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USACE / CESAJ

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS

CESAJ 01355 (Oct 2002)

Superseding
CESAJ 01410 (May 2002)

JACKSONVILLE DISTRICT LOCAL MASTER GUIDE SPECIFICATION

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SECTION 01355

ENVIRONMENTAL PROTECTION
06/04

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NOTE: This guide specification covers the requirements for environmental protection during construction activities.

Comments and suggestions are welcome. Using e-mail for feedback is encouraged. Comments should be directed to:

Planning Division, Environmental Branch, POC Mr. Paul Karch, 904-232-2168 (paul.j.karch@usace.army.mil).

ALL COMMENTS RECEIVED WILL BE DISSEMINATD TO THE PROPER OFFICE FOR RESPONSE.
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PART 1 GENERAL

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NOTE: This guide specification contains requirements which may be included in projects when applicable; requirements will be added, deleted, or modified as necessary to satisfy project conditions.
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1.1 SCOPE

This Section covers 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. For the purpose of this specification, environmental damage is defined as the presence of hazardous, physical, chemical, or biological elements or agents which adversely affect human health 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.

1.2 REFERENCES

1.2.1 Miscellaneous Environmental Laws And Regulations

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NOTE: APPLICABLE TO ALL PROJECTS.
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There are numerous environmental laws and regulations. At the Federal level, the applicable laws and regulations include compliance with the Clean Water Act (CWA); Clean Air Act (CAA); Coastal Zone Management Act (CZMA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Endangered Species Act (ESA); Fish and Wildlife Coordination Act (FWCA); Marine Protection, Research, and Sanctuaries Act (MPRSA); Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA); National Environmental Policy Act (NEPA); National Historic Preservation Act (NHPA); National Pollution Discharge Elimination System (NPDES); Research and Sanctuaries Act; Native American Graves Protection and Repatriation Act (NAGPRA); Resource Conservation and Recovery Act (RCRA); Rivers and Harbors Act (R&H); Safe Drinking Water Act (SDWA); Toxic Substance Control Act (TSCA); Wild and Scenic Rivers Act (WSRA); Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); Code of Federal Regulations (CFRs); Executive Orders; and, Environmental Protection Agency (EPA) requirements. NEPA compliance measures specified in an Environmental Assessment (EA) or Environmental Impact Statements (EIS) are also applicable with regard to compliance.

1.2.2 Publication Reference(s)

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NOTE TO SPEC WRITER: Issue (date) of references included in project specifications need not be more current than provided by the latest change to this guide specification.
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The publication(s) listed below form(s) a part of this specification to the extent referenced. The publication(s) [is] [are] referred to in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE EM 385-1-1	(2003) U.S. Army Corps of Engineers Safety and Health Requirements Manual

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NOTE: Delete above reference publication if not a requirement for subparagraph "Beach Placement Restrictions" below.
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COE EM 1110-1-1003	(1996) NAVSTAR Global Positioning System Surveying

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NOTE: Delete above reference publication if Hopper Dredges are not applicable to project work;

refer to subparagraph "Hopper Dredge Equipment" below.
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COE ER 1110-1-5 (1984) Plant Pest Quarantined Areas and Foreign Soil Samples

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NOTE: Delete above reference publication if not applicable to this project.
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1.3 QUALITY CONTROL

The Contractor shall establish and maintain quality control for 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.

1.4 PERMITS [AND AUTHORIZATIONS]

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GENERAL NOTE: FOR MAINTENANCE DREDGING PROJECTS USE NAVIGATION SECTION AND FOR ALL OTHER WORK USE PROGRAMS AND PROJECT MANAGEMENT DIVISION PROJECT MANAGER; FILL IN ALL BLANKS; INFO CAN BE OBTAINED FROM DESIGN BRANCH PROJECT MANAGER.

NOTE: Select appropriate paragraph(s). First two paragraphs with subparagraphs included are used when permits have been obtained. Last paragraph is used when no permit has been issued.
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[The Contractor shall obtain all needed permits or licenses. The Government will not obtain any permits for this project; see Clause PERMITS AND RESPONSIBILITIES of Section 00700 CONTRACT CLAUSES. The Contractor shall be responsible for implementing the terms and requirements of the appropriate permits as needed and for payment of all fees.

In addition to the above, the Contractor shall comply with all requirements under the terms and conditions set out in the following permit(s) and authorization(s) obtained by the Corps of Engineers listed below. These permit(s) and authorization(s) are available for review by contacting the Jacksonville District, [Operations and Technical Support Section at 904-232-2539] [Programs and Project Management Division at 904-232-[ ].]

a. Florida Department of Environmental Protection Permit No. [ ]; Effective Date: [ ]; Expiration Date: [ ] [and Modifications issued on [ ]].

b. Puerto Rico Environmental Quality Board dated [ ].

c. [ ].]

[The Contractor shall comply with all requirements under the terms and conditions set out in all permit(s).]

1.5 SUBMITTALS

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NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.
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Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G|PD

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NOTE: Applicable to ALL projects. BE SURE TO SELECT APPROPRIATE REFERENCE/AGENCY.
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Within 20 calendar days after the date of Notice of Award, the Contractor shall submit an Environmental Protection Plan for review and acceptance by the Contracting Officer. The Government will consider an interim plan for the first 30 days of operations. However, the Contractor shall furnish an acceptable final plan no later than 30 calendar days after receipt of Notice to Proceed. Acceptance of the Contractor's plan shall not relieve the Contractor of his responsibility for adequate and continuing control of pollutants and other environmental protection measures. Acceptance of the plan is conditional and predicated on satisfactory performance during construction. The Government reserves the right to require the Contractor to make changes to the Environmental Protection Plan or operations if the Contracting Officer determines that environmental protection requirements are not being met. No physical work at the site shall begin prior to acceptance of the Contractor's plan or an interim plan covering the work to be performed. The Environmental Protection Plan shall include but not be limited to the following:

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NOTE TO SPEC WRITER: DELETE ITEMS LISTED BELOW THAT DO NOT APPLY AND ADD ITEMS, IF NECESSARY, THAT DO APPLY. REMEMBER TO RE-ALPHABETIZE.
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a. A list of Federal, [State] [Commonwealth] [Territorial], and local laws, regulations, and permits concerning environmental protection, pollution control, and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits.

b. Methods for protection of features to be preserved within authorized work areas. The Contractor shall prepare a listing of methods to protect resources needing protection, i.e., trees,

shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological, and cultural resources.

c. Procedures to be implemented to provide the required environmental protection and to comply with the applicable laws and regulations. The Contractor shall provide written assurance that immediate corrective action will be taken to correct pollution of the environment due to accident, natural causes, or failure to follow the procedures set out in accordance with the environmental protection plan.

d. A permit or license for and the location of the solid waste disposal area.

e. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossing, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

f. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.

g. Traffic control plan.

h. Methods of protecting surface and ground water during construction activities.

i. Spill prevention. The Contractor shall specify all potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air, ground, water, wetlands, or drainage areas. The plan shall specify the Contractor's provisions to be taken to meet Federal, [State] [Commonwealth] [Territorial], and local laws and regulations regarding labeling, storage, removal, transport, and disposal of potentially hazardous substances.

j. Spill contingency plan for hazardous, toxic, or petroleum material.

k. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.

l. Plan of borrow area(s).

m. A statement as to the person who shall be responsible for implementation of the Environmental Protection Plan. The Contractor personnel responsible shall report directly to the Contractor's top management and shall have the authority to act for the Contractor in all environmental protection matters.

n. Recycling and Waste Management Plan. Executive Order 12873 of 20 October 1993 requires a number of considerations in planning a project. Fallen trees should not be burned or buried. Mulching, composting, and other uses for trees should be considered. Also, recovery of metals at the job site, including

aluminum cans, should be considered with proceeds to be retained by the Contractor. Non-Federal recycling and waste minimization efforts shall also be incorporated into this plan.

o. A Certification Letter must be signed acknowledging the Contractor has a copy of all permits applicable to the project and understands the conditions in the permit. The Certification Letter shall be attached to the Environmental Protection Plan (A sample Certification Letter is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below).

[p. Operational plan to achieve protection of sea turtles during hopper dredge(s) operation.]

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NOTE: Delete above if HOPPER DREDGE is not a requirement.
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[q. Construction activities shall be conducted in a manner as not to impact migratory birds or induce their nesting.]

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NOTE: Delete above if BIRD NESTING MONITORING is not a requirement.
****

[r. Steps to be taken to construct the project in such a manner as not to impact gopher tortoises.]

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NOTE: Delete above if GOPHER TORTOISE MONITORING is not a requirement.
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[s. A protection and education plan for the Eastern indigo snake.]

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NOTE: Delete above if EASTERN INDIGO SNAKE MONIOTORING is not a requirement.
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[SD-02 Shop Drawings

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NOTE: Delete submittal requirement in its entirety if HOPPER DREDGE is not a requirement.
****

Turtle Deflector Device; G|COR

If the Contractor proposes to use a hopper dredge for this work, detail drawings shall be submitted showing the proposed device and its attachment to the Contractor's equipment. Contractor's drawings to be submitted shall include the approach angle for any and all depths to be dredged during this contract. A copy of the approved drawings and calculations shall be available on the vessel during the life of this contract. No dredging work shall

be allowed to commence until approval of the installed turtle deflector device.]

SD-07 Certificates

Qualifications

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NOTE: Delete submittal requirement if MONITORING FOR SEA TURTLE EGGS is not a requirement.
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The Contractor shall submit a certified copy of Florida Fish and Wildlife Conservation Commission (FF&WCC) permit for handling of sea turtle eggs.

Bird Monitoring Qualifications; G|PD

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NOTE: Delete submittal requirement if BIRD NESTING MONITORING is not a requirement; however, IF BIRD NESTING MONITORING IS REQUIRED, fill in blank.
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Within 20 calendar days after the date of Notice of Award, the Contractor shall furnish to the Contracting Officer for approval, the qualifications of the bird monitor/observer. Appropriate qualifications for bird monitor/observer shall be a demonstrated ability to find and/or identify bird species, nesting behavior, eggs and nests, and habitat requirements. The Contractor shall consult with and coordinate all monitoring plans and activities with [ ].

Eastern Indigo Snake Observer; G|PD

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NOTE: Delete submittal requirement if EASTERN INDIGO SNAKE protection is not a requirement.
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Within 20 calendar days after the date of Notice of Award, the Contractor shall furnish to the Contracting Officer for approval, the qualifications of the eastern indigo snake observer.

Sea Turtle Trawling and Relocation (For Hopper Dredges Only) Permit

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NOTE: Delete submittal requirement if Hopper Dredge is not a requirement.
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The Contractor shall submit a certified copy of National Marine Fishery Service (NMFS) permit for sea turtle trawling and relocation as well as a statement as to the person responsible for implementation of the NMFS permit.

SD-11 Closeout Submittals

Logs/Final Summary Report

Contractor shall submit as specified, logs and final summary report of sightings and incidents with endangered species.

[Eastern Indigo Snake Monitoring Report

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NOTE: Delete submittal requirement if EASTERN INDIGO SNAKE MONIOTORING is not a requirement.
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Contractor shall submit an Eastern indigo snake monitoring report to the appropriate U.S. Fish and Wildlife (FWS) Field Office within 60 days of the conclusion of clearing phases. The report shall be submitted whether or not Eastern indigo snakes are observed. The report shall contain any sightings of Eastern indigo snakes, summaries of any relocated snakes if relocation was approved for the project (e.g., locations of where and when they were found and relocated), and other obligations required by the State that may or may not be stipulated in the permit.]

Project Environmental Summary Sheet

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NOTE: Applicable to ALL projects.
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Contractor shall submit within 30 days following completion of the project, a written report of the absence or occurrence of environmental incidents. In addition, for construction activities whose anticipated duration is more than one calendar year, the Contractor shall complete a sheet each May 31st (plus/minus 14 days).

[Logs/Summary of Bird Nesting Monitoring

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NOTE: Delete submittal requirement if BIRD NESTING MONITORING is not a requirement.
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Contractor shall submit as specified, logs and summary of monitoring detailing nesting and nesting success.]

[Comprehensive Final Report

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NOTE: Delete submittal requirement if GOPHER TORTOISE MONITORING is not a requirement.
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Contractor shall submit as specified, a compilation of all data and maps prepared during the surveys and all information regarding relocation of gopher tortoises.]

[Hopper Dredge(s) Recording Chart(s)

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NOTE: Delete submittal requirement if HOPPER DREDGE

is not a requirement.
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Contractor shall submit as specified, a copy of the hopper dredge(s) output recording chart(s) for each day's operation on a daily basis.]

1.6 SUBCONTRACTORS

Assurance of compliance with this section by subcontractors shall be the responsibility of the Contractor.

1.7 NOTIFICATION

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NOTE: Select appropriate agency.
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The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the aforementioned Federal, [State] [Commonwealth] [Territorial], or local laws or regulations, permits and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and take such action as may be approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspension.

Additionally, the Contractor shall notify the Contracting Officer, in writing, of the absence or occurrence of environmental incidents, as required on the Project Environmental Summary Sheet, copy on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below. Refer to paragraph SUBMITTALS above.

1.8 CONTRACTOR PERSONNEL QUALIFICATIONS IN POLLUTION CONTROL

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NOTE: Select appropriate agency/Section reference.
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The Contractor's personnel shall be qualified to perform all phases of environmental protection, including methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and careful installation and monitoring of the project to ensure adequate and continuous environmental pollution control. Quality Control and supervisory personnel shall be thoroughly knowledgeable of Federal, [State] [Commonwealth] [Territorial], and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the Contractor. Quality Control personnel will be identified in the Quality Control Plan submitted in accordance with Section [01451 CONTRACTOR QUALITY CONTROL.] [01452 DREDGING/BEACH FILL PLACEMENT - CONTRACTOR QUALITY CONTROL.]

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NOTE: PAYMENT PARAGRAPH IS LOCATED IN CESAJ SECTION 01270 MEASUREMENT AND PAYMENT.
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PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 PROTECTION OF ENVIRONMENTAL RESOURCES

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NOTE: Select appropriate agency.
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For contract work, the Contractor shall comply with all applicable Federal, [State] [Commonwealth] [Territorial], or local laws and regulations. The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected at least during the entire period of this contract. The Contractor shall confine his activities to areas defined by the drawings and specifications. Deviations from drawings or specifications (e.g., proposed alternate borrow areas, disposal areas, staging areas, and alternate access routes) could result in the need for the Government to reanalyze and re-approve the project from an environmental standpoint. Environmental protection shall be as stated in the following subparagraphs.

3.1.1 General Project Environmental Design and Installation Criteria

Some project sites have features that shall not be impacted in any way, including cultural, historic, or archeological features. At all sites, project plans should minimize disturbance to existing features at the site to the extent possible, including vegetative, topographic, and drainage pattern features. Wetland impacts (temporary access, detours, staging areas, and other work area impacts) to project sites should be avoided and may require separate permitting action. Any wetlands temporarily impacted shall have its soil restored upon project completion. Expansion of previously permitted project footprints may likewise require separate permitting action.

In all cases, the design and/or installation of project system shall provide for protection of the environment during handling, installing, storing, utilizing, transporting, servicing, testing, refilling, transferring, pumping, processing, removing waste products, repairing and maintaining systems and their components. Necessary design protection shall also be considered that would prevent contamination of the environment from impacts to the system caused by storm water runoff and flooding. Retrofit of connected systems on project sites to modern environmental protection design standards shall also be considered.

In the event environmental protection measures fail, the Contractor shall implement procedures to control and correct environmental damage.

3.1.1.1 Petroleum-Based Systems Environmental Design and Installation Criteria

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NOTE: DELETE IF NOT APPLICABLE; ONLY APPLICABLE TO PERMANENT STRUCTURES ON-SITE INSTALLED OR REPAIRED THAT REQUIRE PETROLEUM BASED SYSTEMS.

HOWEVER, IF APPLICABLE, EDIT SUBPARAGRAPH FOR APPROPRIATE AGENCY; FOR EXAMPLE, REFERENCES TO STATE

OF FLORIDA, SFWMD, AND FAC MAY NOT BE APPLICABLE TO PROJECT IN COMMONWEALTH/TERRITORY.
****

For petroleum-based systems, a statement of site suitability shall be provided and shall include what would be necessary to prevent adverse impact to water quality; natural resources; habitat; historic, cultural, and archeological sites; and fragile local resources in the event of a fuel spill. Human error and mechanical/electrical failure of components without human intervention shall also be considered in the design with regard to spills. Additionally, appropriate noise and emissions controls shall be incorporated into the design, including vapor and exhaust controls.

At a minimum, environmental protection design requirements shall also include the following: (1) stationary tanks and piping shall have secondary containment features; (2) approved materials and corrosion protection systems shall be utilized; (3) system leaks shall be readily detected and contained without human intervention; and, (4) overfill containment systems shall be provided.

Applicable Federal, [State] [Commonwealth] [Territorial], and local codes and requirements shall be strictly adhered to in the design, including those of the U.S. Environmental Protection Agency (EPA), the State of Florida, the South Florida Water Management District (SFWMD), and other local governing agencies such as those of counties and municipalities. In the case of the State, requirements include Chapter of the Florida Administrative Code (FAC) such as 62-17 (Approved Materials), 62-252 (Vapor Emissions), 62-296 (Emissions), 62-761 (Underground Storage Tanks), and 62-762 (Aboveground Tanks). Note that Chapters 62-761 and 62-762 of the FAC may be combined into one Chapter. Best Management Practices from the applicable agencies shall also be adhered to in the design.

3.1.1.2 Sewage-Based Systems Environmental Design and Installation Criteria

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NOTE: EDIT SUBPARAGRAPH FOR APPROPRIATE AGENCY; FOR EXAMPLE, REFERENCES TO STATE OF FLORIDA, SFWMD, AND FAC MAY NOT BE APPLICABLE TO PROJECTS IN COMMONWEALTH/TERRITORY.)
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In general, there shall be no waste or debris discharges of any kind for a project unless authorized by the Contracting Officer. This shall include the Contractor's providing sufficient temporary sanitary equipment and facilities for the project. The design and/or installation of temporary or permanent sewage systems shall ensure that waters will be free of effects of sewage discharges. Applicable Federal, [State] [Commonwealth] [Territorial], or local codes and requirements regarding sewage shall be strictly adhered to in the design, such as those of the EPA and, in the case of the State, Chapter 62-620 (Wastewater Facilities) of the FAC. Best Management Practices from the applicable agencies shall also be adhered to in the design.

3.1.2 Protection of Land Resources

Prior to the beginning of any construction, the Contractor shall identify all land resources to be preserved or avoided within the Contractor's work area. Materials displaced into uncleared areas shall be removed. The Contractor shall not remove, cut, deface, injure, or destroy land resources

including trees, shrubs, vines, grasses, topsoil, and land forms without special permission from the Contracting Officer. The Contractor shall engage a qualified tree surgeon to perform all tree surgery. The Contractor shall be responsible to repair injuries to bark, trunk, branches, and roots of protected trees by dressing, cutting, and painting as specified for Class I Fine Pruning, of the National Arborist Association Pruning Standards for Shade Tree or as per State's Agricultural Extension Agency Guidelines, immediately as occurrences arise. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs.

3.1.2.1 Work Area Limits

Prior to any construction, the Contractor shall mark the areas that are not required to accomplish all work to be performed under this contract. Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. The Contractor shall protect from damage all existing trees designated to remain. Protection of tree roots shall be provided against noxious materials in solution caused by run-off or spillage. Fires shall be located outside the canopy of protected trees. No materials, trailers, or equipment shall be stored within the drip line of any protected tree. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects.

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NOTE: Delete below paragraph if not applicable to this project.
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[The Contractor shall thoroughly clean all construction equipment and tools at the prior job site in a manner that ensures all residual soil is removed and that egg deposits from plant pests are not present. The Contractor shall consult with the U.S. Department of Agriculture (USDA) regarding additional cleaning requirements that may be necessary. In addition, if this contract involves the identification, shipping, storage, testing, or disposal of soils from such a quarantined area, the Contractor agrees to comply with the provisions of COE ER 1110-1-5 and attachments. The Contractor agrees to assure compliance with this obligation by all subcontractors.]

3.1.2.2 Protection of Landscape

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NOTE: Delete subparagraph in its entirety if NOT dredging from land or utilizing upland disposal area.

However, IF APPLICABLE, delete bracketed information when features ARE NOT defined on drawings.
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Trees and their roots, shrubs, vines, grasses, land forms, and other landscape features [indicated and defined on the drawings to be preserved] shall be clearly identified and protected by fencing or any other approved techniques. Protection of trees shall be as illustrated in the Tree

Protection Plan Detail on the web site indicated in the paragraph CONSTRUCTION FORMS AND DETAILS below. Tree protection fencing shall be placed before excavation or grading is begun and maintained in place until construction is complete. Branches of protected trees, if required, shall be removed to clear for construction and pruning shall subsequently be performed to restore the natural shape of the entire tree. Branches or roots, if required, shall be cut with sharp pruning instruments and not broken or chopped. Protected trees shall be fertilized to compensate for root loss with 6-6-6 as per manufacturer's application direction. Any damage to tree crowns or roots shall be repaired promptly after damage occurs.

a. Trench or Bore Under Trees: Where trenching for utilities is required within tree driplines, the Contractor shall hand dig under and around roots or bore under them. The Contractor shall protect roots from drying and cover exposed roots within an hour as specified in subparagraph "Excavation for Structures" below. No lateral roots which interfere with new construction shall be cut. Boring is permitted.

b. Excavation for Structures: Where excavating for new construction is required within tree drip lines, the Contractor shall hand excavate to minimize damage to root systems. The Contractor shall use narrow tine pitchforks and comb soil to expose roots. The Contractor shall relocate roots in backfill areas. If large, main lateral roots are encountered that are exposed beyond the excavation limits, the Contractor shall bend and relocate these roots without breaking or girdling. If roots are encountered immediately adjacent to new construction such that relocation is not practical, the Contractor shall saw roots approximately 3" back from the new construction, seal with tree wound dressing, and protect any exposed embankment of roots from drying by covering with straw and black plastic. The Contractor shall irrigate affected areas daily until final grade conditions are established and the exposed roots are backfilled properly for continued plant growth.

c. Replacement: The Contractor shall remove dead or damaged protected trees determined, by the Government, to be incapable of restoration to normal health growth. The Contractor shall replace each removed tree up to 4" caliper with tree of equal specie and size. For each tree removed larger than a 4" caliper, the Contractor shall replace the tree with one 4" caliper tree per 4" caliper increment or fraction thereof.

[d. Grade Change: See Section 02300A EARTHWORK for method of handling grade changes at existing trees to be protected during construction.]

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NOTE: Subparagraph above is applicable ONLY if UFGS Section 02300A EARTHWORK is used. This is a requirement of Environmental Branch.
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3.1.2.3 Unprotected Erodible Soils

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NOTE: Delete subparagraph in its entirety if not applicable.
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Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in instances where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the areas developed as approved by the Contracting Officer.

3.1.2.4 Disturbed Areas

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NOTE: Fill in blanks and choose appropriate agency.

NOTE TO SPEC WRITER: APPLICABLE ONLY TO UPLAND CONSTRUCTION WORK.

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The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

a. Retardation and Control of Runoff: Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, and by any measures required by area wide plans approved under paragraph 208 of the Clean Water Act.

b. Erosion and Sedimentation Control Devices: The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as directed by the Contracting Officer. Temporary velocity dissipation devices shall be placed along drainage courses so as to provide for non-erosive flows. Temporary erosion and sediment control measures such as berms, dikes, drains, sediment traps, sedimentation basins, grassing, mulching, baled hay or straw, and silt fences shall be maintained until permanent drainage and erosion control facilities are completed and operative. For silt fences, the filter fabric is to be of nylon, polyester, propylene, or ethylene yarn of at least 50 lb/in strength and able to withstand a flow rate of at least 0.3 gal/ft sq/minute. The fabric should contain ultraviolet ray inhibitors and stabilizers and be a minimum of 36 inches in width. The toe of the fence shall be buried at least 8 inches deep to prevent undercutting and shall be secured to posts by suitable staples, tie wire, or hog rings. Posts shall have a cross section of at least 2"x4" and a minimum of 4 foot in length. Fence shall be overlapped to the next post if fabric joints are necessary.

c. Sediment Basins: Sediment from construction areas shall be trapped in temporary or permanent sediment basins in accordance with basin plans shown on the drawings. The basins shall accommodate the runoff of a local 24-hour storm. After each storm, the basins shall be pumped dry and accumulated sediment shall be removed as necessary to maintain basin effectiveness. Overflow shall be controlled by paved weir or by vertical overflow pipe, draining from the surface. The collected topsoil sediment shall be reused for fill on the construction site, and/or conserved (stockpiled) for use at another site(s). The Contractor shall institute effluent quality monitoring programs as required by [State] [Commonwealth] [Territorial] and local

environmental agencies.

3.1.2.5 Contractor Facilities and Other Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made when approved by the Contracting Officer. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby watercourses, wetlands, or lakes. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from entering nearby watercourses, wetlands, or lakes. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment. If there is suspicion that sediment may be unsuitable for disposal at a specified location, the Contractor shall immediately take measures to contain the suspect sediment and notify the Contracting Officer.

3.1.2.6 Solid Wastes

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NOTE: Select appropriate reference and agency.
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Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination. Solid waste materials shall be hauled to an approved solid waste disposal site [shown on the drawings] [designated by the Contracting Officer]. The Contractor shall comply with Federal, [State,] [Commonwealth,] [Territorial,] and local regulations pertaining to the use of the solid waste disposal site.

3.1.2.7 Fuel, Oil, and Lubricants

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NOTE: Select appropriate agency.
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Fuel, oil, and lubricants shall be managed so as to prevent spills and evaporation. To prevent spills, fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bibb. Edges of the pans shall be 8-inch minimum in depth to ascertain that no contamination of the ground takes place. Pans shall be cleaned by an approved method immediately after every dispensing of fuel and wastes disposed of offsite in an approved area. Should any spilling of fuel occur, the Contractor shall immediately recover the contaminated ground and dispose of it offsite in an approved area. Petroleum waste generated shall be stored in marked corrosion-resistant containers and recycled or disposed of in accordance with 40 CFR 279, [State] [Commonwealth] [Territorial], and local regulations.

3.1.2.8 Hazardous Waste

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NOTE: Select appropriate agency.
****

Hazardous wastes are defined in 40 CFR 261. The Contractor shall ensure that hazardous wastes are stored and disposed of in accordance with 40 CFR 261 and [State] [Commonwealth] [Territorial] and local regulations. The Contractor shall ensure that hazardous wastes are packed, labeled, and transported in accordance with 49 CFR 173 and [State] [Commonwealth] [Territorial] and local regulations.

3.1.2.9 Hazardous Materials

****
NOTE: Select appropriate agency.
****

The Contractor shall ensure that hazardous materials are labeled, stored, and transported in accordance with 49 CFR 173, [State] [Commonwealth] [Territorial], and local regulations.

3.1.2.10 Disposal of Other Materials

Other materials than previously discussed (Construction and Demolition, vegetative waste, etc.) shall be handled as directed.

3.1.3 Preservation and Recovery of Historic, Archeological, and Cultural Resources

****
NOTE: If areas are not designated on drawings, the first two subparagraphs may be deleted and other subparagraphs used without reference to paragraph number.
****

3.1.3.1 Applicable Law

A number of Federal laws require protection of cultural resources. Two laws, in particular, can be potentially involved with dredging activities: (1) the National Historic Preservation Act, as amended; and, (2) the Abandoned Shipwreck Act.

3.1.3.2 Known Resources

If known historic, archeological and cultural resources within the Contractor's work area(s) are present, it 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.

3.1.3.3 Inadvertent Discoveries

If, during or other construction activities, the Contractor observes items that may have historic or archeological value, such observations shall be reported immediately to the Contracting Officer so that the appropriate Corps 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 his employees from further removing, or otherwise damaging, such resources.

The possibility of encountering submerged cultural resources is inherent in dredging and snagging operations. Such findings could include shipwrecks, shipwreck debris fields (such as steam engine parts), prehistoric watercraft (such as log "dugouts"), and other structural features intact or displaced. The materials may be deeply buried in sediment, resting in shallow sediments or above them, or protruding into water. Suspected cultural materials inadvertently gathered from a water-saturated context should be kept moist by re-immersion, spraying, or some other expedient means of wetting until the appropriate Corps staff provide further directives. No interviews or other contact with media shall occur without clear authorization from the Contracting Officer or the appropriate Corps representative.

3.1.3.4 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 coordinated with the Contracting Officer. Contract adjustments resulting from compliance with this paragraph shall be determined in accordance with Clause DIFFERING SITE CONDITIONS of Section 00700 CONTRACT CLAUSES.

3.1.4 Protection of Water Resources

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface, ground waters, and wetlands. The Contractor shall plan his operation and perform all work necessary to minimize adverse impact or violation of the water quality standard. Special management techniques as set out below shall be implemented to control water pollution by the listed construction activities which are included in this contract. The Contractor's construction methods shall protect wetland and surface water areas from damage due to mechanical grading, erosion, sedimentation and turbid discharges. There shall be no storage or stockpiling of equipment, tools, or materials within wetlands or along the shoreline within the littoral zone unless specifically authorized.

3.1.4.1 Washing and Curing Water

Waste waters directly derived from construction activities shall not be allowed to enter water areas. These waste waters shall be collected and placed in retention ponds where suspended materials can be settled out or the water evaporates so that pollutants are separated from the water. Analysis shall be performed and results reviewed and approved by Corps staff before water in retention ponds is discharged.

3.1.4.2 Cofferdam and Diversion Operations

****

NOTE: Delete subparagraph in its entirety if not applicable.
****

Construction for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure shall be controlled at all times to limit the impact of water turbidity on the habitat for wildlife and impacts on water quality for downstream use.

3.1.4.3 Stream Crossings

****
NOTE: Delete subparagraph in its entirety if not applicable. However, if applicable, select appropriate agency.
****

Stream crossings shall be controlled during construction. Crossings shall provide movement of materials or equipment without violating water pollution control standards of the Federal, [State] [Commonwealth] [Territorial], or local government.

3.1.4.4 Monitoring of Water Areas

Monitoring of water areas affected by construction activities shall be the responsibility of the Contractor. All water areas affected by construction activities shall be monitored by the Contractor.

3.1.4.5 Turbidity

****
NOTE: Select appropriate agency; for the Virgin Islands, delete both references.

HOWEVER, IF SECTION 01411 TURBIDITY AND DISPOSAL MONITORING IS USED, DELETE FIRST BRACKETED PARAGRAPH AND USE SECOND BRACKETED PARAGRAPH.
****

[The Contractor shall conduct his operations in a manner to minimize turbidity[.] [and shall conform to all water quality standards as prescribed by [Chapter 62-302, State of Florida, Department of Environmental Protection (FDEP). FDEP surface water quality standards can be obtained from the following web sites: http://www.dep.state.fl.us/ogc/documents/rules/shared/62-302.pdf and http://www.dep.state.fl.us/ogc/documents/rules/shared/62.302t.pdf.] [the Puerto Rico Water Quality Standards Regulation of the Puerto Rico Environmental Quality Board.]]

[The Contractor shall conduct his operations in a manner to minimize turbidity. Refer to Section 01411 TURBIDITY AND DISPOSAL MONITORING for further instructions.]

3.1.4.6 Oil, Fuel, and Hazardous Substance Spill Prevention and Mitigation

****
NOTE: Select appropriate agency.
****

The Contractor shall prevent oil, fuel, or other hazardous substances from entering the air, ground, drainage, local bodies of water, or wetlands. This shall be accomplished by design and procedural controls. In the event that a spill occurs despite the design and procedural controls, the following shall occur:

(1) Immediate action shall be taken to contain and cleanup any spill of oil, fuel or other hazardous substance.

(2) Spills shall be immediately reported to the Contracting Officer.

(3) Spill contingency planning shall be strictly in accordance with the criteria of 40 CFR, Part 109.

(4) To control the spread of any potential spill, absorbent materials shall be readily available and capable of absorbing the contents of the single largest tank.

(5) To control the spread of any potential spill, the Contractor shall provide a written certification of commitment of manpower, equipment, and materials required to expeditiously cleanup and dispose of spill materials.

a. Spill Preventive Systems: System design and installation requirements have been discussed at the beginning of this Section. Temporary or portable tanks shall conform to applicable Federal, [State] [Commonwealth] [Territorial], and local codes and requirements and shall not be placed where they may be affected by storm, flooding, or washout. Diversionary structures for spills shall be put in place in advance where practical. Both spill preventive systems and any deviations from associated requirements must be approved by the Contracting Officer prior to implementation.

b. Liabilities: The Contractor shall be liable in the amounts established in 40 CFR, Part 113 when it can be shown that oil was discharged as a result of willful negligence or willful misconduct. The penalty for failure to report the discharge of oil shall be in accordance with the provision of 33 CFR, Part 153.

3.1.4.7 Wetlands Protection

a. The Contractor shall determine the location of wetlands within the project area and adjacent to the project area from the information provided in the contract documents. The Contactor shall instruct all personnel associated with the project of the presence of wetlands if the wetlands are located within 1,000 feet300 meters of staging areas, access roads or any other areas used during construction activities.

b. All construction personnel shall be advised that there are civil and criminal penalties for harming or destroying wetlands beyond actions specifically identified, anticipated, and authorized in these specifications and associated plans and environmental documents. The Contractor shall erect a silt fence at least 30 feet upland and along the entire length of all wetland delineation lines adjacent to the work site and staging areas, prohibit all access into the wetland, and ensure compliance with the paragraph "Protection of Water Resources" above.

c. The Contractor shall not anchor, place pipelines, or stage equipment in a manner that will cause any damage to wetlands beyond those specifically identified, anticipated, and authorized in these specifications and associated drawings and environmental documents. Anchoring, placing pipeline, or staging equipment shall be avoided in these sensitive wetland areas. If such activities cannot be done without affecting sensitive areas outside the construction area identified in the contract documents, the activities shall cease, and the Contracting Officer and Chief, Environmental Branch (904-232-1598) shall be immediately notified (no later than the morning following the working day if the incident occurs after normal working hours). Any actual incident involving damage to, or disturbance of, wetlands shall be reported.

3.1.4.8 [ ]

****
NOTE: If applicable, specify additional operations unique to this contract.
****

[ ]

3.1.5 Protection of Fish and Wildlife Resources

The Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed in the Contractor's Environmental Protection Plan prior to the beginning of construction operation.

In the event that a threatened or endangered species is harmed as a result of construction activities, the Contractor shall cease all work and notify the Contracting Officer. The order of contact within the Corps of Engineers shall be as follows:

Order of Contact of Corps Personnel

Title	Telephone Number Work Hours	After Hours
Corps, Inspector	On site	Lodging Location
[Area][Resident][Antilles] Engineer, [ ] (CESAJ-[ ]-[ ])	[ ]	To be Provided
Dr. Loren Mason, Chief, Environmental Branch, Planning Division (CESAJ-PD-E)	904-232-2202	To be Provided
Chief, Construction Branch Construction-Operations Division (CESAJ-CO-C)	904-232-1123	To be Provided
Chief, Construction-Operations Division (CESAJ-CO)	904-232-1122	To be Provided

3.1.5.1 Endangered Species Protection

****
NOTE: USE THE FOLLOWING SUBPARAGRAPHS WHEN ONLY MANATEES ARE INVOLVED. BE SURE TO SELECT APPOPRIATE

ACT OR REGULATION.
****

The Contractor shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees.

a. Civil and Criminal Penalties: All construction personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the [Florida Manatee Sanctuary Act] [Commonwealth of Puerto Rico Endangered Species Regulation]. The Contractor may be held responsible for any manatee harmed, harassed, or killed as a result of construction activities.

b. Siltation Barriers: If siltation barriers are used, they shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

c. Vessel/Boat Operation: All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom, and vessels shall follow routes of deep water whenever possible. Boats used to transport personnel shall be shallow-draft vessels, preferably of the light-displacement category, where navigational safety permits. Mooring bumpers shall be placed on all barges, tugs, and similar large vessels wherever and whenever there is a potential for manatees to be crushed between two moored vessels. The bumpers shall provide a minimum stand-off distance of 4 feet.

d. Manatee Sighting: If a manatee(s) is sighted within 100 yards of the project area, all appropriate precautions shall be implemented by the Contractor to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. If a manatee is closer than 50 feet to moving equipment or the project area, the equipment shall be shut down and all construction activities shall cease within the waterway to ensure protection of the manatee. Construction activities shall not resume until the manatee has departed the project area. If construction activity shall cease, notify the Contracting Officer.

e. Manatee Signs: Prior to commencement of construction, each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8-1/2" x 11" reading, "CAUTION: MANATEE HABITAT/IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA." In the absence of a vessel, a temporary 3' x 4' sign reading "CAUTION: MANATEE AREA" will be posted adjacent to the issued construction permit. A second temporary sign measuring 8-1/2" x 11" reading "CAUTION: MANATEE HABITAT. EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION" shall be posted at the dredge operator control station and at a location prominently adjacent to the issued construction permit. The Contractor shall remove the signs upon completion of construction. Sample Manatee Caution Signs are on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

f. Manatee Sighting Reports: Any collisions with a manatee or sighting of any injured or incapacitated manatee shall be reported immediately to the Corps of Engineers by notifying the personnel indicated in the table "Order of Contact of Corps Personnel" above. The Contractor shall also immediately report any collision with and/or injury to a manatee to the Florida Wildlife Conservation Commission "Manatee Hotline" 1-888-404-FWCC (3922) as well as the U.S. Fish and Wildlife Service, [Jacksonville Field Station at 904-232-2580 for North Florida] [Vero Beach Field Office at 772-562-3909 for South Florida] [Boqueron Field Office at 787-851-7273 for Puerto Rico].

****

NOTE: Fill in all blanks and select appropriate reference. ALSO BE SURE TO SELECT APPROPRIATE FIELD OFFICE ADDRESS FROM LIST BELOW FOR SUBMISSION OF LOG. ADDRESS OF FIELD OFFICE CAN BE FOUND IN SECTION 01330 SUBMITTAL PROCEDURES.

****

g. Manatee Monitoring (Clamshell Only): During clamshell dredging operations, a dedicated observer will monitor for the presence of manatees. If manatees are present, the observer shall document all activities with the use of a video camera with the capabilities of video taping at night. The video tape shall have date/time signature and record all manatee movements in the construction area and note any reactions to turbidity, sound, and light. The Contractor will forward 3 copies to Dr. Loren Mason, Chief, Environmental Branch, P.O. Box 4970, Jacksonville, Florida, 32232-0019, within 10 days of completion of the dredging.

h. Report Submission: The Contractor shall maintain a log detailing sightings, collisions, or injuries to manatees occurring during the contract period. The data shall be recorded on forms provided by the Contracting Officer (sample Daily Manatee Reporting Log is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below). All data in original form shall be forwarded directly to Dr. Loren Mason, Chief Environmental Branch, P. O. Box 4970, Jacksonville, Florida, 32232-0019, within 10 days of collection and copies of the data shall be supplied to the Contracting Officer. Following project completion, a report summarizing the above incidents and sightings shall be submitted to the following:

Florida Fish and Wildlife Conservation Commission
Bureau of Protected Species Management
620 South Meridian Street
Tallahassee, Florida 32399-1600

Chief, Environmental Branch
U.S. Army Corps of Engineers (CESAJ-PD-E)
P.O. Box 4970
Jacksonville, Florida 32232-0019

[Area][Resident][Antilles] Engineer, [ ]
U.S. Army Corps of Engineers (CESAJ-[ ]-[ ]
[ ]
[ ]

[U.S. Fish and Wildlife Service

6620 Southpoint Drive South, Suite 310
Jacksonville, Florida 32216-0912]

[U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32961-3559]

[U.S. Fish and Wildlife Service
P. O. Box 491
Boqueron, Puerto Rico 00622-0491]

****

NOTE: USE THE FOLLOWING PARAGRAPHS WHEN MANATEES, SEA TURTLES AND/OR WHALES ARE INVOLVED; delete reference to WHALES if not applicable. Also include GOPHER TORTOISES, EASTERN INDIGO SNAKES, BALD EAGLES AND CRESTED CARCARA when applicable. However, there are no CRESTED CARCARA in Jacksonville and any reference to them should be deleted. SELECT APPROPRIATE REFERENCE.

****

The Contractor shall instruct all personnel associated with the project of the potential presence of manatees[,] [and] sea turtles[,] [dolphins and whales] in the area, and the need to avoid collisions with and harming these animals. All construction personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing manatees[,] [or] sea turtles[,] [dolphins or whales] which are protected under the Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and/or the Florida Manatee Sanctuary Act. The Contractor shall be held responsible for any manatee, sea turtle[,] [or whale] harmed, harassed, or killed as a result of construction activities.

[In addition, the Contractor shall instruct all personnel associated with the project of the potential presence of [gopher tortoises,] [Eastern indigo snakes,] [bald eagles][,] [and] [crested caracara] in the area, and the need to avoid harming these animals. The Contractor shall be held responsible and liable for any of the above-mentioned animals that are harmed, harassed, or killed as a result of construction activities. In the event that a threatened or endangered species is harmed as a result of construction activities, the Contractor shall cease all work and notify the Contracting Officer.]

a. Siltation Barriers: If siltation barriers are used, they shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

b. Special Operating Conditions:

(1) All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom, and vessels shall follow routes of deep water whenever possible. Boats used to transport personnel shall be shallow-draft vessels, preferably of the light-displacement category, where navigational safety permits. Mooring bumpers shall be placed on all barges, tugs, and similar large vessels

wherever and whenever there is a potential for manatees to be crushed between two moored vessels. The bumpers shall provide a minimum stand-off distance of four feet.

(2) If a manatee(s) is sighted within 100 yards of the project area, all appropriate precautions shall be implemented by the Contractor to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. If a manatee is closer than 50 feet to moving equipment or the project area, the equipment shall be shut down and all construction activities shall cease within the waterway to ensure protection of the manatee. Construction activities shall not resume until the manatee has departed the project area.

****
NOTE: Delete subparagraph below if RIGHT WHALES are not applicable.
****

(3) During the period December through March, barges or dredges moving through the designated critical habitat of the right whale (Eubalaena glacilis) shall take the following precautions. During evening hours or when there is limited visibility due to fog or sea states greater than Beaufort 3, the tug/barge or dredge operator shall slow down to 5 knots or less when traversing between areas if whales have been spotted within 15 nautical miles (nm) of the vessel's path within the previous 24 hours. During the period 1 December through 30 March, daily aerial surveys within 15 nautical miles (nm) of the dredging and disposal sites will be conducted by others to monitor for the presence of the right whale. Right whale sightings will be immediately communicated by marine radio to the dredging Contractor's dredge. In addition, the tug/barge or dredge operator shall maintain a 500-yard buffer between the vessel and any whale. The area designated as critical habitat in the southeastern United States encompasses waters between 31 degrees 15 seconds N (approximately located at the mouth of the Altamaha River, GA) and 30 degrees 15 seconds N (approximately Jacksonville, FL) from the shoreline out to 15 nm offshore; and the waters between 30 degrees 15 seconds N and 28 degrees 00 seconds N (approximately Sebastian Inlet, FL) from the shoreline out to 5 nm. If a stranded/injured/incapacitated whale is observed within the construction site, the Contractor is requested to immediately contact the NMFS Whale Stranding Network pager number at 305-862-2850.

****
NOTE: Delete subparagraph below if SEA TURTLES are not applicable.
****

(4) Dredging operations shall cease if 3 turtles or 2 endangered turtles are taken until the Contracting Officer notifies the Contractor to resume dredging.

c. Manatee Monitoring (Clamshell Only): During clamshell dredging operations, a dedicated observer shall monitor for the presence of manatees. The dedicated observer shall have experience in manatee

observation and be equipped with polarized sunglasses to aid in observing. If manatees are present, the observer shall document all activities with the use of a video camera with the capabilities of video taping at night. The video tape shall have date/time signature and record all manatee movements in the construction area and note any reactions to turbidity, sound, and light. Nighttime lighting of waters within and adjacent to the work area shall be illuminated, using shielded or low-pressure sodium-type lights, to a degree that allows the dedicated observer to sight any manatee on the surface within 200 feet of the operation. The dredge operator shall gravity-release the clamshell bucket only at the water surface, and only after confirmation that there are no manatees within the safety distance identified in the standard construction conditions. The Contractor shall forward 3 copies to Chief, Environmental Branch, P.O. Box 4970, Jacksonville, Florida, 32232-0019, within 10 days of completion of the dredging.

d. Manatee Signs: Prior to commencement of construction, each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8-1/2" x 11" reading, "CAUTION: MANATEE HABITAT/IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA." In the absence of a vessel, a temporary 3' x 4' sign reading "CAUTION: MANATEE AREA" shall be posted adjacent to the issued construction permit. A second temporary sign measuring 8-1/2" x 11" reading "CAUTION: MANATEE HABITAT. EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION" shall be posted at the dredge operator control station and at a location prominently adjacent to the issued construction permit. The Contractor shall remove the signs upon completion of construction. Sample Manatee Caution Signs are on the web site indicated in the paragraph CONSTRUCTION FORMS AND DETAILS below.

3.1.5.2 Endangered Species Observers (Hopper Dredge Only)

****
NOTE: Delete word in bracket if there are no whales.
****

During dredging operations, an observer approved by the National Marine Fisheries Service (NMFS) for sea turtles and [whales] shall be aboard to monitor for the presence of the species. During transit to and from the disposal area, the observer shall monitor from the bridge during daylight hours for the presence of endangered species, especially the right whale, during the period December through March. During dredging operations, the observer shall monitor the inflow screening for turtles and/or turtle parts.

a. Observation Sheets: The results of the monitoring shall be recorded on the appropriate observation sheet. An observation sheet shall be completed for each dredging cycle whether or not sea turtle or sea turtle parts are present. Sample observation sheets are on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

b. Endangered Species Observer(s): NMFS-approved firms shall provide and manage the endangered species observer(s). A list of acceptable firms can be obtained by contacting NMFS Chief of Office of Protective Species in St. Petersburg, Florida at 727-570-5312. The trained observer(s) shall require quarters on board the dredge.

3.1.5.3 Manatee, Sea Turtle, and Whale Sighting Reports

****
NOTE: Fill in all blanks and select appropriate reference.
****

Any take concerning a manatee, sea turtle, or whale or sighting of any injured or incapacitated manatees, sea turtles, or whales shall be reported immediately to the Corps of Engineers by notifying the personnel indicated in the table "Order of Contact of Corps Personnel" above.

A copy of the incidental take report shall be provided within 24 hours of the incident. The Contractor shall also immediately report any collision with and/or injury to a manatee to the Florida Fish and Wildlife Conservation Commission "Manatee Hotline" 1-888-404-FWCC (3922) as well as the U.S. Fish and Wildlife Service, [Jacksonville Field Station 904-232-2580 for North Florida] [Vero Beach Field Office 772-562-3909 for South Florida] [Boqueron Field Office 787-851-7273 for Puerto Rico].

3.1.5.4 Disposition of Turtles or Turtle Parts

All turtles lethally taken by the dredge shall have a tissue sample collected for genetic anaylsis by the observer. The observer shall follow the NMFS "Protocol for Collecting Tissue from Dead Turtles for Genetic Analysis" posted on the web site indicated in the paragraph CONSTRUCTION FORMS AND DETAILS below. After sample collection, positively identified turtle parts shall be disposed of in accordance with the direction of the Contracting Officer. Turtle parts which cannot be positively identified on board the dredge or barge(s) shall be preserved by the observer(s) for later identification. Observer(s) shall measure, weigh, tag, and release any uninjured turtles incidentally taken by the dredge. Observer(s) (or their authorized representative) shall transport, as soon as possible, any injured turtles to a rehabilitation facility such as Sea World at Orlando, Florida.

3.1.5.5 Report Submission

****
NOTE: Fill in all blanks. ALSO BE SURE TO SELECT APPROPRIATE FIELD OFFICE ADDRESS FROM LIST BELOW FOR SUBMISSION OF LOG. ADDRESS OF FIELD OFFICE CAN BE FOUND IN SECTION 01330 SUBMITTAL PROCEDURES.
****

The Contractor shall maintain a log detailing all incidents, including sightings, collisions with, injuries, or killing of manatees, sea turtles, or whales occurring during the contract period. The data shall be recorded on forms provided by the Contracting Officer (sample forms are on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below). All data in original form shall be forwarded directly to Chief, Environmental Branch, P. O. Box 4970, Jacksonville, Florida, 32232-0019, within 10 days of collection and copies of the data shall be supplied to the Contracting Officer. Following project completion, a report summarizing the above incidents and sightings shall be submitted to the following:

Florida Fish and Wildlife Conservation Commission
Bureau of Protected Species Management
620 South Meridian Street

Tallahassee, Florida 32399-1600

Chief, Environmental Branch
U.S. Army Corps of Engineers (CESAJ-PD-E)
P.O. Box 4970
Jacksonville, Florida 32232-0019

[Area][Resident][Antilles] Engineer, [ ]
U.S Army Corps of Engineers (CESAJ-[ ]-[ ]
[ ]
[ ]

[U.S. Fish and Wildlife Service
6620 Southpoint Drive South, Suite 310
Jacksonville, Florida 32216-0912]

[U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960-3559]

[U.S. Fish and Wildlife Service
P. O. Box 491
Boqueron, Puerto Rico 00622-0491]

[National Marine Fisheries Service
Protected Species Management Branch
9721 Executive Center Drive
St. Petersburg, Florida 33702]

3.1.5.6 Hopper Dredge Equipment

****
NOTE: Use when HOPPER DREDGE is applicable.
****

Hopper dredge drag heads shall be equipped with rigid sea turtle deflectors which are rigidly attached. No dredging shall be performed by a hopper dredge without an installed turtle deflector device approved by the Contracting Officer. Sample Turtle Deflector Design Details are on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

a. Deflector Design:

(1) The leading vee-shaped portion of the deflector shall have an included angle of less than 90 degrees. Internal reinforcement shall be installed in the deflector to prevent structural failure of the device. The leading edge of the deflector shall be designed to have a plowing effect of at least 6" depth when the drag head is being operated. Appropriate instrumentation or indicator shall be used and kept in proper calibration to insure the critical "approach angle". (Information Only Note: The design "approach angle" or the angle of lower drag head pipe relative to the average sediment plane is very important to the proper operation of a deflector. If the lower drag head pipe angle in actual dredging conditions varies tremendously from the design angle of approach used in the development of the deflector, the 6" plowing effect does not occur. Therefore, every effort should be made to insure this design "approach angle" is maintained with the lower drag pipe.)

(2) If adjustable depth deflectors are installed, they shall be rigidly attached to the drag head using either a hinged aft attachment point or an aft trunnion attachment point in association with an adjustable pin front attachment point or cable front attachment point with a stop set to obtain the 6" plowing effect. This arrangement allows fine-tuning the 6" plowing effect for varying depths. After the deflector is properly adjusted there shall be NO openings between the deflector and the drag head that are more than 4" by 4".

b. In Flow Basket Design:

(1) The Contractor shall install baskets or screening over the hopper inflow(s) with no greater than 4" x 4" openings. The method selected shall depend on the construction of the dredge used and shall be approved by the Contracting Officer prior to commencement of dredging. The screening shall provide 100% screening of the hopper inflow(s). The screens and/or baskets shall remain in place throughout the performance of the work.

(2) The Contractor shall install and maintain floodlights suitable for illumination of the baskets or screening to allow the observer to safely monitor the hopper basket(s) during non-daylight hours or other periods of poor visibility. Safe access shall be provided to the inflow baskets or screens to allow the observer to inspect for turtles, turtle parts or damage.

c. Hopper Dredge Operation:

(1) The Contractor shall operate the hopper dredge to minimize the possibility of taking sea turtles and to comply with the requirements stated in the Incidental Take Statement provided by the National Marine Fisheries Service in their Biological Opinion.

(2) The turtle deflector device and inflow screens shall be maintained in operational condition for the entire dredging operation.

(3) When initiating dredging, suction through the drag heads shall be allowed just long enough to prime the pumps, then the drag heads must be placed firmly on the bottom. When lifting the drag heads from the bottom, suction through the drag heads shall be allowed just long enough to clear the lines, and then must cease. Pumping water through the drag heads shall cease while maneuvering or during travel to/from the disposal area. (Information Only Note: Optimal suction pipe densities and velocities occur when the deflector is operated properly. If the required dredging section includes compacted fine sands or stiff clays, a properly configured arrangement of teeth may enhance dredge efficiency which reduces total dredging hours and "turtle takes." The operation of a drag head with teeth must be monitored for each dredged section to insure that excessive material is not forced into the suction line. When excess high-density material enters the suction line, suction velocities drop to extremely low levels causing conditions for plugging of the suction pipe. Dredge operators should configure and operate their equipment to eliminate all low level suction velocities. Pipe plugging in the

past was easily corrected, when low suction velocities occurred, by raising the drag head off the bottom until the suction velocities increased to an appropriate level. Pipe plugging cannot be corrected by raising the drag head off the bottom. Arrangements of teeth and/or the reconfiguration of teeth should be made during the dredging process to optimize the suction velocities.)

(4) Raising the drag head off the bottom to increase suction velocities is not acceptable. The primary adjustment for providing additional mixing water to the suction line should be through water ports. To insure that suction velocities do not drop below appropriate levels, the Contractor's personnel shall monitor production meters throughout the job and adjust primarily the number and opening sizes of water ports. Water port openings on top of the drag head or on raised stand pipes above the drag head shall be screened before they are utilized on the dredging project. If a dredge section includes sandy shoals on one end of a tract line and mud sediments on the other end of the tract line, the Contractor shall adjust the equipment to eliminate drag head pick-ups to clear the suction line.

(5) Near the completion of each payment section, the Contractor shall perform sufficient surveys to accurately depict those portions of the acceptance section requiring cleanup. The Contractor shall keep the drag head buried a minimum of 6 inches in the sediment at all times. Although the over depth prism is not the required dredging prism, the Contractor shall achieve the required prism by removing the material from the allowable over depth prism.

(6) During turning operations the pumps must either be shut off or reduced in speed to the point where no suction velocity or vacuum exists.

(7) These operational procedures are intended to stress the importance of balancing the suction pipe densities and velocities in order to keep from taking sea turtles. The Contractor shall develop a written operational plan to minimize turtle takes and submit it as part of the Environmental Protection Plan.

(8) The Contractor must comply with all requirements of this specification and the Contractor's accepted Environmental Protection Plan. The contents of this specification and the Contractor's Environmental Protection Plan shall be shared with all applicable crew members of the hopper dredge.

3.1.5.7 Recording Charts for Hopper Dredge(s)

All hopper dredge(s) shall be equipped with recording devices for each drag head that capture real time, drag head elevation, slurry density, and at least two of the following: Pump(s) slurry velocity measured at the output side, pump(s) vacuum, and/or pump(s) RPM. The Contractor shall record continuous real time positioning of the dredge, by plot or electronic means, during the entire dredging cycle including dredging area and disposal area. Dredge location accuracy shall meet the requirements of the latest version of COE EM 1110-1-1003. A copy of the EM can be downloaded from the following web site: http://www.usace.army.mil/inet/usace-docs/eng-manuals/em.htm. The

recording system shall be capable of capturing data at variable intervals but with a frequency of not less than every 60 seconds. All data shall be time correlated to a 24 hour clock and the recording system shall include a method of daily evaluation of the data collected. Data shall be furnished to the Contracting Officer for each day's operation on a daily basis. A written plan of the method the Contractor intends to use in order to satisfy these requirements shall be included with the Contractor's Quality Control Plan.

3.1.5.8 Sea Turtle Risk Assessment (For Hopper Dredges Only)

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NOTE: Delete if SEA TURTLE RISK ASSESSMENT AND RELOCATION requirement not needed. IF PARAGRAPH IS USED, IT WILL REQUIRE ADDITIONAL ITEMS FOR BIDDING SCHEDULE. ALSO, SELECT APPROPRIATE STATE/COMMONWEALTH AGENCY AND FIELD OFFICE.

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a. Sea Turtle Trawling and Relocation: A sea turtle risk assessment survey shall be conducted following the take of two sea turtles or one endangered sea turtle and continue until directed by the Contracting Officer. The results of each trawl shall be recorded on Sea Turtle Trawling Report on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below. A final report shall be prepared and submitted to the Contracting Officer prior to re-commencement of dredging summarizing the results of the survey (with all forms and including total trawling times, number of trawls and number of captures). Any turtles captured during the survey shall be measured and tagged in accordance with standard biological sampling procedures with sampling data recorded on Sea Turtle Tagging and Relocation Report on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below. Any captured sea turtles shall be relocated south of the work area at least 3 miles from the location recorded on the Sea Turtle Tagging and Relocation Report form.

b. Sea Turtle Trawling Procedures: An approved sea turtle trawling and relocation supervisor shall provide researchers and nets to capture and relocate sea turtles, shall conduct Sea Turtle Risk Assessment Survey, and shall conduct any initiated sea turtle trawling. Turtles shall be captured with trawl nets to determine their relative abundance in the channel during dredging. Methods and equipment shall be standardized including data sheets, nets, trawling direction to tide, length of station, length of tow, and number of tows per station. Data on each tow shall be recorded using Sea Turtle Trawling Report on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below. The trawler shall be equipped with two 60-foot nets constructed from 8-inch mesh (stretch) fitted with mud rollers and flats as specified in Turtle Trawl Nets Specifications appended to the end of this Section. Paired net tows shall be made for 10 to 12 hours per day or night. Trawling shall be conducted with the tidal flow using repetitive 15-30 minute (total time) tows in the channel. Tows shall be made in the center, green and red sides of the channel such that the total width of the channel bottom is sampled. Positions at the beginning and end of each tow shall be determined from GPS Positioning equipment. Tow speed shall be recorded at the approximate midpoint of each tow. Refer to COE EM 1110-1-1003, paragraph 5.3 and Table 5-1, for acceptable GPS criteria.

c. Water Quality and Physical Measurements: Water temperature measurements shall be taken at the water surface each day using a laboratory thermometer. Weather conditions shall be recorded from visual observations and instruments on the trawler. Weather conditions, air temperature, wind velocity and direction, sea state-wave height, and precipitation shall be recorded on the Sea Turtle Trawling Report on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below. High and low tides shall be recorded.

d. Initiation of Trawling: Initiate trawling if three turtles are taken. The Contractor must initiate trawling and relocation activity in the dredging area within 8 hours of the occurrence of the take. Trawling shall continue until suspended by the Contracting Officer.

e. Approved Trawling Supervisor: Trawling shall be conducted under the supervision of a biologist approved by the NMFS. A letter of approval from NMFS shall be provided to the Contracting Officer prior to commencement of trawling.

f. Turtle Excluder Devices: Approval for trawling for sea turtles without Turtle Excluder Devices (TEDs) must be obtained from NMFS. Approval for capture and relocation of sea turtles must be obtained from the [Florida Fish and Wildlife Conservation Commission (FF&WCC)] [Puerto Rico Department of Natural Environmental Resources (PRDNER)]. Approvals must be submitted to the Contracting Officer prior to trawling.

g. Report Submission: Following completion of the project, a copy of the Contractor's log regarding sea turtles shall be forwarded to the Chief, Environmental Branch and the [Area] [Resident] [Antilles] Engineer, [ ] [Area] [Resident] [Antilles] Office within 10 working days.

3.1.5.9 Sea Turtle Beach Nest Monitoring

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NOTE: Use the following when MONITORING OF SEA TURTLES ON THE BEACH is required. Project Manager to check permit to see if dredging window will change monitoring dates. ALSO, SELECT APPROPRIATE STATE/COMMONWEALTH AGENCY AND FIELD OFFICE.

****

a. Sea Turtle (Work Stoppage) Window and Monitoring: If dredging and placement of material in the beach fill area along Florida Beaches has commenced on or before March 1st, turtle monitoring and nest location shall commence on March 1st and continue concurrently with the performance of work. If dredging and placement of material on Florida Beaches has not commenced prior to March 1st, the Contractor shall commence turtle monitoring and nest location activities for a period of 65 days prior to performing any work (including movement of equipment) in the beach fill area or commence turtle monitoring March 1st whichever date is later. In such case, after turtle monitoring and nest location activities have been performed for a period of 65 days, the Contractor shall commence work in the beach fill area and continue the monitoring activities concurrently with performance of the work. In any case turtle monitoring and nest location/relocation activities are required through November 30th or until completion of the work on

Florida Beaches, whichever is earlier.

b. Daily Visual Inspection: Turtle monitoring activities shall include performance of daily visual inspections of the beach at sunrise by a person permitted by the FF&WCC for handling sea turtle eggs. Any nests discovered shall be excavated and relocated prior to 9:00 a.m. to a nearby self-release beach location where artificial lighting and/or other disturbances shall not interfere with successful incubation, hatching nor hatchling orientation. A log of the results of turtle egg monitoring and recovery activities shall be kept and a copy submitted weekly to the Chief, Environmental Branch, Jacksonville District (sample Marine Turtle Nesting Summary Report form is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below).

c. Turtle Subcontractor: The Contractor shall have a [FF&WCC] [PRDNER] permitted subcontractor approved by the Contracting Officer to accomplish the sea turtle monitoring of this section unless he demonstrates to the satisfaction of the Contracting Officer the capability to accomplish sea turtle monitoring and recovery by obtaining a permit from the [FF&WCC] [PRDNER] to take turtles.

d. Report Submission: Following completion of the project, a copy of the Contractor's log regarding sea turtles shall be forwarded to the Chief, Environmental Branch and the [Area] [Resident] [Antilles] Engineer, [ ] [Area] [Resident] [Antilles] Office.

3.1.5.10 Beach Placement Restrictions

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NOTE: Add appropriate dates for respective County nesting periods: ESCAMBIA COUNTY south through PASTCO COUNTY: May 1 to November 30; PINELLAS COUNTY south through MONROE COUNTY: April 1 to November 30; DADE COUNTY: April 1 to November 30; NASSAU COUNTY south through VOLUSIA COUNTY: April 15 to November 30; and, BREVARD COUNTY south through BROWARD COUNTY: March 1 to November 30.

****

a. Equipment Lighting During Sea Turtle Nesting Period [to]: Direct lighting of the beach and near shore waters shall be limited to the immediate construction area and shall comply with safety requirements. Lighting on offshore or onshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the waters surface and nesting beach while meeting all Coast Guard, COE EM 385-1-1, and OSHA requirements. Light intensity of lighting plants should be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields should be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area. Refer to Beach Lighting Schematic on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

b. Pipeline Placement: Any construction pipes placed parallel to the shoreline shall be placed as far landward as possible up to the vegetated dune line.

c. Beach Tilling: Till the fill area between the landward edge and

the seaward edge of the top of the berm with equipment operated so as to penetrate and loosen beach sand (a) to a depth of 36 inches and (b) laterally without leaving unloosened compact sand between the adjacent paths of tines or penetrating part of the equipment. (Suitable equipment is Caterpillar D9L/No. 9 Adjustable Parallelogram Multishank Ripper, or equal.) The Contractor shall be careful not to drag the beach where rock structures have been covered with less than 3 feet of sand.

3.1.5.11 Escarpments

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NOTE: IF APPLICABLE, EDIT PARAGRAPH ACCORDINGLY. DELETE LAST BRACKETED SENTENCE IF SHORE PROTECTION PROJECT IS NOT LOCATED IN DADE COUNTY.
****

[Visual surveys for escarpments along the project area shall be made immediately after completion of the beach nourishment project.] [The Contractor shall perform daily visual surveys for escarpments along finished sections of the beach nourishment area that have not been accepted by the Contracting Officer as complete.] Results of the surveys shall be submitted to the Contracting Officer. Escarpments that [interfere with sea turtle nesting] [or] that exceed 18 inches in height for a distance of 100 feet or more shall be mechanically leveled by the Contractor to the natural beach contour[.] [by (insert date).] If the project is completed during the main part of the nesting season [{insert applicable date)], [escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place.] [nourished beaches shall be surveyed monthly for escarpments by the protocol stated above.] [Once a beach section is accepted by the Contracting Officer as complete, Dade County Department of Environmental Resources Management (DERM) will take over the responsibility for visual surveys and escarpment removal.]

3.1.5.12 Hardground/Reef Protection

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NOTE: Delete if not a requirement. Applies to shore protection projects using a borrow site and a pipeline running over hardbottom or hardbottom adjacent to beach.
****

Existing hardground/reef areas within the Contractor's work area will be so designated on the contract drawings and precaution will be taken to preserve these resources as they existed prior to construction. The Contractor shall install all protection for these resources so designated on the drawings and shall be responsible for their preservation during this contract. Pipelines will be placed only in approved areas and anchoring will be permitted in sandy areas only. Pipeline will be monitored for leaks. Any leaks that develop shall be repaired immediately, especially over hardgrounds/reefs, and the pumpout operations shall be shutdown until repairs are completed. Refer to Section 02391 BEACH FILL.

3.1.5.13 Protection of Migratory Bird Species

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NOTE: Delete if BIRD NESTING MONITORING is not applicable.

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The Contractor shall keep construction activities under surveillance, management, and control to prevent impacts to migratory birds and their nests. All construction personnel shall be advised that migratory birds are protected by the Florida Endangered and Threatened Species Act of 1977, Title XXVIII, Chapter 372.072, and the U.S. Fish and Wildlife Service pursuant to the Migratory Bird Treaty Act of 1918 and the Endangered and Threatened Species Act of 1982, as amended. The Contractor may be held responsible for harming or harassing the birds, their eggs or their nests as a result of the construction.

a. Monitoring of Construction Area: In order to meet these responsibilities, the Contractor shall conduct monitoring of the construction area beginning 1 April through 31 August, if construction activities occur during that period. Daily monitoring using the Daily Bird Monitoring Report shall be conducted during the dawn or dusk time frames by a bird monitor approved by the Contracting Officer. (Caution shall be taken by the monitor to avoid disturbance to the nesting birds.) The Contractor shall maintain a daily log detailing monitoring and nesting activity (not all bird species are listed). Sample monitoring report and qualification sheet are on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below. Within 30 days after completion of construction, a summary of monitoring shall be submitted to the Corps detailing nesting and nesting success/failure including species, number of nests created, location, number of eggs, number of offspring generated during the project and reasons for nesting success or failure, if known.

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NOTE: Use following subparagraph only when crested caracara nests are sighted within the project area. IF DELETED, RENUMBER SUBSEQUENT SUBPARAGRAPHS.

****

b. Presence/Absence Survey: At least 3 visits must be made to each site during April-July. A 6-minute point count (variable circular plot) should be conducted between sunrise and 3 hours after or 1 hour prior to sunset. If breeding birds are encountered, nests shall be located and observed without disturbance to the nesting activity. Nests shall be marked and visited every 3-5 days to determine fate.

c. Nesting Activity Notification: Any nesting activity observed by the Contractor shall be reported immediately to the Contracting Officer who shall have sole authority for any work stoppages, creation of the buffer area, or restart of construction activities. In addition, notify the personnel indicated in the table "Order of Contact of Corps Personnel" above.

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NOTE: Fill in all blanks.

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d. Nesting Within Construction Area:

(1) Should nesting begin within the construction area, a temporary, 200-foot buffer shall be created around the nests and marked to avoid entry (the Contracting Officer will provide signs). The area shall be left undisturbed until nesting is

completed or terminated, and the chicks fledge. The decision to allow construction in a former nesting site will be determined by the Contracting Officer in consultation with the U.S. Fish and Wildlife Service and the FF&WCC. Access to the nesting sites by humans (except limited access when accompanied by the bird monitor or Contracting Officer), equipment or pets under control of the Contractor is prohibited.

(2) If nesting occurs within the construction area, a bulletin board shall be placed and maintained by the Contractor in the contracting shed with the location map of the construction site showing the bird nesting areas and a warning, clearly visible, stating that "BIRD NESTING AREAS ARE PROTECTED BY THE FLORIDA THREATENED AND ENDANGERED SPECIES ACT AND THE FEDERAL MIGRATORY BIRD TREATY ACT".

(3) Birds will find the top of the dike or the flat interior desirable nesting habitat. If construction activity ceases for any period of time, nesting may occur before work can resume. Any stoppage of activity could induce nesting, subsequently, construction could be altered or stopped to avoid impacting the birds. Areas which are potentially suitable for nesting can be altered to make the area undesirable. One approved method is the placement of stakes at 10- to 15-foot intervals and tie flagging between the stakes in a web fashion. This may dissuade bird nesting until construction can be resumed. In addition, the disposal area basin can be flooded prior to the beginning of nesting season to the elevation required for displacement from the disposal of dredged material in order to make the basin undesirable for bird nesting.

e. Bird Monitoring Qualifications: The Contractor's Environmental Protection Plan shall contain the qualifications of the bird monitor and the steps to be taken to construct the project in such a manner as not to impact migratory birds or induce their nesting. The qualifications of the bird monitor are a demonstrated ability to identify bird species, general and nesting behavior characteristics, nests and eggs, and a knowledge of habitat requirements. In addition, references must be provided to verify non-educational experience.

f. Work Delay: Delays in work due to the fault of negligence of the Contractor or the Contractor's failure to comply with this specification shall not be compensable. Any adjustments to the contract performance period or price that are required as a result of compliance with this section shall be made in accordance with the Clause SUSPENSION OF WORK of Section 00700 CONTRACT CLAUSES.

3.1.5.14 Protection of Gopher Tortoise (GT) Populations (Gopherus polyphemus)

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NOTE: Delete if GOPHER TORTOISE MONITORING is not applicable.

****

The Contractor shall keep construction activities under surveillance, management, and control to prevent impacts to GTs and their burrows. All construction personnel shall be advised that GTs are listed by the State of Florida as a Species of Special Concern and protected by the FAC, Chapter

39-27.002(4). The Contractor may be held responsible for taking, harming, or harassing the tortoises, their eggs or their burrows as a result of the construction. The destruction of GT burrows constitutes taking under this law except as authorized by specific permit.

a. General:

(1) In order to meet these responsibilities, the Contractor shall conduct gopher tortoise surveys prior to the beginning of construction activities. The surveys shall be conducted by a qualified gopher tortoise biologist. A list of qualified individuals may be obtained from the FF&WCC.

(2) The Contractor shall stay at least 25 feet from entrances of individual burrows.

b. Relocation Permit Requirements: If five or fewer tortoises will be affected and adequate habitat will exist on the site following construction, tortoises may be captured and released back onto the site in an area where they can move freely. A special permit is not required. If more than five (5) GTs are to be relocated, a capture/release/relocation permit is required from the FF&WCC; contact the FF&WCC for a list of GT relocation contacts.

c. Taking: If the work will probably kill tortoises, a taking permit is required from the State for the taking of any tortoises. Taking includes the entombment or killing of gopher tortoises as a result of bulldozing, grading, paving, or building construction.

d. State Permit Applications: Pursuant to the requirements of Rules 68-25.002 and 68-27.002 of the Wildlife Code of the State of Florida (Title 68A, FAC), a permit for a GT capture/relocation/release project must be secured from the FF&WCC prior to initiating any relocation work. Applications shall be submitted at least 30 days prior to the time needed from Office of Environmental Services, Division of Wildlife, Florida Fish and Wildlife Conservation Commission, 620 S. Meridian Street, Tallahassee, Florida 32399-1600, ATTN: Mr. Rick McCann, Endangered Species Coordinator, telephone 850-488-6661. Permits to capture and release GTs on site will be issued by regional Division of Wildlife or Office of Environmental Services personnel based on telephone requests (field verifications may be conducted by FF&WCC personnel if deemed necessary).

e. Relocation Window: GT relocation within the State of Florida can occur year-round in the geographic area below State Highway 50. Relocation of GTs between State Highway 50 and the counties bordering the State of Georgia, excluding Duval and Suwannee Counties, can only occur between 1 March and 1 December. Relocation within the counties bordering the State of Georgia, including Duval and Suwannee Counties, can only occur between 1 April and 1 October.

f. Application Information: The application will contain, but not be limited to, aerial photography of the donor and recipient sites, a detailed map showing the location of the active and inactive burrows sites, the location and number of acres of GT habitat, the carrying capacity of the recipient site and any management plans for the recipient site.

g. Applicant Qualifications: Applicants for relocation permits

shall be suitably trained or experienced in such work. Copies of applicant credentials demonstrating such shall be appended to applications. A list of qualified individuals may be obtained from the FF&WCC.

h. Temporal Considerations:

(1) Tortoises shall not be captured/relocated on days for which the overnight low temperature for that day and the two consecutive days thereafter is forecasted by the U.S. National Weather Service to be below 50 degrees F. This 3-day window of milder overnight temperatures is to allow the relocated tortoises to settle into the recipient site.

(2) During summer months, releases shall not be made during the hottest part of the day at sites where shade is limited.

i. Donor Site Surveys: No more than 60 days prior to relocation, all potential GT habitat on a given development site shall be thoroughly and systematically surveyed using appropriate, biologically sound methodology. Permit applicants are to submit preliminary estimates of the total number of tortoises on a subject site, size of that portion of the site which is potential tortoise habitat, and a general characterization of the habitat. Recommended survey techniques for estimating population density and classification systems for GT habitat types are available from the FF&WCC.

(1) All burrows found to be "active" or "inactive" shall be plotted on maps to facilitate efficient future relocation. Criteria for determining the status of GT burrows may be obtained from the FF&WCC.

j. Recipient Site Selection and Treatment: Sites selected to receive relocated tortoises shall be either of similar habitat character and quality as corresponding donor sites, or demonstrated to be otherwise suitable for GT occupancy.

(1) Sites already occupied by tortoises at or near carrying capacity shall not be selected as recipient sites. In some instances, especially at sites of marginal habitat quality, certain habitat manipulation measures (such as burning) could be employed to improve habitat quality and thereby increase carrying capacity, rendering the site acceptable as a recipient site. In those cases, continuous, periodic management treatments would normally be necessary to maintain carrying capacity at the elevated levels. Permit applications opting for this course shall append their applications with a proposed long-term management plan for recipient sites. Carrying capacity may be determined by the FF&WCC.

(2) Relocation of 20 or fewer tortoises shall be to recipient sites already occupied. Relocation of more than 20 should be to recipient sites either vacant or occupied at population levels substantially below carrying capacity. Carrying capacity criteria may be obtained from FF&WCC.

(3) Recipient sites shall be situated any distance east or west of donor sites, but no more than 50 miles north or south of donor sites unless appropriately justified.

(4) Recipient sites should not overlap or abut sites supporting genetically unique or discrete tortoise populations, or sites supporting populations which otherwise merit protection from genetic swamping. Genetically unique or discrete populations will be determined by the FF&WCC. In instances where such a potential exists, the FF&WCC shall be consulted for a determination as to the site's acceptability.

(5) Recipient sites already occupied by tortoises shall be thoroughly surveyed prior to relocation and all encountered burrows plotted on maps and categorized as "active," "inactive" or "old" per the criteria of the FF&WCC.

k. Capture Methodology: Tortoises shall be excavated from burrows (i.e., with backhoe), trapped, or otherwise captured by non-harmful means. If trapped, five-gallon pitfall bucket traps shall be buried at burrow entrances, shaded and covered with paper or cheesecloth overlain with a thin layer of soil. A hole at least one inch in diameter should be drilled into the bottom of each bucket for drainage. Each bucket shall be checked at least once per day for at least 28 consecutive days. Capture methodology may be modified on persistently wet sites or during periods of heavy rainfall.

l. Transport and Release Methodology: Captured tortoises must be transported without undue delay and under shaded and sanitary conditions. Care shall be taken to avoid any physical damage (i.e., abrasion) to tortoises in transit.

(1) Prior to release, each relocated tortoise shall be sexed (adults only), measured and permanently and uniquely marked by scute-notching. Criteria for marking and measuring relocated GTs may be obtained from the FF&WCC.

(2) On unoccupied recipient sites, relocated individuals shall be released in groups of no more than 20 in the same general vicinity with access to shade nearby. On already occupied sites, relocated tortoises shall be distributed throughout the site and, when possible, individuals shall be released at "old" or "inactive" burrows, criteria of which is available through the FF&WCC.

m. Reporting: Any tortoise mortality or debilitating injury occurring during the capture, relocation and release phases of a relocation is to be reported to the personnel indicated in the table "Order of Contact of Corps Personnel" above, and Mr. Michael Abbot, Florida Fish and Wildlife Conservation Commission, 1239 SW 10th Street, Ocala, Florida 34474, at telephone number (352)-732-1225.

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NOTE: Fill in all blanks.

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n. Report Submission: Within 30 days of the final survey, a detailed and comprehensive final report is to be prepared and submitted to the Division of Wildlife, FF&WCC, and U.S. Army Corps of Engineers (Dr. Loren Mason, Chief, Environmental Branch, P.O. Box 4970, Jacksonville, Florida 32232-0019), such report to include a compilation of all data and all maps prepared during the surveys and

all information regarding relocation of the GTs.

o. Qualifications: The Contractor's Environmental Protection Plan shall contain the qualifications of the GT survey/relocation contract and the steps to be taken to construct the project in such a manner as not to impact GTs.

p. Work Delay: Delays in work due to the fault or negligence of the Contractor or the Contractor's failure to comply with this specification shall not be compensable. Any adjustments to the contract performance period or price that are required as a result of compliance with this section shall be made in accordance with the provisions of the Clause SUSPENSION OF WORK of Section 00700 CONTRACT CLAUSES.

3.1.5.15 Protection of Eastern Indigo Snake Populations

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NOTE: Delete if not a requirement. HOWEVER, IF APPLICABLE, MUST INCLUDE PARAGRAPH REGARDING GOPHER TORTOISE POPULATIONS.
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a. Monitoring of Construction Area: The requirements of this paragraph only apply if Eastern indigo snakes (indigo snakes) are observed in the construction area. The Contractor shall coordinate with the Jacksonville District Corps of Engineers, Environmental Studies Section (CESAJ-PD-ES) and the U.S. Fish and Wildlife Service's (FWS) South Florida Field Office during the establishment and implementation of an indigo snake protection/education plan.

b. Qualified Observer: A qualified observer shall be present on site to watch for indigo snakes during all construction and clearing phases of the project. The name(s) and qualifications of the proposed observer shall be submitted to the Contracting Officer for approval. The information submitted should indicate what experience the individual has that would qualify the person to act as an indigo snake observer.

c. Indigo Snake Protection/Education Plan: An indigo snake protection/education plan shall be developed for all construction crews to follow. The plan shall be provided to the Contracting Officer for review and approval at least 30 days prior to any construction or clearing activities. The educational materials for the plan could consist of a combination of posters or videos, pamphlets, and lectures and should include the following information:

(1) Description of the indigo snake, its habits, and protection under Federal Law;

(2) Instructions not to injure, harm, harass or kill this species;

(3) Directions to notify the qualified observer(s) if an indigo snake is sighted;

(4) Directions to cease construction activity, notify the qualified observer, and allow the indigo snake sufficient time to move away from the site on its own before resuming construction

(only a qualified individual, who has been either authorized by a Section 10(a)(1)(A) permit issued by the FWS, or designated as an agent of the State of Florida by the FF&WCC for such activities, is permitted to come in contact with an indigo snake);

(5) Telephone numbers of pertinent agencies to be contacted if a dead indigo snake is encountered; and,

(6) Instructions that, if necessary, indigo snakes shall be held in captivity only long enough to transport them to a release site; at no time shall two snakes be kept in the same container during transportation.

d. Gopher Tortoise Burrows: If gopher tortoise burrows are present, refer to subparagraph "Protection of Gopher Tortoise (GT) Populations (Gopherus polyphemus)" above. If gopher tortoise burrows are present, the requester should coordinate with the FF&WCC for information on the relocation program for gopher tortoises. As a part of the relocation program, the FF&WCC reviews and approves preserve areas for gopher tortoises. These same areas may be used for the release of indigo snakes. Therefore, prior to any construction or clearing activities in areas where gopher tortoise burrows have been identified the following measures should be incorporated into the indigo snake plan:

(1) A qualified individual should map and flag the locations of all gopher tortoise burrows on the site. Prior to actual clearing, the qualified individual should update that initial survey no more than two weeks prior to clearing. These maps should be made available to all construction crews.

(2) In some circumstances, an underground camera may be needed to investigate gopher tortoise burrows for indigo snakes. If an indigo snake is found, and the burrow will be destroyed by construction activity then the burrow should be carefully excavated with a backhoe while monitoring the snake's position and condition with the underground camera. In burrows that are suitable for camera use, the burrow will be carefully excavated with a combination of backhoe and hand excavation. Before excavating any burrow, it is recommended that a strong, flexible tube or hose be inserted into the burrow to the end to mark the course of the entire burrow in case it collapses during excavation. If a backhoe is used, the bucket should be equipped with a straight blade, not a blade with teeth. The excavation must be done with caution to prevent potential injury to an indigo snake.

(3) An indigo snake found in a burrow may be captured and released (by a qualified individual who has been either authorized by a Section 10(a)(1)(A) permit issued by the FWS, or designated as an agent of the State of Florida by the FF&WCC for such activities) immediately into a FF&WCC approved preserve area for gopher tortoises near a marked inactive or abandoned gopher tortoise burrow. Indigo snakes shall be held in captivity only long enough to transport them to a release site; at no time shall two snakes be kept in the same container during transportation. A map of marked inactive or abandoned burrow should be made available to the qualified individual. This will allow for prompt release of an indigo snake.

e. Reporting: Refer to subparagraph "Protection of Gopher Tortoise (GT) Populations (Gopherus polyphemus)" above. Reporting of indigo snake mortality or debilitating injury occurring during the capture, relocation and release phases of a relocation will be reported as required in referenced subparagraph.

3.1.5.16 Blasting

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NOTE: Delete if not applicable. If applicable, be sure to select appropriate Field Office Address shown below.

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In the area where blasting could occur or any area where blasting is required to obtain channel design depth, the following marine mammal and turtle protection measures shall be employed, before, during and after each blast:

a. For each explosive charge placed, detonation will not occur if a marine mammal is known to be (or based on previous sightings, may be) within a circular area around the detonation site with the following radius:

$$r = 260 (W)^{(1/3)}$$

(260 times the cube root of the weight of the explosive charge in pounds)

where:

r = radius of the danger zone in feet.
W = weight of the explosive charge in pounds (tetryl or TNT).

The area described by the above equation shall be known as the danger zone.

b. A marine mammal watch will be conducted by no less than 2 qualified observers from a small watercraft, at least 1/2 hour before and after the time of each detonation, in a circular area at least three times the radius of the above described danger zone (this is called the watch zone).

c. Any marine mammal(s) in the danger zone or the watch zone shall not be forced to move out of those zones by human intervention. Detonation shall not occur until the animal(s) move(s) out of the danger zone on its own volition.

d. In the event a marine mammal or marine turtle is injured or killed during blasting, the Contractor shall immediately notify the Contracting Officer; the Florida Marine Patrol "Manatee Hotline" at 1-800-342-5367; as well as the U.S. Fish and Wildlife Service, [Jacksonville Field Station at 904-232-2580 for North Florida] [Vero Beach Field Office at 561-562-3909 for South Florida] [Boqueron Field Office at 787-851-7273 for Puerto Rico].

3.1.6 Seagrass Protection Measures

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NOTE: Delete if not a requirement.
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a. The Contractor shall instruct all personnel associated with the project of the presence of seagrasses, especially the Federally-listed threatened Johnson's Seagrass (Halophlia johnsonii), and the need to avoid contact with seagrasses.

b. All construction personnel shall be advised that there are civil and criminal penalties for harming or destroying seagrasses, especially Johnson's Seagrass which is protected under the Endangered Species Act of 1973, as amended. The Contractor may be held responsible for any seagrasses harmed or destroyed due to construction activities.

c. The Contractor shall not anchor, place pipeline, or stage equipment in a manner that will cause any damage to seagrasses or hardbottoms. Anchoring, placing pipeline, or staging equipment shall avoid these sensitive areas. If such activities cannot be done without affecting these sensitive areas, the activities shall cease and the Contracting Officer and Chief, Environmental Branch (904-232-1010) shall be immediately notified (no later than the morning following the next working day if the incident occurs after normal working hours). Any actual or potential incident involving damage to, or disturbance of, seagrasses or hardbottoms shall be reported.

3.1.7 Protection of Air Resources

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NOTE: Select appropriate agency.
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The Contractor shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with the applicable air pollution standards of the [State of Florida (Florida Statute, Chapter 403 and others and Chapters 200 series of the FAC)] [Commonwealth] [Territorial] and all Federal emission and performance laws and standards, including the U.S. Environmental Protection Agency's Ambient Air Quality Standards. Information regarding Florida Statutes can be obtained from the following web sites: http://www.dep.state.fl.us/ogc/documents/statutes/text/403.doc; http://www.dep.state.fl.us/ogc/documents/rules/aiur/62-213.doc; and, http://www.dep.state.fl.us/ogc/documents/rules/mainrule.htm.

3.1.7.1 Particulates

Particulates, such as dust, shall be controlled at all times, including weekends, holidays, and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and work areas within or outside the project boundaries free from particulates that would cause air pollution standards to be exceeded or that would cause a hazard or nuisance. The Contractor shall have the necessary equipment and approved methods to control particulates as the work proceeds and before a problem develops.

3.1.7.2 Burning

All burning shall be subject to [State] [Commonwealth] [Territorial] and local requirements, including requirements for burn permits and bans during certain conditions such as droughts.

3.1.7.3 Odors

Odors shall be controlled at all times for all construction activities.

3.1.8 Protection of Sound Intrusions

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NOTE: Use if applicable.
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The Contractor shall keep construction activities under surveillance and control to minimize damage to the environment by noise.

3.2 POSTCONSTRUCTION CLEANUP

The Contractor shall clean up any area(s) used for construction.

3.3 PRESERVATION AND RESTORATION OF LANDSCAPE AND MARINE VEGETATION DAMAGES

The Contractor shall restore all landscape features and marine vegetation damaged or destroyed during construction operations outside the limits of the approved work areas. Such restoration shall be a part of the Environmental Protection Plan as defined in subparagraph "Environmental Protection Plan" of paragraph SUBMITTALS above. This work shall be accomplished at the Contractor's expense.

3.4 MAINTENANCE OF POLLUTION CONTROL FACILITIES

The Contractor shall maintain all constructed facilities and pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.5 CONSTRUCTION FORMS AND DETAILS

From the Jacksonville District Home Page, click the links ORGANIZATIONS, ENGINEERING, then CONSTRUCTION FORMS AND DETAILS. See web site address www.saj.usace.army.mil/cadd/end/construction_forms_and_details.htm.

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