

TECHNICAL SPECIFICATIONS
WEEKI WACHEE RIVER RESTORATION PROJECT



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

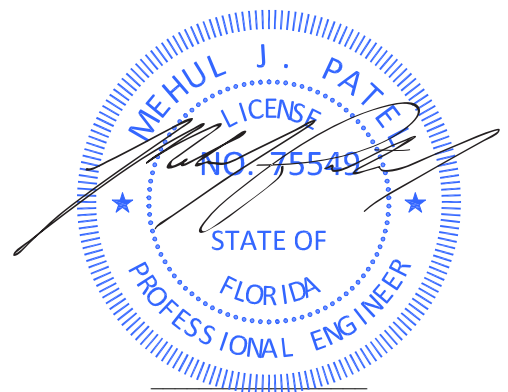
SEPTEMBER 2020

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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SEPTEMBER 2021



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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 Weeki Wachee River Channel Restoration Project will remove accumulated sediment along approximately 1.6 miles of the Weeki Wachee River. The work consists of furnishing all labor, materials, equipment, and incidentals necessary to hydraulically dredge the sediment material, pump, convey this material to the specified dewatering facilities and remove the dewatered sediment material. The Contractor will construct an offsite Dredge Material Treatment Area (DMTA) where the dredge material will be dewatered and removed from the site. Contractor will take possession of the dredge 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 bank protection/stabilization to protect the general public as well as the job site. The CONTRACTOR shall revegetate embankments after grading.

1.04 WORK PERFORMED BY OTHERS:

A. **The CONTRACTOR shall provide access to county facilities, including lift station, manholes, and force main located at dredge material dewatering site.**

1.05 CONTRACTOR'S USE OF PREMISES:

A. 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:

A. 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 Hernando County (County) facilities at DMTA and at identified staging areas.**

2. **The CONTRACTOR shall provide continuous access to the public and public facilities during dredging operations in the river to the greatest extent practicable. Requests for temporary access restriction shall be coordinated and approved through the DISTRICT.**
 3. **The CONTRACTOR shall provide Maintenance of Traffic in association with the Tropical Drive cut to install the temporary culvert and repair the road. The CONTRACTOR shall maintain one-way traffic during installation of the temporary culvert and subsequent culvert removal and road repair upon completion of dredging. The road cut, temporary culvert installation and final road repair shall be conducted in compliance with Hernando County Facility 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. Weeki Wachee River Restoration Plans Set dated May 2020, as revised September 2021.
- 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: geotechnical reports and Hernando County as-builts.

END OF SECTION

SECTION 01050
FIELD ENGINEERING

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, pre-dredging bathymetric survey at the proposed return water pipe outfall location and as-built surveys.
3. The CONTRACTOR shall provide one set of As-Built Drawings depicting all upland elevations in NAVD 88 (North American Vertical Datum) and all bathymetric elevations referenced to Mean Low Water (MLW).

B. Related Work Specified Elsewhere:

1. SECTION 01300 - Submittals
2. SECTION 01700 – Contract Closeout
3. SECTION 02250 – Hydraulic Dredging and Dewatering of Dredge Material

1.02 SUBMITTALS:

- A. 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 his staking operations or of his 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 DISTRICT 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 DISTRICT 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.
- C. Cross-sections: River and pipe outfall (s) cross-sections shall be submitted as specified in SECTION 02250.

END OF SECTION

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 of this project, in full accordance with the conditions of the permits granted for the project.

END OF SECTION

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 18 th 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 43 rd 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 7962 Conell Court P. O. Box 5283 Lorton, VA 22079
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, 17 th 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) (OECI) 8720 Reds Oak Bloulevard, 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
EI	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, Subarticle 5 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, 17 th 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 Varembe, 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 24 th Street, 6 th 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

END OF SECTION

**SECTION 01150
MEASUREMENT AND PAYMENT**

1.1 GENERAL

- A. All pay items under this Contract shall be paid for in accordance with this section.
- B. Contingency Allowance: The CONTRACTOR shall not use Contingency Allowance without written approval from the Owner.
- 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, 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 sediment material that will be removed prior to submitting its lump sum bid. The survey information provided on the construction plans was collected in 2018 and 2019 and additional sedimentation within the dredging footprint is likely. As such, the actual sediment material removal volume is likely greater than estimated in the permit applications and may include the potential dredging areas shown in the construction plans as the Proposed Dredging Areas and the Bottom Edge of Channel for Potential Dredging Area. The contractor will maintain a 4:1 slope from the edge of the Bottom Edge of Channel for Potential Dredging Area, except where structures such as docks or seawalls, or natural shorelines, prevent the identified 10-foot setback. The CONTRACTOR shall conduct such pre-bid survey it deems necessary to determine the anticipated sediment material volume, so its lump sum bid incorporates the revised volume and dredging areas and ensures dredging to 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. 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.

- I. 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, but not included in the Bid Response Form shall be included in the lump sum quantity for Mobilization.

1.2 PAY ITEM DESCRIPTIONS

1.0. Mobilization

- a. 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, baseline and pre-dredging bathymetric survey at the proposed return water pipe outfall location; 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.

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.

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

PERCENT OF ORIGINAL CONTRACT AMOUNT EARNED	ALLOWABLE PERCENT OF THE LUMP SUM PRICE FOR MOBILIZATION
5	25
10	50
25	75
50	100

Partial payment shall be limited to ten percent (10%) of the original Contract amount for the project. Any remaining amount will be paid upon completion of all work on the project, including final punchlist work items. The applicable work specified under this section shall be paid for under the following Pay Item (and/or other similar project specific phasing):

- Mobilization

2.0 Maintenance of Traffic

- a. General: The work specified under this section includes maintaining traffic within

the limits of the project for the duration of the construction period, including any temporary suspensions of the work. This section includes installation and maintenance of traffic control and safety devices during construction. Maintenance of Traffic includes all facilities, devices, and operations as required for safety and convenience of the public within the work zone.

- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for under the following Pay Item:

- Maintenance of Traffic

3.0 Environmental Protection and Erosion Control

- a. General: The work specified under this section includes all labor, equipment and materials for the prevention of environmental damage as the result of construction operations under the Contract Documents. Work under this section includes furnishing all labor and materials to install, inspect and maintain the erosion control and/or turbidity barriers surrounding project work as shown on the drawing or as required by the Florida Department of Environmental Protection (FDEP) Environmental Resource Permit (ERP), the Army Corps of Engineers (USACE) Permit, federal, state, and local laws and regulations, as well as turbidity monitoring.

- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for under the following Pay Item:

- Environmental Protection and Erosion Control

4.0 Manatee Protection

- a. General: The work specified under this section includes all labor, equipment, and materials for manatee protection in accordance with the FDEP ERP, the USACE Permit, federal, state, and local laws and regulations.

- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for under the following Pay Item:

- Manatee Protection

5.0 Site Work – Dredge Material Treatment Area and Storage/Staging Areas

- a. General: The work specified under this section includes all labor, equipment, and materials for construction of the Dredge Material Treatment Area (DMTA), the inflow and outflow pipelines, and all ancillary facilities in accordance with the Plans and Technical Specifications. Also included under this section is all site work needed to establish and maintain all storage and staging areas for personnel and equipment to access all work sites. The work under this section also includes any testing and design services required by a Florida licensed Engineer of the final design and layout of the DMTA, including dewatering pond berms as required by the Permits, Plans and Technical Specifications.

- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for under the following Pay Item:

- Site Work – Dredge Material Treatment Area and Storage/Staging Areas

6.0 Sediment Removal by Hydraulic Dredging & Dewatering of Dredge Material

- a. General: The work specified under this section consists of furnishing all labor, materials, equipment, and incidentals necessary to hydraulically dredge the sediment material, pump, and convey this material to the specified DMTA, and to dewater the slurry resulting from dredging activities in accordance with Section 02250 of the Technical Specifications. The work specified under this section also includes all labor, materials, equipment, and incidentals necessary for tree protection, overhead tree trimming, debris removal and off-site hauling during the hydraulic dredging operation.

- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for in accordance with Section 02250 under the following Pay Item:

- Sediment Removal by Hydraulic Dredging & Dewatering of Dredge Material

7.0 Hauling and Disposal of Dredged/Dewatered Material

- a. General: The work specified under this section consists of furnishing all labor, materials, equipment, and incidentals necessary to remove the dewatered sediment material from the DMTA and to dispose of the dewatered material in a manner in accordance with the Technical Specifications and all permit conditions and applicable laws and regulations. This item includes all associated disposal and transportation costs, including any tolls and tipping fees.

- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for in accordance with Section 02300 under the following Pay Item:

- Hauling and Disposal of Dredged/Dewatered Material

8.0 Survey

- a. General: The work specified under this section consists of furnishing all labor, materials, equipment, and incidentals necessary to produce the Survey Plan, baseline dredge material treatment area and pipeline topographic survey, pre-dredging bathymetric survey at the proposed return water pipe outfall location, Interim Progress Surveys, and As-built Survey as described in Section 02250.

- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for under the following Pay Item:

- Survey

9.0 Restoration of Dredge Material Treatment Area and Storage/Staging Areas

- a. General: The work specified under this section consists of all labor, materials, and equipment to remove the DMTA facility and restore all work areas to pre-construction or better condition and elevations following the completion and acceptance of dredging and in accordance with the permitted DMTA Restoration Plan attached to the FDEP and USACE permits. The DMTA Restoration Plan notes that "the Permittee shall restore 1.2 acres of temporary wetland impacts to pre-existing contours, elevations, vegetation, habitat type, and hydrology." No planting of wetland vegetation is required as the wetland restoration is expected to naturally revegetate.
- b. Payment: The pay quantities for work specified under this section shall be lump sum. The applicable work specified under this section shall be paid for under the following Pay Item:
 - Restoration of Dredge Material Treatment Area and Storage/Staging Areas

10.0 Contingency

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

END OF SECTION

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
- 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 his superintendent
 - b. Representatives of principal Subcontractors and Suppliers
 - c. ENGINEER and his 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 his 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, 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. 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.

END OF SECTION

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 his Subcontractor's) failure to initially satisfy the legibility quality requirements will not relieve CONTRACTOR (or his 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 his Subcontractors or any other contractors as described herein.
 2. In establishing schedule for Compliance Submittals, allow fifteen (15) working days in DISTRICT's office for reviewing original Submittals and ten (10) working days for reviewing resubmittals.

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

**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 of 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 of 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

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 to be affected by construction.
- 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 river channel, dredge material treatment area, storage areas, access areas, laydown areas, access roads, gates, fences, and project drainage boundaries. CONTRACTOR shall include adjacent seawalls, shorelines, and docks along the project alignment.

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. Number of views shall be adequate to show the finished WORK.
 - 4. If Project is not completed during the Contract Time, or authorized extensions, photographs shall continue to be taken at no increase in Contract Price.
- B. Photographs shall be taken with five (5) megapixel minimum resolution.
- C. Provide a jump drive medium containing all photographic images in JPG format. Label with the name and Contract number of Project, name of CONTRACTOR, description of view, and date photograph was taken.
- 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 aerial of the dredge material treatment area, 1) one vertical aerial of Rogers Park, and 1) vertical aerial of any other properties used for staging, storing, or access by the CONTRACTOR. Image orientation 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 print shall have the project site, date and time the photograph was taken electronically superimposed on it or written in the bottom border or on the back of the photograph. Each submittal shall also include rights of reproduction for the DISTRICT and the ENGINEER(s) of Record.
- 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

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 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 required to comply with the Contract Documents.
 - F. CONTRACTOR shall submit his 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. CONTRACTOR shall pay all costs for such services. 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 fail 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:

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

END OF SECTION

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. Utility services
 - 2. Construction and support facilities
 - 3. Construction aids
 - 4. Fire protection
 - 5. Bypass flow
- 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 including:
 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:
 1. Comply with NFPA 10 and 241, and ANSI A10 Series standards "Temporary Electrical Facilities."
 2. Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.
- 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.
- B. Water: Provide potable water approved by local health authorities.
- C. Water Hoses: Provide 3/4-inch (19-mm), heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet (30 m) long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- D. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

- E. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- F. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- G. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.01 TEMPORARY UTILITIES:

A. General:

1. Engage the appropriate local utility company to extend temporary electric and phone service to the Project area from nearby existing utilities. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
2. Provide adequate utility capacity at each stage of construction. Prior to availability of temporary utilities at the Site, or in remote areas without services, provide trucked-in services as required for start-up and construction operations.
3. Furnish, install and maintain temporary utilities required for adequate construction, safety and security. Modify, relocate and extend systems as WORK progresses. Repair damage caused by installation or use of temporary facilities. Grade the areas of Site affected by temporary installations to required elevations and grades, and clean the area. Remove on completion of WORK or until service or facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
4. The types of temporary construction utilities and facilities required include, but are not limited to, potable drinking water, wastewater, drainage, dewatering equipment, enclosure of WORK, ventilation, electrical power, lighting, hoisting facilities, stairs, ladders, and roads.
5. Inspect and test each service before placing temporary utilities in use. Arrange for required inspections and tests by governing authorities, and obtain required certifications and permits for use.
6. Materials used for temporary service shall not be used in the permanent system unless so specified or acceptable to the DISTRICT.

3.02 TEMPORARY ELECTRICITY AND LIGHTING:

A. New Service:

1. Arrange with utility company to extend existing electric service to temporary office trailers.

2. Connect temporary service in a manner directed by utility company officials. Provide separate meter for metering of power used by all entities authorized to be at or perform WORK at the Project Site.
 3. The electric service shall be of sufficient capacity and characteristics for the various construction tools, machinery, lights, heating and air conditioning, pumps, and other tools required by CONTRACTOR and his Subcontractors. In areas of the Project where permanent or temporary power service from the local utility is not available, the CONTRACTOR shall supply and maintain engine-driven, power-generator sets.
 4. Provide weatherproof, grounded, power distribution system sufficient to accommodate construction operations requiring power, use of power tools, electrical heating and lighting. Provide overload protection. Supply power for electric welding, if any, from engine-driven, power-generator sets.
 5. Provide adequate artificial lighting for all areas of WORK when natural light is not adequate for WORK.
 6. Sufficient light shall be provided for general construction areas, with additional sufficient lighting for specific tasks and to meet safety requirements.
- B. Use of Permanent System:
1. Prior to use of permanent system to be installed by the power company for construction purposes, obtain written permission of the DISTRICT.
 2. Maintain permanent system as specified for temporary facilities.
- C. Costs of Installation and Operation:
1. Pay fees and charges for permits and applications.
 2. Pay costs of installation, maintenance, removal of temporary services, and restoration of any permanent facilities used.
 3. Pay costs of electrical power used (if applicable).
 4. Pay costs of furnishing, operating, and maintaining engine-driven power-generator sets, where applicable.

3.03 TEMPORARY HEAT AND VENTILATION:

- A. General:
1. Provide temporary heat, ventilation and cooling as required to maintain adequate environmental conditions in temporary office trailers and storage sheds and to facilitate progress of the WORK, to meet specified minimum conditions for the installation of materials, and to protect materials and finishes from damage. Protect from adverse affects of low temperatures or high humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
 2. Methods of heating and fuel shall be suitable for particular purposes. Portable heaters shall be standard approved units with controls.
- B. Costs of Installation and Operation:
1. Pay fees and charges for applications, permits, and inspections.

2. Pay costs of installation, operation, maintenance, removal of equipment, and restoration of existing or permanent facilities if used.
3. Pay cost of power and fuel 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

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 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.

3.02 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 requirements of applicable codes and standards or regulatory agencies.
3. Barriers shall be of a neat and reasonable uniform appearance, structurally adequate for the required purposes.
4. Maintain barriers in good repair and clean condition for adequate visibility.
5. Relocate barriers as required by progress of Work.
6. Repair damage caused by installation and restore area to original or better condition. Clean the area.

3.03 ENVIRONMENTAL CONTROLS:

A. Dust Control:

1. If appropriate to the site location, and at the discretion of the DISTRICT, provide positive methods and apply dust control materials to minimize raising dust from construction operations.
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. The keeping of 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 spillages 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 spillages, and to remove contaminated soils or liquids. Excavate and dispose of any contaminated earth off-site in approved locations, and replace with suitable compacted fill and topsoil.

3. Take special measures to prevent harmful substances from entering public waters, sanitary, or storm sewers.
4. If hazardous materials are discharged, report to authorities as required by Law or Regulations and notify DISTRICT.

3.04 TRAFFIC CONTROL 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 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

**SECTION 01531
MANATEE PROTECTION**

PART 1 - GENERAL

- 1.01 SCOPE: The scope of this SECTION is to instruct all personnel associated with the Project of the potential presence of manatees and manatee speed zones and the need to avoid collisions with and injury to manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).
- 1.02 RELATED WORK SPECIFIED ELSEWHERE:
- A. SECTION 01530 - Temporary Barriers and Controls
 - B. SECTION 02435 - Turbidity Control and Monitoring
- 1.03 REFERENCES:
- A. Marine Mammal Protection Act of 1972
 - B. Endangered Species Act of 1973
 - C. Florida Manatee Sanctuary Act of 1978

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

- A. The CONTRACTOR shall advise all construction personnel about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The CONTRACTOR shall also advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Marine Mammal Protection, the Endangered Species Act, and the Florida Manatee Sanctuary Act. The CONTRACTOR may be held responsible for any manatee harmed, harassed, or killed as a result of construction activities.
- B. Siltation barriers shall be installed and shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be monitored regularly to avoid manatee entanglement or entrapment. Barriers shall not impede manatee movement.
- C. All vessels associated with the project shall operate at “Idle Speed/No Wake” at all times while in the immediate area and while in water where the draft of the vessel provides less than four feet clearance from the bottom. All vessels shall follow routes of deep water whenever possible.
- D. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). If a manatee is sighted within 100 yards of the project area, all appropriate precautions shall be implemented by the contractor to ensure protection of the manatee. All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s)

has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

- E. Any collision with and/or injury to a manatee shall be reported immediately to the DISTRICT's representative and to the "Florida Fish and Wildlife Conservation Commission (FWC) Manatee Hotline" at 1-888-404-FWCC (1-888-404-3922). Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-561-562-3909) in South Florida, and to FWC at ImperiledSpecies@myFWC.com.
- F. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities, including construction/dredging activities. Awareness signs that have already been approved for this use by the FWC must be used. Samples of manatee signage are included at the end of this specification. All signs shall be removed by the CONTRACTOR upon completion of the project. One (1) sign measuring at least three (3) feet by four (4) feet which reads **Caution Boaters: Watch for Manatees** shall be posted in a location where it is prominently visible to water related construction crews. A second sign shall be posted in a location that is prominently visible to all personnel engaged in water related activities, explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations. The second sign shall be at least 8 ½ inches by 11 inches and these signs can be viewed at MyFWC.com/manatee.
- G. A permanent manatee awareness sign shall be installed and maintained at the docking facility. The sign shall be three feet by four feet, 125 gauge 61TS aluminum, covered with white and blue, engineer grade, reflective sheeting; black and white, painted lettering; black screened design; and black, engineer grade, reflective tape border. The 3 feet wide by 4 feet long sign shall conform to the Florida Uniform Waterway marking System in accordance with F.S. 327.40-1. The installation of the sign shall be made in accordance with DEP Specification for such signs.
- H. Verification (photos) that signs have been installed at designated locations shall be provided to the FWS and the U.S. Army Corps of Engineers (USACE) before the docking facility begins operations. Signs and pilings remain the responsibility of the owner(s) and are to be maintained for the life of the docking facility in a manner acceptable to the USACE.
- I. The project is located within a designated important manatee area. As such, the CONTRACTOR will need to employ a full-time, dedicated manatee observer during all in-water WORK.

Sign 1: Caution Manatee Area



Sign 2: Idle Speed/No Wake



END OF SECTION

**SECTION 01570
TRAFFIC CONTROL**

PART 1 - GENERAL

1.01 SCOPE:

A. Summary of Work:

1. The WORK of this SECTION shall consist of furnishing all labor, material, and equipment and performing all operations in connection with traffic control in accordance with the Drawings and applicable codes and as specified herein.
2. The CONTRACTOR shall provide Maintenance of Traffic in accordance with the Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction Section 102 and FDOT Standard Plans for Road Construction Index 102-100 thru 102-670
3. The CONTRACTOR shall provide Maintenance of Traffic in association with the Tropical Drive cut to install the temporary culvert and repair the road. The CONTRACTOR shall maintain one-way traffic during installation of the temporary culvert and subsequent culvert removal and road repair upon completion of dredging. The road cut, temporary culvert installation and final road repair shall be conducted in compliance with Hernando County Facility Design Guidelines.

1.02 APPLICABLE STANDARDS AND PUBLICATIONS:

- A. Standards or Codes: The edition of the standards 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. The Florida Department of Transportation, "Standard Specifications for Road and Bridge Construction" (FDOT)
 2. American Association of State Highway and Transportation Officials (AASHTO)
 3. American Society for Testing and Materials (ASTM)
 4. County Codes
 5. U. S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices" (FHWA)

PART 2 - PRODUCTS

2.01 GENERAL:

- A. Coordinate with the Drawings to verify which of the following products are used in the WORK.

2.02 HIGHWAY SIGNING:

- A. Erecting aluminum or steel roadway signs with supporting posts, at the locations shown on the plans. The roadway signs and material shall conform to the requirements on FDOT Standard Specifications: Section 700, Articles 700-1 through 700-7.

2.03 REFLECTIVE PAVEMENT MARKERS:

- A. Installing reflectorized pavement markers and removing pavement markers within the Project limits as designated in the plans. The reflectorized pavement markers and materials shall conform to the requirements of FDOT Standard Specifications: Section 706, Articles 706-1 through 706-2.

2.04 PAINTING TRAFFIC STRIPES:

- A. Painting reflectorized traffic stripes, including edge stripes and traffic guide. The painting and materials shall conform to the requirements of FDOT Standard Specifications: Section 710, Article 710-1 through 710-2.

2.05 THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS:

- A. Placing and materials shall conform to the requirements of FDOT Standard Specifications: Section 711, Articles 711-1 through 711-2.

PART 3 - EXECUTION

3.01 SIGNS, MARKERS, PAINTING:

- A. Erection of signs and sign supports shall be in accordance with Section 700-9 of the FDOT Specifications.
- B. Placement of the markers shall be in accordance with Sections 710-3 through 710-9 of the FDOT Specifications.
- C. Painting shall be in accordance with Sections 710-3 through 710-9 of the FDOT Specifications.
- D. Thermoplastic markings shall be in accordance with Sections 711-3 through 711-7 of the FDOT Specifications.

END OF SECTION

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 sign and structure 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 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 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 and titles of authorities
 - c. Name and title of Design Engineer

- d. 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 his own signs.

2.02 INFORMATIONAL SIGNS:

- A. Construction:
 - 1. This includes signs for traffic, construction workers, and general public in regards 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

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. CONTRACTOR shall provide a copy to 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 Work of 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 assure 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 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:

- A. Specified in each applicable Section of Specifications

2.02 PRODUCT SELECTION AND SUBSTITUTIONS:

- A. 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

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 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

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:
 - a. Inspection procedures
 - b. Project record document submittal
 - c. Final cleaning
 - d. 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 depicting all upland elevations in NAVD 88 and all bathymetric elevations relative to MLW.
 - 5. Provide as-built surveys of the pipeline route, dredge material treatment area, river and deposition area cross-sections and outfall pipe location (s) certified by a Professional Land Surveyor registered in the State of Florida. This includes verifying proper embankment slopes and removal of excess material.
 - 6. Complete final cleanup requirements.
 - 7. 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.
- C. Return all keys furnished by the DISTRICT. The CONTRACTOR shall forfeit his key deposit for keys that are not returned.

1.04 RECORD DOCUMENT SUBMITTALS:

- A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. 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.
- 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. Mark new information that is important to the DISTRICT that is not shown on Drawings or Shop Drawings.
 5. Note related change-order numbers where applicable.
 6. 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 plotted at the same station and on top of the design cross-sections.
 - f. As-Built shall include a plot of the river and deposition area cross-sections plotted at the same station as and on top of the design cross-sections.
 - g. Give particular attention to concealed elements that would be difficult or expensive to locate at a later date.
 - h. GPS (global positioning system) coordinates of major structures using the format lat/long DD (decimal/degree) NAD83 (North American Datum).
 7. 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.
 8. Mark these documents to show substantial variations in actual WORK performed in comparison with the text of the Specifications and modifications.
 9. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 10. Note related As-Built information and Product Data.
 11. Upon completion of the WORK, submit record Specifications to the DISTRICT for the DISTRICT's records on CD in PDF format.
 12. 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 Supplemental Conditions, SECTION 01300, and technical specifications.

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

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 DEFINITIONS: (Not Applicable)

1.04 SUBMITTALS: (Not Applicable)

1.05 QUALIFICATIONS: (Not Applicable)

1.06 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.

1.07 CERTIFICATIONS AND TESTINGS: (Not Applicable)

1.08 INSPECTION COORDINATION: (Not Applicable)

1.09 WARRANTY: (Not Applicable)

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 workmen according to FDOT Specification Section 102 Maintenance of Traffic and local regulations.
- 3.02 STANDARD CLEARING AND GRUBBING: Standard site clearing and grubbing, in accordance with 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 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

**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. This section also includes land preparation activities for excavation and fill areas associated with the dredged material treatment area. This section is not applicable to hydraulic dredging work in the river or near the riverbanks.
- 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 – Specification Prevention, Control, and Abatement of Erosion and Water Pollution

1.03 DEFINITIONS: (Not Applicable)

1.04 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.

1.05 QUALIFICATIONS: (Not Used)

1.06 RESPONSIBILITIES:

- A. The CONTRACTOR shall ensure the safe passage of persons around areas of clearing and land preparation. The CONTRACTOR shall conduct its operations to prevent injury to adjacent structures, vegetation designated to remain, 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. Where the blockage is allowed, the CONTRACTOR shall provide alternate routes around closed or obstructed traffic ways.
- 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.

1.07 CERTIFICATIONS AND TESTING: (Not Applicable)

1.08 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.

1.09 WARRANTY: (Not Applicable)

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 GENERAL CLEARING:

- A. The CONTRACTOR shall remove the majority of the above grade non-native vegetative matter in the areas indicated on the plans. The CONTRACTOR shall complete the work of Clearing and Land Preparation as outlined below.
 1. Mowing or the use of a bush-hog may be required in areas of heavy grass, weeds, or woody-stalked vegetation.
 2. Completely remove all designated exotic/hazardous trees and shrubs within the designated earthwork boundaries. Segregate clusters of exotic trees and shrubs from native plants at locations to be designated by the DISTRICT in the field. 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 and pruning 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 trees and shrubs. The CONTRACTOR shall be responsible for repair and replacement of existing amenities to the satisfaction of the DISTRICT. The CONTRACTOR shall protect all vegetation, habitats, or amenities on the project location as indicated on the plans and in accordance with SECTION 02436 Environmental Protection Plan.
- B. The CONTRACTOR shall clear upland areas adjacent to cut or fill sections to a minimum distance of ten (10) feet outside of slope lines unless lesser distances are specified. Clearing in areas of native vegetation for embankment construction shall be limited to a distance of 10 feet outside of slope lines.
- C. 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. 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.
- D. 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.
- E. The CONTRACTOR shall haul all organic materials and residues left from burning operations to an approved landfill or disposal site.

3.02 CLEARING WITHIN AREAS OF NATIVE VEGETATION:

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

3.03 EROSION CONTROL:

- A. The CONTRACTOR shall prevent and control erosion and water pollution as per 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

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.
- 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 02220 – Excavation and Backfilling
 - 5. SECTION 02221 – Trench Backfill and Compacting
 - 6. SECTION 02436 – Environmental Protection
 - 7. SECTION 02486 – Grassing

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 Course 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. Reports include:
 - a. Final Report Sediment Samples from Weeki Wachee River and Adjacent Canals Hernando County, Florida. Ardaman & Associates, Inc. January 11, 2019.
 - b. Dredge Disposal Site Evaluation Hernando County, Florida. Ardaman & Associates, Inc. February 13, 2020.

1.03 DEFINITIONS [if applicable]:

- A. **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 water retaining embankment cores, roadway 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, SC (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; SC has 12-50% finer than a No. 200 sieve.)

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 ½ inches [90 mm]	90-100
¾ 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

- B. 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. Tighter restrictions on stone size are considered in the top layer of fill, as per subsection 3.03 F. Final Dressing of Slopes, if the area is to be seeded, sodded, or landscaped. Random backfill shall be placed where indicated on the Drawings. 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. The CONTRACTOR may blend native materials to achieve a material that meets the requirements for random backfill. Random backfill shall meet the CH (inorganic clays of high plasticity)

Unified Soil Classification System (ASTM D2487) designation in addition to the classifications identified for select backfill.

Random backfill shall meet the below requirements 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 ½ inches	< 12 inches	6 inches
6 inches	12-24 inches	12 inches
12 inches	> 24 inches	12 inches

- C. **Unclassified Fill:** Unclassified Fill may be material used to bring areas to grade where there is no potential for slope erosion and the fill will not support a structure of critical function. Unclassified backfill shall be placed where neither select backfill nor random backfill are shown on the Drawing. Unclassified Backfill shall be composed of material excavated for the WORK or imported material that can be compacted to the required density.
 - D. **Levee Fill Material:** Levee fill material shall consist of clean, granular materials that are free of debris, cinders, combustibles, roots, sod, wood, cellulose, organic material and materials subject to termite attack. Levee fill shall not have more than 12% passing the U.S. Standard Number 200 sieve (dry weight basis). The maximum particle size shall be 12 inches (305 mm) in any direction. Particles between 8 inches (203 mm) and 12 inches (305 mm) in diameter are considered “oversized materials” and shall not exceed 10% by volume of the levee fill material.
 - E. **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.
 - F. **Unsuitable Fill:** Soil that does not meet the requirements for fill (or backfill) addressed thus far in this SECTION shall be considered unsuitable fill soil.
 - G. **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).
 - H. **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).
- 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 QUALIFICATIONS:

- A. Geotechnical Testing Agency Qualifications: The CONTRACTOR will engage and pay for an independent testing agency qualified according to ASTM E 329 to perform Quality Control. This Quality Control involves conducting soil materials and rock-definition testing during earthwork operations, as documented according to ASTM D 3740.
- B. Earthwork Contractor Qualifications: The CONTRACTOR shall use an adequate number of skilled laborers and installers who are thoroughly trained and have a minimum of 5 years of successful experience in the necessary crafts and are completely familiar with the code requirements, the contract provisions, and the methods needed for the proper performance of the WORK of this SECTION. The CONTRACTOR shall employ the adequate resources and equipment necessary to successfully perform the WORK of this SECTION on schedule.

1.06 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. Excavation and backfilling shall be in accordance with SECTION 02220 - Excavation and Backfilling.
- 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.

1.07 CERTIFICATIONS AND TESTING: CONTRACTOR shall furnish, at his 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 his own expense, those areas directed by the DISTRICT.

1.08 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.

1.09 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. 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.

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 0.25 foot above or below the lines and grades indicated shall be permitted (except final restoration tolerances shall be 0.10 feet above or below design grade); however, the cross sectional area shall not be less than designed.
 - 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 backfill 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.

3.03 EMBANKMENT:

A. Embankment:

1. Embankment shall consist of a select backfill core and random backfill side slopes (unless otherwise indicated) and shall be placed to the lines and grades as shown on the Drawings. At no location shall the completed top elevation be lower than indicated. Embankment side slopes indicated are nominal, and may be varied. Completed side slopes shall be uniform from top to toe of the embankment, and shall be smoothly transitioned. The CONTRACTOR shall perform embankment WORK as shown on the Drawings, required and in accordance with these specifications.
 - a. Materials suitable for select fill shall be placed in the central core of the levee in horizontal layers not exceeding 12 inches in loose thickness and compacted as indicated.
 - b. Random fill shall be placed to its final position on each side of the select fill concurrent with select fill placement.
 - c. Rocks exceeding the acceptable size shall be either stockpiled or crushed to the acceptable size for use. The acceptable sizes of rocks are shown in the Definitions Section of this specification.
2. Cohesive soils shall be compacted to not less than 95% of the maximum density at optimum moisture content determined by accordance with ASTM D698. Cohesionless materials shall be compacted to not less than 80% relative density determined in accordance with ASTM D4253 and D4254.

B. Roadway and Access Berm Embankment: The CONTRACTOR shall construct embankments for roadways and access berms in accordance with the requirements of SECTION 120 of the latest edition of the FDOT Standard Specifications for Road and Bridge Construction.

C. Final Dressing of Slopes: Following the completion of embankment placement and compaction, the CONTRACTOR shall grade embankment slopes and adjacent transition areas so that they are reasonably smooth and free from irregular surface changes. The CONTRACTOR shall comply with the following:

1. In areas where the embankment is to have grass, sod, or landscaping, the material within the top one foot of the levee, shall be free of any rocks greater than 2 inches (51 mm) in diameter.
2. The degree of finish shall be that ordinarily obtained from blade grader or similar operations.
3. Provide roundings at bottom of slopes and other breaks in grade.

D. Cross-Sections: Provide field measured cross-sections of the final embankments to the DISTRICT for payment and record purposes, plotted at the same stations as the detailed cross-sections shown on the plans.

3.04 BACKFILLING:

- A. Structure Backfill: The CONTRACTOR shall place structural backfill in accordance with the lines, grades, and cross-sections shown in the Drawings or as ordered by the DISTRICT. The CONTRACTOR shall backfill using select fill. Stones or rocks greater than 2 inches (51 mm) in any dimension shall not be placed within 12 inches of the structure. Lifts shall not exceed 12 inches. The following procedures shall be adhered to:
 - 1. Structure backfill shall be compacted to not less than 95% maximum dry density as measured by ASTM D1557.
 - 2. Remove all debris from excavation prior to placement of material.
 - 3. Place backfill in level layers of thickness within the compacting ability of equipment used.
 - 4. Perform backfilling simultaneously on all sides of structures. For walls, backfill shall be brought up evenly on each side of the wall and sloped to drain away from the wall.
- B. Unclassified Backfill: The CONTRACTOR shall ensure that unclassified backfill be placed in 12 inch loose lifts to the lines and grades shown on the Drawings or as approved by the DISTRICT. The CONTRACTOR shall compact unclassified backfill to a density approximating the density of surrounding native material and in a manner that will prevent settlement of the completed area.

3.05 MAINTENANCE:

- A. The CONTRACTOR shall protect newly graded areas from actions of the elements.
- B. 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.
- C. The CONTRACTOR shall maintain grassed areas in accordance with SECTIONS 02486.

END OF SECTION

SECTION 02220
EXCAVATION AND BACKFILLING

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The CONTRACTOR shall furnish all labor, materials, and equipment to perform the excavation and backfilling as shown on the Drawings.
- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 02110 – Clearing and Land Preparation
 - 2. SECTION 02200 – Earthwork

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 (56,000 ft-lbf/cu. ft.)
 - 2. D1557 Standard Test Methods for Laboratory compaction Characteristics of Soil Using the Modified Effort (12,400 ft-lbf/cu. ft.)
 - 3. D4253 Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
 - 4. D4254 Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
- B. Florida Department of Transportation
 - 1. Standard Specifications for Road and Bridge Construction, latest edition, (FDOT)

1.03 DEFINITIONS: (Not Applicable)

1.04 SUBMITTALS: The CONTRACTOR shall submit, prior to the start of work, the planned method of construction of the embankments shown on the Drawings, or as specified herein, for the DISTRICT'S review. This plan shall also indicate the intended construction sequence for backfilling operation.

1.05 QUALIFICATIONS: (Not Applicable)

1.06 RESPONSIBILITIES: (Not Applicable)

1.07 CERTIFICATIONS AND TESTING: Field density tests in accordance with ASTM Standards, for each type of material used in backfilling may be required. Failure to meet the specified density will require the CONTRACTOR to recompact and retest, at its own expense, those areas directed by the DISTRICT.

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 at least 48 hours advance notice of its intention to begin new WORK activities.

1.09 WARRANTY:

- A. The CONTRACTOR shall warrant the WORK against defects for one year from the date of Final Completion and as described in the contract documents.

PART 2 - PRODUCTS

- 2.01 STRUCTURAL BACKFILL: The CONTRACTOR shall provide satisfactory structural backfill material which shall consist of material free of muck, stumps, rocks, or other material considered unacceptable by the DISTRICT. The general requirements for fill shall be in accordance with SECTION 02200 Earthwork and FDOT 120-7.1 and 7.2.
- 2.02 EMBANKMENT FILL: The CONTRACTOR shall provide embankment fill free of muck stumps, roots, brush, vegetation or other material considered undesirable by the DISTRICT to be placed in upland areas. Embankment fill containing muck free of stumps, roots, brush, vegetation or other material considered undesirable by the DISTRICT may be utilized in zones where wetland plants are proposed. The general requirements of embankment fill shall be in accordance with SECTION 02200 Earthwork and FDOT 120-7.1 and 7.2.

PART 3 - EXECUTION

3.01 SITE PREPARATION:

- A. Clearing and Grubbing: The CONTRACTOR shall perform clearing and grubbing in accordance with SECTION 02110 Clearing and Land Preparation and with the following provisions:
 - 1. Perform only in areas where earthwork or other construction operations are to be performed or otherwise shown on Drawings.
 - 2. Protect tops, trunks, and roots of existing trees that are to remain on the site.
 - 3. Clear areas and dispose of other trees, brush and vegetation before starting construction.
 - 4. Remove tree stumps and roots larger than three inches in diameter and backfill resulting excavations with approved material.
- 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 depth of approximately six inches or to a sufficient depth to remove excessive roots in heavy vegetation or brush areas and as required segregating topsoil.
 - 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 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.

3.03 STOCKPILE OF EXCAVATED MATERIAL: The CONTRACTOR shall stockpile excavated materials in areas shown on the Drawings or in areas otherwise approved by the DISTRICT.

3.04 PLACEMENT OF STRUCTURAL FILL: The CONTRACTOR shall place structural backfill true to the lines, grades and, cross sections shown in the Drawings or as ordered by the DISTRICT. Structural backfill shall be deposited by the CONTRACTOR in horizontal layers not exceeding eight inches in depth measured loose, and shall be compacted to a density of not less than 95 percent of the

maximum density at optimum soil moisture content +/- 2% as determined by ASTM D1557 Standards. Backfill shall not be placed against fresh concrete without the approval of the DISTRICT.

- 3.05 PLACEMENT OF EMBANKMENT FILL: The CONTRACTOR shall construct embankments true to the lines, grades, and cross sections shown on the Drawings or as directed by the DISTRICT. Fill for embankments shall be placed by the CONTRACTOR in successive layers of not more than twelve inches in thickness, measured loose, for the full width of the embankment. Each layer of the material used in the formation of the embankments shall be compacted by the CONTRACTOR to a density of at least 95 percent of the maximum density as determined by ASTM D1557 Standards. Unreasonable roughness of the surface shall be dressed out. Rocks and boulders shall not project above the finished surfaces. All areas disturbed shall be graded by the CONTRACTOR so that water drains freely at all points after construction.
- 3.06 COMPACTION EQUIPMENT: When placing fill adjacent to foundations or retaining walls, heavy equipment for spreading and compacting fill shall not be operated closer than a distance equal to the height of backfill above the top of the footing; the area remaining shall be compacted in layers not more than 4 inches in compacted thickness with power-driven hand tampers suitable for the materials being compacted. Backfill shall be placed carefully around pipes or tanks to avoid damage to coatings, wrappings, or tanks. Backfill shall not be placed against foundation walls prior to 7 days after completion of the walls. As far as practicable, backfill shall be brought up evenly on each side of the wall and sloped to drain away from the wall.
- 3.07 GRADING: The CONTRACTOR shall perform grading as shown on the Drawings, required, and provided for below:
- A. Grade and compact all areas within the project area, including excavated and filled sections and adjacent transition areas, reasonably smooth, and free from irregular surface changes.
 - B. Degree of finish shall be that ordinarily obtained from blade grader or scraper operations except as otherwise specified.
 - C. Finished grades shall comply with grading tolerances provided in Section 02200.
 - D. Finish all ditches, swales, and gutters to drain readily.
 - E. Provide roundings at top and bottom of banks and at other breaks in grade.
- 3.08 CLEANUP: The CONTRACTOR shall cleanup the site as required and provided for below, to the satisfaction of the District:
- A. Clear surfaces of all stones, roots, grading stakes, and other objectionable materials.
 - B. Keep paved areas clean and promptly remove rock or dirt dropped upon surfaces.
- 3.09 PROTECTION AND MAINTENANCE: The CONTRACTOR shall maintain the embankments until final acceptance of all work. The maintenance shall include repairs of any erosion, slides, or other damages.

END OF SECTION

SECTION 02221
TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 SCOPE:

- A. Summary of Work: The CONTRACTOR shall furnish all labor, materials and equipment necessary for complete and proper trenching, backfilling and compacting as specified herein.
- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 02200 Earthwork
 - 2. SECTION 02220 Excavation and Backfilling

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. D1557 - Standard Test Methods for Laboratory compaction Characteristics of Soil Using the Modified Effort (56,000 ft-lbf/ ft³ (2,700 kN-m/m³))
 - 3. D4253 - Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
 - 4. D4254 - Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
- B. Florida Department of Transportation (FDOT):
 - 1. Standard Specifications for Road and Bridge Construction, latest edition, (FDOT)
- C. Miscellaneous Project Data:
 - 1. Subsurface soil data logs are provided for the CONTRACTOR'S reference in the geotechnical reports.

1.03 DEFINITIONS: (Not Applicable)

1.04 SUBMITTALS: (Not Applicable)

1.05 QUALIFICATIONS: (Not Applicable)

1.06 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 road, 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.

1.07 CERTIFICATIONS AND TESTINGS: (Not Applicable)

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

1.09 WARRANTY:

- A. The CONTRACTOR shall warrant the WORK against defects for one year from the date of Final Completion and as described in the contract documents.

PART 2 - PRODUCTS

2.01 MATERIALS: The CONTRACTOR shall furnish materials as required to complete the Work under this Section.

PART 3 - EXECUTION

3.01 EXTENT OF OPEN EXCAVATION: The CONTRACTOR shall perform the excavation such that at any time the amount of excavation open will be held to a minimum consistent with normal and orderly prosecution of the work, or as restricted by permit conditions.

3.02 TRENCH EXCAVATION: The CONTRACTOR shall perform trench excavation in accordance with the following.

- A. All excavation for piping shall be open cut. Trench sides shall be approximately vertical between an elevation of one foot above the top of the pipe and the centerline of the pipe; otherwise, trench sides shall be as vertical as possible or as required. Trenches may be excavated by machinery to a depth that will not disturb the finish grade.
- B. Trench width shall be as narrow as practical and shall not be widened by scraping or loosening material from the sides.

3.03 EXCAVATION BELOW NORMAL GRADE:

- A. In the event the CONTRACTOR through error or carelessness excavates below the elevation required, the CONTRACTOR shall at his own expense backfill with selected gravel and compact to obtain a suitable pipe bedding all as directed and to the satisfaction of the DISTRICT.
- B. In the event unstable or unsuitable bedding material is encountered at or below the pipe bedding level, the CONTRACTOR shall remove such material and replace it with suitable compacted material.

3.04 BACKFILLING TRENCHES:

- A. The CONTRACTOR shall be responsible for obtaining the necessary inspections before, during and after backfilling and shall re-excavate, refill and perform all such related work to obtain satisfactory test results.
 - B. The CONTRACTOR shall use excavated materials classified as embankment fill for backfilling and such grading on the site as is required. The CONTRACTOR shall dispose of any excess fill or unstable material in areas approved by the DISTRICT. Pipe trenches shall be backfilled with fine, loose embankment fill (see SECTION 02220, paragraph 2.02), free from large stones, carefully deposited on both sides of pipe and thoroughly and carefully rammed until enough fill has been placed to provide a cover of at least one foot above the pipe. The remainder of the backfill material may then be thrown in and tamped. Water settling may be permitted. The CONTRACTOR shall submit written request detailing the need to perform water settling and reasons why work in the dry is not possible. The CONTRACTOR shall also submit detailed procedures for the review and approval of the DISTRICT. Whenever trenches have not been properly filled, or if settlement occurs, they shall be refilled, smoothed off and finally, made to conform to the surface of the ground. Backfilling shall be carefully performed and the surface restored to the elevation shown on the plans. In unpaved areas the surface of trenches shall conform and be equal to quality, character and material of the surface immediately prior to making the excavation.
 - C. Place earth embedment as follows:
 - 1. With level bottom layer at proper grade to receive and uniformly support pipe barrel throughout its length.
 - 2. Form shallow depression under each joint to facilitate jointing.
 - 3. Add second layer simultaneously to both sides of the pipe with care to avoid displacement of the pipe.
 - 4. Place material in maximum 12-inch lifts.
- 3.05 BACKFILLING OF TRENCH UNDER ROADWAY: The CONTRACTOR shall place material in 12-inch maximum layers after filling one foot above pipe as previously described. Each layer shall be compacted to 95 percent maximum dry density as measured by ASTM D1557 so that pavement can be placed promptly. Any pavement cut or area disturbed by this work shall be replaced to match existing.
- 3.06 BACKFILLING OF TRENCH OPEN AREAS: The CONTRACTOR shall place material in 12-inch maximum lifts after filling one foot above pipe as previously described. The top one-foot layer shall be compacted to 90 percent maximum dry density as measured by ASTM D1557. Each layer shall be compacted to the density of adjacent soils. Restore the surface to original grade and place sod or seed as required by the contract documents.

END OF SECTION

SECTION 02250
HYDRAULIC DREDGING AND DEWATERING OF DREDGE MATERIAL

1.0 River Sediment Removal & Dewatering

A. GENERAL

1. SCOPE:

The work specified under this section consists of furnishing all labor, materials, equipment, and incidentals necessary to hydraulically dredge the sediment material, pump, and convey this material to the specified dredge material treatment area, and to dewater the slurry resulting from dredging activities in a manner in accordance with DISTRICT's specifications and all permit conditions and applicable laws and rules. The work specified shall include all other activities necessary to conduct the work even if not specifically listed in the pay items. The estimated dredge volumes represent the ENGINEER's estimate of the in-place volumes of sediment to be dredged based on the river-wide hydrographic survey conducted on the dates provided on the Plans. The CONTRACTOR shall conduct such pre-bid surveys it deems necessary to verify the current channel configuration and volume of material to be removed prior to bid submission.

2. SUBMITTALS:

At least 14 days prior to the Preconstruction Conference, the CONTRACTOR shall prepare and submit for the DISTRICT's approval the following documents:

- a. A detailed layout plan of the site to be used as staging area within the parcel limits shown on the plans.
- b. A detailed layout plan of the dewatering equipment setup and ancillary facilities, including pumping facilities and temporary storage areas. With the detailed layout plan, the CONTRACTOR shall also include a detailed plan for securing and installing the pipe, pipe maintenance and maintenance of traffic for the return water pipe and dredge material pipe to the treatment area between the dredging operation and the dredge material treatment area. A pre-dredging bathymetric survey shall be conducted at the proposed return water pipe outfall location (s).
- c. A detailed plan of the area selected for personnel and parking activities.
- d. The CONTRACTOR shall submit details of equipment setup, including the installation of the excess water return system.
- e. A Health & Safety Plan (HSP) that defines all training, operation, and monitoring activities necessary to meet all occupational labor requirements.
- f. An Emergency Action Plan (EAP) for responding to the break or rupture of the dredge pipeline. This plan shall detail the CONTRACTOR's proposed precautions and response to an accidental break or rupture of the dredge pipeline, to minimize the amount of dredged material discharged into adjacent uplands, wetlands, river areas that have been previously dredged, and/or other areas of the river outside the identified dredge areas. This plan shall also include details for cleanup and restoration of these areas afterwards.
- g. An in-river pipeline alignment plan which details proposed locations of floating and submerged pipeline alignments, anchorage details, signage and lighting details, and the locations of navigational cross-overs for boaters needing to cross the dredge pipeline during dredging operations.
- h. A Vessel Safety Plan (VSP). The CONTRACTOR shall develop and submit for DISTRICT approval, a written safety plan detailing how the CONTRACTOR will maneuver vessels under Shoal Line Boulevard. The CONTRACTOR shall not be allowed to crane vessels into the river from the bridge.
- i. A Weekly Operation and Monitoring Report. CONTRACTOR shall develop and submit for DISTRICT

approval the format to be used for the monitoring report. The report shall combine the previous week's daily reports which summarize dredging progress, approximate dredged volumes, and any required maintenance activities. The Weekly Operation and Monitoring Report shall include copies of the turbidity monitoring reports for dredge operations. Once dredging activities have begun the report will be due on the first working day of the following week.

- j. Safety Data Sheets (SDS) for all chemicals to be used in the dredging or dewatering processes must be provided to, and authorized by, the DISTRICT prior to the commencement of work.

3. DISCOVERY OF NATURAL AND/OR CULTURAL RESOURCES:

If any natural or cultural resources that are not identified on the Drawings are encountered, all dredging activity will cease, and the DISTRICT shall be notified immediately. CONTRACTOR is to follow all local, state, and federal guidelines pertaining to historically significant artifacts. The Army Corp of Engineers permit specifies procedures when encountering historically significant artifacts.

4. PUMPING OF BILGES:

The pumping or release of oil or bilge water containing oil into navigable waters, or into areas which would permit the oil to flow into such waters, is prohibited by the River and Harbor Act (30 Stat. 1152; 33 U.S.C. 407) and other pertinent regulations. Violation of this prohibition by the CONTRACTOR is subject to the penalties under those regulations.

5. PERMITS:

- a. Permit Guidelines: All sediment removal and dewatering activities shall be performed in strict accordance with the general and specific conditions of the Florida Department of Environmental Protection – General Permit and USACOE permit (and any Agency-approved modifications to those permits) issued for the project, as applicable at the time of work. The CONTRACTOR shall adapt their methods of operation as needed to comply with the requirements contained within those documents.
- b. Additional Permits: The CONTRACTOR shall be responsible for obtaining a generic permit for stormwater discharges for large and small construction activities through the Florida Department of Environmental Protection (FDEP). Additionally, the CONTRACTOR shall work with Hernando County to obtain all needed permits for the dredge material treatment site and right of way permitting.
- c. Severance Fees: There is no severance fee associated with removal of the permitted designated material under current permitted conditions. However, severance fees may apply if the CONTRACTOR is found to have removed non-permitted material (e.g. outside of project limits, sand, etc.).

B. EXECUTION

1. GENERAL PERFORMANCE REQUIREMENTS

All equipment, including dredges, pipelines, pumping systems, and the dewatering system(s), shall be of sufficient size, capacity, and configuration to complete the described scope of work within the project schedule accounting for expected work delays resulting from inclement weather, mechanical breakdowns, prescribed operating times and days, etc. The equipment and unit processes shall be configured as to be sufficiently flexible to handle the expected rate fluctuations arising from the variability of in-situ material characteristics. The CONTRACTOR shall submit a description of the types, numbers, capacities, and sizes of all equipment proposed to be used to complete the project along with a general description of the overall dredging and dewatering process to be used as part of the CONTRACTOR's bid submittal.

2. DREDGING ACTIVITIES:

- a. Adjacent Property and Structures: The CONTRACTOR shall be responsible for dredging to the lines and grades shown on the Plans and specified herein. Dredging shall be conducted no closer than 10 feet from the river shoreline and existing structures, except near Shoal Line Boulevard where dredging shall

be no closer than 30 feet from the bridge rip rap. The CONTRACTOR shall promptly repair at their own expense any damage to private or public property resulting from his dredging activities. Any damage to existing structures as a result of CONTRACTOR's activity will result in the suspension of dredging activity and require the prompt repair of the damage by the CONTRACTOR at their own expense as a prerequisite to the resumption of dredging. Should any dredged materials or other debris be pushed, moved, discharged, or otherwise deposited into the areas described above as a result of CONTRACTOR's operations, the material must be promptly removed by CONTRACTOR, at the CONTRACTOR's own expense, to the satisfaction of the DISTRICT.

- b. Environmental Protection: The CONTRACTOR shall operate the dredge in a safe and professional manner consistent with standard industry practices and applicable regulations. The dredge and associated equipment shall be maintained in a good condition to prevent any spills or oil leaks. In case of accidental discharge of petroleum or hazardous substances into the river, the CONTRACTOR shall immediately provide environmental protective measures for remediation and control.
- c. Safety Coordinator: The CONTRACTOR shall designate a Safety Coordinator for the work site. The CONTRACTOR's Superintendent may be designated safety coordinator. The Safety Coordinator shall be present at all times during dredging operations and shall be in continuous radio or telephone communication with the dredge.
- d. Dredge Extents: It is the CONTRACTOR's responsibility to satisfy itself as to the volume of sediment material that will be removed prior to submitting its lump sum bid. The survey information provided on the construction plans was collected in 2018 and 2019 and additional sedimentation within the dredging footprint is likely. As such, the actual sediment material removal volume is likely greater than estimated in the permit applications and may include the potential dredging areas shown in the construction plans as the Proposed Dredging Areas and the Bottom Edge of Channel for Potential Dredging Area. The contractor will maintain a 4:1 slope from the edge of the Bottom Edge of Channel for Potential Dredging Area, except where structures such as docks or seawalls, or natural shorelines, prevent the identified 10-foot setback. The CONTRACTOR shall conduct such pre-bid survey it deems necessary to determine the anticipated sediment material volume, so its lump sum bid incorporates the revised volume and dredging areas and ensures dredging to the specified design.
- e. Dredge Limits and Tolerances: The areas to be dredged shall be dredged to the design elevations and limits shown on the Plans. Dredging to higher elevations than shown on the Plans is limited to 0.2 feet unless the CONTRACTOR encounters subsurface conditions such as limestone, a consolidated shell layer, or a rock outcrop, in which case the DISTRICT shall provide direction to the CONTRACTOR on how to proceed. Under no circumstances shall the CONTRACTOR dredge into the river hard bottom, shell layers, or limerock outcrops. If the DISTRICT directs the CONTRACTOR to modify dredge elevations due to an unforeseen condition, the contract payment terms will not change. The CONTRACTOR shall limit over-dredging to 0.5 feet below those elevations shown on the Drawings or specified herein. The horizontal limits of dredging shall be within 0.5 feet of those shown on the Drawings.
- f. Dredge Sequencing: The CONTRACTOR may submit to the DISTRICT a modified sequencing plan for the implementation of dredging. However, any modified sequencing plan must be approved by the DISTRICT prior to implementation.
- g. Dredge Vertical and Horizontal Accuracies: The dredge shall be equipped with a real-time, navigational and dredging control system with vertical and horizontal accuracies of 0.5 feet and 3 feet, respectively. As noted above in Section 2e, the vertical tolerances for acceptance of the work are no higher than 0.2 feet above the plan grade and no lower than 0.5 feet below the plan grade. The horizontal tolerance for acceptance of the work is within 0.5 feet for the channel/sediment deposition area bottom and top.
- h. Densimeter: The dredge shall be equipped with a densimeter to continuously measure the solids content of dredged material in the discharge pipeline.
- i. Weather Conditions: Special care shall be taken if dredging is performed in dark, overcast, and all other low-visibility conditions to provide adequate warning for locations of dredge, anchor cables, and floating pipelines.

- j. Existing Utilities: Prior to dredging and installation of the dredge material treatment area and pipeline, the CONTRACTOR shall identify and locate existing utilities within the work limits. The CONTRACTOR shall avoid interfering with existing utilities and shall take precautions against damages which might result from the CONTRACTOR's operations. If the CONTRACTOR damages an existing utility as a result of the dredging or dewatering or related operations, the CONTRACTOR shall immediately notify the affected utility and the DISTRICT. The CONTRACTOR shall repair, or have the damaged utility repaired by the Utility in question, at the CONTRACTOR's expense. Any costs associated with downtime for making such repairs and downtime shall be at the CONTRACTOR's own expense.
- k. Power: The CONTRACTOR may work with the power company to provide power to the site at their own cost. The CONTRACTOR may remove the power line at project completion.
- l. Vessel Launch and Mooring: Boats may be launched from the Rogers Park Boat Ramp located just southeast of the Shoal Line Boulevard bridge. These operations shall also be conducted in a manner that minimize damage to surrounding area and shall not interfere with public uses of the park. No mooring of the dredge or ancillary vessels shall be allowed in or around public access areas or in the boat basin. The attachment of mooring lines to trees for the purpose of mooring any dredging equipment or related material shall not be allowed. The CONTRACTOR shall be responsible for repairing any damages that may result from these activities at the CONTRACTOR's own expense.
- m. Equipment and Materials Storage Area: Dredging equipment and materials (e.g. dredging pipes) may be stored at the Staging Area that has been approved by the DISTRICT prior to the start of construction. The DISTRICT has negotiated the use of the dredge material treatment area parcel with the COUNTY. The CONTRACTOR is responsible for negotiating terms of use with any other Owner of alternate staging area property. The CONTRACTOR shall be responsible for selecting additional locations that will be used for storage and access and for making all improvements as needed for support dredging operations. The CONTRACTOR shall also be responsible for obtaining all local, state and federal permits needed for use of alternate sites, as well as for coordinating with the current site owner throughout the project duration.

3. DREDGE PIPELINE REQUIREMENTS:

- a. Pipeline Design: The CONTRACTOR shall prepare and submit to the DISTRICT for review, a plan showing the proposed alignments of the floating pipeline, submerged pipeline, upland pipeline, and proposed booster pump locations, along with the locations and types of marking and anchorage systems. The CONTRACTOR shall also submit equipment and material specifications including pump curves that are corrected for impeller size modifications and design speeds, pressure ratings for all pipe materials and fittings, and drive motor specifications.
 - 1) The pipeline shall be tightly connected, restrained or welded joints, and shall be made of suitable pipe materials. If steel is used, the pipeline shall be protected against corrosion with an approved cathodic protection system.
 - 2) The pipeline shall be adequately anchored to control lateral movement in uplands and at the locations of bends, turns, and directional changes. The CONTRACTOR is responsible for the selection and design of the appropriate anchoring systems.
 - 3) The CONTRACTOR shall maintain the pipeline free of damages and leaks. The pipeline shall be inspected daily for leaks. Failure to immediately repair pipeline leaks or damages shall result in suspension of the dredging operation and require prompt repair as a prerequisite to the resumption of dredging.
 - 4) The CONTRACTOR shall suspend dredging and immediately repair at his expense any damages to private or public properties, structures, or docking facilities resulting

from lateral movement, leakage, or failure of the dredging pipeline.

- 5) Should the CONTRACTOR elect to submerge the pipeline at some locations, the pipeline shall rest on the river bottom that is devoid of emergent or submerged aquatic vegetation. Adequate safety procedures shall be applied at locations where the top of the submerged pipeline and any anchor securing the submerged pipeline may interfere with navigation or any other recreational activities.
 - 6) Should the CONTRACTOR elect to use a pipeline material that is buoyant or semi-buoyant, such as PVC, HDPE, or similar low-density materials, the CONTRACTOR shall securely anchor the submerged segments of the pipeline to prevent the pipeline from lifting off the river bottom under any conditions. The locations of submerged pipeline segments shall be marked, along entire lengths, with signs, buoys, lights, and flags as required by the Florida Fish and Wildlife Conservation Commission (FFWCC). The CONTRACTOR shall make daily inspections of the submerged pipeline segments to ensure that buoyancy has not loosened the anchors.
 - 7) Any portion of the pipeline that is not resting on the river bottom will be considered a floating pipeline and must comply with all safety regulations and other restrictions. The CONTRACTOR shall post signs in conspicuous locations along all in-river floating pipeline segments of the dredge pipeline with appropriate warnings about its presence. The dredge pipeline shall be property of the CONTRACTOR and the entire pipeline and all anchors shall be removed at the end of the Project.
- b. Pipeline Assembly: The CONTRACTOR shall assemble and install the pipeline between the dredge and the dredge material treatment area to transport the dredged materials. The CONTRACTOR is fully responsible for the selection of the pipeline types and materials unless otherwise shown on the Plans or specified herein. The CONTRACTOR is also fully responsible for the design, installation, maintenance, and daily inspection of the pipeline, as well as associated marking and anchorage systems. The installation shall be conducted in accordance with manufacturer's recommendations and industry standards.
 - c. Pipeline Location: The dredge pipeline shall be located and secured to maximize public safety and minimize impacts on navigation. The CONTRACTOR shall locate the discharge end of the dredge pipeline as shown on the plans. The CONTRACTOR shall be responsible for repairing any damages that may result from pipeline installation and anchorage. The CONTRACTOR shall prepare pipeline support and anchorage details as needed for the specific requirements. The CONTRACTOR shall design the means for safely maintaining vehicular traffic flow along Tropical Drive during the installation of the temporary culvert through which the pipelines will pass. The support/anchorage and vehicular access details shall be provided by the CONTRACTOR to the DISTRICT and reviewed at least 21 days prior to the pre-construction conference. The CONTRACTOR shall restrict the lateral movement of the upland, floating and submerged pipeline segments. Pipeline shall be adequately anchored to prevent damage to surrounding properties, wetlands, vegetation, existing docking or river access structures, roads and right-of-way, and from interfering with river navigation. The CONTRACTOR shall obtain a Uniform Waterway Marker permit from the FFWCC prior to the placement of any in-river markers, if required. Floating and submerged pipeline shall be flagged in accordance with FFWCC regulations with plainly marked signs or buoys throughout duration of dredging operations. The CONTRACTOR shall be responsible for meeting all Coast Guard safety standards, for when mooring or anchoring the dredge and ancillary equipment and supplies when not in operation.
 - d. Pipeline Lights: Flashing lights shall be installed on the floating pipeline segments for safety during non-day light hours and low-visibility conditions. The lights shall be supported either by buoys or by

temporary piling provided by CONTRACTOR and approved by DISTRICT. Flashing yellow lights shall be spaced at appropriate intervals in navigable areas as necessary to alert boaters and to provide adequate safety conditions under all visibility conditions. The CONTRACTOR shall also apply all necessary procedures to maintain adequate security of equipment and supplies.

- e. Booster Pumps: If booster pumps are required, the CONTRACTOR shall be responsible for determining the types, numbers, capacities, and locations of the required booster pumps along the pipeline route. The CONTRACTOR shall show the proposed locations of booster pumps in the submittals referenced herein. The CONTRACTOR shall inspect the booster pumps daily and shall maintain them in good working condition according to manufacturer's recommendations. The booster pumps, the prime movers, and any auxiliary equipment shall be fitted or equipped with mufflers, noise control enclosures, or other noise control methods, measures, and features such that the noise from the equipment does not violate Local or County noise ordinances. In no case shall the noise levels exceed 70 decibels on the A scale at slow response, and impulse noise levels shall not exceed 77 decibels on the A scale, or Local or County requirements, if more stringent. The CONTRACTOR shall place the booster pumps as far from residential areas as possible. Booster pump locations shall include all necessary warnings and safety precautions for proper and safe equipment operation.

4. SPECIFIC DEWATERING REQUIREMENTS

- a. Dredge Material Treatment Area (DMTA): Dewatering, transfer, and transporting of dredged materials (prior to removal for offsite disposal) shall be conducted within the work limits shown in Project Plans and specified herein. The CONTRACTOR is not permitted to disturb or have construction equipment or personnel outside the work limits. Public roads and rights-of-way may be utilized to the extent allowed by Local, State and Federal laws and regulations. No public roads shall be utilized for the movement of dredged materials from one portion of the dewatering work site to another. CONTRACTOR shall not utilize or impact any wetland areas other than those shown in the permits. The CONTRACTOR will be permitted to stage dredging equipment only in the operation area selected for this Project. Operations shall be in a manner that minimizes damage to the surrounding areas.
- b. Site Plan: The CONTRACTOR shall prepare and submit to the DISTRICT for review a plan showing the proposed location of all dewatering equipment, including parking for trucks and any other sediment disposal equipment.
- c. Equipment Setup: The equipment must fit within the dewatering portion of the site as indicated in the Project Plans, while providing adequate area to store the dewatered material.
- d. Equipment Inspection: The CONTRACTOR shall inspect the dewatering mechanical equipment daily and shall maintain them in good working conditions according to manufacturer's recommendations.
- e. Discharge Pipe: The CONTRACTOR shall locate the discharge end of the excess water discharge pipeline as shown on the plans. The outfall into the river shall be designed with a flow diffuser and installed to minimize sediment re-suspension in the area of the outfall. A pre-dredging bathymetric survey of the outfall location shall be conducted prior to the mobilization and operation of the outfall pipe.
- f. Discharge Sampling: The CONTRACTOR shall provide a means of sampling the dredge discharge water that is accessible to DISTRICT staff at all times during the dredging operation.
- g. Pumps: The CONTRACTOR shall be responsible for determining the types, numbers, capacities, and locations of pumps necessary to operate the dewatering equipment
- h. Sediment Dewatering: The CONTRACTOR shall ensure that the sediment material, after passive dewatering, is truckable and that it meets the minimum specifications corresponding to the materials disposal location, if any. The retention period for passive dewatering shall vary with dredging rate and material characteristics. All passive dewatering must occur within the limits of the site as indicated in the plans.
- i. Maximum Height of Dredged Material: Sediment material in the passive dewatering areas shall be stacked or mounded at an elevation that allows safe and proper management of the material without causing it to run into the perimeter ditches or adjacent access roads and without impacts to areas outside

- of the designated limits of the dewatering site.
- j. Treatment Area Berm Design & Maintenance: It is the CONTRACTOR's responsibility to obtain a berm design that has been signed and sealed by a Florida Licensed Professional Engineer and is suitable for use at the Dredge Material Treatment Area for the purposes of this project. The CONTRACTOR is responsible for daily inspections and maintenance of the berm to design standards for the duration of the project so that there are no adverse effects to the surrounding site. The CONTRACTOR is responsible for the labor, materials, equipment, and incidentals that are required to obtain the design, construct and maintain the berm to permitted requirements.
 - k. Access Routes: The CONTRACTOR shall maintain access routes to the sediment dewatering facilities in good condition to minimize impacts to adjacent areas. Appropriate equipment shall be available for dust control, as necessary.
 - l. Laboratory Testing: Cost, sampling and reporting effort of all required laboratory testing associated with the FDEP and USACOE requirements as stated in the permits, and any additional testing requirements for the project, shall be borne by the CONTRACTOR, including the cost of all retesting due to defective materials or construction. Testing shall be in accordance with the applicable portions of Specifications, Plans and permits. The CONTRACTOR shall also be responsible for all related laboratory costs associated with cancellation of scheduled testing due to Work not completed and ready for testing at the scheduled time.

5. SURVEYING REQUIREMENTS

- a. Survey Plan: A plan describing methodologies, procedures and equipment to be used shall be submitted for approval by the DISTRICT prior to initiating any surveying work. The DISTRICT may have a representative accompany the CONTRACTOR's survey crew to observe the surveys and ensure that the work is conducted in accordance with sound survey practice and in conformance with applicable specifications, rules and statutes, that there is no evidence of collusion, fraud, or obvious error in the data, and that any required horizontal and vertical corrections to the work are accurately annotated in the survey record.
- b. Baseline and Pre-dredging Survey: The CONTRACTOR shall conduct baseline topographic surveys of the dredge material treatment area and pipeline route through the upland areas, to support subsequent restoration completion. Baseline (pre-dredging) bathymetric surveys shall also be completed by the CONTRACTOR for the proposed dewatering outfall pipe location(s) back into the river or canals.
- c. Interim Progress Survey: The CONTRACTOR must provide interim progress surveys to verify the extent of the area dredged in support of progress payments. These interim surveys of river channel and deposition area bathymetry shall minimally be along the cross-sections provided in the Construction Plans and will document the area dredged since the previous progress payment request. The surveys shall be signed and sealed by a Florida registered Professional Land Surveyor and submitted with the payment request.
- d. As-built Survey: The CONTRACTOR must provide the as-built survey to the DISTRICT, signed and sealed by a Florida registered Professional Land Surveyor, within thirty (30) days of dredging completion and upon DMTA restoration. CONTRACTOR's Surveyor must make all field books and calculations available for review by the DISTRICT or their designee.

The as-built survey must include:

- 1. River channel dredging area bathymetry. Survey of all cross-sections provided in the Construction Plans to verify desired depth and width has been reached.
- 2. Deposition dredging areas bathymetry. Survey cross-sections of the dredged Deposition Areas.
- 3. Dredge material treatment area and upland pipeline route topography. Survey of project site and pipeline corridor after restoration to verify original site grade has been restored.
- 4. Outfall pipe bathymetric survey to verify original site bathymetry has not been impacted or has

- been restored.
5. Other items (if specified in Technical Special Provisions or Supplemental Specifications)

C. BASIS OF PAYMENT

- a. Description: The work specified under this Section shall be paid for on a Lump Sum basis.
- b. Interim Payment: Interim payments will be made based upon the documented percentage of the river channel and deposition areas dredged and the associated dewatered material transported offsite to the final disposal destination(s). The percentage of dredging completed will be based upon the linear distance of channel dredged and the percentage of the sediment deposition areas dredged as documented by the CONTRACTOR's interim progress surveys. The ENGINEER shall develop the percent completion estimates per linear foot of river channel dredged and acre of sediment deposition area dredged at the beginning of the project. The CONTRACTOR shall document the number and capacity of trucks hauling sediment from the DMTA site to verify the final transport of the material See SECTION 02300 – Transportation & Disposal of Sediment Material) . Verification of truck hauling will be at the discretion of the ENGINEER. Interim payment amounts will be calculated as the percentage of the project dredged, and material transported from the site, as a fraction of the estimated dredging on the plans.
- c. Final Payment: Final payment for work completed will be based on the total payment due per the Lump Sum price in the Schedule of Values. Final Payment is subject to verification that the post dredging hydrographic survey meets the plan cross section and profile requirements of the Contract Documents.
- d. Payment Authorization: No payment will be authorized for work under this Section until the dewatered material has been removed from the work site and transported to the disposal destination(s). No payments will be authorized unless the dredging, dewatering, transportation, and disposal activities are conducted to the satisfaction of the DISTRICT. Any modifications to the extent of dredging along a cross-section alignment shall not constitute a reason to modify the unit cost for this Section.
- e. The payment under this Section shall include of all work activities required to dredge the sediment material, transport it to the dewatering facilities, provide passive dewatering of this material, and transport the sediment material to an acceptable off-site location and shall include all other activities not specifically listed in the schedule of values.
- f. Pay Items: The work under this Section shall be paid for under the pay items for Sediment Removal by Hydraulic Dredging & Dewatering of Dredge Material (per Lump Sum).

END OF SECTION

SECTION 02300
TRANSPORTATION & DISPOSAL OF SEDIMENT MATERIAL

A. GENERAL

1. SCOPE:

The work specified under this section consists of furnishing all labor, materials, equipment, and incidentals necessary to remove the dewatered sediment material from the work site and to dispose of the dewatered material in a manner in accordance with the DISTRICT's specifications and all permit conditions and applicable laws and regulations. This item includes all associated disposal and transportation costs, including any tolls and tipping fees.

2. PRECEDENCE:

Any specific requirements listed in executed agreements between the DISTRICT and Landowners will take precedence over these specifications.

3. SUBMITTALS:

At least 21 days prior to the Preconstruction Conference, the CONTRACTOR shall prepare and submit for the Engineer's approval the following documents:

- a. Detailed information about the trucking routes to be used for the transport and disposal of the material. The DISTRICT must review this information prior to the Preconstruction Conference.
- b. Detailed schedule information for the trucking and transportation activities.
- c. The CONTRACTOR shall submit details of equipment setup, including the work areas for loading equipment, the staging areas for the loading and queuing of trucks, and the parking of idle equipment and vehicles.

4. PERMITS:

All sediment transportation and disposal activities shall be performed in strict accordance with the general and specific conditions of the Florida Department of Environmental Protection – General Permit and USACOE permits (and any Agency-approved modifications to those permits) issued for the project, as applicable at the time of work. The CONTRACTOR shall adapt their methods of operation as needed to comply with the requirements contained within those documents.

B. EXECUTION

1. TRANSPORTATION AND DISPOSAL ACTIVITIES:

- a. Dewatering Work Area and Haul Route: Operations will be performed in a manner that minimizes disruption or damage to the surrounding areas.
- b. Site Plan: The CONTRACTOR shall prepare and submit to the DISTRICT to review a plan showing the proposed locations for staging vehicles, loading vehicles, parking and trucks, and any other sediment disposal equipment.
- c. Access Routes: The CONTRACTOR shall maintain access routes within the dredge material treatment areas in good condition to minimize impacts to adjacent areas. Appropriate equipment shall be available for dust control, as necessary.

2. SPECIFIC TRANSPORTATION AND DISPOSAL REQUIREMENTS

- a. Sediment Disposal: The CONTRACTOR shall be responsible for transportation and disposal in a manner approved by the DISTRICT and consistent with local and state regulations, all Permits, and other provisions of the specifications. All sediment removed from the river shall be disposed of at approved disposal locations. A list of approved disposal areas shall be submitted to the DISTRICT prior to construction.
- b. Sand Size Materials: Sand size materials from throughout the river may be disposed of in a beneficial manner. Sufficient sand shall be retained for blending to achieve necessary compliance restoration of the dredged material treatment area.
- c. Waste Material: Any waste material and debris shall be disposed by the CONTRACTOR and at the CONTRACTOR's expense.

C. BASIS OF PAYMENT

- a. Description: The pay quantity shall consist of all work activities required to transport the material for final disposal, properly dispose of the material, and account for all other related activities not specifically listed in the schedule of values. The work specified under this section shall be paid for on a lump sum basis for Transportation & Disposal of Sediment Material.
- b. Payment terms will be as follows: Partial Payment for the Transportation and Disposal of Sediment Material will be based on the estimated sediment disposed as defined by the percentage of dredging completed (see SECTION 02250 – Hydraulic Dredging and DMTA) in accordance with the Contract Documents, as confirmed by the number of trips and capacity of truck hauling sediment.
- c. Documentation: The CONTRACTOR shall maintain and submit truck counts as adequate documentation to confirm the proper disposal of the material.
- d. Payment Authorization: No payments will be authorized unless transportation and disposal activities are conducted to the satisfaction of the DISTRICT. Any modifications to the CONTRACTOR's intended disposal destination(s) shall not constitute a cause for a modification of the lump sum cost.”

END OF SECTION

**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, July 2008 Edition
- 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
 - a. Florida Stormwater Erosion and Sedimentation Control Inspector's Manual

1.03 DEFINITIONS: (Not used)

1.04 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.

- 1.05 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.
- 1.06 RESPONSIBILITIES: (Not Used)
- 1.07 CERTIFICATIONS AND TESTING: (Not Used)
- 1.08 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.
- 1.09 WARRANTY: (Not Used)

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 work day, 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 appropriate to the conditions and at the locations, times, and frequencies specified below and in the FDEP Permit. An FDEP approved Turbidity Monitoring Log is attached (Appendix A) for the CONTRACTOR's use.
 - 1. Background Monitoring Location: At least 100 feet (or as specified in the applicable environmental permit) upstream of any construction activities that may generate turbidity within a channel or conveyance feature outside the construction area, in the middle of the channel, at mid-depth in the water column, and outside of any visible turbidity plume. Flow direction can change with the tide. As such, the upstream location for background monitoring will always be in the direction the flow originates.
 - 2. Compliance Monitoring Location: At a point no greater than 450 feet downstream (or as specified in the applicable environmental permit) of any construction activities discharge locations that may generate turbidity, in the middle of the channel, in the densest portion of any visible plume, at mid-depth. Flow direction can change with the tide. As such, the downstream location for compliance monitoring will always be in the direction to flow is heading relative to the dredge equipment.
 - 3. 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 (or as specified in the applicable environmental

permit) and every four hours thereafter until the work day ends. Water samples shall be collected at the same time(s) every work day according to this schedule. Any substantial deviation from this schedule must be approved by the DISTRICT unless otherwise compelled by force majeure, in which case, an explanation must be provided verbally as soon as possible and in writing within 48 hours of the deviation.

- b. During Activities and Conditions That Cannot Generate Construction-Related Turbidity: Once daily at 10:00 AM or as specified in the applicable environmental permit.
4. 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.
 5. 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 work day.
- B. The CONTRACTOR shall submit quarterly monitoring data (Turbidity Log Forms), to the DISTRICT. Documents submitted shall contain the following information:
1. Permit number
 2. Project name
 3. Dates of sampling and analysis
 4. A statement describing the methods used in the collection, handling, storage and analysis of the samples
 5. A map indicating the sampling locations
 6. A statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.
- C. The CONTRACTOR shall submit monitoring reports that also include the following information for each sample that is taken:
1. Time of day samples taken
 2. Depth of water body
 3. Depth of sample
 4. Antecedent weather conditions
 5. Water level stage
 6. Direction of flow

3.04 EXCEEDANCES OF WATER QUALITY STANDARDS

- A. The Weeki Wachee River is classified as an Outstanding Florida Waters (OFW). If at any time monitoring reveals the turbidity levels at the river compliance sampling station are greater than 0 NTU above background samples, construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable

levels. Turbidity violations and corrective measures shall be documented in the monitoring reports.

- B. The CONTRACTOR must notify the DISTRICT immediately, who then, per the permit, must notify the permitting agency of the exceedance. If known, the CONTRACTOR may also contact the assigned Permitting and Compliance Staff for the Project directly.

END OF SECTION

APPENDIX A

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 29 NTU's above Background Sample?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
If the 29 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):
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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 01531 – Manatee Protection
 - 3. SECTION 02100 – Site Preparation
 - 4. SECTION 02110 – Clearing and Land Preparation
 - 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, regulation and permits concerning environmental protection, pollution control and abatement that are applicable to the CONTRACTOR's proposed operations and the requirements imposed.
- B. 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).
- C. Procedures to be implemented are to provide the required environmental protection and 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.
- D. Environmental monitoring plans, if appropriate.
- E. Traffic control plan, if appropriate.
- F. Drawings showing locations of proposed temporary activities, such as material storage areas or stockpiles of excess spoil or materials.
- G. 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 FDOT Specification Sections 104-1, 2, 3, 4, 6 and 7 and FDEP regulations and permit conditions.
- H. 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.
- I. Spill Contingency Plan for hazardous, toxic or petroleum material.
- J. 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.
- K. Identification of the person who shall be responsible for implementation of the Environmental Protection Plan. This person shall have authority to respond for the CONTRACTOR in all environmental protection matters.
- L. A recycling and waste management plan. The CONTRACTOR shall include waste minimization efforts in the Plan.

1.05 QUALIFICATIONS:

When the Eastern Indigo Snake is identified as a species of concern in the environmental permits the CONTRACTOR shall supply qualified eastern indigo snake observers during ground clearing

activities. The observer's qualifications shall be provided to DISTRICT at least two weeks prior to the commencement of ground clearing activities.

CONTRACTOR shall comply with Section 01531 Manatee Protection, all permits obtained for the project, and all local, state and federal laws related to manatee protection.

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 to the District at least 48 hours advance notice of its intention to begin new WORK activities.

1.09 WARRANTY: (Not Used)

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. The Standard Protection Measures for the Eastern Indigo Snake dated August 12, 2013, are attached in Appendix A.

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) will be trained by the DISTRICT and/or U.S. Fish & Wildlife Service on how to identify and implement appropriate protection measures for each species.

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 land forms) unless indicated in the plans or specifically authorized by the DISTRICT. All damaged areas shall be restored to 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 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 substance spills directly into 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 manpower, 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's for records retention.

The CONTRACTOR is prohibited from the on-site burning of hazardous wastes (aerosol cans, oil filters, etc.). All hazardous wastes 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 wastes 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 occur 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 and gopher tortoise. 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.

- 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, shell, midden, charcoal or other deposits, rocks or coral, evidences 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 August 12, 2013

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida 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). 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 strategic locations on the construction 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. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps,

roots, and debris piles. 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. "Take" 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 snake 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

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 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.

END OF SECTION

SECTION 02920
SODDING

PART 1 - GENERAL

1.01 SCOPE:

- A. This section generally defines CONTRACTOR's responsibilities, unless otherwise indicated, for the following:
 - 1. Preparation of subsoil
 - 2. Placing topsoil
 - 3. Sod installation
 - 4. Maintenance
- B. The following specification sections may be related to the WORK. This list is not intended to be all-inclusive.
 - 1. SECTION 02486 – Grassing

1.02 REFERENCES:

- A. FDOT - Florida Department of Transportation - Standard Specifications for Road and Bridge – 2004 (Section 575)

1.03 SUBMITTALS:

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

1.04 QUALITY ASSURANCE:

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

1.05 REGULATORY REQUIREMENTS:

- A. Comply with regulatory agencies for fertilizer.

1.06 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver products to the site under provisions of SECTION 01600.
- B. Store and protect products under provisions of SECTION 01600.
- C. Sod:

1. Deliver sod on pallets. Protect exposed roots from dehydration.
 2. Do not deliver more sod than can be laid within 48 hours.
- D. The CONTRACTOR shall furnish the DISTRICT invoices of all materials received in order that the minimum application rate of materials may be determined.

1.07 MAINTENANCE SERVICE:

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

1.08 WARRANTY: Not Used

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Sod:

1. The sod shall be Argentine Bahia or a native species of sod, including Paspalum vaginatum cultivar, to closely match existing as directed, with well matted roots.
2. The sod shall be commercial size rectangular measuring 12-inches by 24 inches or larger.
3. The sod shall be sufficiently thick to secure a dense stand of live grass, with a minimum thickness of 2-inches.
4. The sod shall be live, fresh, free of pernicious weeds, and uninjured at the time of planting.
5. The sod shall have a soil matt of sufficient thickness adhering firmly to the roots to withstand all necessary handling and be reasonably free of weeds and other grasses.
6. The sod shall be planted as soon as possible after being harvested and shall be shaded and kept moist from the time of harvesting until it is planted.
7. The source of the sod may be inspected and approved by the DISTRICT prior to construction

B. Topsoil:

1. Excavated from site and free of weeds.

C. Water:

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

2.02 FERTILIZING: Not Used

2.03 LAYING SOD:

- A. Moisten prepared surface immediately prior to laying sod.

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

2.04 MAINTENANCE:

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

END OF SECTION

**SECTION 04200
SITE RESTORATION**

A. GENERAL

1. 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 other pay items (such as in seeding, or sodding) The CONTRACTOR shall clean up and restore any dredging, staging, pipeline, storage, boat ramp, and easement areas used for the project, leaving the areas in a condition equivalent to or better than the pre-dredging condition. The CONTRACTOR shall also restore all landscape features, damaged vegetation, and restore the irrigation features and on-site drainage structures, as noted in Section 02250, Hydraulic Dredging and Dewatering of Dredge Material. 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 dredging, staging, storage and pipeline route areas used for the project, leaving the areas in a condition equivalent to or better than the pre-dredging condition. The CONTRACTOR shall also restore all landscape features and river vegetation damaged or destroyed during dredging outside the dredging limits. The CONTRACTOR will remove the intake and return pipes to and from the DMTA. The CONTRACTOR shall retain ownership of the materials removed from site which were provided for temporary construction.
- b. DMTA: The CONTRACTOR shall restore the DMTA to pre-construction elevations following the completion and acceptance of dredging. Work shall be in accordance with the permitted DMTA Restoration Plan attached to the FDEP and USACE permits. The DMTA Restoration Plan notes that "the Permittee shall restore 1.2 acres of temporary wetland impacts to pre-existing contours, elevations, vegetation, habitat type, and hydrology." No planting of wetland vegetation is required as the wetland restoration area is expected to naturally revegetate following successful contour re-establishment.

END OF SECTION