and the beginning of the maintenance period.
- 2. Maintenance during Establishment Period:
 - a. The CONTRACTOR shall be responsible for ensuring ninety percent (90%) survival of all plants installed from the completion of the last day of planting through a 365-day establishment period. District staff will conduct quarterly assessments of plant survivorship.

- b. The CONTRACTOR shall, on a quarterly basis within the said period, replace any and all plants below the ninety percent (90%) threshold survivorship level or that have deteriorated below the level of Florida Grade No. 2 for trees and shrubs and Wetland Plants for herbaceous material as specified in the Nurserymen Standards.
- c. The CONTRACTOR will be required to maintain the Project site during the 365-day establishment period. The time clock will commence upon the DISTRICT acceptance of Final Completion of Project construction. The intent of the plant maintenance is to minimize non-native and nuisance plant growth and maximize survivorship, growth, and maturation of the installed plants. Treatment of nuisance/exotic vegetation will be required on a quarterly basis during the 365- day establishment period. The nuisance and exotic species to be treated include all Category I or Category II species in the most recent Florida Invasives Species Council (FISC) list of invasive species which can be found at <http://floridainvasivespecies.org>. Following site visits and maintenance, the CONTRACTOR will submit to the DISTRICT a summary report detailing site observations, plant conditions, maintenance activities, and any other relevant information appropriate concerning the success of the upland/wetland sectors of the Project.
- d. All herbicide applications must be supervised by a Florida pesticide applicator, licensed in the use of restricted use herbicides for aquatic pest control and natural area weed management. The CONTRACTOR shall comply with applicable governmental regulations, U.S. Environmental Protection Agency (EPA) product labels, and manufacturer's directions when handling, mixing, transporting, applying, and disposing of herbicides. When herbicides are applied to, or near, surface waters under this Agreement, the CONTRACTOR must complete and submit the Treatment Report (Attachment 1) to the DISTRICT within fourteen (14) days of the treatment activity. If applicable, this form is a requirement prior to processing invoices.
- e. The CONTRACTOR must conduct spot checks in and around the area where herbicides are applied for adverse incidents possibly or known to be caused by application of herbicides, including the unanticipated death or distress of non-target organisms and disruption of wildlife habitat, recreational or municipal water use. Visual assessments of the application site must be performed: i) during any post-application surveillance or efficacy check that the CONTRACTOR conducts, if surveillance or an efficacy check is conducted, ii) during any herbicide application, when considerations for safety and feasibility allow. Visual monitoring activities are to be reported to the DISTRICT on the Surveillance/Inspection Report (Attachment 2) within fourteen (14) days of the inspection.
- f. If the CONTRACTOR observes or is otherwise made aware of an adverse incident, as defined in Appendix A of the Permit, resulting from a discharge of pollutants to surface waters of the state from a herbicide application by the CONTRACTOR, then the CONTRACTOR must notify the State Watch Office at 800-320-0519, in accordance with Part IV.C.3. (a) of the Permit Twenty-Four Hour Adverse Incident Notification Form (Attachment 3). A copy of the report must be provided to the DISTRICT. If required by Part IV.C.3. (b) of the Permit, a Thirty (30) Day Adverse Incident Written Report Form (Attachment 4) must be completed, and a copy forwarded to the DISTRICT as soon as possible. The rationale for any determination that a written report of an identified adverse incident is not required in accordance with Part IV.C.3. (a) of the Permit and a description of any corrective action(s), including spill responses, resulting from herbicide application activities and the rational for such action must be provided to the DISTRICT. This adverse incident notification and reporting requirements are in addition to the reporting requirements under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), United States Code, 7 USC 136 SECTION 6(a)(2) and its implementing regulations, Code of Federal Regulations, at 40 CFR Part 159.

- g. Records of equipment calibration, on behalf of self or the DISTRICT, must be maintained (Calibration/Maintenance Documentation Form, Attachment 5). These records are to be maintained only by the entity performing the pest application activity and do not need to be submitted to the DISTRICT.
- h. For “In-Water” Herbicide Applications: The CONTRACTOR must comply with all applicable requirements of the Florida Department of Environmental Protection’s (FDEP) Generic Permit for Pollutant Discharges to Surface Waters of the State from the Application of Herbicides (Permit), set forth in Exhibit “B,” pursuant to FDEP’s federally approved National Pollutant Discharge Elimination System (NPDES) Program.
- i. The CONTRACTOR shall be responsible for the labor and materials to replace existing and installed desirable vegetation that may be damaged during maintenance and watering activities.
- j. During all planting and maintenance events, any stored materials on District property and/or equipment belonging to the CONTRACTOR, as approved by the DISTRICT, will be the sole responsibility of the CONTRACTOR, and will be kept in an orderly condition and in compliance with all applicable regulations. Plant containers and other waste associated with planting/maintenance activities will be promptly removed from the project site and disposed of properly.

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WETLAND/UPLAND PLANTINGS
SECTION 02900-8

SECTION 02910 NON-NATIVE VEGETATION REMOVAL AND CONTROL

- A. The work included under this section consists of mechanical and selective removal and/or treatment of non-native (exotic) plant species within the project limits not associated with
 - standard clearing & grubbing of project grading areas as depicted in the Plans
 - work included in Section 02900 – 3.03 Plant Maintenance, Replacement and Invasive Control
- B. In areas designated as “Melaleuca Removal,” exotic vegetation is to be primarily manually removed to limit the impacts to desirable vegetation and/or soils. In some locations mechanical removal equipment (rubber tire backhoe, front end loader, hydroaxe, forestry mulcher, and other similar heavy equipment) may obtain reasonable access to the area while limiting the overall disturbance. In these instances, the exotic vegetation may be removed by the roots. Prior approval by the District is required before mechanical clearing of any exotic vegetation. Materials shall be disposed of in accordance with Section 02110 Clearing and Land Preparation.
- C. Organic, mucky soils and flooded conditions may exist in the wetland areas during the wet season and/or following heavy rainfall events. Therefore, work should take place during dry periods. In the event work is to be performed when wet, the contractor should take measures to minimize the disturbance to the wetland soils via excessive compaction and rutting.
- D. The Contractor shall make their own inspection to determine the character, density, and extent of non-native vegetation and existing field conditions prior to bid preparation.
- E. Removal and Cut-stump Herbicide Treatment of Melaleuca (*Melaleuca quinquenervia*).
 - Wetlands 1, 2, and 4 (W-1, W-2, W-4) are colonized by a large number of mature Melaleuca (*Melaleuca quinquenervia*). As part of the clearing and grubbing phase of the project, the trees will be cut so the stumps are several inches above the ground surface or if the site is inundated, several inches above the surface water level.
 - After cutting, the stumps will be immediately treated with an herbicide approved for wetland use where the label instructions include cut stump treatment of Melaleuca (*Melaleuca quinquenervia*) in or near surface water if applicable. The herbicide mix will include a dye marker. District and/or Park staff will inspect the area following treatment to determine that all the stumps have been treated.
 - Cut trees will be removed from the wetland. Contractor to burn or remove material from site. Care will be taken to minimize wetland soil disturbance.

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NON-NATIVE VEGETATION REMOVAL AND CONTROL
SECTION 02910-2

SECTION 04200 SITE RESTORATION

PART 1 – GENERAL

1.01 SCOPE

The work specified under this Section shall include all labor, equipment and materials necessary for all Site Restoration activities and materials (including all restoration work shown in the plans, as identified in notes, and as indicated indirectly in other Technical Specifications), and as otherwise needed to restore the work site to the condition indicated in the Plans as the Post-work Restoration condition. This excludes works specifically included under sections (such as in seeding). The CONTRACTOR shall clean up and restore any staging, storage, and easement areas used for the project, leaving the areas in a condition equivalent to or better than the pre-construction condition. The CONTRACTOR shall also restore all landscape features, damaged vegetation, and restore the irrigation features and on- site drainage structures. The CONTRACTOR may keep materials removed from site which were provided for temporary construction (i.e. fencing, temporary electric, etc.).

- A. Site Restoration: The CONTRACTOR shall clean up and restore any staging, storage, and access route areas used for the project, leaving the areas in a condition equivalent to or better than the pre-construction condition. The CONTRACTOR shall also restore all landscape features and vegetation damaged or destroyed during construction outside the construction limits. The CONTRACTOR shall retain ownership of the materials removed from the site which were provided for temporary construction.

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SITE RESTORATION
SECTION 04200-2

SECTION 05000 INCORPORATED STANDARD SPECIFICATIONS

PART 1 – GENERAL

1.01 FDOT STANDARD SPECIFICATIONS

The governing specifications for the following items include the latest State of Florida Department of Transportation Standard Specifications for Road and Bridge Construction Latest Edition (FDOT): Geosynthetic Reinforced Foundation Over Soft Soil, Type B Stabilization (12"), Optional Base Group 1, 1.5" Structural Course, Fencing (Type A, 4', Standard), Metal Gate Type A (24' Opening), and No. 57 Stone . All references to "Department" in reference to the reviewing authority in FDOT shall be considered the "District" for this contract. The following information provided in this section is in addition to the FDOT specifications and shall be considered the presiding conditions in the case of conflicting information between the specifications, plans, and Contract documents, unless otherwise determined or directed by the District Representative.

PARTS 2 AND 3 – PRODUCTS AND EXECUTION

2.01 MATERIALS AND EXECUTION

The following FDOT Standard specifications are incorporated as part of these specifications with the listed amendments applied:

A. Geosynthetic Reinforced Foundation Over Soft Soil – FDOT SECTION 145

The description, methods, and materials for the item shall include, but not be limited to, the requirements of FDOT SECTION 145 Geosynthetic Reinforcement and its associated materials section requirements. All pay items under this Contract shall be lump sum per SECTION 01150 Measurement and Payment. The lump sum cost shall include all work as outlined in FDOT SECTION 145-9 Basis of Payment.

B. Type B Stabilization (12") – FDOT SECTION 160

The description, methods, and materials for the item shall include, but not be limited to, the requirements of FDOT SECTION 160 Stabilizing and its associated materials section requirements. This item is associated with any necessary trail or roadway repair. Any needed repairs shall be at no additional cost to the DISTRICT.

C. Optional Base Group 1 – FDOT SECTION 285

The description, methods, and materials for the item shall include, but not be limited to, the requirements of FDOT SECTION 285 Optional Base Course and its associated materials section requirements. This item is associated with any necessary trail or roadway repair. Any needed repairs shall be at no additional cost to the DISTRICT.

D. 1.5" Structural Course – FDOT SECTION 287

The description, methods, and materials for the item shall include, but not be limited to, the requirements of FDOT SECTION 287 Asphalt Treated Permeable Base and its associated materials section requirements. This item is associated with any necessary trail or roadway repair. Any needed repairs shall be at no additional cost to the DISTRICT.

E. Fencing, Type A, 4', Standard – FDOT SECTION 550

The description, methods, and materials for the item shall include, but not be limited to, the requirements of FDOT SECTION 550 Fencing and its associated materials section requirements. All pay items under this Contract shall be lump sum per SECTION 01150 Measurement and Payment. The lump sum cost shall include all work as outlined in FDOT SECTION 550-6 Basis of Payment.

F. Metal Gate Type A (24' Opening) – FDOT SECTION 550

The description, methods, and materials for the item shall include, but not be limited to, the requirements of FDOT SECTION 550 Fencing and its associated materials section requirements. All pay items under this Contract shall be lump sum per SECTION 01150 Measurement and Payment. The lump sum cost shall include all work as outlined in FDOT SECTION 550-6 Basis of Payment.

G. No. 57 Stone – FDOT SECTION 901

The description, methods, and materials for the item shall include, but not be limited to, the requirements of FDOT SECTION 901 Coarse Aggregate and its associated materials section requirements. All pay items under this Contract shall be lump sum per SECTION 01150 Measurement and Payment. The lump sum cost shall include the total amount of material required and transportation/delivery to the site.

END OF SECTION