DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
400 HIGH POINT DRIVE, SUITE 600
COCOA, FLORIDA 32926

REPLY TO
ATTENTION OF

October 14, 2011

Regulatory Division
North Permits Branch
Cocoa Section
SAJ-2007-05637 (SP-TSD)

United States Department of the Navy
C/o Lieutenant Matthew Maples
PO Box 1623
Cape Canaveral, FL 32920-1623

Dear Lieutenant Maples:

The U.S. Army Corps of Engineers (Corps) is pleased to enclose the Department of the Army permit, which should be available at the construction site. Work may begin immediately but the Corps must be notified of:

a. The date of commencement of the work,

b. The dates of work suspensions and resumptions of work, if suspended over a week, and

c. The date of final completion.

This information should be mailed to the Special Projects and Enforcement Branch of the Regulatory Division of the Jacksonville District at PO Box 4970, Jacksonville, Florida, 32232. The Special Projects and Enforcement Branch is also responsible for inspections to determine whether Permittees have strictly adhered to permit conditions.

IT IS NOT LAWFUL TO DEVIATE FROM
THE APPROVED PLANS ENCLOSED.

Sincerely,

Donald W. Kinard
Chief, Regulatory Division

Enclosures

Copies Furnished:
CESAJ-RD-PE
Osvaldo Rodriguez (CESAJ-DP-CN)
John Milio (FWS, Jacksonville)
Chris McArthur, EPA, Atlanta

DEPARTMENT OF THE ARMY PERMIT

Permittee: United States Department of the Navy
C/o Lieutenant Matthew Maples
PO Box 1623
Cape Canaveral, FL 32920-1623

Permit No: SAJ-2007-05637 (SP-TSD)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the Permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To maintenance dredge up to 500,000 cubic yards of material annually from the United States Navy (USN) portions of four areas at Canaveral Harbor (aka Port Canaveral): Cut 1A, Navy Trident Turning Basin (TTB), Trident Access Channel (TAC) and the Entrance Channel Widener. These four areas consist of approximately 200 acres in total area. The TAC and TTB will be dredged to the maintenance depth of -41 foot (ft) mean low lower water (MLLW) with a 2 foot paid overdredge depth, -43 ft MLLW. The Cut 1A and the Navy Entrance Channel Widener will be dredged to the maintenance depth of -44 foot MLLW with a 2 foot paid overdredge depth, -46 ft MLLW. All dredging shall be conducted by either cutterhead or clamshell equipment only.

Maintenance Dredge Area	Dredge depth MLLW	Paid Overdredge Depth	Disposal location (see attached exhibits)
Cut 1A	44 foot	2 foot	Nearshore or Canaveral ODMDS
Navy Entrance Channel Widener	44 foot	2 foot	Nearshore or Canaveral ODMDS
Trident Access Channel	41 foot	2 foot	Zone 1 Canaveral ODMDS
Trident Turning Basin	41 foot	2 foot	Zone 3 Upland Zone 2 to Canaveral ODMDS

The work described above is to be completed in accordance with the 13 pages of drawings referenced in Attachment 1 and the nine additional attachments affixed at the end of this permit instrument.

Project Location: The project is located at Canaveral Harbor in Cape Canaveral, in Section 11, Township 24 South, Range 37 East, in Brevard County, Florida. The project is located within the Trident Turning Basin, Trident Access Channel, Entrance Channel Widener and within Cut 1A. These areas are contiguous to the Atlantic Ocean.

Directions to site: From Jacksonville, take I-95 South; exit onto SR 528 and head east; turn north onto SR 401 toward Cape Canaveral Air Force Station. (Gated security access is required); follow to Canaveral Naval Ordinance Test Unit, Canaveral Harbor, Brevard County, Florida.

Latitude & Longitude: Latitude: 28.4135° North
Longitude: 80.5947° West

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized under Section 10 of the Rivers and Harbors Act ends on **December 31, 2019**. The time limit for completing the work authorized under Section 103 of the Marine Protection, Research and Sanctuaries Act ends on **December 31, 2013**. Authorization for the use of the Canaveral ODMDS may not be extended. If you find that you need more time to complete the Section 10 portion of the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above expiration date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:
SPECIAL CONDITIONS ASSOCIATED WITH DREDGING OPERATIONS:

1. **Reporting Address:** All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following addresses:

a. U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232. or by e-mail: CESAJ-ComplyDocs@usace.army.milCESAJ-ComplyDocs@usace.army.mil

b. U. S. Environmental Protection Agency (EPA), Wetlands, Oceans & Coastal Branch, 61 Forsyth Street, Atlanta, GA 30303. or by email: Mcarthur.Christopher@epamail.epa.gov

The Permittee shall reference this permit number, SAJ-2007-05637 (SP-TSD), on all submittals. Email submittals shall include the project name and permit number on the subject line.

2. **Commencement & Completion Notification:** Within 10 days from the date of initiating the authorized work, the Permittee shall provide to the Corps and the EPA a written notification of the date of commencement of work authorized by this permit at least 15 days prior to initiating dredging operations authorized by this permit.

3. **As-Builts:** Within 60 days of completion of the authorized work or at the expiration of the construction window of this permit, whichever occurs first, the Permittee shall submit as-built drawings of the authorized work and a completed As-Built Certification Form (Attachment 3) to the Corps. The as built exhibits will be necessary for the impact site and the off-site mitigation area. The drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawing should show all "earth disturbance," including wetland/surface water impacts, water management structures, and any on-site mitigation areas, if applicable.

b. List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed shall be indicted. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.

c. The Department of the Army Permit number.

d. Include pre- and post-construction aerial photographs of the project site, if available.

4. **EPA Concurrency**: The Permittee acknowledges that the permit is not valid unless there is an existing concurrency from the U.S. Environmental Protection Agency stating that the material meets the ocean disposal criteria for the Canaveral ODMDS.

5. **Cultural Resources/Historic Properties:** No structure or work shall adversely affect or disturb properties listed in the National Register of Historic Places or those eligible for inclusion in the National Register. Prior to the start of work, the Applicant/Permittee or other party on the Applicant's/Permittee's behalf, shall conduct a search of known historical properties by contracting a professional archaeologist, contacting the Florida Master Site File at 850-245-6440 or SiteFile@dos.state.fl.us. The Applicant/Permittee can also research sites in the National Register Information System (NRIS). Information can be found at http://www.cr.nps.gov/nr/research/.

If, during the initial ground disturbing activities and construction work, there are archaeological/cultural materials unearthed (which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, 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), the Permittee shall immediately stop all work in the vicinity and notify the Compliance and Review staff of the State Historic Preservation Office at 850-245-6333 and the Corps Regulatory Project Manager to assess the significance of the discovery and devise appropriate actions, including salvage operations. Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7.

In the unlikely event that human remains are identified, they will be treated in accordance with Section 872.05, Florida Statutes; all work in the vicinity shall immediately cease and the local law authority, the State Archaeologist (850-245-6444), and the Corps Regulatory Project Manager shall immediately be notified. Such activity shall not resume unless specifically authorized by the State Archaeologist and the Corps.

6. **Manatee condition:** The Permittee agrees to abide by the attached standard construction conditions designed to protect the endangered West Indian Manatee (Attachment 4).

7. **Sea Turtle and Smalltooth Sawfish Conditions**: The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006 and provided in Attachment 5 of this permit.

8. **Regulatory Agency Changes**: Should any other regulatory agency require changes to the work authorized or obligated by this permit, the Permittee is advised that a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the Cocoa Regulatory Office.

9. **Nearshore Disposal**: Near beach quality material (with less than 20% fines) may be transported and disposed of in the Nearshore Disposal Area at Cocoa Beach. The Nearshore Disposal area is reflected in Attachment 1, Drawing 8 of 13).

10. **Federally Listed Species:** This Corps permit does not authorize you to take an endangered species, in particular the manatee, any species of sea turtles, any species of whale (in particular the right whale). In order to legally take a listed species, the Permittee must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a BO under ESA Section 7, with "incidental take" provisions with which the Permittee must comply). The enclosed National Marine Fisheries Service (NMFS) Regional Biological Opinion (BO) dated September 25, 1997, (Attachment 10) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Authorization under this Corps permit is conditional upon compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with this Corps permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.
U.S. Fish and Wildlife Service (Attachment 6): By letter dated November 5, 2007, the U.S. Fish and Wildlife Service (FWS) provided guidance for the placement of sand on the littoral zone of the beach. This guidance is attached and should be followed if any beach quality sands are

placed near beaches. The Permittee also agrees to follow the guidance outlined in the Canaveral Port Authority's Manatee Protection Plan (Attachment 7), and the Exterior Light Management & Security Alternatives Plan dated February 2006 (Attachment 8).

U.S. Fish and Wildlife Service (Attachment 9) By letter dated October 6, 2011, the FWS provided concurrence that the U.S. Navy project may affect, not likely to adversely affect the manatee after the the Permittee agreed to adhere to the Port Canaveral Special Conditions for Maintenance Dredging (included in Attachment 9).

National Marine Fisheries Service (NMFS), Protected Resources Division - The Permittee has agreed to the cessation of operations of any moving equipment if a sea turtle comes closer than 100 feet and shut down of all activities for 20 minutes until the protected species has departed the project area on its own volition. The Corps determined that the above referenced project falls within the scope of the South Atlantic Regional Biological Opinion (SARBO) dated September 25, 1997 (Attachment 10) and their adherence to the above condition.

The work will be performed between the months of May and October. If work must occur during the calving season (December through March), all work must comply with the guidance provided in the SARBO dated September 25, 1997. This includes participation in the Right Whale Early Warning System and enhancement of the monitoring procedures. The dredging will be conducted by either cutterhead or clamshell dredging equipment.

The U.S. Fish and Wildlife Service and the National Marine Fisheries Service are the appropriate authorities to determine compliance with the conditions and limitations identified in this Department of the Army permit for the protection of Federally listed species and with the ESA.

11. **Site Monitoring and Management Plan**: The Permittee shall comply with the monitoring and reporting requirements referenced in the Site Monitoring and Management Plan (SMMP) dated October 2001, for the Canaveral ODMDS.

SPECIAL CONDITIONS FOR USE OF CANAVERAL ODMDS

I. EPA Concurrence

12. The Permittee shall send to the U.S. Army Corps of Engineers (Corps), Regulatory Division, Special Projects and Enforcement Branch, P.O. Box 4970, Jacksonville, Florida 32232-0019 and EPA Region 4's Wetlands, Coastal and Water Quality Branch, 61 Forsyth Street, Atlanta, GA 30303 a notification of commencement of work at least fifteen (15) days before initiation of any dredging operations authorized by this permit. This notification and all subsequent submittals shall be sent to the Corps and EPA and shall reference permit number SAJ-2007-5637(SP-TSD).

13. The Permittee acknowledges that the permit is not valid unless there is an existing concurrency from the U.S. Environmental Protection Agency stating that the material meets the ocean disposal criteria for the Canaveral ODMDS.

14. The Permittee shall ensure that they are in compliance with the monitoring and reporting requirements as stated in the Site Monitoring and Management Plan for the disposal site.

15. ODMDS Exclusion Area: The areas depicted as Zone 3 within the Trident Turning Basin are located within the Exclusion Zone for ODMDS, as reflected in Attachment 1, drawing sheet 6 of 13). Material from these excluded areas may NOT be transported to the Canaveral ODMDS. Material from these areas will be excavated and placed in an upland disposal site that has been identified as either upland disposal site CDA-C or upland disposal site CDA-A, as identified in Attachment 1, drawing sheets 8, 9, and 10 of 13. The upland disposal area called CDA-C is located immediately to the west of the Trident Turning Basin. The upland disposal area called CDA-A is located immediately to the east of the Trident Wharf Facility.

16. **Canaveral ODMDS Dredge Material Limitation:** The total volume of dredged materials authorized under this DA permit is 500,000 cubic yards annually.

17. **Loss of Material:** The Permittee shall not allow any water or dredged material placed in a hopper dredge or disposal barge or scow to flow over the sides or leak from such vessels during transportation to the Canaveral ODMDS.

II. DISPOSAL OPERATIONS

18. The Permittee agrees that only dredged materials from areas considered suitable by the Environmental Protection Agency as considered in their letter dated September 19, 2011 will be disposed of in the Canaveral ODMDS. ODMDS Exclusion Area: The areas depicted as Zone 3 within the Trident Turning Basin are located within the Exclusion Zone for ODMDS, as reflected in Attachment 1, drawing 6 of 13. Material from these excluded areas may NOT be transported to the Canaveral ODMDS. Material from these areas will be excavated and placed in an upland disposal site that has been identified as either upland disposal site CDA-C or upland disposal site CDA-A, as identified in drawing Attachment 1, drawing sheets 8, 9 and 10 of 13. The upland disposal area called CDA-C is located immediately to the west of the Trident Turning Basin. The upland disposal area called CDA-A is located immediately to the east of the Trident Wharf Facility.

19. For this permit, the term disposal operations shall mean, navigation of any vessel used in disposal operations, transportation of dredged material from the dredging site to the Canaveral ODMDS, proper disposal of dredged material at the disposal area within the Canaveral ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site. The

location of the Canaveral ODMDS is reflected in Attachment 1, Drawing sheets 8 and 11 of 13 of the permit.

20. **Canaveral ODMDS Disposal Release Zone Restrictions:** The Canaveral ODMDS is defined as the diamond shaped disposal area (referred as a rectangle) that is located approximately 7.6 miles south southeast of the mouth of the Canaveral Harbor and is about four square nautical miles in size. The Canaveral ODMDS site has center coordinates of Latitude 28°18'45.01" North by Longitude 80°30'59.2" West (NAD 83) and corner coordinates of:

North location Latitude: 28°19'54.02" North by Longitude: 80°31'07.29" West
East location Latitude: 28°18'51.02" North by Longitude: 80°29'39.17" West
South location Latitude: 28°17'36.03" North by Longitude: 80°30'51.18" West
West location Latitude: 28°18'39.02" North by Longitude: 80°32'19.18" West

21. When dredge material is disposed, no portion of the hopper dredge or disposal barge or scow shall be outside the boundaries of the Canaveral ODMDS and all disposal shall occur within the approved designated area and no portion of the hopper dredge or disposal barge or scow shall be closer than 100 meters (330 feet from the center of the Canaveral ODMDS. Specific coordinates for the release of the materials have been provided to each user of the Canaveral ODMDS. The Permittee agrees to only release materials authorized under this DA permit within the eastern disposal zone identified by a 2,500 foot radius from the center point at:

State Plane (Florida East 0901 US Ft NAD27):
X: 659,104 E
Y: 1,446,755 N

Geographic (NAD83)
28°18'41.02" North
80°31'40.18" West

22. **Disposal Operations Compliance:** The Permittee shall ensure that the dredge material is released in Canaveral ODMDS release zone. If a violation occurs: a) the violation shall be reported to the contracting officer's representative immediately at (904) 232-2086 or (904) 607-5847 and to EPA's Ocean Dumping Coordinator immediately at (404) 562-9391. b) written notification shall by faxed to EPA Region 4, Attn: EPA's Ocean Dumping Coordinator at (404) 562-9343, to U.S. Army Corps of Engineers, Operations at (904) 232-2162 and U.S. Army Corps of Engineers, Enforcement Section at (904) 232-1677 within twenty-four (24) hours after the violation occurs. A Compliance Report shall be submitted within three working days after a violation is reported.

23. **Compliance Report (if needed):** The Permittee shall submit a report on any disposal of dredge material outside the release zones of the Canaveral ODMDS site. The report shall be submitted within three working days after the incident. The report shall include the location of the loss material and the amount of material placed outside the authorized ODMDS release zone. The report shall include a narrative with a description of the violation, indicate the time it occurred and when it was reported to the EPA and the Corps, discuss the circumstances surrounding the violation, and identify specific measures taken to prevent reoccurrence.

24. **Monitoring Requirements:** The Permittee shall use either Electronic Tracking System (ETS) or Dredge Quality Management (DQM) as described in the Canaveral ODMDS Site Monitoring and Management Plan (SMMP) and include the contract specification language as specified in the appendix.

ETS: The Permittee shall continuously track the horizontal location and draft condition of the disposal vessel (hopper dredge or scow) to and from the Canaveral ODMDS. Data shall be collected at least every 500 feet during travel to and from the ODMDS and every minute or every 200 feet of travel, whichever is lesser, while approaching within 1,000 feet of and within the ODMDS. The Permittee shall use Florida State Plane or latitude and longitude coordinates (North American Datum 1983). State Plane coordinates shall be reported to the nearest foot and latitude and longitude coordinates shall be reported as decimal degrees out to 6 decimals. Westerly longitudes are to be reported as negative. Draft readings shall be recorded in feet out to 2 decimals. If the electronic positioning system fails or navigation problems are detected, all disposal operations shall cease until the failure or navigation problems are corrected.

DQM: The Permittee shall use Dredge Quality Management (DQM) to monitor dredging and dredge material disposal. The Permittee shall use an electronic positioning system to navigate to and from the harbor to the ODMDS. For this section of the permit, the electronic positioning system will be as per the DQM specifications. If the electronic positioning system fails or navigation problems are detected, all disposal operations shall cease until the failure or navigation problems are corrected. The permittee shall certify the accuracy of the electronic positioning system proposed for use during disposal operations. The certification shall be accomplished by providing current certification documentation from the National DQM Program for scow and hopper dredge instrumentation systems. The National DQM certification is valid for one year from the date of certification.

25. **Load Data:** The Permittee shall record electronically for each load the following information:

a. Load Number

b. Disposal Vessel or Scow Name
c. Tow Vessel Name (if scow used)
d. Captain of Disposal or Tow Vessel
e. Name of the Disposal Site
f. Estimated volume of Load
g. Description of Material Disposed
h. Source of Dredged Material/Acceptance Section
i. Date, Time and Location at Initiation and Completion of Disposal Event

26. **Bathymetric Survey:** The Permittee shall conduct a bathymetric survey of the Canaveral ODMDS within 90 days prior to project disposal and within 30 days following project completion in accordance with the following:

a. The number and length of the survey transects shall be sufficient to encompass the Canaveral ODMD and a 500 foot wide area around the site. The transects shall be spaced at 500-foot intervals or less.

b. Vertical accuracy of the survey shall be +/-0.5 feet. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing either microwave line of site system or differential global positioning system. The vertical datum shall be mean lower low water (MLLW) and the horizontal datum shall use Florida State Plane or latitude and longitude coordinates (North American Datum 1983). State Plane coordinates shall be reported to the nearest 0.10 foot and latitude and longitude coordinates shall be reported as decimal degrees to 6 decimal points.

27. The permittee has read and agrees to assure that they are incompliance with the requirements of the Canaveral ODMDS Site Management and Monitoring Plan (SMMP).

III. REPORTING REQUIREMENTS

28. **Electronic Data:** The Permittee shall provide electronic data required by the **Electronic Tracking System** (ETS) or **Data Quality Management System** (DQM) as well as Load Data Special Conditions above to USEPA Region 4 on a weekly basis. The data shall be submitted as an eXtensible Markup Language (XML) document via Internet e-mail to DisposalData.R4@epa.gov. XML data file format specifications are available from USEPA Region 4.

29. **Post-Disposal Data:** The Permittee shall submit Post-Disposal Data to the Corps and USEPA at the address referenced in the Reporting Addresses Special Condition above documenting compliance with all general and special conditions defined in this permit. The

Post-Disposal Data shall be sent within 90 days after completion of the disposal operations authorized by this permit. The Post-Disposal Data shall consist of four individual reports, which are: Summary Report and Bathymetric Survey Results. The reports shall include the following information:

a. The **Summary Report** shall include: dredging project title; DOA permit number and expiration date (if applicable), contract number, name of contractor, name and type of vessel(s) discharging material in ODMDS, disposal timeframes for each vessel, total volume (paid and unpaid in situ dredged quantity) for contract, total volume (paid and unpaid in situ dredged quantity) to each disposal location, total paid volume (paid in situ dredged quantity) to ODMDS, gross volume (reported by contractor) to ODMDS, number of loads to ODMDS, type of material to ODMDS, number of loads placed outside authorized ODMDS release zone, number of loads placed outside ODMDS limits, dates of pre-disposal and post-disposal bathymetric surveys, and a brief narrative discussing any violation(s) of the 103 concurrency and/or DOA permit (if applicable). This narrative shall include a description of the violation, indicate the time it occurred and when it was reported to the EPA, discuss the circumstances surrounding the violation, and identify specific measures taken to prevent reoccurrence.

b. The **Bathymetric Survey Results** shall include pre-disposal and post-disposal bathymetric survey plots in Adobe Acrobat PDF format. Field data used to create the soundings shown on these survey plots will be provided in sorted and space-delimited ASCII files. The plots will indicate the state plane coordinate system, horizontal datum, and vertical datum on which the surveys are based.

IV ENDANGERED SPECIES

30. **South Atlantic Regional Biological Opinion (SARBO):** The 1997 South Atlantic Regional Biological Opinion (SARBO) for the South Atlantic Division, U.S. Army Corps of Engineers, for swimming sea turtles, whales, and sturgeon can be found at the following ERDC web address: http://el.erdc.usace.army.mil/seaturtles/refs-bo.cfm. The SARBO contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the SARBO. Your authorization under the Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take of the attached SARBO, which terms and conditions are incorporated by reference in the permit. Failure to comply with the terms and conditions associated with the incidental take of the SARBO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. However, depending on the affected species NMFS is the appropriate authority to determine compliance with the terms and conditions of its SARBO and with the Endangered Species Act (ESA). For further clarification on this point, you should contact the

appropriate agency. Should they determine that the conditions of the SARBO have been violated; normally they will enforce the violation of the ESA, or refer the matter to the Department of Justice.

The work is projected to be performed between the months of May and October. If work must occur during the calving season (December through March), all work must comply with the guidance provided in the SARBO dated September 25, 1997. This includes participation in the Right Whale Early Warning System and enhancement of the monitoring procedures. In addition, if any dredging operations are undertake between December 1 and March 31, NMFS requires monitoring by endangered species observers with at-sea large whale identification experience to conduct daytime observations for whales. During daylight hours, the vessel must take precautions to avoid whales. During evening hours or when there is limited visibility due to fog or sea states of greater than Beaufort, 3, the vessel must slow down to 5 knots or less when traversing between areas if whales have been spotted within 15nm of the vessel's path within the previous 24 hours. All vessels shall maintain a 500-yard buffer zone between the vessel and any sighted whale.

31. The Permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than four feet clearance from the bottom and that vessels shall follow routes of deep water whenever possible.

32. If a manatee is sighted within 100 yards of the project area/vessel, all appropriate precautions shall be implemented by the Permittee/contractor to ensure protection of the manatee.

V LIMITATIONS

33. The expiration date for the dredging authorized under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) is December 31, 2019.

The expiration date for the use of the Canaveral ODMDS for disposal of specifically designated dredge materials authorized under Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413) is December 31, 2013. Authorization for the use of the Canaveral ODMDS may not be extended.

34. **Navigation Assurance:** The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation

of the navigable waters, the Permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

35. **Project Modification**: Should any other regulatory agency require changes to the work authorized or obligated by this permit, the Permittee is advised that a modification to this permit instrument is required prior to initiation of those changes.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899
(33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

(X) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as Permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) (DATE) 10/14/11

LT Matthew Maples
(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

(DISTRICT ENGINEER) (DATE) 10/14/2011

for ALFRED A. PANTANO, JR.
Colonel, Corps of Engineers
Commanding

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

(TRANSFEREE-SIGNATURE) (DATE)

_____

(NAME-PRINTED)

_____

(ADDRESS)

_____

(CITY, STATE, AND ZIP CODE)

_____

(PHONE NUMBER)

_____

(EMAIL ADDRESS)

Attachments to Department of the Army Permit Number SAJ-2007-05637-SP-TSD

1. PERMIT DRAWINGS: Thirteen (13) pages, dated October 13, 2011.

2. WATER QUALITY CERTIFICATION: Florida Department of Environmental Protection (FDEP) permit file number 0129260-002-JC (Attachment 2).

3. As-Built Certification by a Professional Engineer (Attachment 3).

4. Standard Manatee Conditions for In-Water Work dated 2011 (Attachment 4).

5. Sea Turtle and Smalltooth Sawfish Construction Conditions dated March 23, 2006 (Attachment 5).

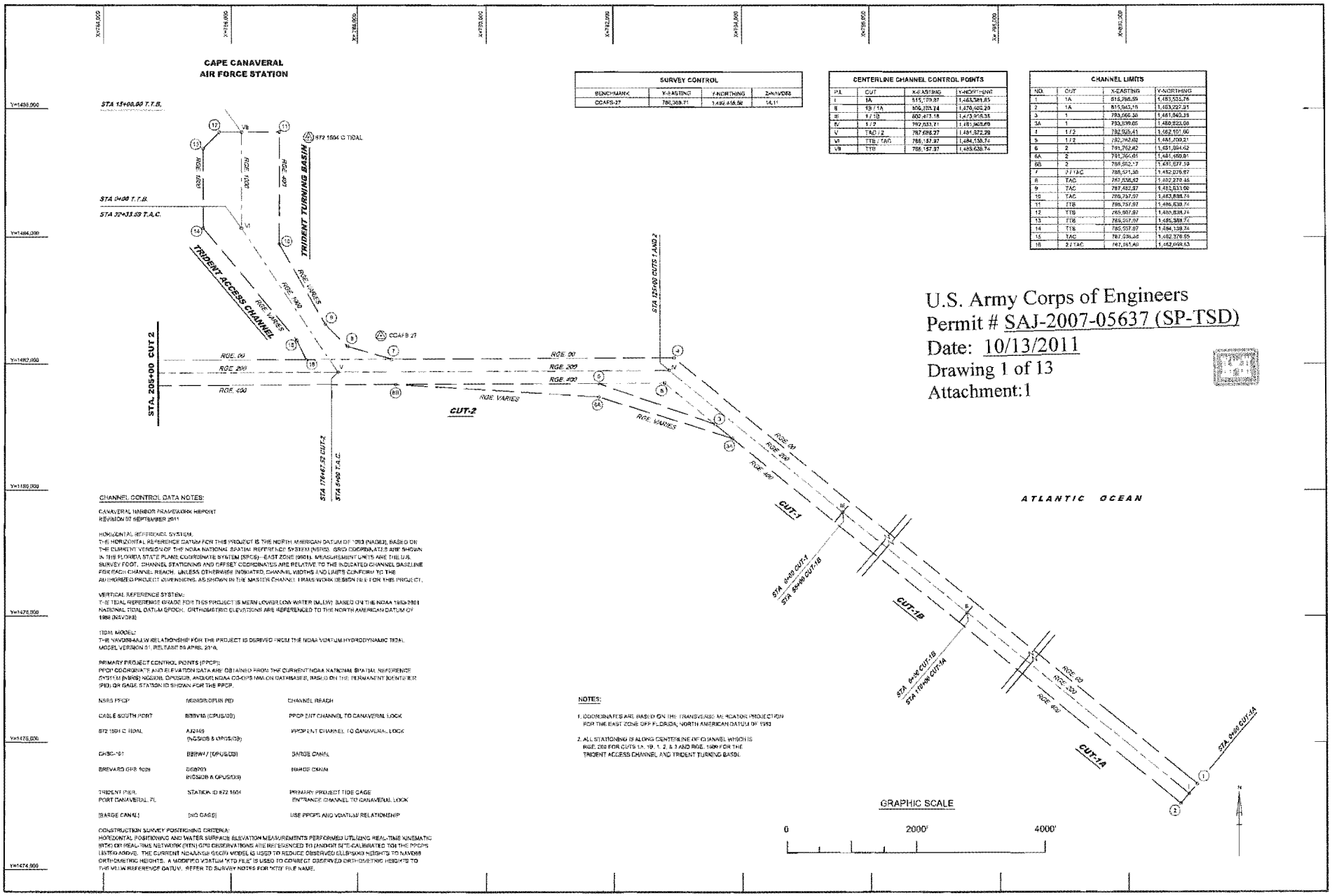
6. U.S. Fish and Wildlife, Endangered Species Letter dated November 5, 2007 (Attachment 6).

7. Canaveral Port Authority Manatee Protection Plan (Attachment 7).

8. Exterior Light Management & Security Alternatives Plan dated February 2006 (Attachment 8).

9. U.S. Fish and Wildlife, Endangered Species Letter of Concurrence dated October 6, 2011 (Attachment 9).

10. South Atlantic Regional Biological Opinion (SARBO) dated August 25, 1997 (Attachment 10).



SURVEY CONTROL			
BENCHMARK	X-EASTING	Y-NORTHING	Z=NAVD88
CCAFS-27	780,389.71	1,492,416.92	14.11

CENTERLINE CHANNEL CONTROL POINTS			
P.I.	CUT	X-EASTING	Y-NORTHING
I	1A	815,170.87	1,463,581.85
II	1B / 1A	806,703.74	1,476,465.29
III	1 / 1B	800,473.18	1,473,958.35
IV	1 / 2	792,553.71	1,481,908.69
V	TAC / 2	787,698.27	1,481,572.29
VI	TTB / TAC	786,157.97	1,484,138.74
VII	TTB	786,157.97	1,485,638.74

CHANNEL LIMITS			
NO.	CUT	X-EASTING	Y-NORTHING
1	1A	816,286.59	1,463,532.76
2	1A	815,943.18	1,463,227.91
3	1	793,066.38	1,461,940.39
3A	1	793,899.85	1,460,923.08
4	1 / 2	792,525.41	1,462,101.00
5	1 / 2	792,792.02	1,481,709.21
6	2	791,762.42	1,481,894.62
6A	2	791,764.61	1,481,469.81
6B	2	788,982.17	1,481,577.39
7	2 / TAC	788,491.30	1,482,079.87
8	TAC	787,836.82	1,482,279.46
9	TAC	787,482.87	1,483,633.00
10	TAC	786,757.97	1,483,838.74
11	TTB	786,757.97	1,486,638.74
12	TTB	785,907.97	1,486,638.74
13	TTB	785,907.97	1,485,388.74
14	TTB	785,557.97	1,484,138.74
15	TAC	787,036.36	1,482,376.55
16	2 / TAC	787,161.49	1,482,668.53

U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 1 of 13
Attachment: 1

CHANNEL CONTROL DATA NOTES:

CANAVERAL HARBOR FRAMEWORK REPORT
REVISION 07 SEPTEMBER 2011

HORIZONTAL REFERENCE SYSTEM:
THE HORIZONTAL REFERENCE DATUM FOR THIS PROJECT IS THE NORTH AMERICAN DATUM OF 1983 (NAD83), BASED ON THE CURRENT VERSION OF THE NOAA NATIONAL SPATIAL REFERENCE SYSTEM (NSRS). GRID COORDINATES ARE SHOWN IN THE FLORIDA STATE PLANE COORDINATE SYSTEM (SPCS) - EAST ZONE (0901). MEASUREMENT UNITS ARE THE U.S. SURVEY FOOT. CHANNEL STATIONING AND OFFSET COORDINATES ARE RELATIVE TO THE INDICATED CHANNEL BASELINE FOR EACH CHANNEL REACH. UNLESS OTHERWISE INDICATED, CHANNEL WIDTHS AND LIMITS CONFORM TO THE AUTHORIZED PROJECT DIMENSIONS, AS SHOWN IN THE MASTER CHANNEL TRANSFORM DESIGN FILE FOR THIS PROJECT.

VERTICAL REFERENCE SYSTEM:
THE TIDAL REFERENCE GRADE FOR THIS PROJECT IS MEAN LOWER LOW WATER (MLLW) BASED ON THE NOAA 1983-2001 NATIONAL TIDAL DATUM EPOCH. ORTHOMETRIC ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88).

TIDAL MODEL:
THE NAVD88-MLLW RELATIONSHIP FOR THE PROJECT IS DERIVED FROM THE NOAA VDATUM HYDRODYNAMIC TIDAL MODEL VERSION 01, RELEASED APRIL 2010.

PRIMARY PROJECT CONTROL POINTS (PPCP):
PPCP COORDINATE AND ELEVATION DATA ARE OBTAINED FROM THE CURRENT NOAA NATIONAL SPATIAL REFERENCE SYSTEM (NSRS) NGS/OB, OPUS/OB, AND/OR NOAA CO-OPS NWLON DATABASE, BASED ON THE PERMANENT IDENTIFIER (PID) OR GAGE STATION ID SHOWN FOR THE PPCP.

NSRS PPCP	NGS/OB/OPUS PID	CHANNEL REACH
CABLE SOUTH PORT	BB8V16 (OPUS/OB)	PPCP ENT CHANNEL TO CANAVERAL LOCK
872 1604 C TIDAL	AJ2449 (NGS/OB & OPUS/OB)	PPCP ENT CHANNEL TO CANAVERAL LOCK
CHSC-161	BBBW47 (OPUS/OB)	BARGE CANAL
BREVARD CPB 1029	DG8703 (NGS/OB & OPUS/OB)	BARGE CANAL
TRIDENT PIER, PORT CANAVERAL, FL	STATION ID 872 1604	PRIMARY PROJECT TIDE GAGE ENTRANCE CHANNEL TO CANAVERAL LOCK
[BARGE CANAL]	[NO GAGE]	USE PPCPS AND VDATUM RELATIONSHIP

CONSTRUCTION SURVEY POSITIONING CRITERIA:
HORIZONTAL POSITIONING AND WATER SURFACE ELEVATION MEASUREMENTS PERFORMED UTILIZING REAL-TIME KINEMATIC (RTK) OR REAL-TIME NETWORK (RTN) GPS OBSERVATIONS ARE REFERENCED TO (AND/OR SITE-CALIBRATED TO) THE PPCPS LISTED ABOVE. THE CURRENT NOAA/NGS GEOID MODEL IS USED TO REDUCE OBSERVED ELLIPSOID HEIGHTS TO NAVD88 ORTHOMETRIC HEIGHTS. A MODIFIED VDATUM 'KTD FILE' IS USED TO CONVERT OBSERVED ORTHOMETRIC HEIGHTS TO THE MLLW REFERENCE DATUM. REFER TO SURVEY NOTES FOR 'KTD' FILE NAME.

NOTES:

1. COORDINATES ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE EAST ZONE OF FLORIDA, NORTH AMERICAN DATUM OF 1983.
2. ALL STATIONING IS ALONG CENTERLINE OF CHANNEL WHICH IS RGE. 200 FOR CUTS 1A, 1B, 1, 2, & 3 AND RGE. 100 FOR THE TRIDENT ACCESS CHANNEL AND TRIDENT TURNING BASIN.

US Army Corps of Engineers
Jacksonville District

103 DRAWING
NOT FOR CONSTRUCTION

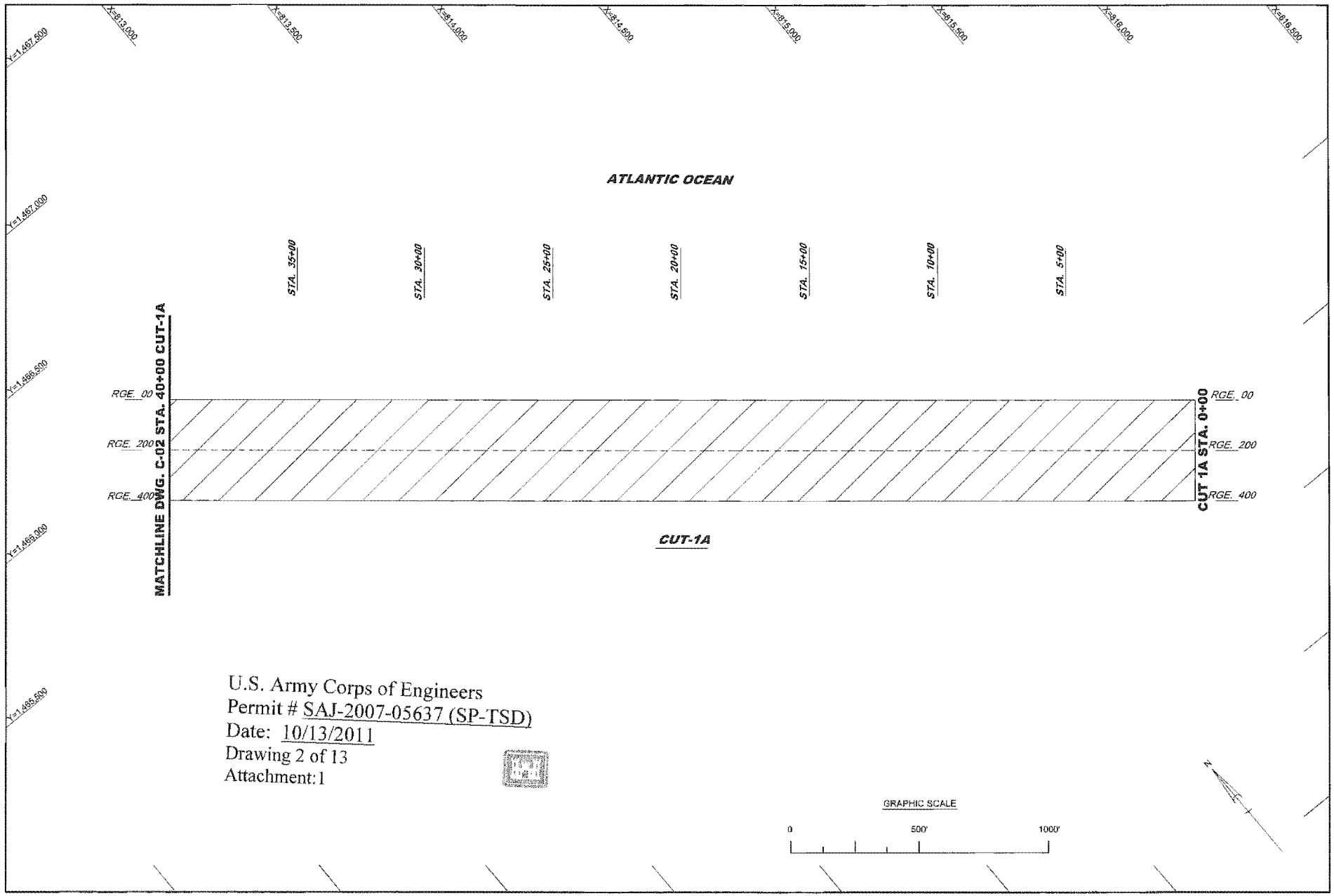
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by: QLA
Dwn by: QLA
Ckd by:
Dated: OCTOBER 2011

U.S. Navy Maintenance Dredge Cut 1A, Navy Entrance Channel Widener Trident Turning Basin and Trident Access Channel

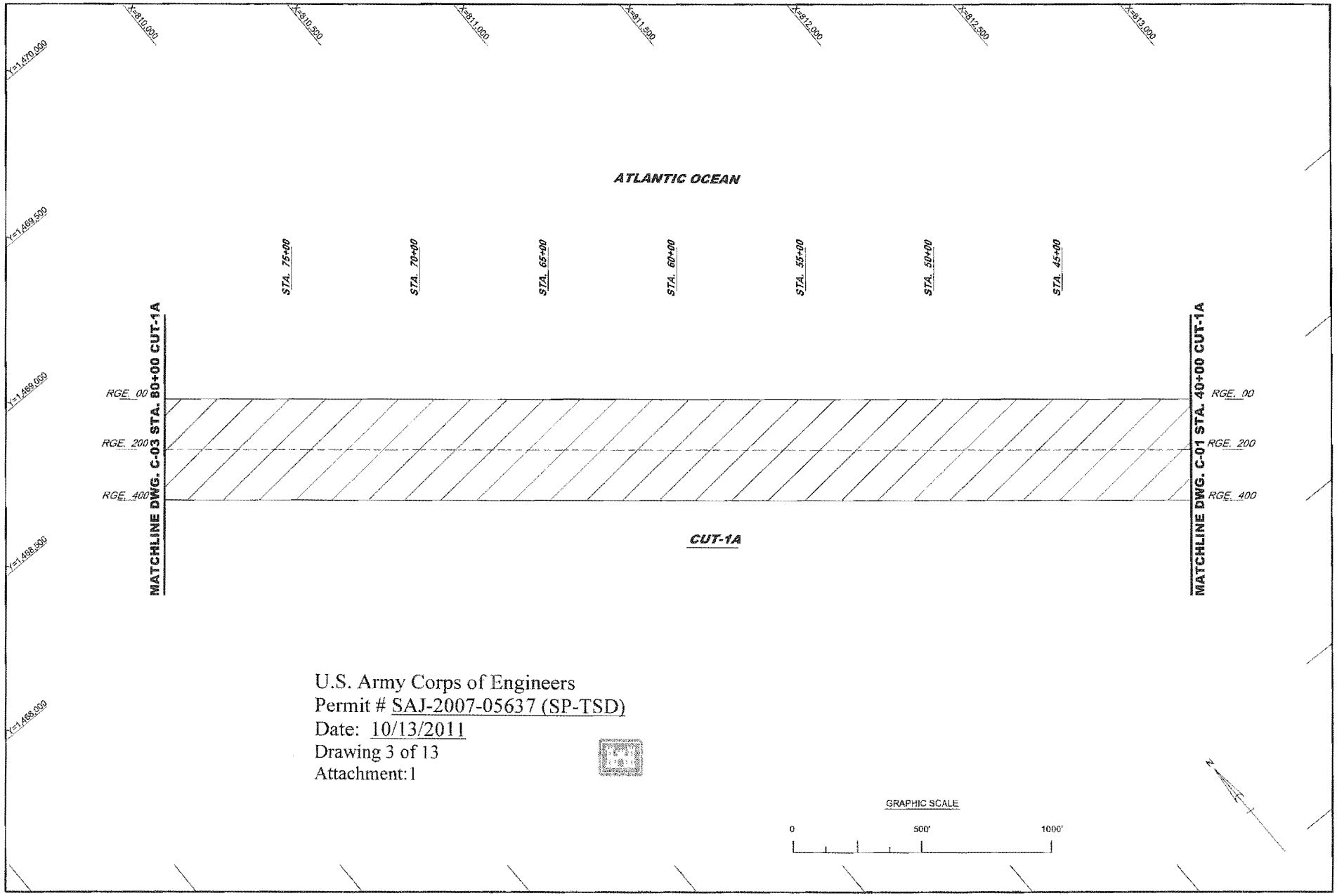
CANAVERAL HARBOR, FLORIDA
CONTROL DATA

PLATE
G-01



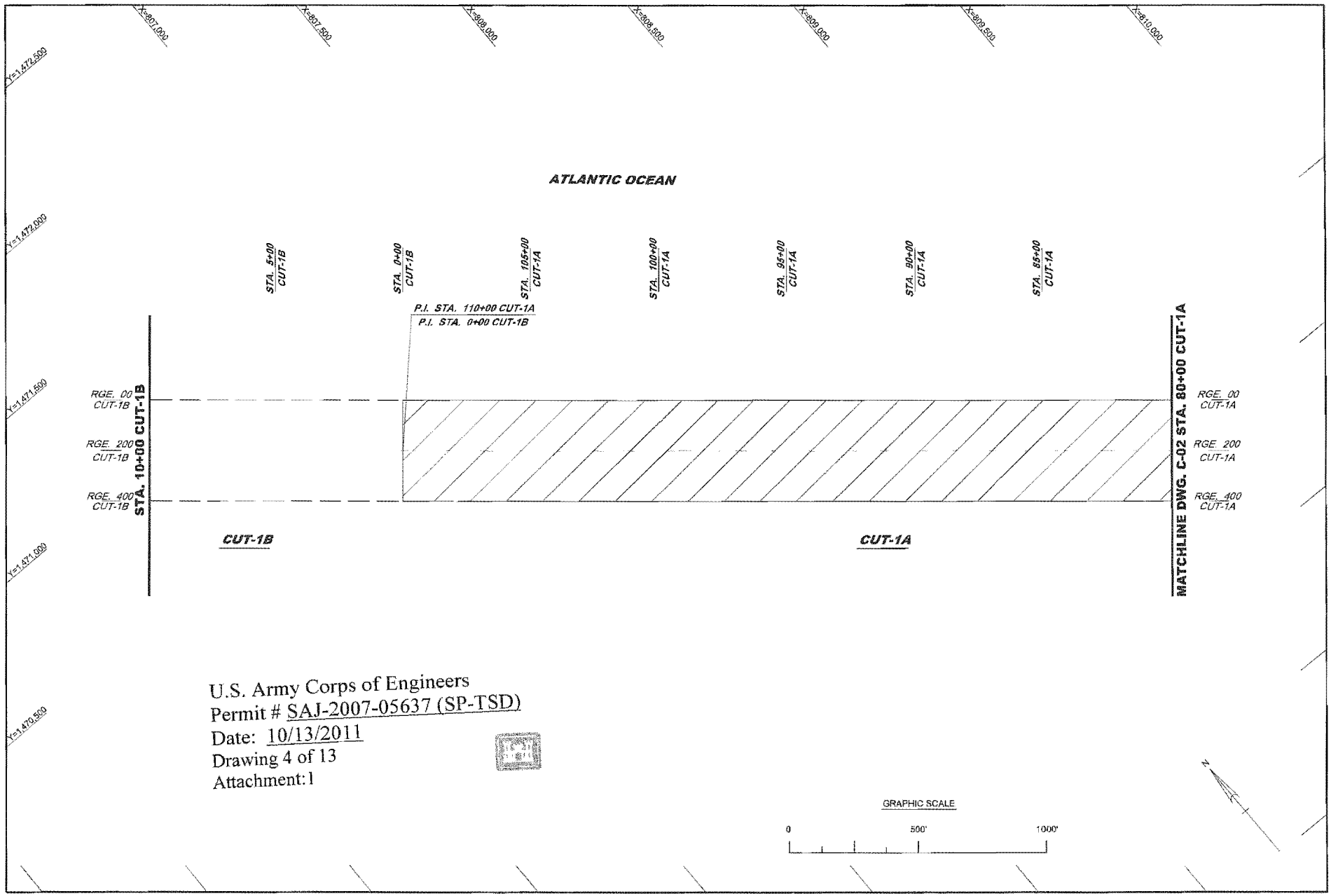
U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 2 of 13
Attachment: 1

US Army Corps of Engineers, Jacksonville District	103 DRAWING NOT FOR CONSTRUCTION	Dsn by: QLA Dwn by: QLA Ckd by: Dated: OCTOBER 2011	CANAVERAL HARBOR, FLORIDA U.S. Navy CUT-1A	PLATE C-01
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA			



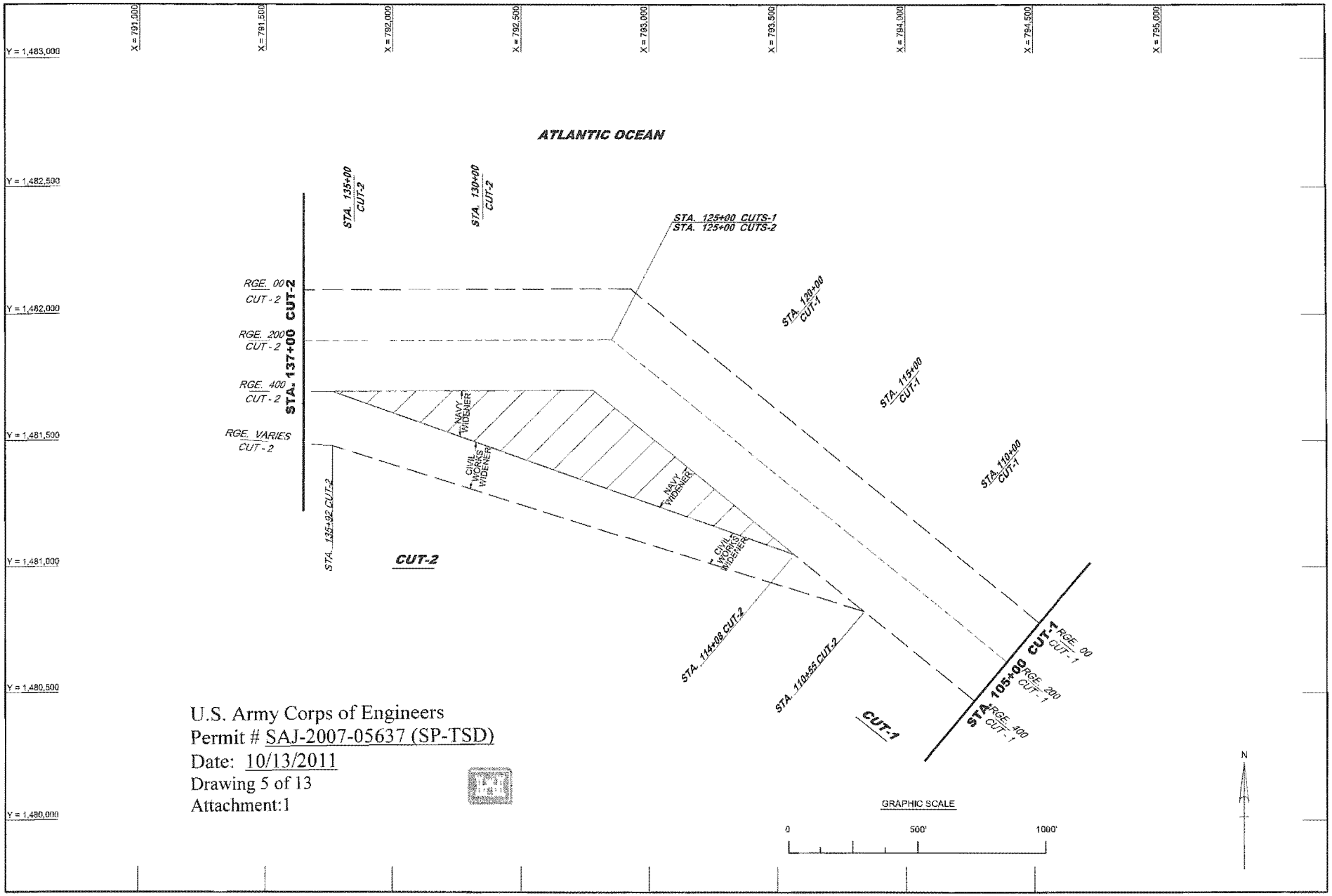
U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 3 of 13
Attachment:1

US Army Corps of Engineers Jacksonville District	103 DRAWING NOT FOR CONSTRUCTION **DEPARTMENT OF THE ARMY** JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	Dsn by: QLA Dwn by: QLA Ckd by: Dated: OCTOBER 2011	**CANAVERAL HARBOR, FLORIDA** U.S. Navy **CUT-1A**	PLATE C-02



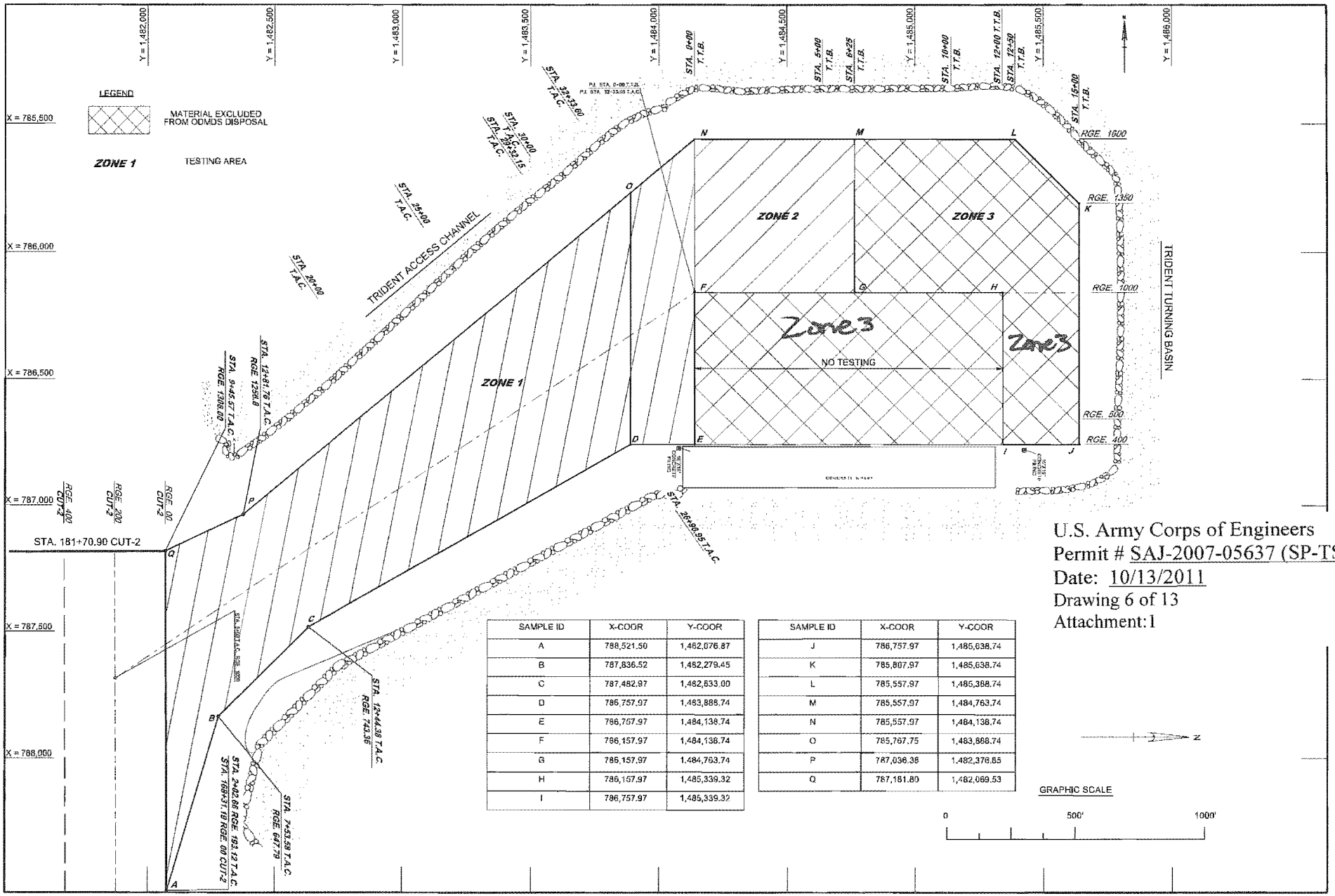
U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 4 of 13
Attachment: 1

US Army Corps of Engineers, Jacksonville District	103 DRAWING NOT FOR CONSTRUCTION	Dsn by: QLA Dwn by: QLA Ckd by: Dated: OCTOBER 2011	CANAVERAL HARBOR, FLORIDA U.S. Navy CUT-1A	PLATE C-03
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA			



U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 5 of 13
Attachment:1

US Army Corps of Engineers Jacksonville District	103 DRAWING NOT FOR CONSTRUCTION	Dsn by: QLA	CANAVERAL HARBOR, FLORIDA U.S. Navy	PLATE C-04
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	Dwn by: QLA Ckd by: Dated: OCTOBER 2011	NAVY WIDENER	



SAMPLE ID	X-COOR	Y-COOR
A	788,521.50	1,482,076.87
B	787,836.52	1,482,279.45
C	787,482.97	1,482,633.00
D	786,757.97	1,483,888.74
E	786,757.97	1,484,138.74
F	786,157.97	1,484,138.74
G	786,157.97	1,484,763.74
H	786,157.97	1,485,339.32
I	786,757.97	1,485,339.32

SAMPLE ID	X-COOR	Y-COOR
J	786,757.97	1,485,638.74
K	785,807.97	1,485,638.74
L	785,557.97	1,485,388.74
M	785,557.97	1,484,763.74
N	785,557.97	1,484,138.74
O	785,767.75	1,483,888.74
P	787,036.38	1,482,376.85
Q	787,181.80	1,482,069.53

U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 6 of 13
Attachment:1

US Army Corps of Engineers
Jacksonville District

103 DRAWING
NOT FOR CONSTRUCTION

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

Dsn by: QLA
Dwn by: QLA
Ckd by:
Dated: OCTOBER 2011

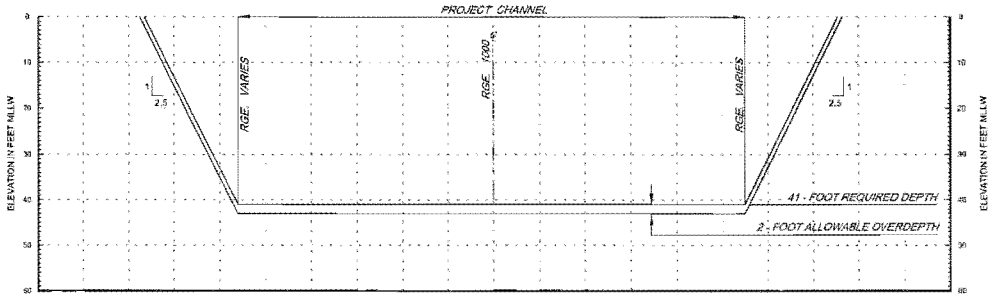
U.S. Navy
XX = Zone 3, Upland Dredge Material Excluded from Canaveral ODMDS

CANAVERAL HARBOR, FLORIDA

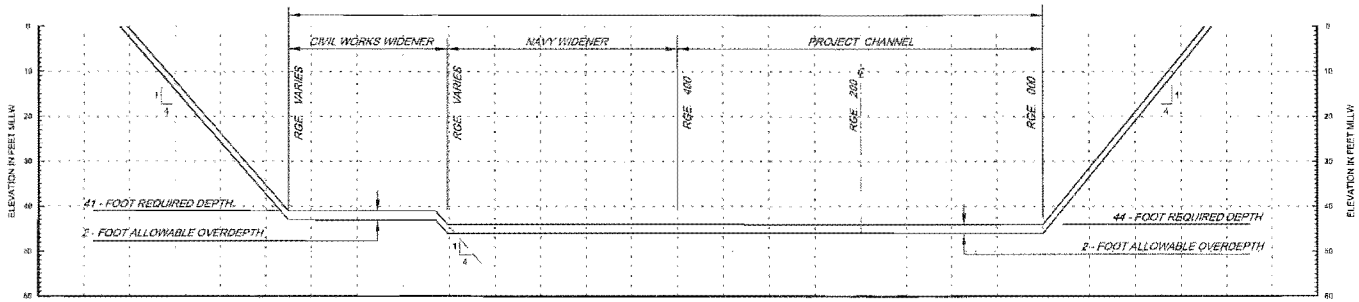
T.A.C. & T.T.B.

PLATE
C-05

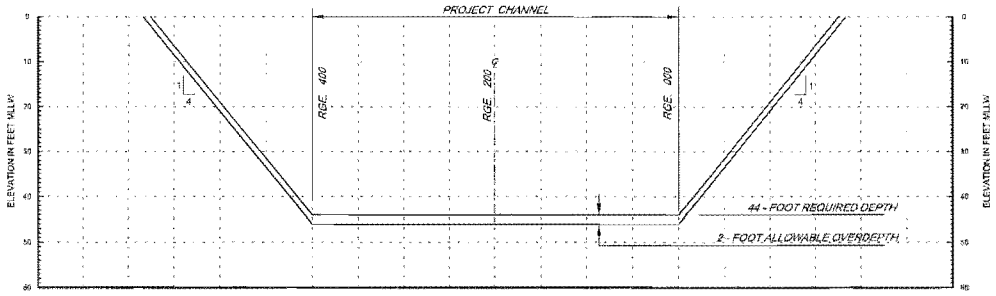
U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 7 of 13
Attachment: 1



TRIDENT ACCESS CHANNEL (TAC) & TRIDENT TURNING BASIN (TTB)



CUT 1 (NAVY WIDENER)



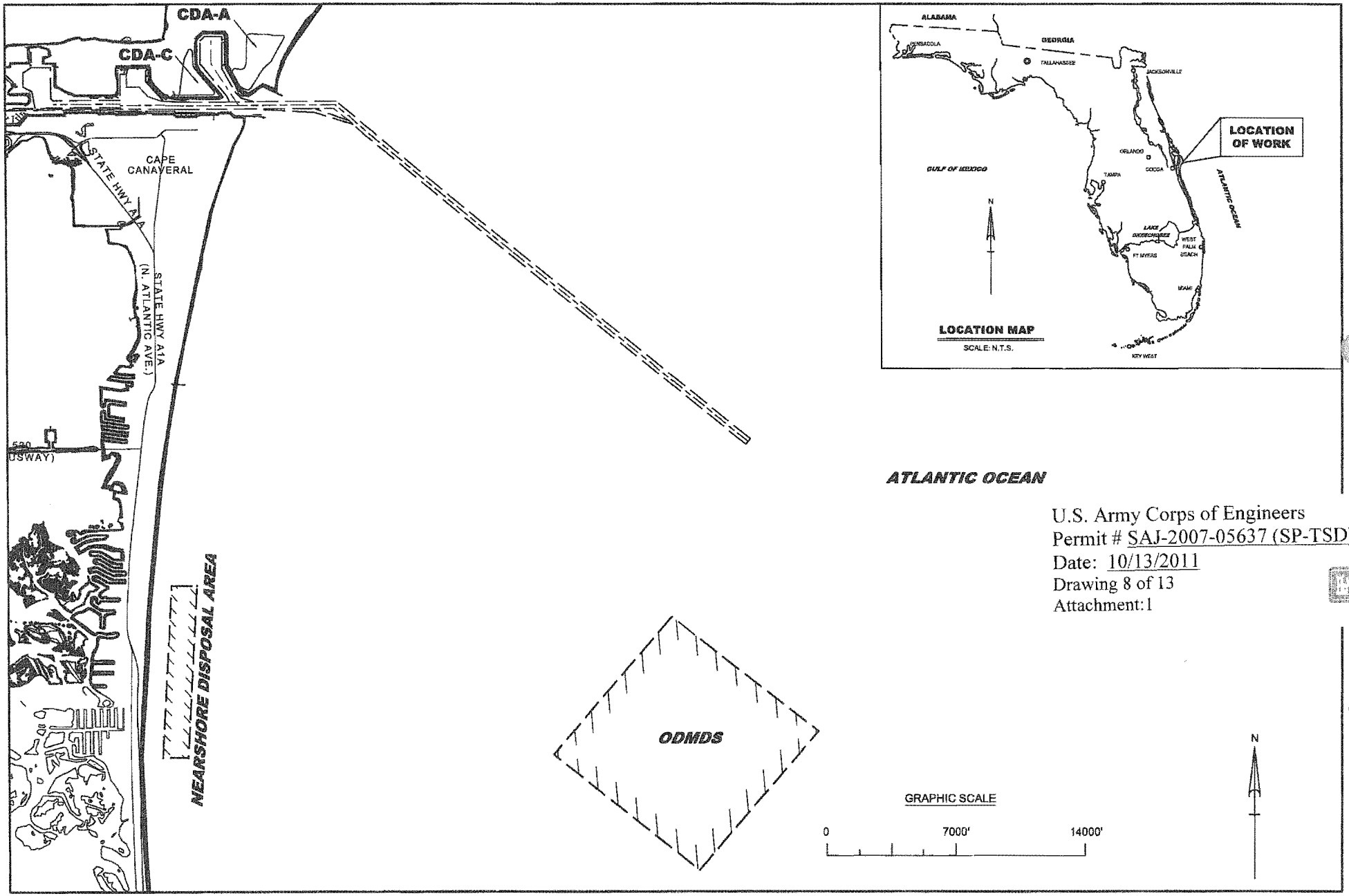
CUT1A

GRAPHIC SCALE

0 40' 80'

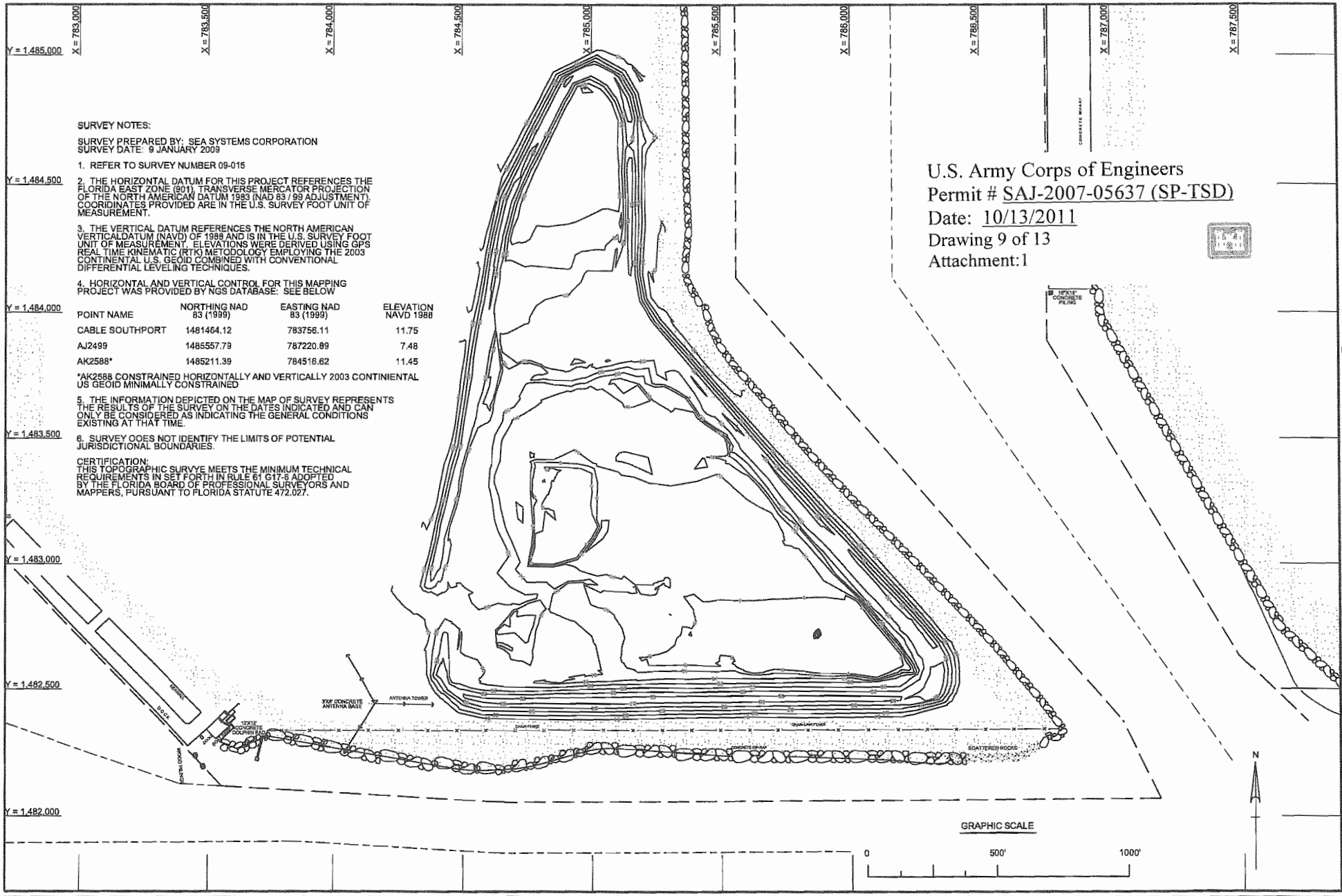
0 200' 400'

US Army Corps of Engineers Jacksonville District	103 DRAWING NOT FOR CONSTRUCTION	Dsn by: QLA	CANAVERAL HARBOR, FLORIDA	PLATE
		Dwn by: QLA		
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	Ckd by:	X-SECTIONS	C-06
		Dated: OCTOBER 2011		

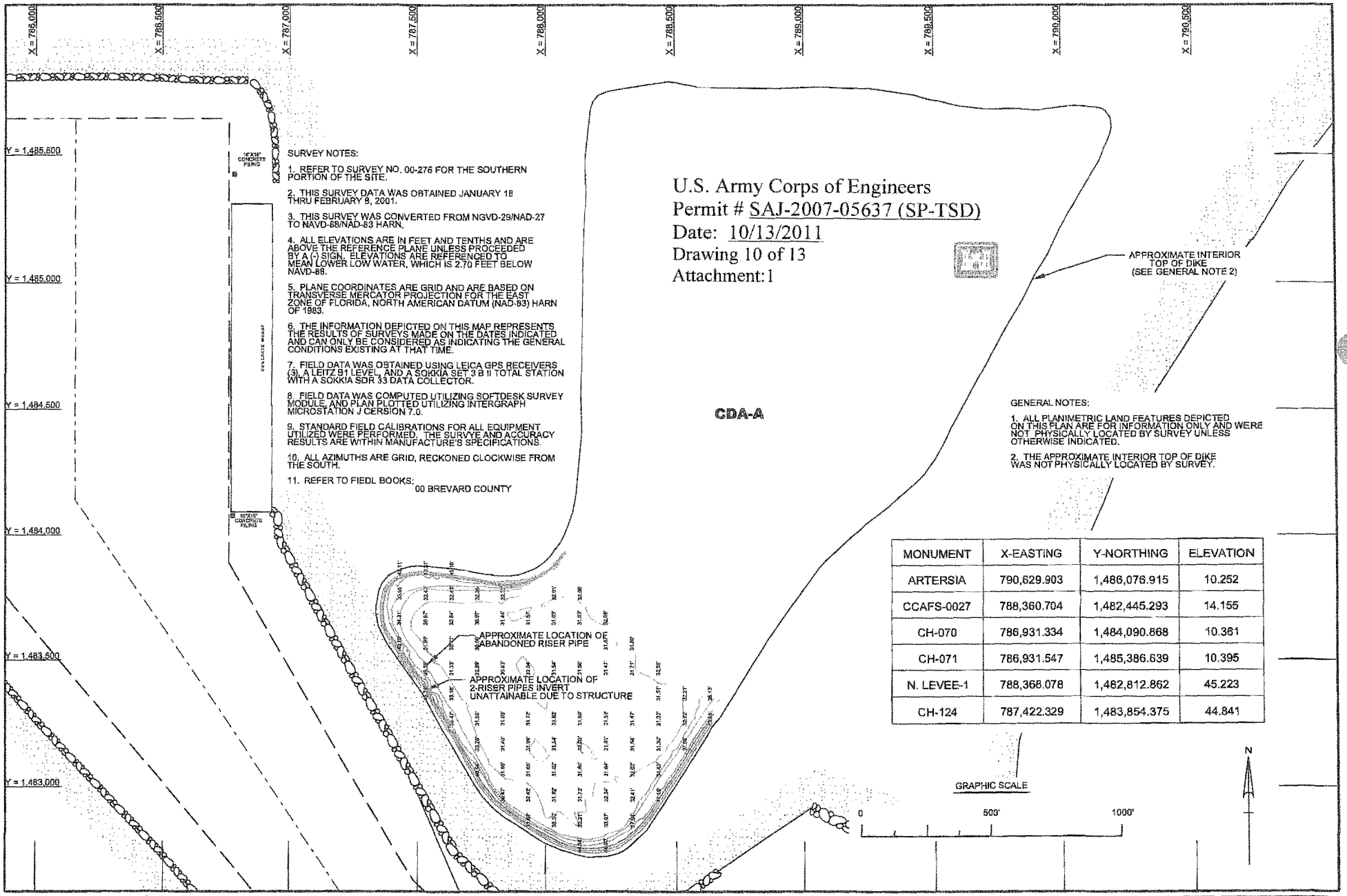


U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 8 of 13
Attachment:1

US Army Corps of Engineers Jacksonville District	103 DRAWING NOT FOR CONSTRUCTION	Dsn by: QLA	CANAVERAL HARBOR, FLORIDA 103 CONCURRENCE DRAWING	PLATE G-01
	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	Dwn by: QLA Ckd by: LRP Dated: MARCH 2011	PROJECT LOCATION MAP for Disposal Locations	



US Army Corps of Engineers Jacksonville District	103 DRAWING NOT FOR CONSTRUCTION DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	Dsn by: QLA Dwn by: QLA Ckd by: LRP Dated: MARCH 2011	CANAVERAL HARBOR, FLORIDA 103 CONCURRENCE DRAWING WEST CONFINED DISPOSAL AREA (CDA-C)	PLATE C-03



MONUMENT	X-EASTING	Y-NORTHING	ELEVATION
ARTERSIA	790,629.903	1,486,076.915	10.252
CCAFS-0027	788,360.704	1,482,445.293	14.155
CH-070	786,931.334	1,484,090.868	10.361
CH-071	786,931.547	1,485,386.639	10.395
N. LEVEE-1	788,368.078	1,482,812.862	45.223
CH-124	787,422.329	1,483,854.375	44.841

US Army Corps of Engineers
Jacksonville District

103 DRAWING
NOT FOR CONSTRUCTION

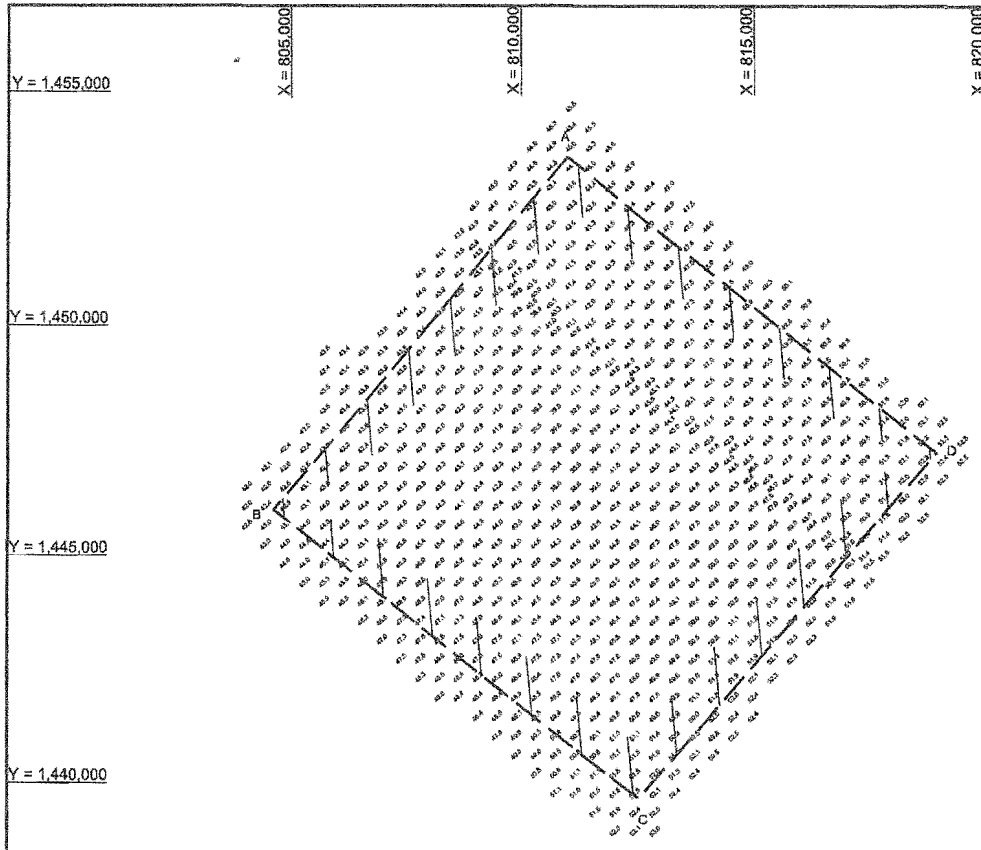
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by: QLA
Dwn by: QLA
Ckd by: LRP
Dated: MARCH 2011

CANAVERAL HARBOR, FLORIDA
103 CONCURRENCE DRAWING

EAST CONFINED DISPOSAL AREA (CDA-A)

PLATE
C-04



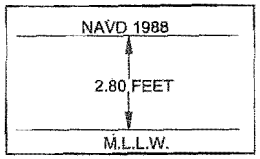
ODMDS SURVEY NOTES:

1. REFER TO SURVEY NO. 09-017.
2. ELEVATIONS ARE IN FEET AND TENTHS AND REFER TO NOAA MEAN LOWER LOW WATER (MLLW) WHICH IS 2.80 FEET BELOW NAVD 1988.
3. ALL ELEVATIONS ARE BELOW THE CHART DATUM UNLESS PRECEDED BY A (+) SIGN.
4. TIDAL REDUCTIONS WERE OBTAINED UTILIZING REAL-TIME KINEMATIC GPS POSITIONING WITH THE REFERENCE BASE LOCATION AT "CCAFS-27" FOR THE ENTIRE PROJECT.
5. PLANE COORDINATES ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE EAST ZONE OF FLORIDA AND REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD83).
6. SURVEY WAS PERFORMED USING REAL-TIME KINEMATIC GPS FOR POSITIONING WITH THE REFERENCE BASE STATION LOCATED AT "CCAFS-27". VERTICAL MEASUREMENTS WERE MADE USING A RESON 8101 MULTI-BEAM DEPTH RECORDER WITH A 240KHZ (HIGH FREQUENCY) HULL-MOUNTED TRANSDUCER.
7. AIDS TO NAVIGATION WERE NOT COLLECTED FOR THIS SURVEY.
8. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED ABOVE AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THAT TIME. THIS CHART IS SOLELY FOR THE DISTRIBUTION OF AVAILABLE DEPTHS AT THE TIME OF THE SURVEY AND IS NOT TO BE USED FOR NAVIGATION.
9. SURVEY ACCURACY PERFORMANCE STANDARDS, QUALITY CONTROL, AND QUALITY ASSURANCE REQUIREMENTS WERE FOLLOWED DURING THIS SURVEY IN ACCORDANCE WITH USACE EM 1110-2-1003, HYDROGRAPHIC SURVEYING, 1 JAN 02.
10. MULTI-BEAM DATA WAS SORTED ON A 420 X 420 GRID, MINIMUM SOUNDING POSITIONED CELL-CENTER.

BOUNDARY POINTS	PLANE COORDINATES (NAD83) X	Y
POINT A	811,002.97	1,453,597.96
POINT B	804,607.70	1,445,998.56
POINT C	812,498.85	1,439,667.00
POINT D	818,903.67	1,447,267.60

CANAVERAL HARBOR ODMDS

VERTICAL DATUM DIAGRAM
(THIS SHEET ONLY)



RELATIONSHIP BETWEEN NAVD 1988 AND NOAA MEAN LOWER LOW WATER TIDAL DATUM (1983-2001 EPOCH)

SURVEY TABULATION			
VESSEL	AREA SURVEYED	DATE SURVEYED	REFERENCE BASE STATION LOCATION
FLORIDA	ODMDS	25, 27 JAN 09	CCAFS-27

GAPHIC SCALE

0 4000' 8000'

N

U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 11 of 13
Attachment: 1

US Army Corps of Engineers
Jacksonville District

103 DRAWING
NOT FOR CONSTRUCTION

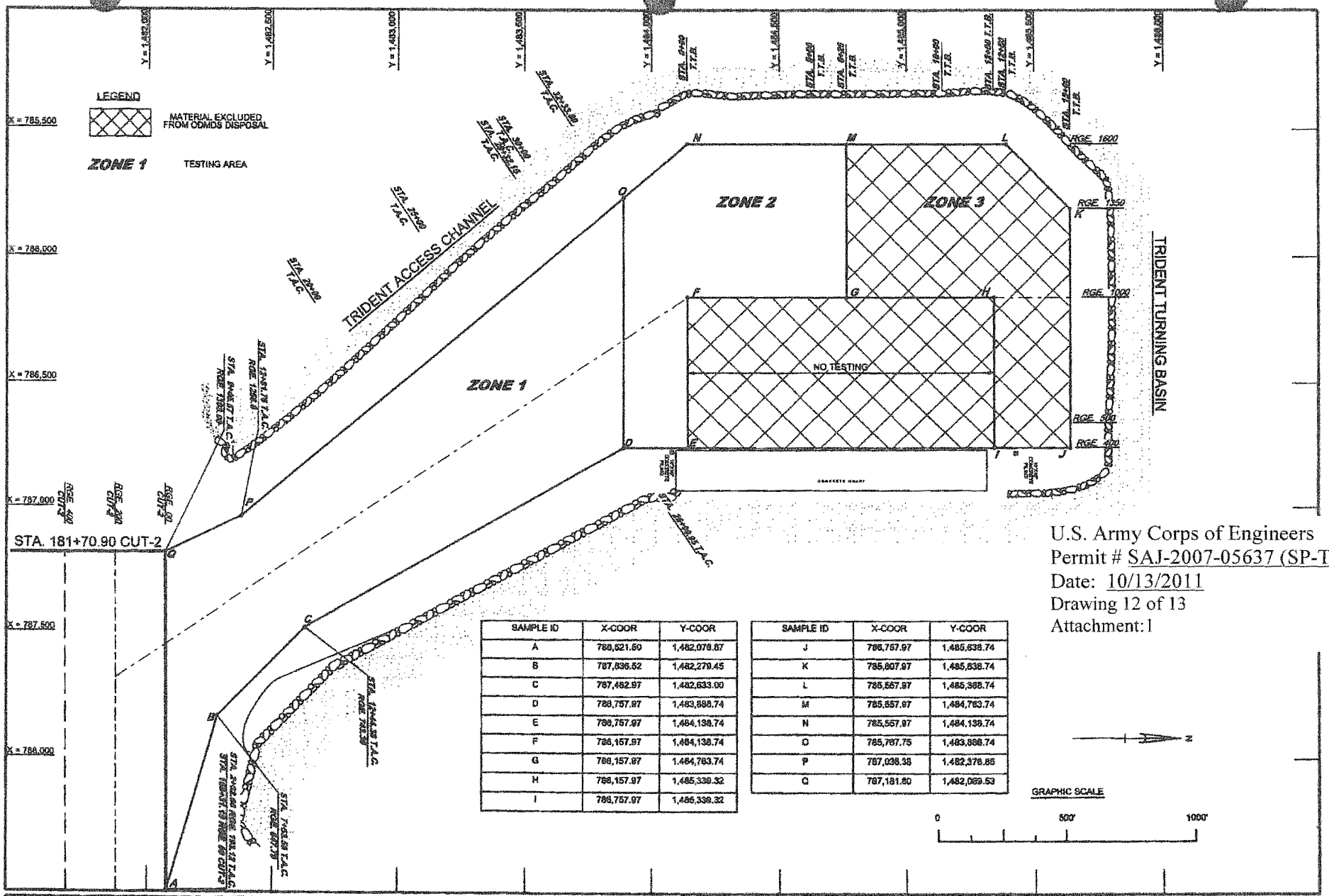
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

Dsn by: QLA
Dwn by: QLA
Ckd by: LRP
Dated: MARCH 2011

CANAVERAL HARBOR, FLORIDA
103 CONCURRENCE DRAWING

ODMDS

PLATE
C-05



SAMPLE ID	X-COOR	Y-COOR
A	788,521.60	1,482,076.87
B	787,836.52	1,482,279.45
C	787,482.97	1,482,633.00
D	788,757.97	1,483,888.74
E	788,757.97	1,484,138.74
F	786,157.97	1,484,138.74
G	786,157.97	1,484,763.74
H	786,157.97	1,485,339.32
I	788,757.97	1,485,339.32

SAMPLE ID	X-COOR	Y-COOR
J	788,757.97	1,485,638.74
K	785,807.97	1,485,638.74
L	785,557.97	1,485,388.74
M	785,557.97	1,484,763.74
N	785,557.97	1,484,139.74
O	785,787.75	1,483,888.74
P	787,036.35	1,482,376.85
Q	787,181.80	1,482,069.53

U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 12 of 13
Attachment:1

US Army Corps of Engineers
Jacksonville District

103 DRAWING
NOT FOR CONSTRUCTION

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

Dsn by: CLA
Drn by: CLA
Ckd by: LRP
Dated: MARCH 2011

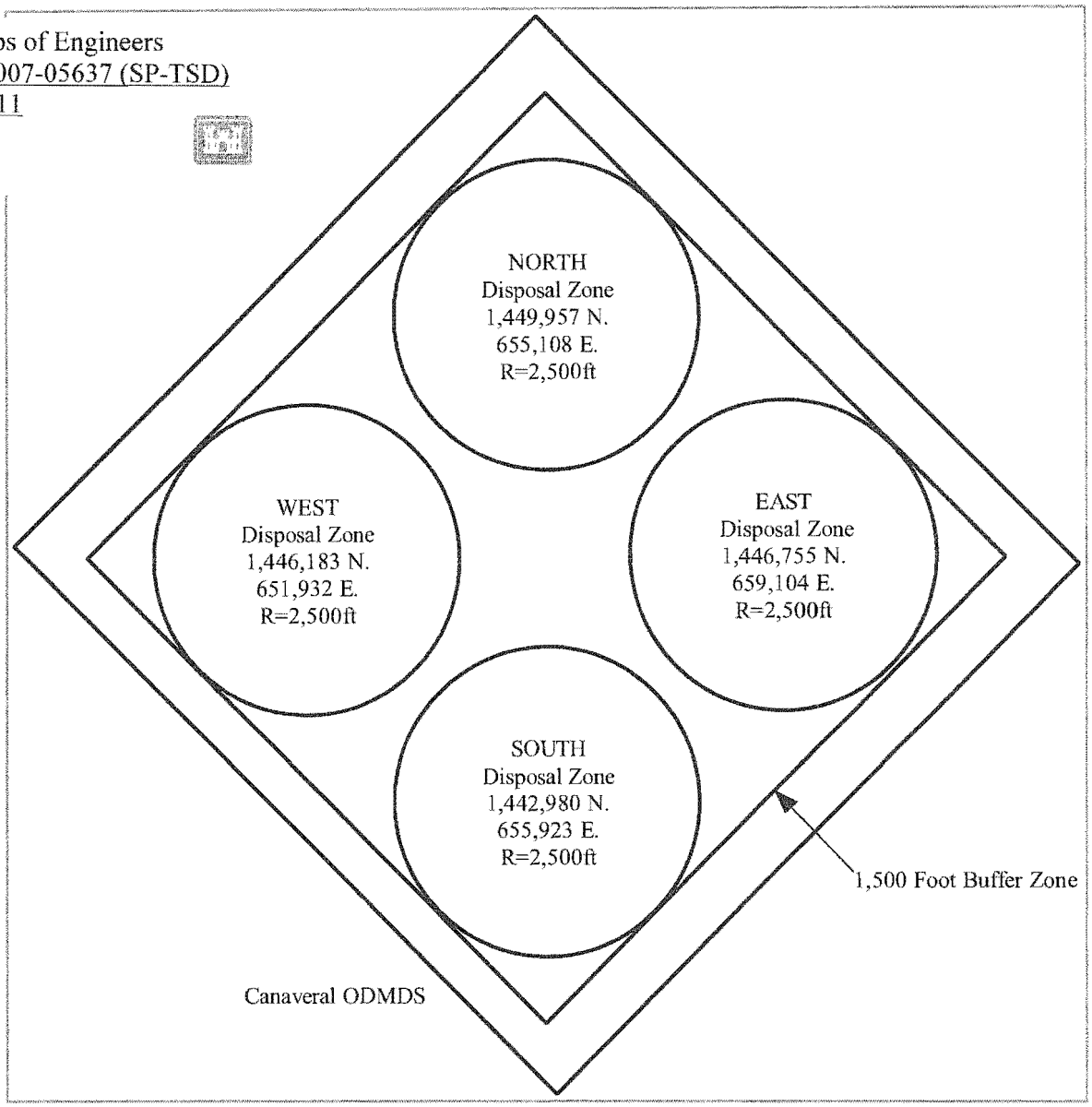
CANAVERAL HARBOR, FLORIDA
103 CONCURRENCE DRAWING

T.A.C. & T.T.B.

PLATE
C-01

Canaveral ODMDS Disposal Zones

U.S. Army Corps of Engineers
Permit # SAJ-2007-05637 (SP-TSD)
Date: 10/13/2011
Drawing 13 of 13
Attachment:1



Disposal Zone	Anticipated Projects	State Plane Center Coordinates (Florida East 0901 U.S. Ft.)		Geographic Center Coordinates	
NORTH	Canaveral Port Authority ADA Upland Disposal Site	1,449,957 N.	655,108 E.	28°19'19" N	80°31'04" W
SOUTH	Canaveral Port Authority West Turning Basin Deepening/Expansion and Maintenance Material	1,442,980 N.	655,923 E.	28°18'08" N	80°30'58" W
EAST	Civil Works & Navy Maintenance Material	1,446,755 N.	659,104 E.	28°18'40" N	80°31'41" W
WEST	Civil Works & Navy Maintenance Material	1,446,183 N.	651,932 E.	28°18'46" N	80°30'19" W

Attachment 3

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Special Projects and Enforcement Branch, PO Box 4970, Jacksonville, Florida 32232.. If you have questions regarding this requirement, please contact the Special Projects and Enforcement Branch at 904-232-3131.

1. Department of the Army Permit Number: SAJ-2007-05637(SP-TSD)

2. Permittee Information:

Name _____

Address _____

_____

3. Project Site Identification:

Physical location/address _____

_____

4. As-Built Certification:

I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

_____ _____

Signature of Engineer Name (Please type)

_____ _____

(FL, PR or VI) Reg. Number Company Name

_____

Address

_____

City State ZIP

(Affix Seal)

_____ _____

Date Telephone Number

Deviations from the approved permit drawings and special conditions: (attach additional pages if necessary)

Attachment 4

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 Florida Fish and Wildlife Conservation Commission (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 in Vero Beach (1-772-562-3909) for south Florida, and emailed 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 FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8½ " 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. These signs can be viewed at http://www.myfwc.com/WILDLIFEHABITATS/manatee_sign_vendors.htm. Questions concerning these signs can be forwarded 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

Attachment 5

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc

Attachment 6

United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive, South
Suite 310
Jacksonville, Florida 32216-0912

IN REPLY REFER TO:

FWS Log No. 41910-08-I-0037

November 5, 2007

Colonel Paul L. Grosskruger, District Engineer
U.S. Army Corps of Engineers
Regulatory Division, North Permits Branch
Atlantic Permits Section
P.O. Box 4970
Jacksonville, Florida 32232-0019
(Attn: Stephen Brooker)

Dear Colonel Grosskruger:

The U.S. Fish and Wildlife Service (Service) has reviewed your correspondence and accompanying information, received in this office on October 15, 2007, for the following project.

APPLICANT	CORPS APPLICATION NUMBER	FWS LOG NUMBER
United States Navy	SAJ-2007-5637 (SP-TSB)	41910-2008-I-0037

The United States Navy proposes to maintenance dredge up to 500,000 cubic yards of material annually from Cut 1A, the Navy Trident Turning Basin, Trident Access Channel, and Entrance Channel Widener. Near beach quality material will be placed in the Nearshore Disposal Area at Cocoa Beach. Other dredged materials will be disposed of at the EPA-designated Canaveral Ocean Dredged Material Disposal Site (ODMDS), the West Confined Disposal Facility (CDA-C) west of the Trident Turning Basin, or the Barge Canal Disposal Area adjacent to the Barge Canal on Merritt Island. The work will be performed between the months of May and October. The dredging will be conducted by either cutterhead or clamshell dredging equipment.

The Service has reviewed the information provided by the Corps included in your October 15, 2007, request for informal consultation on the West Indian (Florida) manatee, (*Trichechus manatus latirostris*), the nesting and hatchling loggerhead (*Caretta caretta*), green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), Kemp's ridley (*Lepidochelys kempii*), and leatherback (*Dermochelys coriacea*) sea turtles. We provide the following comments in accordance with section 7 of the Endangered Species Act of 1973, (Act) as amended (16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act of 1972, (MMPA) as amended (16 U.S.C. 1461 *et seq.*). A

complete administrative record of this consultation is on file at the Jacksonville Field Office's sub-office in St. Petersburg.

The Corps used the manatee key to determine that the proposed project "may affect but was not likely to adversely affect" the manatee. The Service concurs with this determination that the proposed project "may affect but is not likely to adversely affect" the manatee.

The Service also concurs with the Corps' determination that the proposed project "is not likely to adversely affect" nesting and hatchling sea turtles provided the following activities are completed:

1. All lighting activities associated with the proposed project comply with the guidance of the Canaveral Port Authority Light Management Plan. The Canaveral Port Authority Light Management Plan shall be reviewed and approved by the Service.

2. Littoral zone placement for dredged material shall be placed at or below the mean high water (MHW) such that it will not create a barrier to marine turtles attempting to nest or otherwise create a berm that is not suitable for marine turtle nesting.

3. From May 1 through November 1, all project lighting shall be limited to the immediate area of active construction only and shall be the minimal lighting necessary to comply with U.S. Coast Guard and/or OSHA requirements. Stationary lighting on the beach and all lighting on the dredge shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to minimize illumination of the nesting beach and water.

4. Visual surveys for barriers formed by sand disposal shall be completed prior to April 15 each year after fill placement. Sand berms that could interfere with sea turtle movement to and from the beach or otherwise impact nesting shall be leveled to the natural beach contour or otherwise modified by May 1.

This concurrence will terminate your request for informal consultation and, unless we hear from you to the contrary, fulfill section 7 requirements of the Act, and no further action is required. In addition, because no incidental take of manatees is anticipated, no such authorization under the MMPA would be needed.

If modifications are made to the project; if the applicant fails to comply with the manatee protective measures and special conditions; if additional information involving potential effects to listed

species becomes available; or if unauthorized take of manatees or sea turtles occur during construction, consultation will be reinitiated.

If you have any further questions, please contact Ann Marie Lauritsen at (904) 525-0661.

Sincerely,

David L. Hankla
Field Supervisor

Cc:

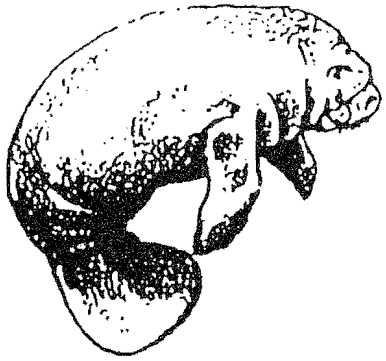
Robbin Trindell- FWC/Tallahassee
Sandy MacPherson- FWS/JAX

Attachment 7

AAPA 1996 ENVIRONMENTAL COMPETITION

Manatee Protection Program

A PORT CANAVERAL ENVIRONMENTAL ENHANCEMENT PROJECT



SUBMITTED BY:
CANAVERAL PORT AUTHORITY
P.O. BOX 267
CAPE CANAVERAL, FL 32920

CONTACT:
LORRAINE GUISE
ASSISTANT DIRECTOR OF ENVIRONMENTAL PROGRAMS

JULY 1996

TABLE OF CONTENTS

INTRODUCTION

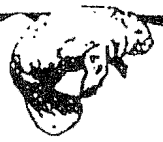
The manatee (Trichechus manatus latirostris) is one of the best-known endangered species in the state of Florida. These animals can be found all along Florida's coast and in associated interior rivers. Brevard County's location along the east-central coast provides optimal weather and habitats for the species to grow and reproduce and, as such, Brevard is the hub of Florida's east coast manatee population.

Located within Brevard County, Port Canaveral is an important area for the survival of these animals. Florida manatees use port waters for playing, resting, feeding, freshwater drinking, reproduction, and as a travel corridor between the Atlantic Ocean and the Indian River Lagoon (see Figure 1). To minimize the risk of injury to the manatees from commercial and recreational activity in the port, the Canaveral Port Authority has voluntarily implemented a Manatee Protection Program which is designed to increase awareness and provide protection for this endangered species.

GOALS AND OBJECTIVES

The primary goal of the Port Canaveral Manatee Protection Program is to minimize human-related manatee mortality within the port. Toward this end, the plan objectives are directed toward increasing awareness among port users including tenants, commercial shipping interests and recreational boaters. In addition, the port authority has committed to providing structural improvements to the piers to enhance manatee safety and requesting tenants to improve shipboard fenders.

The high levels of commercial vessel and recreational boating activity combined with the significant numbers of manatees using Port Canaveral results in a potentially dangerous environment for the manatee. With the implementation of the port's Manatee Protection Program, deliberate and systematic steps are being taken to minimize future impacts to these endangered species. The ultimate objective of the port's plan is to protect the manatees and help bring the species back from their endangered status.



DISCUSSION

Background

In 1989, Florida's Governor and Cabinet approved recommendations submitted by the Florida Department of Environmental Protection (FDEP) to protect the manatee and its habitat and to increase boating safety in the state's waterways. In these recommendations, thirteen key counties with high levels of manatee mortality, including Brevard County, were identified and mandated to develop comprehensive management plans to reduce manatee mortality and establish boat facility siting policies. In 1993, Brevard County established an ad-hoc committee to formulate a management plan for manatee and boating safety. The committee consisted of 34 members from all municipalities bordering the Indian River Lagoon, a variety of interest groups, and federal and state agencies involved with manatee protection.

Although not under the county's jurisdiction, Port Canaveral elected to participate on the ad-hoc committee and voluntarily entered into an agreement with the Florida Department of Environmental Protection to implement a separate and independent manatee protection plan for the port area. The formulation of the port's protection plan was based on data provided by the agency and an independent study of manatee usage at Port Canaveral funded by the Canaveral Port Authority. The plan components were approved by the Port Canaveral Board of Commissioners in August, 1995 and were implemented immediately thereafter.

Objectives and Methodology

The key elements of the Port Canaveral Manatee Protection Program include improvements to the port's fendering system, grating of stormwater outfalls to prevent manatees from entering and implementation of an education/awareness program for port users. These elements are essential to successfully reducing the human-related manatee mortality associated with commercial and recreation use of the port and were agreed upon by the FDEP and U.S. Fish and Wildlife Service. The following is a list of the key elements of the Port Canaveral Manatee Protection Plan.

(1) The port shall develop a wharf repair and replacement schedule within six months of the FDEP approval of the Brevard County Manatee Protection Plan. All docks or bulkheads that are utilized by vessels 100 feet in length or larger and do not presently have three-foot fenders under maximum operational compression should have highest priority.

(2) All existing bulkheads that dock vessels 100 feet in length or more shall have a minimum of three-foot standoffs under maximum operational compression. Future cargo and cruise terminal berths that are constructed of bulkhead walls shall provide a minimum of four-foot standoff under maximum operational compression. For open pile structures that provide sufficient escape room for manatees, three-foot standoff shall be provided between the hull of the vessel and the nearest pile face.

Due to the unique structural design of the bulkhead wall at the Marginal Wharf which prevents the retrofitting of fenders providing a minimum of three-foot standoff under maximum operational compression, the three-foot fendering requirement does not apply to the existing pier design. Until the redesign of this pier is complete (circa 2015) manatee safety and awareness and line handler training courses shall be emphasized and conducted yearly for users of this pier. The redesign of this pier shall include fenders providing three-foot standoff under maximum operational compression.

(3) Fender mounting elevations shall not be restricted. However, when technically feasible, the port shall make efforts to minimize the amount of fender area placed below mean high water.

(4) The Canaveral Port Authority shall be responsible for the maintenance of the fenders. Fenders shall be inspected at least every two years and repairs shall be performed as necessary.

(5) Fenders on bulkhead wall structures shall be positioned so that the clear space between the fenders does not exceed fifty feet. Fender spacing on open pile structures or isolated breasting dolphins shall not be restricted.

(6) The Canaveral Port Authority shall request and encourage tenants to use fenders providing three-foot standoff under maximum operational compression between all vessels when moored at the bulkhead, between two rafted vessels, or between a fueling vessel and a receiving vessel.

(7) New stormwater outfalls shall be designed and placed to minimize adverse impacts to manatees. Existing stormwater outfalls shall be grated to prevent manatees from entering.

(8) Existing manatee protection efforts shall be maintained:

a. Continue development of the Manatee Protection Plan

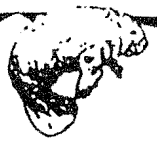
b. Continue Lock Operator manatee education and awareness

c. Continue Port Authority manatee education and awareness program for port users including development of educational brochures.

d. Continue installation of fenders, as described herein.

e. Implement yearly awareness training for line handlers.

(9) Consistent with permit requirements, manatee observers shall be posted during dredging, the movement of construction-related workboats, or any other water-based construction activity.



During the formulation of the plan, the port's engineering staff studied the feasibility of using fendering systems which provided 3-4 feet of clearance between vessels and bulkheads during maximum operational compression. It was determined that in certain areas of the port, the use of these fenders was indeed feasible but in other areas it was not. As a result, the FDEP allowed some flexibility for those areas where new fenders could not be installed in the near term. However, it is important to note that all new piers constructed in the recent past, including Cruise Terminal #10 and the new Disney Cruise Line Terminal, have the manatee safe fenders which allow three feet of standoff during maximum operational compression. All piers built in the future will be equipped with similar fenders.

The mounting elevation of the fenders was also a concern to the Save the Manatee Club because it was believed that manatees could be caught between the fender and vessel if any portion of the fender was under water. The port, however, was not able to commit to a specific fendering height because of individual ship requirements. As a result, a compromise agreement was reached which specified that the port would make efforts where technically feasible to place the fenders above mean high water. This consideration has now been incorporated into the design of all piers.

Other concerns about fendering included the maintenance, spacing of fenders on the piers, and spacing of fenders between moored vessels. To address

these concerns, the port agreed to be responsible for maintenance and inspections of fenders on a regular basis, to place fenders no more than fifty feet apart on bulkhead walls, and to work with tenants to ensure three-foot fenders between moored vessels. These agreements have been implemented through design practice, the regular performance of fender inspections, and the distribution of information to tenants requesting their use of three-foot fenders.

The FDEP was especially concerned about the potential for small and mid-sized manatees to get caught in the various stormwater outfall pipes around the port. Many of the outfalls are under water at high tide and pose a danger to unsuspecting manatees as the tide goes out. The Canaveral Port Authority, recognizing the historical problems associated with manatee mortality caused by outfall structures in other areas of the county, agreed to grate the structures which posed the greatest threats. A list of potentially dangerous outfalls has been compiled by the port's environmental staff and the grating design to fit individual outfalls is in progress. Approximately 12 outfalls will be grated through this effort.

One of the most crucial elements of the plan is the provision for education to increase awareness among port users regarding manatee safety. To properly implement the education program, brochures and a video were produced and seminars have been conducted for interested parties. The

brochure (Appendix A) and video (Appendix D) were made available to all port tenants, local boating organizations, commercial shipping interests, and local residents. Seminars are provided to all construction contractors, local residents, students and interested parties, as requested. As the program continues, these seminars will be expanded to include commercial shipping interests. In addition, newspaper advertisements (Appendix B) have been published during high use periods to advise port users about manatees in the area.

Award Criteria Fulfillment

BENEFITS

The Port Canaveral Manatee Protection Plan will ultimately benefit the population of manatees which use the port harbor. The development of this plan also provided a first time opportunity for the port, the FDEP, and the U.S. Fish and Wildlife Service to discuss the special concerns about manatee safety in a port area. The survival of all species, especially those whose existence is endangered, is beneficial to all mankind.

INVOLVEMENT AND EFFORT BY THE PORT

The development of the Manatee Protection Plan was the result of a two year effort between the FDEP, the U.S. Fish and Wildlife Service, and the Canaveral Port Authority. The plan's implementation was funded entirely by the Canaveral Port Authority and the production and dissemination of the

brochures and video was performed solely by port authority personnel. The high level of involvement and voluntary effort on behalf of the port authority has resulted in a distinctive and highly successful program.

CREATIVITY OF THE PROGRAM

The development of the plan was, in itself, a creative process in that it was the result of a first-time effort among the plan developers (FDEP, U.S. Fish & Wildlife Service and the Canaveral Port Authority) to address the specific concerns about manatee safety in the port area. The plan elements were based on the unique features and functions of the port area and the agreements made were a prototype which can be used in other port areas.

Implementation of the plan has been successful due to the large number of people reached through the dissemination of brochures and videos.

PROJECT RESULTS

The program has been successful in that many port tenants and users have implemented the manatee safety suggestions outlined in the brochure and video. Awareness about manatees in Port Canaveral has increased dramatically and no human-related mortalities have been recorded in the port during 1996.

COST EFFECTIVENESS OF THE PROGRAM

Implementation of the Manatee Protection Program at Port Canaveral and

the distribution of brochures and videos was performed solely by port authority staff. These materials made it possible to reach a large number of port users in a cost effective manner in a short period of time. In addition, information about manatee usage of Port Canaveral is disseminated by word-of-mouth at local functions attended by the port's environmental staff.

TRANSFERABILITY OF TECHNOLOGY TO PORT INDUSTRY

This protection program can be used as a prototype by all ports in the manatee's natural habitat range.

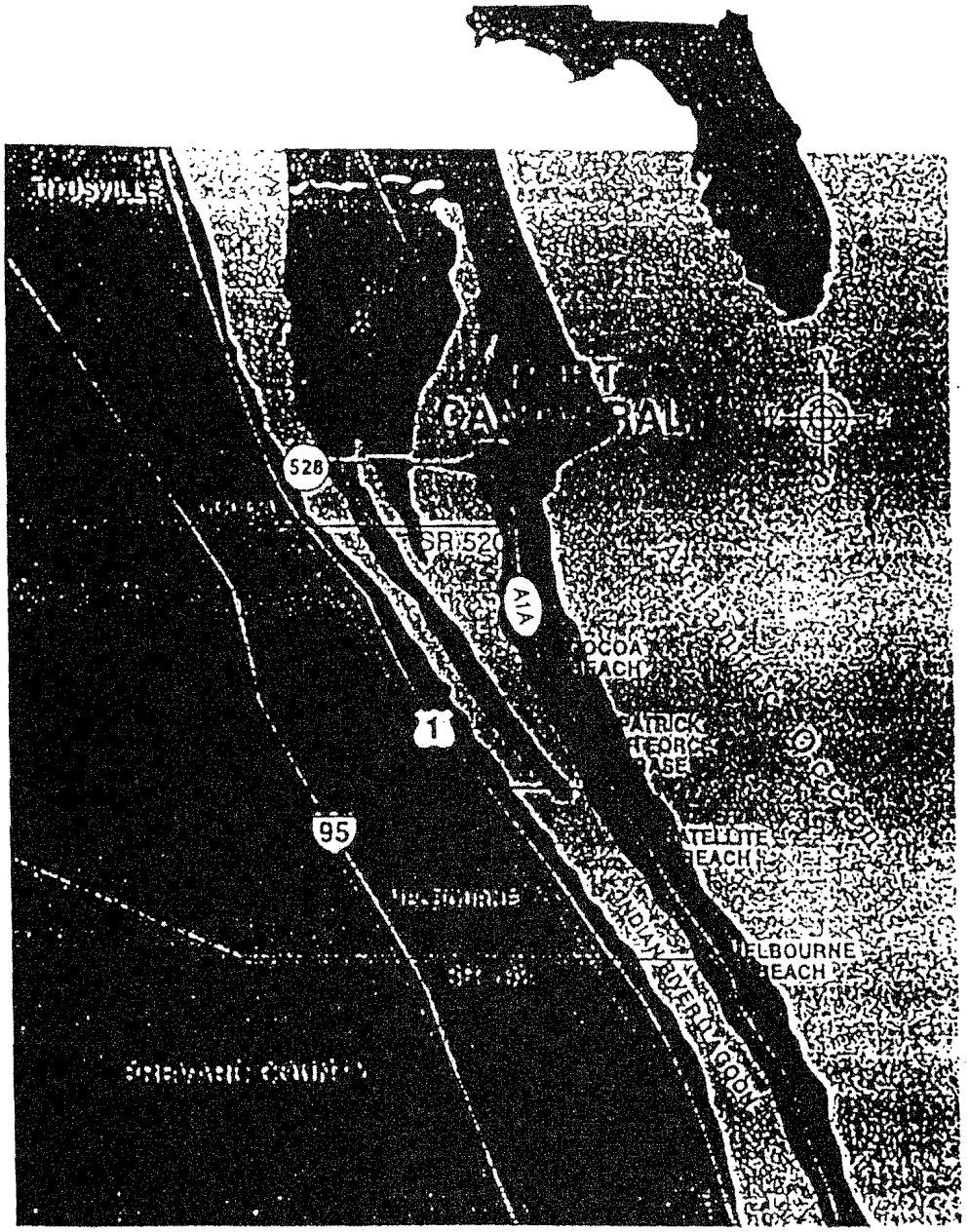
CONCLUSION

The voluntary effort extended by the Canaveral Port Authority to protect the Florida Manatee and to educate ports users about their presence has resulted in a successful program. All areas or activities in the port which pose a potentlal threat to the safety of the manatee have been mitigated resulting in the minimization of adverse impacts to this species. As awareness about the manatees movements within the port increases, so too will the number of port users who watch for them and take action to avoid them.

The Canaveral Port Authority believes that the implementation of endangered species programs such as this will help protect the affected species and ultimately benefit mankind by their long term survival.

FIGURE 1

PROJECT LOCATION MAP

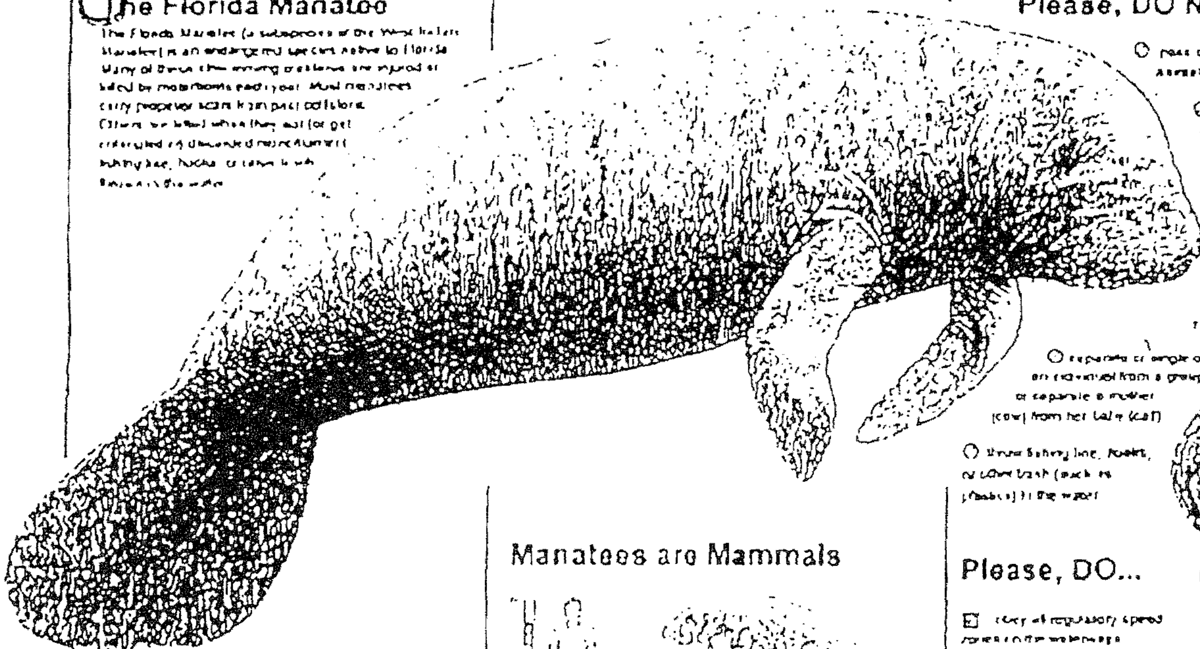


APPENDIX A
MANATEE AWARENESS BROCHURE

Manatee Basics for Boaters

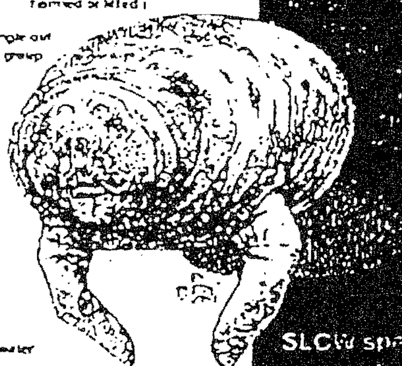
The Florida Manatee

The Florida Manatee (a subspecies of the West Indian Manatee) is an endangered species native to Florida. Many of these slow-moving creatures are injured or killed by motorboats each year. Most manatees carry propeller scars from past collisions. Others are killed when they eat (or get entangled in) discarded monofilament fishing line, hooks, or other trash thrown in the water.



Please, DO NOT...

- pass directly over submerged animals if you can avoid them
- chase manatees while in a boat or when swimming
- hold, grab or ride a manatee
- feed or give water to manatees (it may attract manatees to boats, or high boating traffic areas where they are harmed or killed)
- separate or single out an individual from a group or separate a mother (cow) from her baby (calf)
- throw fishing line, hooks, or other trash (such as plastics) in the water

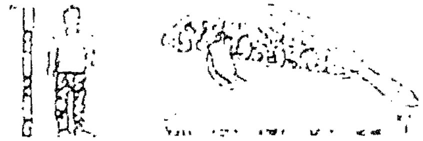


Save a Life!

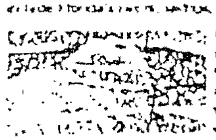
Report accidental boat strikes to manatees immediately to begin prompt rescue and rehabilitation. Please report injured, dead or orphaned manatees, or ones being harassed to a Fish & Wildlife Conservation Officer.

1-800-DIAL-FMP
***FWC (mobile phone)**
or use VHF Channel 16

Manatees are Mammals



The manatee is a large, aquatic mammal that generally grows to 9–10 feet long and weighs an average of 800–1,200 pounds. They can live in fresh, brackish, or salt water habitats, which include Florida's rivers, springs, bays and canals.

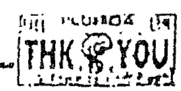


Manatees breathe air, just like other mammals. They come up to breathe every two to four minutes, but can stay submerged for 15 to 20 minutes when resting. When a manatee breathes, the nose is usually the only part of the manatee's body that breaks the surface of the water. Remember to look out for manatees when boating in Florida's waterways.

Manatees are protected by these laws: The Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973 and the Florida Manatee Sanctuary Act of 1978.

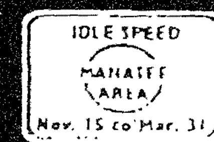
Please, DO...

- obey all regulatory speed zones in the waterways
- slow down—especially in water depths less than five feet
- steer your boat clear of manatee congregations
- reduce your speed whenever you see the circular wave pattern caused by the tail of a swimming manatee
- practice passive observation activities when you see a manatee in its natural habitat: look, stay quiet and give them space
- wear polarized sunglasses so you can see manatees and seagrasses better
- stay in marked channels where the water is deeper
- use a pole, paddle, or trolling motor when boating over seagrass beds (Loss of habitat is a serious threat to the manatee's survival)
- help support manatee recovery efforts by purchasing a manatee license plate at your local county tag office

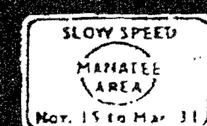


How do you know when you are traveling at IDLE or SLOW speed?

IDLE speed



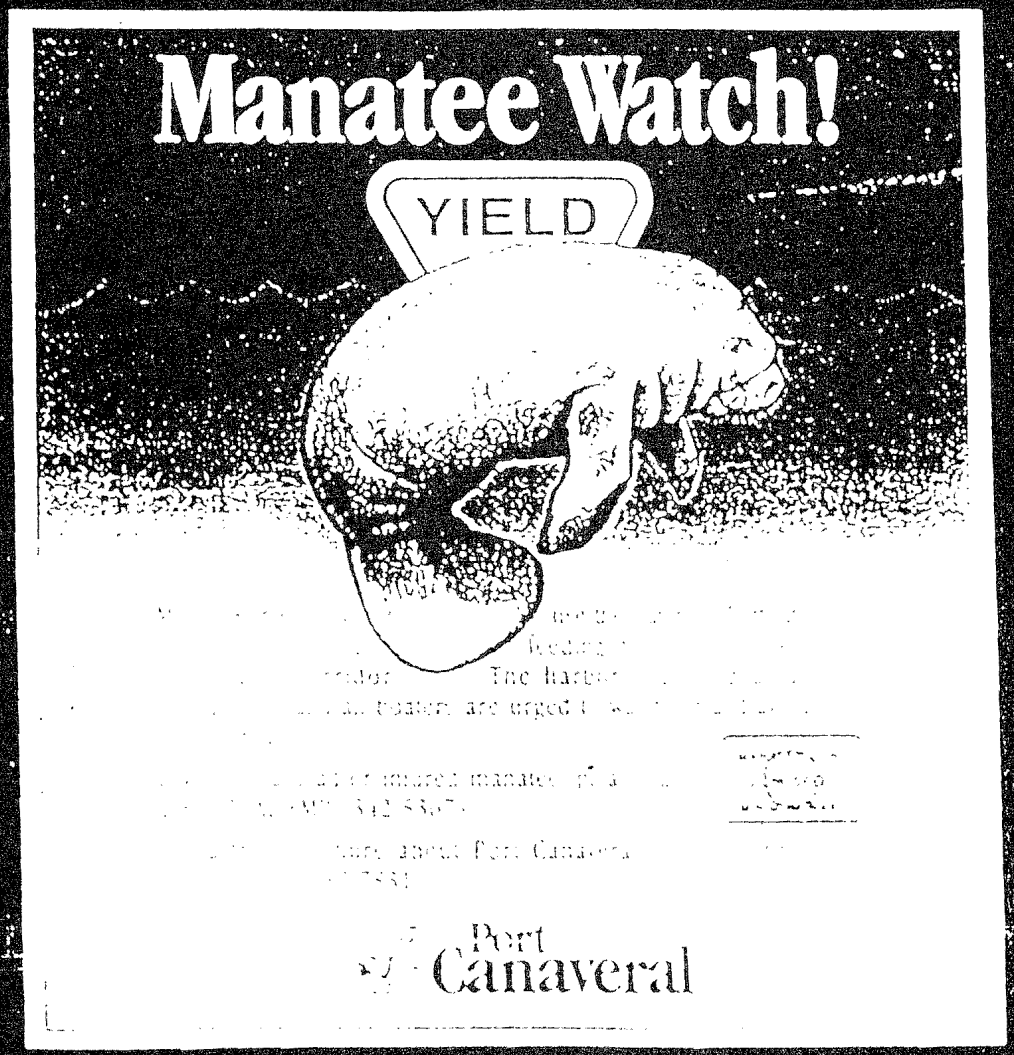
SLOW speed



Fish and Wildlife Conservation Commission

E1 01328 22 002

APPENDIX B
MANATEE AWARENESS NEWSPAPER ADVERTISEMENT



Manatee Awareness ad placed in local newspapers in May [illegible] to inform the public before busy Memorial Day weekend.

MANATEE WATCH

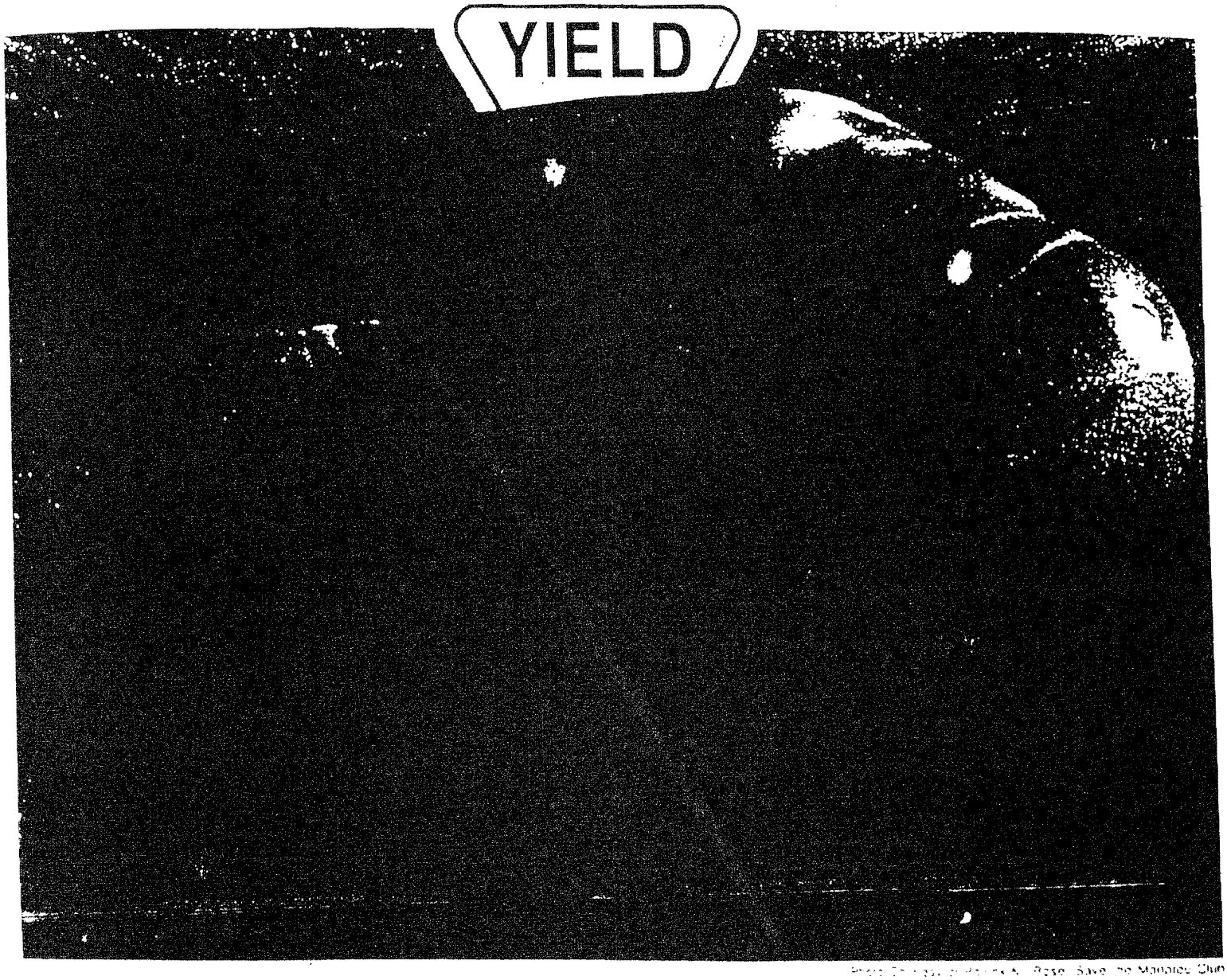


Photo by [illegible] A. Rose, Save the Manatee Club

Where To Watch For Manatees

necessary

outfalls.

especially

Manatees

and mild

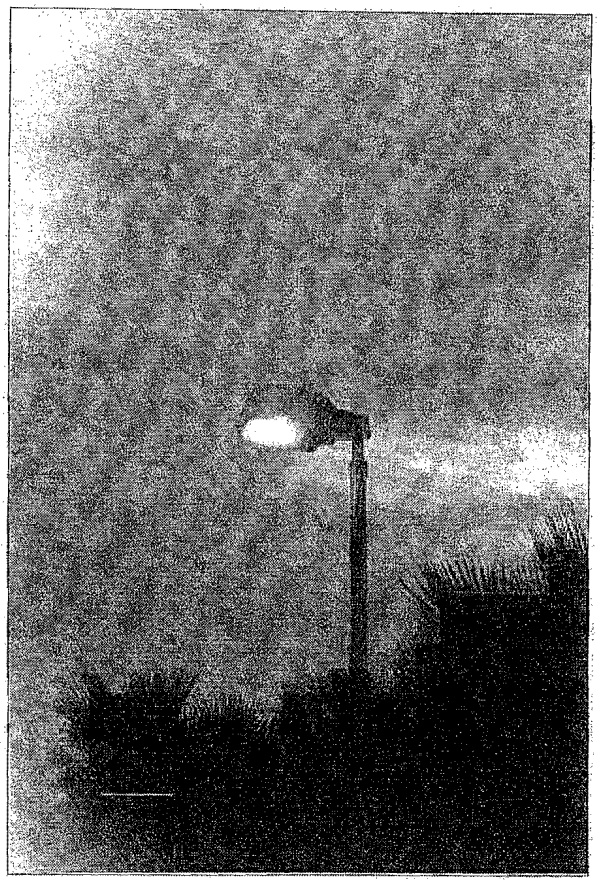
shallow

What to Watch For

- manatee dives
- water's surface
-

Attachment 8

EXTERIOR LIGHT MANAGEMENT
&
SECURITY ALTERNATIVES PLAN



February 2006

CANAVERAL
PORT AUTHORITY

Canaveral Port Authority
Exterior Light Management
And Security Alternatives Plan

1.0 BACKGROUND, BASIS AND LIMITATIONS

Port Canaveral is a deepwater seaport primarily engaged in ship-to-shore cargo transference and cruise operations. Specific exterior lighting is necessary for the all human activities at the Port. The various operations at the Port must balance numerous Federal and State regulations, mandates, and other requirements for security, safety, and environmental protection. The Exterior Light Management and Security Alternatives Plan (ELMSAP) has been developed to provide this balance in the area of exterior lighting and obtains basis from various statutes, regulations, and standards, including the following:

- Florida Statute, Chapter 161.052 Coastal Construction and excavation; regulation.(Enforced by FAC Chapter 62B-33 Bureau of Beaches and Coastal Systems – Rules and Procedures for coastal Construction and Excavation; Permits for Construction Seaward of the Coastal Construction Control Line and Fifty-foot setback)
- Florida Statute, Chapter 161.163 Coastal areas used by sea turtles; rules. (Enforced by FAC Chapter 62B-55 Model Lighting Ordinance for marine Turtle Protection)
- Florida Statute, Chapter 370.12 Protection of Marine Turtles
- 33 CFR 154.570 Facilities Transferring Oil or Hazardous Material in Bulk
- 33 CFR 126.15 Condition for Designation as Designated Waterfront Facility
- 29 CFR 1917.123 Terminal Facilities Illuminations
- Florida Department of Law Enforcement : Minimum Security Standards for the Florida Seaports
- Illuminating Engineering Society of North America : The IESNA Lighting Handbook, Ninth Edition
- The National Academy of Sciences : Night Vision: Current Research and Future Directions, Symposium Proceedings (1987)
- Florida Marine Research Institute Technical Reports : Understanding, Assessing, and Resolving Light-Pollution Problems on Sea Turtle Nesting Beaches, Second Edition, Revised 2000
- Florida Building Code as adopted by the Florida Building Commission

This Plan applies to all lighting sources located on Canaveral Port property. In general, the ELMSAP GUIDELINES and STANDARDS do not apply to sources of light located on docked vessels or motorized vehicles or within building envelopes unless the installation is found to violate the stated purpose defined herein. All new construction, modification of use, or repairs to existing construction shall be constructed, used or repaired only in conformance with the ELMSAP. Existing construction or use that remains in service is not required to be modified to conform to the ELMSAP unless determined by the Port Administration that continued use significantly violates the purpose defined herein. The ELMSAP GUIDELINES take precedence over any and all STANDARDS provided herein if the application of any provided STANDARD installed in a specific condition significantly violates the purpose defined herein.

2.0 PURPOSE

The Canaveral Port Authority's Exterior Light Management and Security Alternatives Plan (ELMSAP) provides the Port and its tenants with a set of GUIDELINES and STANDARDS to provide balance between sometimes conflicting Federal, State, and Port requirements. The purpose of the ELMSAP is to provide appropriate lighting quality and quantity for various Port activities while:

1. Minimizing impacts to the environment including the environment of nesting and hatchling marine turtles,
2. Optimizing lighting efficiencies,
3. Maintaining compatibility with security and safety measures employed at the Port, and
4. Minimizing electric power consumption and operating costs.

To meet this purpose the Plan specifically targets elimination of light pollution and glare from all exterior artificial light sources. The ELMSAP provides both GUIDELINES and STANDARDS. GUIDELINES, when utilized, will require specific Port review of proposed installations and products to substantiate general conformance with the defined purpose. STANDARDS, when utilized, will be interpreted as being in de-facto conformance with the ELMSAP without specific review by the Port provided they are installed in conformance with the defined purpose of the ELMSAP. All lighting shall comply with the Lighting Safety Requirements provided herein.

3.0 DEFINITIONS

(1) "Artificial light" or "artificial lighting" means the light emanating from any human-made device.
(2) "Adjacent Grade(s)" means the elevation of the earth or water body that lies within 50 feet measured horizontally from the point of reference.

(3) "Beach" means the zone of unconsolidated material that extends landward from the mean low water line to the place where there is a marked change in material or physiographic form, or to the line of permanent vegetation, usually the effective limit of storm waves.
(4) "Bug" type bulb means any yellow colored light bulb that is marketed as being specifically treated in such a way so as to reduce the attraction of bugs to the light.
(5) "Coastal construction activities" means any work or activity that is likely to have a material physical effect on existing coastal conditions or natural shore and inlet processes.
(6) "Cumulatively illuminated" means illuminated by numerous artificial light sources that as a group illuminate any portion of the beach.
(7) "Directly illuminated" means illuminated as a result of glowing element(s), lamp(s), globe(s), or reflector(s) of an artificial light source which is visible to an observer on the beach.
(8) "Dune" means a mound or ridge of loose sediments, usually sand-sized, lying landward of the beach and deposited by any natural or artificial mechanism.
(9) "Frontal dune" means the first natural or man-made mound or bluff of sand which is located landward of the beach and which has sufficient vegetation, height, continuity, and configuration to offer protective value.
(10) "Ground-level barrier" means any vegetation, natural feature or artificial structure rising from the ground which prevents beachfront lighting from shining directly onto the beach-dune system.
(11) "Hatchling" means any species of marine turtle, within or outside of a nest, that has recently hatched from an egg.
(12) "Indirectly illuminated" means illuminated as a result of the glowing element(s), lamp(s), globe(s), or reflector(s) of an artificial light source which is not visible to an observer on the beach.
(13) "Lighting Level" means the level of illumination or illuminance measured on a plane. The plane shall be as applicable to the task but shall generally be vertical or horizontal to the earth. (See the Illuminating Engineering Society of North America publications for further definition.)
(14) "Marine turtle" means any marine-dwelling reptile of the families Cheloniidae or Dermochelyidae found in Florida waters or using the beach as nesting habitat, including the species: Caretta caretta (loggerhead), Chelonia mydas (green), Dermochelys coriacea (leatherback), Eretmochelys imbricata (hawksbill), and Lepidochelys kempi (Kemp's ridley). For purposes of this rule, marine turtle is synonymous with sea turtle.
(15) "Moonlight" means lighting produced from the moon which is generally defined as natural ambient exterior lighting horizontally on earth between 0 foot-candles (new moon) and 0.02 foot-candles (full moon).
(16) "Nest" means an area where marine turtle eggs have been naturally deposited or subsequently relocated.
(17) "Nesting season" means the period from March 1 through October 31 of each year.
(18) "Nighttime" means the locally effective time period between sunset and sunrise, where sunset and sunrise times are as defined and tabulated by the U. S. Naval Observatory (http://aa.usno.navy.mil).

(19) "Twilight" means "Civil Twilight" as tabulated by the U. S. Naval Observatory (http://aa.usno.navy.mil) which is further defined as all times when the natural ambient exterior lighting level at grade is between 0.3 foot-candles and 30 foot-candles.

4.0 LIGHTING ZONES

Lighting Zones are defined areas depicting general uses of typical lighting requirements. The Port's property is classified by the following Lighting Zones: (1) Pier Zone, (2) Roadway, Parking, Bikeway, and Walkway (RPBW) Zone, (3) Marina Zone, (4) Retail Zone, (5) Storage Zone, (6) Beach Zone, (7) Park zone and (8) Special Use Zone. All property within the limits of the Port is classified under one of the listed zones. More specific locations of these Zones are identified on the attached graphic maps.

4.1 Pier Zone: This zone is generally any area of the Port that is on any pier structure or dry land within 50 feet of any pier that is scheduled for use of loading or unloading cargo or passengers (excluding areas defined as the Marina Zone).

4.2 Roadway, Parking, Bikeway, and Walkway (RPBW) Zone: This zone is generally any area of the Port that is designed for motor vehicle, bicycle, or walking use.

4.3 Marina Zone: This zone is generally any area of the Port that is used for storage or docking of nautical vessels generally without the specific scheduled use of loading or unloading cargo or passengers.

4.4 Retail Zone: This zone is generally any area of the Port that is used by the general public for obtaining retail services or products.

4.5 Storage Zone: This zone is generally any area of the Port that is designed for loading, unloading, storage, and inspection of materials.

4.6 Beach Zone: This zone is generally any area of the Port that is within 150 feet of the high-water or high-tide waterline of any beach (typically suitable for sea turtle nesting).

4.7 Park Zone: This zone is generally any area of the Port that is used by the general public for recreational use.

4.8 Special Use Zone: This zone is any area of the Port that is not defined by other zone categories. The specific use shall be as defined by the Canaveral Port Authority.

5.0 LIGHTING SAFETY / SECURITY REQUIREMENTS

The following additional safety provisions shall be provided for the Lighting Zone(s) indicated.

5.1 General Lighting Requirements for All Zones: Except for approved signage lighting and other specially approved uses, no fixture shall be installed, oriented, aimed, or maintained to distribute more than 5% of its total lumen output above the elevation of its mounting. Support of all lighting fixtures shall comply with the Florida Building Code for wind velocities, exposure, and importance factor. All lighting fixtures mounted higher than 30 feet above adjacent grades shall be provided with a separate safety chain or cable suitable to support the fixture upon failure of its normal support connections.

5.2 Safety / Security Lighting Requirements for All Zones: Lighting for safety and security shall be provided in all Zones to the levels indicated in the GUIDELINES.

5.3 General Lighting Control for All Zones: All lighting shall be connected to allow control by manual and/or automatic switches. The tenants shall be responsible for control of the lighting located within and on their property or tenant spaces, as applicable, during all nighttime hours. The Port may, at their discretion, assume responsibility for control of specific exterior lighting within tenant spaces to maintain conformance to the purpose of the ELMSAP and may charge the tenant accordingly. All designated security lighting shall operate continuously during all hours that the ambient lighting level is less than the level provided by twilight. The Port reserves the right to replace or extinguish by any means nonconforming lighting throughout the Port property at the expense of the applicable tenant.

5.4 Pier Zone: Pier edges adjoining water shall include yellow or black-and-yellow reflective paint or tape to provide warning of this special hazard.

5.5 RPBW Zone: Crosswalks and other conflicting use areas shall be striped by yellow or black-and-yellow reflective paint or tape, or strobing embedded lighting to provide warning of this special hazard.

5.6 Marina Zone: Lighting shall be provided to enhance the visibility of cleats, ropes and other small objects on docks. Pier edges adjoining water shall be striped by yellow or black-and-yellow reflective paint or tape to provide warning of these special hazards. No beacons or red or green lighting shall be installed.

6.0 GUIDELINES

6.1 All light fixtures shall be designed to minimize light pollution, glare, and shadows. Full cut-off type fixtures (as defined in the IESNA Lighting Handbook) shall be used to the greatest degree possible. "Noncutoff" fixtures are prohibited for all metal-halide and high-pressure sodium sources where mounted higher than 16 feet above adjacent grades. Fixture test data may be required to substantiate conformance to the ELMSAP. Shields may be used to meet this requirement, but test data must represent fixtures with shields in place. Most current fixtures can be retrofitted with a fully shielded cutoff attachment that directs light downward to comply with new requirements. Please see Appendix A for examples of appropriate light fixtures and companies that sell retrofittings.

6.2 Unless stated otherwise, lighting levels indicated in these guidelines are based on IESNA Lighting Handbook recommended calculation methods for average horizontal values over a 10'x10' maximum area on the task surface at the end of a 3-year unmaintained operation.

6.3 Specific Zone Guidelines:

6.3.1 Pier Zone: Lighting in this zone shall comply with minimum IESNA Lighting Handbook recommendations for piers (i.e. 3 foot-candles for surrounding areas, 5 foot-candles for active shipping areas, 10 foot-candles for passenger areas, and 30 foot-candles for search or inspection areas) during all times of active use with an absolute maximum permissible lighting level of 30 horizontal foot-candles at any grade location or 30 vertical foot-candles above the pier/water edge at any time. Lighting of this zone shall also comply with IESNA Lighting Handbook for security use (i.e. 0.5 foot-candles to 2.0 foot-candles) during all times when the pier is not in active use. The lighting sources shall be fully shielded cutoff-fixtures of high- or low-pressure sodium for all uses except designated security lighting shall be low-pressure sodium only and search or inspection areas shall be permitted to utilize any source. All high-pressure sodium lighting shall be controlled by manual initiation and photocell or motion-sensing extinguishing to disable the lighting at sunrise and/or upon removal of activity. A manual bypass mode is acceptable to address failure of any control component provided the manual by-pass automatically disconnects the lighting no more than one hour after manual initiation. Topside lighting of the ship (i.e. lighting of facades of docked ships) from pier property may be allowed as a special use if otherwise in general conformance to the purpose of the ELMSAP.

6.3.2 RPBW Zone: Lighting in this zone shall comply with IESNA Lighting Handbook recommendations (including vertical and horizontal illumination, uniformity, and transition values) for the

intended use (see Chapter 22 in the Handbook). In general, the lighting level shall be between 0.3 foot-candles and 1.2 foot-candles except designated security lighting shall comply with IESNA Lighting Handbook recommendations for security use. Security lighting in this Zone shall generally be a minimum 0.2 foot-candles but may be up to 30 foot-candles at gate inspection areas. The minimum security lighting levels recommended by the IESNA Lighting Handbook shall be maintained during all times, regardless of other uses. The lighting sources shall be fully shielded cutoff-fixtures of high- or low-pressure sodium for all uses except that metal-halide lighting source is permissible at gate inspection areas and on top-down signage lighting. All lighting shall be controlled by photocell with over-ride (to off) capability or astronomical programmable time-clock or controller. A manual bypass mode is acceptable to address failure of any control component provided the manual by-pass automatically disconnects the lighting no more than twelve hours after manual initiation.

6.3.3 Marina Zone: Lighting in this zone shall comply with minimum IESNA recommendations for safety (i.e. 0.2 foot-candles) during all times with an absolute maximum permissible lighting level of 5 foot-candles on all docks and walkways. Search areas designated by the Port Authority are permitted to utilize lighting levels up to 30 foot-candles by any source provided the lighting is utilized only at times of the search. The lighting sources shall be bollards, directional wall packs with shielding, downlights with shields and baffles, 590nm amber LED's, or embedded lights.

6.3.4 Retail Zone: Lighting in this zone shall comply with IESNA Lighting Handbook recommendations for the intended use. Storefronts, signage, outside markets, and other spaces or uses will be allowed to have flexibility in appearance, color, sparkle/flicker/strobing, modeling, "reflected glare," and other means to attract customers and to allow evaluation of merchandise and completion of sales provided the specific use does not conflict with the conformance to the purpose of the ELMSAP and is dark sky friendly (www.starrynightlights.com or www.darksky.org/fixtures/fixtures.html). Minimum lighting of this zone shall comply with IESNA Lighting Handbook recommendations for security (i.e. 0.2 foot-candles) during all times, regardless of other uses. The lighting sources shall be downlights with shields and baffles, true red neon, LED, high-pressure sodium with fully shielded cutoff-fixtures, or incandescent for all uses except other sources may be permitted after review and approval by the Port Authority. All non-security lighting (including signage) shall be extinguished whenever the retail establishment is not open to accept general public customers.

6.3.5 Storage Zone: Lighting of this zone shall comply with IESNA Lighting Handbook recommendations for storage use (i.e. typically 0.3 foot-candles vertical, 1.0 foot-candles horizontal) during all times that the area is being used for storage. Locations with tasks requiring greater lighting levels (such as pumping stations, inspection points, and hazardous areas) shall be permitted to utilize lighting to the maximum foot-candles recommended by the IESNA Lighting Handbook but the lighting shall be controlled to limit its use to those times required by personnel activity. Lighting of this zone shall comply with IESNA recommendations for security (i.e. minimum 0.2 foot-candles generally) during all times, regardless of use. Search areas designated by the Port Authority are permitted to utilize lighting levels up to 30 foot-candles by any source provided the lighting is utilized only at times of the search. The lighting sources shall be wall packs with appropriate mounting and shield (retrofit if necessary), downlights, low-pressure sodium with fully shielded cutoff-fixtures for all uses except that high-pressure sodium lighting with fully shielded cutoff fixture sources are permissible in locations where motorized vehicles and pedestrian traffic congestion occur and at locations where greater lighting levels are temporarily required. All lighting except for security use shall be controlled to require manual initiation and photocell or motion-sensing extinguishing to disable the lighting at sunrise and/or upon removal of activity. A manual bypass mode is acceptable to address failure of any control component provided the manual by-pass automatically disconnects the lighting no more than two hours after initiation.

6.3.6 Beach Zone: Lighting of this zone shall be tightly limited and controlled but shall comply with minimum IESNA recommendations for security (i.e. 0.2 foot-candles to 1.0 foot-candles) in selected areas during hours of public use. The lighting sources shall be yellow (i.e. "bug" type) incandescent or 590nm amber LED. Fully shielded cutoff low-pressure sodium lighting sources with light barriers will be permitted upon review and approval by the Port Authority in areas of traffic or personnel congestion if shielded from the beach. All lighting shall be controlled by motion-sensing with photocell. A manual bypass mode is acceptable to address failure of any control component provided the manual by-pass automatically disconnects the lighting no more than twelve hours after initiation. A manual "off" mode shall be provided allowing extinguishing of all lighting sources at the discretion of the Port Authority.

6.3.7 Park Zone: Lighting in this zone shall comply with IESNA Lighting Handbook recommendations for the intended use of park and public areas (i.e. 1 foot-candle at ground level). Trails and

walkways should be illuminated to a minimum of 0.6 foot-candles at ground level for the length of the trail and on all sides out to a distance of 30 feet. Vertical illumination 1.5 meters above the ground should be at least equal to the horizontal illuminance at ground level. The lighting sources shall be fully shielded cutoff high or low pressure sodium, top down sign lighting, bollards, directional wall packs with shielding, downlights with shielding and baffles, or LED's.

6.3.8 Special Use Zone: Lighting of this zone shall comply with the recommendations of IESNA Lighting Handbook and specific requirements of the Port Authority for the specific uses defined. All existing lighting in this Zone shall be subject to review and approval by the Port Authority and/or may be mandated by the Port Authority to be removed. No lighting shall be permitted within this Zone except as specifically reviewed and approved by the Port Authority. The Port Authority reserves the authority to mandate any level of security lighting as necessary within this Zone. All lighting shall be controlled to conform to the purpose of the ELMSAP. All lighting additions within this Zone will be forwarded to FWS for review.

7.0 STANDARDS

Classifications, Fixture Descriptions, and Manufactured Products

7.1 Controllers.

7.1.1 Controllers (or control panels) may be used to control exterior lighting. They shall be intelligent type with a minimum of 8 channel, 7 day, multi-year holiday scheduling with system clocks that are astronomic and automatic daylight savings adjusting. The clock shall be battery backed-up and the program shall be in non-volatile memory. Individual on/off/auto switches shall be provided for each channel output. Contactor ratings shall be compatible with the loads controlled or contactor(s) shall be used. Examples of acceptable manufacturers, product series, and "html" internet links follow:

7.1.1.1 The Watt Stopper, Inc. – Basic Control System: http://www.wattstopper.com/documents/docs/BasicSystemCut0103.pdf

7.1.1.2 Leviton – LiteKeeper: http://www. levitonhelpdesk.com/catalog

7.1.1.3 Intermatic, Inc. – ET70000C Series: http://www.intermatic.com/?action=subcat&sid=239

7.2 Contactors.

7.2.1 Contactors may be used to control exterior lighting where electrical loads exceed the capacity of other switches, timers, photocells or controllers. They may be momentary or maintained type and compatible with the loads controlled. Examples of acceptable manufacturers, product series, and "html" internet links follow:

7.2.1.1 Square D. – Type L or LX Class 8903:
http://ecatalog.squared.com/catalog/173/html/sections/14/17314069.html

7.2.1.2 Cutler-Hammer – Type C30CN:
http://www.eatonelectrical.com/unsecure/cms1/CA03701001E.PDF

7.3 Photocells.

7.3.1 Photocells may be used as the sole control for security lighting only or may be used in concert with other control equipment for other lighting control uses. Photocells shall fail "on" and shall include a built-in delay to prevent false switching due to transient lighting exposure. The photocells may be conduit, outlet box, or surface mounted but shall face the northern sky in their installed location. The rated temperature range rating for the photocell shall be -40 degrees to +140 degrees. The contact shall be rated for the load connected. Examples of acceptable manufacturers, product series, and "html" internet links follow:

7.3.1.1 Tork – Various types: http://www.tork.com/pdf5.htm

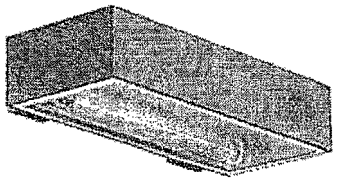
7.3.1.2 Intermatic, Inc. – Various types:
http://www.intermatic.com/?action=cat&cid=52

7.4 Light Fixtures

7.4.1 Security and Storage Zones – Fully shielded cutoff low-pressure sodium, pole or building mounted. Maximum 90' mounting height. Wall packs with appropriate mounting and shielding, downlights. Examples of acceptable manufacturers, product series, and "html" internet links follow:

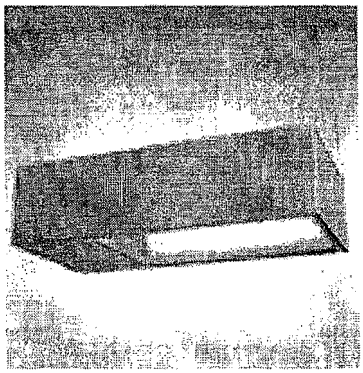
7.4.1.1 Gardco Lighting – Form 10 Low Pressure Sodium:
http://www.gardcolighting.com/brochure/G_LPS_cat.pdf

- LPS Wall Mount with shield as seen below



7.4.1.2 Spaulding – Oakland Series:
http://www. Spauldinglighting.com

7.4.1.3 Lithonia Lighting – KML Series:
http://www.lithonia.com

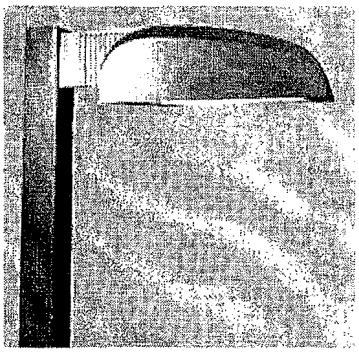


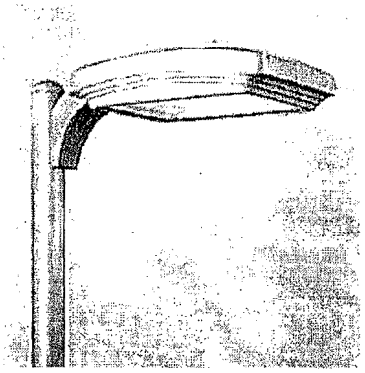
7.4.2 RPBW Zone – Fully shielded cutoff high-pressure sodium, pole or building mounted. Maximum 30' mounting height above adjacent grade. Top down sign lighting. Examples of acceptable manufacturers, product series, and "html" internet links follow:

7.4.2.1 Gardco Lighting – Gullwing:
http://www.gardcolighting.com/brochure/g_gullwing_broc.pdf

7.4.2.2 Lithonia Lighting – Aeris Series:
http://www. lithonia.com

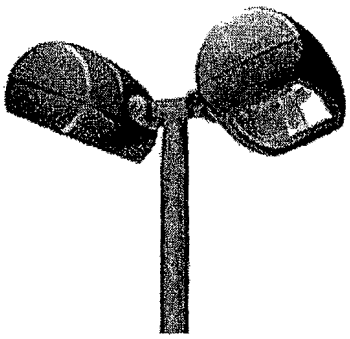
7.4.2.3 Kim Lighting - Architype:
http://www.kimlighting.com



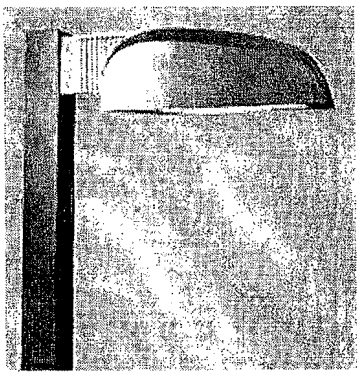


7.4.3 Pier and Retail Zones – Fully shielded cutoff high-pressure sodium, down lights with shields and baffles, true red neon, 590nm LED's. Examples of acceptable manufacturers, product series, and "html" internet links follow:

7.4.3.1 Gardco Lighting – Designer Flood:
http://www.gardcolighting.com/brochure/g_dflood_broc.pdf

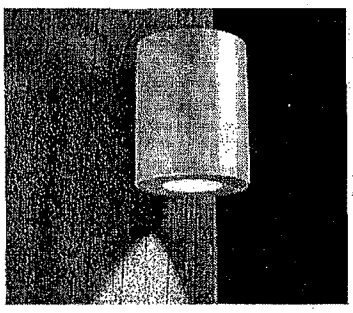


7.4.3.2 Lithonia Lighting - Aeris: http://www.lithonia.com



7.4.3.3 Spaulding Lighting – Icon II:
http://www.spauldinglighting.com

7.4.4 Marina, Park and Beach light fixtures – 590nm LED, marina bollards, directional wall packs with shielding, downlights with shielding and baffles, embedded lights. Examples of acceptable manufacturers, product series, and "html" internet links follow:



7.4.4.1 MP Lighting – LED911AM30FR:
http://www.mplighting.com/en/TempLEDWeb.html

7.4.4.2 Lithonia Lighting -KBR8- DTT-TRT with louvers or KBR8-S-MI with louvers: http://www. Lithonia.com

8.0 NOTIFICATION AND ENFORCEMENT

8.1 The Canaveral Port Authority will issue annual notices to all tenants and operations personnel prior to sea turtle nesting season, which will address light use requirements and responsibilities.

8.2 Port tenants shall notify the Port Authority prior to the installation of any additional or new lighting regardless whether the work is for operations, security, or retrofit or replacement of any existing lighting. The Port must be notified whether the lighting proposed is through use of the GUIDELINES or STANDARDS of the ELMSAP prior to any installation. Use of the GUIDELINES requires submittal of written plans and specifications detailing the work proposed. If the proposed work deviates

from the ELMSAP, the proposed deviation must be submitted to FWS through the Canaveral Port Authority for approval. FWS will review and typically respond within 30 days upon receipt of any deviation request.

8.3 All tenants must submit lighting plans and specifications to the Canaveral Port Authority prior to any new construction. Failure to comply with the Canaveral Port Authority's ELMSAP will result in a denial of the proposed project until it fully complies.

8.4 The Canaveral Port Authority will incorporate the ELMSAP and its requirements into the Canaveral Port Authority's Building Regulations. Although the Port is authorized to enforce specific violations as indicated in the text of the ELMSAP, all violations of the ELMSAP will also be considered building code violations, and treated as such.

9.0 ZONING MAPS

APPENDIX A

EXAMPLE LIGHTING FIXTURES

These fixtures are meant to show typical acceptable/unacceptable lighting fixtures in respect to lighting for structures along Florida's coast to protect Sea Turtle Nesting.

For guidance please contact
Florida Fish and Wildlife Conservation Commission
Division of Wildlife - Bureau of Protected Species Management
620 South Meridian Street DOW-BPS Tallahassee, FL 32399-1600
(850) 922-4330 Fax (850)921-5988

ACCEPTABLE

ONLY WITH PROPER BULB(S)

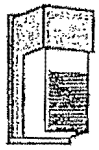
UNACCEPTABLE

WALKWAY/PATH LIGHTING

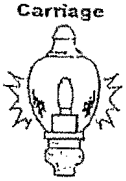
Low Profile Bollards with Louvers

Globe Fixture

Unshielded Carriage

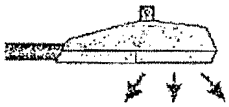


Wallpack

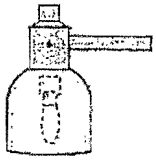


Acorn Fixture

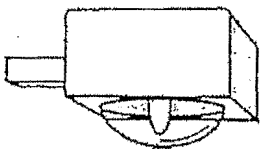
STREET/PARKING LIGHTING



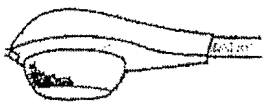
Full Cutoff Streetlight



Fully Shielded NEMA Light

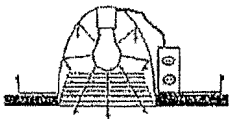


Drop-Lens/Sag-Lens w/ exposed bulb

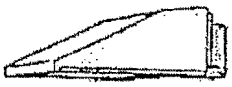


Unshielded Streetlight

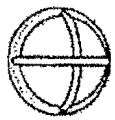
ARCHITECTURAL LIGHTING



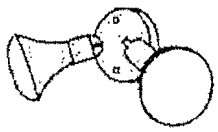
Recessed Can w/ baffles



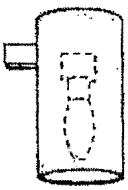
Glare Buster



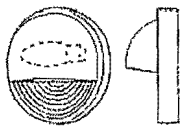
Nautical Wall Sconce



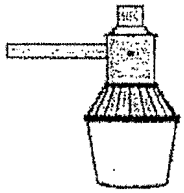
Floodlight



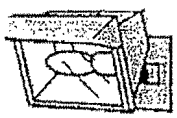
Canister Downlight



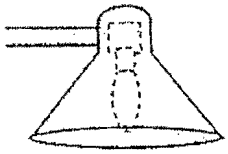
'Eyelid' Step Light



NEMA Security Light

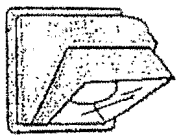


Partially Shielded Floodlight

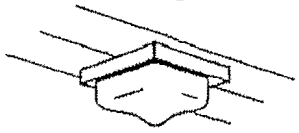


Downlight

Louvered Step Light



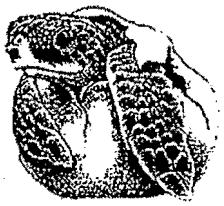
Shielded Security Light



Drop-Lens Canopy Light

Bulbs for all fixtures should be of the Yellow 'Bug' Light variety incandescent or compact fluorescent.

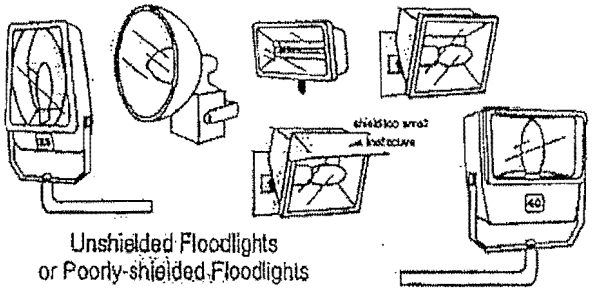
CONTACT
Florida Fish and Wildlife Conservation Commission
Division of Wildlife
Bureau of Protected Species Management
620 South Meridian Street DOW-BPS
Tallahassee, FL 32399-1600
(850) 922-4330 Fax (850)921-6988



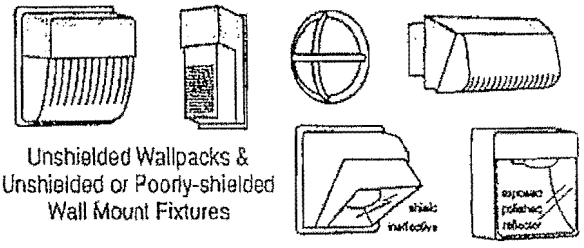
EXAMPLE LIGHTING FIXTURES

Unacceptable/Discouraged

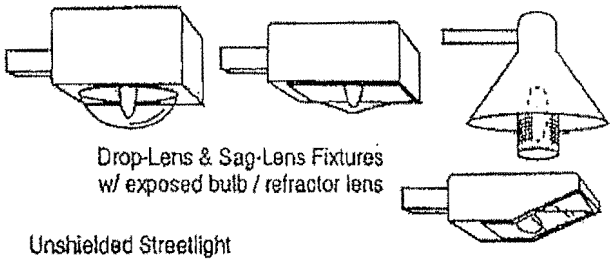
Fixtures that prodce glare and light trespass



Unshielded Floodlights
or Poorly-shielded Floodlights

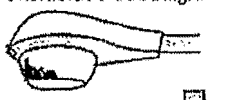


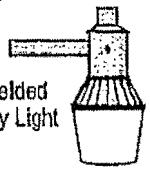
Unshielded Wallpacks &
Unshielded or Poorly-shielded
Wall Mount Fixtures



Drop-Lens & Sag-Lens Fixtures
w/ exposed bulb / refractor lens

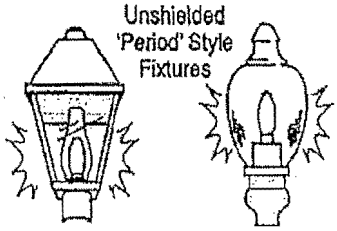
Unshielded Streetlight



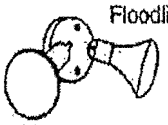


Unshielded
Security Light

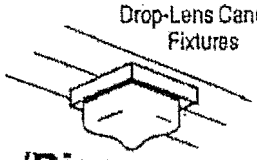
Unshielded
'Period' Style
Fixtures



Unshielded PAR
Floodlights



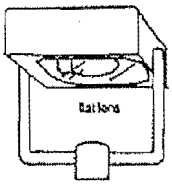
Drop-Lens Canopy
Fixtures



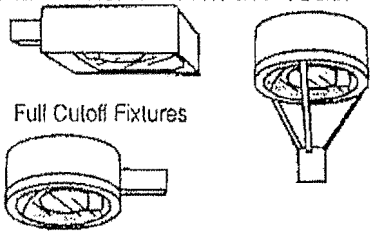
Unacceptable/Discouraged

Acceptable

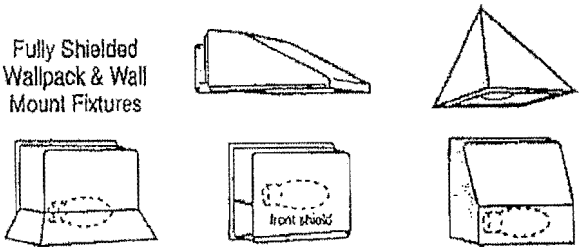
Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night. Use yellow (long-wavelength) bug type bulbs for fixtures visible from the beach.

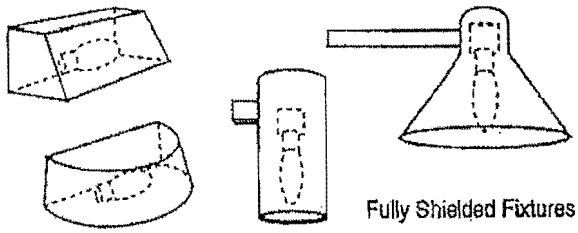


Full Cutoff Fixtures



Fully Shielded
Wallpack & Wall
Mount Fixtures



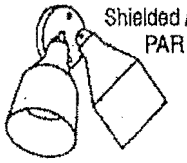


Fully Shielded Fixtures

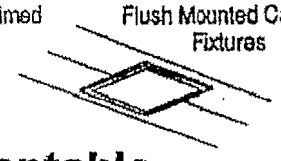
Full Cutoff Streetlight

Fully Shielded
Security Light

Fully Shielded
'Period' Style
Fixtures



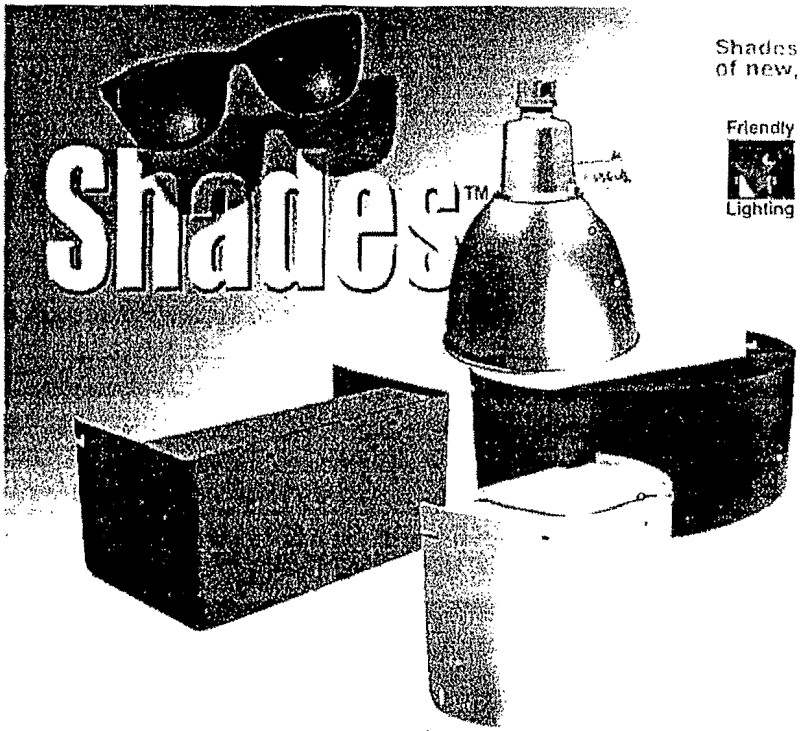
Shielded / Properly-aimed
PAR Floodlights



Flush Mounted Canopy
Fixtures

Acceptable

Shades™



Shades improve the look and light distribution of new, old and mismatched lighting fixtures.

Friendly Lighting

Curved and Rectangular Shades fit over Wallpacks, Floodlights and Vandalproof fixtures

Shade fits existing RAB Yard Blaster and other manufacturer's Barn Lights

Fully covers lamp to cut glare & direct light down

Cover existing fixtures that are worn, unattractive or mismatched. Add vandalproof metal protection.

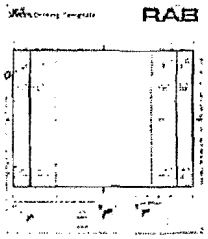
Field adjustable light distribution

Shades add vandalproof metal protection

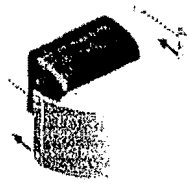
Full Cutoff top vents heat, not light

Stainless steel hardware

Easy mounting template



Easy Installation & Relamping



1. Attach hanger brackets to wall on each side of fixture. Template provided
2. Slide shade onto hanger bracket and tighten bolts.

Stop Glare & Light Pollution

Retrofit old fixtures to comply with new glare and light pollution laws

Yard Blaster
Light Distribution

Down Blaster
Full Cutoff
Light Distribution

35° Cutoff
Below Horizontal

45% more light
On the job!

Fits Over Fixtures For a Great New Look!

Standard top allows some uplight

Cutoff Top for Fully Shielded Full Cutoff lighting
(depending on shade mounting location)

Specifications

Material:
Die formed aluminum, 2mm thick

Finish:
Chip and fade resistant architectural bronze or bright white polyester powder coat finish.

Customized Shades:
Consult factory for custom finish colors, sizes, shapes and cut-outs.

Hardware:
Stainless steel nuts, bolts and lock washers. Aluminum "L" brackets.

Fax Info on Demand 24/7
Call RAB FaxBack at 888 722-1236.
Enter document numbers shown below:

	Catalog Page	Installation Manual
SHC&R 1,2,3	412	421
SHY	412	422

For more info on RAB FaxBack see p.170

Product Info on the Internet:
www.rabweb.com, click "support"

RAB TEL 888 RAB 1000
FAX 888 RAB 1232
www.rabweb.com

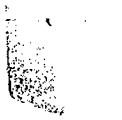
New!
Shades Small

Curved and Rectangular Shades to cut glare and improve the looks of smaller lighting fixtures. Die formed aluminum with mounting brackets and stainless steel hardware.

Finish: ● Architectural Bronze
White

SHC1W

SHR1W



Shades with Full Cutoff Tops

SHR1WCO

Fits Smaller Fixtures

Par Floods Quartz Floods

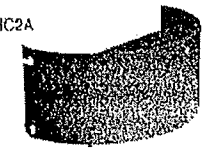
Small Wall Fixtures

New!
Shades Medium

Curved and Rectangular Shades to cut glare and improve the looks of medium size lighting fixtures. Die formed aluminum with mounting brackets and stainless steel hardware.

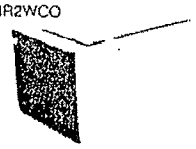
Finish: ● Architectural Bronze
White

SHC2A



SHR2W

SHR2WCO



Fits Medium Fixtures

HID Floods Quartz Floods

Medium Wall Fixtures

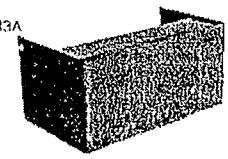
New!
Shades Large

Curved and Rectangular Shades cut glare and improve the looks of larger lighting fixtures. Die formed aluminum with mounting brackets and stainless steel hardware.

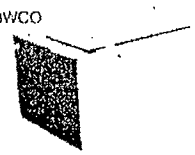
Finish: ● Architectural Bronze
White

SHC3W

SHR3A

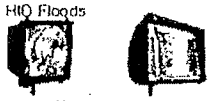


SHR3WCO



Fits Large Fixtures

HID Floods

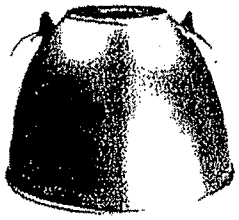


Large Wallpacks

New!
Barn Light Shades

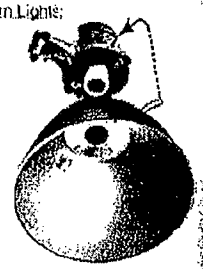
Cut glare and light pollution from 175 watt Mercury Vapor and 70 watt HPS RAB Yard Blaster and other brand Barn Light fixtures. Die formed aluminum shade attaches with clips or screws. Stainless steel hardware.

Finish: Natural



Fits screw-on Barn Lights:
RAB
Lumark
American
Heath-Zenith
Regent/NCI
Electripak
Designer's Edge

Fits clip-on Barn Lights:
Hubbell
GE



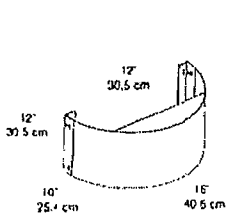
Catalog Numbers

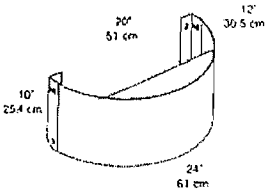
Curved Bronze	Curved White	Rectangular Bronze	Rectangular White	Natural
SHC1A	SHC1W	SHR1A	SHR1W	SHY
Add suffix "CO" for full cutoff top				

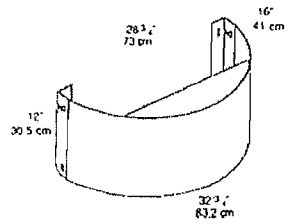
Curved Bronze	Curved White	Rectangular Bronze	Rectangular White
SHC2A	SHC2W	SHR2A	SHR2W
Add suffix "CO" for full cutoff top			

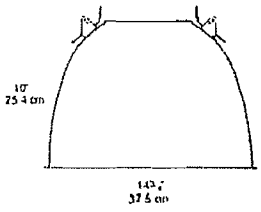
Curved Bronze	Curved White	Rectangular Bronze	Rectangular White
SHC3A	SHC3W	SHR3A	SHR3W
Add suffix "CO" for full cutoff top			

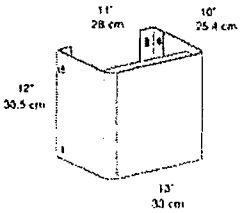
Dimensions

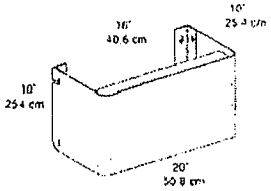


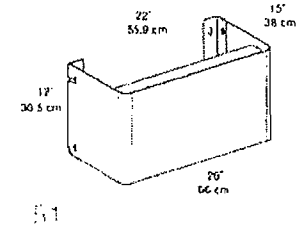








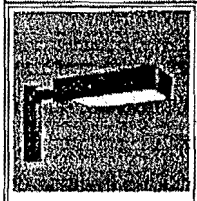


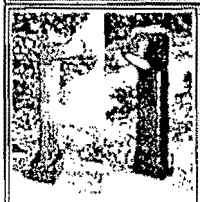
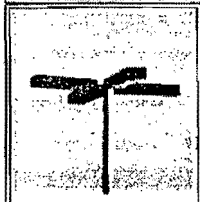
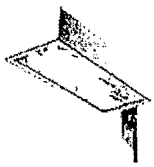
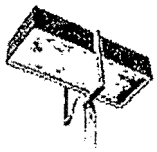


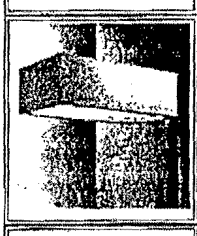
TEL 888 RAB 1000
FAX 888 RAB 1232
www.rabweb.com

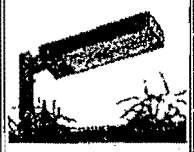
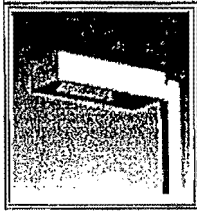
RAB

Fixtures below this line have not been evaluated by IDA's Fixture Seal of Approval Program. However, they are Fully Shielded or Shielded fixtures.

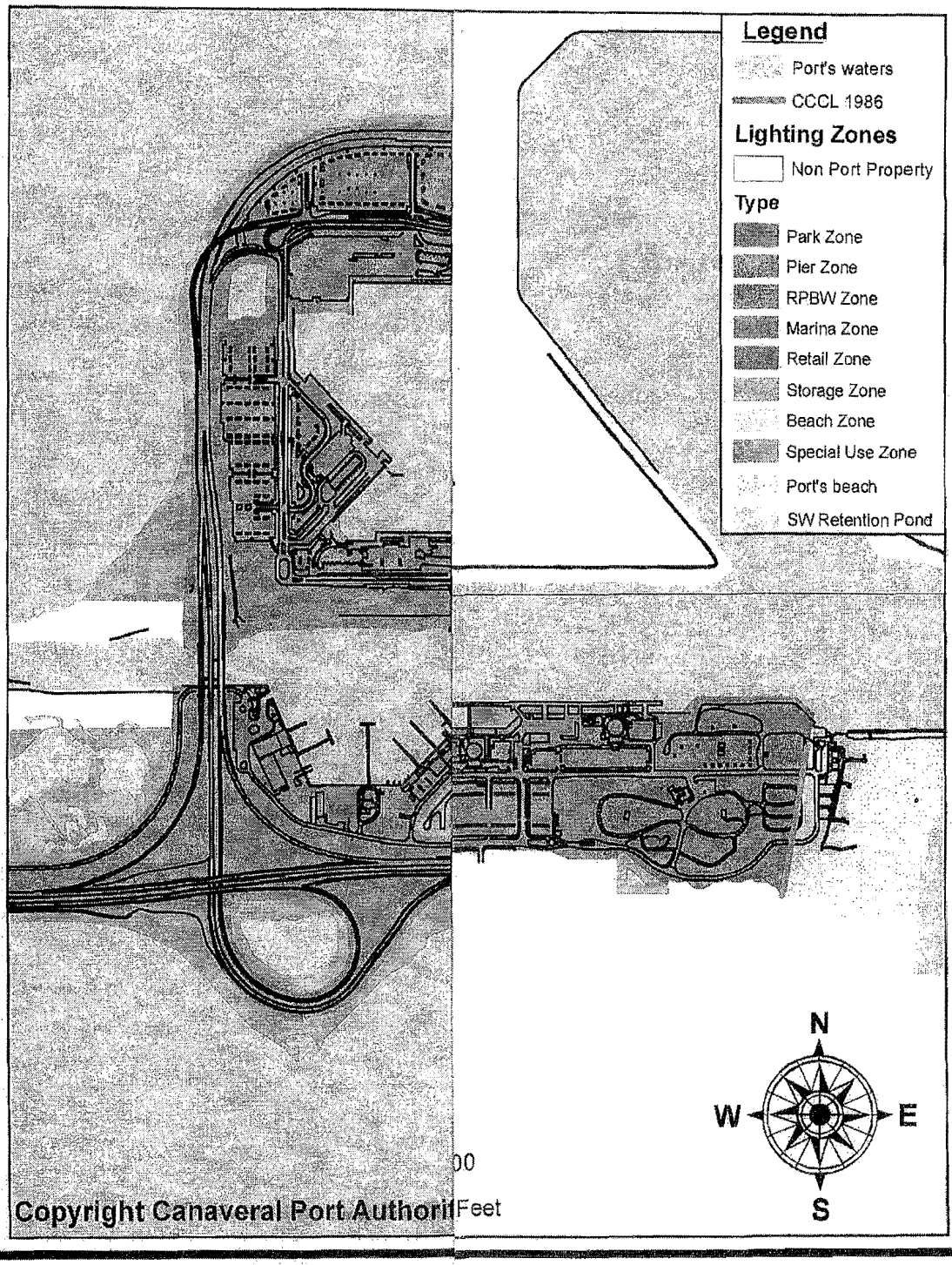
	Manufacturer:	ABS Lighting
	Model:	Series 4000
	Lamp/Wattage:	LPS /1 x 18-180w and 2 x 90w
	Notes:	Fully Shielded (when mounted with lamp facing down)
	Additional Links:	Available wall- and pole-mounted; knuckle slipfit mounting (option KSF) is not fully shielded.
	Manufacturer:	American Electric Lighting
	Model:	LML Series
	Lamp/Wattage:	LPS /55, 90, 135, 180
	Notes:	Fully Shielded
	Additional Links:	Specification Sheet (.pdf)
Sorry No Picture Available	Manufacturer:	Architectural Area Lighting
	Model:	ALS176D - Direct Downlight Bracket
	Lamp/Wattage:	LPS/ 1 x 35-180
	Notes:	Fully Shielded, Available wall mount only
	Additional Links:	
Sorry No Picture Available	Manufacturer:	Architectural Area Lighting
	Model:	ALW186CLX - Wedge Forward Throw
	Lamp/Wattage:	LPS/ 1 x 35-180
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	
	Manufacturer:	Architectural Landscape Lighting (site uses frames)
	Model:	Model: AL-08
	Lamp/Wattage:	LPS/ 1 x 35-180
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	Manufacturer's Brochure (PDF, 30K)
	Manufacturer:	Architectural Landscape Lighting (site uses frames)
	Model:	Model: AL-09
	Lamp/Wattage:	LPS/ 1 x 35-180
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	Manufacturer's Brochure (PDF, 30K)
	Manufacturer:	Architectural Landscape Lighting (site uses frames)
	Model:	Model: AL-10
	Lamp/Wattage:	LPS/ 1 x 35-180, 2 x 35-90
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	Manufacturer's Brochure (PDF, 30K)
	Manufacturer:	Carandini
	Model:	ANDINA Series AND-18/A or AND-35/A See AND-35/M below.

	Lamp/Wattage:	LPS /18, 35
	Notes:	Fully Shielded, (Upward Light Output Ratio) ULOR 0.0%
	Additional Links:	Light control, Zones, Brochure (.pdf), Catalogue (.pdf),
	Manufacturer:	Bieber Lighting Corporation, (site uses frames)
	Model:	Aurora Bollard
	Lamp/Wattage:	LPS / 35 HPS,/100 CFL/42 MH/100
	Notes:	Fully Shielded,
	Additional Links:	
	Manufacturer:	Bieber Lighting Corporation, (site uses frames)
	Model:	La Jolla Series
	Lamp/Wattage:	LPS / 55, 90, 135, 180
	Notes:	Fully Shielded,
	Additional Links:	
	Manufacturer:	Bieber Lighting Corporation, (site uses frames)
	Model:	WMR
	Lamp/Wattage:	LPS/55W HPS/up to 150 MH/up to 175
	Notes:	Fully Shielded
	Additional Links:	
	Manufacturer:	Gardco Lighting
	Model:	LPS Direct Mount
	Lamp/Wattage:	LPS / 55, 90, 135, 180
	Notes:	Fully Shielded
	Additional Links:	Gardco Low Pressure Sodium Luminaires
	Manufacturer:	Gardco Lighting
	Model:	LPS Arm Mount
	Lamp/Wattage:	LPS / 55, 90, 135, 180
	Notes:	Fully Shielded
	Additional Links:	Gardco Low Pressure Sodium Luminaires
	Manufacturer:	Gardco Lighting
	Model:	LPS Post Top
	Lamp/Wattage:	LPS / 55, 90, 135, 180
	Notes:	Fully Shielded
	Additional Links:	Gardco Low Pressure Sodium Luminaires
	Manufacturer:	Gardco Lighting
	Model:	LPS Wall Mount
	Lamp/Wattage:	LPS / 55, 90, 135, 180
	Notes:	Fully Shielded
	Additional Links:	Gardco Low Pressure Sodium Luminaires

	Manufacturer:	Lithonia Lighting ☆
	Model:	KT Low-Pressure Sodium Cutoff
	Lamp/Wattage:	LPS/90
	Notes:	Fully Shielded (flat glass only)
	Additional Links:	Specsheet (pdf) , Environmentally Friendly Outdoor Lighting
	Manufacturer:	LSI Lighting System ☆
	Model:	Cypress
	Lamp/Wattage:	LPS 90, 135, 180
	Notes:	Fully Shielded
	Additional Links:	
Sorry No Picture Available	Manufacturer:	Myers Nu-Art Lighting Products
	Model:	ARLP-Series
	Lamp/Wattage:	LPS/ 1 x 35-180
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	
	Manufacturer:	Quality Lighting
	Model:	SE/SS
	Lamp/Wattage:	LPS / 1 x 18-180, 2 x 90
	Notes:	
	Additional Links:	Manufacturer's Brochure (PDF 107K)
	Manufacturer:	Spaulding Lighting Inc.
	Model:	Palomar (.pdf)
	Lamp/Wattage:	LPS / 35-180
	Notes:	Fully Shielded, CFL option only is fully shielded
	Additional Links:	
	Manufacturer:	Spaulding Lighting Inc.
	Model:	Cambridge I/II (.pdf, 121k)
	Lamp/Wattage:	LPS/ 2 x 35-55 (I), 2 x 90 (II)
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	
	Manufacturer:	Spaulding Lighting Inc.
	Model:	Oakland I/II (.pdf, 379k)
	Lamp/Wattage:	LPS/ 1 x 35-180 (I), 2 x 35-180 (II)
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	
	Manufacturer:	Spaulding Lighting Inc.
	Model:	Oakland III (.pdf 213k)
	Lamp/Wattage:	LPS/ 1 x 90-180
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	

	Manufacturer:	Spaulding Lighting Inc.
	Model:	Dallas Round (.pdf, 259K)
	Lamp/Wattage:	LPS/ 2 x 18-90
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	
	Manufacturer:	Spaulding Lighting Inc.
	Model:	Dallas Square (.pdf, 259K)
	Lamp/Wattage:	LPS/ 2 x 18-55
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	
Sorry No Picture Available	Manufacturer:	Sterner Lighting Systems Inc.
	Model:	Softform PACIFIC
	Lamp/Wattage:	LPS/ 1 x 90-135
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	
	Manufacturer:	Visionaire Lighting ★
	Model:	Roadway RDW-1, RDW-2, RDW-3,
	Lamp/Wattage:	LPS/ 1 x 35, 90, 180
	Notes:	Fully Shielded, Available pole- and wall-mount
	Additional Links:	Other LPS Products
	Manufacturer:	Visionaire Lighting ★
	Model:	Sunset SUN-1, SUN-2 SUN-3
	Lamp/Wattage:	LPS/ 1 x 55, 1 x 90, 2 x 90,
	Notes:	Fully Shielded
	Additional Links:	
	Manufacturer:	Visionaire Lighting ★
	Model:	Sunset SUN-4, SUN-5
	Lamp/Wattage:	LPS/ 1 x 135, 1 x 180
	Notes:	Fully Shielded
	Additional Links:	
	Manufacturer:	U.S. Architectural Lighting
	Model:	RLPS
	Lamp/Wattage:	LPS / 90, 135, 180
	Notes:	Fully Shielded
	Additional Links:	

Ponative Plan



\\topaz\GIS\Proj\PortCanaveral\ELMP-Map (D)\LightingZones_11inx17in (2).mxd

Attachment 9

United States Department of the Interior

U. S. FISH AND WILDLIFE SERVICE

7915 BAYMEADOWS WAY, SUITE 200
JACKSONVILLE, FLORIDA 32256-7517

IN REPLY REFER TO:

FWS Log Nos. 41910-2012-I-0001

October 6, 2011

Colonel Alfred A. Pantano, Jr., District Engineer
U.S. Army Corps of Engineers
Jacksonville District
400 High Point Drive, Suite 600
Cocoa, Florida 32926
(Attn: Tamy Dabu)

Dear Colonel Pantano:

The U.S. Fish and Wildlife Service (USFWS) has reviewed your correspondence and accompanying information, dated May 19, 2011, for the following proposed project application.

APPLICANT	CORPS APPLICATION NUMBER	FWS LOG NUMBER
United States Navy	SAJ-2007-5637 (SP-TSB)	41910-2012-I-0001

The applicant proposes to maintenance dredge up to 500,000 cubic yards of material annually from the Trident Submarine Basin, Trident Access Channel Entrance, Channel Widener, and Cut 1A of the Entrance Channel, Port Canaveral. Potential dredging methods include clamshell and hydraulic cutterhead suction. Work would occur between May and October. Likely in-water spoil disposal sites include the Nearshore Disposal Area just offshore of Cocoa Beach, and the designated Canaveral Ocean Dredged Material Disposal Site located approximately 7.25 miles southeast of the project area. Potential upland disposal sites include two areas on either side of the Trident Turning Basin (CDA-C and CDA-A) and one adjacent to the Barge Canal on Merritt Island (CDA-B). The project is located within the Trident Submarine Turning Basin and its contiguous estuarine waters, adjacent uplands, and marine waters of the Atlantic Ocean at

S11, T24S, R37E, Port Cabaveral, Cape Canaveral, Florida. We submit the following comments in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), and the Marine Mammal Protection Act of 1972, (MMPA) as amended (16 U.S.C. 1461 *et seq.*).

The Corps determined that the proposed project occurs within the range of the federally endangered West Indian (Florida) manatee (*Trichechus manatus latirostris*) and its designated critical habitat. In order to reduce the risk of take of a manatee to insignificant or discountable levels, the Corps will require the applicant to adhere to the Canaveral Port Authority's 1996 Manatee Protection Program as well as the latest Standard Manatee conditions for In-Water Work. As a result, the Corps determined that the proposed project may affect, but is not likely to adversely affect, the manatee or its designated critical wintering habitat and requested our concurrence.

Telemetry, mortality, aerial survey, and Canaveral Lock observation and recording data indicate that manatees occur regularly within Port Canaveral throughout the year. Their presence is greatest during the spring, summer, and fall. The data also reveal that their numbers decrease during the winter months, most significantly in years when ambient water temperatures remain well below 20°C for extended periods of time.

Anecdotal observational information indicates that manatees orient to the sound of splashing water as a possible indicator of a fresh water source. This behavior has also been noted in response to water running off and out of a dredge bucket during clamshell and other mechanical dredging. Such responses could result in an adverse impact to any animals remaining in the immediate vicinity of the entry site of the dredge bucket after it releases its material into a holding area and resumes dredging. In 2011 a bucket at the end of a backhoe dredging an area in the Miami River was implicated in the take of an adult manatee (Florida Wildlife Research Institute, 2011, unpublished data).

Based on the preceding, the possibility of a clamshell dredge being used in the proposed project, and the dredges operating 24 hours a day, it is our view that further measures are needed to protect the manatee. A set of those measures were provided to the Corps and applicant for review as additional conditions to any permit issued for the proposed work (enclosed). Both the Corps and the applicant agreed to those conditions, which the Corps will include in any permit issued for the proposed work.

As a result of agreement on inclusion of the additional manatee protections, we concur with the Corps that any project so conditioned is not likely to adversely affect the manatee. That determination also is consistent with the more restrictive take provision for the manatee under the MMPA.

Although this does not represent a biological opinion as described in section 7 of the Act, it does fulfill the requirements of the Act and no further action is required. If modifications are made to the project; if the applicant fails to comply with the permit conditions; if additional information involving potential effects to listed species becomes available; or if unauthorized take of manatee occurs from construction or operation of the

project over time, consultation will be reinitiated.

If you have any questions regarding this response, please contact Mr. John Milio of my staff at the address on the letterhead, by e-mail at john_milio@fws.gov, or by calling 904-731-3098.

Sincerely,

for David L. Hankla
Field Supervisor

Encl as:

cc:
Carol Knox
Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Imperiled Species Management Section
620 South Meridian Street
Tallahassee, Florida 32399

Port Canaveral Special Conditions for Maintenance Dredging

1) All in-water operations, including vessels, will be shutdown if a manatee(s) or marine turtle(s) comes within 50 feet of the operation. Observers will notify the operators if manatees or marine turtles enter within the designated safety distances. Activities will not resume until the manatee(s) or marine turtle(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) or marine turtle(s) has not reappeared within 50 feet of the operation. Animals will not be herded away or harassed into leaving. All contracted workers and observers will be provided a copy of these special conditions related to maintenance dredging work.

2) To reduce the risk of crushing a manatee, fenders or buoys will be installed and maintained to provide sufficient standoff space of at least four feet (under maximum designed compression) between vessels and bulkheads, and also between two vessels that are moored together (such as, but not limited to, the mooring of the scow and dredge barges).

3) Clamshell operations:
   a. During clamshell operations, the dredge operator will gravity-release the clamshell bucket beginning at the water's surface, and only after confirmation that there are no manatees or marine turtles within the 50-foot safety distance.
   b. During nighttime clamshell dredging, the use of night vision technology (active and passive infrared) may be used to supplement direct observations with artificial light. The observers will, prior to commencement of work, be given operational information and time using the equipment to gain experience with the chosen type(s) of technology.

4) Observers:
   a. When in-water work is being performed or vessels are moving, at least two persons will be designated as protected marine animal observers. Designated observers will have appropriate qualifications and observation experience, demonstrated by a minimum of 100 hours of documented experience as an observer that has monitored marine animals during in-water dredging projects. The protected marine animal observers will be on site during all in-water construction activities and will advise personnel to cease operation upon sighting a manatee or marine turtle within 50 feet of any in-water construction.
   b. If the dedicated observers determine that detection of manatees during certain weather conditions (i.e. fog, rain, wind, etc.) is not possible, then dredging operations will cease until weather conditions improve and detection is again possible. The observers will record all bad weather conditions and any issues of non-compliance on their logs.

5) Reporting:
   a. Any collision with or injury to a manatee will be reported immediately to Florida Fish and Wildlife Conservation Commission's (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service (USFWS) in Jacksonville (1-904-731-3336) and to FWC at ImperiledSpecies@myFWC.com.
   b. No later than 15 calendar days prior to the commencement of each dredging event, notification of the actual start date and expected completion date, as well as the names, contact information, and experience of the selected observers will be sent to the FWC at ImperiledSpecies@myfwc.com and the USFWS at northflorida.fws.gov.
   c. All observers will maintain a daily log that details sightings, collisions, or injuries to protected marine animals, as well as project specific information such as work itinerary, weather, work shutdowns, observer shift changes, etc. In regard to manatee behavior, the observers will also log time of observation, estimated distance of manatees from the dredge, type of behavior (such as passing through, pausing in the vicinity of the project, interacting with the dredge, scows, tugs, etc., attracted to running or dripping water), detection method (i.e. unaided visual, passive infrared, active infrared, etc) and whether the dredge is operating at the time of observation. A final report for each dredging event will be written, summarizing all activities noted in the daily observer logs, an assessment and documentation (via photo or digital imagery) of effectiveness of any new technology implemented for observation (such as infrared) and new protocols, the location and name of project, and the dates and times of work. The lead observer will ensure that the logs and report will be submitted within 30 days following project completion to the FWC at: ImperiledSpecies@myfwc.com.

6) Lighting:
   a. From March 1 through November 30, all project lighting east of the port locks will be limited to the immediate area of active construction only and will be the minimal lighting necessary to comply with U.S. Coast Guard, USACE and/or OSHA requirements.
   b. In order to better observe manatees and marine turtles during nighttime clamshell operations, the Contractor will use shielded lights to illuminate the water surface for 75 feet around the hoist line (cable attached to bucket). These lights will be shielded and/or positioned such that they are not visible from any sea turtle nesting beaches immediately north and south of Port Canaveral. The light intensity will be a minimum of 54 lux (5 foot candles) at the water surface throughout this illuminated area including the edge. The Contractor will have a handheld spotlight with a minimum of 10,000,000 candle power available to assist when appropriate in the detection of manatees and marine turtles immediately outside of this illuminated area. The Contractor will measure the size of the illuminated area, intensity of the specified illumination, and assess its direct visibility from adjacent beaches, prior to commencement of the project. No night-time operations will commence or continue if one or more of these lighting parameters do not comply with the required specifications.

7) The preceding conditions will be revised if adverse impacts to manatees occur during their proper implementation, or to reflect new information on the species or protective measures relevant to the continued adequacy of those measures during maintenance dredging operations.