FEBRUARY 2014

ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

DUVAL COUNTY, FLORIDA

U.S. Army Corps
of Engineers

JACKSONVILLE DISTRICT

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FINDING OF NO SIGNIFICANT IMPACT
BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA IMPROVEMENT
DUVAL COUNTY, FLORIDA

I have reviewed the Environmental Assessment (EA) for the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the EA enclosed hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement (EIS). Reasons for this conclusion are, in summary:

a. The proposed action will be conducted in accordance with the Endangered Species Act, and will have no effect on any protected species or their critical habitat. The work will not jeopardize the continued existence of any threatened or endangered species or impact any designated critical habitat.

b. This project has been coordinated with the State of Florida, and all applicable water quality standards will be met.

c. The proposed work has been determined by the State of Florida to be consistent with the Florida Coastal Zone Management Program.

d. The proposed work has been coordinated with the Florida State Historic Preservation Officer and appropriate federally recognized tribes. It has been determined that the proposed dredging and advanced maintenance actions will not adversely affect any properties eligible for or listed on the National Register of Historic Places.

e. There are no known sources of hazardous, toxic, or radioactive wastes in the project area. Sediments and materials for the areas to be excavated during construction have been evaluated to be sandy material, with no indication of contaminants.

f. Public benefits will be provided with stabilized dredged material management area cell dike walls, which will maintain unobstructed channel navigation in the St. Johns River.

g. Measures will be in place during construction to eliminate, reduce, or avoid adverse impacts below the threshold of significance to fish and wildlife resources.

In view of the above and after consideration of public and agency comments received on the project, I conclude that the proposed action for Bartram Island will not result in a significant adverse effect on the human environment. This Finding incorporates by reference all discussions and conclusions contained in the EA herewith and does not require an EIS.

Alan Dodd
Colonel, U.S. Army
District Commander

5 MAR 13
Date

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ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING ACTIVITY AT BARTRAM ISLAND DREDGE MATERIAL MANAGEMENT AREA, DUVAL COUNTY, FLORIDA

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1 PROJECT PURPOSE AND NEED

1.1 PROJECT AUTHORITY

The Jacksonville Harbor Deepening Study was authorized by a resolution from the Committee on Public Works and Transportation, U.S. House of Representatives, dated February 5, 1992, which states:
"Resolved by the Committee on Public Works and Transportation of the United States House of Representatives, That the Board of Engineers for Rivers and Harbors, is requested to review the Report of the Chief of Engineers on Jacksonville Harbor, Florida, published as House Document 214, Eighty-ninth Congress, First Session, and other pertinent reports, to determine whether modification of the recommendations contained therein are advisable at the present time, in the interest of navigation and other purposes." Section 101(b)(8) of the Water Resources Development Act (WRDA) of 1996 authorized a project for mitigation of shoreline erosion and storm damages caused by existing Federal navigation improvements.

1.2 PROJECT LOCATION

Bartram Island, formerly known as Quarantine Island, is approximately 4 miles long and varies in width from less than a quarter mile to about one-half mile. It is located in the Jacksonville Harbor portion of the St. Johns River beginning at around River Mile 10 near the westernmost tip of Blount Island and extends along the river's contour to just beyond the mouth of Dunn Creek, (**Figure 1**). Bartram Island appears on survey maps of the Jacksonville Harbor area as early as 1895, and is apparently a result of dredged material deposition. Bartram Island is owned by the Jacksonville Port Authority (Jaxport) and is an actively managed dredged material placement site and part of dredged material management area (DMMA) component of Jacksonville Harbor and is managed by the U.S. Army Corps of Engineers (USACE).

1.3 PROJECT NEED OR OPPORTUNITY

The northern portion of Bartram Island contains two large disposal areas each secured by an earthen dike. These areas are named Cell A and DellB2. Currently these cells are undergoing maintenance to improve their existing dike and to provide additional storage capacity. Pursuant to ER-200-2-2, this activity qualifies as a National Environmental Policy Act (NEPA) Categorical exclusion for the Corps. The dike is being raised to a finished elevation of 55 feet NAVD 1988, accommodating 2.8 M cubic yards of material placement. The project also includes replacing existing weirs with new systems at each cell for improved water drainage. The current dike raising construction activity at Cell A has experienced erosional damage along the toe of the dike slope, most frequently observed on the north side of the Cell A dike. An erosion control alternative is needed in this critical area to prevent additional erosion from occurring at the base of cell dike wall. This NEPA document will evaluate viable alternatives to prevent additional erosion of the dike wall from occurring.

1.4 AGENCY GOAL OR OBJECTIVE

The goal of the activity is to ensure the integrity of the dike and prevent sedimentation impact to the fringing salt marsh immediately adjacent to the cell structure.

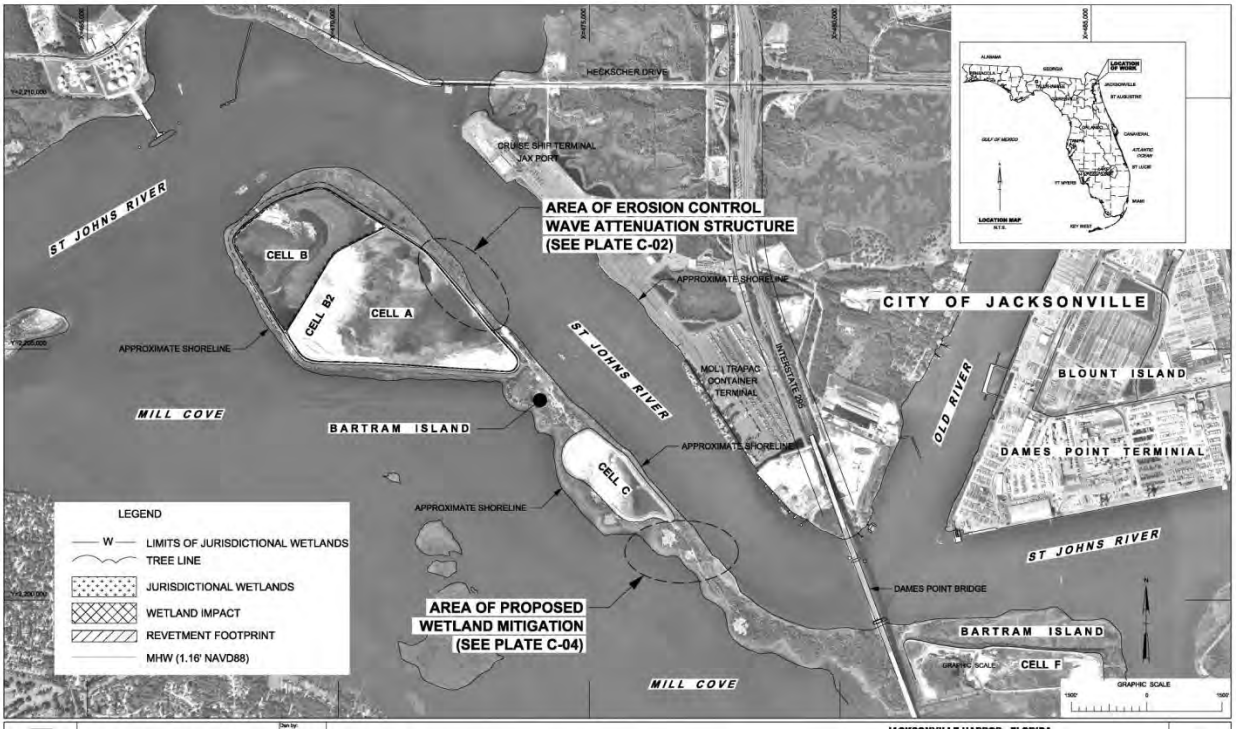

Figure 1. Project Location.

1.5 RELATED ENVIRONMENTAL DOCUMENTS

Related National Environmental Policy Act (NEPA) documents are listed below:

- Feasibility Report and Environmental Impact Statement, Jacksonville Harbor, Florida. 1998.
- General Reevaluation Report and Environmental Assessment, Jacksonville Harbor, Florida. 2002
- Draft Integrated General Reevaluation Report II and Supplemental Environmental Impact Statement, Jacksonville Harbor Navigation Study, Florida 2013.
- Jacksonville Harbor Operation & Maintenance Dredged Material Management Plan (DMMP) 2012 to 2031 Update. 2013

1.6 DECISIONS TO BE MADE

This Environmental Assessment (EA) will evaluate the effects of the proposed action.

1.7 SCOPING AND ISSUES

1.7.1 ISSUES EVALUATED IN DETAIL

The following issues were identified as relevant to the proposed action and appropriate for detailed evaluation:

- Impacts to wetlands;
- Impacts to federally protected species occurring or potentially occurring within the project area (i.e. Florida manatee, Wood Stork);
- Shoreline stability;
- Essential Fish Habitat (EFH);
- Migratory bird protection;
- Impacts to vegetation (native plant communities);
- Water quality degradation;
- Impacts to navigation;
- Cultural resources;
- Recreation; and
- Modification of local aesthetic qualities.

1.7.2 ISSUES ELIMINATED FROM DETAILED ANALYSIS

The proposed action is expected to have little or no impact on native soils, housing, or population dynamics. Therefore, the above issues were not considered important or relevant to the proposed action.

1.8 PERMITS, LICENSES, AND ENTITLEMENTS

Pursuant to Section 401 of the Clean Water Act, water quality certification from the State of Florida would be required to impact waters and/or wetlands associated with the recommended alternative. In accordance with the Coastal Zone Management Act, a Federal Consistency Determination (CD) was prepared under previous NEPA documents for the proposed placement of dredged material. The State, through issuance of Permit Number 16-255718-001-ES, has concurred with the Federal CD this activity is consistent with the Florida Coastal Management Program. Permit Number 16-255718-001-ES expires on January 13. 2016. A permit modification pertaining to the erosion control measure (preferred alternative, section 2.2) was issued by FDEP on February 13, 2014, and is included in Appendix C.

In accordance with Section 7 of the Endangered Species Act (ESA), consultation in regards to the proposed action with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) would occur.

2 ALTERNATIVES

The alternatives section is perhaps the most important component of this EA. This section describes the no-action alternative and the proposed action. Additional project alternatives were described in previous NEPA documents and will not be discussed in this assessment. The beneficial and adverse environmental effects of the alternatives are presented in comparative form, providing a clear basis for choice to the decision maker and the public. A preferred alternative was selected based on the information and analysis presented in the sections on the Affected Environment and Probable Impacts.

2.1 DESCRIPTION OF ALTERNATIVES

2.1.1 ALTERNATIVE 1: No Action (Status Quo)

In the no action alternative, the erosion control structure would not be constructed along the immediate toe of slope within the existing salt marsh. The dike slope would remain vulnerable to wind and wave currents along its base.

2.1.2 ALTERNATIVE 2: Construction of Erosion Control Structure

An erosion control structure will be placed at the toe of the existing slope along the north side of the dike. A permanent wave attenuation structure (WAS) will start at STA 236+00, and will extend around 1,100 feet in length, ending at STA 247+00 at a palm tree hammock as shown on **Figure 2**. The width of footprint will be around 21-ft wide along the outer-most edge at the wetland interface. The structure includes a one-lane narrow road that is required to construct the structure as well as provide access to the outside cell dike wall for monitoring and maintenance. A profile view, **Figure 3,** depicts the tie-in of the dike erosion blanket to the wave attenuation structure including the access road. The design incorporates features to accept a high energy wave reaching the erosion blanket at the toe of the dike side wall and dissipate the energy so that as water enters and exits the structure it no longer has the ability to cause erosion. This design provides long-term protection to the adjacent marsh from deposition of erosional fill material along with stabilization to the dike structure's outside wall facing the St. Johns River.

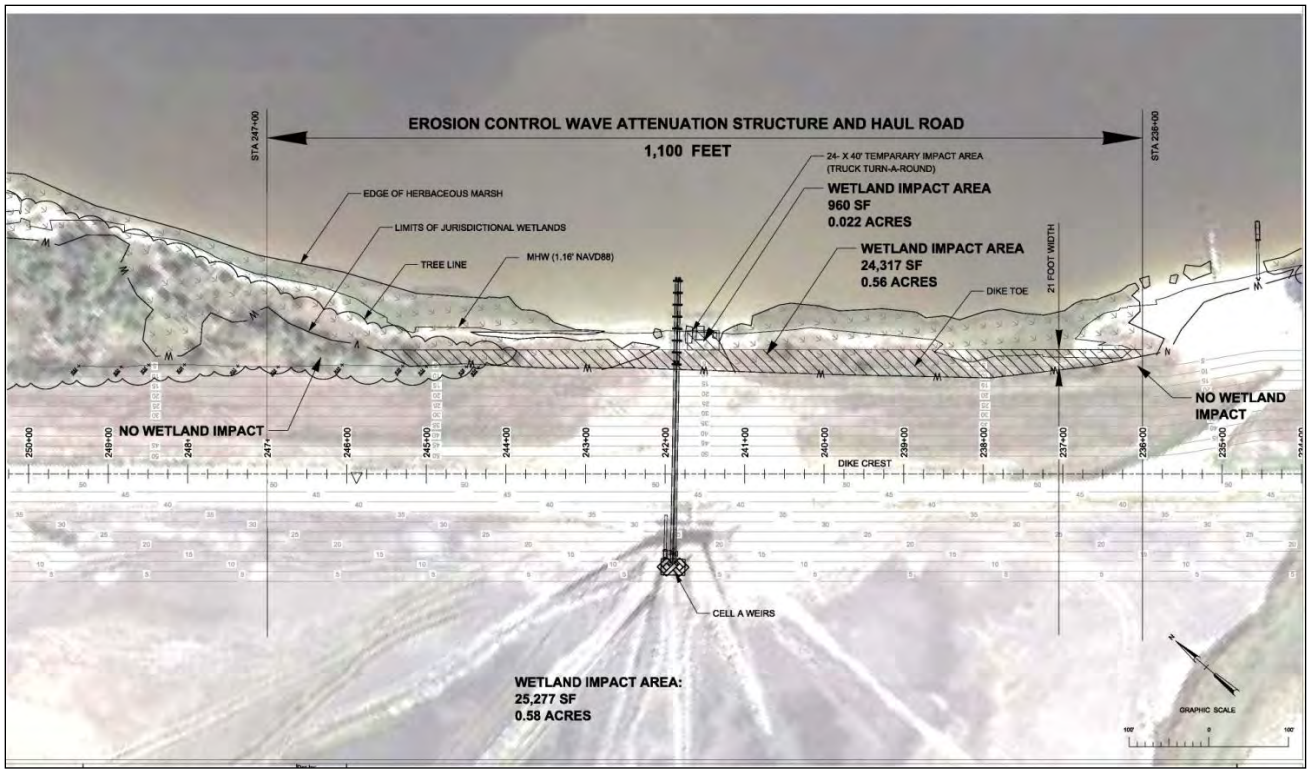

Figure 2. Plan view of impact area from footprint of wave attenuation structure.

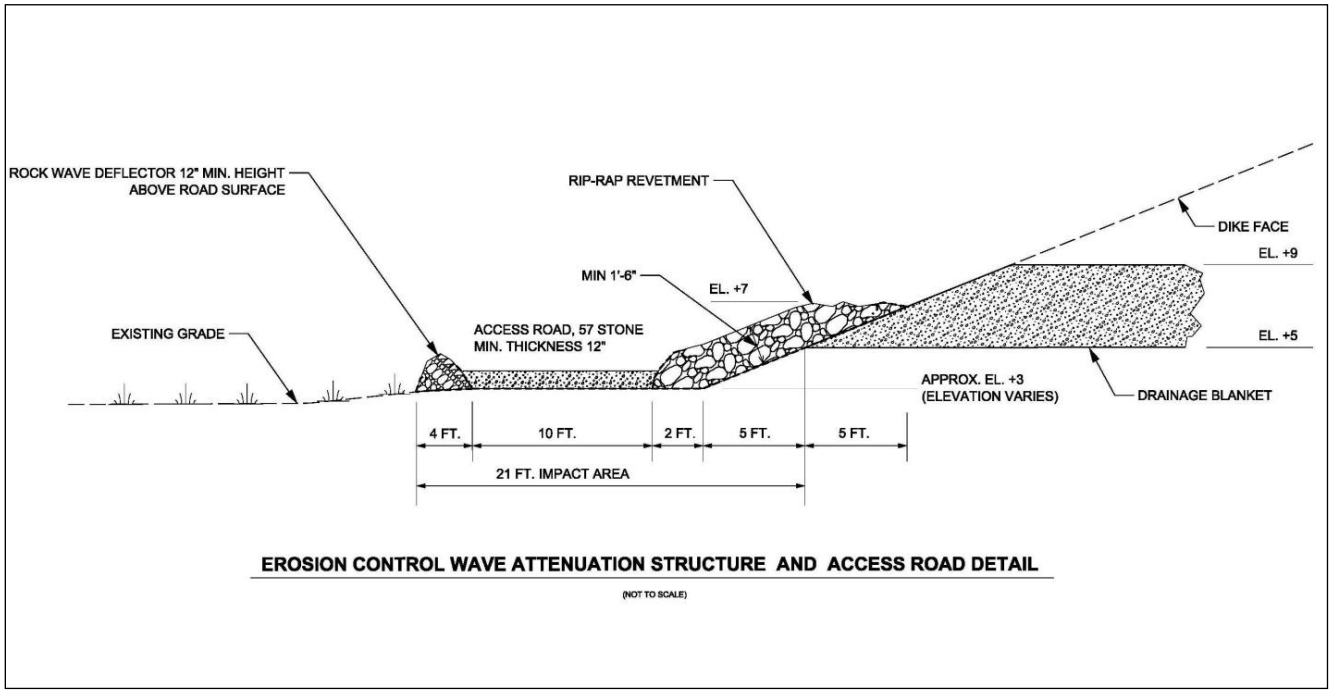

Figure 3. Detail of wave attenuation structure, including a narrow access road, for permanent erosion control along the base of the Cell A dike wall.

2.2 PREFERRED ALTERNATIVE

The preferred alternative is to construct the proposed erosion control structure consisting of the WAS at the location and in the manner as described in Alternative 2. Alternative 2 is also preferred environmentally as the WAS will decrease the likelihood of erosion of the dike's base. The WAS will prevent adverse impact of erosion and consequential deposition of material into the estuary system. The WAS will provide protection to the fringing salt marsh by dissipating high wave energy and releasing the water back to the St. Johns River. Alternative 2 will provide long term protection to the adjacent salt marsh habitat and stabilization to Cell A dike wall.

2.3 COMPARISON OF ALTERNATIVES

Without the construction of the WAS (the no-action alternative), long term stability will be more difficult to establish. Currently, attempts to control erosion of DMMA Cell A/B side-slope on the north side of the island is an on-going activity that includes vertical grading of the dike slope along with the placement of topsoil and seeding with herbaceous (grass) species. However, due to recent weather conditions, onsite managers have observed isolated erosional events that have resulted in deposition of fill at the foot of the dike. Activities are underway to restore the fringing salt marsh to pre-event condition; additionally, new erosion control silt fencing has been installed and is monitored regularly to address concerns before they result in adverse impact. It is for this reason a permanent structure is proposed for construction along the cell dike toe of slope at the location where damage is most likely to occur. The WAS will benefit the existing estuary and St. Johns River by protecting them from further damage from fill deposition as more intense storms are likely to occur in the future.

2.4 MITIGATION

A proposed mitigation activity would compensate for 0.58 acre of functional loss of high marsh within the footprint of the wave attenuation structure by replacing this community at another location on Bartram Island between active DMMA Cells C and F. Creation of a wetland mitigation site is proposed for a previously disturbed, fallow upland area which will restore the function of a salt marsh estuarine system. The proposed mitigation will consist of salt marsh creation located on-site at a former dredged material deposition site, see **Figure 4.** The creation of the 6.46-acre low and high salt marsh will establish native community for vegetation, benthic organisms, and enhance wildlife habitat.

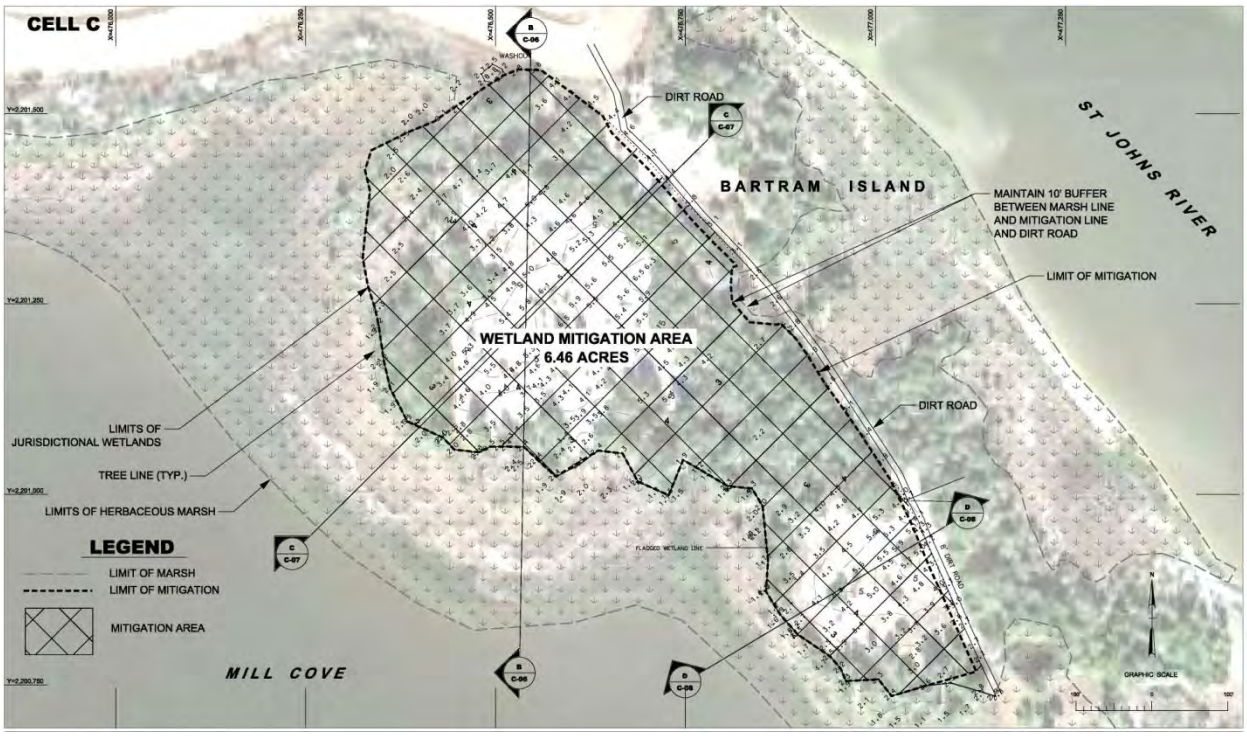

Figure 4. Proposed mitigation area will consist of 6.46 acres of high and low salt marsh created from former upland dredge material placement site.

Impact from the WAS construction will be compensated by dedication of 0.88 acres of the salt marsh mitigation. The remaining acreage will be available for unidentified cumulative impacts that may occur in the reasonably foreseeable future through expansions projects associated with Bartram Island. **Any available portion of the on-site mitigation area will be restricted to impacts solely occurring on Bartram Island by Jacksonville Port Authority (Jaxport) or USACE operations of the DMMA and ancillary facilities; no "credits" will be provided for other off-site Jaxport properties or projects. Likewise, no credits will be sold for non-Jaxport projects.** Details of the mitigation, including the UMAM analysis, are discussed in the Bartram Island Mitigation Plan, Appendix F.

Table 1. Summary of Direct and Indirect Impacts

ENVIRONMENTAL FACTOR	ALTERNATIVE 1: NO ACTION (STATUS QUO)	ALTERNATIVE 2: PREFERRED ALTERNATIVE
FISH & WILDLIFE RESOURCES	Risk of deposition of erosional fill material into fringing salt marsh will adversely affect fish and wildlife by habitat degradation.	A small portion of the salt marsh will be permanently impacted by the action; however, benefit to the remaining salt marsh includes protection from erosional degradation, thus stabilizing the habitat.
THREATENED & ENDANGERED SPECIES	No impact to listed species as they are unlikely to use this habitat (manatee, sea turtles, wood stork).	No impact to listed species as they are unlikely to use this habitat (manatee, sea turtles, wood stork).
MIGRATORY BIRDS	Risk of deposition of erosional fill material into fringing salt marsh could adversely affect migratory birds through habitat degradation.	A small portion of the salt marsh will be permanently impacted by the action; however, benefit to the remaining salt marsh includes protection from erosional degradation, thus providing continued habitat resources. Salt marsh creation (mitigation plan) will enhance migratory bird habitat on Bartram Island.
ESSENTIAL FISH HABITAT	Infaunal species in the benthic habitat could be impacted from risk of depositional fill from erosion of the dike wall.	Most of the area of impact is not within essential fish habitat. Action will provide protection to existing infaunal species in the benthic community from deposition of fill on this habitat.
WETLAND SHORELINE STABILITY	The wetland shoreline will struggle to maintain stability from the risk of fill deposition as the cell dike wall establishes long term stabilizing measures. Storm events may accelerate adverse effects of erosion.	The action will provide long term stability to the fringing salt marsh along the shoreline, although a small portion of the marsh will be directly impacted by construction of the wave attenuation structure.
WATER QUALITY	Risk of deposition of fill into marsh could cause minor temporary impact of turbidity to surface water quality of the St. Johns River.	The proposed action will minimize risk of degraded water quality by benefit of stabilizing cell wall and slope from erosion. Temporary impact during construction may occur to immediately adjacent surface water.
NAVIGATION	Navigation is not likely to be impacted	Navigation is not likely to be impacted
ECONOMICS	Economics are not likely to be impacted	Economics are not likely to be impacted
CULTURAL RESOURCES	No Cultural Resources would be affected.	No Cultural Resources would be affected.
RECREATION	Bartram Island is a privately owned active industrial site. No impact to recreation activities are anticipated as access to the site for recreation activities is prohibited.	Bartram Island is a privately owned active industrial site; access for recreation is prohibited. No impact to recreation activities are anticipated to occur as a result of the proposed action.
AESTHETICS	Aesthetic view shed is not likely to be adversely impacted.	Aesthetic view shed is not likely to be adversely impacted.
NOISE	No effect	Temporary effect during construction activities.

3 AFFECTED ENVIRONMENT

The Affected Environment section succinctly describes the existing environmental resources of the areas that would be affected if any of the alternatives were implemented. This section describes only those environmental resources that are relevant to the decision to be made. It does not describe the entire existing environment, but only those environmental resources that would affect or that would be affected by the alternatives if they were implemented. This section, in conjunction with the description of the "no-action" alternative, forms the base line conditions for determining the environmental impacts of the proposed action and reasonable alternatives.

3.1 GENERAL ENVIRONMENTAL SETTING

Bartram Island appears on survey maps of the Jacksonville Harbor area as early as 1895 apparently as a result of dredged material placement. Placement of dredged material in subsequent years behind the Dames Point Training Wall further modified Bartram Island. Currently, multiple cells are used as containment for dredged material from operation and maintenance of the St. Johns River Federal Channel as well as other waterways within the lower River basin.

3.1.1 SOILS

The Aquic Quartzipsamments soils associated with the site are indicative of its past and current use as a placement site for dredged river material (USACE, 1998). An Aquic Quartzipsamments soil is identified by loamy fine sand or coarser material dominated by quartz (silica) grains where seasonal saturation or seasonal ground water fluctuations may be typical. These soils are typically of a texture that is subjected to movement by water in a saturated environment, or wind if it is dry, i.e. where there is little to bind the soil particles together (Jennifer Marriott-Kramer, soil scientist, personal correspondence). The soils on-site are highly disturbed from active dredged material placement and management, and may not exhibit conventional soil characteristics indicative of wetland salt marsh or upland natural communities.

3.1.2 VEGETATION

A broad salt marsh, interspersed with slightly elevated tree and shrubby islands, occurs along the perimeter of Bartram Island. Vegetation associated with the high marsh includes glasswort (*Salicornia virginica*), saltwort (*Batis maritima*), salt grass (*Distichlis spicata*), marsh hay grass (*Spartina patens*), needlerush *(Juncus roemerianus*), and various shrubs including sea oxeye (*Borrichia frustescens*), saltbush (*Bachharis halimifolia*), and marsh elder (*Iva frutescens*). The lower, more inundated areas are characterized by a monoculture of smooth cordgrass (*Spartina alterniflora*). The small mesic islands are generally vegetated with cabbage palm (*Sabal palmetto)*, Southern red cedar, marsh elder, and saltbush. The depression areas in the western section of the island are primarily vegetated with saltbush and various grasses (*Panicum* spp*, Paspalum* spp). The invasive exotic salt cedar has also been observed at Bartram Island, but this plant has been aggressively controlled by the USACE and Jacksonville Port Authority.

As a result of the continued dredged material placement, much of the remainder of the island has been occupied by successional upland plants. Grasses and other herbaceous ground cover are prominent on the dike slopes and are also sparsely distributed within largely inactive dredged material areas throughout the island.

The herbaceous, shrub, and tree vegetation of the fringing marsh and mesic woodlands along the perimeter of Bartram Island provide beneficial habitat to wildlife and resident or migratory birds. No wading bird rookeries have been observed by USACE biologists while onsite. Tracks from the northern raccoon (*Procyon lotor*), coyote (*Canis latrans*), and feral dog (*Canis lupus familiaris*) are observed. One lone gopher tortoise (*Gopherus polyphemus)* is known to inhabit an upland former dredged material placement site on the eastern side of Bartram Island.

3.2 PHYSICAL CONDITIONS

Bartram Island is an active construction site that receives dredge materials from routine maintenance of the lower St. Johns River. The material is contained in several DMMA cells constructed from previously dredged material. Currently, two DMMA cells (A and B2) are being expanded vertically to accommodate additional dredged material for placement in near future maintenance events. These activities demonstrate the dynamic nature of the routinely disturbed island. An erosion gravel blanket is at the foot of the dike, which consists of aggregate limestone rock with pore spaces that collect shifting sand. As the pore spaces fill and the material settle, the aggregate and sand form a conglomerate that anchors the dike at its toe.

Due to location in the lower St. Johns River (LSJR), Bartram Island is subjected to off-site influences affecting the fringing salt marsh that circumnavigates its perimeter. Specifically, abnormally large, impact-inducing waves are caused by several sources including high seasonal tides, storm surge, strong wind, and vessel wakes. Tides within the Dames Point region can vary significantly in height, with ranges from 0.1-ft at low tide to 4.1-ft at high tide during a full moon, and 0.5-ft to 3.8-ft when less than 5% of the moon is visible (http://www.saltwatertides.com/cgi-local/seatlantic.cgi). This variation can push tidal waters against the adjacent dike or into the uplands on-site.

An estuarine wetland consisting of a high and low salt marsh occurs along the base of the DMMA dike side slope. The wetland was formed from disturbance as a result of on-going construction and maintenance activities over many years. The high marsh grades into a low marsh beyond the project limit and extends to open water of the LSJR. The salt marsh is brackish within a mesohaline (average salinity of 14.5 parts per thousand (ppt)) riverine zone, and is subjected to daily tidal influence (SRRLSJRB, 2013). As previously described, the marsh is frequently subjected to high wave energy which often overtops the erosion control silt fence, the first line of defense from the adverse effect of erosion from the side slope depositing material into the marsh.

3.3 THREATENED AND ENDANGERED SPECIES

3.3.1 WEST INDIAN MANATEE

The West Indian (Florida) manatee (*Trichechus manatus latirostris*) is known to occur in the study area primarily during the spring, summer, and fall months. As water temperatures decline during the winter months, manatees generally leave the St. Johns River, as well as the Intracoastal Waterway (IWW), and move to warm water refugia such as springs or industrial warm water discharges (USFWS website, 2014). Since 1993, researchers at Jacksonville University have been conducting year round bi-weekly aerial and aquatic manatee surveys of the St. Johns River and other water bodies within Duval County. Surveys conducted during 2009 through 2011 recorded approximately 70 manatees within the surveyed area. During May and June, 2012, between 172 and 88 manatees were sighted in the lower St. Johns River, respectively. Most of the sightings occurred south of Duval County. These data can be viewed at http://www.ju.edu/marco/.

3.3.2 WOOD STORK

Wood storks (*Mycteria americana*) are large, long-legged wading birds that primarily occur in the southeastern United States with nesting areas mostly restricted to Florida, Georgia, and South Carolina. A highly colonial species, wood storks generally nest in large rookeries and feed in flocks. The primary habitat for wood storks includes freshwater and estuarine wetlands. Nesting mostly occurs in cypress forests and mangrove swamps. Wood storks feed in freshwater marshes, tidal creeks and pools, and manmade aquatic habitats such as roadside ditches and retention ponds. This type of habitat is not found on Bartram Island.

Presently, the wood stork breeding population is believed greater than 8,000 nesting pairs. The southeast United States breeding population of the wood stork declined from an estimated 20,000 pairs in the 1930's to about 10,000 pairs by 1960; and to a low of approximately 5,000 pairs in the late 1970's (USFWS 2005). Since 2003, the 3-year population averages have exceeded 6,000 nesting pairs. Although these averages fall below the benchmark of 10,000 nesting pairs identified in the recovery plan to delist the species, it does meet the criteria to downgrade the species from endangered to threatened. As such, the USFWS has proposed to reclassify the continental United States breeding population of wood stork from endangered to threatened under the Endangered Species Act of 1973. The proposed rule is currently under review. Although none have been observed on or adjacent to Bartram Island, wood storks likely feed within the tidal channels and pools and other shallow water habitats associated with the St. Johns River. Bartram Island is within the 13-mile foraging buffer of four nesting colonies of Wood Storks in Duval County: Jacksonville Zoo, Cedar Point Road, Dee Dot Ranch, and Pumpkin Hill.

3.3.2 ATLANTIC STURGEON/SHORTNOSE STURGEON

Historically, the range of the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and shortnose sturgeon (*Acipenser brevirostrum)* included major estuary and river systems from Labrador to the St. Johns River, Florida (NMFS website, 2014). Their populations have been decimated due to overharvesting. The Atlantic States Marine Fisheries Commission in 1998 banned harvest through 2038 along the entire Atlantic Seaboard. The remaining main threats to the recovery of this species are dams located on Atlantic Seaboard Rivers, which block sturgeon access to historical spawning areas. Additional threats to the sturgeon in the St. Johns River include poor water quality, fishery by-catch, and habitat degradation issues. Florida presently has no documented breeding population of Atlantic sturgeon in either the St. Johns or St. Marys Rivers.

3.3.1 SEA TURTLE

Sea turtles that are frequently observed in Duval County occur mostly along the shoreline of the Atlantic Ocean where more suitable habitat exists for nesting and foraging. Within the St. Johns River, green (*Chelonia mydas)* and loggerhead (*Caretta caretta)* sea turtles have been observed at the mouth of the river around the Mayport Naval Station where foraging opportunities exist. No sea turtles have been observed on the shoreline of Bartram Island or in waters immediately adjacent to the island. The fringing salt marsh is not suitable habitat for nesting as no exposed beaches are present.

3.4 MIGRATORY BIRDS

The Migratory Bird Treaty Act applies to over 800 species of migratory birds and protects both live and dead birds and bird parts (including nests, feathers, and eggs). Over 200 species, including full time residents and seasonal migratory bird species visit the St. Johns River, as it lies along the Atlantic flyway for birds migrating to winter habitat in the Caribbean, Central and South America, and Florida (SJRWMD 2012: Chapter 13 Appendix 3).

Some species of migratory birds are likely to nest in these habitats. Nesting species at the nearby Timucuan Ecological and Historic Preserve include at least the following species managed as part of the Migratory Bird Treaty Act of 1918 (http://flshorebirdalliance.org/about_us-pages/Timucuan.html):

- Wilson's Plover *Charadrius wilsonia*
- American Oystercatcher *Haematopus palliates*
- Willet *Tringa semipalmata*
- Laughing Gull *Leucophaeus tricilla*
- Black Skimmer *Rynchops niger*
- Least Tern *Sternula anitllarum*
- Royal Tern *thalasseus maximus*
- Sandwich Tern *Thalasseus sandivcensis*
- Gull-billed Tern *Gelochelidon nilotic*
- American Avocet *Recrvirostra Americana*
- Black-necked Stilt *Himantopus mexicanus*

Numerous species including both migratory and non-migratory species have been recorded as part of monitoring efforts since 2006 at dredged material management areas maintained by the USACE (Bartram Island, Buck Island). Of the species listed above, the Willet, American Oystercatcher, American Avocet, Black-necked Stilt, and various terns and gulls are frequently observed on Bartram Island.

3.5 ESSENTIAL FISH HABITAT

Essential fish habitat (EFH) is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" in the Magnuson-Stevens Fishery Conservation and Management Act. EFH includes all types of aquatic habitat such as wetlands, estuary, and brackish rivers. The project footprint is within high marsh that is not supportive to

fish species due to intermittent exposure of substrate at mean low tide. Species managed by the NMFS that may occur adjacent to the project within the vicinity can be found in **Table 2.**

Table 2. Summary of managed species identified by the NMFS that are known to occur in Lower St. Johns River near Bartram Island, Duval County, Florida.

Common Name	Species	Presence
Summer Flounder	*Paralichthys denatatus*	Year Round
Bluefish	*Pomatomus saltatrix*	Year Round
Coastal Migratory Pelagics	5 species	Summer
Snapper-Grouper Complex	73 species	Summer
Penaeid Shrimp	3 species	Summer/Winter
Atlantic Sharpnose Shark	*Rhizoprionodon terraenvae*	Year Round
Blacktip Shark	*Carcharinus limbatus*	Summer
Blacknose Shark	*Carcharhinus acronotus*	Summer
Bonnethead Shark	*Sphyrna tiburo*	Year Round
Bull Shark	*Carcharhinus leucas*	Unknown/Rare
Dusky Shark	*Carcharhinus obscures*	Unknown/Rare
Finetooth Shark	*Carcharhinus isodon*	Unknown/Rare
Lemon Shark	*Negaprion brevirostris*	Unknown/Rare
Nurse Shark	*Gingloymostoma cirratum*	Unknown/Rare
Sandbar Shark	*Carcharhinus plumbeus*	Unknown/Rare
Sand Tiger Shark	*Odontaspis taurus*	Unknown /Rare
Scalloped Hammerhead	*Sphyrna lewini*	Seasonal Migration
Spinner Shark	*Carcharhinus brevipinna*	Seasonal Migration
Tiger Shark	*Galeocerdo cuvieri*	Unknown/Rare

Source: Dial Cordy and Associates, 2011.

Species Common name (*Scientific name)*	Life Stage	Substrate Preference	
		Unconsolidated Sediment	Salt Marsh & Tidal Channel
Ladyfish (*Elops saurus)*	A	A	
Striped anchovy (*Anchoa hepsetus)*	A, J, L	A, J, L	
Bay anchovy (*Anchoa mitchilli)*	A, J, L	A, J, L	
Scaled sardine (*Harengula jaguana)*	J	J	
Atlantic thread herring (*Opisthonema oglinum)*	A, J, L	A, J, L	
Sheepshead minnow (*Cyprindon variegates)*	A, J, L	A, J, L	A, J, L
Atlantic menhaden (*Brevoortia tyrannus)*	A, J, L	A	J, L
Yellowfin menhaden (*Brevoortia smithi)*	A, J, L	A	J, L
Bay scallop (*Argopecten irradians)*	A, J, L	A, J	L
Atlantic rangia (*Rangia cuneata)*	A, J, L	A, J, L	A, J, L
Quahog (*Mercenaria sp.)*	A, J	A, J	
Grass shrimp (*Palaemonetes pugio)*	A, J		A, J
Striped mullet (*Mugil cephalus)*	A, J	A, J	
Spot (*Leiostomus xanthurus)*	A, J	A	
Atlantic croaker (*Micropogonias undulates)*	A, J	A, J	
Silversides (*Menidia sp.)*	A, J, L	A, J, L	A, J, L
American eel (*Anguilla rostrata)*	A, J, L	J, L	A, J, L
Hardhead catfish (*Arius felis)*	A, J, L	A, J, L	

Gafftopsail catfish (*Bagre marinus)*	A, J, L	A, J, L	
Inshore lizardfish (*Synodus foetens)*	A, J, L		A, J, L
Oyster toadfish (*Opsanus tau)*	J	J	
Atlantic needlefish (*Strongylura marina)*	A, J, L	A, J, L	
Timucu (*Strongylura timucu)*	J	J	
Killifish (*Fundulus sp.)*	A, J, L		A, J, L
Sailfin molly (*Poecilia latipinna)*	A, J, L		A, J, L
Pipefish (*Sygnathus sp.)*	A, J, L		A, J, L
Sea robin (*Prionotus sp.)*	J	J	
Mojarra (*Eucinostomus sp.)*	A, J	A, J	
Pinfish (*Lagodon rhomboides)*	A, J, L	A, J, L	A, J, L
Silver perch (*Bairdiella chrysoura)*	A, J, L	A, J, L	
Kingfish (*Menticirrhus sp.)*	A, J	A, J	
Gobies (*Bathygobius sp., Gobionellus sp.)*	A, J, L	A, J, L	A, J, L

Source: Dennis et al 2001; SAFMC 1998; University of Florida 2008.
A=adult; J=juvenile; L=larvae

3.6 WATER QUALITY

3.6.1 WATER COLUMN

The waters adjacent to the project area are classified by the State of Florida as Class III waters (FL Ch 62-302, F.A.C), suitable for recreation as well as propagation and maintenance of a healthy and well-balanced population of fish and wildlife. Water quality within the estuarine coastal areas of Duval County is highly variable.

3.6.2 SEDIMENT

The sediment within the area of the proposed action is highly disturbed and is derived from the placement of dredged fill material on Bartram Island. The material originated from dredge maintenance events of the St. Johns River Federal channel, along with Jacksonville Harbor side channels, shipping berths, and residential access canals along the lower portion of the River. The grain size of the material ranges from medium sand to fine-grained silt or clay, based on visual observation. No geo-technical survey has been conducted of the proposed construction zone for the WAS.

3.7 NAVIGATION

The St. Johns River contains a Federal Channel that is several hundred feet adjacent to the land edge of Bartram Island. The proposed project is at the base of the cell dike sloped wall outside of any navigation channel.

3.8 CULTURAL RESOURCES

The area surrounding the project has been subjected to previous archaeological investigations and no resources have been identified. Studies include: *A Cultural Resources Assessment Survey and Archeological Testing of the Proposed JPA Dames Point Marine Terminal, Duval County, Florida* by Robert Johnson in 2006 and the *Cultural Resources Remote Sensing Survey*

of the Jacksonville Harbor Project GR22, Duval County, Florida by Panamerican Consultants Inc in 2010. In addition, the Corps has previously determined that the project which this mitigation area will serve did not have any potential to effect historic properties. This determination of effect was consulted on in 2005 whereby the SHPO concurred with the Corps finding that the dike raising would have no effect (DHR No. 2005-2436)

3.9 RECREATION

Bartram Island is owned and controlled by Jaxport. Access is prohibited to the public for recreational usage. The site is an active dredged material management facility with on-going industrial activity by heavy equipment and periodic placement of dredged material. It is in the interest of public safety that the entire island is closed to the public for recreational usage.

3.10 AESTHETICS

Bartram Island is located within the LSJR of the Jacksonville Harbor, and is an active construction site along with a managed area frequently receiving dredged material. Aesthetically, the island does not offer a quality view shed to observers along the River corridor, or among nearby residents. The island straddles the heavily traveled Interstate 295 corridor that allows an aerial view of the island from the Dames Point Bridge. The proposed action's location along the toe of the dike on the north side of the island is mostly out of view with exception to observers on vessels as they pass by.

3.11 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

There are no known sources of hazardous, toxic, or radioactive wastes in the project area.

3.12 NOISE

The ambient sound level of a region is the total noise generated, including sounds from natural and artificial sources. The magnitude and frequency of environmental noise may vary considerably over the course of a day and throughout the month because of changing weather conditions and seasonal vegetative cover. Background noise from vessel traffic and construction activities appears to be moderate.

4 ENVIRONMENTAL EFFECTS

This section is the scientific and analytic basis for the comparisons of the alternatives. See **Table 1** in **Section 2** Alternatives, for summary of impacts. The following includes anticipated changes to the existing environment including direct, indirect, and cumulative effects.

4.1 FISH AND WILDLIFE RESOURCES

4.1.1 ALTERNATIVE 1: No Action (Status Quo)

Risk of deposition of erosional fill material into the fringing salt marsh could occur from high wave action as a result of severe storm, seasonally high tides, or other sources. Without a permanent structure to abate the energy generated by the high waves, the base of the cell dike wall will continue to be undermined which could lead to its failure and consequential significant impact to wildlife resources and habitat.

4.1.2 ALTERNATIVE 2: Construction of Erosion Control Structure

The proposed action of the WAS construction will have direct impact to habitat for fish and wildlife species. Impacts to the benthic community in the substrate will be offset by the creation of salt marsh proposed in the mitigation plan. This newly created habitat would allow additional habitat for annelids and arthropods to re-colonize the sediments, thus providing shelter and food resources for migratory and resident birds, small mammals and other wildlife.

4.2 THREATENED AND ENDANGERED SPECIES

Pursuant to Section 7 of the Endangered Species Act (ESA), coordination with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) in regard to this project is ongoing. The Corps has determined that the proposed action will not affect any species protected under the ESA. These species fall under the jurisdiction of the FWS. The Corps' final determination relative to project impacts and the need for mitigation measures is subject to review by and consultation with the FWS and NMFS.

4.2.1 SEA TURTLES

4.2.1.1 ALTERNATIVE 1: No Action (Status Quo)

No impacts to sea turtle nesting or foraging habitat would be anticipated.

4.2.1.2 ALTERNATIVE 2: Construction of Erosion Control Structure

Construction activities within the salt marsh impact zone and mitigation area will have no affect to sea turtle nesting or foraging activities. Bartram Island is several miles upstream of typical sea turtle foraging and nesting areas. The habitat needed for these activities by sea turtles does not exist on or adjacent to Bartram Island. No additional impacts to sea turtle nesting or foraging would be anticipated.

4.2.2 MANATEES

4.2.2.1 ALTERNATIVE 1: No Action (Status Quo)

No impacts to manatees would be anticipated.

4.2.2.2 ALTERNATIVE 2: Construction of Erosion Control Structure

This project would have no effect to manatees. All work related to the construction of the WAS erosion control feature will be conducted from the upland landward side of Bartram Island. Any ancillary water activity, such as transportation of materials and equipment, would be subject to the standard manatee protection measures.

4.2.3 WOODSTORK

4.2.3.1 ALTERNATIVE 1: No Action (Status Quo)

No impacts to woodstorks would be anticipated.

4.2.3.2 ALTERNATIVE 2: Construction of Erosion Control Structure

No impacts to woodstork nesting or foraging would be anticipated as no suitable habitat is present within the project limits at Bartram Island.

4.3 MIGRATORY BIRDS

4.3.1 ALTERNATIVE 1: No Action (Status Quo)

No adverse impacts to migratory birds would be anticipated.

4.3.2 ALTERNATIVE 2: Construction of Erosion Control Structure

No adverse impacts to migratory birds would occur as a result of this project. However, if any construction were performed from April 1 to August 31, the Corps' standard Migratory Bird Protection Plan (MBPP) would be implemented.

4.4 ESSENTIAL FISH HABITAT

4.4.1 ALTERNATIVE 1: No Action (Status Quo)

Potential erosional events from wave action due to storm events, vessel wakes, seasonal high tide, or wind could result in adverse impact to the salt marsh substrate within the benthic community of the perennially watered environment from deposition of fill material in the low salt marsh. A catastrophic storm or wave event that triggers deposition of fill into the salt marsh's perennially watered environment poses a substantial adverse impact on EFH or federally managed fisheries. The substrate of the project area is naturally dynamic and unconsolidated.

4.4.2 ALTERNATIVE 2: Construction of Erosion Control Structure

USACE has determined that the proposed action within a high salt marsh would not have a significant adverse impact on EFH or federally managed fisheries within the LSJR. Beneficially, construction of the proposed erosion control structure would lessen the probability for any catastrophic erosion/deposition events, thus resulting in less adverse impact to adjacent EFH over time. The displacement of benthic habitat within the footprint of the WAS would impact 0.58 acres of intermittently flooded high salt marsh (**Figure 3)** and cause a permanent loss of benthic organisms in this area. However, the mitigation area, also located on Bartram Island, will compensate for this loss by the creation of 0.88 acres of new benthic habitat on the south side of the island (**Figure 4)**. Turbidity outside of the immediate project limits is not anticipated to occur as the actual construction operations will be conducted from the landward side of Bartram Island. It is important to note both the proposed project and mitigation areas are not within an open water environment, but rather, they are tidally influenced.

4.1 FISH AND WILDLIFE RESOURCES

4.1.1 ALTERNATIVE 1: No Action (Status Quo)

Risk of deposition of erosional fill material into the fringing salt marsh could occur from high wave action as a result of severe storm, seasonally high tides, or other sources. Without a permanent structure to abate the energy generated by the high waves, the base of the cell dike wall will continue to be undermined which could lead to its failure and consequential significant impact to wildlife resources and habitat.

4.1.2 ALTERNATIVE 2: Construction of Erosion Control Structure

The proposed action of the WAS construction will have direct impact to habitat for fish and wildlife species. Impacts to the benthic community in the substrate will be offset by the creation of salt marsh proposed in the mitigation plan. This newly created habitat would allow additional habitat for annelids and arthropods to re-colonize the sediments, thus providing shelter and food resources for migratory and resident birds, small mammals and other wildlife.

4.2 THREATENED AND ENDANGERED SPECIES

Pursuant to Section 7 of the Endangered Species Act (ESA), coordination with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) in regard to this project is ongoing. The Corps has determined that the proposed action will not affect any species protected under the ESA. These species fall under the jurisdiction of the FWS. The Corps' final determination relative to project impacts and the need for mitigation measures is subject to review by and consultation with the FWS and NMFS.

4.2.1 SEA TURTLES

4.2.1.1 ALTERNATIVE 1: No Action (Status Quo)

No impacts to sea turtle nesting or foraging habitat would be anticipated.

4.2.1.2 ALTERNATIVE 2: Construction of Erosion Control Structure

Construction activities within the salt marsh impact zone and mitigation area will have no affect to sea turtle nesting or foraging activities. Bartram Island is several miles upstream of typical sea turtle foraging and nesting areas. The habitat needed for these activities by sea turtles does not exist on or adjacent to Bartram Island. No additional impacts to sea turtle nesting or foraging would be anticipated.

4.2.2 MANATEES

4.2.2.1 ALTERNATIVE 1: No Action (Status Quo)

No impacts to manatees would be anticipated.

4.2.2.2 ALTERNATIVE 2: Construction of Erosion Control Structure

This project would have no effect to manatees. All work related to the construction of the WAS erosion control feature will be conducted from the upland landward side of Bartram Island. Any ancillary water activity, such as transportation of materials and equipment, would be subject to the standard manatee protection measures. Due to the intermittently exposed substrate at low tide for both the impact zone and mitigation area, t.

4.7 NAVIGATION

4.7.1 ALTERNATIVE 1: No Action (Status Quo)

Impact to navigation is not expected to occur as the project area is not within a navigable channel.

4.7.2 ALTERNATIVE 2: Construction of Erosion Control Structure

Impact to navigation is not expected to occur as the proposed action is not within a navigable channel.

4.8 CULTURAL RESOURCES

4.8.1 ALTERNATIVE 1: No Action (Status Quo)

No impacts to cultural resources are anticipated to occur as a result of the no-action alternative.

4.8.2 ALTERNATIVE 2: Construction of Erosion Control Structure

A determination that no historic properties will be affected by the proposed project has been made by the Corps. Consultation on this project with the State Historic preservation Officer and appropriate federally recognized tribes is ongoing. It is expected that this determination will be concurred with based on the fact that no resources have been identified by the previous surveys of the area (See section 3.8). Previously the SHPO concurred with the Corps determination that the dike raising would have no effect on historic properties (DHR No 2005-2436).

4.9 RECREATION

4.9.1 ALTERNATIVE 1: No Action (Status Quo)

Recreational usage by the public is prohibited on Bartram Island due to a risk to public safety. Recreational boating on waters adjacent to the shoreline will not be affected.

4.9.2 ALTERNATIVE 2: Construction of Erosion Control Structure

Recreational usage by the public is prohibited on Bartram Island due to a risk to public safety. The island is a privately owned facility that is an active industrial dredged material management site and is in a constant state of construction. Recreational boating on waters adjacent to the shoreline near the project area will not be affected.

4.10 AESTHETICS

4.10.1 ALTERNATIVE 1: No Action (Status Quo)

Construction activities at Bartram Island are on-going with heavy equipment and exposed material on the cell dikes. The occurrence of a possible dike wall failure, although unlikely, would have an impact to the view of the island by passing boaters or motorist overhead on I-295.

4.10.2 ALTERNATIVE 2: Construction of Erosion Control Structure

Construction activities at Bartram Island are on-going with heavy equipment and exposed material on the cell dikes. The proposed project will have a temporary impact on the view shed during construction of the erosion control structure and salt marsh creation associated with the mitigation effort. The permanent structure, once completed, will have minimal impact to the overall view in the immediate vicinity of the St. Johns River. The completed salt marsh on the

south side of the island will enhance the overall aesthetic view for residents on the south shoreline of the river.

4.11 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

4.11.1 ALTERNATIVE 1: No Action (Status Quo)

There are no known sources of hazardous, toxic, or radioactive wastes in the project area.

4.11.2 ALTERNATIVE 2: Construction of Erosion Control Structure

There are no known sources of hazardous, toxic, or radioactive wastes in the project or mitigation areas. Sediments and materials for the areas to be excavated during construction have been evaluated to contain sandy material, with no indication of contaminants. However, the site would be re-mediated in the event contaminants were unexpectedly found during construction of the WAS and mitigation features.

4.12 NOISE

4.12.1 ALTERNATIVE 1: No Action (Status Quo)

Construction activity associated with normal maintenance operations associated with Bartram Island DMMA has continuous noise due to the industrial land use of the facility. However, because Bartram Island is completely surrounded by a large body of water within the LSJR, noise levels are isolated from the human environment away from the island.

4.12.2 ALTERNATIVE 2: Construction of Erosion Control Structure

Construction activity associated with the proposed project would not result in increased noise over the current level. The site is an on-going active construction site that has low-grade noise from heavy equipment operation. However, because Bartram Island is completely surrounded by a large body of water within the LSJR, noise levels are isolated from the human environment away from the island.

4.13 PUBLIC SAFETY

4.13.1 ALTERNATIVE 1: No Action (Status Quo)

Because public access is prohibited on Bartram Island, no effect to public safety would occur as a result of the no action alternative.

4.13.2 ALTERNATIVE 2: Construction of Erosion Control Structure

Because public access is prohibited on Bartram Island, no effect to public safety would occur as a result of the preferred alternative action.

4.14 CUMULATIVE IMPACTS

Cumulative effects are defined in 40 CFR 1508.7 as those effects that result from:

> *...the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

Cumulative environmental effects for the proposed project were assessed in accordance with guidance provided by the President's Council on Environmental Quality (CEQ).

Table 3 summarizes the impact of such cumulative actions by identifying the past, present, and reasonably foreseeable future condition of the various resources which are directly or indirectly impacted by the proposed action and its alternatives. Also illustrated is the future condition with any reasonable alternatives (or range of alternatives). Continued operation of the Bartram Island DMMA cells, per the Jacksonville Harbor Operations and Maintenance DMMP (2013), will require on-going repair and maintenance of features such as the cell dikes, access roads, docks, weirs, and their outfalls to keep this facility productive, efficient, and above all, focused on public safety. Creation of the salt marsh mitigation area, described in Appendix G, will provide on-site compensation for potential projects in the reasonably foreseeable future. Although the current proposed action will dedicate 0.88 acres of the 6.46-acre salt marsh creation area, the remaining 5.58 acres will be available to compensate for the potential impacts of future projects related to the operation and maintenance of the Bartram Island DMMA which is used by Jaxport and USACE.

Table 3. Summary of Cumulative Impacts

Resources/Issues	Past Actions & Their Effects	Current DMMA Operation and Dike Raising Construction	Proposed Erosion Control Features	Other Present and Reasonably Foreseeable Future Actions & Their Effects
Fish & Wildlife Resources	Creation of DMMA cells have on-going manipulation of material placement from dredging events; also use of materials maintain the facility through construction of cross-dike partitions, roads, and other on-site features. Cells have used uplands with minimal impact to wetland habitat.	Minimal impact on migratory birds with protective measures. Other wildlife temporarily displaced during construction or dredged material placement activities.	Construction of the WAS would impact the benthic community, but would be replaced through mitigation. Remaining adjacent habitat would be better protected from potential erosion events. Minimal impact on migratory birds with protective measures. Other wildlife temporarily displaced during WAS construction.	Minimal impact on migratory birds with protective measures. Benthic organisms would be impacted by projects within tidally influenced wetlands but would be replaced through mitigation. Other wildlife temporarily displaced during dredged material placement.
Threatened & Endangered Species	No effect to federally protected species under the ESA. No known usage by ESA listed species is documented to date.	No effect to federally protected species under the ESA is expected. One species of special concern (gopher tortoise) is present in upland habitat on Bartram Island. Efforts are underway to relocate the specimen to a State-approved habitat.	No effect to federally protected species under the ESA is expected.	No effect to federally protected species under the ESA is expected.
Essential Fish Habitat	No substantial effect on Federally managed fish species.	No effect on federally managed fish species with avoidance of resources outside the cell dikes with slope stabilization practices.	No substantial effect on federally managed fish species with avoidance of resources outside the project footprint. Benthic organisms directly impacted due to project, but would be compensated in mitigation action. Adjacent benthic habitat would be protected with erosion control project.	No substantial effect on federally managed fish species with avoidance of resources outside the DMMA cells. Benthic organisms temporarily displaced due to potential maintenance projects, but would be compensated in mitigation action.

Resources/Issues	Past Actions & Their Effects	Current DMMA Operation and Dike Raising Construction	Proposed Erosion Control Features	Other Present and Reasonably Foreseeable Future Actions & Their Effects
Water Quality	Temporary increase in turbidity with de-watering operation through weirs and outfalls.	Temporary increase in turbidity with de-watering during construction activities; release of impounded water within DEP permit specifications.	Erosion control structure construction will have no effect to water quality as work will be conducted landward of the watered environment. Mitigation area will have turbidity curtain to address temporary turbidity during construction.	Water quality issues would be addressed per individual project action. Control measures would be used to prevent or minimize turbidity issues.
Wetlands	Fringing salt marsh of high and low marsh vegetation is manmade from dredged material placement. Minimal impact has occurred by past and present operations.	Some minor deposition of fill from isolated erosion events has caused temporary impact; efforts are underway to restore these areas. Slope stabilization measures will provide long term protection to fringing salt marsh. Erosion control fencing is placed at base perimeter of construction site.	Proposed wave attenuation and road structure will provide long term protection along with slope stability to critical area of potential erosion impact in high salt marsh. Direct impact to wetland function in project footprint would be compensated by mitigation action.	Future expansion of DMMA cells, repair or rebuild of cell walls, access roads, weirs, outfalls or docks may encroach into existing wetlands along the perimeter of the active facility. Compensation for these potential projects would be addressed in excess acreage of the mitigation area.
Economics	The Bartram Island DMMA facility is an integral component to the shipping industry, a significant contributor to regional economic growth.	The Bartram Island DMMA cell raising project continues to provide a valuable asset to operation maintenance of the St. Johns River deep draft Federal navigational channel.	The erosion control structure would provide stability to Cell A by extending the capacity for dredge material placement; thereby reducing the cost of operation and maintenance of the navigation channel.	Future expansion projects associated with the continued use of the Bartram Island facility will continue to provide a long-term economic benefit to the region.
Navigation	Continued use of the DMMA cells for material placement during maintenance of the deep draft navigation channel results in safe navigation by commercial vessels including international cargo ships.	The Bartram Island DMMA cell raising project continues to provide a valuable asset to operation maintenance of the St. Johns River deep draft Federal navigational channel.	The erosion control structure would provide stability to Cell A by extending the capacity for dredge material placement; thereby promoting efficient operation and maintenance of the navigation channel.	Future expansion projects associated with the continued use of the Bartram Island facility will continue to provide a long-term placement option for future maintenance of the navigational channel.

4.15 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.15.1 Irreversible

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. Other than the use of fuel, equipment and supplies, there would be no irreversible commitment of resources.

4.15.2 Irretrievable

An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. Benthic organisms and common vegetation types within the project area would be lost due to construction of the WAS, but would be compensated through the mitigation action.

4.16 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

There would be an unavoidable impact to the salt marsh limited to the footprint from the WAS construction activities. Benthic organisms and common vegetation types within the project area would be permanently impacted due to construction but would be compensated through the salt marsh mitigation proposed at an alternate location on Bartram Island.

4.17 LOCAL SHORT-TERM USES AND MAINTENANCE/ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The proposed construction work is typically of short duration. Adversely affected benthos would be compensated through the mitigation action, and would recover soon after the completion of the salt marsh creation. Most fish species and other motile organisms like crabs should be able to avoid the heavy equipment used in construction. Since the project area is limited in size and the activities will take place from the landward side, the long-term productivity of fish and other motile species should not be significantly affected. Removal of material from the upland site for the mitigation construction is also typically of short duration but could temporarily adversely impact wildlife. As this site is only periodically used, the wildlife would re-colonize the interior of the property and habituate other upland habitat located on Bartram Island.

4.18 INDIRECT EFFECTS

Constructing the erosion control structure would benefit the DMMA by reinforcing the newly raised dike wall, and therefore, this action would benefit the shipping industry as well as local and statewide economies. The added capacity of Cell A will extend the life of the DMMA for future dredging events on the St. Johns River.

4.19 COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

This project has support and is compatible with federal, state, and most local objectives.

4.20 CONFLICTS AND CONTROVERSY

There are no known areas of conflicts and controversy over the proposed WAS and mitigation features at this time.

4.21 UNCERTAIN, UNIQUE, OR UNKNOWN RISKS

There are no uncertain, unique or unknown risks associated with the proposed action within or immediately adjacent to the project footprint. Monitoring of the created salt marsh will be conducted as a component of the mitigation action and will determine if risk of failure is imminent. A contingency plan will be activated if the mitigation area is under-performing towards a trend of failure.

4.22 PRECEDENT AND PRINCIPLE FOR FUTURE ACTIONS

As this project would establish a permanent resolution to the potential adverse effects of erosion at the toe of the dike wall, there would be no precedent and/or principle for future actions established.

4.23 ENVIRONMENTAL COMMITMENTS

The U.S. Army Corps of Engineers and contractors commit to avoiding, minimizing or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

1. Standard protective measures for manatees shall be required.

2. The District's MBPP shall be implemented.

3. The work shall be performed in compliance with State water quality standards.

4. Air emissions such as vehicular exhaust and dust shall be controlled.

5. The contracting officer would notify the contractor in writing of any observed noncompliance with Federal, State, or local laws or regulations, permits and other elements of the contractor's Environmental Protection Plan. The contractor would, 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 would issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions would be granted or costs or damages allowed to the contractor for any such suspension.

6. The contractor would train his personnel in all phases of environmental protection. The training would include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality control and supervisory personnel would be thoroughly trained in the proper use of monitoring devices and abatement

equipment, and would be thoroughly knowledgeable of Federal, State, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the contractor.

7. The environmental resources within the project boundaries and those potentially affected outside the limits of permanent work under the contract would be protected during the entire period of the contract. The contractor would confine his activities to areas defined by the drawings and specifications.

8. As stated in the standard contract specifications, the disposal of hazardous or solid wastes would be in compliance with Federal, State, and local laws. A spill prevention plan would also be required.

4.24 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

4.24.1 National Environmental Policy Act of 1969

Environmental information on the project has been compiled and this EA has been prepared. The EA and proposed FONSI will be circulated for review by public notice. All correspondence is included as Appendix E. The project is in compliance with the National Environmental Policy Act.

4.24.2 Endangered Species Act of 1973

Consultation will be initiated with the NMFS and USFWS upon the circulation of the EA and proposed FONSI. This project will be coordinated under the Endangered Species Act and is therefore, in full compliance with the Act. Species under the jurisdiction of NMFS are covered under the South Atlantic Regional Biological Opinion (1998).

4.24.3 Fish and Wildlife Coordination Act of 1958

A Coordination Act Report is not required for the proposed work. This project is in full compliance with the Act.

4.24.4 National Historic Preservation Act of 1966 (Inter Alia)

Consultation with the Florida State Historic Preservation Officer (SHPO) was initiated in 2005 for the dike raising and updated consulation on this project is ongoing in accordance with the National Historic Preservation Act of 1966, as amended, and as part of the requirements and consultation processes contained within the NHPA implementing regulations of 36 CFR 800, this project is also in compliance, through ongoing consultation, with the Archeological Resources Protection Act (96-95), American Indian Religious Freedom Act (PL 33 95-341), Executive Orders (E.O) 11593, 13007, & 13175 and the Presidential Memo of 1994 on Government to Government Relations. Consultation has been initiated with the SHPO and appropriate federally recognized tribes. SHPO consultation was initiated 27 January 2014. It is anticipated that this project will have no affect on historic properties included in or eligible for inclusion in the National Register of Historic places. The project is in compliance with each of these Federal laws. A copy of the letter(s) indicated above has been placed in Appendix E.

4.24.5 Clean Water Act of 1972

The project shall be in compliance with this Act. A Section 404(b) evaluation is included as Appendix A of this document. The FDEP WQC associated with this project is 16-255718-001-ES and was issued on January 13, 2011 (Appendix C). Currently, a modification application to the permit has been submitted to include the erosion control action and subsequent mitigation. All State water quality standards will be met.

4.24.6 Clean Air Act of 1972

No air quality permits are required for this project. This project will be coordinated with U.S. Environmental Protection Agency (EPA) during the public review period and is in compliance with Section 309 of the Act.

4.24.7 Coastal Zone Management Act of 1972

In accordance with the Coastal Zone Management Act, a Federal Consistency Determination (CD) was prepared under previous coordination and is included in Appendix B. The State, through issuance of Permit Number 16-255718-001-ES. Currently, a modification application to the permit has been submitted to include the erosion control action and subsequent mitigation which will determine whether this activity is consistent with the Florida Coastal Management Program.

4.24.8 Farmland Protection Policy Act of 1981

No prime or unique farmland will be impacted by implementation of this project. This Act is not applicable.

4.24.9 Wild and Scenic River Act of 1968

No designated Wild and Scenic river reaches will be affected by project related activities. This Act is not applicable.

4.24.10 Marine Mammal Protection Act of 1972

Protective measures for marine mammals such as manatees and dolphins should not be necessary. The work is in full compliance with the Act.

4.24.11 Estuary Protection Act of 1968

The fringing salt marsh represents an estuarine wetland that will be affected by project activities. The creation of 6.46 acres of salt marsh mitigation will compensate for the 0.88 acre impact to this wetland. The work is in full compliance with the Act.

4.24.12 Federal Water Project Recreation Act

The Bartram Island DMMA site does not offer any recreational amenities to the public; therefore, the principles of the Federal Water Project Recreation Act, (Public Law 89-72) as amended, are not applicable to this project which is Operations and Maintenance of existing Federal navigation channels.

4.24.13 Submerged Lands Act of 1953

The project will occur on submerged lands of the State of Florida. The project is being coordinated with the State and is in compliance with the Act.

4.24.14 Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990

There are no designated coastal barrier resources in the project area that will be affected by this project. These Acts are not applicable.

4.24.15 Rivers and Harbors Act of 1899

The proposed work will not obstruct navigable waters of the United States. The project is in full compliance.

4.24.16 Anadromous Fish Conservation Act

Anadromous fish species will not be affected. The project will be coordinated with NMFS and is in compliance with the act.

4.24.17 Migratory Bird Treaty Act and Migratory Bird Conservation Act

No migratory birds will be affected by project activities. The Corps' standard MBPP will be used to minimize potential impacts to migratory birds. The project is in compliance with these Acts.

4.24.18 Marine Protection, Research and Sanctuaries Act

The term "dumping" as defined in the Act (3[33 U.S.C. 1402](f)) does not apply to the disposal of material for beach nourishment or to the placement of material for a purpose other than disposal (i.e. placement of rock material as an artificial reef or the construction of artificial reefs as mitigation). Therefore, the Marine Protection, Research and Sanctuaries Act does not apply to this project. The disposal activities addressed in this EA have been evaluated under Section 404 of the Clean Water Act.

4.24.19 Magnuson-Stevens Fishery Conservation and Management Act

The Corps has determined that the project will not have a significant adverse impact on EFH or federally managed fish species occurring along the northeast coast of Florida. The project is in compliance with the Act.

4.24.20 Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

The purpose of PL 91-646 is to ensure that owners of real property to be acquired for Federal and Federally assisted projects are treated fairly and consistently and that persons displaced as a direct result of such acquisition will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. The proposed project does not involve real property acquisition or displacement of property owners or tenants. This Act is not applicable.

4.24.21 Executive Order 11990, Protection of Wetlands

Approximately 0.58 acre of wetland consisting of high salt marsh will be affected by project activities. The permanent loss of this wetland will be compensated by mitigation that includes the creation 6.46 acres of both high and low salt marsh, of which 0.88 acres will offset the permanent impact from the project action. The proposed project is in compliance with the goals of this Executive Order (E.O.).

4.24.22 E.O. 11988, Flood Plain Management

The proposed project will have no adverse impacts to flood plain management and is in compliance with the goals of this E.O.

4.24.23 E.O. 12898, Environmental Justice

The proposed action will not result in adverse human health or substantial environmental effects. The work will not impact "subsistence consumption of fish and wildlife." The proposed project is in compliance with the goals of this E.O.

4.24.24 E.O. 13045, Protection of Children

Executive Order 13045, requires each Federal agency to "identify and assess environmental risks and safety risks [that] may disproportionately affect children" and ensure that its "policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." This project has no environmental or safety risks that may disproportionately affect children and is in compliance.

4.24.25 E.O. 13089, Coral Reef Protection

This project will not impact those species, habitats, and other natural resources associated with coral reefs as this habitat does not occur in north Florida. The proposed project is in compliance with the goals of this E.O.

4.24.26 E.O. 13112, Invasive Species

This project will not introduce any invasive species.

4.24.27 E.O. 13186, Migratory Birds

The proposed project will not cause the destruction of migratory birds and their eggs or hatchlings. The proposed project is in compliance with the goals of this E.O.

5 LIST OF PREPARERS

5.1 PREPARERS

Table 4. List of Preparers

Preparer	Discipline	Role
Kat McConnell	Biologist	Principal Author, NEPA Compliance
Dan Hughes	Archaeologist	Cultural & Historic Resources
Mike Hollingsworth	Environmental Engineer	Water Quality

5.2 REVIEWERS

This EA was reviewed by the supervisory chain of the Environmental Branch and Planning Division, as well as the Operations Division, Project Management, and the Office of Counsel of the U.S. Army Corps of Engineers, Jacksonville District.

6 PUBLIC INVOLVEMENT

6.1 SCOPING AND DRAFT EA

A Public Notice pursuant to Title 33 of the Code of Federal Regulation (Part 337.1(8)) will be issued for this action to provide a 15 day public and agency comment period. The EA and proposed Finding of No Significant Impact (FONSI) are available to the public. Comments on the EA and Proposed FONSI will be incorporated into the final document.

6.2 AGENCY COORDINATION

Coordination will be conducted with the appropriate agencies as described in this report. Agency coordination letters are located in Appendix E.

6.3 LIST OF RECIPIENTS

Copies of the EA and proposed FONSI will be made available to appropriate stakeholders and agencies as well as placed on the internet at the following address: http://www.saj.usace.army.mil/Divisions/Planning/Branches/Environmental/DocsNotices_OnLine.htm. The final EA and FONSI will also be posted on the above website. A list of stakeholders receiving notification of this document is included within Appendix G.

6.4 COMMENTS RECEIVED AND RESPONSE

Comments received on the EA during the public review period and responses given will be included herein.

7 REFERENCES

South Atlantic Fishery Management Council. 1998. Habitat plan for the South Atlantic Region: Essential fish habitat requirements for fishery management plans of the South Atlantic Fishery Management Council.

U.S. Army Corps of Engineers (USACE). 1998. Environmental Assessment and Finding of No Significant Impact (EA/FONSI), Maintenance Dredging of Bartram Island, Palm Beach County, Florida.

University of North Florida and Jacksonville University, 2013 (cited as SRRLSJRB). *State of the River Report for the Lower St. Johns River Basin, FL: Water Quality, Fisheries, Aquatic Life and Contaminants, 2013.* Prepared for the Environmental Protection Board, City of Jacksonville, FL.

WEBSITES:

http://www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon.htm
National Marine Fisheries Service; Atlantic Sturgeon

http://www.fws.gov/northflorida/manatee/manatee-gen-facts.htm
U.S. Fish and Wildlife Service; West Indian (Florida) Manatee Factsheet (rev. 2013)

http://www.fws.gov/northflorida/Species-Accounts/PDFVersions/Wood-stork-2005.pdf
U.S. Fish and Wildlife Service; Woodstork Factsheet 2005 (rev. 2013)

http://www.sjrreport.com/
State of the River Report for the Lower St. Johns River Basin, 2013. Jacksonville University and University of North Florida.

ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

APPENDIX A

SECTION 404(b)

Section 404(b)(1) Evaluation
For the Erosion Control Structure for Dell A Dike Raising Activity at Bartram Island Dredged Material Management Area

1.0 Introduction

Section 404(b)(1) of the Clean Water Act (CWA) of 1972 requires that any proposed discharge of dredged material into waters of the United states must be evaluated using the guidelines developed by the Administrator of the U. S. Environmental Protection Agency (EPA) in conjunction with the Secretary of the Army. These guidelines can be found in Title 40, Part 230 of the Code of Federal Regulations. The following evaluation is prepared in accordance with the guidelines and follows the recommended format contained in ER 1105-2-100, of December 28, 1990. (Note that the proposed placement of material into the Ocean Dredged Material Disposal Site (ODMDS) is not included in this evaluation as no placement of material will occur in association with the proposed action.

2.0 Project Description

The dike raising and partitioning activity associated with Cells A and B2 will provide additional storage and management of dredged material extracted from the Federal navigational channel within the St. Johns River. The dike is being raised to a finished elevation of 55 feet NAVD 1988, accommodating 2.8 M cubic yards of material placement. The project also includes replacing existing weirs with new systems at each cell for improved water drainage. The current dike raising construction activity at Cell A has experienced erosional damage along the toe of the dike slope, most frequently observed on the north side of the cell dike. An engineered control structure is needed in this critical area to prevent additional erosion from occurring at the base of cell dike wall. The construction of a wave attenuation structure (WAS) will provide the opportunity to prevent erosion from inflicting additional damage to the fringing salt marsh that is present from the toe of the dike to the watered edge of the St. Johns River. A permanent wave attenuation structure (WAS) will start at STA 236+00, and will extend around 1,100 feet in length, ending at STA 247+00 at a palm tree hammock as shown on Figure 2. The width of footprint will be around 21-ft wide along the outer-most edge at the wetland interface. The wall of the dike will tie into the erosion blanket of the wave attenuation structure. The design incorporates features to accept a high energy wave reaching the erosion blanket at the toe of the dike side wall and dissipate the energy so that as water enters and exits the structure it no longer has the ability to cause erosion. This design provides long-term protection to the adjacent marsh from deposition of fill material along with stabilization to the dike structure's outside wall facing the St. Johns River.

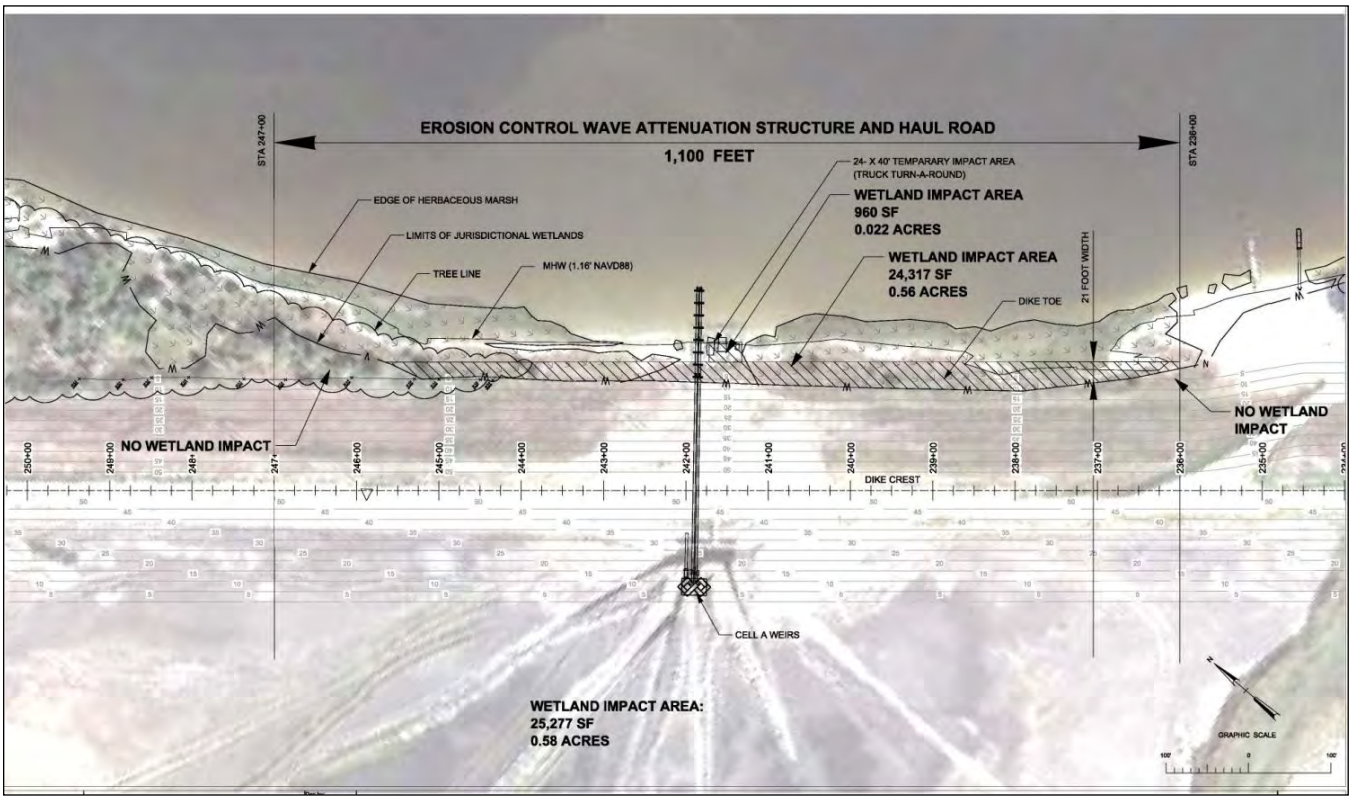

Figure 1. Plan view of the wave attenuation and access road structure.

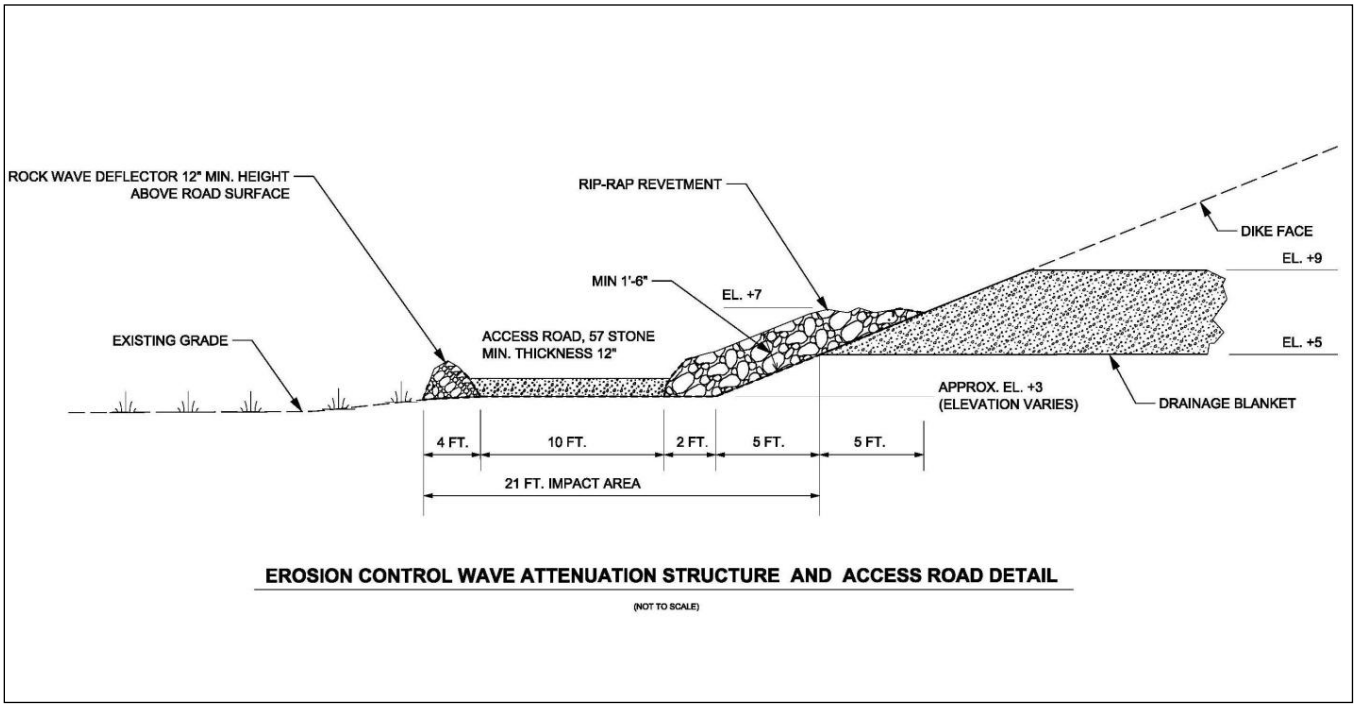

Figure 2. Profile view of the wave attenuation and access road structure.

Bartram Island is approximately 4 miles long and varies in width from less than 0.25 mile to about 0.5 mile. It is located in the Jacksonville Harbor portion of the St. Johns River at around River Mile 10 near the westernmost tip of Blount Island, and extends along the river's contour to just beyond the moth of Dunn Creek. It is owned by the Jacksonville Port Authority and is an actively managed dredged material placement site. The dredged material management area (DMMA) is managed by the U. S. Army Corps of Engineers (USACE).

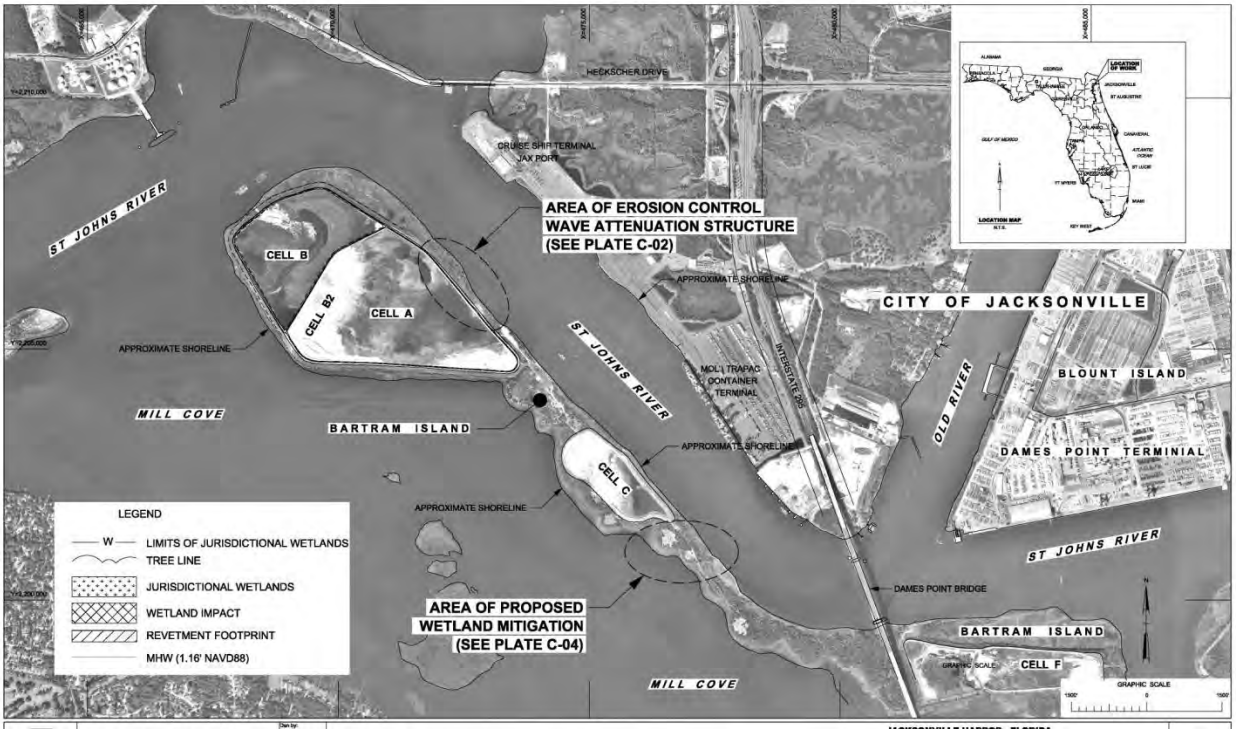

Figure 3. Project Location

2.1 Project Authorization

The Jacksonville Harbor Deepening Study was authorized by a resolution from the Committee on Public Works and Transportation, U.S. House of Representatives, Dated February 5,1992, which stated: "Resolved by the Committee on Public Works and Transportation of the United States House of Representatives, that the Board of Engineers for the River and Harbors, is requested to review the Report of the Chief of Engineers on Jacksonville Harbor, Florida, published as House Document 214, Eighty-ninth Congress, First Session, and other pertinent reports, to determine whether modification of the recommendations contain therein are advisable at the present time, in the interest of navigation and other purposes." Section 101(b)(8) of the Water Resources Development Act (WRDA) 1996 authorized a project for mitigation of shoreline erosion and storm damages caused by existing Federal navigation improvements.

3.0 General Description of Material

The construction will use materials required to meet the performance goals of the structure within the proposed action area.

3.1 Description of the Material Composition and Quantities

Riprap for the revetment area will include 2,600 tons of 12" (+/-) of FDOT Ditch Lining Stone, 800 tons of No. 57 stone, and 6,112 square feet of geo-textile.

3.2 Description of the Construction Method

The project minimize impacts to the fringe wetlands by limiting work within the footprint of the WAS. No work will be conducted from the watered edge of the project limit; the wave attenuation and access road structure will be constructed from a landward approach. The WAS will serve as the sediment control; no silt fence will be placed outside the limits of the haul road. The WAS will be constructed initially to serve as a physical boundary for the work and to serve as sediment control. Geo-textile will be placed under the curb, the haul road, and rip rap revetment. The material will be hauled from the upland staging area into the project footprint for placement and distribution by heavy equipment. Transportation of the materials to the Island will be conducted under existing procedures of the on-going active dike raising construction project.

3.3 Anticipated Schedule

The proposed schedule to complete the erosion control structure is about 90 to 120 days.

4.0 Factual Determinations

This section considers factors described in 40 CFR Part 230.11(a), 230.20 and applicable portions of Subpart H.

4.1 Description of the Material Quantities

4.1.1 Substrate Elevation and Slope

The erosion control structure will be constructed at the foot of the existing cell dike wall and gravel blanket that is located along the wetland boundary at an approximate elevation of 5.0-ft NAVD. Once completed, this elevation will be maintained at the interface with the wetland boundary.

4.1.2 Substrate Sediment Type

The Aquic Quartipsamments soils associated with the site are indicative of its past and current disturbance from placement of previously dredged river material. This material is defined as loamy fine sand or coarser materials dominated by quartz where the seasonal saturation or seasonal ground water fluctuations may be typical. The texture is subjected to movement by water in a saturated environment, or by wind in a dry environment. The substrate on site is highly disturbed from activities associated with the DMMA management.

4.1.3 Dredged/Fill Material Movement

Once the material is placed and the WAS is fully constructed, no movement within or immediately adjacent to the project footprint is anticipated to occur as a result of the construction. The benefit to the immediate environment will be to arrest any erosion from

occurring at the base of cell dike wall. The construction of a WAS from materials as described above will provide the opportunity to prevent erosion from inflicting additional damage to the fringing salt marsh that is present from the toe of the dike to the watered edge of the St. Johns River.

4.1.3.1 Physical Effects on Benthos

The proposed action will impact the benthos within the area of the WAS footprint (.058 acre) as organisms living in the substrate will become buried under placement of the materials. However, the direct impact will be offset through compensation by a mitigation area to be created on Bartram Island. The mitigation plan will encompass 6.46 acres of high and low salt marsh habitat, of which the WAS impact will comprise 0.88 acres for compensatory mitigation. Once the salt marsh is created, it is anticipated that similar benthic organisms will become established in the substrate at this ecosystem.

4.1.3.2 Physical Effects on Water Column Species

The majority of the project will occur in an area of exposed substrate at low tide within a high marsh. This area does not continuously support fish as no perennial water column is present. The project is not anticipated to have an adverse effect to fish or other mobile aquatic organisms.

4.1.3.3 Physical Effects on Wetland Vegetation

The WAS footprint will directly impact 0.58 acre of existing high salt marsh that is a component of the fringing wetland surrounding Bartram Island. The loss of this wetland vegetation subsequent habitat function will be offset through compensatory mitigation on Bartram Island. The mitigation plan included in Appendix F of the *Environmental Assessment for the Erosion Control Structure for Cell A Dike Raising at Bartram Island DMMA* details the creation of 6.46 acre salt marsh to be constructed in a disturbed upland of formerly dredged material placement. Approximately 0.88 acres of this mitigation will compensate for impacts caused by the proposed action. The remaining acreage will be reserved for on-site cumulative actions that may occur in the near foreseeable future.

5.0 Water Quality

The project activities would be performed in compliance with State of Florida water quality standards. In accordance with the Coastal Zone Management Act, state consistency review will be performed as part of stakeholder and agency coordination of the EA. The USACE expects that the State of Florida will concur with the determination that the project is consistent with the enforceable policies of the Florida Coastal Management Program.

5.1 Tide

The lower St. Johns River is a tidal system with an extended estuary. Tidal heights at the mouth of the river can become quite high from influence by the Atlantic Ocean. At times the tide can produce strong currents that affect the shoreline of lands along the river, and in particular, along the estuary fringe of Bartram Island. Tide heights influenced by astronomical factors such as lunar or seasonal cycles can produce extraordinary high tides. The occurrence of these tides has

caused erosion at the base of the cell dike walls, which correspondingly can have an adverse impact to the fringing salt marsh.

5.2 Salinity

The salinity of the lower St. Johns River is affected by seasonal storm patterns bringing sudden intense amounts of rainfall. These storm events introduce significant freshwater to the river system, thus diluting the salinity level. The seasonal rainy season from June to late October receives the majority of the large storm events, and is followed by a dry season in which salinity levels tend to concentrate during times of drought.

5.3 Water Clarity/Color/Suspended Particulate/Turbidity Determinations

The lower St. Johns River is a tannin-stained, slightly turbid waterbody. The proposed action will not alter water quality, such as increased turbidity levels. All work would be conducted in the high marsh that is mostly exposed along the base of the cell wall. The project is not anticipated to cause any adverse effects to the river water quality of turbidity beyond background levels due to suspended particulates. All work would be conducted from the landward side of the project footprint, and will remain within the footprint. All work would be conducted in compliance with the state water quality certification specified conditions as required in the FDEP permit.

6.0 Hazardous, Toxic, Radioactive Waste (HTRW)

The project area is within an estuary with known contaminants. However, materials to be used for construction of the erosion attenuation device are from clean sources that do not contain any HTRW contaminants.

7.0 Aesthetics

The project site is located on the northeastern side of Bartram Island in the center of the lower St. Johns River in a highly industrial area. Temporary visual impacts may occur during construction of the wave attenuation structure; however, the project is adjacent to an on-going construction site (cell dike wall raising) and is not highly visual from the shoreline.

8.0 Effects of Biota

8.1 Primary Productivity and Photosynthesis

The proposed activity will completely cover existing vegetation thus impacting the ability for photosynthesis. The impact of 0.58 acres of high marsh, mostly herbaceous vegetation would be offset by the creation of 6.46 acre of salt marsh containing similar species, of which 0.88 acre would be dedicated to the compensation of the impact within the project area. The mitigation is designed to restore the function of the vegetation including productivity and photosynthesis.

8.1.1 Suspension/Filter Feeders

No impact is expected to occur to these organisms as the project area is not within a perennially watered environment. No adverse long-term impacts to any trophic group in the food web are anticipated.

8.1.2 Sight Feeders

Visual feeders could experience short term impacts, but no long-term adverse impacts would occur as a result of this project.

8.1.3 Contaminant Determinations

Deposited fill material will not introduce, relocate, or increase contaminants.

8.1.4 Aquatic, Ecosystem, and Organism Determinations

The proposed activity will impact of 0.58 acres of high marsh habitat within an estuary ecosystem which will be offset by the creation of 6.46 acre of salt marsh of which 0.88 acre will be dedicated to the compensation of the impact within the project area. The mitigation will restore the function of this ecosystem and any organisms that utilize this.

8.1.5 Aquatic, Ecosystem, and Organism Determinations

Although short term effects (e.g. clogging of feeder appendages) on plankton are likely, no adverse long-term impacts to planktonic organisms are anticipated.

9.0 Effects of Plankton

Although short term effects (e.g. clogging of feeder appendages) on plankton are likely, no adverse long-term impacts to planktonic organisms are anticipated.

10.0 Effect s on Benthos

Although avoidance to non-motile or motile benthic invertebrates on nearshore hardbottom habitat and soft bottom habitat will be practiced, some long-term, adverse impacts are anticipated to occur.

11.0 Effects on Nekton

No adverse long-term impact to nektonic species is anticipated.

12.0 Effects on the Aquatic Food Web

No adverse long-term impact to any trophic group in the food web is anticipated.

13.0 Effects on Special Aquatic Sites

13.1 Coral Reefs

There are no coral reefs located with the proposed action areas.

13.2 Sanctuaries and Refuges

There are no sanctuaries or wildlife refuges located within the proposed action areas.

13.3 Wetlands

The wetland within the project area consists of 0.58 acres, all of which will be permanently impacted by the proposed action. Compensation of the wetland will be mitigated through the creation of 6.46 acres of similar habitat, of which 0.88 acres will be dedicated to the impact.

13.4 Mudflats

The salt marsh within the project area contains intermittently exposed mudflats during low tide. Most of these areas occur adjacent to the project footprint and will not be impacted by the proposed action. Any mudflat that is permanently impacted will be compensated through the mitigation action.

13.5 Vegetated Shallows

There are no seagrass beds located within or adjacent to the action area, the staging sites or material placement locations.

14.0 Endangered and Threatened Species

There will be no effect on any endangered or threatened species from the proposed project. All work will be conducted from the landward side of the project area, thus no effect to manatees or woodstorks are expected to occur. Other endangered and threatened species, such as sea turtles or piping plover would not be affected as the habitat within the project area is not suitable for these species. No designated critical habitat occurs within the project limits.

15.0 Other Wildlife Species

No significant adverse impacts to small foraging mammals, reptiles, wading birds, or wildlife in general are expected.

16.0 Actions to Minimize Impacts

All practical safeguards will be taken during construction to preserve and enhance environment, aesthetic, recreational, and economic values in the project area. Specific precautions that will be implemented in conjunction with the proposed project are discussed elsewhere in this Section 404(b) evaluation and in the Environmental Assessment for the impact.

17.0 Proposed Site Determinations

17.1 Mixing Zone Determinations

The fill material will not cause unacceptable changes in the mixing zone specified in the Water Quality Certification in relation to: depth, current velocity, direction and variability, degree of turbulence, stratification, or ambient concentrations of constituents.

17.2 Determination of Compliance with Applicable Water Quality Standards

Because the fill material is inert, state water quality standards will not be violated. No activity will occur in the watered environment adjacent to the project footprint.

17.3 Potential Effects of Human Use Characteristics

17.3.1 Municipal and Private Water Supplies

No municipal or private water supplies will be impacted by the implementation of this action.

17.3.2 Recreational and Commercial Fisheries

No recreational or commercial fisheries will be impacted by the implementation of this action.

17.3.3 Water Related Recreation

No water related recreation will be impacted by the implementation of this action. Bartram Island is an active industrial facility that is privately owned by Jacksonville Port Authority. No public access is provided on island; recreation on the island is prohibited.

17.3.4 Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves

None of these types of facilities are present on Bartram Island; therefore, no impact will occur by the implementation of this action.

17.3.5 Determination of Cumulative Effects on the Aquatic Ecosystem.

There will be no significant cumulative impacts that result in a major impairment of water quality to the existing aquatic ecosystem as a result of placement of fill at the project site. No cumulative impact to threatened or endangered species or general wildlife is anticipated to occur as a result of this action.

17.3.6 Determination of Secondary Effects of the Aquatic Ecosystem

No adverse secondary effects of the placement of the fill material are anticipated from the implementation of this action.

18.0 Findings of Compliance or Non-compliance with the Restrictions on Discharge.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. No practicable alternative exists which meets the study objectives that does not involve discharge of fill into waters of the State of Florida and/or United States.

c. After consideration of disposal site dilution and dispersion, the discharge of fill materials will not cause or contribute to, violations of any applicable State water

quality standards for Class III waters. The discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

d. The Bartram Island project will not effect of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973, as amended.

e. The placement of fill material will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish shellfish, wildlife, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values will not occur.

f. On the basis of the guidelines, the proposed project area is specified as complying with the requirements of these guidelines.

ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

APPENDIX B

COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

COASTAL ZONE MANAGEMENT ACT

FLORIDA COASTAL MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

BARTRAM ISLAND EROSION CONTROL ACTION
DUVAL COUNTY, FLORIDA

1. Chapter 161, Beach and Shore Preservation.

The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed plans and information will be submitted to the state in compliance with this chapter.

2. Chapters 186 and 187, State and Regional Planning.

These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed project will be coordinated with various Federal, State and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the shorefront and infrastructure.

3. Chapter 252, Disaster Preparation, Response and Mitigation.

This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The proposed project involves the placement of beach compatible material onto and eroding beach as a protective means for residents, development, and infrastructure located along St. Johns River shoreline within Duval County. Therefore, this project would be consistent with the efforts of the Division of Emergency Management. Appropriate mitigation for unavoidable nearshore hardbottom habitat has been proposed.

4. Chapter 253, State Lands.

This chapter governs the management of submerged state lands and resources within state lands. This includes archaeological and historical resources; water resources; fish and wildlife resources; beaches and dines; submerged grass beds and other benthic communities; swamps,

marshes, and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: No seagrass beds, mineral resources; unique natural features; or artificial reefs are located within or adjacent to the areas proposed for dredging, disposal, beach fill placement, or mitigation. Fringing wetland composed of high and low salt marsh is located within the proposed work zone; 0.58 acres would be impacted by construction activities. The impacts will be compensated by the creation of 6.46 acres of similar functioning salt marsh within a former dredged placement area of a dormant upland. Of this total acreage, 0.88 acres would be dedicated to the proposed action. The remaining acreage will be reserved for cumulative impacts in the reasonable near future. The proposed project would comply with the intent of this chapter.

5. Chapters 253, 259, 256, and 375, Land Acquisition.

These chapters authorize the state to acquire land to protect the environmentally sensitive areas.

Response: No land acquisition is proposed in this project.

6. Chapter 258, State Parks and Aquatic Preserves.

This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: There are no state parks or aquatic preserves within the study area. Neither of these areas will be included for project management measures. Therefore, no adverse impact will occur to these state lands.

7. Chapter 267, Historic Preservation.

This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: No significant impacts to historical properties are expected from construction of the proposed erosion control structure on Bartram Island based upon the results of site investigation and this coordination.

8. Chapter 288, Economic Development and Tourism.

This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The proposed project is within an active industrial dredged material management area facility, and as such, public access to the Island is prohibited by the property owner and operator, Jacksonville Port Authority. Access to the watered edge of the Island in the St. Johns River is allowable. This would be compatible with tourism for this area and therefore, is consistent with the goals of this chapter.

9. Chapters 344 and 339, Public Transportation.

This chapter authorizes the planning and development of a safe balanced and efficient transportation system.

Response: No public transportation systems would be impacted by this project.

10. Chapter 370, Saltwater Living Resources.

This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and to conduct scientific, economic, and other studies and research.

Response: The proposed erosion control project will not adversely affect living saltwater resources or their management used for their consumption as work will occur in an intermittently exposed high marsh. All construction material will be staged on upland land, and activities will be conducted from the landward side of the project area. The proposed project is consistent with the purposes of this chapter.

11. Chapter 372, Living Land and Freshwater Resources.

This chapter establishes the Fish and Wildlife Conservation Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The project will have no significant effect on freshwater aquatic life or wild animal life.

12. Chapter 373, Water Resources.

This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: The project does not involve water resources as described by this chapter.

13. Chapter 373, Pollutant Spill Prevention and Control.

This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan will be required.

14. Chapter 377, Oil and Gas Exploration and Production.

This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This project does not involve the exploration, drilling or production of gas, oil, or petroleum product, and therefore, does not apply.

15. Chapter 380, Environmental Land and Water Management.

This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development.

Response: The proposed project will not have any regional impact on resources in the area. Therefore, the project is consistent with the goals of this chapter.

16. Chapter 381, F.S., Public Health: General Provisions

The statute establishes public policy concerning the state's public health system, which is designated to promote, protect, and improve the health of all people in the state.

Chapter 381 Public Health: General Provisions
Enforceable policy includes only Sections 381.001, .0011, .0012, .006, ,0061, .0065, .0066, and .0067.
381.001 Legislative intent; public health system.
381.0011 Duties and powers of the Department of Health.
381.0012 Enforcement authority.
381.006 Environmental health.
381.0061 Administrative fines.
381.0065 Onsite sewage treatment and disposal systems; regulation.
381.0066 Onsite sewage treatment and disposal systems; fees.
381.0067 Corrective orders; private and certain public water systems and onsite sewage treatment and disposal systems.

Response: This project will not affect public health systems.

17. Chapter 388, Arthropod Control.

Mosquito control efforts of the state are to achieve and maintain such levels of arthropod control as will protect human health and safety and foster the quality of life of the people, promote the economic development of the state, and facilitate the enjoyment of its natural attractions by reducing the number of pestiferous and disease-carrying arthropods. It is the policy of the state

to conduct arthropod control in a manner consistent with protection of the environmental and ecological integrity of all lands and waters throughout the state.

Response: The project would not further the propagation of mosquitoes or other pest arthropods.

18. Chapter 403, F.S., Environmental Control

Environmental control policies conserve state waters; protect and improve water quality for consumption and for the propagation of fish and wildlife; and maintain air quality to protect human health and plant and animal life. This statute provides wide-ranging authority to address various environmental control concerns, including air and water pollution; electrical power plant and transmission line siting; the Interstate Environmental Control Compact; resource recovery and management; solid and hazardous waste management; drinking water protection; pollution prevention; ecosystem management; and natural gas transmission pipeline siting.

Not approved as enforceable policy: Section 403.7125(2) and (3).

> (2) The owner or operator of a landfill …shall establish a fee, or a surcharge on existing fees or other appropriate revenue-producing mechanism, to ensure the availability of financial resources for the proper closure of the landfill.
>
> (3) An owner or operator of a landfill … may provide financial assurance to the department in lieu of the requirements of subsection (2).

Response: An Environmental Assessment that addresses project impacts has been prepared and will be reviewed by the appropriate resource agencies, including the Florida Department of Environmental Protection. Environmental protection measures will be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. Water Quality Certification will be sought from the State prior to construction. The project complies with the intent of this chapter.

19. Chapter 553, F.S., Building and Construction Standards

The statute addresses building construction standards and provides for a unified Florida Building Code.

Enforceable policy includes only Sections 553.73 and .79.

553.73 Florida Building Code.

553.79 Permits; applications; issuance; inspections.

Response: The proposed project does not involve the construction of any buildings; therefore, this chapter does not apply.

20. Chapter 582, Soil and Water Conservation.

This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: The proposed project is not located near or on agricultural lands; therefore, this chapter does not apply.

21. **Chapter 597, F.S., Aquaculture**

The statute establishes public policy concerning the cultivation of aquatic organisms in the state. The intent is to enhance the growth of aquaculture, while protecting Florida's environment. This includes a requirement for a state aquaculture plan which provides for the coordination and prioritization of state aquaculture efforts, the conservation and enhancement of aquatic resources and which provides mechanisms for increasing aquaculture production for the creation of new industries, job opportunities, income for aquaculturists, and other benefits to the state.

Response: The proposed project does not involve aquaculture or waters used for aquaculture; therefore, this chapter does not apply.

ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

APPENDIX C

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER QUALITY PERMIT
DEP No. 16-25578-001-ES

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHEAST DISTRICT
8800 BAYMEADOWS WAY WEST, SUITE 100
JACKSONVILLE, FLORIDA 32256

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

February 13, 2014

SENT VIA EMAIL: David.Stubbs@jaxport.com

David C. Stubbs
Jacksonville Port Authority
2831 Talleyrand Avenue
Jacksonville, Florida 32206

RE: Modification of Permit No.: 16-255718-001-ES
Modification No.: 16-255718-004-EM

Dear Mr. Stubbs:

Your request to modify the above permit has been reviewed by Department staff in accordance with Section 62-343.100 and 62-343.120, Florida Administrative Code (F.A.C.). Your permit was issued under the authority of Part IV of Chapter 373, Florida Statutes (S.F.), and Title 62, F.A.C., Chapter 253 and Chapter 258, F. S., and Chapter 18-20, F.A.C., if located within an Aquatic Preserve, and Chapter 18-21, and Section 62-343.075, F.A.C., and the policies of the Board of Trustees and in accordance to Operating Agreements executed between the Department and the Water Management Districts, as referenced in Chapter 62-113, F.A.C., and a Coordination Agreement Between the U.S, Army Corps of Engineers, Jacksonville District, and the Department for a State Programmatic General Permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 401 of the Clean Water Act. This permit contains a regulatory authorization for the construction and operation of the system, a proprietary authorization for the use of sovereignty submerged lands for private purposes, if applicable, and the Federal State Programmatic General Permit (SPGP) for activities in Wetlands and/or Waters of the United States, if applicable.

The requested modification is to:

1. Remove the construction of the previously authorized underdrain system in Cell B2 from the scope of work.

2. Add the construction of approximately 1,100 linear feet by approximately 21 feet of wave attenuation structure to the scope of work. The construction will permanently impact approximately 0.58 acres of jurisdictional saltmarsh wetlands at the project site.

3. To mitigate for the functional loss of the impacted wetlands a mitigation area shall be constructed on Bartram Island immediately east of Cell C. In accordance with the Uniform

Mitigation Assessment Method, the impact area has a Functional Loss of 0.33. The proposed creation has a Relative Functional Gain of 3.74, and would therefore require 0.88 acres of creation to offset the impact. 6.46 acres of creation is proposed. 5.58 acres shall provide mitigation for potential future impacts on Bartram Island.

4. Mitigation area construction and monitoring shall be done in accordance with the attached Bartram Island Mitigation Plan.

The requested modification(s) will affect these authorizations as listed:

REGULATORY AUTHORIZATION FOR CONSTRUCTION AND OPERATION

The above change(s) is/are not expected to adversely affect water quality and will not be contrary to public interest and not expected to result in any adverse environmental impact or water quality degradation. The authority sought under the provisions of Part IV of Chapter 373, F.S., and Title 62, F.A.C. to construct and operate the system is modified as described above.

PROPRIETARY REVIEW CHOOSE ONE

Your project does not occur on state-owned submerged lands and will not require authorization from the Department to use these lands for private purposes in accordance with Section 253.77, Florida statutes.

SPGP - STATE PROGRAMMATIC GENERAL PERMIT AUTHORIZATION -

Your proposed modification(s) has been reviewed in accordance with Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. **The U.S. Army Corps of Engineers (Corps) State Programmatic General Permit (SPGP) was not granted in your original permit. Federal authorization for your project cannot be given in conjunction with this permit modification.** A copy of your permit application has been forwarded to the Corps for their review. The Corps will issue their authorization directly to you or contact you if additional information is needed. If you have not heard from the Corps within 30 days from the date your application was received at the local FDEP Office, contact the Corps at the Jacksonville Regulatory Field Office at (904-232-1681), for status and further information. **Failure to obtain Corps authorization prior to construction could subject you to federal enforcement action by that agency.**

Authority for review - an agreement with the U.S. Army Corps of Engineers entitled "Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection State Programmatic General Permit, Section 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rule 28-106.201, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, any email address, any facsimile number, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 21days of receipt of such notice, regardless of the date of publication. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

Judicial Review

Any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, M.S. 35, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this action is filed with the Clerk of the Department.

This letter of approval does not alter the original expiration date, conditions, or monitoring requirements of the regulatory, sovereign submerged lands or SPGP authorizations contained in the permit. This letter, accompanying drawings and/or documents **must be attached to the original permit**.

Thank you for applying to the Submerged Lands and Environmental Resource Permit Program. If you have any questions regarding this matter, please contact Aaron Sarchet at (904) 256-1654 or e-mail address at Aaron.Sarchet@dep.state.fl.us.

Executed in Duval, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Sincerely,

Melissa M. Long

Melissa M. Long, P.E.
Program Administrator
Water and Environmental Resources Permitting

Enclosures: Project Drawings, 8 pages
Mitigation Plan 11 pages

cc: U.S. Army Corps of Engineers Jacksonville Office (CorpsJaxReg@usace.army.mil)

NOTICE

YOUR PROJECT DID NOT QUALIFY FOR THE STATE AND FEDERAL COMBINED STATE PROGRAMMATIC GENERAL PERMIT (SPGP) PROGRAM. THE ATTACHED AUTHORIZATION(S) DOES NOT INCLUDE THE REQUIRED FEDERAL AUTHORIZATION FOR YOU TO CONSTRUCT YOUR PROJECT. A COPY OF YOUR APPLICATION HAS BEEN SENT TO THE US ARMY CORPS OF ENGINEERS (USACOE) FOR PROCESSING. THE FEDERAL AUTHORIZATION FOR YOUR PROJECT WILL BE SENT TO YOU SEPARATELY BY THE USACOE. YOU CAN NOT CONSTRUCT YOUR PROJECT WITHOUT THE APPROPRIATE FEDERAL AUTHORIZATION. THE USACOE CAN BE CONTACTED IN JACKSONVILLE AT 904-232-1679.

X=465,000
X=470,000
X=475,000
X=480,000
X=485,000
Y=2,210,000
Y=2,205,000
Y=2,200,000

HECKSCHER DRIVE

CRUISE SHIP TERMINAL
JAX PORT

ST JOHNS RIVER

CELL B

CELL B2

CELL A

CELL C

CELL F

AREA OF EROSION CONTROL
WAVE ATTENUATION STRUCTURE
(SEE PLATE C-02)

APPROXIMATE SHORELINE

APPROXIMATE SHORELINE

APPROXIMATE SHORELINE

APPROXIMATE SHORELINE

MOL TRAPAC
CONTAINER
TERMINAL

INTERSTATE 295

CITY OF JACKSONVILLE

BLOUNT ISLAND

OLD RIVER

DAMES POINT TERMINAL

ST JOHNS RIVER

DAMES POINT BRIDGE

MILL COVE

BARTRAM ISLAND

MILL COVE

BARTRAM ISLAND

AREA OF PROPOSED
WETLAND MITIGATION
(SEE PLATE C-04)

LEGEND

- W — LIMITS OF JURISDICTIONAL WETLANDS
- TREE LINE
- JURISDICTIONAL WETLANDS
- PROPOSED WETLAND IMPACT AREA
- PROPOSED REVETMENT FOOTPRINT
- MHW (1.16' NAVD88)

N

GRAPHIC SCALE
1500' 0 1500'

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA

US Army Corps of Engineers
Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

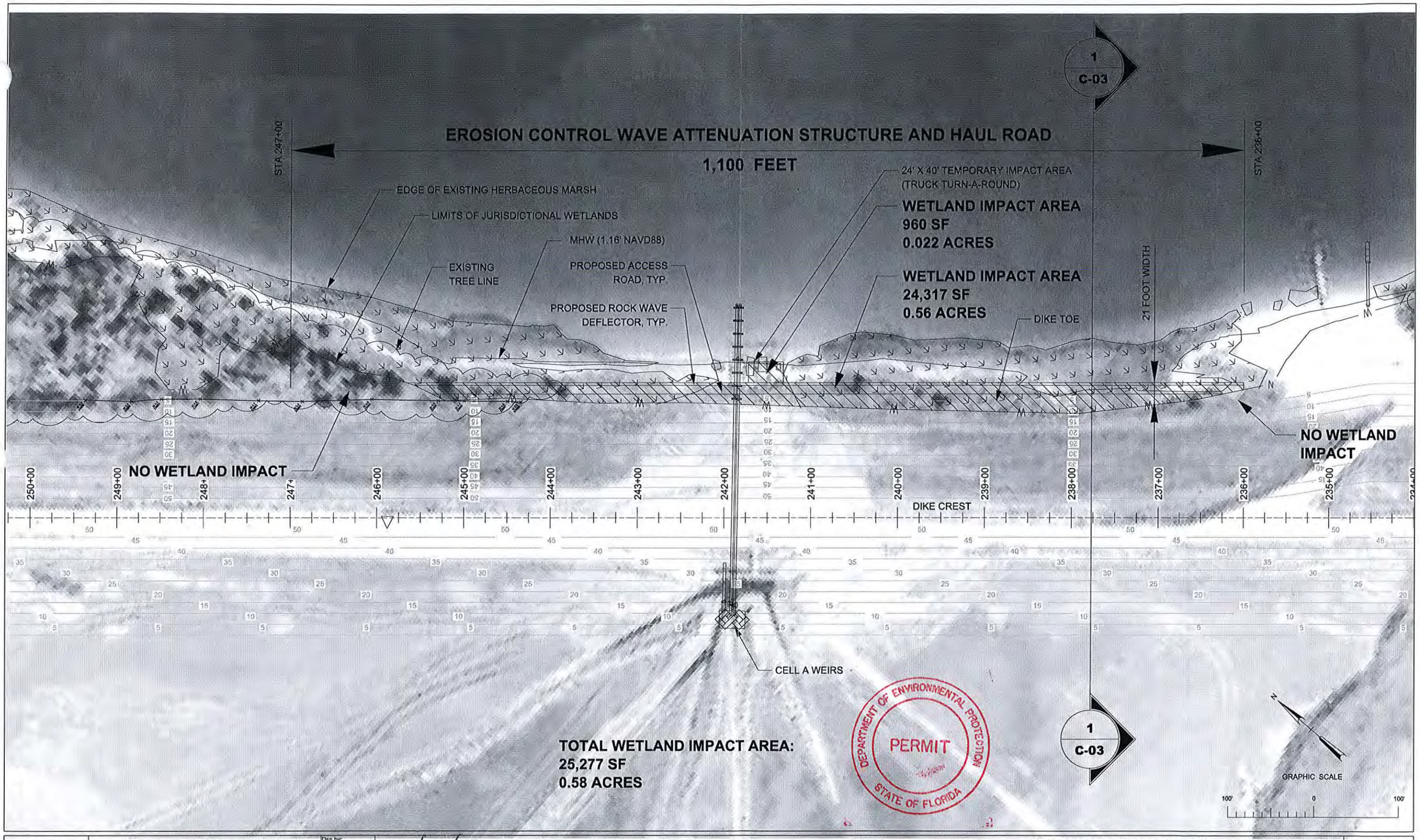
12/10/13

WQC PLATES
NOT FOR CONSTRUCTION

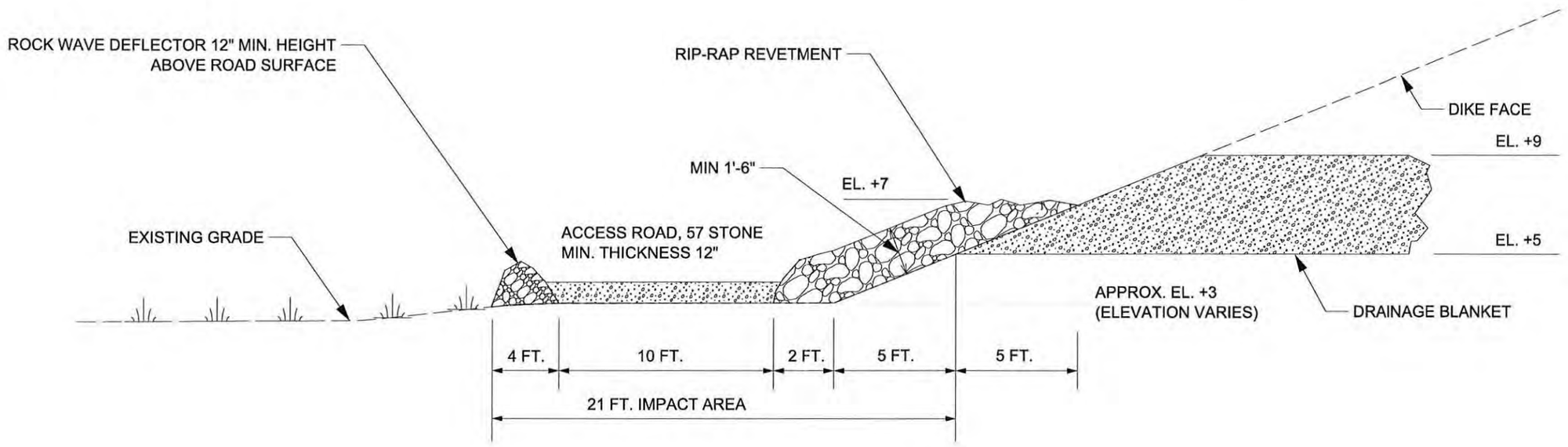
JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

BARTRAM ISLAND OVERALL

PLATE
C-01



US Army Corps of Engineers, Jacksonville District	WQC PERMIT PLATE NOT FOR CONSTRUCTION **DEPARTMENT OF THE ARMY** JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	Dsn by: JDB Dwn by: MR2 Ckd by: LRP Dated: NOVEMBER 2013	12/16/13 **WQC PLATES** NOT FOR CONSTRUCTION	**JACKSONVILLE HARBOR, FLORIDA** **BARTRAM ISLAND CELL A,** **SHORE PROTECTION AND WETLAND RESTORATION** **CELL A EROSION CONTROL WAVE ATTENUATION STRUCTURE AND HAUL ROAD PLAN**	PLATE C-02



1
C-02

EROSION CONTROL WAVE ATTENUATION STRUCTURE AND ACCESS ROAD DETAIL

(NOT TO SCALE)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA

US Army Corps of Engineers
Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by: JDB
Dwn by: MR2
Ckd by: LRP
Dated: NOVEMBER 2013

12/16/13

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

EROSION CONTROL WAVE ATTENUAION STRUCTURE AND ACCESS ROAD DETAIL

PLATE
C-03

US Army Corps of Engineers
Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

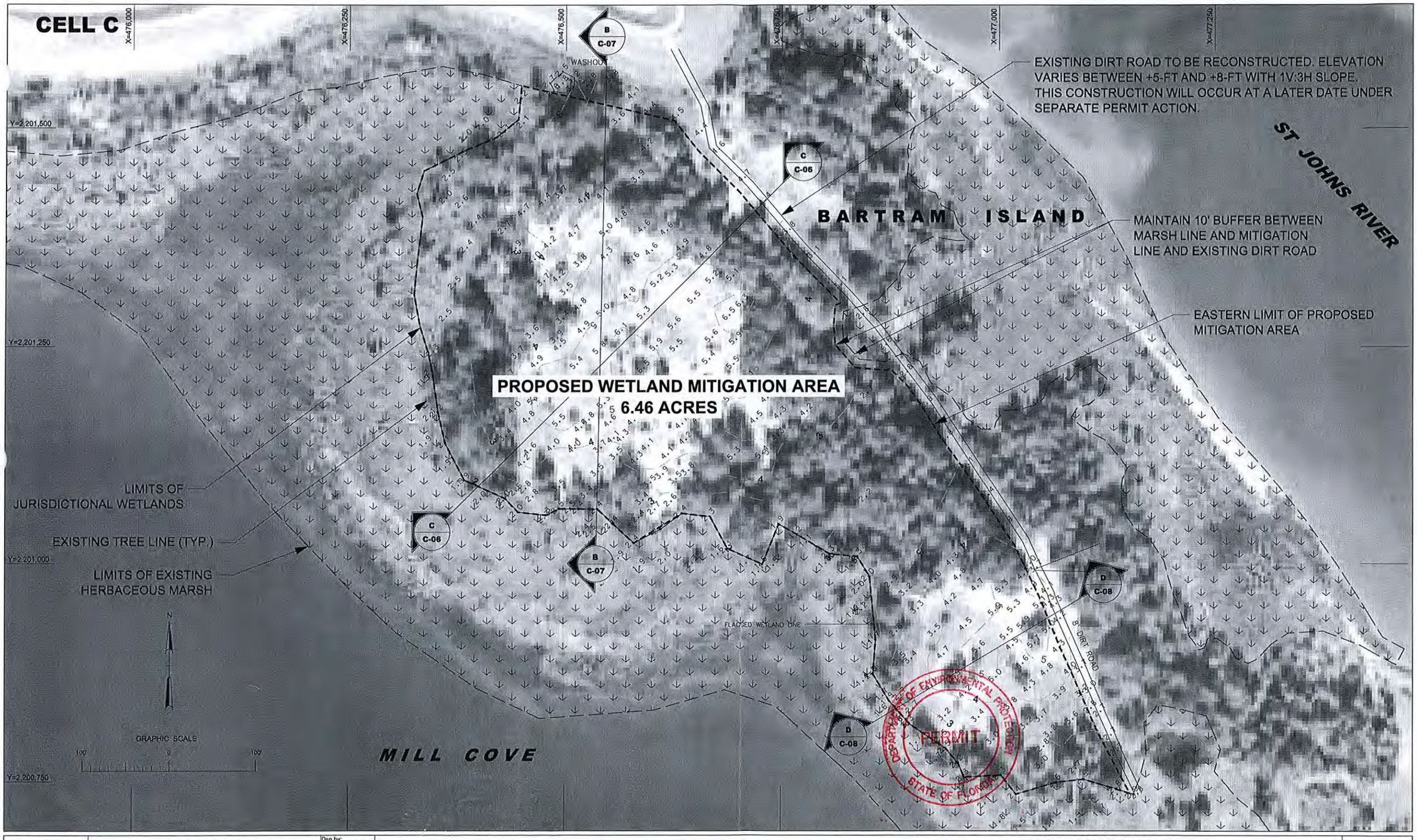
12/16/13

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

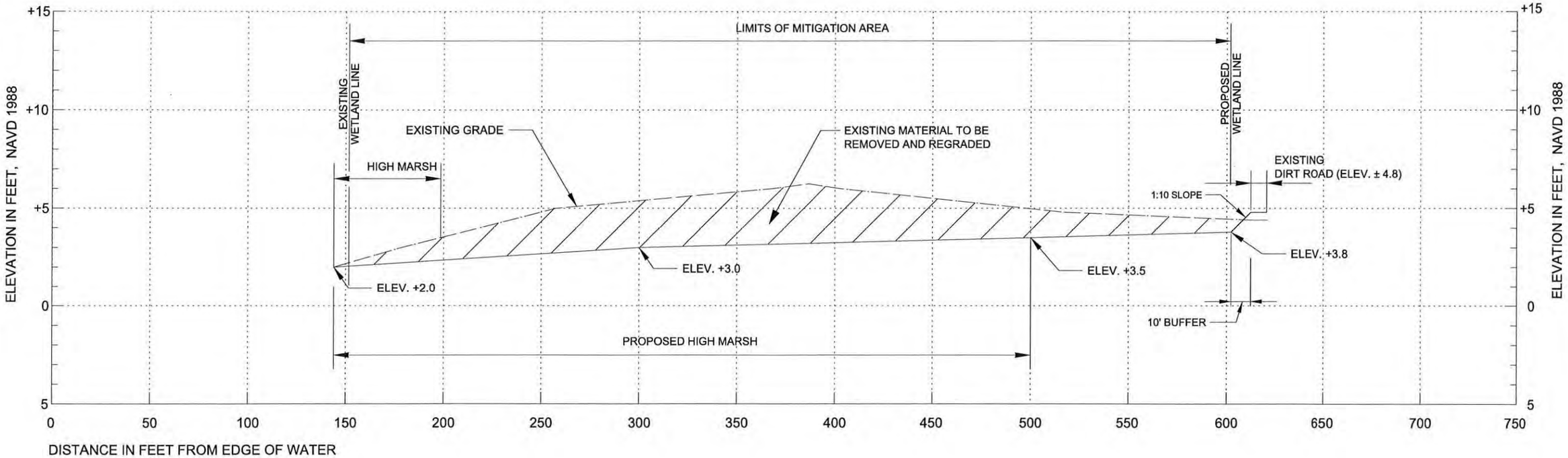
WETLAND MITIGATION AREA - OVERALL

PLATE
C-04



US Army Corps of Engineers • Jacksonville District	WQC PERMIT PLATE NOT FOR CONSTRUCTION	Dsn by: JDB	**WQC PLATES** NOT FOR CONSTRUCTION	**JACKSONVILLE HARBOR, FLORIDA BARTRAM ISLAND CELL A, SHORE PROTECTION AND WETLAND RESTORATION**
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	Dwn by: MR2		**WETLAND MITIGATION - PLAN VIEW**
		Ckd by: LRP		PLATE C-05
		Dated: NOVEMBER 2013		

12/16/13



C-05 — **CROSS SECTION - CELL C WETLAND MITIGATION**

HORZ. = SCALE "A"
VERT. = SCALE "B"

DEPARTMENT OF ENVIRONMENTAL PROTECTION — PERMIT — STATE OF FLORIDA

"A" 50' 0 50'

GRAPHIC SCALE

"B" 5' 0 5'

US Army Corps of Engineers — Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by: JDB
Dwn by: MR2
Ckd by: LRP
Dated: NOVEMBER 2013

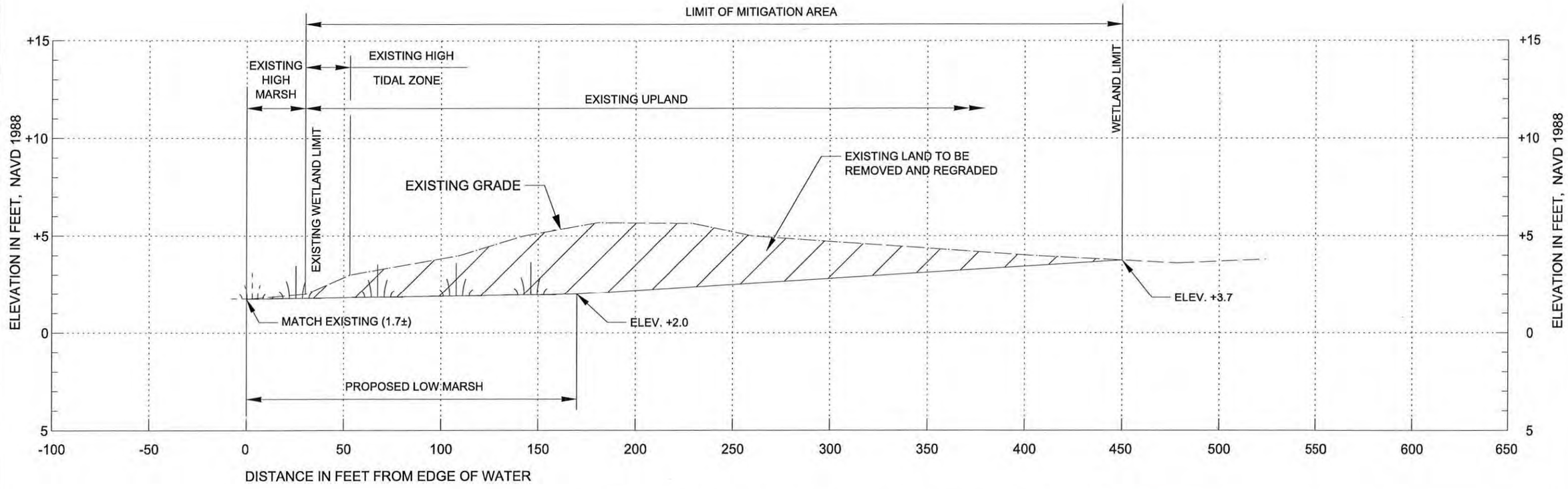
12/16/13

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

WETLAND MITIGATION AREA - CROSS SECTION

PLATE
C-06



B
C-05

CROSS SECTION - CELL C WETLAND MITIGATION

HORZ. = SCALE "A"
VERT. = SCALE "B"

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA

"A" 50' 0 50'

GRAPHIC SCALE

"B" 5' 0 5'

US Army Corps of Engineers
Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by: JDB
Dwn by: MR2
Ckd by: LRP
Dated: NOVEMBER 2013

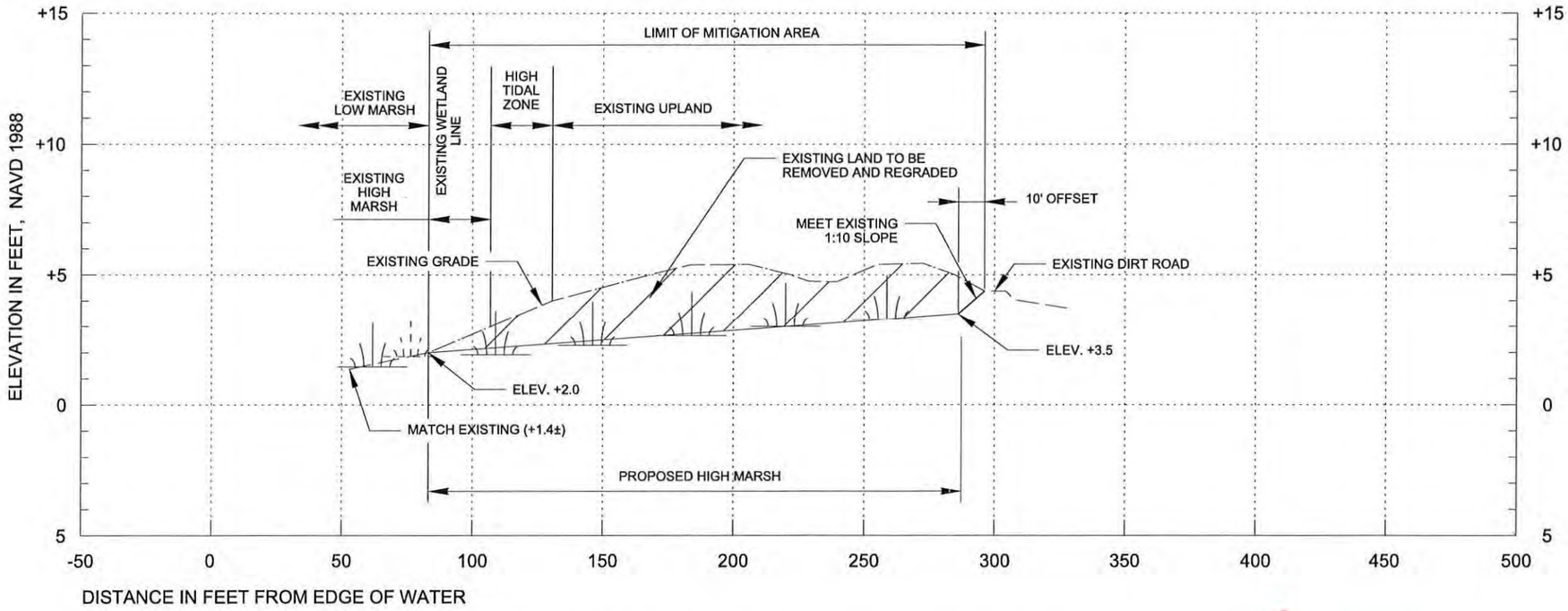
12/16/13

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

WETLAND MITIGATION AREA - CROSS SECTION

PLATE
C-07



D
C-05

CROSS SECTION - CELL C WETLAND MITIGATION

HORZ. = SCALE "A"
VERT. = SCALE "B"

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA

GRAPHIC SCALE

US Army Corps of Engineers
Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

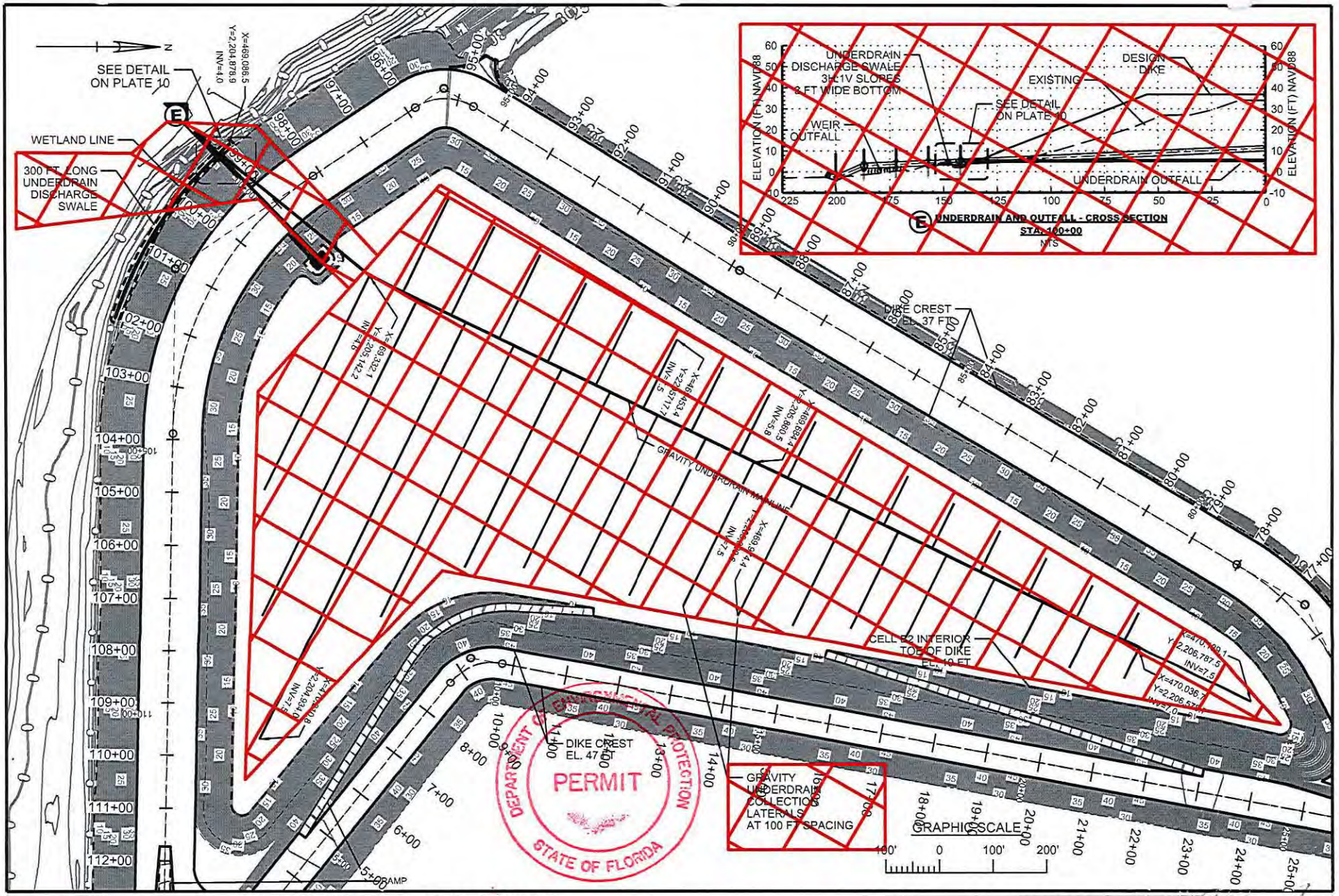
12/16/13

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

WETLAND MITIGATION AREA - CROSS SECTION

PLATE
C-08



US Army Corps of Engineers Jacksonville District

PERMIT DRAWINGS
(NOT FOR CONSTRUCTION)

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

FILE NAME:

DATED:

SCALE: AS SHOWN

DWN BY: MLC

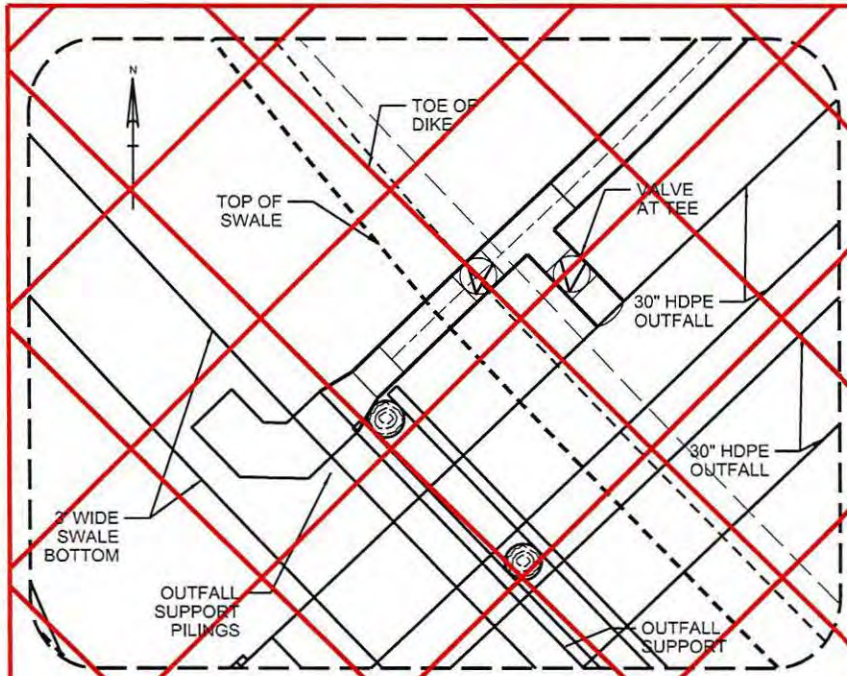
GENERAL NOTES:
ALL SLOPES SHOWN ARE TYPICAL.
THE VERTICAL DATUM ON ALL ELEVATION INFORMATION SHOWN IS NGVD 1988.

UNDERDRAIN COLLECTION SYSTEM, DISCHARGE OUTFALL, AND 300' RECEIVING SWALE
THE THE EXTERIOR DIKE TOE ARE DELETED FROM CONSTRUCTION PLANS AS OF 29 JULY 2013.

JACKSONVILLE HARBOR
DUVAL COUNTY, FLORIDA
DMMA BARTRAM ISLAND
CELL A DIKE RAISING
~~CELL B2 UNDERDRAIN MANIFOLD SYSTEM~~

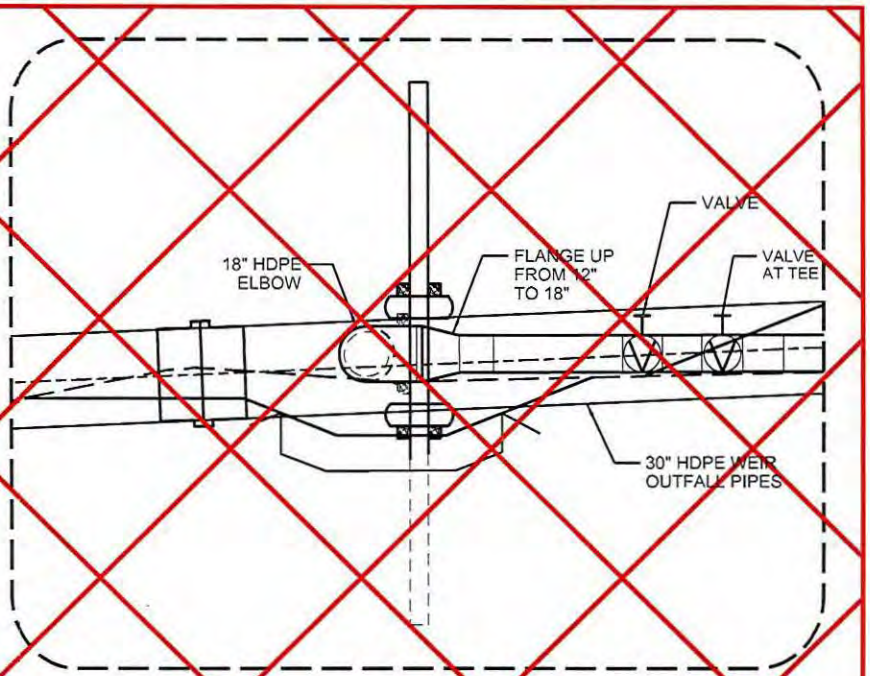
PLATE: 9

12/16/13



UNDERDRAIN DETAIL - PLAN VIEW

SCALE: A



UNDERDRAIN DETAIL - CROSS SECTION

SCALE: A

NOTE:

UNDERDRAIN COLLECTION SYSTEM, DISCHARGE OUTFALL, AND 300' RECEIVING SWALE AT EXTERIOR DIKE TOE ARE DELETED FROM CONSTRUCTION PLANS AS OF 29 JULY 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT
STATE OF FLORIDA

GRAPHIC SCALE

SCALE A: 2' 0 2' 4'

US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION) DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	FILE NAME:	DWN BY: MLC	GENERAL NOTES:	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **UNDERDRAIN DETAILS**	**PLATE: 10**
		DATED: APRIL 2013				
		SCALE: AS SHOWN				

Bartram Island Mitigation Plan

The following mitigation plan complies with the requirements of Section 2036 of the Water Resources Development Act of 2007 (WRDA 2007) and "complies with the mitigation standards and policies established pursuant to the regulatory programs". Also the mitigation plan is proposed to address the loss of jurisdictional wetlands consisting of salt marsh to remain in compliance with the Section 404 of the U.S. Clean Water Act. The functions provided by the creation of new salt marsh in a disturbed upland area on-site will be similar to those lost from the permanent impact by removal of a high marsh system.

Introduction

Bartram Island is located in the lower St. Johns River (LSJR) of the Jacksonville Harbor District; **Figure 1**. It is an active construction site that receives dredge materials from routine maintenance of the River. The material is contained in several Dredged Material Management Area (DMMA) cells constructed from previously dredged material on site. Currently, two DMMA cells (A and B2) are being expanded vertically to accommodate additional dredged material that is anticipated for placement in the near future. A third cell, Cell B, is being used for dry storage of materials excavated from Cells A and B2 to accommodate construction. These activities demonstrate the dynamic nature of the routinely disturbed island. Due to location in the LSJR, Bartram Island is subjected to off-site influences that affect the fringing salt marsh that circumnavigates its perimeter. Specifically, abnormally large, impact-inducing waves are caused by several sources:

- Astronomically high seasonal tides;
- Storm surge;
- Wind generated high energy waves; and
- Vessel wakes (Cargo/cruise ships, pilot tug boats, etc).

Tides within the Dames Point region can vary significantly in height, with ranges from 0.1-ft at low tide to 4.1-ft at high tide during a full moon, and 0.5-ft to 3.8-ft when less than 5% of the moon is visible (http://www.saltwatertides.com/cgi-local/seatlantic.cgi). This variation can push tidal waters against the adjacent dike or into the uplands on-site.

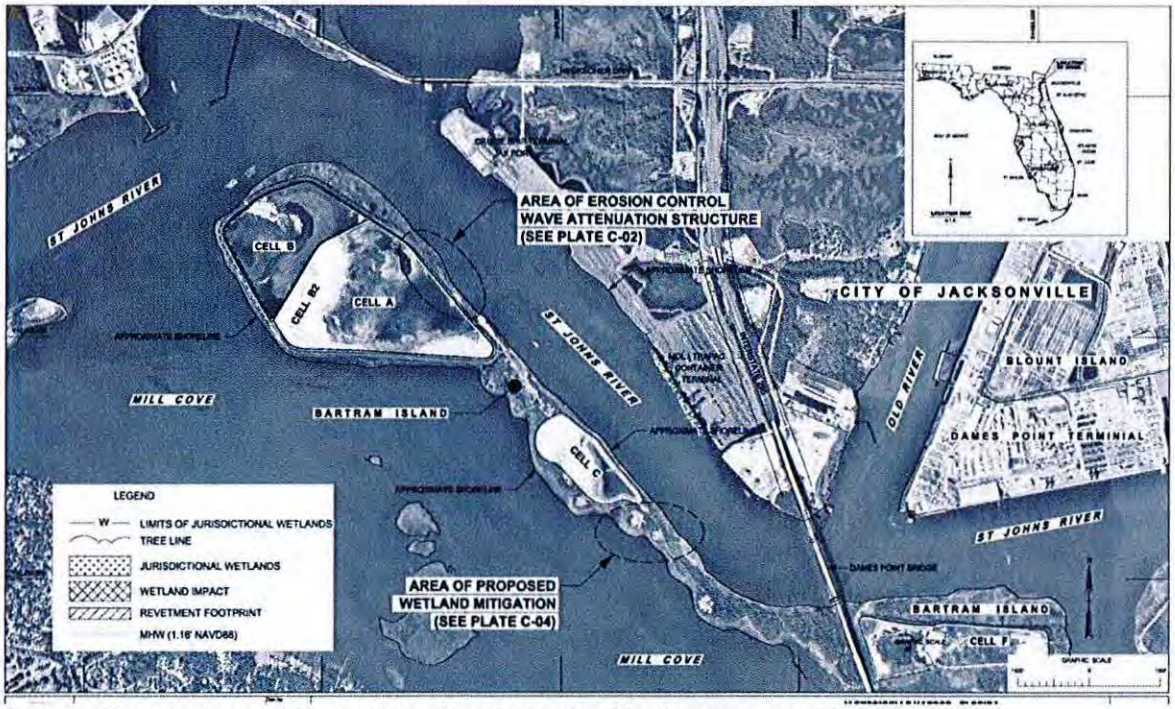


Figure 1. (Permit Plate C-01) Location of Bartram Island in the Lower St. Johns River

Attempts to control erosion of DMMA Cell A/B side-slope on the north side of the island is an on-going activity. Long term stability includes vertical grading along with the placement of topsoil and seeding with herbaceous (grass) species which will occur within a few weeks. However, due to an extraordinarily active wet season from April, 2013 to the present, onsite managers have observed isolated erosional events that have resulted in deposition of fill at the foot of the dike. Activities are underway to restore the fringing salt marsh to pre-event condition; additionally, new erosion control silt fencing has been installed and is monitored regularly to address concerns before they result in adverse impact. It is for this reason a permanent structure is proposed for construction along the cell dike toe of slope at the location where damage is most likely to occur. The wave attenuation structure will provide protection to the fringing salt marsh by dissipating high wave energy and releasing the water back to the River without causing adverse impact of erosion and deposition of material into the estuary system.

The proposed construction of a wave attenuation structure at the toe of the existing dike will result in direct (permanent) impact to salt marsh wetland that exists between the dike and the open water edge of the St. Johns River. Further described herein, the portion of the salt marsh that will be displaced is the high marsh sub-community of the fringing estuary along the base of the dike.

Purpose of Mitigation

The importance of salt marsh ecosystem to the coastal environment can be presented as five ecological roles: primary production, food sources, habitats, stabilization of sediments, and filtration (Dawes, 1998). The purpose of the mitigation is to compensate for the functional loss of high marsh within the footprint of the wave attenuation structure by replacing this community at another location on Bartram

Island between active DMMA cells. Creation of a wetland mitigation site is proposed for a previously disturbed, fallow upland area (FLUCFCS Code 743) which will restore the function of a salt marsh estuarine system.

Description of Impact Area

An estuary consisting of a high and low salt marsh (FLUCFCS Code 642) occurs along the base of the DMMA dike side slope. The estuary was formed from disturbance as a result of on-going construction and maintenance activities over many years. The wetland jurisdictional determination (JD) line is located at the structure base, with the dike built out to the interface delineation line; **Figure 2**. An erosion gravel blanket is at the foot of the dike, which consists of aggregate limestone rock with pore spaces that collect shifting sand. As the pore spaces fill and the material settle, the aggregate and sand form a conglomerate that anchors the dike at its toe. A silt fence is present a few feet from the dike. No upland buffer is present between the dike and JD boundary.

The high marsh grades into a low marsh beyond the project limit and extends to open water of the LSJR. The salt marsh is brackish within a mesohaline (average salinity of 14.5 parts per thousand (ppt)) riverine zone, and is subjected to daily tidal influence (SRRLSJR, 2013). As previously described, the marsh is frequently subjected to high wave energy which often overtops the erosion control silt fence, the first line of defense from the adverse effect of erosion from the side slope depositing material into the marsh. The footprint of the 0.58-acre impact area is a mostly herbaceous high marsh dominated by *Spartina patens* with a small population of *Juncus roemerianus*. Shrubs (*Bachharis halimifolia* and *Myrica cerifera*) are present along the upland margin. A new weir outfall system is located midway along the linear footprint. The HDPE plastic 30-inch pipes extend outward from the dike side wall and are placed on pilings to the water edge of the St. Johns River. The recently installed outfall pipes were included under DEP permit 16-255718-001-ES issued on January 13, 2011.

Wildlife observed in the impact area consists mostly of small crustaceans and minnows when tide is present. Wading birds have been observed roosting on pilings or foraging in or adjacent to the impact zone marsh; osprey are observed foraging overhead. Medium-sized mammals that could utilize the area include raccoons, feral hogs, and armadillo. Sign of scat and tracks indicate that raccoons are frequent visitors.

Description of Proposed Structure

The proposed permanent wave attenuation structure will start at STA 236+00, and will extend around 1,100 feet in length, ending at STA 247+00 at a palm tree hammock. The anticipated area that will be permanently impacted is 0.58 acre, as depicted on the project plan view (**Figure 2**). The width of footprint will be around 21-ft wide along the outer-most edge at the wetland interface. A profile view, **Figure 3,** depicts the tie-in of the dike erosion blanket to the existing wave attenuation structure. The design incorporates features to accept a high energy wave reaching the erosion blanket at the toe of the dike side wall and dissipate the energy so that as water enters and exits the structure it no longer has the ability to cause erosion. This design provides long-term protection to the adjacent marsh from deposition of fill material. Please see the engineering plates included in the DEP permit modification

application submittal (for existing DEP modification #16-259637-003) for further details of the wave attenuation structure design and construction methodology.

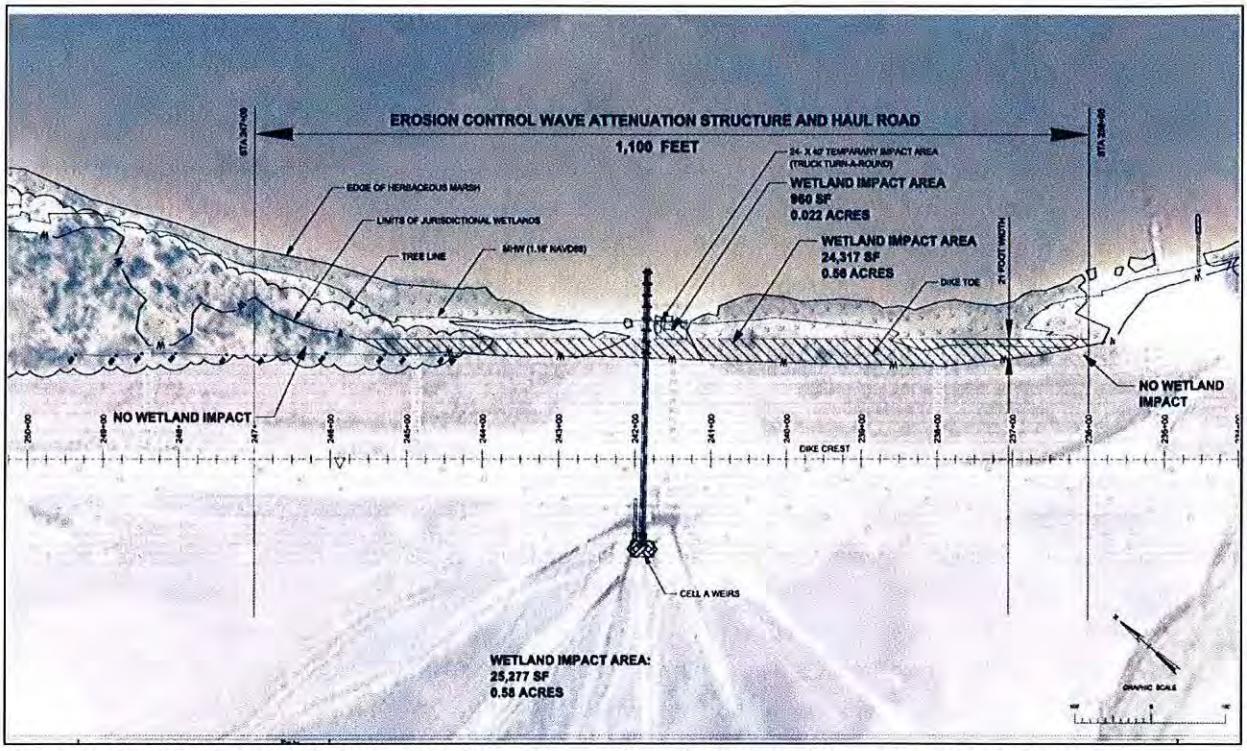


Figure 2. (Permit Plate C-02). Plan view of impact area from footprint of wave attenuation structure.

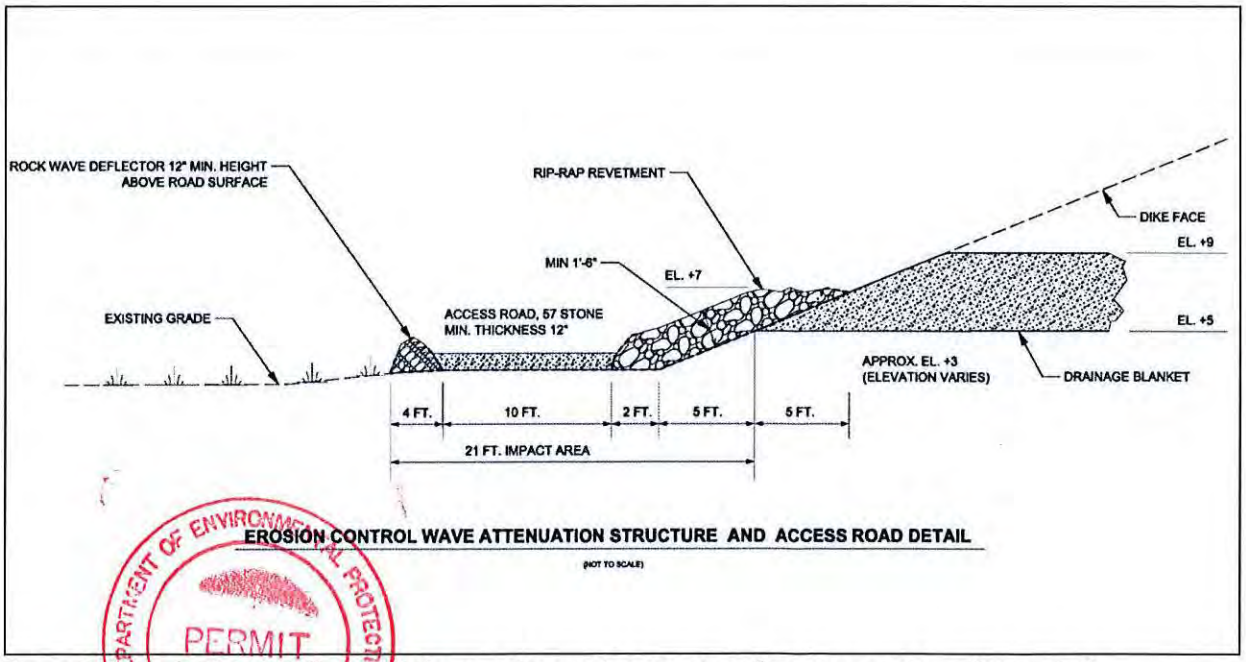


Figure 3. (Permit Plate C-03). Detail of wave attenuation structure for permanent erosion control.

Mitigation Area Existing Conditions

The proposed mitigation area is a fallow, disturbed upland (FLUCFCS Code 743) that is located between DMMA Cells C and F as depicted below in Figure 4. The area is a former dredged material disposal site.

Figure 4. (Permit Plate C-04). Location of mitigation area southeast of Cell C in dormant upland formed by dredged material.

The upland area abuts around 400 feet of a salt marsh on the south side of the island in a crescent shape of the existing landscape, and encompasses 6.46 acres; see plan view of the mitigation area depicted in Figure 5. Soils within the upland consist of medium to fine sand and shell hash derived from former dredged material placed many years ago. The general elevation of the area ranges from approximately 1.1-ft at the low marsh edge to 6.5-ft as shown on the permit plate C-05. The inner area is mostly open (<30% canopy coverage), with herbaceous grasses and forbs comprising ground cover. Vegetation includes predominantly FAC or FACU ruderal herbaceous species of *Schizachyrium scoparium, Eragrostis spectabilis* grasses, and *Melanthera nivea, Solidago sp., Euthamia caroliniana*, and *Erechtites heiractifolia.* Along the margins of the upland area, immature trees and shrubs form a small mesic hammock. Species include *Pinus elliottii, Quercus laurifolia, Juniperus virginiana,* and *Sabal palmetto* along with shrubs *Ilex vomitoria, Myrica cerifera,* and *Baccharis halimifolia.* Along the wetland boundary, the shrubs extend into the upper marsh as the system transitions into an herbaceous dominated high marsh (FLUCFCS Code 642). The high marsh has greater diversity, with a co-dominance of *Spartina patens* and *Juncus roemerianus*, along with non-dominant grasses *Distichlis spicata* and *Setaria corrugata.* As common throughout the fringing marsh along the island perimeter, *Spartina alterniflora* dominates the low marsh waterward near the LSJR edge. Few invasive species are present.

Soils in the adjoining salt marsh consist of saturated or inundated fine sand that are saturated to the mean high water line (MHW).

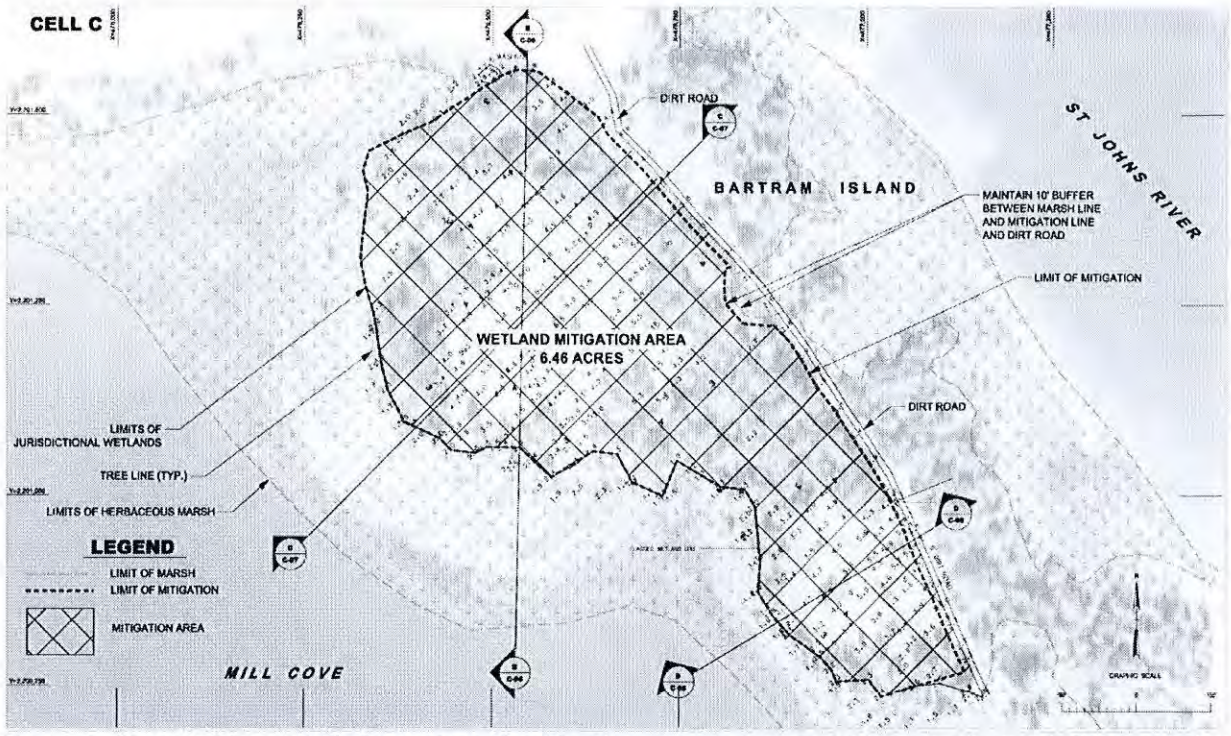


Figure 5. (Permit Plate C-05). Plan view of mitigation area to be created as a salt marsh from existing upland.

Hydrology in the adjoining salt marsh is provided by daily tide as well as runoff from the upland during storm events. In existing conditions, the low and high salt marsh experience inundation that even during low tide soils remain persistently saturated at or near the substrate surface. Extreme flood events occasionally force tidal waters into the upland at the wetland system boundary. Although infrequent, events of this nature have occurred during the current wet season this year. A small drainage channel is present to the west just offsite of the mitigation area. An access road abuts the area to the north, and is excluded from the mitigation. Also, adjacent upland north of the road will be used for staging equipment and storing material removed during the grading operation.

Studies show that restoration of tidal flow and associated habitat changes are important features that can influence bird populations (C. T. Roman and D. M. Burdick (ed), 2012). Wildlife usage in the upland mitigation assessment area is low. Feral pigs, raccoons, and armadillo tracks are present. Trees and shrubs provide cover and forage resources for songbirds. A black racer snake was observed on the access road. Wading birds are present in the adjacent salt marsh. Ospreys and red-shouldered hawks routinely fly overhead to forage for food.

Mitigation Area with Project

The upland area will undergo construction into a wetland by two main activity components: manipulation of the site topography, and introduction of salt marsh vegetation. Tidal marshes typically

have spatially structured vegetation and low diversity (Dawes, 1998). The lower edge of a salt marsh, as found in northern Florida, is drained more completely than inland zones (Dawes, 1998). Often times, this zonation is overlapping in vegetation. The proper elevation needed to sustain the hydrology for appropriate marsh vegetation per stratum will be based on that of the adjoining system so that the entire area will integrate seamlessly into a brackish water marsh found around the perimeter of Bartram Island.

First, upland vegetation will be removed by grubbing and cutting down of trees and woody vegetation. Some existing native species trees such as *Pinus elliottii* and *Sabal palmetto* may be left in isolated locations to become small upland tree islands within the created salt marsh, thus mimicking the habitat that occurs throughout the fringing estuary around the island.

Next, the exposed ground will be graded with heavy equipment, including the removal of excess sand material so that a target topographic elevation is achieved. High marsh is an irregularly flooded system that is not inundated on every daily high tide; rather, it is during exceptionally high tides such as spring or wind-driven tides (Lippson, R.J. and A.J. Lippson, 2009). Studies have shown that a gentle slope of 1 to 3% is recommended to maximize the intertidal areas in tidal marsh restoration, and to dissipate wave energy or a greater area, reducing the probability of erosion (S.W. Broome and C.B. Craft, 1997). Elevation requirements of vegetation to be planted at creation sites can be determined by observing the upper and lower elevation limits of the dominant plant species at the nearby natural marsh (S.W. Broome and C.B. Craft, 1997). The Bartram Island mitigation area will have a gradual drop from an elevation of 3.5 at the existing upland immediately outside of the project limit to an elevation of 2.0-ft found at the existing boundary along the marsh interface toward the River's edge; see profiles on permit plates C-06 to C-08.

The attached graphic illustration of the mitigation area represents the contrast of the existing condition to the with-project rendition. The final grade elevation will match that of the existing regularly flooded low marsh topography relevant to the LSJR water edge. It is anticipated that additional low marsh will require expansion into the existing upper marsh near the boundary of the disturbed wetland/upland interface. This expansion will accommodate the hydrology needed to sustain a newly established transition of wetland in the area of the former upland. Therefore, some alteration of the existing upper marsh will occur as an enhanced sub-community of low marsh. The removal of earthen material from the present wetland boundary to the edge of the created marsh will allow low marsh to extend into this area, but as the slope gradually increases, a vegetation sub-community will transition from low to high marsh, until reaching the upland buffer.

Upland material removed from the site will be stored in the adjacent upland outside of the mitigation project limits for use in maintenance of access roads or other activities associated with the DMMA. Also, a staging area will be located in this area. The existing access road may be maintained using the upland material. Best management practices such as erosion control fencing will be placed along the upland perimeter, and a turbidity curtain will be placed at the watered edge to collect any sediment that may migrate during construction activities.

Establishment of vegetation appropriate for the salt marsh will focus on dominant species that typically occur in a high (upper) marsh. However, as discussed above, the low marsh will be expanded into the area now occupied by a disturbed high marsh along the interface of the wetland boundary. Therefore, some low marsh vegetation will also be included in the planting scheme. One disadvantage of sandy material is its low nutrient capacity, but the problem is alleviated where tidal flooding deposits significant amounts of nutrient-rich particles (C. T. Roman and D. M. Burdick, 2012). Application of fertilizers containing nitrogen and phosphorus enhances plant growth and is usually beneficial during establishment (S.W. Broome and C.B. Craft, 1997). Prior to the plantings, the substrate soils may require some application of fertilizer in order to provide nutrients to newly establishing plants because the previously dredged material contains little nutritional value for vegetation (S.W. Broome and C.B. Craft, 1997). Conversely, overabundance of fertilizer could add unnecessary nutrient loading to the LSJR, which is already stressed from excessive nitrogen and phosphorus. Therefore, the newly exposed soil on site will be tested for residual nutrient and mineral content as a portion of the contracted activities. If the results of the testing determine that soil amendment is required, its use will be sparing and within product guidance. As the vegetation becomes established, sediment accumulation, supplied by tidal and wave action, longshore drift or upland erosion will provide beneficial nutrients that will build the soil over time. This accumulation of sediment allows marsh surfaces to keep pace with rising sea level (S.W. Broome and C.B. Craft, 1997).

Vegetation planting will occur in both the upper and lower marsh sub-communities with regionally available, locally grown materials. The existing lower marsh consisting of a monoculture of *Spartina alterniflora* will be extended landward due to the grading plan detailed above. Therefore, additional *Spartina alterniflora* will be planted into the newly exposed lower elevation toward the water edge. As the lower marsh transitions into a high marsh in the upper elevation area, two dominant vegetation species, *Spartina patens* and *Juncus roemerianus,* will be planted to compose the dominant coverage of the high marsh. Additionally, at the margin of the system, *Distichilis spicata* will be planted for a smooth transition into the upland buffer. These grasses will be supplied in 1-gallon containers and will be spaced on 3-ft centers. As the plants start to spread out during establishment, it is anticipated that natural recruitment of native high marsh species will eventually occupy the open spaces between the plantings adding to the overall diversity. Invasive species will be eradicated as necessary, determined through monitoring.

UMAM Discussion

Pursuant to Florida Chapter 62-345, the Uniform Mitigation Assessment Method (UMAM) was used to evaluate adequate compensation of both the impact zone and proposed mitigation area. The UMAM analysis determines the compensation to offset the functional loss of the existing wetland within the footprint of the pending construction zone. UMAM Worksheets, both Part I and Part II, describe in detail the scoring and supporting data used to calculate the functional loss (FL) from adverse permanent impact, and relative functional gain (RFG) of a proposed mitigation action. The completed and enclosed UMAM worksheets addressing 0.58 acre of impact determined a FL of 0.33 based on a delta of 0.57. The UMAM evaluation for the mitigation area determined a RFG of 0.304 based on a delta of 0.52, time lag of 1.14, and risk factor of 1.5. The time lag of 1.14 is based on similar type of salt marsh mitigation

projects in the area, notably the Mile Point Navigation Study Mitigation Assessment (USACE, 2012) in which several acres of salt marsh will be compensated nearby in the LSJR. For the Bartram Island site, a risk factor of 1.5 was chosen for the creation of an herbaceous wetland extending from an existing system. Unlike the Mile Point project, a smaller area will be included in the Bartram Island mitigation which represents less risk of herbaceous vegetation failure; therefore, a slightly lower risk factor was selected. Information regarding the Mile Point Navigation Study UMAM and mitigation plan can be accessed at the following link:

(http://www.saj.usace.army.mil/Portals/44/docs/Navigation/FINAL_Jacksonville_Harbor_Mile_Point_AppendicesB-F.pdf).

Based on the factors above, the calculated amount of acreage required to fully compensate for the adverse permanent impact to the site is 1.10 acres. However, the area that is proposed for mitigation is 6.46 acres. The Corps and Jacksonville Port Authority (Jaxport) propose to construct an on-site salt marsh for the entire 6.46 acre site, along with enhancement of the high salt marsh at the immediate wetland interface within the project limits. Although only 1.10 acre will be used to compensate for impact of this modified permit application, future construction projects associated with the operation and maintenance of the Bartram Island dredge material management facility will most likely result in expansion into the fringing salt marsh along its perimeter. Construction of 6.46 acres of salt marsh at this time will proactively address the current and future impacts, and will result in a significant cost-savings to both the tax-payer funded Federal government and Jaxport project. Additionally, in contrast to a mitigation bank, the mitigation area will only be used to compensate for onsite permanent impacts; no "credits" will be generated or sold to other interests or parties, and the site will be maintained and monitored as a permittee-built wetland mitigation.

Monitoring Plan

Monitoring will be conducted by qualified wetland scientist(s) that have demonstrated expertise in estuarine systems. Monitoring of the created salt marsh will be conducted initially twice a year for two years and once annually for three years until such time that the successfulness of the site is accomplished based on metric success criteria outlined herein. If monitoring is required beyond the initial five years, evaluation of conditions that are causing stress or other retardation of the site towards a general trend of success will be identified and addressed with employment of the mitigation contingency plan, also described herein.

Monitoring will include evaluation of the following parameters:

- Stability—Stability of the substrate and tidal or wave influence of the created site will be assessed to determine if erosion is occurring.
- Hydrology—A qualitative analysis shall be performed to determine whether the hydrology of the site continues to be suitable for low and high marsh habitats.
- Vegetation—Percent cover (including species type) of the created site and adjacent reference wetland will be ascertained using a sufficient number of randomly selected 1-meter^2 quadrants along transect lines. Each species within the quadrat will be identified and counted; their

abundance calculated as a percentage (to determine population and shoot density). The canopy height of the plants within the quadrat is measured and averaged to determine average canopy height for comparison to the reference site.

- Photography—High and low marsh and tidal streams will be photographed from assigned monument locations. One monument will be assigned to a representative location within the reference site.
- Annual Reports—Reports would include maps of the mitigation area, a description of marsh stability including observed erosion; a qualitative analysis of the site hydrology; an analysis of percent cover data including percentage of high marsh; photographs of the created area from assigned monuments and miscellaneous features, wildlife sightings or issues; copies of field collected data; and finally, recommendations.

Success Criteria provides the basis of established plant growth that is documented to have unassisted persistence for at least two consecutive years within the created site. The criteria for a successful basis of comparison include:

- Areal coverage of species composition within 15% of that in identified nearby reference site for the first year; within 90% by the third year so that less than 10% of exposed or eroded substrate is present.
- Dominance of plant community by target native species (*Spartina alterniflora, S. patens, Juncus roemerianus,* and *Distichlis spicata)* which is similar to the reference salt marsh site determined by plant cover analysis.
- High marsh comprises at least 60% of the total created (former upland) area.
- Hydrological conditions remain favorable for high and low marsh habitats.

Contingency Plan

Environmental monitoring over a period of five years will help ensure the sustainability of the restoration site. The Corps shall be ultimately responsible for ensuring that the final success criteria are met, and will take corrective actions as necessary. If deemed necessary, any corrective actions, such as re-planting or substrate manipulation (elevation or nutrient level adjustment), may be monitored for at least three additional years from the time they were implemented.

References:

Broome, S.W. and C.B. Craft, Ch 37 of *Tidal Marsh Restoration Creation and Mitigation,* 1997. Ecosystem Restoration: Applying Ecological Succession Theory to Evaluate Wetland Restoration in Urbanizing Coastal Watersheds. EPA grant No. R82611.

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Florida Dept. of Transportation. *Florida Land Use, Cover and Forms Classification System Handbook,* 1999. FDOT Surveying and Mapping Thematic Mapping Section, 3rd Edition, January, 1999.

Lippson, R. L., and A. J Lippson, *Life Along the Inner Coast*, 2009. The University of North Carolina Press, Chapel Hill, NC.

Roman, C.T and D.M Burdick (editors), *Tidal Marsh Restoration: A Synthesis of science and management.* 2012. Island PressWashington, DC.

Tiner, R. W., *Filed Guide to Coastal Wetland Plant of the Southeastern United States,*1993. The University of Massachusetts Press.

University of North Florida and Jacksonville University, 2013. *State of the River Report for the Lower St. Johns River Basin, FL.* 2013. Prepared for the Environmental Protection Board, City of Jacksonville, FL.

USACE *Jacksonville Harbor (Mile Point) Navigation Study, Duval County, Florida Final Integrated Feasibility Report and Environmental Assessment*, March, 2012. U. S. Army Corps of Engineers South Atlantic Jacksonville District.

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Florida Department of
Environmental Protection

Northeast District Office
7825 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256-7590

Permittee/Authorized Entity:
Joe R. Miller
Jacksonville Port Authority
2831 Talleyrand Avenue
Jacksonville, Florida, 32206, Duval County

Bartram Island Cell "A" Raising and Partitioning

Environmental Resource Permit
State-owned Submerged Lands Authorization –Not Applicable

U.S. Army Corps of Engineers Authorization –Separate Corps Authorization Required

Permit No.: 16-255718-001-ES

Permit Issuance Date: January 13, 2011
Permit Construction Phase Expiration Date: January 13, 2016

Environmental Resource Permit

Permittee: Jacksonville Port Authority
Permit No: 16-255718-001-ES

PROJECT LOCATION

The activities authorized by this Permit are located at Bartram Island Cell "A", Jacksonville, Florida 32226, in Sections 22, 23, and 26, Township 01 South, Range 27 East in Duval County, at Latitude 30°24'19.08" /Longitude -81°35'45.42.

AUTHORIZATIONS

Bartram Island Cell "A" Raising and Partitioning

Project Description

The permittee is authorized to divide the current Bartram Cell A into two cells which will be called Bartram Island Cell A and Bartram Island Cell B-2. The Bartram Island Cell A dike will be raised from 35 ft. to 47 ft. NAVD 1988, while Bartram Island Cell B-2 will remain at 37 ft. NAVD 1988. All the proposed dikes will have their crests wide enough to accommodate future raisings to 55 ft. NAVD 1988. This will provide additional 2.8 M yd^3 of capacity for Cell A and 1.1 M yd^3 for Cell B-2. The project also includes replacing the existing weirs and associated structures with four new box riser weirs and associated structures, installing 8,500 linear feet of gravel drainage blanket, and the construction of a 264 square foot dock consisting of a 3 ft. wide by 48 ft. long gangway and a 5 ft. wide by 24 ft. long terminal platform on the St. Johns River, a Class III waterbody, not an Outstanding Florida Waterbody, not within an aquatic preserve. Authorized activities are depicted on the attached exhibits.

The project described above may be conducted only in accordance with the terms, conditions and attachments contained in this permit. The issuance of this permit does not infer, nor guarantee, nor imply that future permits or modifications will be granted by the Department.

Sovereignty Submerged Lands Authorization

As staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the Department has reviewed the activity described above and has determined the activity is not on submerged lands owned by the State of Florida. Therefore, your project is not subject to the requirements of Chapter 253, Florida Statutes (F.S.).

Federal Authorization

A copy of this permit has been sent to the U.S. Army Corps of Engineers (USACE). The USACE may require a separate permit. Failure to obtain any required federal permits prior to construction could subject you to enforcement action by that agency.

Coastal Zone Management

This permit also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act.

Water Quality Certification

This permit constitutes certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

Other Authorizations

You are advised that authorizations or permits for this project may be required by other federal, state or local entities including but not limited to local governments and homeowner's associations. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

PERMIT CONDITIONS

The activities described herein must be conducted in accordance with:

The Specific Conditions
The General Conditions
The limits, conditions and locations of work shown in the attached drawings
The term limits of this authorization

You are advised to read and understand these conditions and drawings prior to commencing the **authorized** activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings. If you are utilizing a contractor, the contractor also should read and understand these conditions and drawings prior to commencing the authorized activities. Failure to comply with these conditions, including any mitigation requirements, shall constitute grounds for revocation of the Permit and appropriate enforcement action by the Department.

Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit/certification/authorization, as specifically described above.

SPECIFIC CONDITIONS - PRIOR TO CONSTRUCTION

1. Prior to commencement of work authorized by this permit, the permittee shall provide written notification of the date of the commencement and proposed schedule of construction to SLERP, Department of Environmental Protection, Northeast District, 7825 Baymeadows Way, Suite B-200, Jacksonville, Florida 32256-7590.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

2. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permittee shall cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The permittee shall contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at (850) 245-6333 or (800) 847-7278, as well as the Department of Environmental Protection at 904-256-1700. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes. The following excerpt from **872.05 Unmarked Human Burials is provided for informational purposes:**

872.05(4) DISCOVERY OF AN UNMARKED HUMAN BURIAL OTHER THAN DURING AN ARCHAEOLOGICAL EXCAVATION --When an unmarked human burial is discovered other than during an archaeological excavation authorized by the state or an educational institution, **all activity that may disturb the unmarked human burial shall cease immediately, and the district medical examiner shall be notified. Such activity shall not resume unless specifically authorized by the district medical examiner or the State Archaeologist.**

3. All wetland areas or water bodies which are outside the specific limits of construction authorized by this permit shall be protected from erosion, siltation, scouring, excess turbidity, or dewatering. Turbidity curtains, hay bales, and other such erosion/turbidity control devices shall be installed pursuant to Chapter 6 of The Florida Land Development Manual, A Guide to Sound Land and Water Management, prior to the commencement of dredging, filling, or construction activity. The devices shall remain functional at all times and shall be maintained on a regular basis. Turbidity and/or sedimentation resulting from any activities associated with the project shall not be allowed to enter waters of the State.

4. The work shall be done during periods of average or low water.

5. This permit does **not** authorize the removal of any vegetation within the jurisdictional area.

6. Outside the specific limits of construction authorized by this permit, any disturbance of or damage to wetlands shall be corrected by restoring pre-construction elevations and planting vegetation of the same species, size, and density that exist in adjacent undisturbed wetland areas.

7. The structure authorized by this permit shall not be placed on any property, other than that owned by the permittee, without the prior written approval of that property owner.

8. Outside the specific limits of construction authorized by this permit, the permittee shall not entrench any water, sewer, cable, or utility lines within wetlands, place unpermitted fill material or structures within wetlands, or place sod or landscape material (timers, rock, etc.) within the wetlands.

9. Outside the specific limits of construction authoro0zed by this permit, the permittee shall restore any altered ground contours within the wetlands to an elevation consistent with that of the adjacent wetlands so as to maintain natural hydration, vegetation, and drainage patterns.

10. No dredging, filling, or other construction activity, including the removal of tree stumps and/or vegetative root masses, shall be conducted within the wetlands other than that performed within the specifically authorized work corridor.

11. The project shall comply with applicable State Water Quality Standards, namely:
a) Surface Waters, Minimum Criteria, General Criteria – **62-302.500,**
b) Class III Waters – Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife. – **62-302.400.**

12. All wetland areas or water bodies, which are outside the specific areas of construction authorized by this permit, must be protected from erosion and siltation.

13. This permit does not authorize any landscaping within the wetlands, to include the planting or removal of any trees, plants, sod/grasses, or flowers.

14. There shall be no storage or stockpiling of tools, equipment, materials (i.e., lumber, pilings, riprap, and debris) within wetlands, along the shoreline within the littoral zone, or elsewhere within waters of the state unless specifically approved in this permit. Any and all construction debris shall be removed from wetlands/waters of the state within 14 days of completion of the work authorized by this permit.

15. The waterward end of the dock shall be marked by a sufficient number of reflectors so as to be visible from the water at night by reflected light. The reflectors shall not be green or red in color

16. The permittee shall ensure that the contractor follows the attached Dredged Material Management Area Operation Plan for Bartram Island Cell A and Cell B-2.

17.

DMMA CONSTRUCTION CONDITIONS

18. Ground which will become the foundation of earthen dams needs to be stripped of all vegetation and organic detritus or residue, including muck, mud, slimes, or other material which would flow or undergo excessive consolidation under heavy loading. All earth foundation surfaces on which fill is to be placed should be scarified or moistened and compacted prior to spreading of first course of fill material, and the dam base shall be well drained during construction.

19. Material considered suitable for the dike foundation and dike construction shall be SP, SW, SP-SM, SP-SC, and SW-SM as classified in accordance with ASTM D 2482. The suitable material used shall be free of stumps, vegetation, trees, palmettos, muck, and other extraneous matter which could affect the compactability, density, permeability, or shear strength of the finished dam.

20. Soil classification tests shall be performed in accordance with ASTM 2487 for embankment fill or back fill materials. Grain size analysis shall be conducted in accordance with ASTM D422 and Atterberg limits in accordance with ASTM D 2487. Materials shall be tested for every 5,000 yd^3 of embankment or fill materials, additional tests will be required if noticeable changes in the material occur.

21. For DMMA construction, the permittee shall place 12" uncompacted lifts and compacted to 95% of the Standard Proctor Test (ASTM D1557). For the compaction tests, the run shall not be less than one modified maximum dry density test for every 3,000 yd^3 of cohesionless fill in accordance with ASTM D 1557.

22. In-place density tests of the cohesionless materials shall be determined in accordance with ASTM D 6938. Run shall less than one field test on each lift of material every 300 feet of the embankment length or every 500 yd^3 of completed embankment fill or backfill, whichever is less.

23. Throughout DMMA construction, the permittee shall provide quality control/quality assurance as proposed and approved by the Department (approved guidelines included as exhibit 2 of this permit). A QA/QC report shall be included per Specific Condition 16 of this permit.

24. Within 30 days after completion of construction of the DMMA, the permittee shall submit a signed and sealed certification by an appropriate registered professional indicating that the system has been constructed and that the system is ready for inspection by the Department. Along with the certification, the applicant shall also submit at least two copies of as-built drawings to the Department.

The registered professional shall certify that:

a. The system has been constructed substantially in accordance with approved plans and specifications, or;
b. Any deviations from the approved plans and specifications will not prevent the system from functioning in compliance with the requirements of this chapter. The registered professional shall note and explain substantial deviations from the approved plans and specifications.

25. The permittee shall maintain in a permanent file the following construction records. These records shall be available to Department upon request.

a. Aerial photo of construction site in the immediate area after initial site preparation but before shaping of the dams.
b. Final specifications and plans (e.g. bid documents).
c. Results of all soil tests on foundations and fill materials.
d. Logs of borings and engineering geology reports.
e. Final QA/QC report along with copies of construction progress inspections pertinent to core trench, toe drain, internal drains, and other significant phases of the structure. Photographs of various structural items may be included in the file.
f. Aerial photo of completed disposal area taken after construction is completed.
g. Description of and justification for all deviations or variances from the bid documents.
h. As-built drawings.

DMMA OPERATION CONDITIONS

26. Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and with the general and specific conditions of this permit.

27. The permittee shall provide periodic inspections to check for certain critical conditions. This is especially important during dredging operations. The inspections shall be conducted in accordance with the inspection plan as described by section 7.2 of the approved operation plan (included as exhibit 2).

28. During dewatering or discharging, the permittee shall ensure that the turbidity at the weir crests or 150 meters downcurrent from the point of discharge does not exceed 29 NTU above the background level by following the turbidity monitoring plan as described by section 8 of the approved operation plan (included as exhibit 2).

29. The permittee shall operate the weirs to meet the following water level control requirements:

a. Minimum freeboard of 2 ft during normal conditions, and minimum freeboard of 4 ft and 5 ft in Cell B-2 and Cell A respectively for design storm of 110 mph wind, prior to the arrival of the storm.

b. Minimum ponding depth of 2 ft.

The water level control shall be conducted as described by section 6 of the approved operation plan (included as exhibit 2).

30. The permittee shall provide for annual P.E. inspections of the site to ensure that the system is functioning as designed and permitted. The permittee shall submit the inspection reports to the Department within 30 days from the date of inspection certifying that the site is operating as designed. In addition, the permittee shall state in the report what operational maintenance has been performed on the system. The inspection is not required if the site did not operate during the year, however the inspection report shall indicate that the site did not operate during the calendar year (January 1 – December 30) . If the site has not been operating for 2 years or more, the permittee shall provide for the P.E inspection and furnish the Department the inspection report prior to operation.

31. If the system is not functioning as designed and permitted, operational maintenance shall be performed immediately to restore the system. If the operational maintenance measures are insufficient to enable the system to meet the design standards, the permittee shall either replace the system or construct an alternative design. In this connection, the permittee shall submit a permit modification application within sixty (60) days of the date the system was determined to be design deficient.

32. The permittee shall immediately notify the Department by telephone whenever a serious problem occurs at this facility. Notification shall be made to the Northeast District Office Environmental Resource Program Compliance Manager at (904) 256-1700. Within 7 days of the telephone notification, the permittee shall submit to the Department a written report explaining the extent of the problem, its cause, and what action has been or will be taken to correct the problem.

SPECIFIC CONDITIONS – MANATEE CONDITIONS

33. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with, and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

34. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow routes of deep water whenever possible.

35. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers shall not impede manatee movement.

36. All on-site project personnel are responsible for observing water-related activities for the presence of manatees. All in-water operations, including vessels, shall be shutdown if a manatee comes within 50 feet of the operation. Activities shall not resume until every manatee has moved beyond the 50-foot radius of the project operation, or until 30 minutes has elapsed wherein a manatee has not reappeared within 50 feet of the operation. Animals shall not be herded away or harassed into leaving.

37. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida.

38. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. Please see the Florida Fish and Wildlife Conservation Commission website for information on how to obtain appropriate signs: http://www.myfwc.com/docs/WildlifeHabitats/Manatee_EducationalSign.pdf

39. To reduce the risk of entrapment and drowning of manatees, grating or flap gates shall be installed and maintained over any existing or proposed pipes or culverts greater than 8 inches, but smaller than 8 feet in diameter that are submerged or partially submerged and accessible to manatees on the accessible end(s) during all phases of the construction process and as a final design element to restrict manatee access.

SPECIFIC CONDITIONS- NESTING MIGRATORY BIRDS

40. **Nesting Migratory Bird Surveys.** Nesting migratory bird surveys must be conducted by trained, dedicated individuals (Bird Monitor) with bird identification skills and avian survey experience. A list of the Bird Monitors with their contact information, summary of qualifications including bird identification skills and avian survey experience will be provided to the DEP and also to the Florida Fish and Wildlife Conservation Commission (FWC) regional biologist via email to imperiledspecies@myfwc.com, prior to construction or hiring for operational migratory bird surveys. Bird Monitors will use the following survey protocols:

a) Bird Monitors should review and become familiar with the general information and data collection protocols outlined on the FWC Website (https://public.myfwc.com/crossdoi/shorebirds/index.html). An outline of what data should be collected, including downloadable field data sheets, is available on the website.
b) The nesting season is generally 1 April – 15 September, but some nesting may occur through late September. Nesting season surveys shall begin on April 1 or 10 days prior to construction or operational commencement (including surveying activities and other pre-construction presence), whichever is later. These surveys shall be conducted daily throughout the construction or operational period until September 15th, or when nesting is completed, whichever is later.
c) Nesting season surveys shall be conducted in all potential migratory bird nesting habitats within the project boundaries that may be impacted by construction, pre-construction or operational activities during the nesting season. Portions of the project in which there is no potential for project or operational activity during the nesting season may be excluded.
d) Surveys for detecting new nesting activity will be completed on a daily basis prior to movement of equipment, operation of vehicles, flooding of cells, or other activities that could potentially cause harm to the birds or their eggs or young.
e) Surveys should be conducted by walking the length of the project area and visually inspecting, using binoculars or spotting scope, for the presence of migratory birds exhibiting nesting behavior.
i) If an ATV or other vehicle is needed to cover large project areas, the vehicle must be operated at a speed <6 mph, and the Bird Monitor will stop at no greater than 200 meter intervals to visually inspect for nesting activity.
ii) Once nesting is confirmed by the presence of eggs or young, the Bird Monitor will notify the Contracting Officer or Project Manager. Within 30 days after completion of construction, a summary of monitoring shall l be submitted to the DEP and also to the FWC, which details nesting and nesting success/failure including species, number of nests created, location, number of eggs, number of chicks generated during the project and reasons for nesting success or failure, if known. The Contracting Officer or Project Manager can notify the FWC of activities occurring on site via email to imperiledspecies@myfwc.com.

41. **Buffer Zones and Travel Corridors.** Within the project area, the permittee shall establish a minimum 200 ft wide buffer zone, which will be expanded as necessary to prevent disturbance, around any location where migratory birds have active nests, i.e. nests with eggs or chicks. Any and all construction and operational activities, including movement of vehicles, should be prohibited in the buffer zone.

a. The Bird Monitor shall keep nesting sites under sufficient surveillance to determine if birds appear agitated or disturbed by construction or other activities in adjacent areas. If birds do appear to be agitated or disturbed by these activities, then the width of the buffer zone shall be increased immediately to sufficient size in order to protect nesting birds.
b. Site-specific buffers may be implemented as needed. Reasonable and traditional personnel access should not be blocked where nesting birds will tolerate personnel traffic. Personnel traffic may also be tolerated when nesting was initiated within 200 feet of an established personnel access pathway.
c. Designated buffer zones must be posted with clearly marked signs around the perimeter. If personnel pathways are approved within the 200-foot buffer zone, these should be clearly marked. These markings shall be maintained until nesting is completed or terminated. In the case of solitary nesters, nesting is not considered to be completed until all chicks have fledged.
d. No construction activities, movement of vehicles, or stockpiling of equipment shall be allowed within the buffer area.
e. Travel corridors should be designated and marked outside the buffer areas so as not to cause disturbance to nesting migratory birds. Heavy equipment, other vehicles, or pedestrians may transit past nesting areas in these corridors. However, other activities such as stopping or turning shall be prohibited within the designated travel corridors adjacent to the nesting site.
f. Where such a travel corridor must be established within the project area it should avoid critical areas for migratory birds (known nesting sites, wintering grounds, FWC-designated Critical Wildlife Areas, and USFWS-designated critical piping plover habitat) as much as possible, and be marked with signs clearly delineating the travel corridor from the migratory bird buffer areas described above.
g. To the degree practicable, the permittee should maintain some activity within these travel corridors on a daily basis, without directly disturbing any migratory birds documented on site, especially when those corridors are established prior to commencement of construction or operational activities. Passive methods to discourage nesting shall be limited to flooding or flagging of potential nesting sites prior to the start of nesting, or by other appropriate measures that have been approved by the Contracting Officer. The Bird Monitor shall survey these areas prior to flooding or flagging.

42. **Notification.** If migratory bird nesting occurs within the project area, a bulletin board will be placed and maintained in the construction area 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 STATE AND FEDERAL MIGRATORY BIRD ACTS".

43. **Placement of Equipment and Dredged Material.** If it will be necessary to move equipment or materials past a known migratory bird nesting site, then, whenever possible, that should be done so as not to cause disturbance to nesting migratory birds.

44. **Environmental Protection Plan.** An Environmental Protection Plan (EPP) shall be submitted for review and comment to DEP in coordination with FWC prior to any construction activity. This plan shall include monitoring of nesting migratory birds onsite during construction as well as steps that will be followed to address any unavoidable take of migratory birds, should that occur.

GENERAL CONDITIONS

(1) The following general conditions shall be a part of all permits issued pursuant to this chapter and Chapter 40C-40, F.A.C., unless the conditions are inapplicable to the activity authorized by the permit.

(a) All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

(b) This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by Department staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

(c) Activities approved by this permit shall be conducted in a manner which do not cause violations of state water quality standards.

(d) Prior to and during construction, the permittee shall implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in Chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988), which are incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which case the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specifications in Chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources as soon as practicable.

(e) Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(f) At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the Department a fully executed "Construction Commencement Notice" Form 62-343.900(3) indicating the actual start date and the expected completion date.

(g) When the duration of construction will exceed one year, the permittee shall submit construction status reports to the Department on an annual basis utilizing an Annual Status Report Form 62-343.900(4). These forms shall be submitted during June of each year.

(h) For those systems which will be operated or maintained by an entity which will require an easement or deed restriction in order to provide that entity with the authority necessary to operate or maintain the system, such easement or deed restriction, together with any other final operation or maintenance documents as are required by subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, must be submitted to the Department for approval. Documents meeting the requirements set forth in these subsections of the Applicant's Handbook will be approved. Deed restrictions, easements and other operation and maintenance documents which require recordation either with the Secretary of State or the Clerk of the Circuit Court must be so recorded prior to lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the Department when maintenance and operation of the system is accepted by the local governmental entity. Failure to submit the appropriate final documents referenced in this paragraph will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

(i) Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

(j) Within 30 days after completion of construction of the permitted system, or independent portion of the system, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing As Built Certification Form 62-343.900(5) supplied with this permit. When the completed system differs substantially from the permitted plans, any substantial deviations shall be noted and explained and two copies of as-built drawings submitted to the Department. Submittal of the completed form shall serve to notify the Department that the system is ready for inspection. The statement of completion and certification shall be based on on-site observation of construction (conducted by the registered professional engineer, or other appropriate individual as authorized by law, or under his or her direct supervision) or review of as-built drawings for the purpose of determining if the work was completed in compliance with approved plans and specifications. As-built drawings shall be the permitted drawings revised to reflect any changes made during construction. Both the original and any revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. The following information, at a minimum, shall be verified on the "as-built" or "record" drawings:

1. Dimensions and elevations of all discharge structures including all weirs, slots, gates, pumps, pipes, and oil and grease skimmers;
2. Locations, dimensions, and elevations of all filter, exfiltration, or underdrain systems including cleanouts, pipes, connections to control structures, and points of discharge to the receiving waters;

3. Dimensions, elevations, contours, or cross-sections of all treatment storage areas sufficient to determine stage-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems, when appropriate;

4. Dimensions, elevations, contours, final grades, or cross-sections of the system to determine flow directions and conveyance of runoff to the treatment system;

5. Dimensions, elevations, contours, final grades, or cross-sections of all conveyance systems utilized to convey off-site runoff around the system;

6. Existing water elevation(s) and the date determined; and

7. Elevation and location of benchmark(s) for the survey.

(k) The operation phase of this permit shall not become effective until the permittee has complied with the requirements of the condition in paragraph (i) above, the Department determines the system to be in compliance with the permitted plans, and the entity approved by the Department in accordance with subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, accepts responsibility for operation and maintenance of the system. The permit may not be transferred to such an approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the Department, the permittee shall request transfer of the permit to the responsible approved operation and maintenance entity, if different from the permittee. Until the permit is transferred pursuant to section 7.1 of the Applicant's Handbook: Management and Storage of Surface Waters, the permittee shall be liable for compliance with the terms of the permit.

(l) Should any other regulatory agency require changes to the permitted system, the permittee shall provide written notification to the Department of the changes prior to implementation so that a determination can be made whether a permit modification is required.

(m) This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40C-4 or 40C-40, F.A.C.

(n) The permittee shall hold and save the Department harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

(o) Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under Rule 62-343.040, F.A.C., provides otherwise.

(p) The permittee shall notify the Department in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rule 62-343.130, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

(q) Upon reasonable notice to the permittee, Department authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

(r) If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the Department.

(s) The permittee shall immediately notify the Department in writing of any previously submitted information that is later discovered to be inaccurate.

In addition to those general conditions set forth in subsection (1), the Department shall impose on any permit granted under this chapter and Chapter 40C-40, F.A.C., such reasonable project-specific conditions as are necessary to assure that the permitted system will not be inconsistent with the overall objectives of the District or be harmful to the water resources of the District as set forth in District and Department rules. Upon receipt of the notice of intended Department action, any person whose substantial interests are affected shall have the right to request a hearing in accordance with Chapter 28-106 and Rule 62-110.106, F.A.C.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rule 28-106.201, F.A.C., a petition for an administrative hearing must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;
(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

Judicial Review

Any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, M.S. 35, Tallahassee, Florida 32399-3000; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date this action is filed with the Clerk of the Department.

Thank you for applying to the Submerged Lands and Environmental Resource Permit Program. If you have any questions regarding this matter, please contact Aaron Sarchet at the letterhead address or at 904-256-1654 or via his internet email address Aaron.Sarchet@dep.state.fl.us.

Executed in Duval County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

James R Maher

James R. Maher, P.E.
Program Administrator
Submerged Lands & Environmental
Resource Program

Attachments:
Exhibit 1, Project Drawings and Design Specs., 12 pages
Exhibit 2, Approved Operation Plan, 11 pages
Commencement notice /62-343.900(3)
Annual status report/62-343.900(4)
As-built certification/62-343.900(5)
Inspection certification/62-343.900(6)
Transfer construction to operation phase/ 62-343.900(7)
Application for transfer of an ERP permit/62-343.900(8)

Copies furnished to:
U.S. Army Corps of Engineers
FWC, Imperiled Species Management Section File

CERTIFICATE OF SERVICE

The undersigned hereby certifies that this permit, including all copies, were mailed before the close of business on 1/13/12, to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, under 120.52(7) of the Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Linda Batton
Clerk

1/13/12
Date

Permittee: Jacksonville Port Authority
Permit No: 16-255718-001-ES

Issue Date: January 13, 2012
Expiration Date: January 13. 2017

NOTICES SUBMITTED TO THE DEPARTMENT

Your permit DEP File No.: 16-255718-001-ES requires you to submit the attached Notices to the Department at the times indicated. Failure to submit these notices will constitute noncompliance with the conditions of your permit and an enforcement action may be brought against you. If you are using a contractor you are responsible for insuring these notices are submitted to the Department.

PLEASE NOTE - References to stormwater management systems in the attached forms refers to the activity or activities authorized in your permit.

CONSTRUCTION COMMENCEMENT NOTICE -- FORM 62-343.900(3)
To be submitted 48 hours PRIOR to the commencement of the activity

ANNUAL STATUS REPORT - Form 62-343.900(4)
To be submitted annually each JUNE whenever the construction period exceeds one year after the construction commencement date.

AS BUILT CERTIFICATION PRIVATE RESIDENT -- FORM NED/AS-BUILT
In some cases, such as a single family resident constructing a structure on their own property for their own use, certification by a registered professional is not required. However, written notice to the Department within 30 days of completion of construction of the date the structure was completed is required. If you are a private single family resident property owner please use the As Built Certification - Private Resident form .

APPLICATION FOR TRANSFER OF PERMIT -- Form 62-343.900(8)
To be submitted within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or real property at which the system is located.

SUBMIT ALL NOTICES TO: Department of Environmental Protection
Environmental Resources Program
7825 Baymeadows Way, Suite B-200
Jacksonville, Florida 32256-7590

ENVIRONMENTAL RESOURCE PERMIT
CONSTRUCTION COMMENCEMENT NOTICE

PROJECT:_____ PHASE: one (1)

I hereby notify the Department of Environmental Protection that the construction of the surface water management system authorized by Environmental Resource Permit No.: 16-255718-001-ES has / is expected to commence on _____ 20_____, and will require a duration of approximately _____ months _____ weeks _____ days to complete. It is understood that should the construction term extend beyond one year, I am obligated to submit the Annual Status Report for Surface Water Management System Construction.

PLEASE NOTE: If the actual commencement date is not known, Department staff should be notified in writing in order to satisfy permit conditions.

_____ _____ _____

Permittee or Authorized Agent | Title and Company | Date

_____ _____

Phone | Address

Form #62-343.900(3), F.A.C.
Form Title: Construction Commencement Notice
Date: October 3, 1995

ENVIRONMENTAL RESOURCE PERMIT
AS-BUILT CERTIFICATION

PERMIT NUMBER: 16-255718-001-ES

NAME: Jacksonville Port Authority

I hereby certify that the activities authorized by the above permit have been completed in accordance with the drawings, documents and the general and specific conditions as specified in permit No.: .
I also certify that the entity (company, cooperation, individual doing business as -d/b/a) listed below, if other than myself, completed the work authorized by the permit on the date indicated.

_____
First Name, Last Name (please type or print clearly)

_____
Signature of Permittee

Date work completed _____

Work done by: _____
(Company, cooperation, individual doing business as -d/b/a)

_____
(Address)

_____
(Address)

_____
(City)

_____ _____ -- _____
(State) (ZIP Code + 4)

License Number: _____

Form: #consnote/ned
Form title: As-Built Certification
Date: November 11, 1996

APPLICATION FOR TRANSFER OF ENVIRONMENTAL RESOURCE PERMIT AND NOTIFICATION OF SALE OF A FACILITY OR SURFACE WATER MANAGEMENT SYSTEM

Permit No. 16-255718-001-ES Date Issued _____ Date Expires _____

FROM (Name of Current Permit Holder): _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: (____) _____

Identification or Name of Facility/Surface Water Management System: _____

_____

Phase of Facility/Surface Water Management System (if applicable): _____

The undersigned hereby notifies the Department of the sale or legal transfer of this facility, or surface-water management system, and further agrees to assign all rights and obligations as permittee to the applicant in the event the Department agrees to the transfer of permit.

Signature of the current permittee: _____

Title (if any): _____ Date: _____

TO (Name of Proposed Permit Transferee): _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: (____) _____

The undersigned hereby notifies the Department of having acquired the title to this facility, or surface-water management system. The undersigned also states he or she has examined the application and documents submitted by the current permittee, the basis of which the permit was issued by the Department, and states they accurately and completely describe the permitted activity or project. The undersigned further attests to being familiar with the permit, agrees to comply with its terms and with its conditions, and agrees to assume the rights and liabilities contained in the permit. The undersigned also agrees to promptly notify the Department of any future changes in ownership of, or responsibility for, the permitted activity or project.

Signature of the applicant (Transferee): _____

Title (if any): _____ Date: _____

Project Engineer Name (if applicable) _____

Mailing Address: _____

Telephone: (____) _____

APPLICATION FOR TRANSFER OF ENVIRONMENTAL RESOURCE PERMIT AND NOTIFICATION OF SALE OF A FACILITY OR SURFACE WATER MANAGEMENT SYSTEM

Permit No. 16-255718-001-ES Date Issued _____ Date Expires _____

FROM (Name of Current Permit Holder): _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: (____) _____

Identification or Name of Facility/Surface Water Management System: _____

_____

Phase of Facility/Surface Water Management System (if applicable): _____

The undersigned hereby notifies the Department of the sale or legal transfer of this facility, or surface-water management system, and further agrees to assign all rights and obligations as permittee to the applicant in the event the Department agrees to the transfer of permit.

Signature of the current permittee: _____

Title (if any): _____ Date: _____

TO (Name of Proposed Permit Transferee): _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: (____) _____

The undersigned hereby notifies the Department of having acquired the title to this facility, or surface-water management system. The undersigned also states he or she has examined the application and documents submitted by the current permittee, the basis of which the permit was issued by the Department, and states they accurately and completely describe the permitted activity or project. The undersigned further attests to being familiar with the permit, agrees to comply with its terms and with its conditions, and agrees to assume the rights and liabilities contained in the permit. The undersigned also agrees to promptly notify the Department of any future changes in ownership of, or responsibility for, the permitted activity or project.

Signature of the applicant (Transferee): _____

Title (if any): _____ Date: _____

Project Engineer Name (if applicable) _____

Mailing Address: _____

Telephone: (____) _____

Request for Transfer of Environmental Resource Permit Construction Phase to Operation Phase

(To be completed and submitted by the operating entity)

Florida Department of Environmental Protection

It is requested that Department Permit Number 16-255718-001-ES authorizing the construction and operation of a surface water management system for the below mention project be transferred from the construction phase permittee to the operation phase operating entity.

Project:

From: Name: _____
Address: _____
City: _____ State: _____ Zip: _____

To: Name: _____
Address: _____
City: _____ State: _____ Zip: _____

The surface water management facilities are hereby accepted for operation and maintenance in accordance with the engineers certification and as outlined in the restrictive covenants and articles of incorporation for the operating entity. Enclosed is a copy of the document transferring title of the operating entity for the common areas on which the surface water management system is located. Note that if the operating entity has not been previously approved, the applicant should contact the Department staff prior to filing for a permit transfer.

The undersigned hereby agrees that all terms and conditions of the permit and subsequent modifications, if any, have been reviewed, are understood and are hereby accepted. Any proposed modifications shall be applied for and obtained prior to such modification.

Operating Entity:

_____ Title:
Name

Telephone:

Enclosure

☐ Copy of recorded transfer of title surface water management system
☐ Copy of plat(s)
☐ Copy of recorded restrictive covenants, articles of incorporation, and certificate of incorporation.

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK
2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used (see MyFWC.com/manatee). One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 81/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

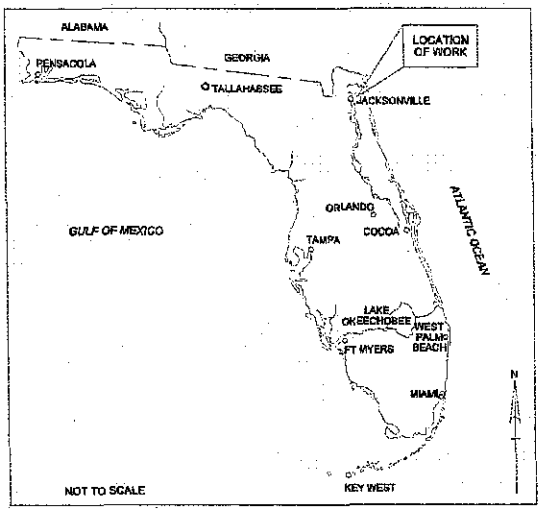
Report any collision with or injury to a manatee:

Wildlife Alert:

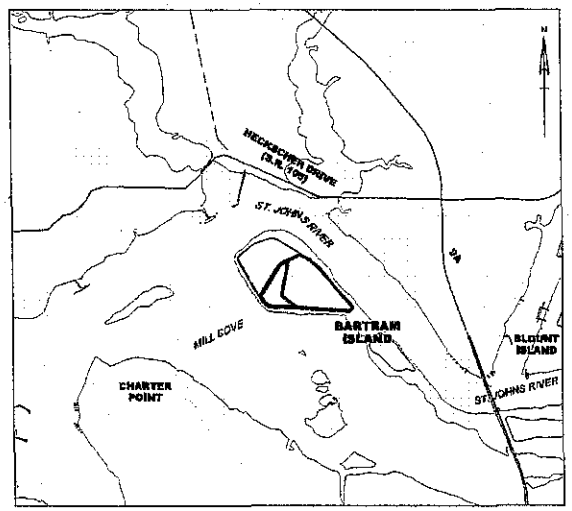
1-888-404-FWCC(3922)

cell *FWC or #FWC

JACKSONVILLE HARBOR
DMMA BARTRAM ISLAND CELL A RAISING AND PARTITIONING



PROJECT LOCATION
N.T.S.



PROJECT VICINITY
N.T.S.

INDEX TO DRAWINGS

PLATE	TITLE
1	COVER SHEET
2	EXISTING PLAN VIEW WITH AERIAL
3	DESIGN PLAN VIEW WITH AERIAL
4	DIKE RAISING CROSS SECTIONS
5	WEIR REPLACEMENT AND INSTALLATION
6	WEIR REPLACEMENT AND INSTALLATION
7	WEIR SYSTEM DETAILS
8	OUTFALL DETAILS
9	CELL B UNDERDRAIN MANIFOLD SYSTEM
10	UNDERDRAIN DETAILS
11	BOUNDARY OF JAXPORT OWNED LANDS
12	FLOATING DOCK PLAN AND PROFILE

ABBREVIATIONS:

APPROX. = APPROXIMATE
DMMA = DREDGED MATERIALS MANAGEMENT AREA
DWG. = DRAWING
℄ = CENTERLINE
CONC. = CONCRETE
℄ = CONSTRUCTION JOINT
EL. = ELEVATION
FT. = FOOT/FEET
HDPE. = HIGH DENSITY POLYETHYLENE
MLLW. = MEAN LOWER LOW WATER
NAD83. = NORTH AMERICAN DATUM OF 1983
NAVD88. = NORTH AMERICAN VERTICAL DATUM OF 1988
NTS. = NOT TO SCALE
TYP. = TYPICAL
USACE. = UNITED STATES ARMY CORPS OF ENGINEERS
USCG. = UNITED STATES COAST GUARD

LEGEND:

- CENTERLINE DIKE
- DESIGN INTERIOR
- 11 CONTOUR
- W WETLAND DELINEATION
- TOP OF DIKE
- UPLAND DISPOSAL AREA (D/A)
- 49.5 ELEVATION AND LOCATION
- 25+00 DIKE STATIONING

DEPARTMENT OF THE ARMY — STATE OF FLORIDA — PERMIT

Lynn A. Westbrook 11/15/11 53508

US Army Corps of Engineers Jacksonville District

PERMIT DRAWINGS
(NOT FOR CONSTRUCTION)

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

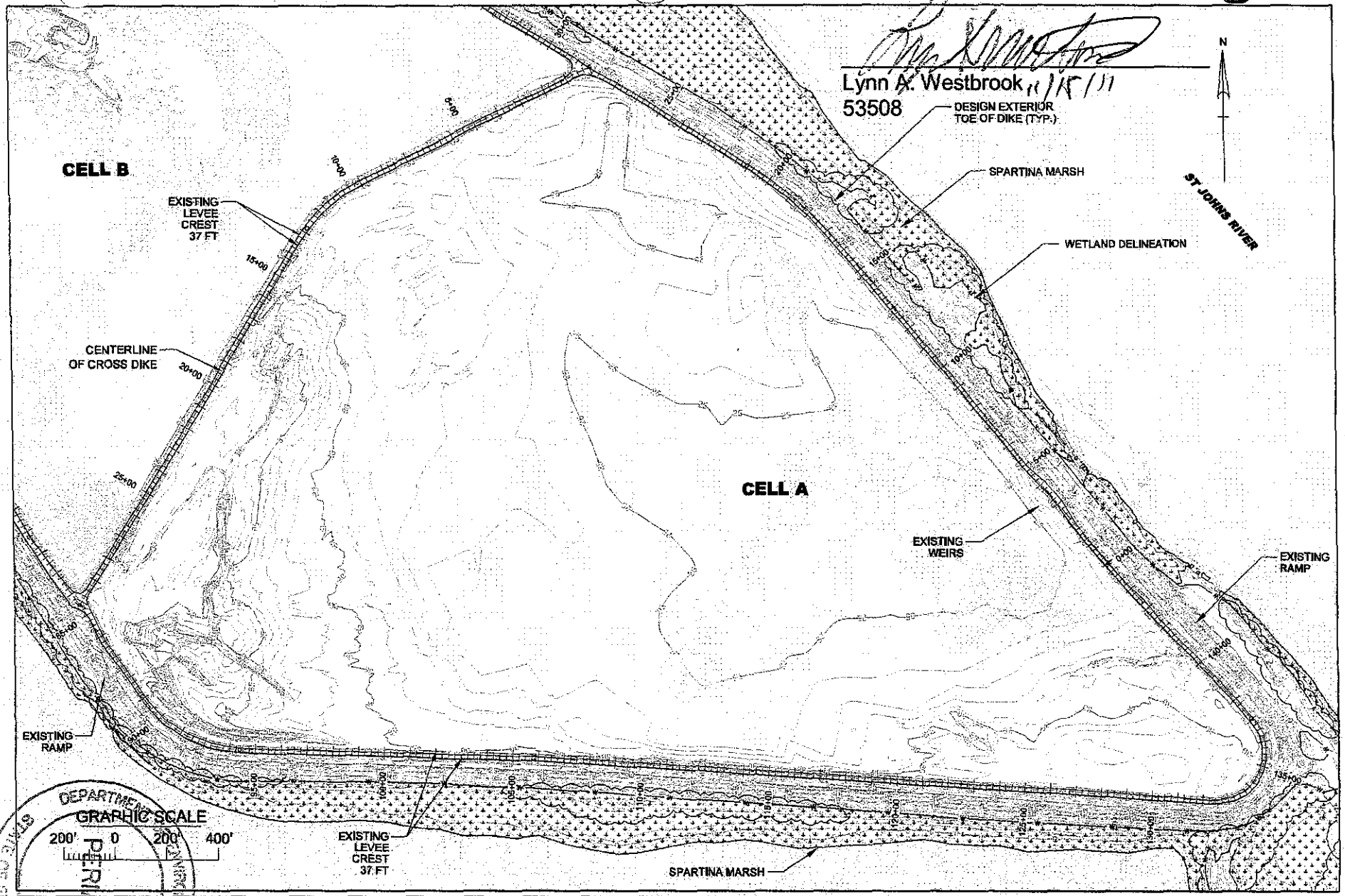
FILE NAME:
DATED: AUGUST 2011
SCALE: AS SHOWN

DWN BY: C.K.M.
DSN BY: C.K.M.
CKD BY: L.R.P.

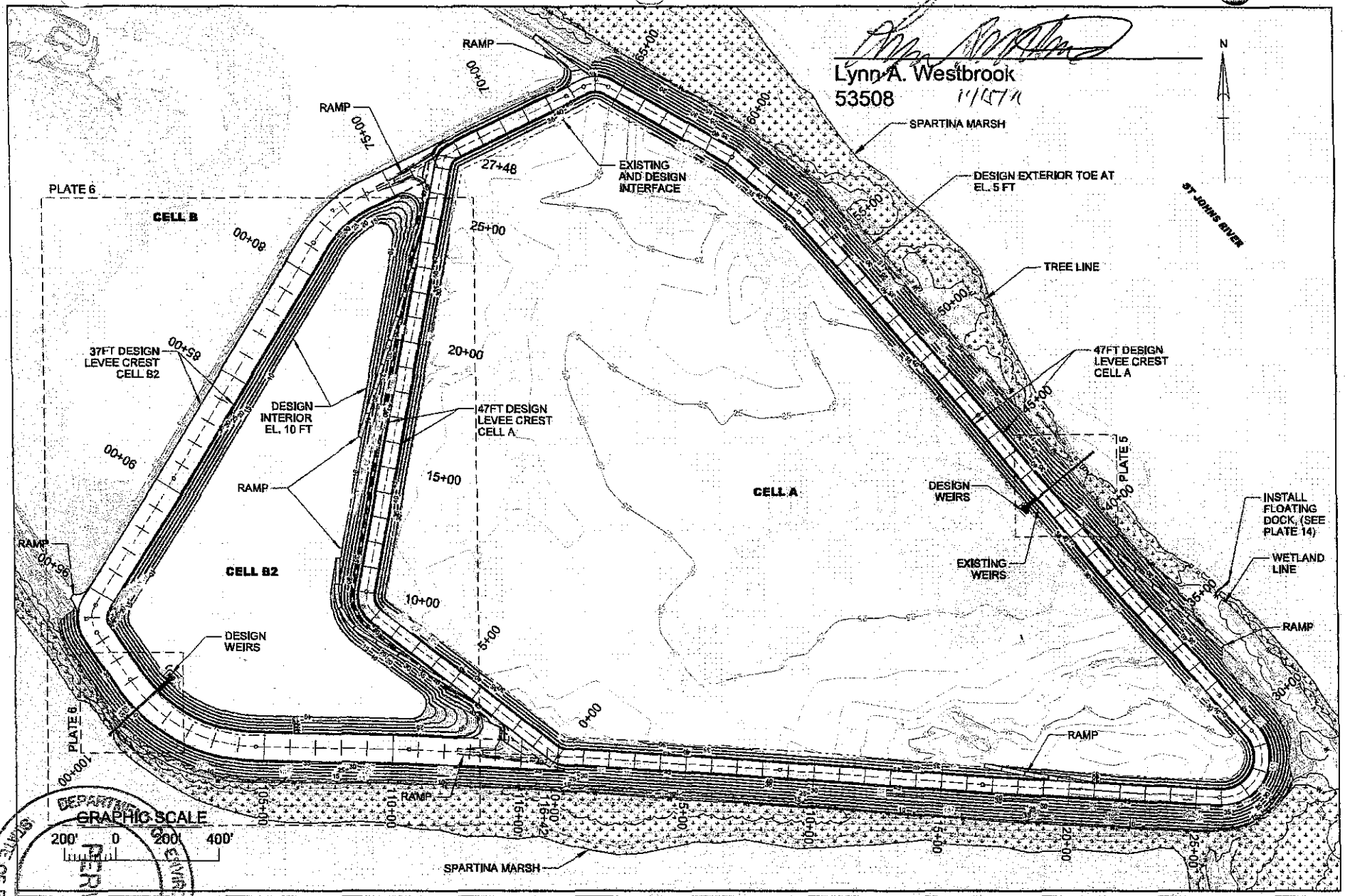
PROJECT DESCRIPTION:
AERIALS SHOWN ARE FROM THE FDOT'S 17 NOV. 2010 SURVEY AND ARE FOR INFORMATION ONLY.

JACKSONVILLE HARBOR
DUVAL COUNTY, FLORIDA
DMMA BARTRAM ISLAND CELL A DIKE RAISING
COVER SHEET

PLATE: 1

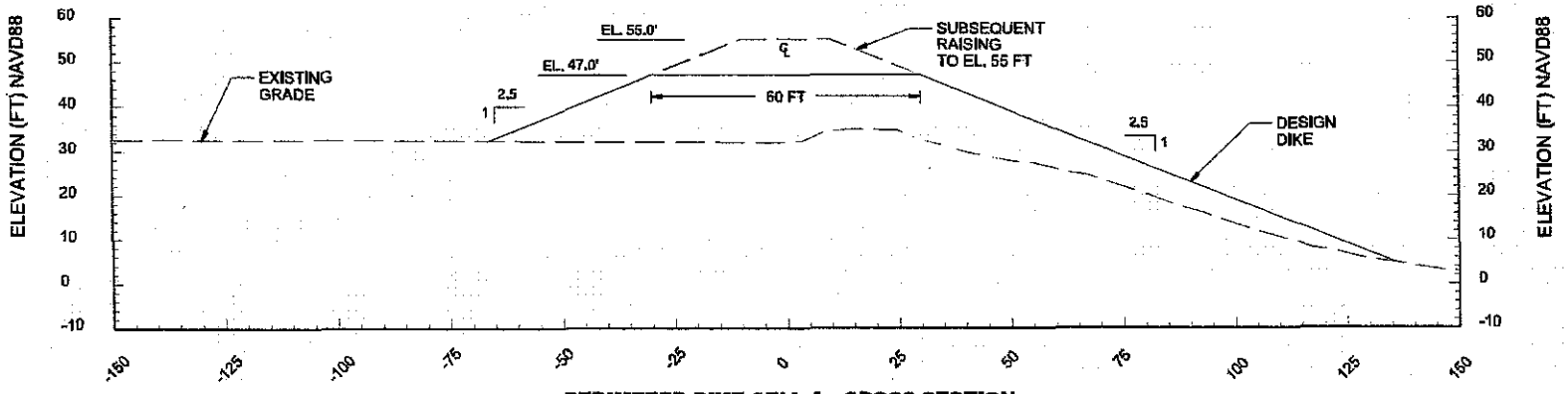


US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION) DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES: CONTOUR ELEVATIONS SHOWN ARE IN NAVD 1988. ELEVATIONS BELOW THE REFERENCE PLANE ARE SHOWN PRECEEDED WITH A (-) NEGATIVE SIGN.	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **EXISTING PLAN VIEW WITH AERIAL**	**PLATE: 2**
		DATED: AUGUST 2011	DSN BY: C.K.M.			
		SCALE: AS SHOWN	CKD BY: L.R.P.			

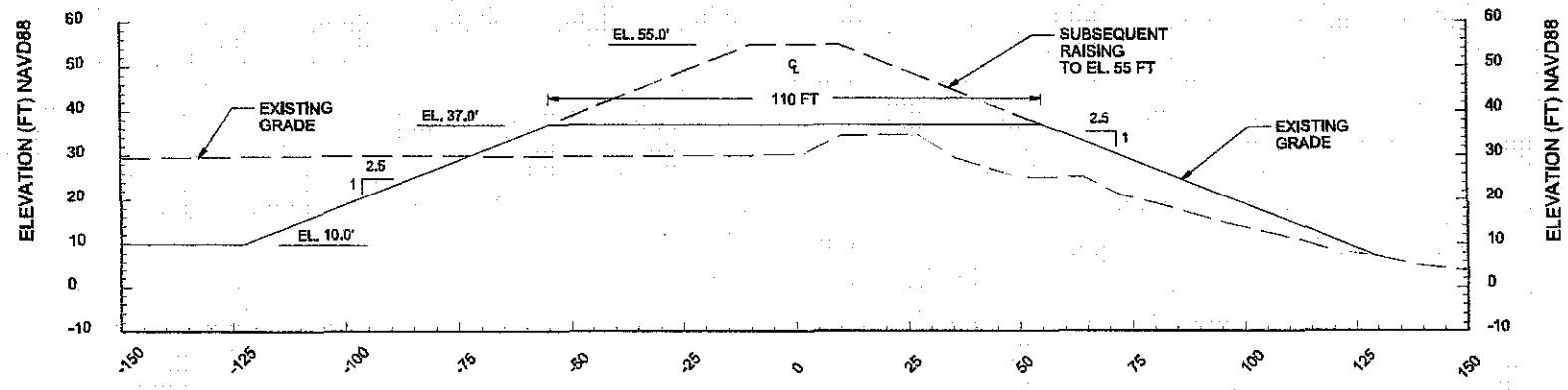


Lynn A. Westbrook
53508 11/4/11

PERMIT DRAWINGS (NOT FOR CONSTRUCTION)	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES: CONTOUR ELEVATIONS SHOWN ARE IN NAVD 1988.	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING**	PLATE: 3
DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	DATED: AUGUST 2011	DSN BY: C.K.M.	ELEVATIONS BELOW THE REFERENCE PLANE ARE SHOWN PRECEEDED WITH A (-) NEGATIVE SIGN.		
US Army Corps of Engineers Jacksonville District	SCALE: AS SHOWN	CKD BY: L.R.P.	DIKES DESIGNED WITH THE FOOTPRINT CAPABLE OF ALLOWING THE DIKES TO BE RAISED TO EL. 55 FT IN THE FUTURE.	**DESIGN PLAN VIEW WITH AERIAL**	



PERIMETER DIKE CELL A - CROSS SECTION
STA. 25+00

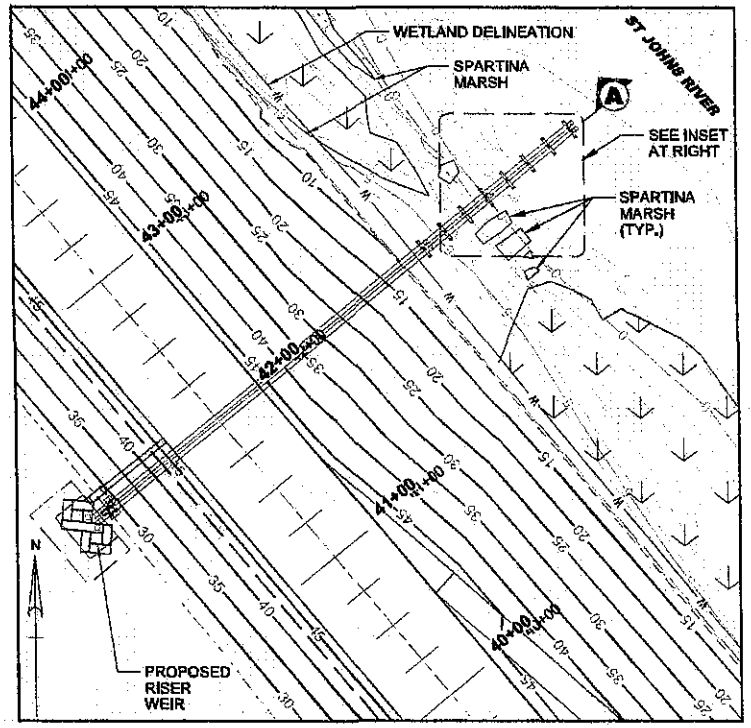


PERIMETER DIKE CELL B - CROSS SECTION
STA. 110+00

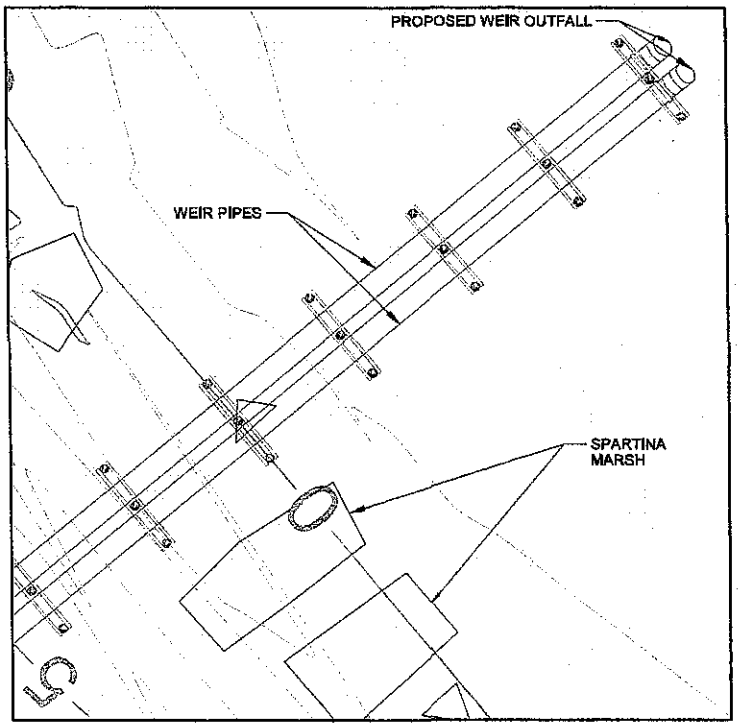
GRAPHIC SCALE
20' 0 20' 40'

Lynn A. Westbrook
53508
11/15/11

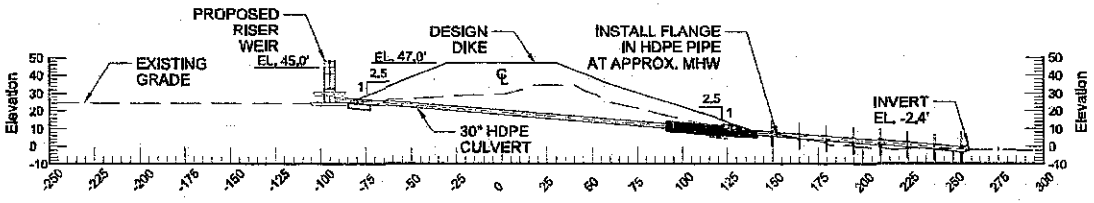
US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION)	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES: ALL SLOPES SHOWN ARE TYPICAL.	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA	PLATE:
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	DATED: AUGUST 2011	DSN BY: C.K.M.	THE VERTICAL DATUM ON ALL ELEVATION INFORMATION SHOWN IS NGVD88.	**DMMA BARTRAM ISLAND CELL A DIKE RAISING**	4
		SCALE: AS SHOWN	CKD BY: L.R.P.	1.35' NAVD88 = MEAN HIGH WATER; -2.36' NAVD88 = MLLW.	**DIKE RAISING CROSS SECTIONS**	



CELL A WEIR PLAN VIEW



CELL A WEIR INSET

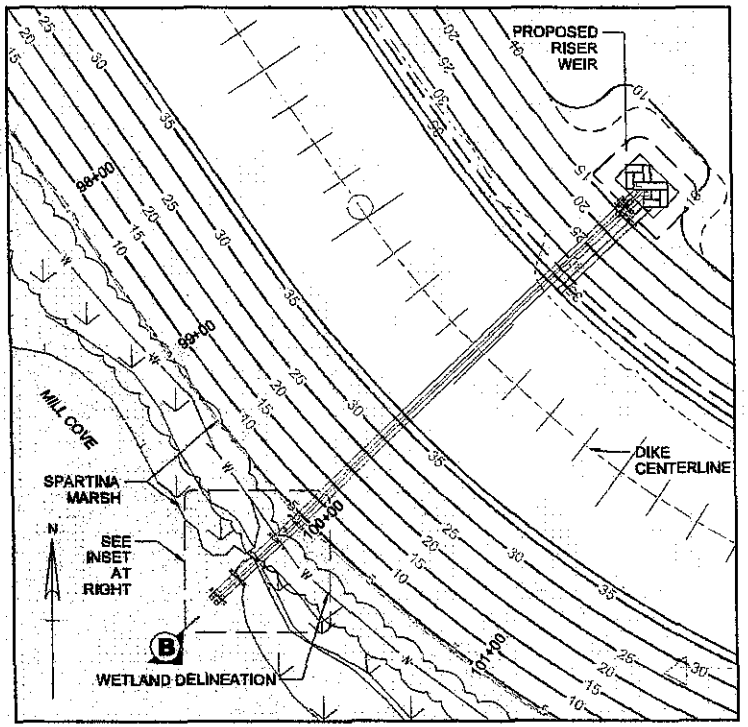


A CELL A WEIR - CROSS SECTION STA. 42+00

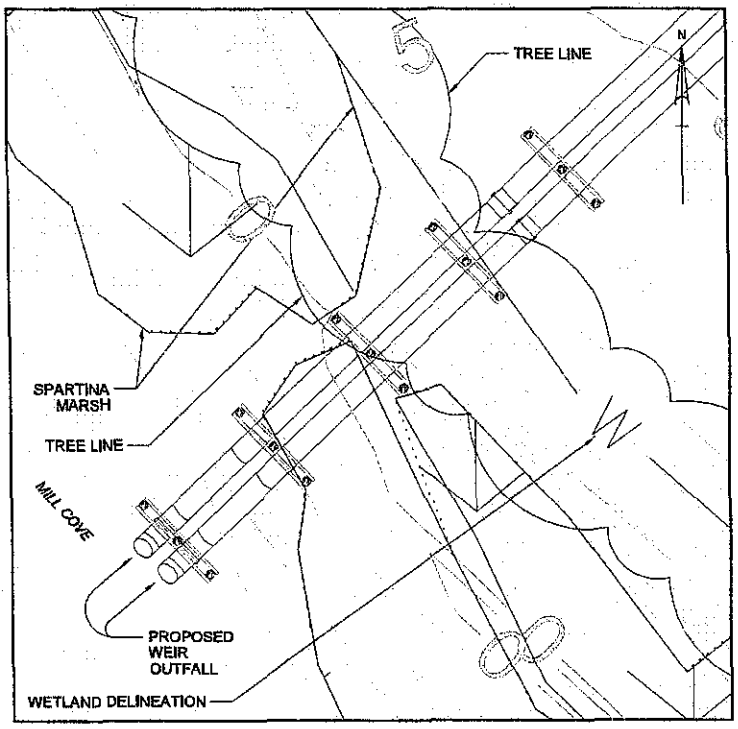
Lynn A. Westbrook
53508
9/15/11

GRAPHIC SCALE
50' 0 50' 100'

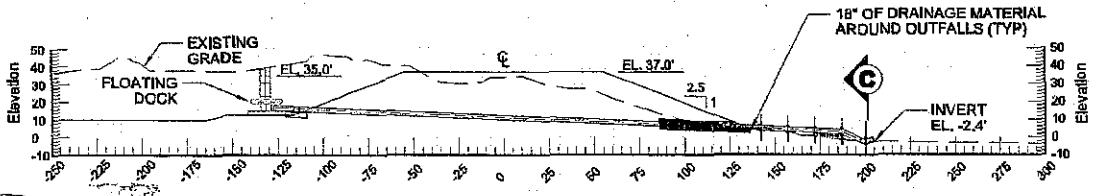
US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION)	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES: ALL EXISTING WEIRS AND CULVERTS ARE TO BE REMOVED AND THE AREA IS TO BE REGRADED TO MATCH NEIGHBORING ELEVATIONS. ALL SLOPES SHOWN ARE TYPICAL. THE VERTICAL DATUM ON ALL ELEVATION INFORMATION SHOWN IS NGVD88. 1.35' NAVD88 = MEAN HIGH WATER; -2.36' NAVD88 = MLLW.	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **WEIR REPLACEMENT AND INSTALLATION**	**PLATE:** **5**
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	DATED: AUGUST 2011	DSN BY: C.K.M.			
		SCALE: AS SHOWN	CKD BY: L.R.P.			



CELL B2 WEIR PLAN VIEW



CELL B2 WEIR INSET



B CELL B2 WEIR - CROSS SECTION STA. 99+95

Lynn A. Westbrook
53508

11/17/11

GRAPHIC SCALE

50' 0 50' 100'

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

US Army Corps of Engineers Jacksonville District

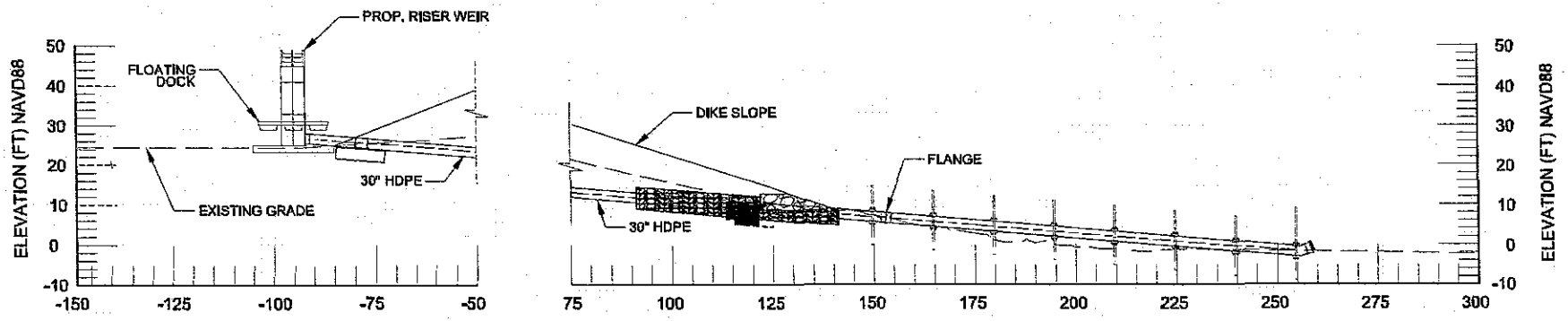
PERMIT DRAWINGS
(NOT FOR CONSTRUCTION)

FILE NAME:	
DATED:	AUGUST 2011
SCALE:	AS SHOWN
DWN BY:	C.K.M.
DSN BY:	C.K.M.
CKD BY:	L.R.P.

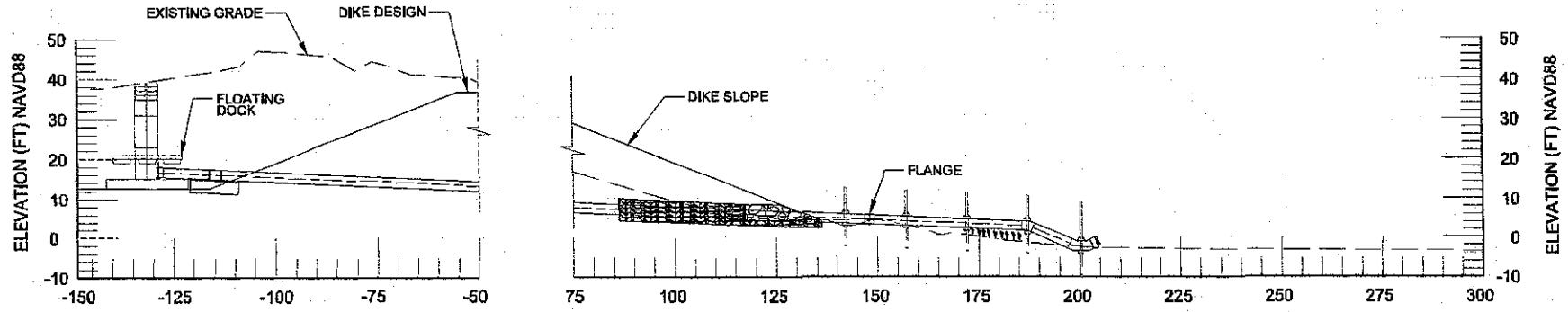
GENERAL NOTES:
ALL EXISTING WEIRS ARE TO BE REMOVED.
ALL SLOPES SHOWN ARE TYPICAL.
THE VERTICAL DATUM ON ALL ELEVATION INFORMATION SHOWN IS NGVD88.
1.35' NAVD88 = MEAN HIGH WATER; -2.36' NAVD88 = MLLW.

JACKSONVILLE HARBOR
DUVAL COUNTY, FLORIDA
DMMA BARTRAM ISLAND
CELL A DIKE RAISING
WEIR REPLACEMENT AND INSTALLATION

PLATE:
6



(A) CELL A WEIR AT STA. 42+00
SCALE: A



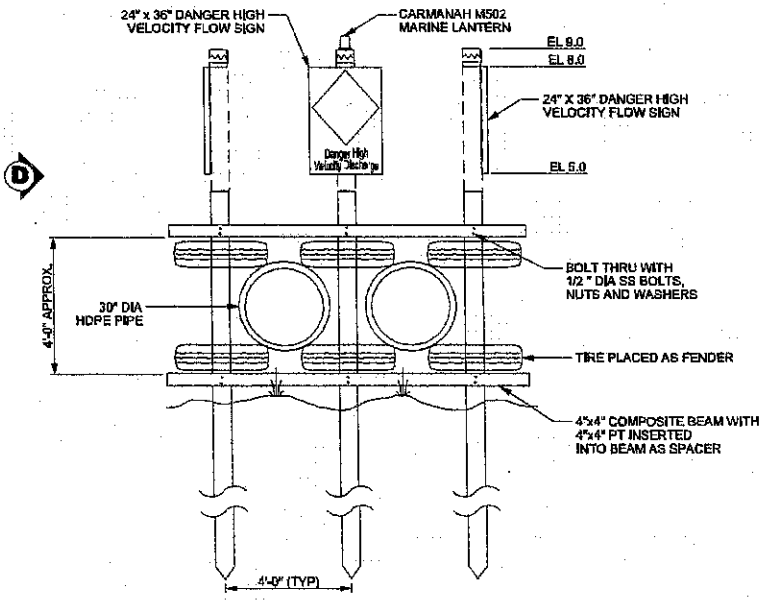
(B) CELL B2 WEIR AT STA. 99+95
SCALE: A

GRAPHIC SCALES
"A" 20' 0 20' 40'

Lynn A. Westbrook 11/15/11
53508

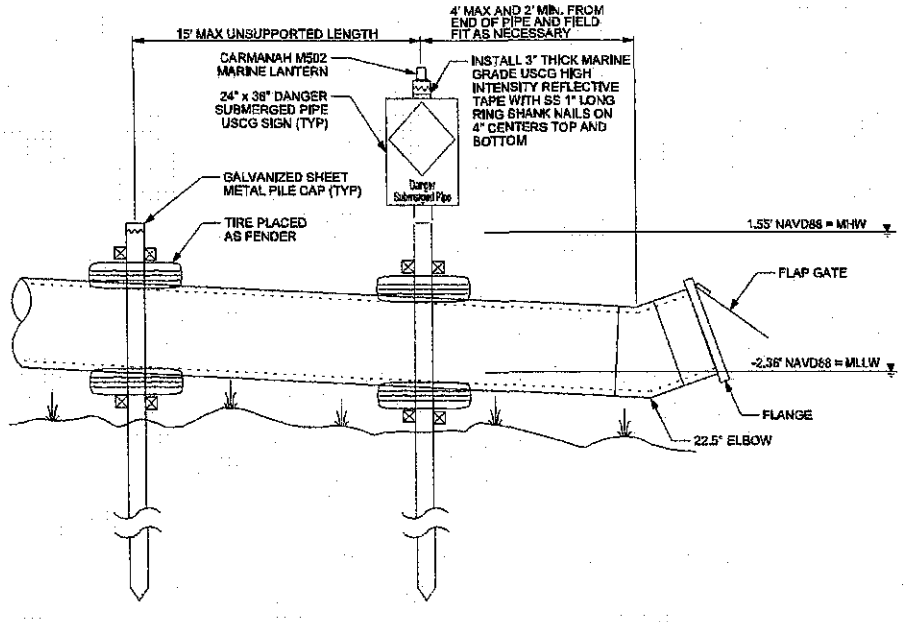
US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION) DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES:	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **WEIR SYSTEM DETAILS**
		DATED: AUGUST 2011	DSN BY: C.K.M.		
		SCALE: AS SHOWN	CKD BY: L.R.P.		

PLATE: 7



C OUTFALL SUPPORT DETAILS - CROSS SECTION

NOT TO SCALE

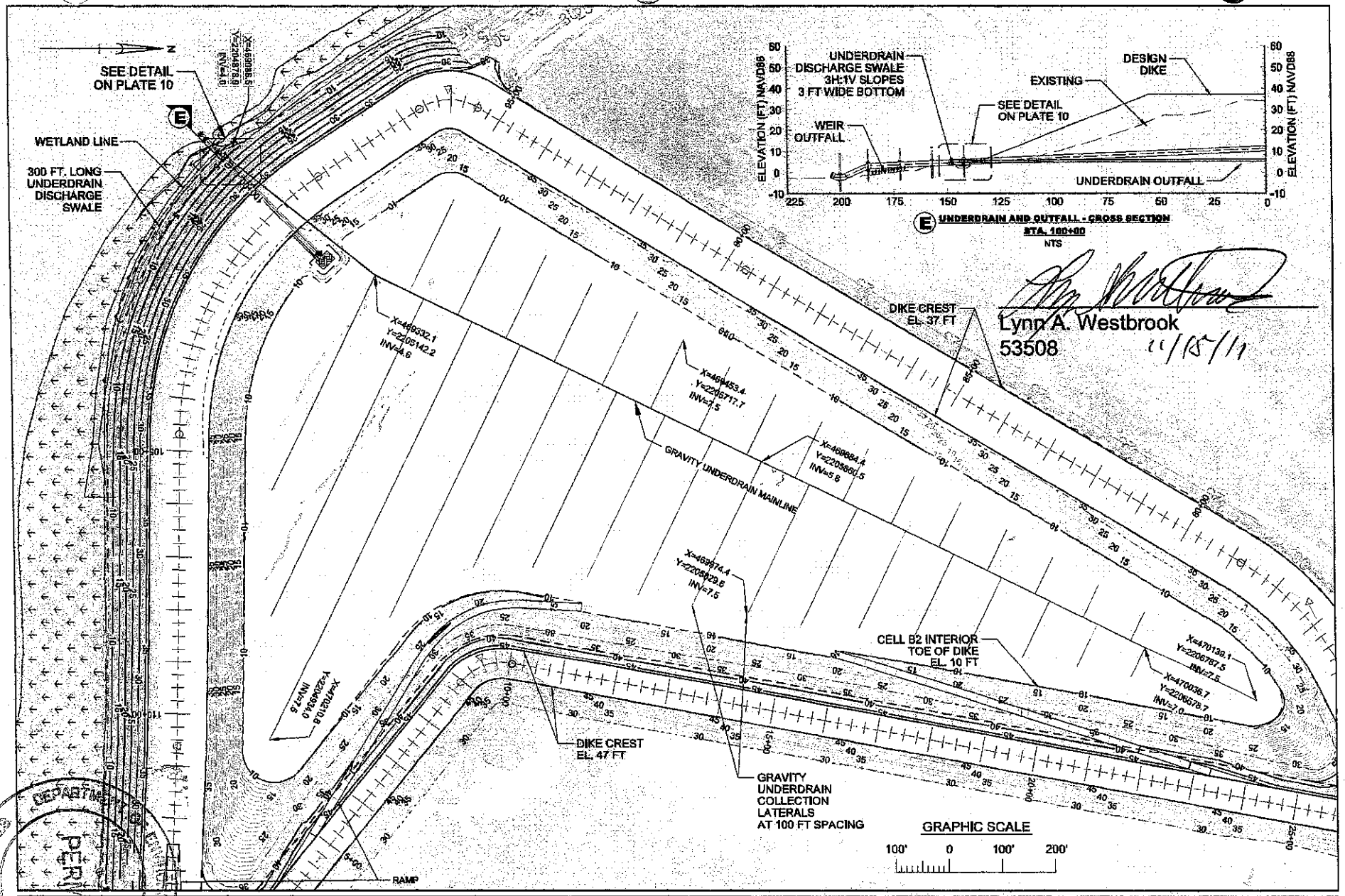


D OUTFALL SUPPORT DETAILS - PROFILE

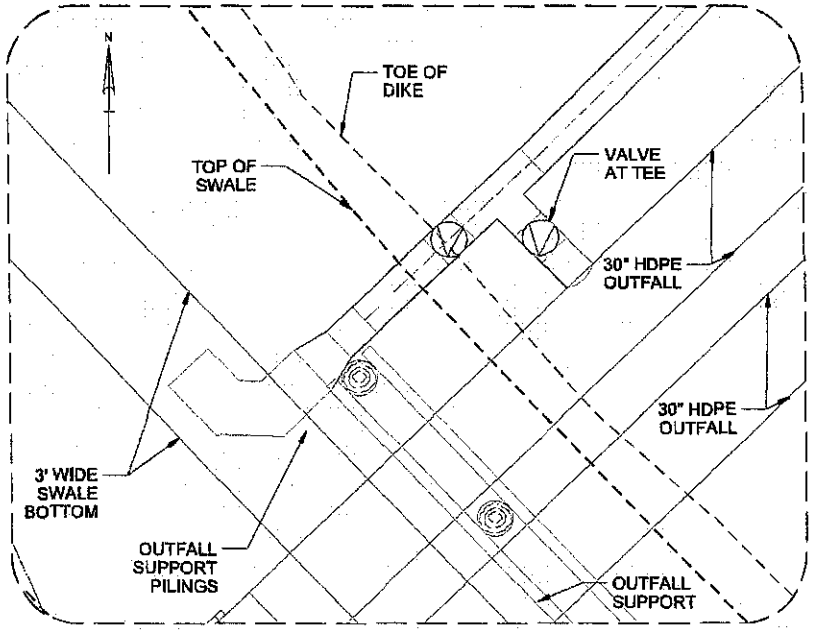
NOT TO SCALE

Lynn A. Westbrook
53508
11/3/11

US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION)	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES:	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **OUTFALL DETAILS**
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	DATED: AUGUST 2011	DSN BY: C.K.M.		**PLATE: 8**
		SCALE: AS SHOWN	CKD BY: L.R.P.		

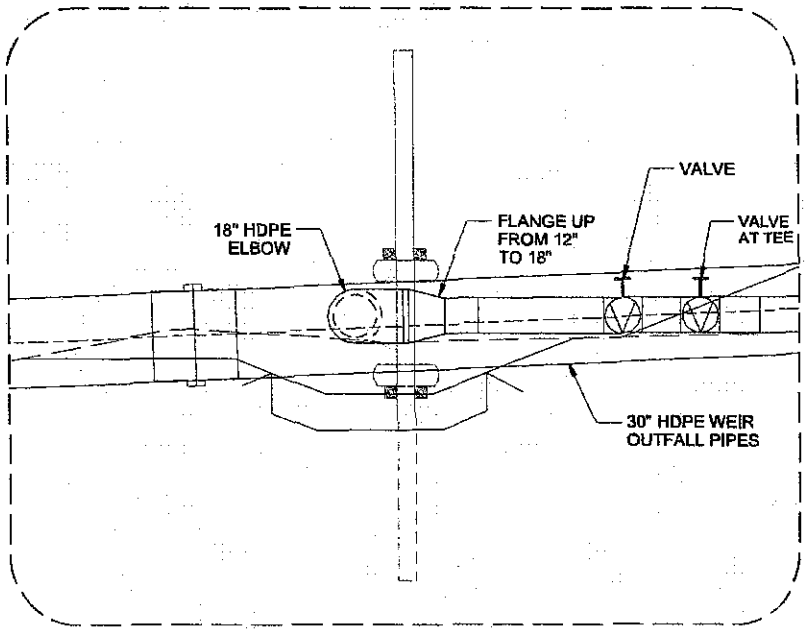


US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION)	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES: ALL SLOPES SHOWN ARE TYPICAL.	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA	PLATE:
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	DATED: AUGUST 2011	DSN BY: C.K.M.	THE VERTICAL DATUM ON ALL ELEVATION INFORMATION SHOWN IS NGVD 1988.	**DMMA BARTRAM ISLAND CELL A DIKE RAISING**	9
		SCALE: AS SHOWN	CKD BY: L.R.P.		**CELL B2 UNDERDRAIN MANIFOLD SYSTEM**	



UNDERDRAIN DETAIL - PLAN VIEW

SCALE: A



UNDERDRAIN DETAIL - CROSS SECTION

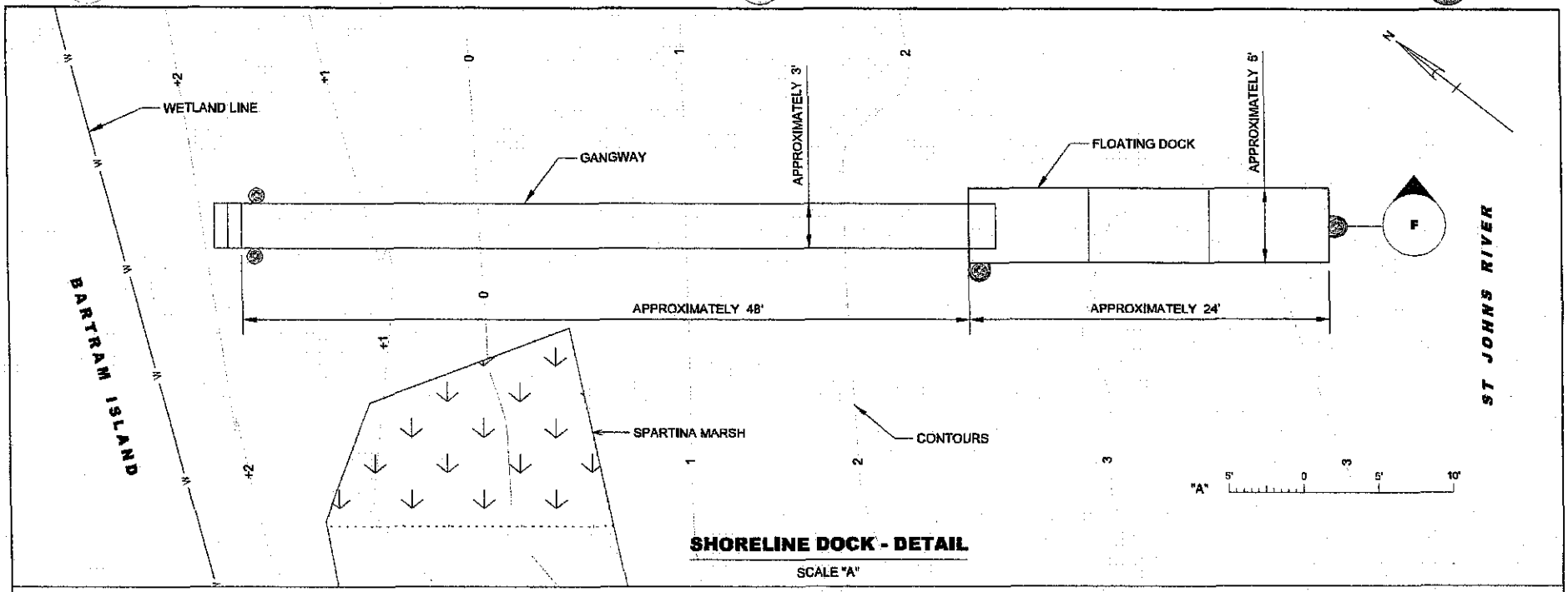
SCALE: A

Lynn A. Westbrook 11/15/11
53508

GRAPHIC SCALE

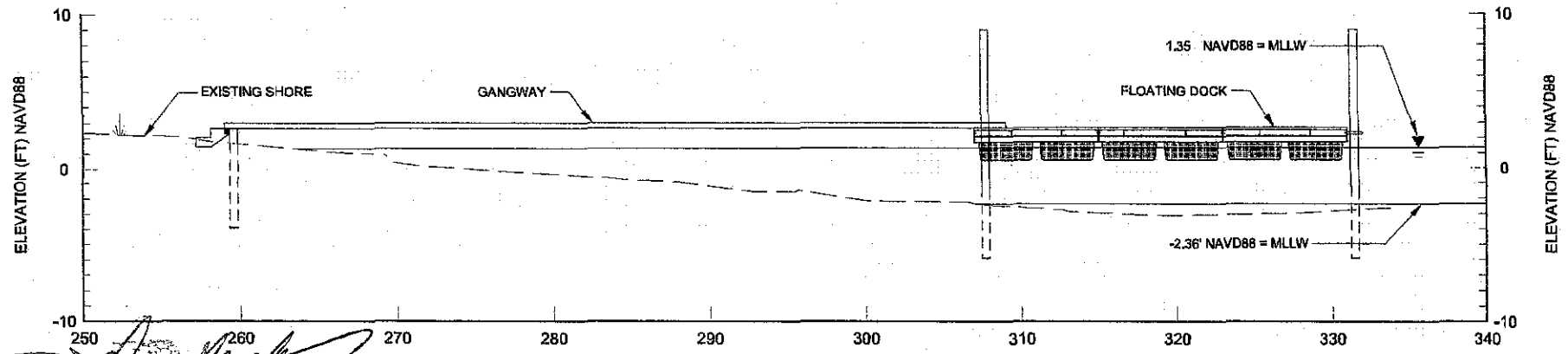
SCALE A: 2' 0 2' 4'

US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION)	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES:	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **UNDERDRAIN DETAILS**	**PLATE: 10**
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	DATE: AUGUST 2011	DSN BY: C.K.M.			
		SCALE: AS SHOWN	CKD BY: L.R.P.			



SHORELINE DOCK - DETAIL

SCALE "A"



SHORELINE DOCK - CROSS SECTION

STA. 34+60

SCALE "A"

GRAPHIC SCALE

5' 0 5' 10'

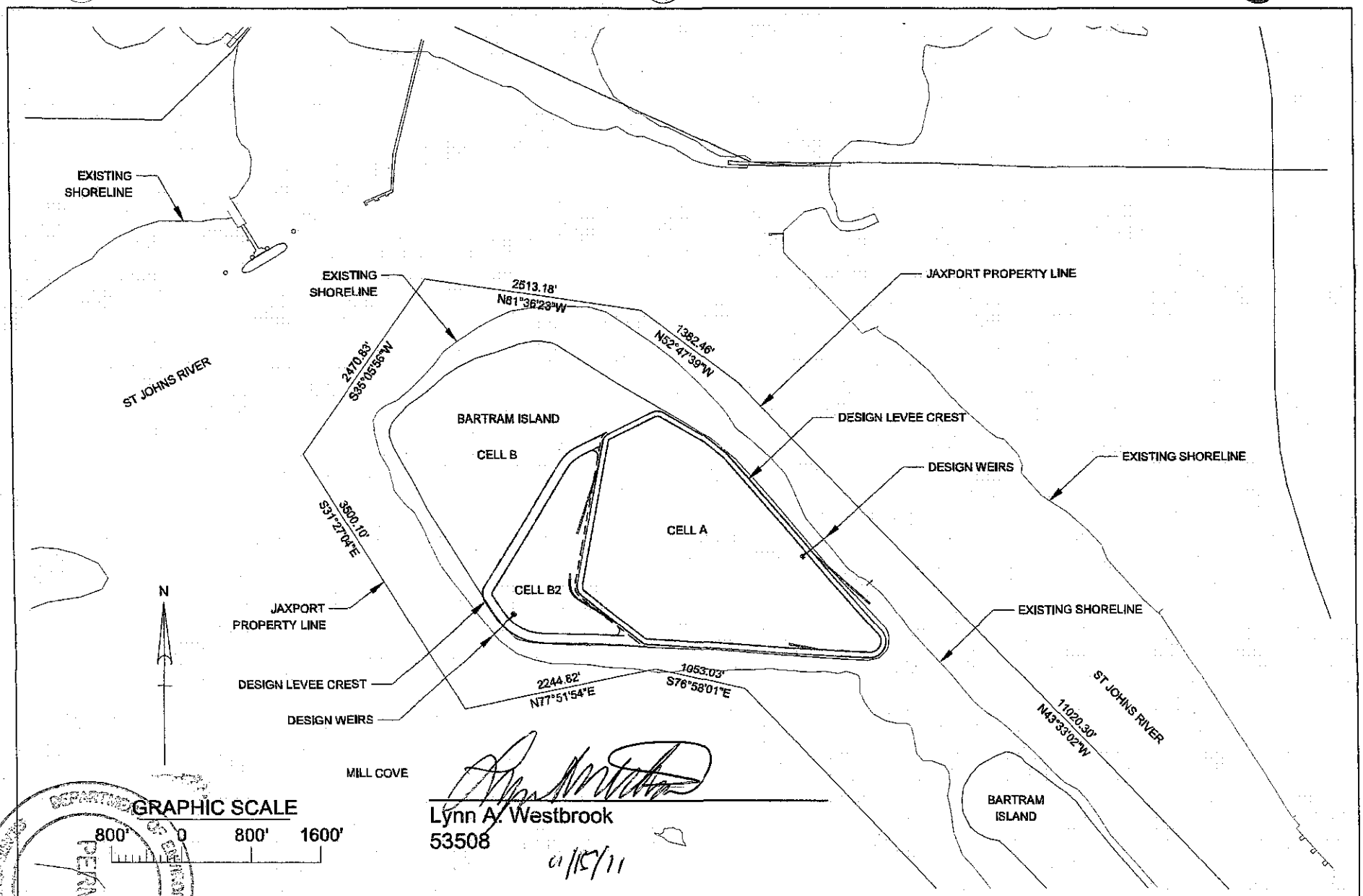
SCALE A:

Lynn A. Westbrook 11/15/11

53508

US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION) DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES:	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **FLOATING DOCK PLAN AND PROFILE**
		DATED: AUGUST 2011	DSN BY: C.K.M.		
		SCALE: AS SHOWN	CKD BY: L.R.P.		

PLATE: 11



Lynn A. Westbrook
53508
11/15/11

US Army Corps of Engineers Jacksonville District	**PERMIT DRAWINGS** (NOT FOR CONSTRUCTION)	FILE NAME:	DWN BY: C.K.M.	GENERAL NOTES: 1. THE BOUNDARY DEPICTED HEREON WAS DERIVED FROM THE "CHARLES BASSETT AND ASSOCIATES, INC." SPECIFIC PURPOSE SURVEY, DATED 7 MAY 1993. 2. THE SOURCE DATA WAS ORIGINALLY REFERENCED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), FLORIDA EAST ZONE, NAD27(1978 ADJUSTMENT). THESE COORDINATES WERE TRANSFORMED TO THE SPCS, FLORIDA EAST ZONE, NAD83(HARN) VIA THE SOFTWARE CORPSCON. 3. ALL UNITS ARE U.S. SURVEY FEET.	JACKSONVILLE HARBOR DUVAL COUNTY, FLORIDA **DMMA BARTRAM ISLAND CELL A DIKE RAISING** **BOUNDARY OF JAXPORT OWNED LANDS**	**PLATE:** **12**
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	DATED: AUGUST 2011	DSN BY: C.K.M.		
		SCALE: AS SHOWN	CKD BY: L.R.P.		

1 References

1.1 EM 1110-2-5027 (available on-line at http://140.194.76.129/publications/eng-manuals/em1110-2-5027/toc.htm)
1.2 DMMA Operation, Maintenance , and Management Plan dated August 2011
1.3 Bartram Island Storm Water Storage Drawdown Analysis
1.4 Memorandum For Record – Bartram Island Cell A Dike Raising and Cross Dike Construction, Seepage and Slope Stability Analysis, dated August 2011
1.5 Bartram Island Dike Raising Permit Plates

2 Introduction

2.1 This Bartram Island Operations Plan has been developed to provide a management guide for Bartram Island Cell A which will be utilized by the Corps of Engineers (Corps) for the maintenance of the federal navigation channel and Bartram Island Cell B-2 which will be used by JaxPort for maintenance of port terminals and other berthing areas. This plan provides guidelines for operation and maintenance of the disposal areas during all phases of operation.

2.2 DMMAs may be designed and constructed by the Corps, the Project Sponsor of the federal project (such as JaxPort), or some other Federal agency, such as the Air Force, Navy, Coast Guard, etc. Ongoing routine maintenance of the DMMA is typically a shared responsibility of the Project Sponsor and the Corps (see reference 1.2). The Corps uses EM 1110-2-5027 (reference 1.1) as a guideline for all aspects of DMMA design, construction, maintenance, and operation.

2.3 This Operations Plan strives to present a comprehensive description of activities and events that have brought us to the present moment and that are planned for the future. These activities and events have been and will be initiated either by the Project Sponsor or the Corps.

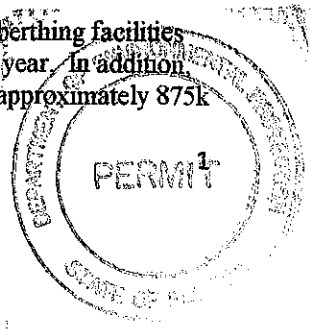
3 Background

3.1 The disposal cells at the Bartram Island DMMA have been operated in support of the Jacksonville Harbor navigation project for more than fifty years. Currently there are five separate disposal cells on Bartram Island with a total effective area (area available for storage of dredged material) of approximately 360 acres. The current acreage and capacity for hydraulic placement of dredged material for each cell is shown below:

Cell	Acreage	Capacity
Cell A	170 acres	0 cubic yards
Cell B	85 acres	0 cubic yards
Cell C	30 acres	0.5M cubic yards
Cell F	35 acres	0.3M cubic yards
Cell G	40 acres	0 cubic yards

3.2 Shoaling Rates

The total yearly dredging needs (shoaling rate) for the JaxPort berths and other vessel berthing facilities associated with the Jacksonville Harbor project is approximately 520k cubic yards per year. In addition, the shoaling rate for the Federal Channel portion of the Jacksonville Harbor project is approximately 875k



cubic yards per year. The Buck Island DMMA will be ready for operation later this year. But the JaxPort cell (Buck Island Cell B) will only provide an additional capacity of 0.7M cubic yards. Given the disposal capacities and the need for maintenance dredging shown above, JaxPort could be facing a dredged material disposal shortfall as early as FY14.

3.3 Therefore, the Corps is preparing contract plans and specifications for a dike raising contract at Bartram Island as described in the referenced permit plates (reference 1.5). The contract will raise the dikes at what is now called Bartram Island Cell A and will also subdivide the cell into two cells to be called Bartram Island Cell A and Bartram Island Cell B-2. This will provide for additional acreage and capacity as shown below:

Cell	Acreage	Capacity
Cell A	120 acres*	2.8M cubic yards**
Cell B-2	40 acres*	1.1M cubic yards***

*These acreages assume that the new cross dike will occupy approximately 10 acres.
**Cell A dike elevation will be 47 feet.
*** Cell B-2 dike elevation will be 37 feet.

In addition to dike raising, the existing Cell A weirs will be removed and replaced with a pair of box riser weirs with discharge into the river at the same location of the existing Cell A weirs and a second pair of box riser weirs will be installed in Cell B-2 with discharge into Mill Cove.

3.4 JaxPort and the Corps also contemplate the use of additional DMMA management practices to preserve and supplement existing and future capacity without the capital investment associated with major dike raising efforts. Such management practices could involve incremental dike raising as a function of on-going DMMA O&M management activity. DMMA management practices could also include transfer of dredged material from active cells to dry stockpile areas located in inactive cells such as Cell B or Cell G or to other stockpile areas located in other upland areas on Bartram Island.

4 Design Analysis

4.1 Freeboard – General

General freeboard requirements for upland DMMAs are provided within Corps guidance in EM 1110-2-5027 (reference 1.1, paragraph 4.3.b(3)(a) on page 4-8). Although detailed freeboard criteria for dams and other large water impounding areas do exist, these Corps criteria are reserved for large reservoirs where overtopping due to wave setup and run-up is primarily dependent on depth and effective fetch length. DMMAs are typically not representative of reservoir conditions, since ponding depths during and after dredged material placement are relatively shallow, and overall fetch lengths are significantly shorter. As such, a freeboard of 2 feet is recommended in Section 4.3 of EM1110-2-5027.

4.2 Freeboard – Operational Requirements

Under all conditions the freeboard in both Cells A and B-2 should be maintained at no less than 2 ft. Wave run-up analyses indicate that (for both Cell A and Cell B-2) a drawdown will have to occur when sustained wind speeds are forecast to be in excess of 60 mph. Based upon the results depicted in the Report titled "Dredged Material Management Area Embankment Freeboard Analysis August 2007", when water depth is 2 feet or less a freeboard of 3.0 ft in cell B-2 and a freeboard of 3.6 ft in Cell A should be created to withstand the effects of a 110 mph design storm. A water depth of greater than 2 feet will

require 4.0 ft and 5.0 ft of freeboard in Cell B-2 and Cell A, respectively to withstand the effects of a 110 mph design storm without damage to the dikes. Prior to the arrival of storm force winds the dredging contractor will be required to create the necessary freeboard by drawing down the water.

4.3 Storm Water Analysis 25-year / 24-hour

A storm water analysis was performed using HEC RAS Version 4.1 The inflow parameter for the model is the 25-year / 24-hour storm event hydrograph (9.5 inch total rainfall). The outflow parameters assume that the initial water elevation is at 53 feet NAVD88 (corresponding with the 2-foot freeboard requirement and completely built-out site), the weir riser boards were set at 50 feet NAVD88. For this analysis the total weir crest length was 32 feet for Cell B-2 and 40 feet for Cell A (2 weir sets in each Cell). For both Cells A and B-2, each weir set is drained by a single 30 inch HDPE weir outfall culvert. The model results indicate peak flow velocities of 25 fps and 21 fps in the weir culvert pipes in Cell A and B-2 respectively. The maximum 2-foot drawdown time estimated was approximately 21.5 and 5.5 hours for Cells A and B-2. (See reference 1.3 for more details.)

4.4 Drawdown Discharge

Based on the 25-year / 24-hour storm analysis, the time to drawdown 3 feet of water from elevation 53 feet NAVD88 to elevation 50 feet NAVD88 is approximately 21.5 hours for Cell A and the time to drawdown 2 feet of water in Cell B-2 is 5.5 hours. Emergency drawdown of water within the DMMA will create 4 and 5 feet of freeboard for Cells B-2 and A, respectively, once a Gale, High Wind, or Tropical Storm Warming is issued for the region.

4.5 Geotechnical Data

Recent geotechnical investigations were performed at the site in support of the weir replacement and dike construction contract. Details of the investigation as well as a description of the subsurface conditions encountered and the geotechnical analysis performed to ensure structural and geotechnical stability of the DMMA are discussed below.

4.5.1 Seepage and Slope Stability

Field investigations, laboratory testing, seepage, and slope stability analyses were performed for the DMMA at Cell A and Cell B-2 on Bartram Island.

Perimeter Dikes at Cell A. – When the interior water level of the cell was modeled at the highest level permitted (44 feet NAVD88) the lowest seepage factor of safety (FOS) calculated for the horizontal gradient was 1.83. Under the same conditions the lowest FOS calculated for the vertical gradient (uplift) was 11.36. The FOS for slope stability are in the range of 1.46 for surficial stability and 1.50 for global stability.

Perimeter Dikes at Cell B-2. – When the interior water level of the cell was modeled at the highest level permitted (34 feet NAVD88) the lowest seepage factor of safety (FOS) calculated for the horizontal gradient was 4.79. Under the same conditions the lowest FOS calculated for the vertical gradient (uplift) was 39.74. The FOS for slope stability are in the range of 1.66 for surficial stability and 1.64 for global stability.

Cross Dike at Between Cells A and B-2. – When the interior water level of the cell was modeled at the highest level permitted (34 feet NAVD88) the lowest seepage factor of safety (FOS) calculated for the horizontal gradient was 3.11. Under the same conditions the lowest FOS calculated for the vertical

gradient (uplift) was 4.62. The FOS for slope stability are in the range of 2.19 for surficial stability and 2.05 for global stability.

The full results of the seepage and slope stability analyses are included in the Memorandum For Record – Bartram Island Cell A Dike Raising and Cross Dike Construction, Seepage and Slope Stability Analysis, dated August 2011 (reference 1.4).

5 Placement of Material

5.1 During placement of dredged material in the disposal area, constant radio communication between the dredge and disposal area personnel shall be maintained. Water elevation should be maintained no higher than 2 feet below the *minimum* dike crest elevation. Water height shall be constantly monitored while pumping to ensure the 2 feet freeboard is maintained.

5.2 Discharge Location

In general, material should be discharged into each cell in order to provide for the longest possible flow path from the discharge point to the weir location. For Cell A, the optimum flow path would be approximately 2500 feet and for Cell B-2 it would be approximately 2000 feet.

6 Weir Operations

6.1 From commencement of dredging, the operation of the weir system needs to be managed to minimize the return of suspended solids and associated turbidity to the receiving water body to meet contract and permit requirements. The dredging contractor, with oversight provided by the contractor's quality control manager and the Corps' quality assurance representative, will monitor and manage the dredge output and the weirs to control water elevation, ponding depth, dredge inflow rate, and other parameters to maintain effluent discharge from the DMMA at or below required turbidity standards. Weir stacks should be fully-operational during all phases of the dredging operation and the weir crests should be maintained at equal elevations with essentially equal flow over the weirs, unless approved by the Contracting Officer in writing. Note that in the special case where placement of dredged material is accomplished without discharge (typical of JaxPort dredging projects), the weirs should be sealed by closing the flap gate and the weir riser boards should be placed to the maximum elevation.

6.2 Minimum Ponding Depth

EM 1110-2-5027 (reference 1.1, paragraph 4.3.a on page 4-5) establishes 2-feet as the minimum operational ponding depth to be used during normal dredging operations. The dredging contractor may choose to use a ponding depth greater than 2-feet at his discretion. For the Bartram Island DMMA cells, the minimum ponding depth of 2-feet should be maintained, unless an emergency drawdown is necessary or final decanting operations are underway.

6.3 Maximum Ponding Depth

Unless otherwise established in the dredging contract specifications, the maximum ponding depth will be controlled or limited by the water elevation necessary to meet the minimum required freeboard.

6.4 Weir Boards

The weir boards specified for use at Bartram Island DMMA Cell A and Cell B-2 are of the lightweight composite material type. This type of weir board provides a good water seal to deter leakage between and

around the weir boards. The individual boards are much lighter and easier to install and remove than equivalent size wooden weir boards; yet, since they are hollow, they have the advantage that they sink and are therefore not subject to floating up and becoming dislodged.

6.5 Lighting

Weir stacks and surrounding area shall be lighted during night-time operations. All lighting shall be in accordance with the USACE Safety and Health Requirements Manual (EM 385-1-1).

6.6 Night-time Visual Monitoring During Dredging Operations

During night-time operations when turbidity monitoring is not active, the contractor shall periodically perform a visual check of the water flow over and through the weirs for any signs of elevated turbidity. Any visual indication of elevated turbidity shall be immediately reported to the Quality Control Manager.

6.7 Decanting

After dredging is complete, the incremental removal of weir boards aids in the slow release of the clarified surface water from the basin over the weir crest. The process of decanting continues after dredging is complete until all residual ponded water is released over the weirs. During decanting, the weirs will be actively managed to meet turbidity standards and minimize the return of suspended solids and associated turbidity to the receiving water body.

7 Site Maintenance and Management

7.1 Typical Specifications for Construction or Repair of Dikes

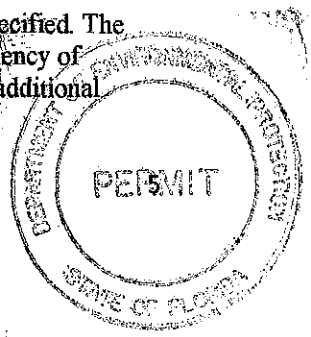
The contract requirements listed below are typical of dike embankment specifications which will be used for the Bartram Island Dike Raising Project. The text may be modified slightly to address specifics of this particular project but the compaction requirements should remain as referenced below.

7.1.1 Compaction of Embankment Material

Material shall be placed in 12-inch uncompacted lifts. Once a 12-inch layer of material has been dumped and spread, it shall be harrowed to break up and blend the fill materials and to obtain uniform moisture distribution. Harrowing shall be performed with a heavy disk plow, or other approved harrow, to the full depth of the layer. If one pass of the harrow does not accomplish the breaking up and blending of the materials, additional passes of the harrow shall be required, but in no case will more than three passes of the harrow on any one layer be required for this purpose. When the moisture content and the condition of the layer are satisfactory, the lift shall be compacted to a minimum of 95 percent of the maximum dry density as determined by the Contractor in accordance with ASTM D 1557. Dumping, spreading, sprinkling, and compacting may be performed at the same time at different points along a section when there is sufficient area to permit these operations to proceed simultaneously. Compaction equipment shall be operated such that the strip being traversed by the roller shall overlap the rolled adjacent strip by not less than 3 feet.

7.1.2 Materials Testing

Perform sufficient testing to insure that the embankment is being constructed as specified. The testing program specified below shall be considered the minimum acceptable frequency of testing. This does not relieve the Contractor from the responsibility of performing additional testing, if required to ensure compliance with these specifications.



a. Soil Classification Tests:
Soil classification tests shall be performed in accordance with ASTM D 2487. One initial classification test shall be required for each different classification of material to be utilized as embankment fill or backfill. As prescribed in ASTM D 2487, grain size analyses in accordance with ASTM D 422 and Atterberg limits in accordance with ASTM D 4318 shall be performed on each different classification. Submit additional tests for every 5000 cubic yards of embankment or backfill material. Soil classification tests shall be performed on foundation material as required to determine the acceptability of the in-situ soils. Additional tests will be required if noticeable changes in the material occur.

b. Cohesionless Material Testing
(1) Compaction Tests- Run not less than one modified maximum dry density test for every 3000 cubic yards of cohesionless fill in accordance with ASTM D 1557.

(2) In-Place Density Tests- The in-place density of the cohesionless materials shall be determined in accordance with ASTM D 6938. Run not less than one (1) field in-place density test on each lift of material every 300 feet of the embankment length or every 500 cubic yards of completed embankment fill or backfill whichever is less. Horizontal locations shall be randomly staggered in the fill. When nuclear method is used for in-place density testing according to ASTM D 6938, the first test and every tenth test thereafter for each material type shall include a sand cone correlation test in accordance with ASTM D 1556.

The sand cone test shall be performed adjacent to the location of the nuclear test, and shall include a nominal 6 inch diameter sand cone, and shall include a minimum wet soil weight of 6 pounds extracted from the hole. The density correlations shall be submitted with test results. Each transmittal including density test data shall include a summary of all density correlations for the job neatly prepared on a summary sheet including at a minimum:

(i) Meter serial number and operators initials.
(ii) Standard count for each test.
(iii) Material type.
(iv) Probe depth.
(v) Moisture content by each test method and the deviation.
(vi) Wet density by each test method and the deviation.

(3) Water (Moisture) Content Tests- Determination of water content shall be performed in accordance with ASTM D 2216.

ASTM D 4643 may be used when rapid moisture content results are needed. All rapid results obtained by ASTM D 4643 shall be confirmed by a test on a duplicate sample performed in accordance with ASTM D 2216. In the event of disagreement between the results, ASTM D 2216 shall govern. One water content test will be performed for each 2000 cubic yards of material placed or each lift of material whichever is less.

7.1.3 Grouting
Prior to commencement of dredging, gopher tortoise burrows and any hole with a diameter six inches or large and deeper than two feet or more within the dike shall be identified and clearly marked. All holes meeting this criteria will be grouted. Any holes that do not meet this criteria shall be filled at the surface by filling with clean sand and compacting to original grade. All gopher tortoises will be relocated prior to grouting and any construction activity.

7.1.4 Grassing

Seeding to obtain a healthy stand of permanent grass plants will begin on the first day of seeding work required under this contract, shall continue through the remaining life of the contract, and end 3 months after the last day of the seeding operation required by this contract or until a satisfactory stand of grass plants is obtained, whichever is later. Written calendar time period shall be furnished for the seed establishment period. When there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be modified for inclement weather, shut down periods, or for separate completion dates of areas. Permanent grass plants shall be evaluated for species and health when the grass plants are a minimum of 1 inch high. A satisfactory stand of permanent grass plants from the seeding operation shall be a minimum of 20 grass plants per square foot. Bare spots shall be a maximum of 9 inches square. The total bare spots shall not exceed 10 percent of the total seeded area.

7.2 Inspections During Dredging

Dike inspection shall be performed twice daily of the entire perimeter of the dike crest and slopes of the disposal area including 50-feet beyond the exterior toe of the slope or to shoreline. Any critical conditions noted during inspection should be immediately reported through the Quality Control Representative to JaxPort and USACE. Upon confirmation by USACE or JaxPort, the frequency of inspections shall be increased to a minimum of four times daily until a remedial action is performed. The inspection shall document any occurrences of the following critical conditions:

a. Seepage on outer face or downstream from the toe in which there are boils, sand cones, or deltas.
b. Silt or sand accumulations, boils, deltas, or cones in the drainage ditches at the base of the dikes.
c. Cracking of soil surface on crest or either face of the dike.
d. Serious erosion of any dike surface.
e. Bulging of the exterior face of dike.
f. Seepage, damp areas, boils, or erosion near weir structure or outfall pipes, especially in the vicinity where the outfall pipes exit the exterior slope of the dikes.
g. Any subsidence of the dike crest or faces.
h. Any deficiencies in the weir structure system that can be detected by visual inspection.
i. Any changes in dike vegetation on the crest, interior slope, exterior slope and fifty feet beyond the exterior toe of slope.

7.3 Offloading

In general, off-loading of material from Bartram Island is not being considered at this time due to lack of demand for fine grain material and excessive cost associated with transporting material off of the island. Therefore, the only off-loading of material under consideration at Bartram Island is the transfer of dredged material from one cell to another or from a cell to dry stockpiles located in upland areas adjacent to existing cells on Bartram Island.

8 Turbidity Monitoring

8.1 During DMMA operations discharging return water into the receiving waters, water samples shall be obtained and analyzed for turbidity. Sampling shall be conducted in accordance with techniques described in the latest edition of "Standard Methods" published by the American Public Health Association (APHA), American Waterworks Association (AWWA), and Water Pollution Control

conducting the sampling, such as "dredge not working due to mechanical problems" or "no sampling taken due to high winds."

i. State plane coordinates (x and y) or GPS coordinates (lat/longs) shall be provided for all sampling stations along with the coordinates of the discharge pipe and the distance between the sampling station and discharge pipe for each sampling event to demonstrate compliance with the stated sampling distances.

8.8 Monitoring reports shall also include the following information for each day that samples are taken:

a. Time of day and date samples were taken.
b. Depth of water body.
c. Depth of sample.
d. Antecedent weather conditions.
e. Tidal stage and direction of flow.
f. Discharge location (station location and map).
g. Water sample location.
h. Wind direction and velocity.

8.9 Notification

If turbidity exceeds background levels by more than 29 NTU at the edge of the mixing zone, the analyst shall immediately notify all appropriate parties. In addition, the activity causing the exceedance shall immediately be modified to reduce turbidity to acceptable levels as soon as possible. If turbidity has not returned to acceptable levels within 24 hours, discharge shall cease and shall not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

1 GENERAL

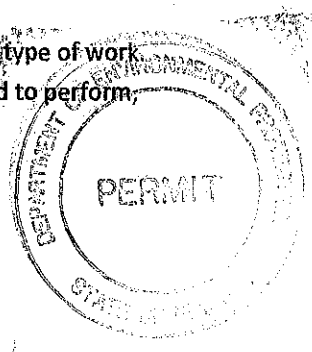
Dredged material disposal capacity is a scarce and valuable commodity. The costs associated with acquiring new capacity are escalating dramatically. In an escalating disposal cost environment, dredged material disposal techniques and process that used to be considered cost prohibitive, are now seen in a different light. Former practices that involve pumping operations followed by months or years of DMMA inactivity have proven to be inefficient at maximizing disposal capacity and have lead to site conditions that are challenging with regard to future dike raising.

2 Active DMMA maintenance and management is recommended for all Federal and non-Federal DMMAs. In addition to the activities involved with active dredging operations, the activities associated with active maintenance and management should include some or all of the following:

A. Grassing
B. Mowing/brush hogging
C. Invasive Plant Control
D. Shoreline Protection
E. DMMA Inspections
F. Minor Dike Repairs
G. Installation and repair of roads
H. Installation and repair of fencing
I. DMMA Off-loading
J. De-watering
K. Turbidity Monitoring
L. Progressive Ditching
M. Minor Dike Raising
N. Dike Base Construction
O. Soil Blending
P. Spoil Re-distribution or Stockpiling
Q. Topo Surveys
R. Geotechnical Data Collection – Core borings, Test pits, Muck probes
S. Bird Nest Deterrence
T. Gopher Tortoise Deterrence
U. Mosquito Control

3 CONTRACTING STRATEGIES FOR DMMA OPERATION, MAINTENANCE, AND MANAGEMENT

An indefinite-delivery-indefinite-quantity (IDIQ) type of contract would be suitable for this type of work. Under this type of contract, all potential items of work that the contractor may be required to perform,



as well as all of the equipment required, are listed in the contract specifications. The contract period for each IDIQ contract might be set up as a base period of one year with options for additional years. Equipment rental unit price rates would be established by bid for the various types of required equipment (drag line, back hoe, front end loader, dump truck, brush hog, etc.). The DMMA operator would then order the work as needed by issuing delivery orders against the contract to accomplish the required work.

Each DMMA should have a designated operator (USACE or Project Sponsor). The designated operator would fund and administer the DMMA Operation, Maintenance, and Management (IDIQ) contract and make all decisions regarding placement of dredged material into the DMMA.

4 Advantages of DMMA Management:

A. Immediate availability of de-watering procedures following dredging events.
B. Immediate availability of ditching procedures as soon as ponded water has been drained from the surface of spoil layer.
C. Immediately availability for dike or weir repairs.
D. Immediate availability for minor dike raising.
E. Ability to proactively manage the inside perimeter of the DMMA cell to facilitate future dike raising.
F. Immediate ability to flood the bottom of the cell if necessary to deter bird nesting prior to dredging operations.
G. Immediate availability of equipment and personnel gives greater confidence to regulatory agencies (reasonable assurance).
H. The overall advantage of DMMA management is that it maximizes the dredged material disposal capacity (return) for each acre of disposal area acquisition (investment).

5 References or related documents:

A. EM 1110-2-5027, especially sections 5-3, 7-3, 7-4, and 7-5.
B. PGL-47

ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

APPENDIX D

ENGINEERING DRAWINGS
PERMIT PLATES

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X=465,000
X=470,000
X=475,000
X=480,000
X=485,000
Y=2,210,000
Y=2,205,000
Y=2,200,000

HECKSCHER DRIVE

CRUISE SHIP TERMINAL
JAX PORT

ST JOHNS RIVER

CELL B

CELL B2

CELL A

CELL C

CELL F

AREA OF EROSION CONTROL
WAVE ATTENUATION STRUCTURE
(SEE PLATE C-02)

APPROXIMATE SHORELINE

APPROXIMATE SHORELINE

APPROXIMATE SHORELINE

APPROXIMATE SHORELINE

MOL TRAPAC
CONTAINER
TERMINAL

INTERSTATE 295

OLD RIVER

CITY OF JACKSONVILLE

BLOUNT ISLAND

DAMES POINT TERMINIAL

ST JOHNS RIVER

DAMES POINT BRIDGE

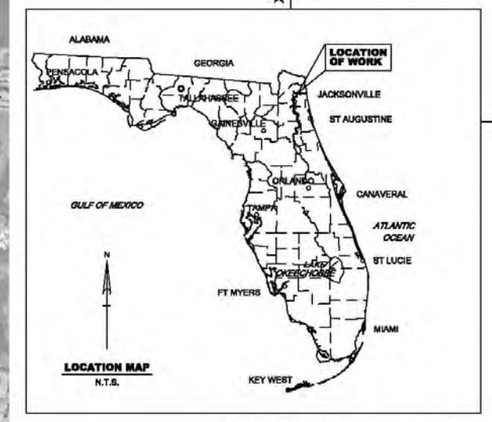
BARTRAM ISLAND

MILL COVE

BARTRAM ISLAND

MILL COVE

AREA OF PROPOSED
WETLAND MITIGATION
(SEE PLATE C-04)



LEGEND

- W — LIMITS OF JURISDICTIONAL WETLANDS
- TREE LINE
- JURISDICTIONAL WETLANDS
- PROPOSED WETLAND IMPACT AREA
- PROPOSED REVETMENT FOOTPRINT
- MHW (1.16' NAVD88)

N

GRAPHIC SCALE

GRAPHIC SCALE
1500' 0 1500'

US Army Corps of Engineers
Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by: JDB
Dwn by: MR2
Ckd by: LRP
Dated: NOVEMBER 2013

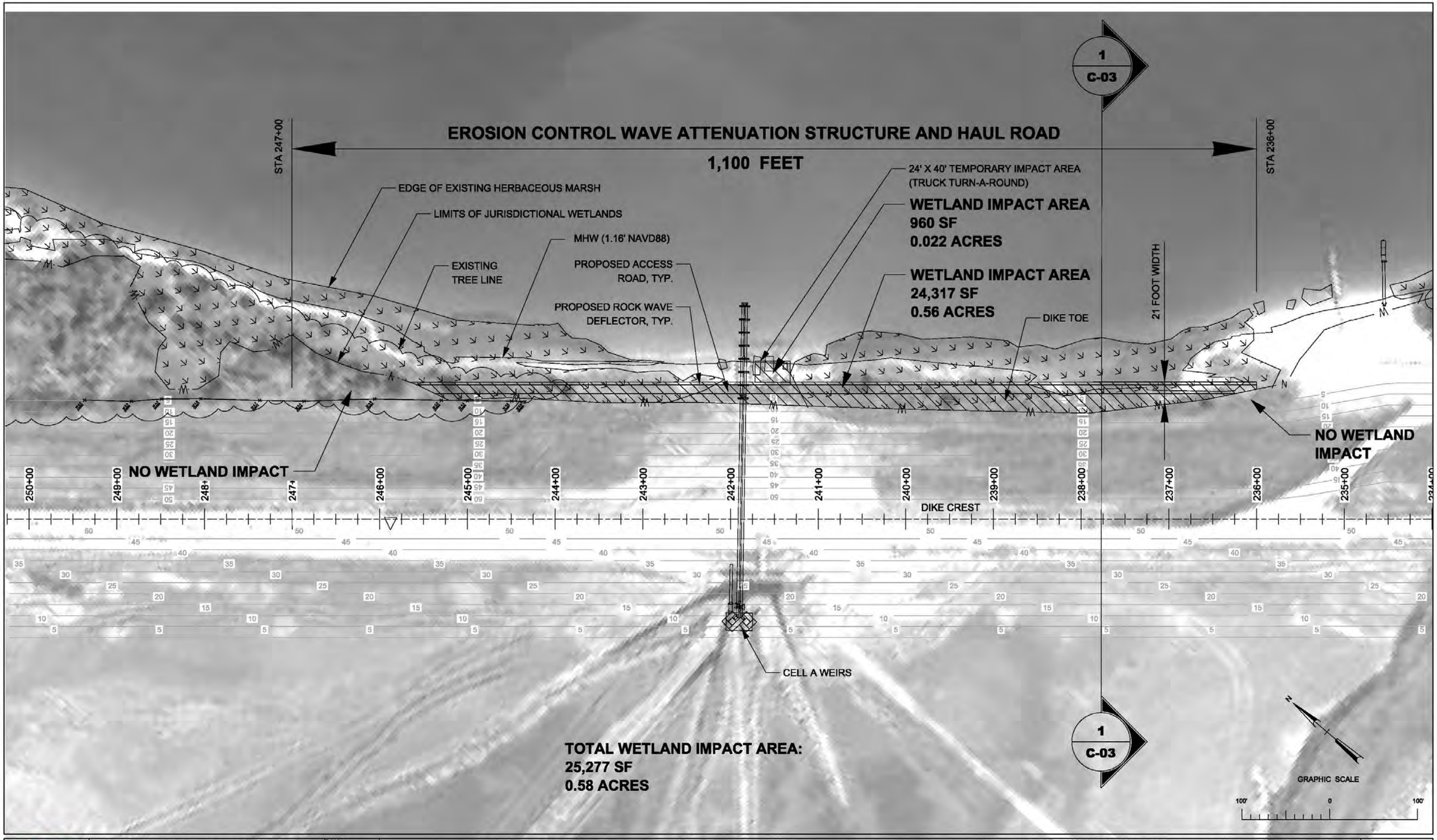
WQC PLATES

NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

BARTRAM ISLAND OVERALL

PLATE
C-01



US Army Corps of Engineers • Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

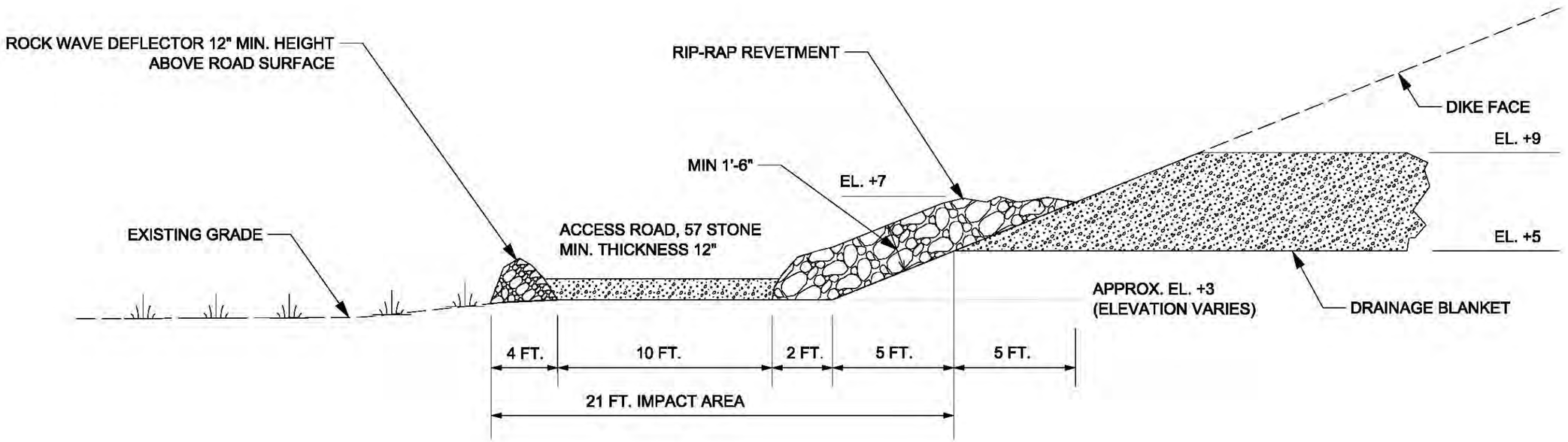
WQC PLATES

NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

CELL A EROSION CONTROL WAVE ATTENUATION STRUCTURE AND HAUL ROAD PLAN

PLATE
C-02



1
C-02

EROSION CONTROL WAVE ATTENUATION STRUCTURE AND ACCESS ROAD DETAIL

(NOT TO SCALE)

US Army Corps of Engineers • Jacksonville District

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION
EROSION CONTROL WAVE ATTENUAION STRUCTURE AND ACCESS ROAD DETAIL

PLATE
C-03

US Army Corps of Engineers
Jacksonville District

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

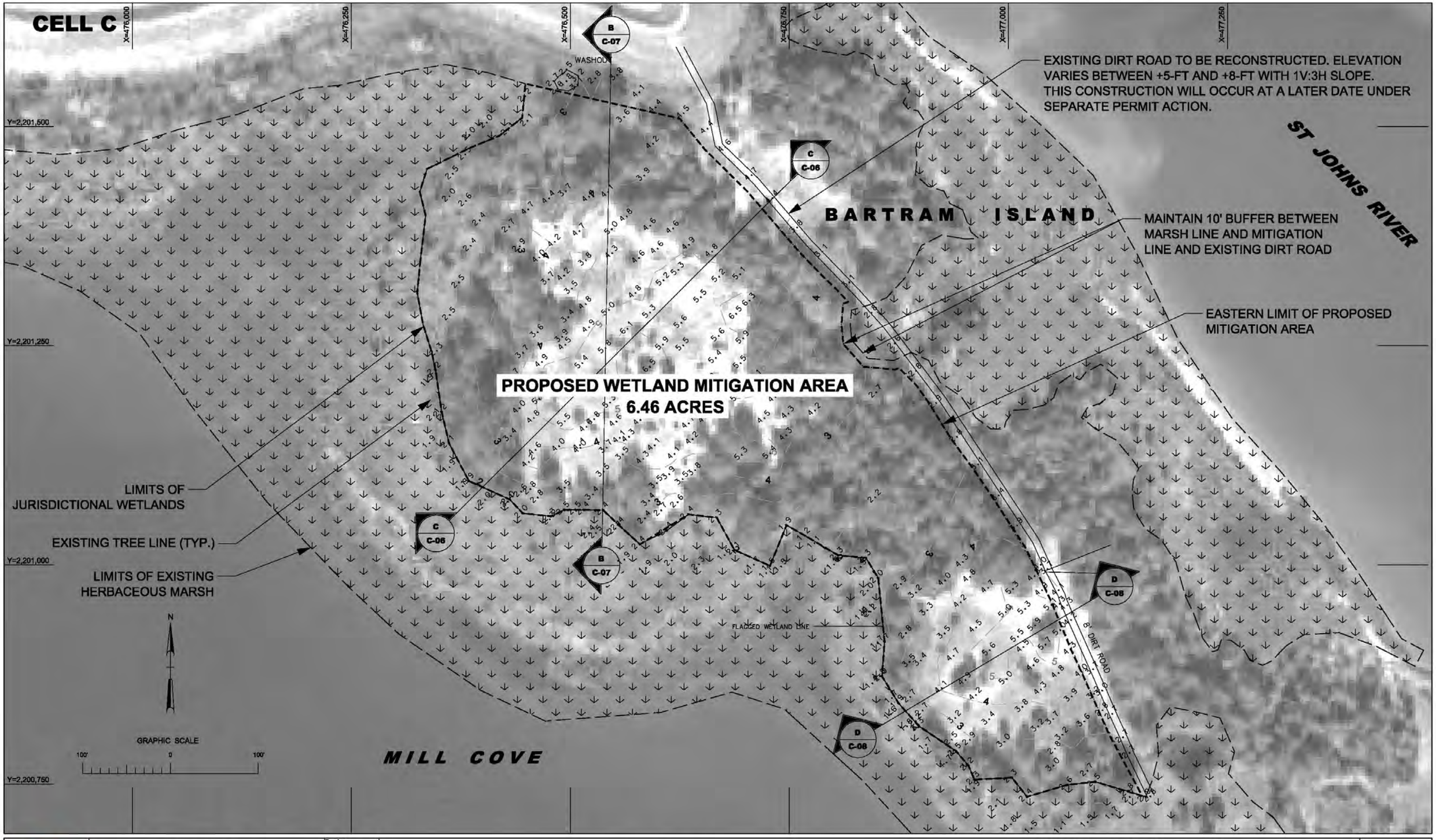
WQC PLATES

NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

WETLAND MITIGATION AREA - OVERALL

PLATE
C-04



US Army Corps of Engineers
Jacksonville District

WQC PERMIT PLATE
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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

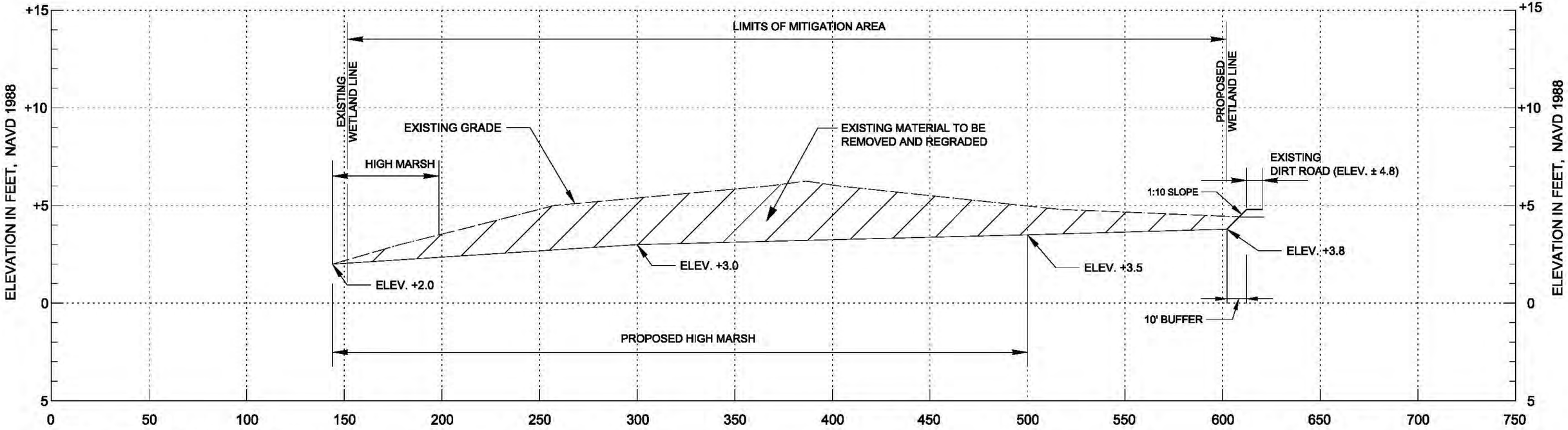
WQC PLATES

NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

WETLAND MITIGATION - PLAN VIEW

PLATE
C-05



C / C-05

CROSS SECTION - CELL C WETLAND MITIGATION

HORZ. = SCALE "A"
VERT. = SCALE "B"

"A" 50' 0 50'

GRAPHIC SCALE

"B" 5' 0 5'

US Army Corps of Engineers • Jacksonville District

WQC PERMIT PLATE
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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

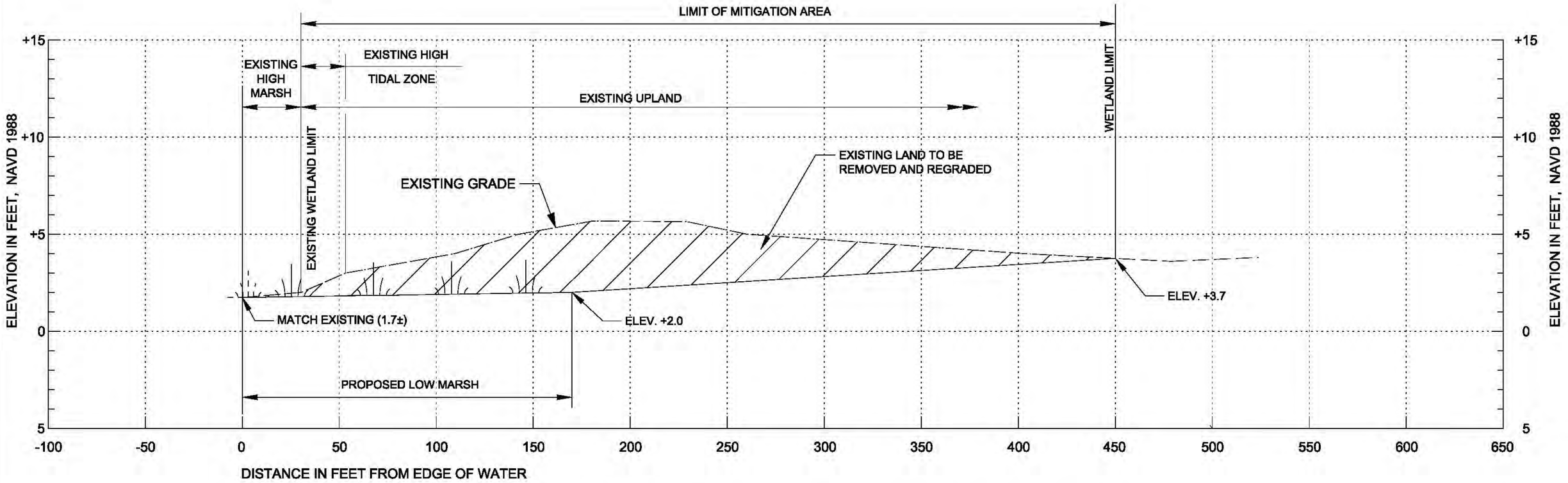
Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION

WETLAND MITIGATION AREA - CROSS SECTION

PLATE
C-06



B
C-05

CROSS SECTION - CELL C WETLAND MITIGATION

HORZ. = SCALE "A"
VERT. = SCALE "B"

"A" 50' 0 50'

GRAPHIC SCALE

"B" 5' 0 5'

US Army Corps of Engineers • Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

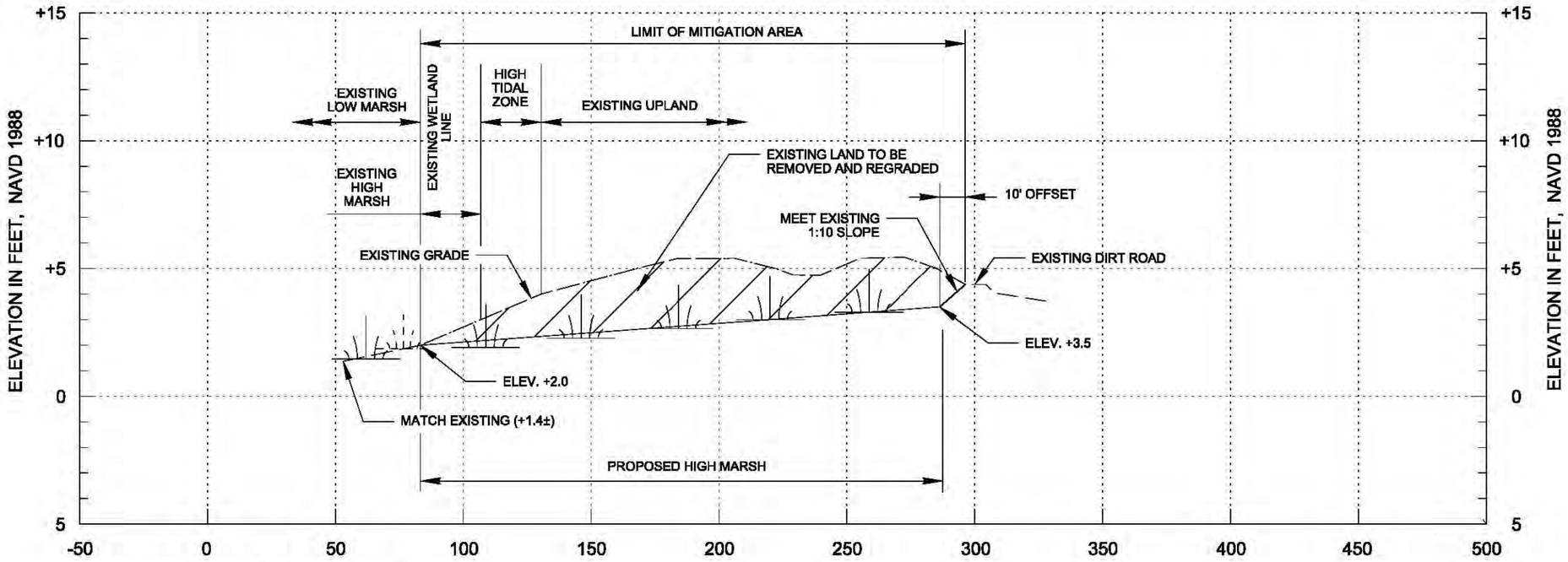
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION
WETLAND MITIGATION AREA - CROSS SECTION

PLATE
C-07



D
C-05

CROSS SECTION - CELL C WETLAND MITIGATION

HORZ. = SCALE "A"
VERT. = SCALE "B"

GRAPHIC SCALE

US Army Corps of Engineers • Jacksonville District

WQC PERMIT PLATE
NOT FOR CONSTRUCTION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by:	JDB
Dwn by:	MR2
Ckd by:	LRP
Dated:	NOVEMBER 2013

WQC PLATES
NOT FOR CONSTRUCTION

JACKSONVILLE HARBOR, FLORIDA
BARTRAM ISLAND CELL A,
SHORE PROTECTION AND WETLAND RESTORATION
WETLAND MITIGATION AREA - CROSS SECTION

PLATE
C-08

ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

APPENDIX E

AGENCY CORRESPONDENCE

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JAN 2 7 2014

Planning and Policy Division
Environmental Branch

Robert Bendus, SHPO
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Mr. Bendus:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, is studying the environmental effects associated with the proposed wetland mitigation site located on Bartram Island located within the St. Johns River (Figure 1). The purpose of the mitigation is to compensate for the functional loss of high marsh within the footprint of the wave attenuation structure by replacing this community at another location on Bartram Island between active DMMA cells. Creation of a wetland mitigation site is proposed for a previously disturbed, fallow upland area (FLUCFCS Code 743) which will restore the function of a salt marsh estuarine system. The mitigation site is an activity being conducted by the Corps, in conjunction with JaxPort's raising of the dikes associated with the Dredge Material Management Area (DMMA) within Bartram Island. While the raising of the dike is not a federal undertaking, previously the Corps did determine that the activity would not have the potential to affect historic properties (DHR No 2005-2436).

Controlling erosion of the DMMA Cell A/B side-slope on the north side of the island is an on-going activity for JaxPort and the long term stability includes vertical grading along with the placement of topsoil and seeding with herbaceous (grass) species. However, due to an extraordinarily active wet season from April 2013 to the present, onsite managers have observed isolated erosional events that have resulted in deposition of fill at the foot of the dike. It is for this reason a permanent structure is proposed for construction along the cell dike toe of slope at the location where damage is most likely to occur. The wave attenuation structure will provide protection to the fringing salt marsh by dissipating high wave energy and releasing the water back to the River without causing adverse impact of erosion and deposition of material into the estuary system (Figure 2).

The area surrounding the project has been subjected to previous archaeological investigations and no resources have been identified. Studies include: *A Cultural Resources Assessment Survey and Archeological Testing of the Proposed JPA Dames Point Marine Terminal, Duval County, Florida* by Robert Johnson in 2006 and the *Cultural Resources Remote Sensing Survey of the Jacksonville Harbor Project GR22, Duval County, Florida* by PCI.

The Corps has determined that the proposed wetland mitigation site poses no effect to historic properties as the proposed construction area occurs within a man made environment where previous testing has not indentified any resources. I request your comments on the determination of no effect. If there are any questions, please contact Mr. Dan Hughes at 904-232-3028 or e-mail atdaniel.b.hughes@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JAN 27 2014

Planning and Policy Division
Environmental Branch

Mr. Fred Dayhoff, Tribal Representative
NAGPRA, Section 106
Miccosukee Tribe of Indians of Florida
Post Office Box 440021
Tamiami Station
Miami, Florida 33144

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, is studying the environmental effects associated with the proposed wetland mitigation site located on Bartram Island located within the St. Johns River (Figure 1). The purpose of the mitigation is to compensate for the functional loss of high marsh within the footprint of the wave attenuation structure by replacing this community at another location on Bartram Island between active DMMA cells. Creation of a wetland mitigation site is proposed for a previously disturbed, fallow upland area (FLUCFCS Code 743) which will restore the function of a salt marsh estuarine system. The mitigation site is an activity being conducted by the Corps, in conjunction with JaxPort's raising of the dikes associated with the Dredge Material Management Area (DMMA) within Bartram Island. While the raising of the dike is not a federal undertaking, previously the Corps did determine that the activity would not have the potential to affect historic properties (DHR No 2005-2436).

Controlling erosion of the DMMA Cell A/B side-slope on the north side of the island is an on-going activity for JaxPort and the long term stability includes vertical grading along with the placement of topsoil and seeding with herbaceous (grass) species. However, due to an extraordinarily active wet season from April 2013 to the present, onsite managers have observed isolated erosional events that have resulted in deposition of fill at the foot of the dike. It is for this reason a permanent structure is proposed for construction along the cell dike toe of slope at the location where damage is most likely to occur. The wave attenuation structure will provide protection to the fringing salt marsh by dissipating high wave energy and releasing the water back to the River without causing adverse impact of erosion and deposition of material into the estuary system (Figure 2).

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Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JAN 2 7 2014

Planning and Policy Division
Environmental Branch

Dr. Paul Backhouse, THPO
Seminole Tribe of Florida
Tribe Historic Preservation Office
30290 Josie Billie Highway
PMP 1004
Clewiston, FL 33440

Dear Mr. Backhouse:

The U.S. Army Corps of Engineers (Corps), Jacksonville District, is studying the environmental effects associated with the proposed wetland mitigation site located on Bartram Island located within the St. Johns River (Figure 1). The purpose of the mitigation is to compensate for the functional loss of high marsh within the footprint of the wave attenuation structure by replacing this community at another location on Bartram Island between active DMMA cells. Creation of a wetland mitigation site is proposed for a previously disturbed, fallow upland area (FLUCFCS Code 743) which will restore the function of a salt marsh estuarine system. The mitigation site is an activity being conducted by the Corps, in conjunction with JaxPort's raising of the dikes associated with the Dredge Material Management Area (DMMA) within Bartram Island. While the raising of the dike is not a federal undertaking, previously the Corps did determine that the activity would not have the potential to affect historic properties (DHR No 2005-2436).

Controlling erosion of the DMMA Cell A/B side-slope on the north side of the island is an on-going activity for JaxPort and the long term stability includes vertical grading along with the placement of topsoil and seeding with herbaceous (grass) species. However, due to an extraordinarily active wet season from April 2013 to the present, onsite managers have observed isolated erosional events that have resulted in deposition of fill at the foot of the dike. It is for this reason a permanent structure is proposed for construction along the cell dike toe of slope at the location where damage is most likely to occur. The wave attenuation structure will provide protection to the fringing salt marsh by dissipating high wave energy and releasing the water back to the River without causing adverse impact of erosion and deposition of material into the estuary system (Figure 2).

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Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

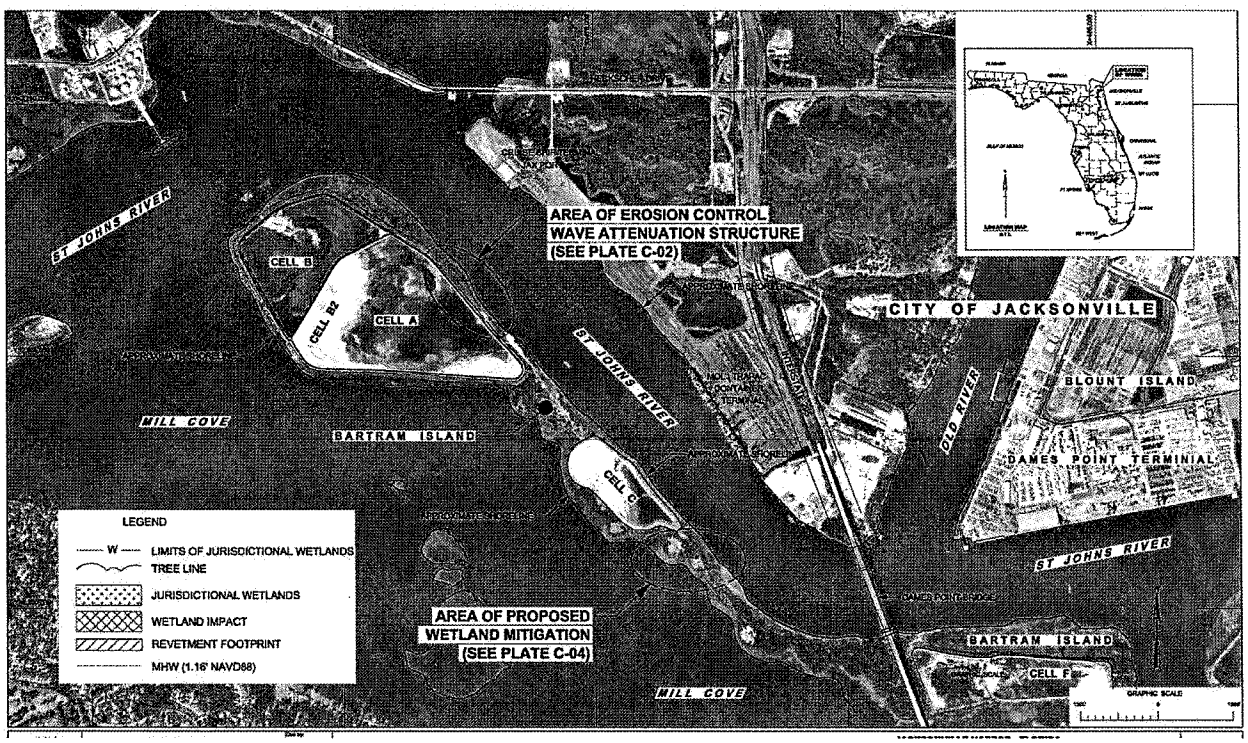

Figure 1. Location of Bartram Island in the Lower St. Johns River

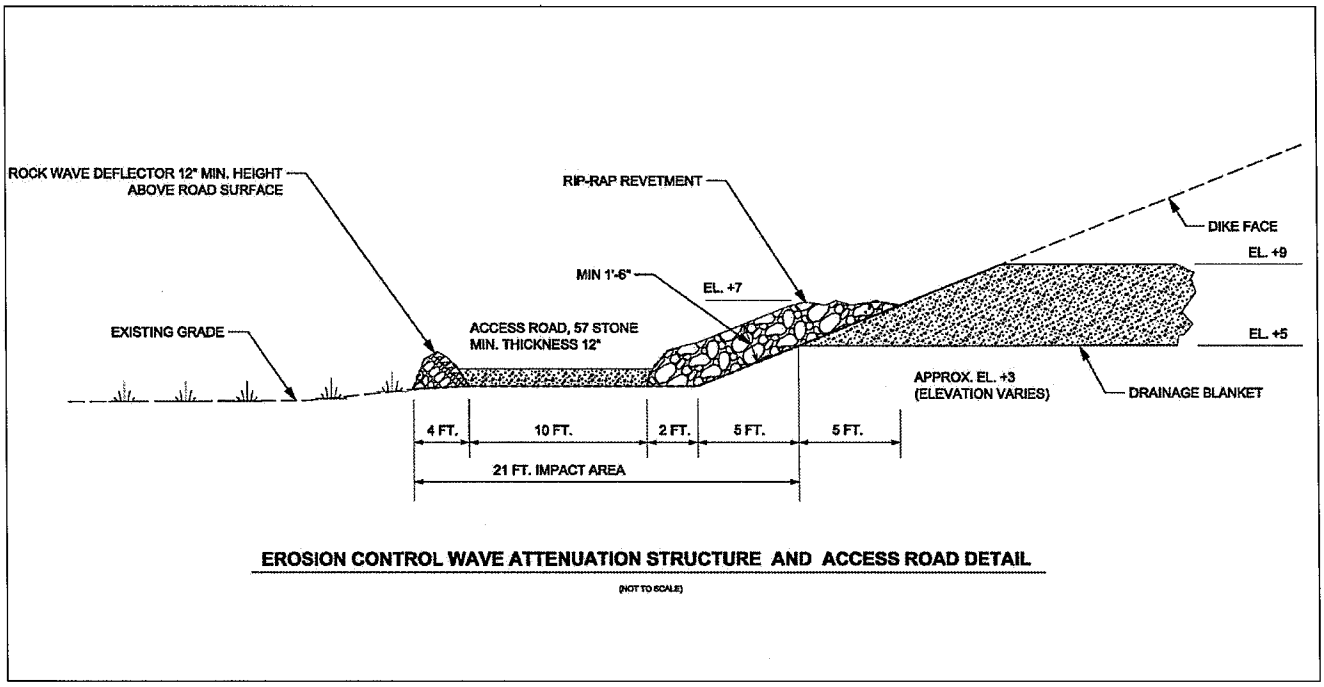

Figure 2. Detail of wave attenuation structure for permanent erosion control.

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FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DE1
Secretary

Mr. Eric Summa
Planning and Policy Division
Jacksonville USACE
P.O. Box 4970
Jacksonville, Florida 32232-0019

February 26, 20

Re: DHR Project File No. 2014-00561/ Received by DHR: January 31, 2014
Project: Bartram Island Dredge Material Management Area
County: Duval

Dear Mr. Summa,

This office reviewed the referenced project for possible effects on historic properties listed, eligible for listing, on the *National Register of Historic Places.* The review was conducted accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amende its implementing regulations in *36 CFR Part 800: Protection of Historic Properties.*

It is the opinion of this office that the proposed project will have no effect on historic prope listed, or eligible for listing, on the *National Register of Historic Places.*

If you have any questions, please contact Michael Hart, Historic Sites Specialist, by phone 850.245.6333, or by electronic mail at Michael.Hart@dos.myflorida.com.

Sincerely

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer

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DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

FEB 2 1 2014

Ms. Virginia Fay
Assistant Regional Administrator
Southeast Regional Office, Habitat Conservation
NOAA, National Marine Fisheries Service
263 13th Avenue South
St. Petersburg, FL 33 701

Re: Bartram Island Operation and Maintenance Erosion Control Structure for Cell A Dike Raising, Duval County, FL

Dear Ms. Fay:

This document provides notification with the National Marine Fisheries Service on Essential Fish Habitat (EFH) as required by the Magnuson-Stevens Fishery Conservation and Management Act 1996. The US Army Corps of Engineers (Corps) is working to ensure effective implementation of the required the Magnuson-Stevens Fishery and Conservation Management Act, EFH consultation (Section 305).

Bartram Island is approximately 4 miles long which is located in the Jacksonville Harbor portion of the St. Johns River. The island starts at around River Mile 10 near the westernmost tip of Blount Island and extends along the river's contour to just beyond the mouth of Dunn Creek. Bartram Island is owned by the Jacksonville Port Authority (Jaxport) and is an actively managed dredged material placement site. The dredged material management area (DMMA) is managed by the U.S. Army Corps of Engineers (Corps).

The dike raising and partitioning activity associated with Cells A and B2 will provide additional storage and management of dredged material extracted from the Federal navigational channel within the St. Johns River. The dike is being raised to a finished elevation of 55 feet NAVD 1988, accommodating 2.8 M cubic yards of material placement. The project also includes replacing existing weirs with new systems at each cell for improved water drainage. The current dike raising construction activity at Cell A has experienced erosional damage along the toe of the dike slope, most frequently observed on the north side of the cell dike. An engineered control structure is needed in this critical area to prevent additional erosion from occurring at the base of cell dike wall. The construction of a wave attenuation structure (WAS) will provide the opportunity to prevent erosion from inflicting additional damage to the fringing salt marsh that is present from the toe of the dike to the watered edge of the St. Johns River.

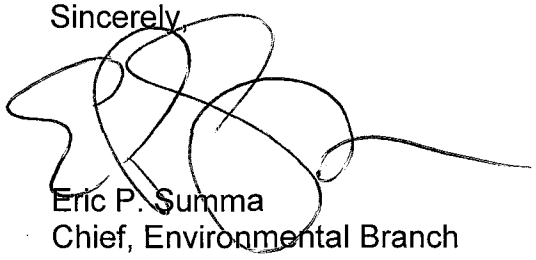
An erosion control structure will be placed at the toe of the existing slope along the north side of the dike within an intermittently inundated high salt marsh. A permanent wave attenuation structure (WAS) will extend around 1,100 feet long and 21-ft wide along the outer-most edge at the wetland interface. The structure includes a one-lane narrow road that is required to construct the structure as well as provide access to the outside cell dike wall for monitoring and maintenance. The design incorporates features to accept a high energy wave reaching the erosion blanket at the toe of the dike side wall and dissipate the energy so that as water enters and exits the structure it no longer has the ability to cause erosion. This design provides long-term protection to the adjacent marsh from deposition of fill material along with stabilization to the dike structure's outside wall facing the St. Johns River.

The project as proposed will not significantly adversely affect fish species or their essential fish habitat. The footprint of the project is above a perennially watered environment. Furthermore, all work will be conducted from the landward side of the cell dike wall. No material or equipment will be used or stored within a watered environment. Permanent impact to the benthic community within the footprint of the project area will encompass 0.58 acre to the fringing salt marsh, and will be compensated by 1.2 acre of 6.46 acre of similar habitat to be created in an on-site mitigation action.

This letter also serves as the NOA of the Environmental Assessment (EA) of the Bartram Island Erosion Control Structure for the Cell A dike Raising, Duval County, FL. Details of the proposed project and mitigation plan are included in the EA. Included throughout the report is information which constitutes the EFH Assessment as required by the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act. Specific sections addressing these measures and conditions are 3.5; 4.4; and 4.24.19 of the Environmental Assessment. Based on the analysis discussed in the report, the Corps has determined that the project as proposed will not adversely affect the essential habitat of species managed under the Act. Based on this information, we request that you concur with this finding.

If you have any questions, please contact me at 904 232-1665 or the technical point of contact, Kathleen McConnell, who can be reached at 904 232-3607.

Sincerely,



Eric P. Summa
Chief, Environmental Branch

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

March 10, 2014 F/SER47:GG/pw

(Sent via Electronic Mail)

Colonel Alan M. Dodd, Commander
U.S. Army Corps of Engineers Jacksonville District
Jacksonville District, Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Attention: Kathleen McConnell

Dear Colonel Dodd:

NOAA's National Marine Fisheries Service (NMFS) reviewed the *Environmental Assessment, Erosion Control Structure for Cell A Dike Raising at Bartram Island Dredged Material Management Area, Duval County, Florida* (EA) dated February 2014 and the corresponding public notice dated February 21, 2014. The Jacksonville District proposes to stem erosion along the northern side of the disposal area by constructing a wave attenuation structure (WAS), 1,100 feet long and 21 feet wide, along the base of the Cell A dike wall. The WAS includes a one-lane, narrow road needed to construct the WAS and to provide access to the wall for monitoring and maintenance. Construction of the WAS would impact 0.58 acres of intermittently flooded, high salt marsh. To offset these impacts, 0.88 acres of marsh would be created on the southern side of Bartram Island. EA Section 4.2.19 indicates the Jacksonville District has determined the project would not have a significant adverse impact on essential fish habitat (EFH) or federally managed fishery species occurring along the northeast coast of Florida. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

EA Section 3.5 describes EFH within the project area and the federally managed fishery species within this portion of the St Johns River. These descriptions do not require augmentation to complete the EFH consultation.

EA Section 4.4 describes the impacts to EFH from constructing the WAS, and EA Appendix F describes the compensatory mitigation, including a complete analysis using the Uniform Mitigation Assessment Method (UMAM) to determine the amount of mitigation needed to offset the impacts under the Florida Administrative Code. Upland vegetation will be removed by grubbing and cutting down trees and woody vegetation. Some existing native trees, such as *Pinus elliottii* and *Sabal palmetto*, may be left in isolated locations to become small upland islands within the created salt marsh, as occurs naturally in the area. Exposed ground would be graded with heavy equipment to achieve locally appropriate marsh elevations. Vegetation planting would occur in both the upper and lower marsh with regionally available, locally grown materials. Best management practices to be employed include erosion control fencing along the upland perimeter and a turbidity curtain at the water edge.

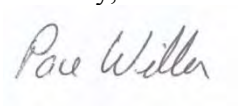
The UMAM analysis shows 0.88 acres of the described mitigation is needed to offset impacts to 0.58 acres of high marsh. The Jacksonville District, however, is proposing 6.46 acres of high and low marsh creation. The District and Jacksonville Port Authority (JPA) anticipate the excess mitigation will be

applied to future projects at Bartram Island that impact fringe marsh. The District and JPA expect proactively addressing future impacts will result in a significant cost-savings over the long term. The excess mitigation would only be used to compensate for onsite permanent impacts; no "credits" would be generated or sold to other interests or parties, and the site would be maintained and monitored as permittee-built wetland mitigation.

NMFS has no objection to the proposed WAS. The need to stem erosion along Bartram Island is clear and taking no action risks a significant dike failure that would damage EFH. The proposed mitigation should adequately offset the impacts from the WAS, and the proactive approach of mitigating now for anticipated future impacts at Bartram Island is an effective strategy.

We appreciate the opportunity to provide these comments. Please direct related questions to the attention of Mr. George Getsinger at our Northeast Florida field office. He may be reached at 9741 Ocean Shore Drive, St. Augustine, Florida, 32080; by telephone at (904) 461-8674; or by email at George.Getsinger@noaa.gov.

Sincerely,



/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, Kathleen.K.McConnell@usace.army.mil
EPA, Eric.H.Hughes@usace.army.mil
SAFMC, Roger.Pugliese@safmc.net
F/SER4, David Dale@noaa.gov
F/SER47, George.Getsinger@noaa.gov

From:	John Milio
To:	McConnell, Kathleen K. SAJ
Subject:	RE: [EXTERNAL] USACE Public Notice No. PN-PD-Jacksonville Harbor -02-14: Draft Environmental Assessment for an Erosion Control Structure for the Cell A Dike Raising Activity located on Bartram Island, St. Johns River, Duval County Florida (UNCLASSIFIED)
Date:	Thursday, March 06, 2014 1:19:30 PM

Kat:

We concur with the Corps' determination within the draft EA that the proposed construction of the Wave Attenuation System (WAS) will have no effect on nesting sea turtles or their habitat, and the manatee. Because WAS construction requires the use of watercraft to transport materials, equipment, and personnel across the St. Johns River to Bartram Island, the Corps' will apply the 2011 Standard Manatee Conditions for In-Water Work to that activity. We support that decision, as application of these standard conditions is expected to prevent take of manatee.

John

****

John F. Milio
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
E-mail: john_milio@fws.gov
http:/www.fws.gov/northflorida
7915 Baymeadows Way, Suite 200
Jacksonville, Florida 32256-7517
904.731.3098 (direct)
904.731.3336 (main)
904.731.3045 (fax)

-----Original Message-----
From: McConnell, Kathleen K. SAJ
[mailto:Kathleen.K.Mcconnell@usace.army.mil]
Sent: Thursday, March 06, 2014 11:29 AM
To: John Milio
Subject: RE: [EXTERNAL] USACE Public Notice No. PN-PD-Jacksonville Harbor -02-14: Draft Environmental Assessment for an Erosion Control Structure for the Cell A Dike Raising Activity located on Bartram Island, St. Johns River, Duval County Florida (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi John: It was nice talking with you this morning. I took your recommendations and incorporated them into the final EA document. I left the PN as is as it reflects the corrected language. A copy of the page in question is attached.

Please review this and respond that this is acceptable per our conversation this morning.

Thanks

Kathleen "Kat" McConnell
Biologist, USACE Jacksonville District
Planning Division Environmental Coastal Section
701 San Marco

Jacksonville, FL 32207
904-232-3607

-----Original Message-----
From: John Milio [mailto:john_milio@fws.gov]
Sent: Tuesday, March 04, 2014 4:32 PM
To: McConnell, Kathleen K. SAJ
Subject: [EXTERNAL] USACE Public Notice No. PN-PD-Jacksonville Harbor -02-14: Draft Environmental Assessment for an Erosion Control Structure for the Cell A Dike Raising Activity located on Bartram Island, St. Johns River, Duval County Florida

Hi Kat:

Will be getting back to you soon on Fishweir Creek.

In the meantime, I was given subject PN to look over. Under EVALUATION: c. Threatened or Endangered Species: Has consultation with our agency been conducted as you state? Also, based on what I read in the DEA, the next sentence should read "The construction of the proposed project will have no effect on the wood stork and nesting and foraging sea turtles, and is not likely to adversely affect the manatee or its designated critical habitat."

On page 16 of the DEA, section 4.2 THREATENED AND ENDANGERED SPECIES: You mention that "Pursuant to Section 7 of the Endangered Species Act (ESA), coordination with.....the U.S. Fish and wildlife Service in regard to this project is ongoing." You should substitute "consultation" for "coordination". Also, the last sentence should read "The Corps' final determination relative to project impacts and any need for special protection measures is subject to review by, and concurrence/non-concurrence from the FWS and NMFS."

Under 4.2.1 SEA TURTLES, strike out "additional", and add "habitat" after sea turtle nesting or foraging..." within ALTERNATIVE 2.

Under 4.2.2.2 ALTERNATIVE 2: Construction of Erosion Control Structure: Modify the first sentence as follows. "This project is not likely to adversely affect manatees or designated critical manatee habitat."

Call/email me if you have any questions. Thanks.

John

****

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Classification: UNCLASSIFIED
Caveats: NONE

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ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

APPENDIX F

MITIGATION PLAN AND UMAM ANALYSIS

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Bartram Island Mitigation Plan

The following mitigation plan complies with the requirements of Section 2036 of the Water Resources Development Act of 2007 (WRDA 2007) and "complies with the mitigation standards and policies established pursuant to the regulatory programs". Also the mitigation plan is proposed to address the loss of jurisdictional wetlands consisting of salt marsh to remain in compliance with the Section 404 of the U.S. Clean Water Act. The functions provided by the creation of new salt marsh in a disturbed upland area on-site will be similar to those lost from the permanent impact by removal of a high marsh system.

Introduction

Bartram Island is located in the lower St. Johns River (LSJR) of the Jacksonville Harbor District; **Figure 1**. It is an active construction site that receives dredge materials from routine maintenance of the River. The material is contained in several Dredged Material Management Area (DMMA) cells constructed from previously dredged material on site. Currently, two DMMA cells (A and B2) are being expanded vertically to accommodate additional dredged material that is anticipated for placement in the near future. A third cell, Cell B, is being used for dry storage of materials excavated from Cells A and B2 to accommodate construction. These activities demonstrate the dynamic nature of the routinely disturbed island. Due to location in the LSJR, Bartram Island is subjected to off-site influences that affect the fringing salt marsh that circumnavigates its perimeter. Specifically, abnormally large, impact-inducing waves are caused by several sources:

- Astronomically high seasonal tides;
- Storm surge;
- Wind generated high energy waves; and
- Vessel wakes (Cargo/cruise ships, pilot tug boats, etc).

Tides within the Dames Point region can vary significantly in height, with ranges from 0.1-ft at low tide to 4.1-ft at high tide during a full moon, and 0.5-ft to 3.8-ft when less than 5% of the moon is visible (http://www.saltwatertides.com/cgi-local/seatlantic.cgi). This variation can push tidal waters against the adjacent dike or into the uplands on-site.

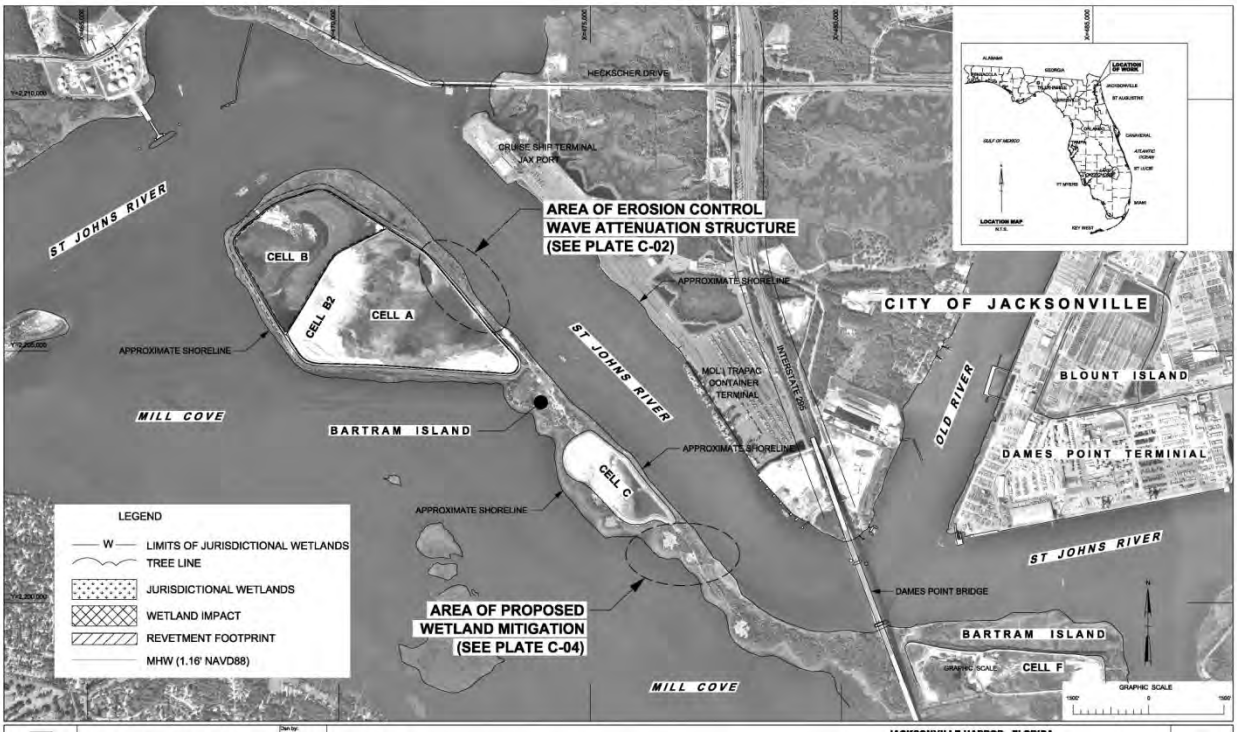


Figure 1. (Permit Plate C-01) Location of Bartram Island in the Lower St. Johns River

Attempts to control erosion of DMMA Cell A/B side-slope on the north side of the island is an on-going activity. Long term stability includes vertical grading along with the placement of topsoil and seeding with herbaceous (grass) species which will occur within a few weeks. However, due to an extraordinarily active wet season from April, 2013 to the present, onsite managers have observed isolated erosional events that have resulted in deposition of fill at the foot of the dike. Activities are underway to restore the fringing salt marsh to pre-event condition; additionally, new erosion control silt fencing has been installed and is monitored regularly to address concerns before they result in adverse impact. It is for this reason a permanent structure is proposed for construction along the cell dike toe of slope at the location where damage is most likely to occur. The wave attenuation structure will provide protection to the fringing salt marsh by dissipating high wave energy and releasing the water back to the River without causing adverse impact of erosion and deposition of material into the estuary system.

The proposed construction of a wave attenuation structure at the toe of the existing dike will result in direct (permanent) impact to salt marsh wetland that exists between the dike and the open water edge of the St. Johns River. Further described herein, the portion of the salt marsh that will be displaced is the high marsh sub-community of the fringing estuary along the base of the dike.

Purpose of Mitigation

The importance of salt marsh ecosystem to the coastal environment can be presented as five ecological roles: primary production, food sources, habitats, stabilization of sediments, and filtration (Dawes, 1998). The purpose of the mitigation is to compensate for the functional loss of high marsh within the footprint of the wave attenuation structure by replacing this community at another location on Bartram

Island between active DMMA cells. Creation of a wetland mitigation site is proposed for a previously disturbed, fallow upland area (FLUCFCS Code 743) which will restore the function of a salt marsh estuarine system.

Description of Impact Area

An estuary consisting of a high and low salt marsh (FLUCFCS Code 642) occurs along the base of the DMMA dike side slope. The estuary was formed from disturbance as a result of on-going construction and maintenance activities over many years. The wetland jurisdictional determination (JD) line is located at the structure base, with the dike built out to the interface delineation line; **Figure 2**. An erosion gravel blanket is at the foot of the dike, which consists of aggregate limestone rock with pore spaces that collect shifting sand. As the pore spaces fill and the material settle, the aggregate and sand form a conglomerate that anchors the dike at its toe. A silt fence is present a few feet from the dike. No upland buffer is present between the dike and JD boundary.

The high marsh grades into a low marsh beyond the project limit and extends to open water of the LSJR. The salt marsh is brackish within a mesohaline (average salinity of 14.5 parts per thousand (ppt)) riverine zone, and is subjected to daily tidal influence (SRRLSJR, 2013). As previously described, the marsh is frequently subjected to high wave energy which often overtops the erosion control silt fence, the first line of defense from the adverse effect of erosion from the side slope depositing material into the marsh. The footprint of the 0.58-acre impact area is a mostly herbaceous high marsh dominated by *Spartina patens* with a small population of *Juncus roemerianus*. Shrubs (*Bachharis halimifolia* and *Myrica cerifera*) are present along the upland margin. A new weir outfall system is located midway along the linear footprint. The HDPE plastic 30-inch pipes extend outward from the dike side wall and are placed on pilings to the water edge of the St. Johns River. The recently installed outfall pipes were included under DEP permit 16-255718-001-ES issued on January 13, 2011.

Wildlife observed in the impact area consists mostly of small crustaceans and minnows when tide is present. Wading birds have been observed roosting on pilings or foraging in or adjacent to the impact zone marsh; osprey are observed foraging overhead. Medium-sized mammals that could utilize the area include raccoons, feral hogs, and armadillo. Sign of scat and tracks indicate that raccoons are frequent visitors.

Description of Proposed Structure

The proposed permanent wave attenuation structure will start at STA 236+00, and will extend around 1,100 feet in length, ending at STA 247+00 at a palm tree hammock. The anticipated area that will be permanently impacted is 0.58 acre, as depicted on the project plan view (**Figure 2)**. The width of footprint will be around 21-ft wide along the outer-most edge at the wetland interface. A profile view, **Figure 3,** depicts the tie-in of the dike erosion blanket to the existing wave attenuation structure. The design incorporates features to accept a high energy wave reaching the erosion blanket at the toe of the dike side wall and dissipate the energy so that as water enters and exits the structure it no longer has the ability to cause erosion. This design provides long-term protection to the adjacent marsh from deposition of fill material. Please see the engineering plates included in the DEP permit modification

application submittal (for existing DEP modification #16-259637-003) for further details of the wave attenuation structure design and construction methodology.

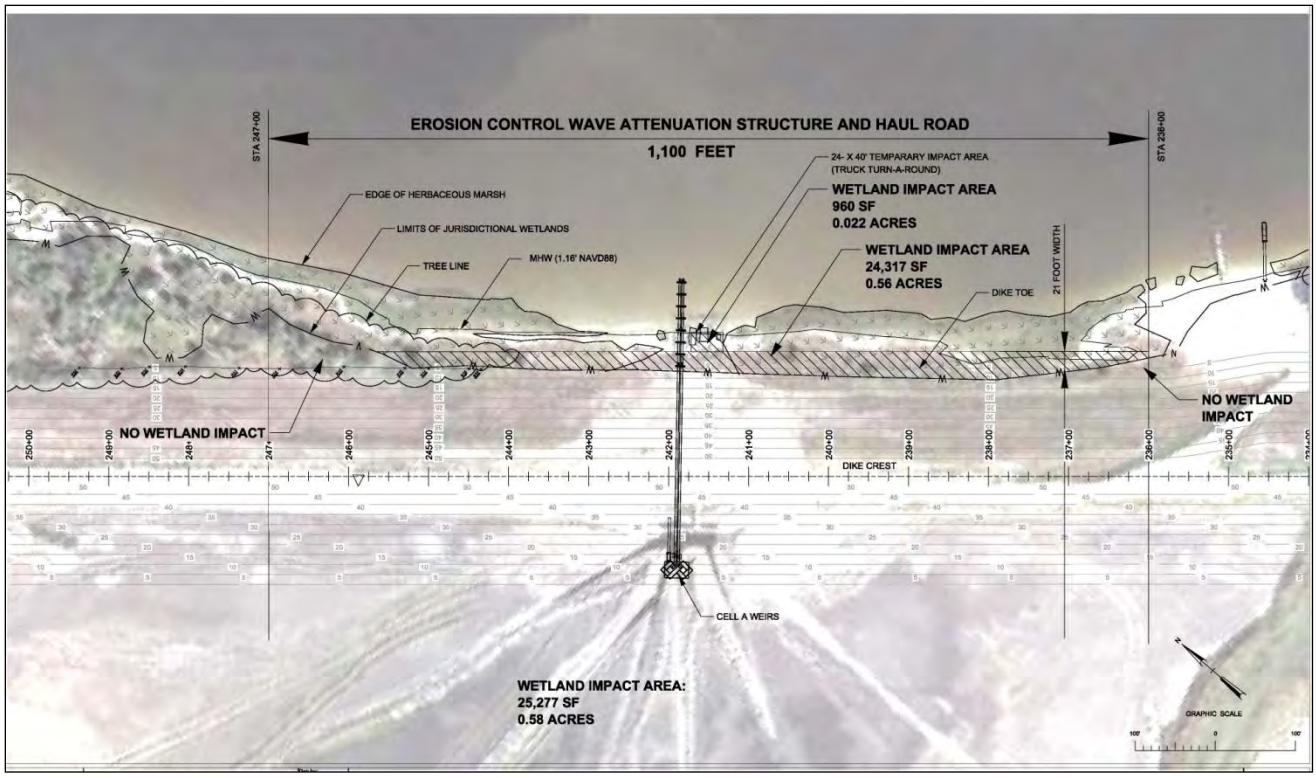


Figure 2. (Permit Plate C-02). Plan view of impact area from footprint of wave attenuation structure.

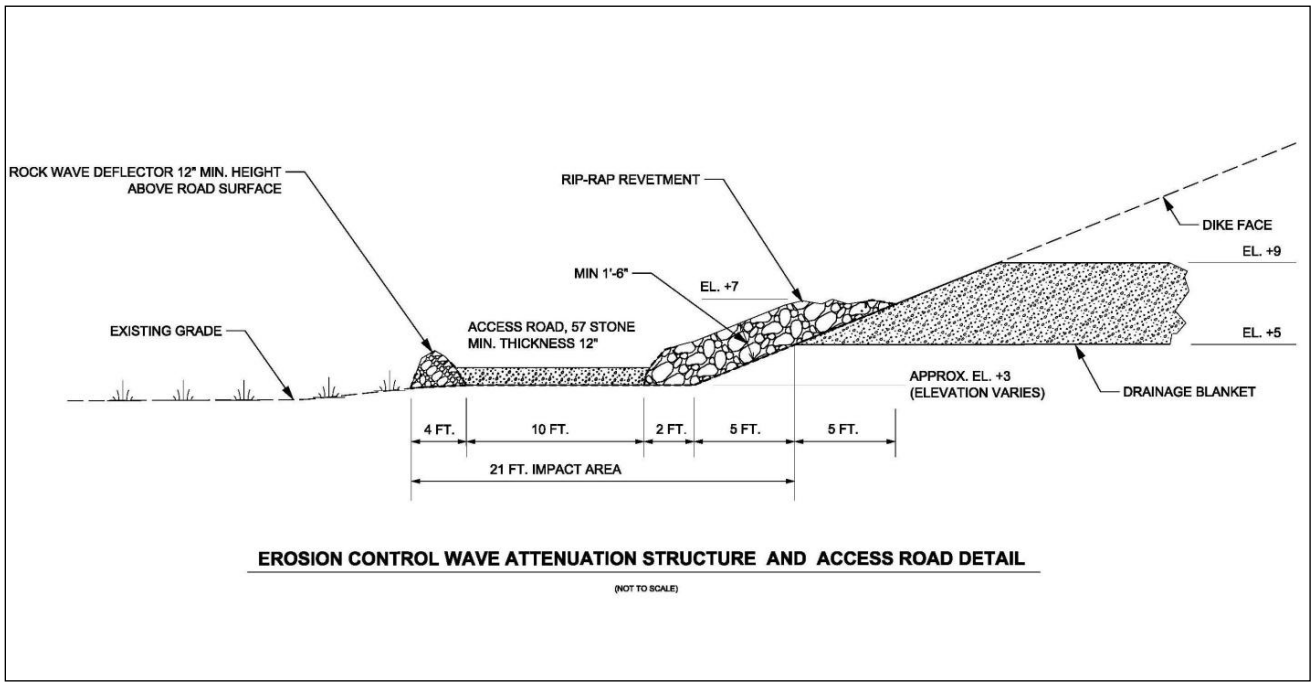


Figure 3. (Permit Plate C-03). Detail of wave attenuation structure for permanent erosion control.

Mitigation Area Existing Conditions

The proposed mitigation area is a fallow, disturbed upland (FLUCFCS Code 743) that is located between DMMA Cells C and F as depicted below in **Figure 4**. The area is a former dredged material disposal site.

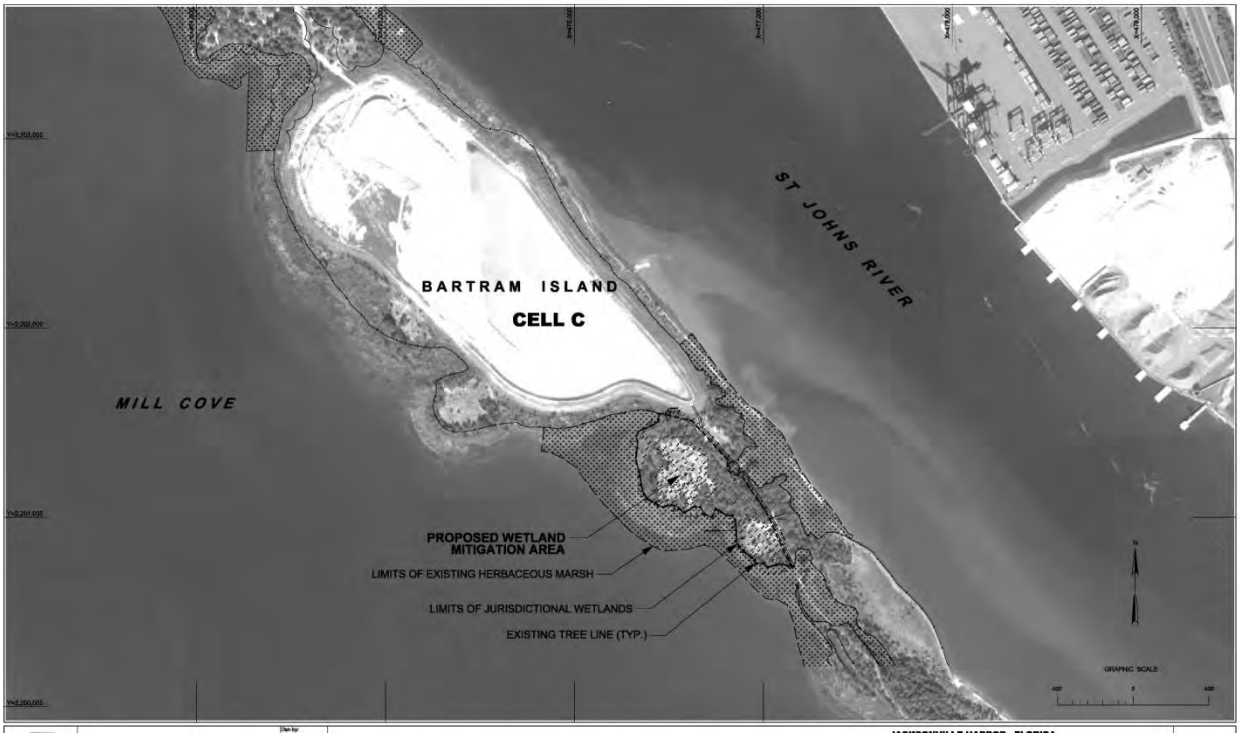


Figure 4. (Permit Plate C-04). Location of mitigation area southeast of Cell C in dormant upland formed by dredged material.

The upland area abuts around 400 feet of a salt marsh on the south side of the island in a crescent shape of the existing landscape, and encompasses 6.46 acres; see plan view of the mitigation area depicted in **Figure 5**. Soils within the upland consist of medium to fine sand and shell hash derived from former dredged material placed many years ago. The general elevation of the area ranges from approximately 1.1-ft at the low marsh edge to 6.46-ft as shown on the permit plate C-05. The inner area is mostly open (<30% canopy coverage), with herbaceous grasses and forbs comprising ground cover. Vegetation includes predominantly FAC or FACU ruderal herbaceous species of *Schizachyrium scoparium, Eragrostis spectabilis* grasses, and *Melanthera nivea, Solidago sp., Euthamia caroliniana*, and *Erechtites heiractifolia.* Along the margins of the upland area, immature trees and shrubs form a small mesic hammock. Species include *Pinus elliottii, Quercus laurifolia*, *Juniperus virginiana,* and *Sabal palmetto* along with shrubs *Ilex vomitoria, Myrica cerifera,* and *Baccharis halimifolia.* Along the wetland boundary, the shrubs extend into the upper marsh as the system transitions into an herbaceous dominated high marsh (FLUCFCS Code 642). The high marsh has greater diversity, with a co-dominance of *Spartina patens* and *Juncus roemerianus*, along with non-dominant grasses *Distichilis spicata* and *Setaria corrugata.* As common throughout the fringing marsh along the island perimeter, *Spartina alterniflora* dominates the low marsh waterward near the LSJR edge. Few invasive species are present.

Soils in the adjoining salt marsh consist of saturated or inundated fine sand that are saturated to the mean high water line (MHW).

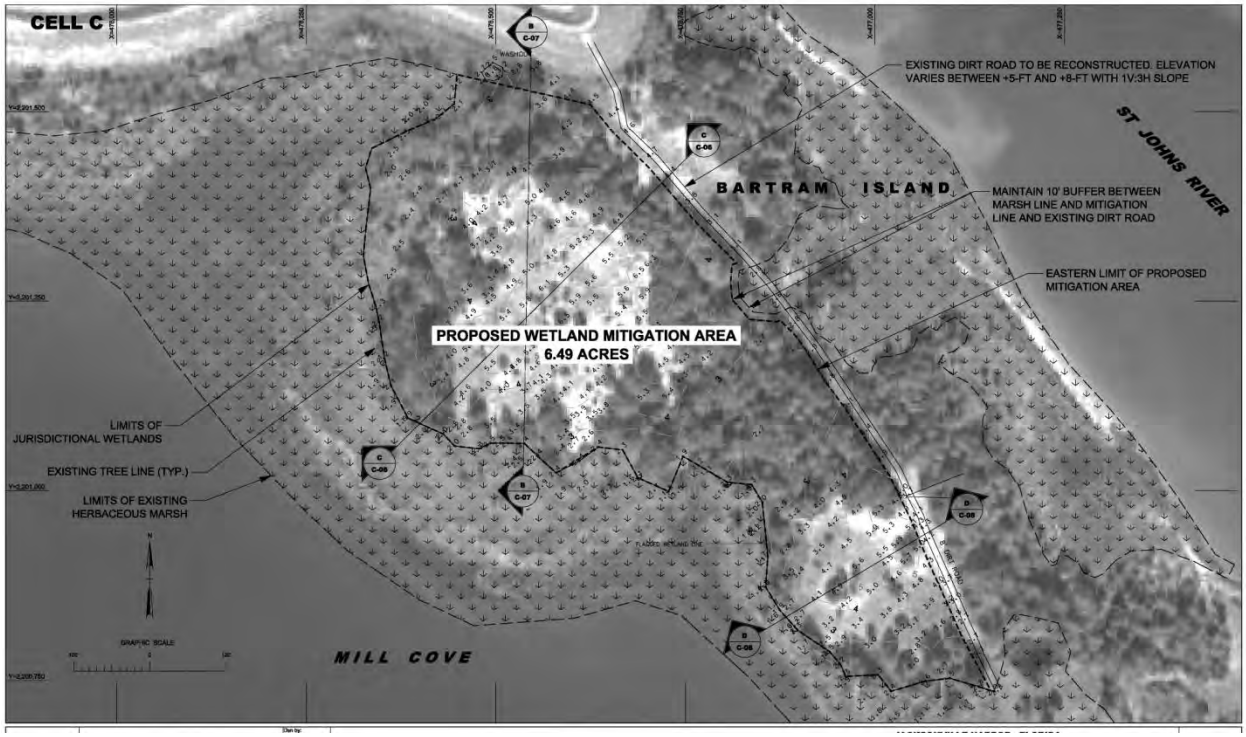


Figure 5. (Permit Plate C-05). Plan view of mitigation area to be created as a salt marsh from existing upland.

Hydrology in the adjoining salt marsh is provided by daily tide as well as runoff from the upland during storm events. In existing conditions, the low and high salt marsh experience inundation that even during low tide soils remain persistently saturated at or near the substrate surface. Extreme flood events occasionally force tidal waters into the upland at the wetland system boundary. Although infrequent, events of this nature have occurred during the current wet season this year. A small drainage channel is present to the west just offsite of the mitigation area. An access road abuts the area to the north, and is excluded from the mitigation. Also, adjacent upland north of the road will be used for staging equipment and storing material removed during the grading operation.

Studies show that restoration of tidal flow and associated habitat changes are important features that can influence bird populations (C. T. Roman and D. M. Burdick (ed), 2012). Wildlife usage in the upland mitigation assessment area is low. Feral pigs, raccoons, and armadillo tracks are present. Trees and shrubs provide cover and forage resources for songbirds. A black racer snake was observed on the access road. Wading birds are present in the adjacent salt marsh. Ospreys and red-shouldered hawks routinely fly overhead to forage for food.

Mitigation Area with Project

The upland area will undergo construction into a wetland by two main activity components: manipulation of the site topography, and introduction of salt marsh vegetation. Tidal marshes typically

have spatially structured vegetation and low diversity (Dawes, 1998). The lower edge of a salt marsh, as found in northern Florida, is drained more completely than inland zones (Dawes, 1998). Often times, this zonation is overlapping in vegetation. The proper elevation needed to sustain the hydrology for appropriate marsh vegetation per stratum will be based on that of the adjoining system so that the entire area will integrate seamlessly into a brackish water marsh found around the perimeter of Bartram Island.

First, upland vegetation will be removed by grubbing and cutting down of trees and woody vegetation. Some existing native species trees such as *Pinus elliottii* and *Sabal palmetto* may be left in isolated locations to become small upland tree islands within the created salt marsh, thus mimicking the habitat that occurs throughout the fringing estuary around the island.

Next, the exposed ground will be graded with heavy equipment, including the removal of excess sand material so that a target topographic elevation is achieved. High marsh is an irregularly flooded system that is not inundated on every daily high tide; rather, it is during exceptionally high tides such as spring or wind-driven tides (Lippson, R.J. and A.J. Lippson, 2009). Studies have shown that a gentle slope of 1 to 3% is recommended to maximize the intertidal areas in tidal marsh restoration, and to dissipate wave energy or a greater area, reducing the probability of erosion (S.W. Broome and C.B. Craft, 1997). Elevation requirements of vegetation to be planted at creation sites can be determined by observing the upper and lower elevation limits of the dominant plant species at the nearby natural marsh (S.W. Broome and C.B. Craft, 1997). The Bartram Island mitigation area will have a gradual drop from an elevation of 3.5 at the existing upland immediately outside of the project limit to an elevation of 2.0-ft found at the existing boundary along the marsh interface toward the River's edge; see profiles on permit plates C-06 to C-08.

The attached graphic illustration of the mitigation area represents the contrast of the existing condition to the with-project rendition. The final grade elevation will match that of the existing regularly flooded low marsh topography relevant to the LSJR water edge. It is anticipated that additional low marsh will require expansion into the existing upper marsh near the boundary of the disturbed wetland/upland interface. This expansion will accommodate the hydrology needed to sustain a newly established transition of wetland in the area of the former upland. Therefore, some alteration of the existing upper marsh will occur as an enhanced sub-community of low marsh. The removal of earthen material from the present wetland boundary to the edge of the created marsh will allow low marsh to extend into this area, but as the slope gradually increases, a vegetation sub-community will transition from low to high marsh, until reaching the upland buffer.

Upland material removed from the site will be stored in the adjacent upland outside of the mitigation project limits for use in maintenance of access roads or other activities associated with the DMMA. Also, a staging area will be located in this area. The existing access road may be maintained using the upland material. Best management practices such as erosion control fencing will be placed along the upland perimeter, and a turbidity curtain will be placed at the watered edge to collect any sediment that may migrate during construction activities.

Establishment of vegetation appropriate for the salt marsh will focus on dominant species that typically occur in a high (upper) marsh. However, as discussed above, the low marsh will be expanded into the area now occupied by a disturbed high marsh along the interface of the wetland boundary. Therefore, some low marsh vegetation will also be included in the planting scheme. One disadvantage of sandy material is its low nutrient capacity, but the problem is alleviated where tidal flooding deposits significant amounts of nutrient-rich particles (C. T. Roman and D. M. Burdick, 2012). Application of fertilizers containing nitrogen and phosphorus enhances plant growth and is usually beneficial during establishment (S.W. Broome and C.B. Craft, 1997). Prior to the plantings, the substrate soils may require some application of fertilizer in order to provide nutrients to newly establishing plants because the previously dredged material contains little nutritional value for vegetation (S.W. Broome and C.B. Craft, 1997). Conversely, overabundance of fertilizer could add unnecessary nutrient loading to the LSJR, which is already stressed from excessive nitrogen and phosphorus. Therefore, the newly exposed soil on site will be tested for residual nutrient and mineral content as a portion of the contracted activities. If the results of the testing determine that soil amendment is required, its use will be sparing and within product guidance. As the vegetation becomes established, sediment accumulation, supplied by tidal and wave action, longshore drift or upland erosion will provide beneficial nutrients that will build the soil over time. This accumulation of sediment allows marsh surfaces to keep pace with rising sea level (S.W. Broome and C.B. Craft, 1997).

Vegetation planting will occur in both the upper and lower marsh sub-communities with regionally available, locally grown materials. The existing lower marsh consisting of a monoculture of *Spartina alterniflora* will be extended landward due to the grading plan detailed above. Therefore, additional *Spartina alterniflora* will be planted into the newly exposed lower elevation toward the water edge. As the lower marsh transitions into a high marsh in the upper elevation area, two dominant vegetation species, *Spartina patens* and *Juncus roemerianus,* will be planted to compose the dominant coverage of the high marsh. Additionally, at the margin of the system, *Distichilis spicata* will be planted for a smooth transition into the upland buffer. These grasses will be supplied in 1-gallon containers and will be spaced on 3-ft centers. As the plants start to spread out during establishment, it is anticipated that natural recruitment of native high marsh species will eventually occupy the open spaces between the plantings adding to the overall diversity. Invasive species will be eradicated as necessary, determined through monitoring.

UMAM Discussion

Pursuant to Florida Chapter 62-345, the Uniform Mitigation Assessment Method (UMAM) was used to evaluate adequate compensation of both the impact zone and proposed mitigation area. The UMAM analysis determines the compensation to offset the functional loss of the existing wetland within the footprint of the pending construction zone. UMAM Worksheets, both Part I and Part II, describe in detail the scoring and supporting data used to calculate the functional loss (FL) from adverse permanent impact, and relative functional gain (RFG) of a proposed mitigation action. The completed and enclosed UMAM worksheets addressing 0.58 acre of impact determined a FL of 0.33 based on a delta of 0.57. The UMAM evaluation for the mitigation area determined a RFG of 0.374 based on a delta of 0.64, time lag of 1.14, and risk factor of 1.5. The time lag of 1.14 is based on similar type of salt marsh mitigation

projects in the area, notably the Mile Point Navigation Study Mitigation Assessment (USACE, 2012) in which several acres of salt marsh will be compensated nearby in the LSJR. For the Bartram Island site, a risk factor of 1.5 was chosen for the creation of an herbaceous wetland extending from an existing system. Unlike the Mile Point project, a smaller area will be included in the Bartram Island mitigation which represents less risk of herbaceous vegetation failure; therefore, a slightly lower risk factor was selected. Information regarding the Mile Point Navigation Study UMAM and mitigation plan can be accessed at the following link:

(http://www.saj.usace.army.mil/Portals/44/docs/Navigation/FINAL_Jacksonville_Harbor_Mile_Point_AppendicesB-F.pdf).

Based on the factors above, the calculated amount of acreage required to fully compensate for the adverse permanent impact to the site is 0.88 acres. However, the area that is proposed for mitigation is 6.46 acres. The Corps and Jacksonville Port Authority (Jaxport) propose to construct an on-site salt marsh for the entire 6.46 acre site, along with enhancement of the high salt marsh at the immediate wetland interface within the project limits. Although only 0.88 acres will be used to compensate for impact of this modified permit application, future construction projects associated with the operation and maintenance of the Bartram Island dredge material management facility will most likely result in expansion into the fringing salt marsh along its perimeter. Construction of 6.46 acres of salt marsh at this time will proactively address the current and future impacts, and will result in a significant cost-savings to both the tax-payer funded Federal government and Jaxport project. Additionally, in contrast to a mitigation bank, the mitigation area will only be used to compensate for onsite permanent impacts; no "credits" will be generated or sold to other interests or parties, and the site will be maintained and monitored as a permittee-built wetland mitigation.

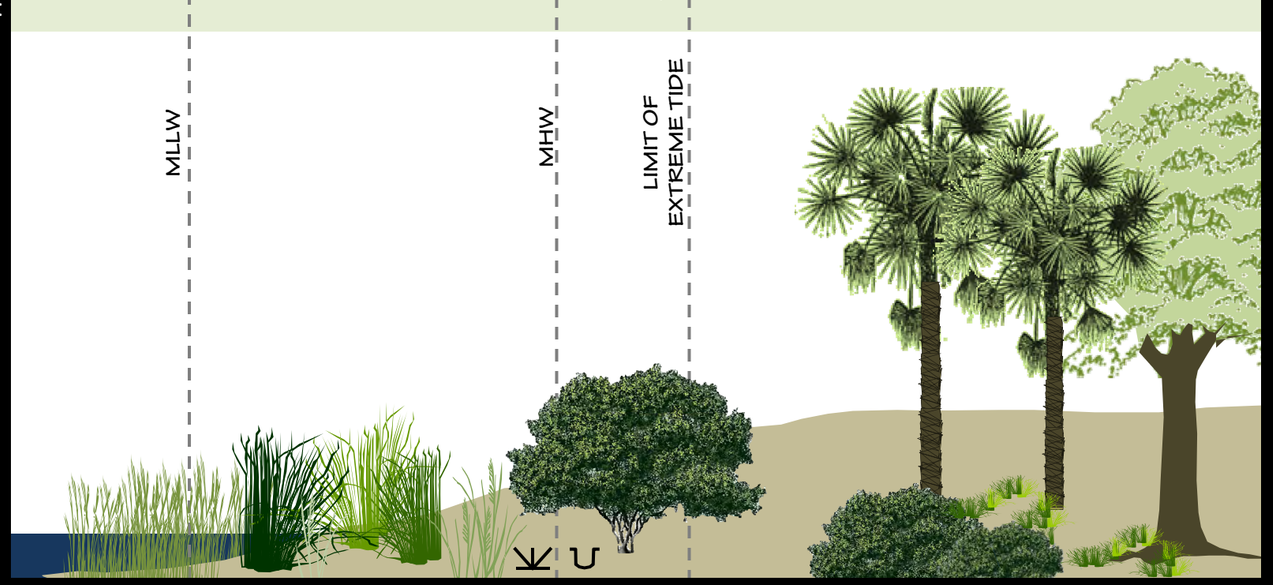
Monitoring Plan

Monitoring will be conducted by qualified wetland scientist(s) that have demonstrated expertise in estuarine systems. Monitoring of the created salt marsh will be conducted initially twice a year for two years and once annually for three years until such time that the successfulness of the site is accomplished based on metric success criteria outlined herein. If monitoring is required beyond the initial five years, evaluation of conditions that are causing stress or other retardation of the site towards a general trend of success will be identified and addressed with employment of the mitigation contingency plan, also described herein.

Monitoring will include evaluation of the following parameters:

- Stability—Stability of the substrate and tidal or wave influence of the created site will be assessed to determine if erosion is occurring.
- Hydrology—A qualitative analysis shall be performed to determine whether the hydrology of the site continues to be suitable for low and high marsh habitats.
- Vegetation—Percent cover (including species type) of the created site and adjacent reference wetland will be ascertained using a sufficient number of randomly selected 1-meter^2 quadrants along transect lines. Each species within the quadrat will be identified and counted; their

ZONE	LOW MARSH	HIGH MARSH	TIDAL ZONE	UPLAND
VEGETATION	SALT MARSH CORDGRASS	SALT GRASS, SALT MEADOW HAY, BLACK NEEDLERUSH	SALT GRASS, WAX MYRTLE SHRUBS AND SOME IMMATURE TREES AT MHWL/ INTERTIDAL ZONE/ UPLAND LINE	GRASSES, GROUND LICHENS, WAX MYRTLE, CABBAGE PALM, LIVE OAK
SATURATION	SATURATED SUBSTRATE AT SURFACE		SANDY SOILS SATURATION >12”	
HYDROLOGY	PERSISTENTLY INUNDATED	REGULARLY INUNDATED AT MEAN HIGH TIDE	SELDOM INUNDATED (ONLY BY EXTREME EVENTS)	ALMOST NEVER INUNDATED



EXISTING CONDITION

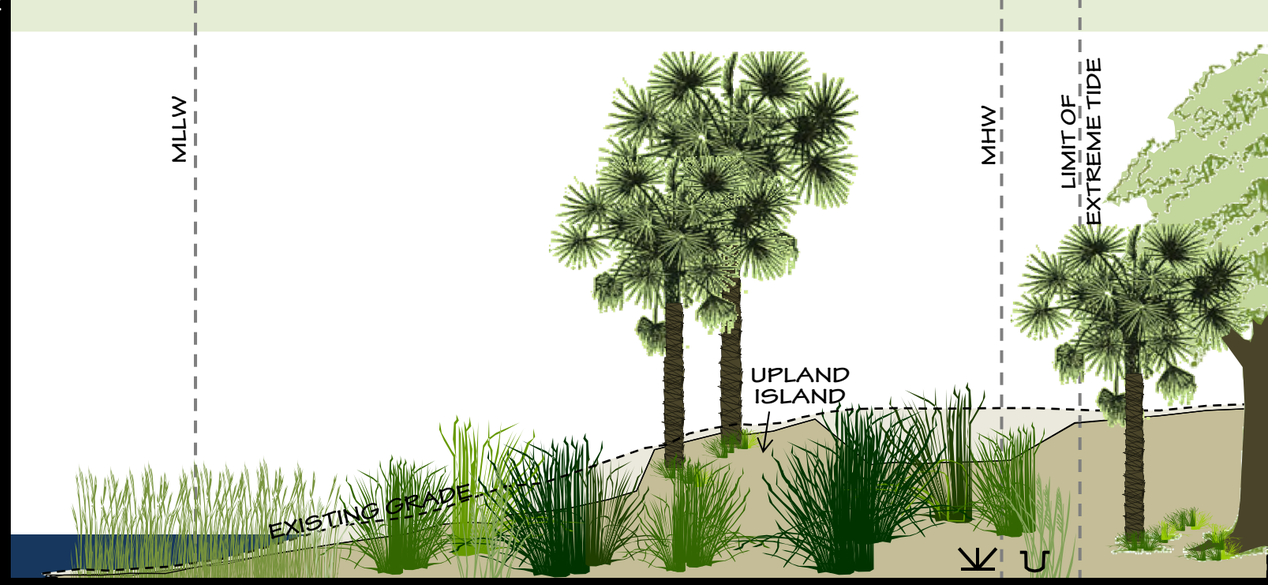
NOT TO SCALE

JACKSONVILLE HARBOR

BARTRAM ISLAND SALTMARSH MITIGATION

WETLAND AREA

ZONE	LOW MARSH	HIGH MARSH	TIDAL ZONE	UPLAND
VEGETATION	SALT MARSH CORDGRASS	SALT GRASS, SALT MEADOW HAY, BLACK NEEDLERUSH	SALT GRASS, WAX MYRTLE SHRUBS AND SOME IMMATURE TREES AT MHWL/INTERTIDAL ZONE/UPLAND LINE	GRASSES, GROUND LICHENS, WAX MYRTLE, CABBAGE PALM, LIVE OAK
SATURATION	SATURATED SUBSTRATE AT SURFACE (except in upland island)			SANDY SOILS SATURATION >12”
HYDROLOGY	PERSISTENTLY INUNDATED	REGULARLY INUNDATED AT MEAN HIGH TIDE	SELDOM INUNDATED (ONLY BY EXTREME EVENTS)	ALMOST NEVER INUNDATED



WITH-PROJECT CONDITION

NOT TO SCALE

JACKSONVILLE HARBOR

BARTRAM ISLAND SALTMARSH MITIGATION

EXPANDED WETLAND AREA

FACTSHEET NOV 2013

abundance calculated as a percentage (to determine population and shoot density). The canopy height of the plants within the quadrat is measured and averaged to determine average canopy height for comparison to the reference site.

- Photography—High and low marsh and tidal streams will be photographed from assigned monument locations. One monument will be assigned to a representative location within the reference site.
- Annual Reports—Reports would include maps of the mitigation area, a description of marsh stability including observed erosion; a qualitative analysis of the site hydrology; an analysis of percent cover data including percentage of high marsh; photographs of the created area from assigned monuments and miscellaneous features, wildlife sightings or issues; copies of field collected data; and finally, recommendations.

Success Criteria provides the basis of established plant growth that is documented to have unassisted persistence for at least two consecutive years within the created site. The criteria for a successful basis of comparison include:

- Areal coverage of species composition within 15% of that in identified nearby reference site for the first year; within 90% by the third year so that less than 10% of exposed or eroded substrate is present.
- Dominance of plant community by target native species (*Spartina alterniflora, S. patens, Juncus roemerianus,* and *Distichlis spicata)* which is similar to the reference salt marsh site determined by plant cover analysis.
- High marsh comprises at least 60% of the total created (former upland) area.
- Hydrological conditions remain favorable for high and low marsh habitats.

Contingency Plan

Environmental monitoring over a period of five years will help ensure the sustainability of the restoration site. The Corps shall be ultimately responsible for ensuring that the final success criteria are met, and will take corrective actions as necessary. If deemed necessary, any corrective actions, such as re-planting or substrate manipulation (elevation or nutrient level adjustment), may be monitored for at least three additional years from the time they were implemented.

References:

Broome, S.W. and C.B. Craft, Ch 37 of *Tidal Marsh Restoration Creation and Mitigation,* 1997. Ecosystem Restoration: Applying Ecological Succession Theory to Evaluate Wetland Restoration in Urbanizing Coastal Watersheds. EPA grant No. R82611.

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Lippson, R. L., and A. J Lippson, *Life Along the Inner Coast*, 2009. The University of North Carolina Press, Chapel Hill, NC.

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USACE *Jacksonville Harbor (Mile Point) Navigation Study, Duval County, Florida Final Integrated Feasibility Report and Environmental Assessment*, March, 2012. U. S. Army Corps of Engineers South Atlantic Jacksonville District.

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Bartram Island DMMA		Cell A

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
642/652		Impact	0.58

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Lower St Johns River	III	

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetland jurisdictional determination (JD) boundary is at the interface of a manmade upland dredge material management area (DMMA) along the steep toe of slope and extends to watered edge of the St Johns River. An erosion blanket consisting of gravel/sand is at the base of the sloped dike. Low and high salt marsh is exposed at low tide within St Johns River system, and is inundated at high tide by direct hydrological connection to the river. Seasonal high tides, storm surges, and occasional large waves from ship/boat wakes can push water from the river up to the dike causing potential erosion to the salt marsh at the interface. Exposed tidal flat shoreline is at low tide along the river edge. Weir pipes are elevated in place and will not affect the wetland. The pipes will crossed with an access road consisting of rock material covering the pipes. This crossing will stay inside of the impact footprint.

Assessment area description

Top of the DMMA dike is an on-going construction site with heavy equipment access road as well as placement and compaction of material to elevate the existing dike. The side slope at present is exposed sand and gravel but will be seeded with upland herbaceous grassy species. The toe of the dike abuts the wetland JD boundary. An erosion blanket consisting of smaller gravel is present at the perimeter of the slope's base. The wetland within footprint of the proposed impact area consists of high marsh, mostly herbaceous (70%) mixture of *Spartina patens, Juncus roemerianus,* and *Paspalum vaginatum,* with *Bachharis halimifolia, Sabal palmetto,* and *Myrica cerifera* on the slightly higher edge along the toe of slope. Soils remain saturated at all times. The high marsh grades into low marsh that is dominated by *Spartina alterniflora.* This portion of the marsh is inundated even during low tide, or has soil saturation at the surface when exposed.

Significant nearby features	Uniqueness
Jacksonville Port Authority shipping facility, major shipping route in channel of St Johns River. Urban-industrial land use, high-use transportation routes with I-295 bridge crossing the island.	NONE. Entire island is a manmade dredge management area receiving constant disturbance from heavy equipment, placement of dredged material.

Functions	Mitigation for previous permit/other historic use
Substrate exposed at low tide provides habitat for macro-invertebrates, benthic organisms, and food resources for wading birds, shorebirds, and raptors. Assessment area functions for tidal attenuation and benthic habitat. Other functions: traps sediment and filters nutrients to improve water quality.	NONE

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading and shorebird foraging and roosting, medium sized mammal foraging and cover, raptors (osprey) foraging, benthic and macro-invertebrate habitat.	Manatee (E) foraging along the salt marsh fringe of shoreline. None have been observed along the island perimeter.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sightings: Crabs, Osprey (foraging overhead), Brown pelican, Black-necked stilt, Great egret, Great blue heron. Raccoon (tracks, scat). Feral hog (tracks). Benthic organsims in shoreline substrate.

Additional relevant factors:

The purpose for the access road and attenuation structure along the toe of the dike within the weltand is to prevent continued erosion from occurring due to wave, tide, storm surge and other potentially catastrophic events. The road and wave attenuation structure will provide permanent stability. The elevation of the dike will continue to grow upward; the slope will be seeded with upland herbaceous vegetation to provide long term stability.

Assessment conducted by:	Assessment date(s):
KKM	11-Sep-11

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Bartram Island DMMA		Cell A
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	KKM	2-Oct-13

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 6	with: 3
Current Condition: Area land use has low to moderate benefits for wildlife. On-going construction and earth moving activities on the landward side of the adjoining dike limits wildlife usage to the existing narrow marsh system of the Assessment Area. Wilfdlife access to/from Assessment Area is substantially restricted by barriers -- Dike creates a barrier for migration and forage of wildlife; St Johns River creates barrier at limit of wetland. Location of two (2) culverts (36-in plastic pipe) are elevated on wooden pilings which also poses a minor barrier to migration of wildlife. Cover of invasive/exotic vegetation is moderate, and is located in upper marsh above the escarpment break line along the toe of the dike slope near the wetland jurisidctional delineation (JD) boundary. Discharge from the Assessment Area causes minimal benefit and negligable effect to the St John's River by alteration in discharge quality or quantity. **With Project:** Construction of an access road and wave attenuation structure along 1100-ft of the dike at the toe of slope will remove wetland function within the assessment area footprint. However, the structure will function to protect the remaining salt marsh immediately adjacent to the St Johns River from erosion by dissipating the high wave energy created from wind, storm surge, vessel wake, and seasonal high tides.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 9	with: 2
Current Condition: Hydrology and water quality moderately support wetland functions and provide benefits to fish and wildlife. The St Johns River is mesohaline and tidally infuenced along the shoreline's salt marsh fringe. The presence of the landward dike prohibits hydrology from influencing the system on one side of the assessment area, although high wave energy hitting the dike occasionally causes turbidity and deposition into the marsh. Water level indicators are distinct as evidenced by the presence of rack line at the escarpment break, and staining along the dike erosion control blanket. Soils in exposed salt marsh are saturated to surface and experience regular flooding. Evidence of wildlife usage by crusaceans (crabs), benthic invertebrates (worms, insects) at regularly exposed tidal flat during low tide. Benthic and vegetation zonation is appropriate for type of system, but shows signs of prior disturbance. Native vegetation has moderate coverage on substrate; (>70% coverage within assessment area). Water quality is as expected for that found in the lower St Johns River (slight to moderately turbid and tannin stained). **With Project:** Significant alteration to the hydrology or water quality are expected within the impact footprint. The permanent road and wave attenuation structure will not support vegetation or wildlife function, but will function to dissipate high wave energy from ship/boat wakes, storm surges, high seasonal tides and wind. The dissipated waves will provide stable hydrology to the adjacent remaining salt marsh system from the edge of the impact area to the river shoreline.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0
Current Conditions: Vegetataion is lush in the salt marsh within the assessment area, comprising 70% of the vegetation community. Some exposed substrate is present at the location of the newly installed weir pipe oufall. The lower salt marsh below the rack line is dominated by *Spartina alterniflora* and is inundated regularly by tidal waters. The upper marsh, inundated at high tide or during extreme surge events, has disturbance from upslope erosional deposition encroaching one side. High marsh vegetation is dominated by *Spartina patens* with small population of *Juncus roemerianus.* Shrubs (*Bachharis halimifolia, Myrica cerifera)* are present along the upland edge. Some inappropriate ruderal species (*Sesbania* sp; *Crotalaria* sp) and invasive *Dactyloctenium aegyptium* (FLEPPC Cat. II) are present in upper marsh at the interface with the wetland boundary. Topograhical strata is inconsistent with that expected for a shrub/herbaceous dominated upper marsh due to fill deposition that raised the elevation, thus allowing encroachment by upland species. Scattered *Sabal palmetto* trees are located toward the terminus of the proposed impact area. Stressed or dead snags, *Quercus laurifolia,* are present. Lack of land management measures allows shrubs to encroach into an herbaceous-dominated system. **With Project:** Removal of the existing high salt marsh vegetation within the assessment area will be permanent.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres: 0.73	with: 0.16

Delta = [with-current]
-0.57

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = -0.33

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Bartram Island DMMA		Cell A

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
743		Mitigation	6.5 ac

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Lower St Johns River	III	

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Dormant upland area on manmade island comprised of non-native dredged fill material that grades into adjoining fringing salt marsh along the edge of the lower St. Johns River. Vegetation coverage is mostly (65%) herbaceous dominated community with around 15% coverage by immature trees and shrubs along the margins. The jurisdictional boundary is at the interface with the high marsh, a shrub-dominated plant community. The high marsh grades into low marsh closer to the water edge.

Assessment area description

Fallow former spoil placement upland area between active DMMA cells. Plant community is dominated by herbaceous grasses *Schizachyrium scoparium* and *Eragrostis spectabilis* in the interior, and *Setaria corrugata* along the margin with the high marsh. Immature trees *Sabal palmetto, Quercus laurifolia,* and *Pinus elliottii* occur along the margins of the area or at the interface with the high marsh directly waterward of the wetland boundary. Shrubs along the interface include *Bachharis halimifolia, Myrica cerifera* and immature *Juniperus virginiana.* Vegetation coverage is about 80%, with sparse small areas of exposed soils often with *Cladonia* sp on the sandy surface. The soils are not saturated at or near surface and consist of varying sizes of sand/shell fill with some fine material.

Significant nearby features	Uniqueness
Jacksonville Port Authority shipping facility, major shipping route in channel of St John's River. Urban-industrial land use, high-use transportation routes with I-295 bridge crossing the island.	NONE. Entire island is a manmade dredge management area receiving constant disturbance from heavy equipment and placement of dredged material.

Functions	Mitigation for previous permit/other historic use
Limited wildlife usage for foraging and ground cover, nesting of small mammals and songbirds. Stormwater attenuation from surge and rainfall.	NONE

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Wading and shorebird foraging and roosting at interface with high marsh, medium sized mammal foraging and cover, raptors (osprey and red-shouldered hawk) foraging. Fiddler crabs.	NONE. Only anticipated ESA species in immediate area is manatee which would not be found in an upland area.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sighted: Osprey, Red-shouldered hawk (foraging overhead), Sea gulls. Raccoon (tracks) Feral hog (scat, lie-down areas and trails).

Additional relevant factors:

The site is between actively used dredged material management area (DMMA) cells (C and F). It has direct connection to the Island's fringing salt marsh on the south side. There is sufficient hydrology available to replace the fallow upland into a high marsh that will expand the existing system. The expanded salt marsh system will provide additional function for improved wildlife habitat as well as flood attenuation and sediment filtering.

Assessment conducted by:	Assessment date(s):
KKM	5-Oct-13

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Bartram Island DMMA		Cell A
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Mitigation	KKM	5-Oct-13

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 3	with: 8
Current Condition: Upland Mitigation Assessment Area (UMAA) occupies relatively high location on island within St Johns River system. UMAA is a fallow, dormant area between two actively used placement cells (C and F). Benefits for wildlife is limited due to disturbance from on-going construction and earth moving activities. Wildlife access to/from the UMAA is substantially limited by barriers -- adjacent road and dikes creates a barrier for migration and forage of wildlife beyonds limits of assessment area; St Johns River limits wildlife to the south. UMAA contains mostly ruderal plant species with a minor amount of invasive/exotic vegetation. Discharge from the assessment area causes minimal benefit or negligable effect to St Johns River by alterations in discharge quality or quantity. **With Project:** Removal of existant fill material and vegetation will cause temporary impact but ultimately will allow opportunity for expansion of a salt marsh system within the footprint. Regrading of UMAA to match elevation of adjacent upper marsh will restore wetland functions. Enhancement of adjoining salt marsh will encourage wildlife usage, and create a stable system.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 2	with: 9
Current Condition: Disturbance within UMAA from fill depositional events prevents adequate hydrology to sustain wetland vegetation or function. Previous fill with various fine to mediom grained dredge material has resulted in atypical soil patterns from stormwater drainage. Vegetation composition within the UMAA is typical for that of a disturbed upland ruderal plant community. Hydrology of the adjacent undisturbed lower salt marsh is adequate to provide hydrology for wetland vegetation (*Spartina alterniflora* and *S. patens)* although encroaching upland shrub species is occuring at the wetland interface due to disrupted hydroperiod. **With Project:** Hydrology adequate for an expanded estuary system including both high and low salt marsh will result from grade elevation correction. This will restore the hydrology needed for a functioning mesohaline salt marsh system, including sustaining an appropriate wetland plant community for this type of system. Restored wetland system will provide flood attenuation and sediment filtering of run-off surface waters prior to discharge into downstream waters of the St Johns River. Expansion of the estuary will significantly increase wildlife usage.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 2	with: 9
Current Conditions: UMAA is disturbed site. Vegetation is predominantly FAC or FACU ruderal hebraceous species of *Schizachyrium scoparium, Eragrostis spectabilis* grasses, and *Melanthera nivea, Solidago* sp., *Euthamia caroliniana,* and *Erechtites heiractifolia.* Topographic relief in moderate from immature trees (*Pinus elliottii, Quercus laurifolia , Juniperus virginiana* and *Sabal palmetto)* along the margins of the upland. At the wetland interface, shrubs include *Bachharis halimifolia, Myrica cerifera, and Ilex cassine* are interspersed with grass *Setaria corrugata* before grading into *Spartina patens* high marsh, and *S. alternifolia* low marsh to the water edge. Few invasive species are present. Coverage is around 90%; exposed soils are sand/shell dredged fill, some *Cladonia* sp is present on exposed ground. **With Project:** Topography elevation will be corrected through grading to match that of the adjoining estuary. Upper marsh vegetation will be similar to that within the adjoining marsh system, and lower marsh will be extension of *Spartina alterniflora* colony. The graded area will be actively planted with vegetation appropriate for this type of system (*Spartina patens* and *Juncus roemerianus)* . Native non-dominant species are expected to naturally recruit to add biodiversity to the high marsh. Erosion from the upland slope will be prevented by the use of BMP including geo-textile silt fencing.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres: 0.35	with: 0.87

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
0.64

If mitigation
Time lag (t-factor) = 1.14
Risk factor = 1.5

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.374

Mitigation Determination Formulas
(See Section 62-345.600(3), F.A.C.)

For each impact assessment area:

(FL) Functional Loss = Impact Delta X Impact acres

For each mitigation assessment area:

(RFG) Relative Functional Gain = Mitigation Delta (adjusted for preservation, if applicable)/((t-factor)(risk))

(a) Mitigation Bank Credit Determination

The total potential credits for a mitigation bank is the sum of the credits for each assessment area where assessment area credits equal the RFG times the acres of the assessment area scored

Bank Assessment Area	RFG	X	Acres	=	Credits
example					
a.a.1					
a.a.2					
total					

(b) Mitigation needed to offset impacts, when using a mitigation bank

The number of mitigation bank credits needed, when the bank or regional offsite mitigation area is assessed in accordance with this rule, is equal to the summation of the calculated functional loss for each impact assessment area.

Impact Assessment Area	FL	=	Credits needed
example			
a.a.1	0.33		0.33
a.a.2			
total			0.33

(c) Mitigation needed to offset impacts, when not using a bank

To determine the acres of mitigation needed to offset impacts when not using a bank or a regional offsite mitigation area as mitigation, divide functional loss (FL) by relative functional gain (RFG). If there are more than one impact assessment area or more than one mitigation assessment area, the total functional loss and total relative functional gain is determined by summation of the functional loss (FL) and relative functional gain (RFG) for each assessment area.

	FL	/	RFG	=	Acres of Mitigation
example					
a.a.1	0.33		0.37		0.89
a.a.2					
total					

Form 62-345.900(3), F.A.C. [effective date]

ENVIRONMENTAL ASSESSMENT

EROSION CONTROL STRUCTURE FOR CELL A DIKE RAISING AT BARTRAM ISLAND DREDGED MATERIAL MANAGEMENT AREA

APPENDIX G

MAILING LIST

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