DEPARTMENT OF THE ARMY PERMIT

Permittee: Collier County
c/o Pelican Bay Services Division
801 Laurel Oak Drive Suite 302
Naples, Florida 34108

Permit No: SAJ-1996-02789 (SP-BEM)

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 U.S. Army Corps of Engineers (Corps) 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:

Maintenance Dredging:

- Remove sand from Clam Pass and associated flood shoal areas in three sections (A, B, and C, see attached drawings) to restore tidal flow to the estuary. It is anticipated that approximately 11,800 cubic yards of sand would be removed from Clam Pass and flood shoal areas according to the most recent survey. This amount could vary in subsequent dredging events up to the maximum 22,800 cubic yards which can be contained within the proposed spoil templates.
- Channel bottom width would be a maximum of 50 feet through the Pass (Dredging Section A) with a design depth of (-5.5) feet NAVD, which includes a 0.5 foot over dredge. Sections B and C would have a design depth of (-4.5) NAVD, which includes a 0.5 foot over dredge. The widths of Sections B and C would vary (see attached drawings).
- A minimum of a 5 to 15 foot buffer would be maintained between the dredging and any mangrove prop roots adjacent to the dredge template. Additional buffers would be provided to seagrasses growing adjacent to the proposed template.
- Dredging would be performed by backhoe, hydraulic dredge, or a combination of both.
- The dredging work is expected to take between 45 and 75 days to complete.

Beach Placement:

- Placement of beach compatible sand on the adjacent beaches (up to 1500 feet north of Clam Pass and 2800 feet south of Clam Pass) as required by Chapter 161, Florida Statues.
- Beach compatible spoil would be placed north and south of Clam Pass according to the project drawings.
- Material excavated with a backhoe would be loaded into haul trucks and dumped onto the proper beach locations.
- Material dredged hydraulically would be pumped to the appropriate beach location with a lateral berm extending ahead of the discharge parallel to the shoreline to reduce turbidity and mixing in the nearshore area.
- Once placed, material will be spread and contoured with loaders, bulldozers, or other suitable beach grading equipment.
- Any non-compatible material would be stockpiled within the staging area and hauled away to an appropriate upland disposal site landward of the Coastal Construction Control Line (CCCL).
- Equipment access to the beach will occur from beach access locations previously used in this area approximately 2.4 miles north and 2 miles south of the Pass or may be delivered directly to the site by barge at the discretion of the contractor.
- Work areas and travel corridors would be roped off to warn visitors to the beach of the construction operations and to keep them out of the work areas.
- Undertaking the work would occur once it has been verified that the beach and access route are clear of any sea turtle nesting activities (from mid-October to November 1). Should additional blockage leading to closure of the Pass occur prior to that time, then additional coordination would be undertaken before the sea turtle nesting season completion to determine if the work can be undertaken without adversely impacting any remaining sea turtle nests.

The work described above is to be completed in accordance with the 15 pages of drawings (Attachment A) and 7 attachments affixed at the end of this permit instrument.

Project Location: The project would affect waters of the United States associated with Clam Pass and the Gulf of Mexico. The project site is located in Clam Pass and the Gulf of Mexico, Sections 8 and 9, Township 49 South, Range 25 East, City of Naples, Collier County, Florida.

Directions to site: From U.S. 41/Tamiami Trail, head west on Pine Ridge Road, which dead-ends into the Clam Pass Parking Lot. Access to the beach is via tram or walking. Clam Pass is located approximately .20 miles north of the beach path.

Approximate Central Coordinates: Latitude: 26.2197 North
Longitude: 81.8169 West

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on **March 9, 2026** If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above 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 (Attachment B).

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:

1. **Reporting Address:** The Permittee shall submit all reports, notifications, documentation and correspondence required by the general and special conditions of this permit to the following address:

a. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Special Projects and Enforcement Branch, 1520 Royal Palm Square Blvd., Suite 310, Fort Myers, FL 33919.

b. For electronic mail CESAJ-ComplyDocs@usace.army.mil (not to exceed 10 MB). The Permittee shall reference this permit number, SAJ-1996-02789(SP-BEM), on all submittals.

2. **As-Built Certification:** Within 60 days of completion of the work authorized by this permit, the Permittee shall submit as-built drawings of the authorized work and a completed "As-Built Certification By Professional Engineer" form (Attachment C) to the Corps. The as-built 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 transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets. The plan view drawing should show all "earth disturbance," including wetland impacts and water management structures.

    b. A list of 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 attached "As-Built Certification By Professional Engineer" form the deviations between the work authorized by this permit and the work as constructed. 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 By Professional Engineer" form does not constitute approval of any deviations by the Corps.

c. Include the Department of the Army permit number on all sheets submitted.

3. **Clean Fill:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

4. **Regional Biological Opinion**: The 1997 Gulf Regional Biological Opinion (GRBO) for swimming sea turtles, whales, and sturgeon can be found at the following web address: http://el.erdc.usace.army.mil/seaturtles/refs-bo.cfm. The GRBO contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is specified in the GRBO. Your authorization is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take of the GRBO, 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 GRBO, 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 GRBO and with the Endangered Species Act (ESA). For further clarification on this point, you should contact NMFS. Should NMFS determine the conditions of the GRBO have been violated, normally they will enforce the violation of the ESA, or refer the matter to the Department of Justice.

5. **Piping Plover Programmatic Biological Opinion (P^3BO):** The permittee provided information to the FWS during consultation for the piping plover. The Permittee has reviewed the Reasonable and Prudent Measures, Terms and Conditions of the P^3BO, and agreed to follow the measures included to minimize impacts to piping plovers. The FWS provided concurrence that the maintenance dredging activities and sand placement activities are consistent with the P^3BO provided the Permittee complies with the mandatory Terms and Conditions to implement the RPMs associated with incidental take for the piping plover.

6. **Biological Opinion:** This permit does not authorize the Permittee to take an endangered species, in particular the red knot. 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 you must comply). The enclosed (Attachment D) FWS Biological Opinion (BO) 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 permit is conditional upon compliance with all of the mandatory terms and conditions associated with incidental take of the enclosed 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 noncompliance with this permit. The FWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

7. **Manatee Conditions: Manatee Conditions:** The Permittee shall comply with the “Standard Manatee Conditions for In-Water Work – 2011”. (Attachment E)

8. **Sea Turtles and Smalltooth Sawfish Conditions:** The Permittee shall comply with National Marine Fisheries Service's (NMFS) “Sea Turtle and Smalltooth Sawfish Construction Conditions” (2006). (Attachment F)

9. **Seagrass Avoidance:** There shall be no impacts to the existing seagrass beds located adjacent to the dredge area as a result of this project. No seagrass impacts shall occur as a result of construction operations, such as, but not limited to, propeller scouring; and vessel or barge anchoring, grounding or spudding. The Permittee shall be held liable for any unauthorized impacts. For any impacts caused by the construction operation, the Corps may require seagrass restoration and mitigation.

10. **Pre-construction survey:** The permittee shall conduct a pre-construction seagrass survey/benthic assessment of the proposed dredge area (within the June 1 through September 30 time frame, if feasible). The purpose of the survey is to determine whether seagrass impacts can be avoided or minimized. Upon receipt of the survey, the Corps will determine whether the impacts can be avoided or minimized. If the impacts cannot be avoided, the Corps may require seagrass compensatory mitigation, monitoring, and contingency plans for any seagrass impacts.

11. **Pre-Construction Meeting:** The Permittee will schedule a pre-construction meeting with the Enforcement Section representative prior to the start of work to review the limitations and special conditions of the permit. During this meeting participants will be required to sign a form acknowledging knowledge and

comprehension of what has been authorized and associated requirements. The Permittee should not start work prior to the pre-construction meeting without written approval by the Corps

12. **Agency Changes/Approvals:** Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised 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 Fort Myers Permits Section. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.

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)

( ) 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).

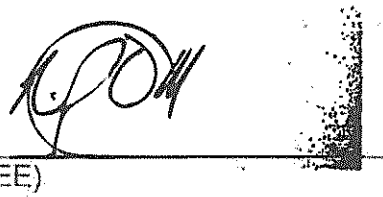
c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

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) 3/8/2016 (DATE)

Neil Dorrill
(PERMITTEE NAME-PRINTED)

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

for: (DISTRICT ENGINEER) 9 March 2016 (DATE)
Jason A. Kirk, P.E.,
Colonel, U.S. Army
District Commander

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)

Attachments to Department of the Army Permit Number SAJ-1996-02789

A. PERMIT DRAWINGS: 15 pages

B. WATER QUALITY CERTIFICATION: Specific Conditions of the water quality permit/certification (0296087-001-JC) in accordance with General Condition number 5 on page 2 of this DA permit. 19 pages.

C. AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER: 2 sheets: 2 pages.

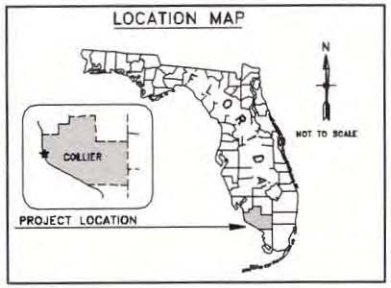
D. BIOLOGICAL OPINION: 19 pages

E. STANDARD MANATEE CONDITIONS FOR IN-WATER WORK – 2011: 2 sheets.

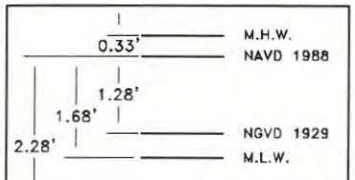
F. SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS: 1 page.

ATTACHMENT A

PERMIT PLANS
CLAM PASS MAINTENANCE DREDGING
COLLIER COUNTY, FLORIDA



SHEET INDEX



RELATIONSHIP BETWEEN NAVD 1988, NGVD 1929, MEAN HIGH WATER, MEAN LOW WATER, AND THE MEAN LOWER LOW WATER TIDAL DATUM (1983–2001 EPOCH). LABINS TIDE STATION "NAPLES–GULF OF MEXICO" NUMBER 872–5110

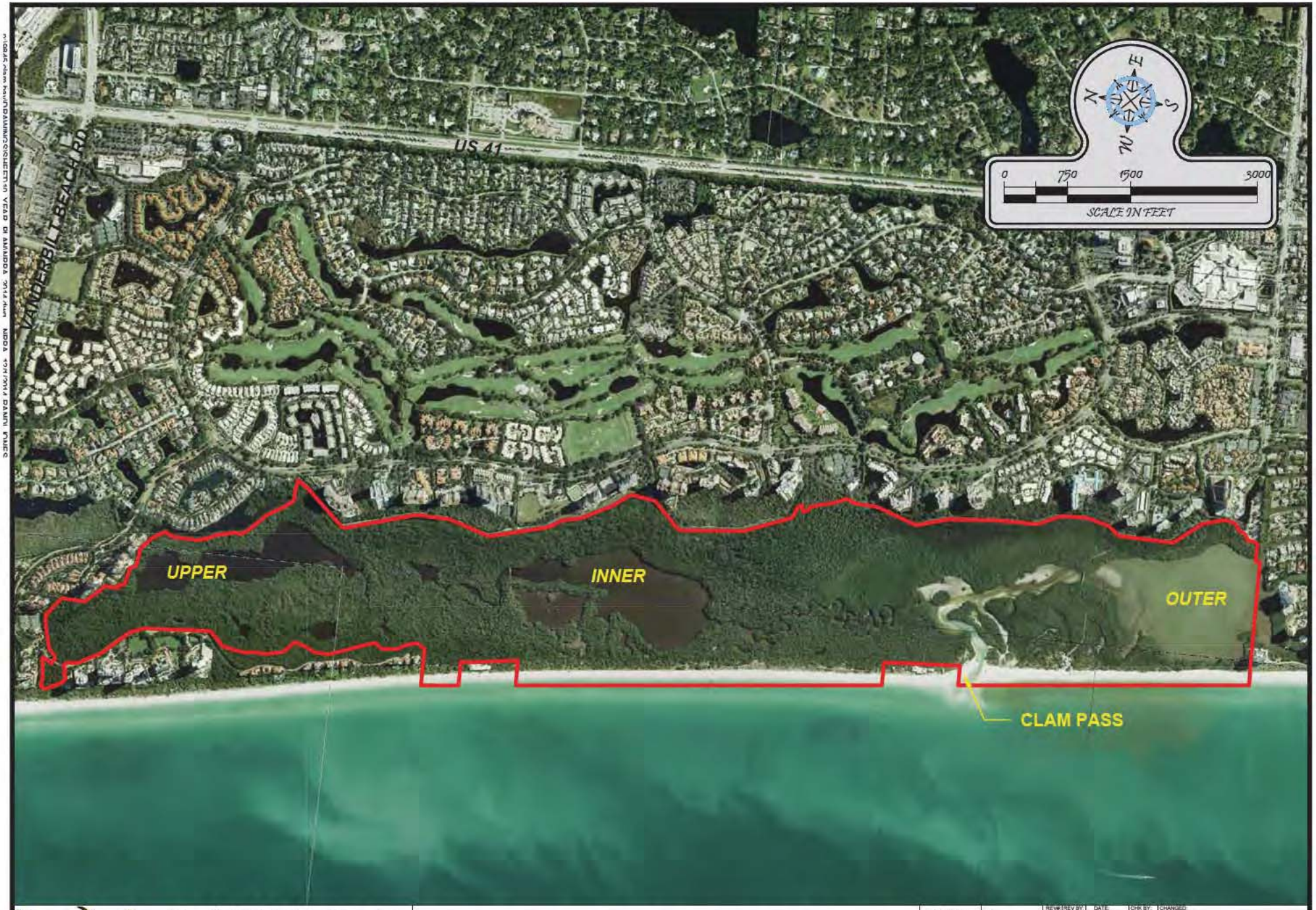
NOTES:

1. AERIAL PHOTOGRAPHS WERE TAKEN IN DECEMBER 2013 AND PROVIDED COURTESY OF COLLIER COUNTY PROPERTY APPRAISER'S OFFICE.
2. COORDINATES SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN DATUM OF 1983, EAST ZONE (NAD83).
3. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
4. THESE PERMIT DRAWINGS SHALL NOT BE CONSIDERED VALID FOR CONSTRUCTION PURPOSES UNLESS SIGNED AND SEALED.

HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

CLAM PASS MAINTENANCE DREDGING PROJECT COVER SHEET & LOCATION MAP		
FOR: PELICAN BAY SERVICES DISTRICT		
DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 1

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com



Turrell, Hall & Associates, Inc.
Marine & Environmental Consulting
3584 Exchange Ave. Suite B. Naples, FL 34104-3732
Email: tuna@turrell-associates.com Phone: (239) 643-0166 Fax: (239) 643-6632

CLAM BAY

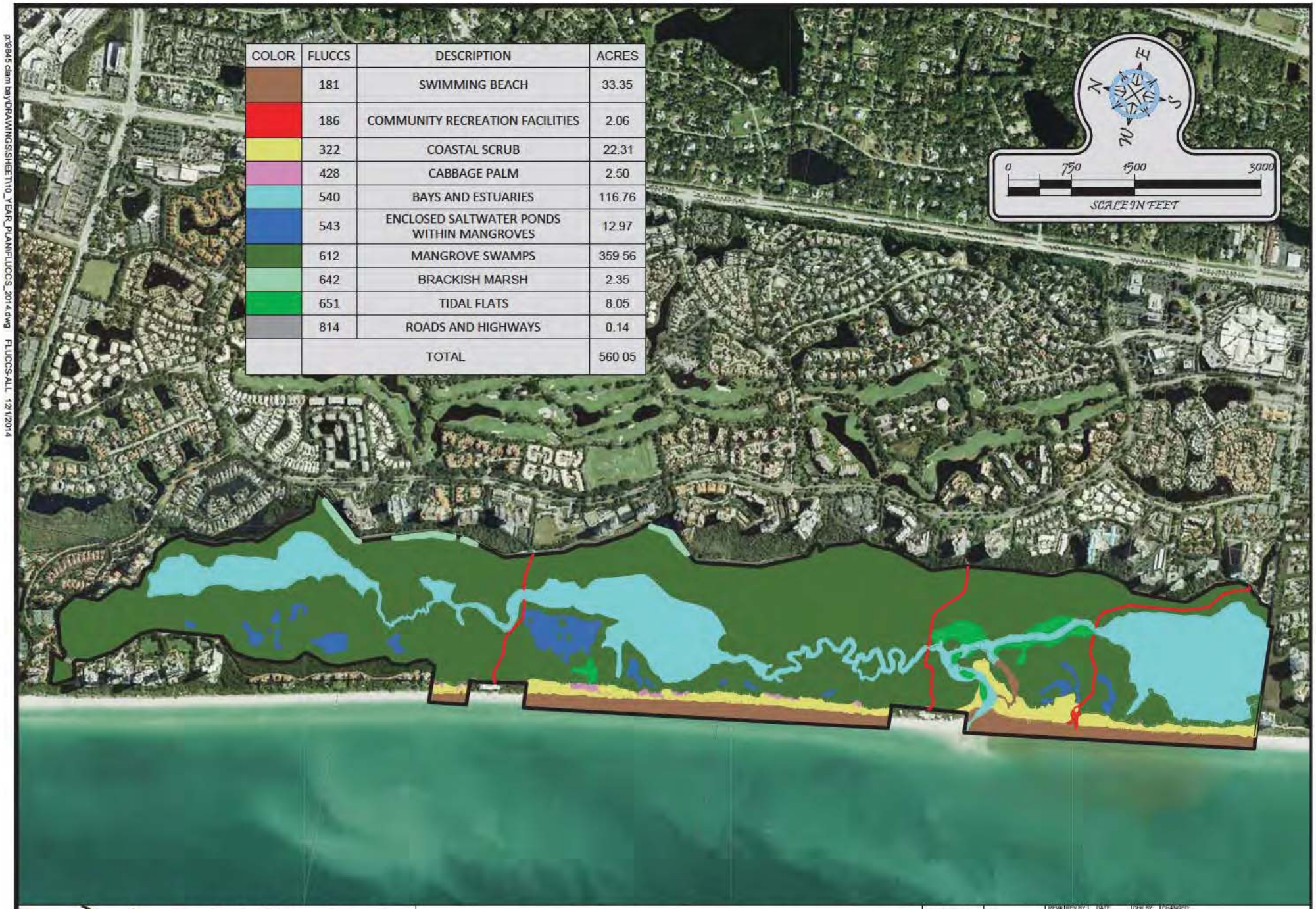
NRPA BOUNDARY

THESE DRAWINGS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT INTENDED FOR CONSTRUCTION USE.

		REV#	REV BY:	DATE:	CHK BY:	CHANGED:
DESIGNED	TH	5.	###	###	###	###
DRAWN BY	RMJ	4.	###	###	###	###
CREATED	12 01 14	3.	###	###	###	###
JOB NO.	9845	2.	###	###	###	###
SHEET NO.	02 OF 10	1.	###	###	###	###

SECTION- 08/09 TOWNSHIP- 49 S RANGE- 25 E

p:\9845 clam bay\DRAWINGS\SHEET\10_YEAR_PLAN\FLUCCS_2014.dwg FLUCCS-ALL 12/1/2014



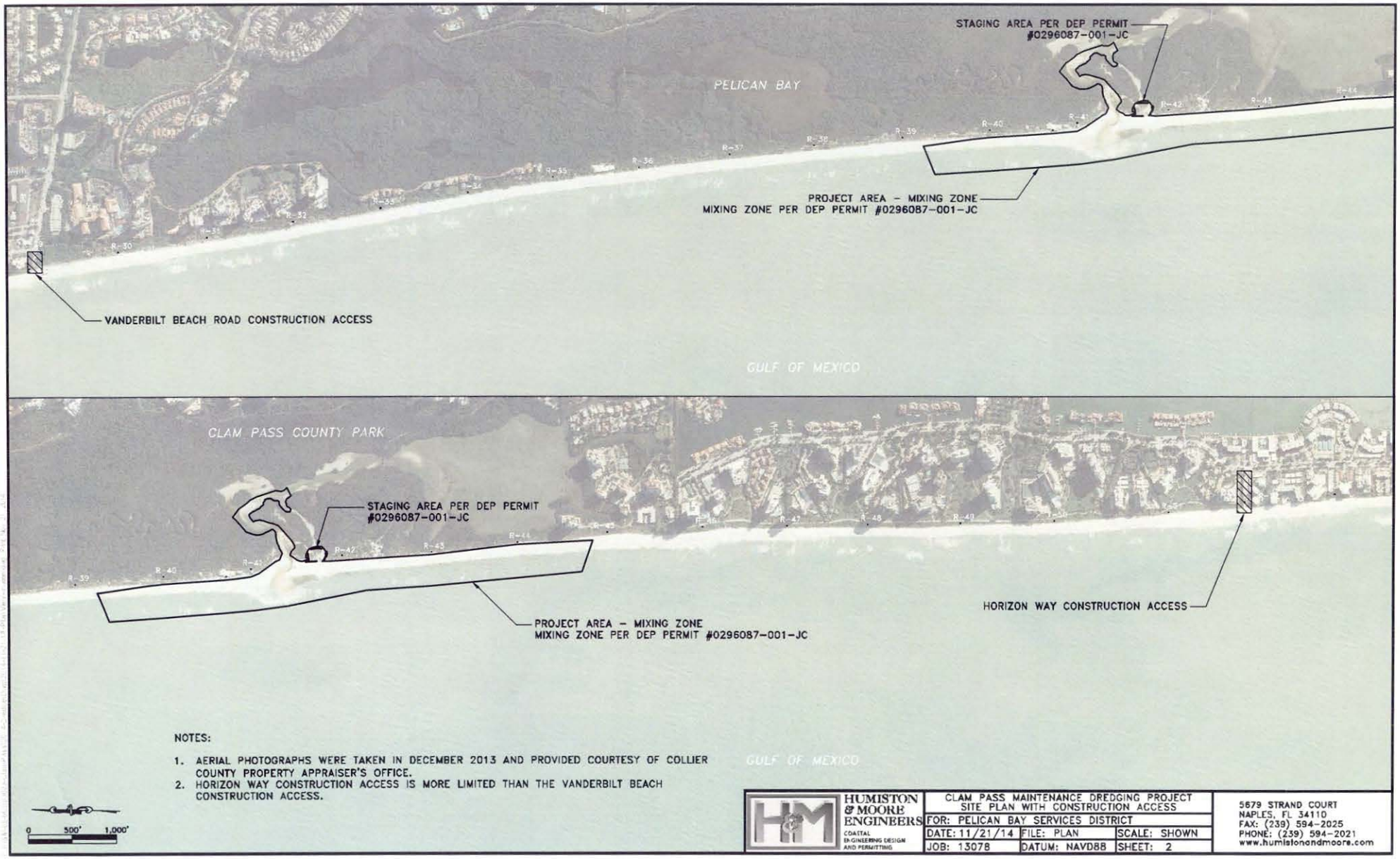
Turrell, Hall & Associates, Inc.
Marine & Environmental Consulting
3584 Exchange Ave. Suite B. Naples, FL 34104-3732
Email: tuna@turrell-associates.com Phone: (239) 643-0166 Fax: (239) 643-6632

CLAM BAY

FLUCCS MAP

		REV#	REV BY	DATE	CHK BY	CHANGED
DESIGNED	TH	1.	###	###	###	###
DRAWN BY	RMJ	2.	###	###	###	###
CREATED	12-01-14	3.	###	###	###	###
JOB NO.	9845	4.	###	###	###	###
SHEET NO.	03 OF 10	5.	###	###	###	###

SECTION- 08/09 TOWNSHIP- 49 RANGE- 25

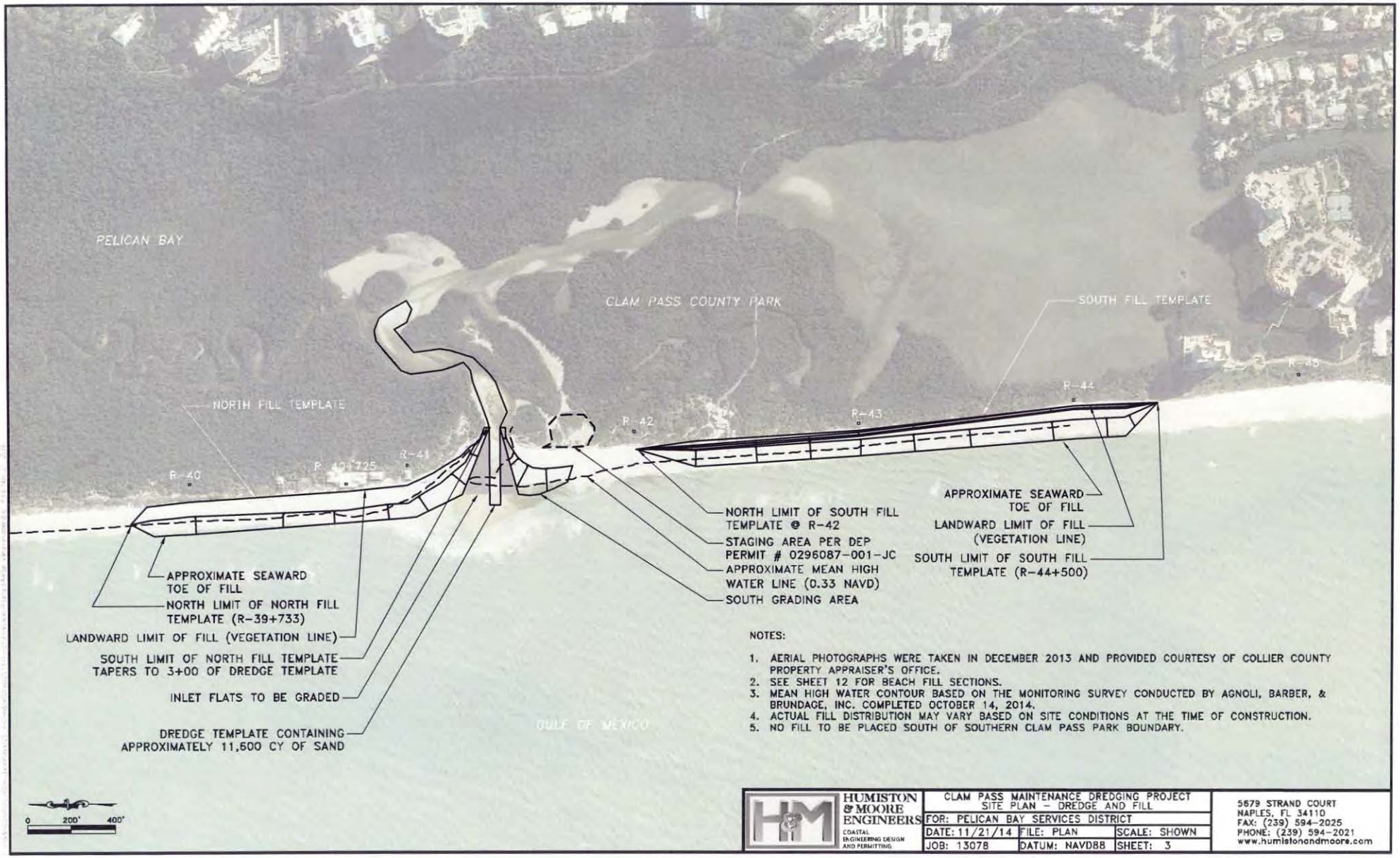


NOTES:

1. AERIAL PHOTOGRAPHS WERE TAKEN IN DECEMBER 2013 AND PROVIDED COURTESY OF COLLIER COUNTY PROPERTY APPRAISER'S OFFICE.
2. HORIZON WAY CONSTRUCTION ACCESS IS MORE LIMITED THAN THE VANDERBILT BEACH CONSTRUCTION ACCESS.

HUMISTON & MOORE ENGINEERS COASTAL ENGINEERING DESIGN AND PERMITTING	CLAM PASS MAINTENANCE DREDGING PROJECT SITE PLAN WITH CONSTRUCTION ACCESS		
	FOR: PELICAN BAY SERVICES DISTRICT		
	DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
	JOB: 13078	DATUM: NAVD88	SHEET: 2

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com



NOTES:

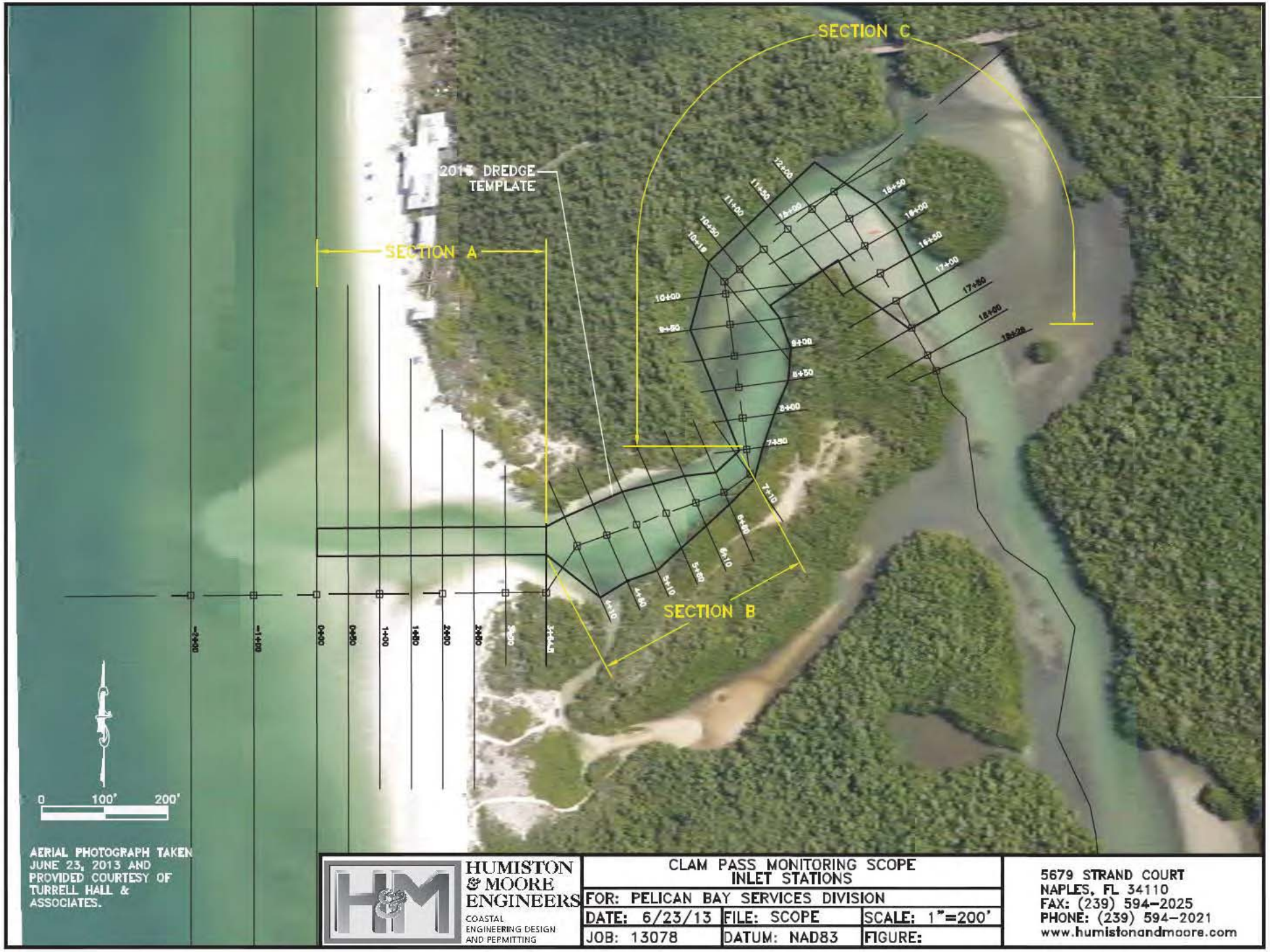
1. AERIAL PHOTOGRAPHS WERE TAKEN IN DECEMBER 2013 AND PROVIDED COURTESY OF COLLIER COUNTY PROPERTY APPRAISER'S OFFICE.
2. SEE SHEET 12 FOR BEACH FILL SECTIONS.
3. MEAN HIGH WATER CONTOUR BASED ON THE MONITORING SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
4. ACTUAL FILL DISTRIBUTION MAY VARY BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION.
5. NO FILL TO BE PLACED SOUTH OF SOUTHERN CLAM PASS PARK BOUNDARY.

HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

CLAM PASS MAINTENANCE DREDGING PROJECT
SITE PLAN – DREDGE AND FILL

FOR: PELICAN BAY SERVICES DISTRICT		
DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 3

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com



AERIAL PHOTOGRAPH TAKEN JUNE 23, 2013 AND PROVIDED COURTESY OF TURRELL HALL & ASSOCIATES.

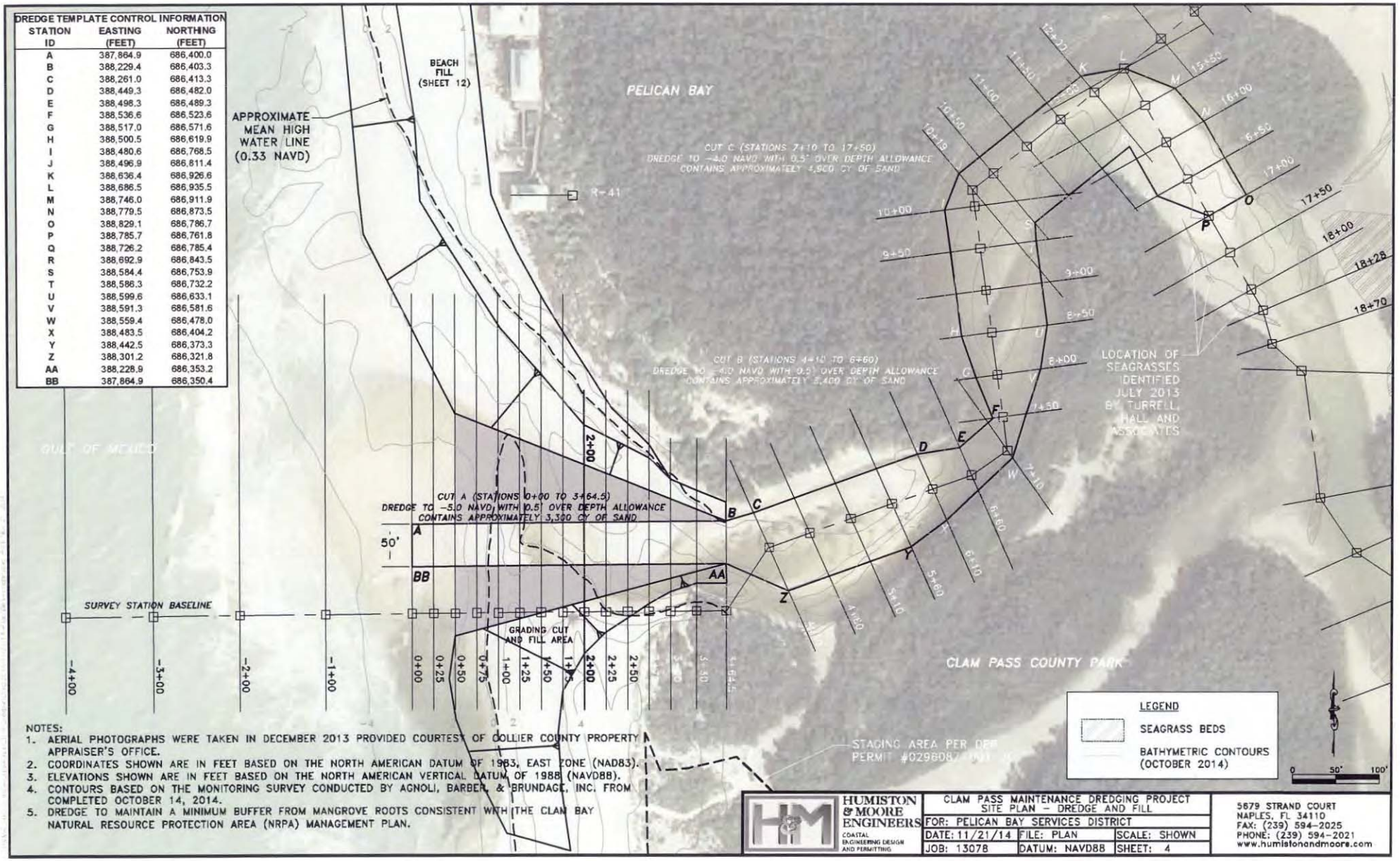
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

CLAM PASS MONITORING SCOPE
INLET STATIONS

FOR: PELICAN BAY SERVICES DIVISION

DATE: 6/23/13	FILE: SCOPE	SCALE: 1"=200'
JOB: 13078	DATUM: NAD83	FIGURE:

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com



DREDGE TEMPLATE CONTROL INFORMATION		
STATION ID	EASTING (FEET)	NORTHING (FEET)
A	387,864.9	686,400.0
B	388,229.4	686,403.3
C	388,261.0	686,413.3
D	388,449.3	686,482.0
E	388,498.3	686,489.3
F	388,536.6	686,523.6
G	388,517.0	686,571.6
H	388,500.5	686,619.9
I	388,480.6	686,768.5
J	388,496.9	686,811.4
K	388,636.4	686,926.6
L	388,686.5	686,935.5
M	388,746.0	686,911.9
N	388,779.5	686,873.5
O	388,829.1	686,786.7
P	388,785.7	686,761.8
Q	388,726.2	686,785.4
R	388,692.9	686,843.5
S	388,584.4	686,753.9
T	388,586.3	686,732.2
U	388,599.6	686,633.1
V	388,591.3	686,581.6
W	388,559.4	686,478.0
X	388,483.5	686,404.2
Y	388,442.5	686,373.3
Z	388,301.2	686,321.8
AA	388,228.9	686,353.2
BB	387,864.9	686,350.4

NOTES:
1. AERIAL PHOTOGRAPHS WERE TAKEN IN DECEMBER 2013 PROVIDED COURTEST OF COLLIER COUNTY PROPERTY APPRAISER'S OFFICE.
2. COORDINATES SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN DATUM OF 1983, EAST ZONE (NAD83).
3. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
4. CONTOURS BASED ON THE MONITORING SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. FROM COMPLETED OCTOBER 14, 2014.
5. DREDGE TO MAINTAIN A MINIMUM BUFFER FROM MANGROVE ROOTS CONSISTENT WITH THE CLAM BAY NATURAL RESOURCE PROTECTION AREA (NRPA) MANAGEMENT PLAN.

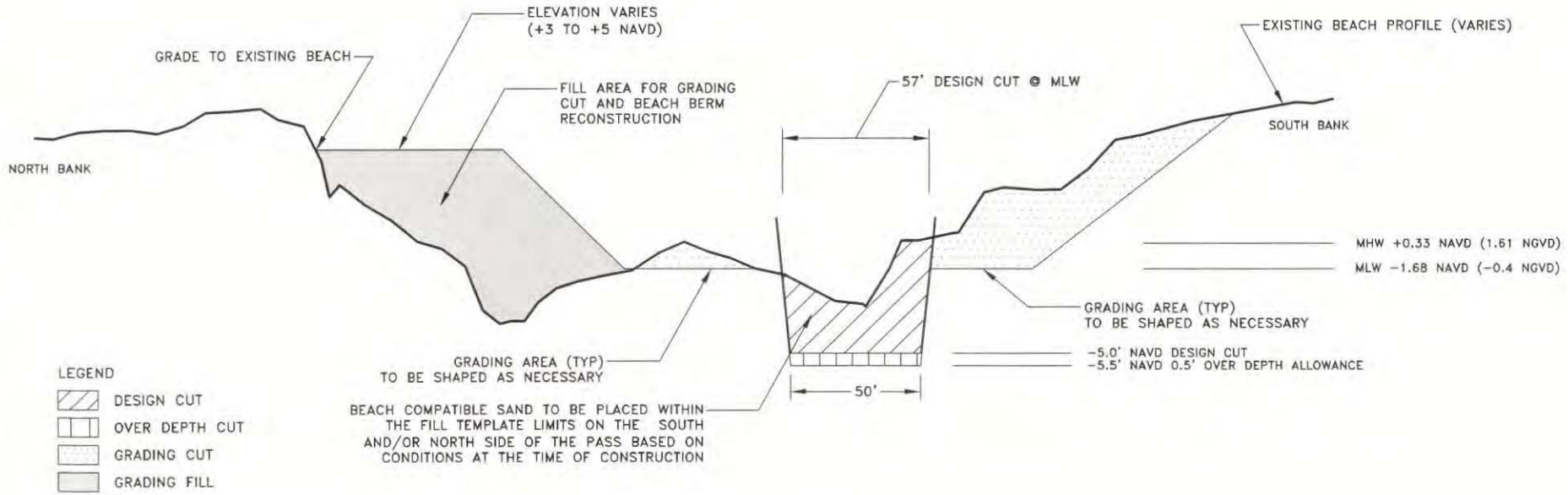
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

CLAM PASS MAINTENANCE DREDGING PROJECT
SITE PLAN – DREDGE AND FILL
FOR: PELICAN BAY SERVICES DISTRICT

DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 4

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

TYPICAL DREDGE CUT FOR INLET STATIONS (0+00 TO 3+64.5)
(STATION 2+00 SHOWN FOR REFERENCE ONLY)



NOTES:

1. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. DISTANCES SHOWN IN FEET.
3. PROFILE BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
4. SLOPES WILL VARY BY STATION FROM STATION 0+00 TO 3+64.5.

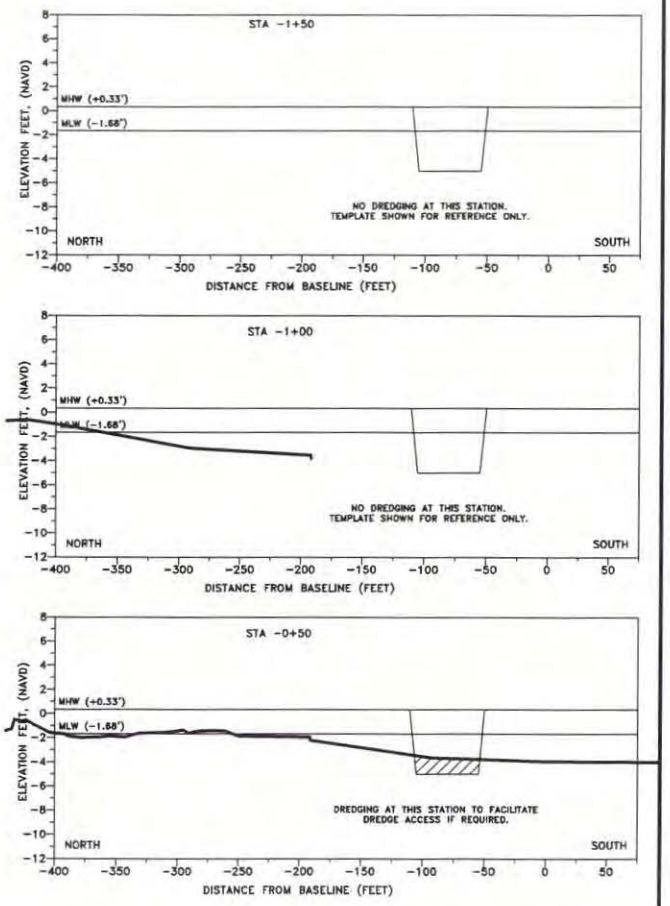
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

CLAM PASS MAINTENANCE DREDGING PROJECT TYPICAL INLET CROSS SECTIONS – DREDGE		
FOR: PELICAN BAY SERVICES DISTRICT		
DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 5

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

DREDGE STATION CONTROL & VOLUMETRIC INFORMATION

STATION ID	NORTHING (FEET)	EASTING (FEET)	AZIMUTH (DEGREES)	EFFECTIVE DISTANCE (FEET)	DESIGN VOLUME (CY)	OVERDEPTH VOLUME (CY)	TOTAL VOLUME (CY)	CUT VOLUME (CY)	GRADING VOLUME (CY)	FILL VOLUME (CY)
-4+00	686291.4	387465.0	179.5	25.0					NO GRADING AT THESE STATIONS	NO FILL AT THESE STATIONS
-3+50	686291.8	387515.0	179.5	50.0	NO DREDGING AT THESE STATIONS EXCEPT AS REQUIRED FOR EQUIPMENT ACCESS					
-3+00	686291.8	387565.0	179.5	50.0						
-2+50	686292.3	387615.0	179.5	50.0						
-2+00	686292.7	387665.0	179.5	50.0						
-1+50	686293.2	387715.0	179.5	50.0						
-1+00	686293.6	387765.0	179.5	50.0						
-0+50	686294.1	387814.9	179.5	50.0						
0+00	686294.5	387864.9	179.5	12.5	70.4	13.0	83.4			
0+25	686295.2	387889.9	179.5	25.0	109.9	25.5	135.4			
0+50	686295.4	387914.9	179.5	25.0	129.4	25.7	155.1		6.2	783.4
0+75	686295.7	387939.9	179.5	25.0	172.3	26.5	198.8		26.6	709.8
1+00	686295.7	387964.9	179.5	25.0	368.5	28.3	396.9		450.6	675.0
1+25	686295.7	387989.9	179.5	25.0	301.8	27.9	329.7		509.4	564.7
1+50	686296.3	388014.9	179.5	25.2	277.5	28.5	306.0		216.6	526.1
1+75	686292.8	388040.1	179.5	25.3	228.2	27.6	255.9		329.5	474.8
2+00	686296.8	388064.9	179.5	25.1	144.1	27.0	171.1	CUT A SUBTOTAL 3,300	238.3	373.3
2+25	686296.8	388089.9	179.5	25.0	131.7	26.3	158.0		64.4	247.9
2+50	686297.2	388114.9	179.5	25.0	133.9	26.0	159.9		0.0	170.8
2+75	686297.2	388139.9	179.5	25.0	95.4	25.4	120.8		0.0	102.2
3+00	686297.7	388164.9	179.5	27.5	112.8	27.8	140.6		9.8	23.9
3+30	686297.9	388194.9	179.5	32.3	185.9	33.4	219.3		37.1	
3+64.5	686298.3	388229.4	179.5	46.8	404.0	50.4	454.5		23.1	
4+10	686372.1	388279.1	156.3	46.5	634.0	86.6	720.6		NO GRADING AT THESE STATIONS	NO FILL AT THESE STATIONS
4+60	686389.3	388326.2	156.3	50.1	744.3	95.9	840.3			
5+10	686406.5	388373.2	156.3	50.1	719.4	97.6	817.0	CUT B SUBTOTAL 3,400		
5+60	686423.6	388420.3	156.3	50.1	604.1	91.7	695.7			
6+10	686440.8	388467.4	156.3	49.0	258.6	63.9	322.4			
6+60	686457.2	388512.4	156.3	49.1	37.5	38.8	76.3			
7+10	686486.1	388553.6	145.0	45.0	0.0	33.2	33.2			
7+60	686525.4	388548.4	82.4	44.8	50.4	25.2	75.6			
8+00	686574.9	388541.8	82.4	50.0	206.5	70.6	277.1			
8+50	686624.5	388535.1	82.4	50.0	373.1	98.0	471.0			
9+00	686674.1	388528.5	82.4	50.0	439.3	93.1	532.4			
9+50	686723.6	388521.9	82.4	48.8	355.2	87.2	442.3			
10+00	686773.2	388515.3	82.4	37.8	73.1	41.6	114.7			
10+19	686792.1	388512.8	140.5	25.0	21.2	21.9	43.0			
10+50	686811.8	388536.6	140.5	40.5	201.0	71.7	272.7			
11+00	686843.6	388575.2	140.5	50.0	107.3	50.0	157.3			
11+50	686875.4	388613.8	140.5	55.8	205.3	88.7	294.0	CUT C SUBTOTAL 4,900		
12+00	686907.3	388652.3	140.5	Station overlaps other cross sections						
13+00	686970.9	388729.5	140.5	NO DREDGING AT THESE STATIONS						
13+50	687001.6	388767.9	140.5							
14+00	687034.6	388806.6	140.5							
14+50	687066.4	388845.1	140.5							
15+00	686935.5	388686.5	240.2	60.3	231.3	104.4	335.7			
15+50	686892.1	388711.3	240.2	50.0	435.1	95.0	530.0			
16+00	686848.7	388736.2	240.2	50.0	483.2	90.9	554.1			
16+50	686805.3	388761.0	240.2	50.0	479.7	88.3	568.0			
17+00	686761.9	388785.8	240.2	25.0	139.7	24.9	164.6			
		TOTALS:			9,600	2,000	11,600		1,900	4,700



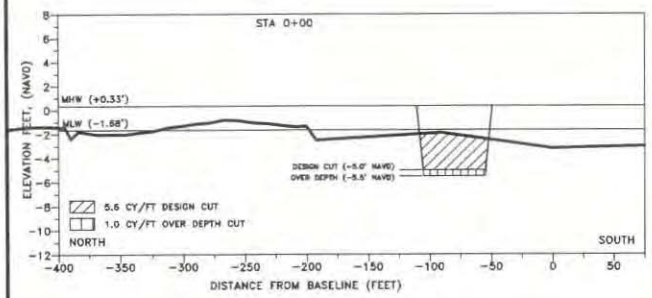
NOTES:

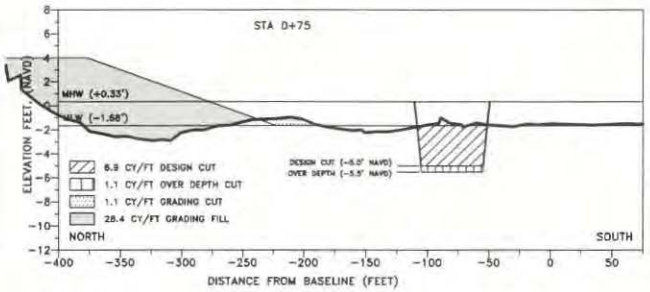
1. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. DISTANCES SHOWN IN FEET.
3. PROFILES BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.

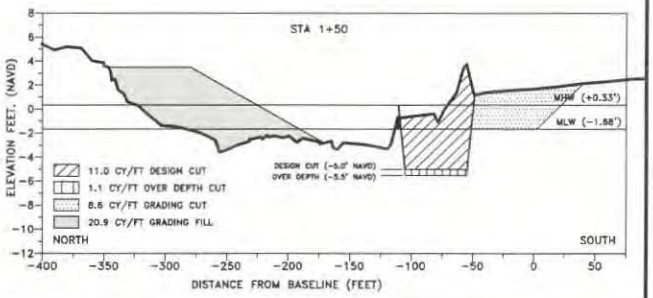
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

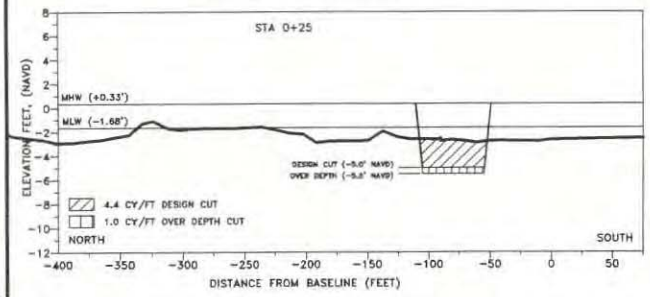
CLAM PASS MAINTENANCE DREDGING PROJECT
CROSS SECTIONS - DREDGE
FOR: PELICAN BAY SERVICES DISTRICT
DATE: 11/21/14 | FILE: PLAN | SCALE: SHOWN
JOB: 13078 | DATUM: NAVD88 | SHEET: 6

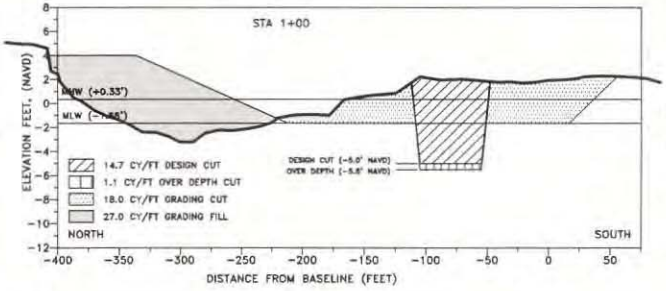
5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

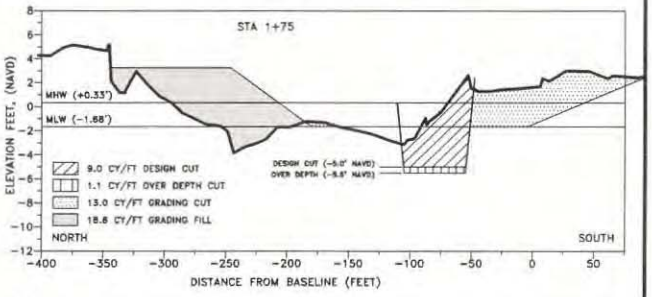


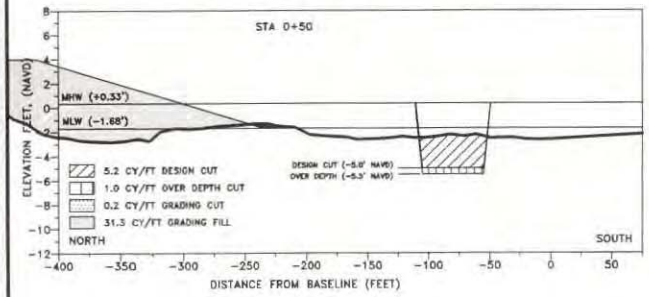


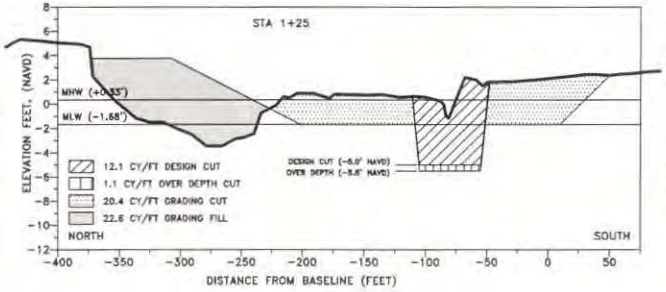


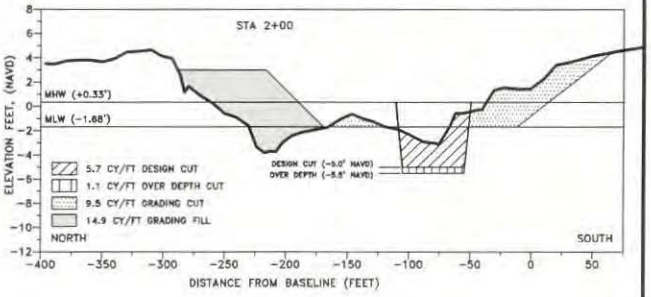












NOTES:

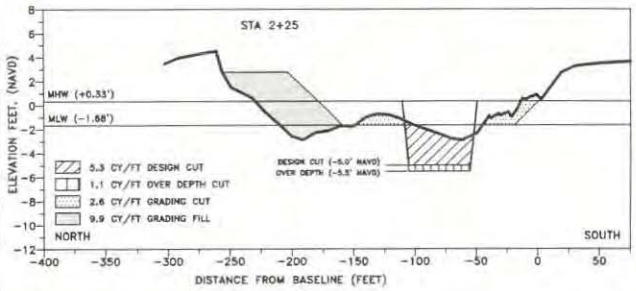
1. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. DISTANCES SHOWN IN FEET.
3. PROFILES BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
4. DREDGE TO MAINTAIN A MINIMUM BUFFER FROM MANGROVE ROOTS CONSISTENT WITH THE CLAM BAY NATURAL RESOURCE PROTECTION AREA (NRPA) MANAGEMENT PLAN.
5. SLOPES OF GRADED SECTIONS VARY AT EACH STATION.

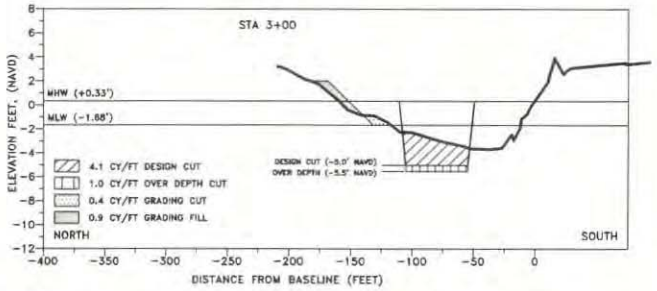
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

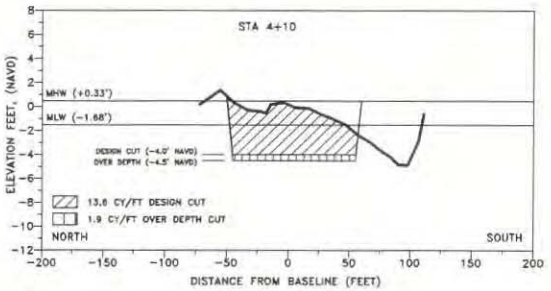
CLAM PASS MAINTENANCE DREDGING PROJECT
CROSS SECTIONS – DREDGE

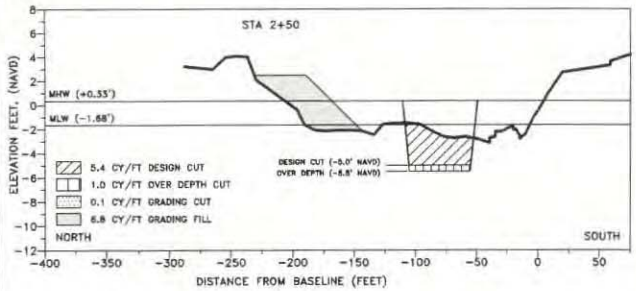
FOR: PELICAN BAY SEVICES DISTRICT		
DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 7

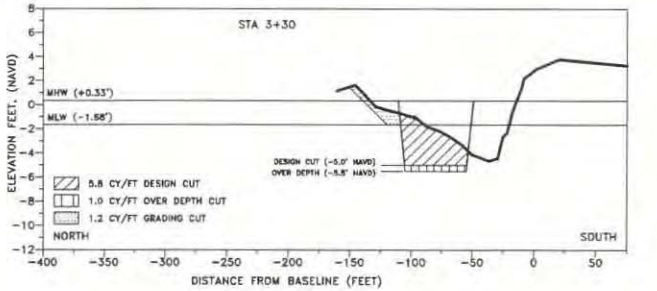
5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

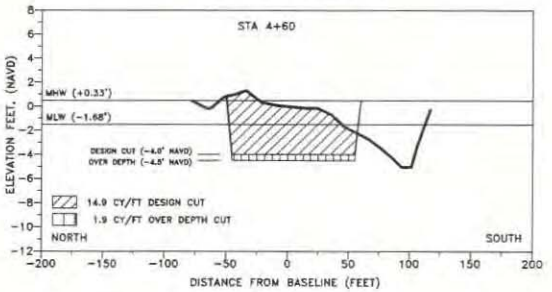


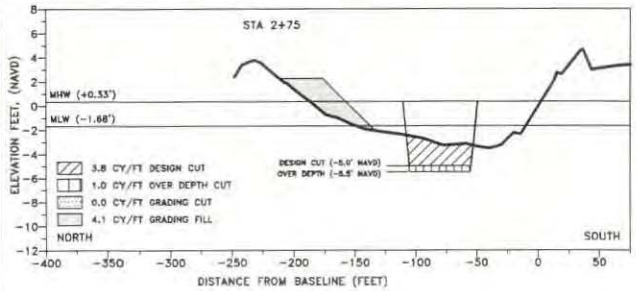


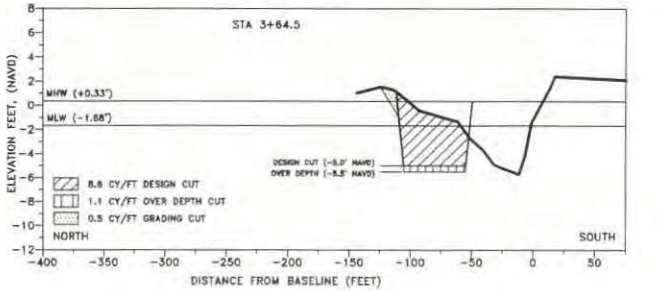


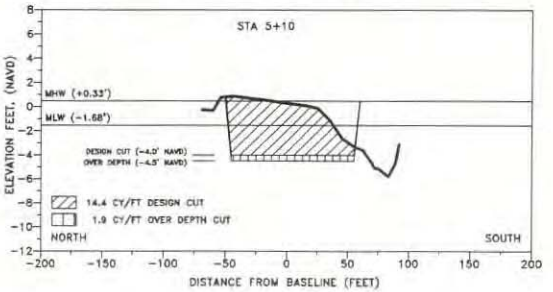












NOTES:

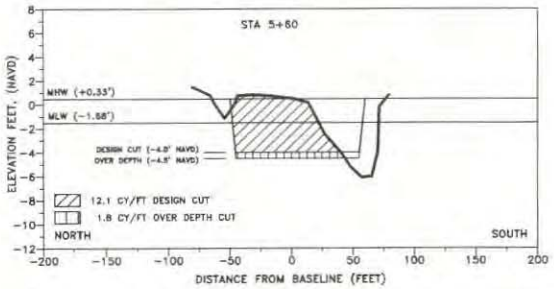
1. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. DISTANCES SHOWN IN FEET.
3. PROFILES BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
4. DREDGE TO MAINTAIN A MINIMUM BUFFER FROM MANGROVE ROOTS CONSISTENT WITH THE CLAM BAY NATURAL RESOURCE PROTECTION AREA (NRPA) MANAGEMENT PLAN.
5. SLOPES OF GRADED SECTIONS VARY AT EACH STATION.

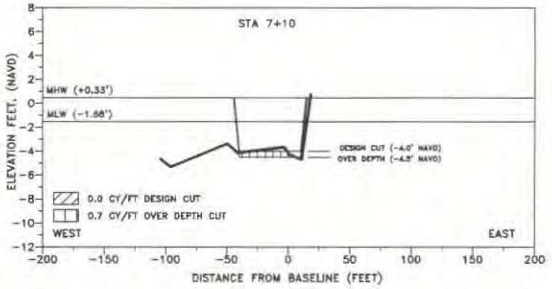
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

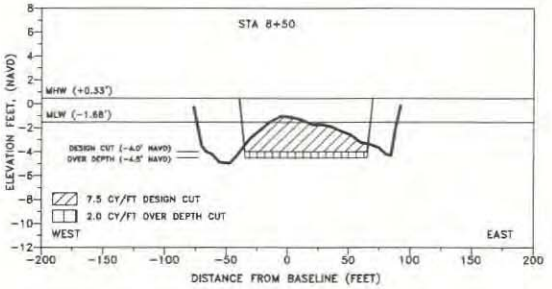
CLAM PASS MAINTENANCE DREDGING PROJECT
CROSS SECTIONS – DREDGE

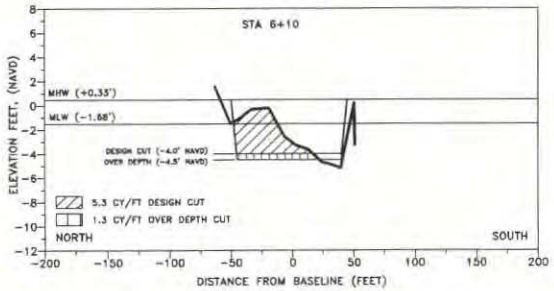
FOR: PELICAN BAY SERVICES DISTRICT		
DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 8

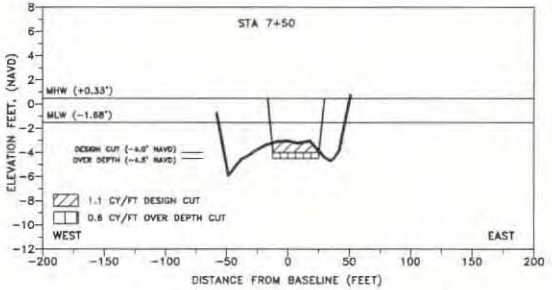
5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

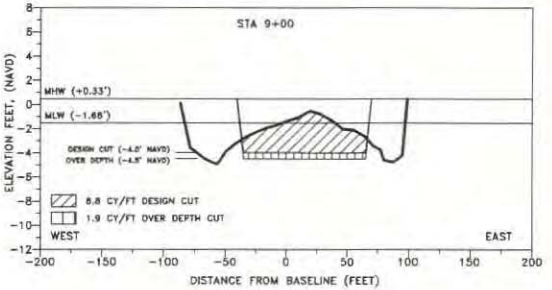


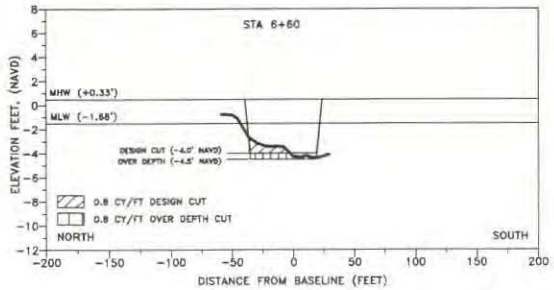


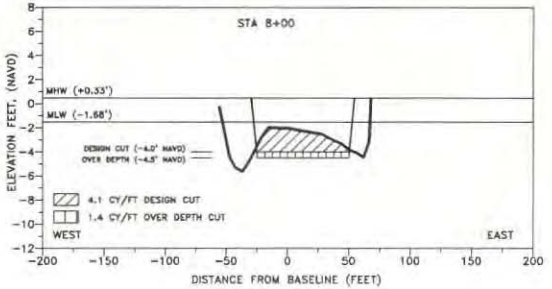


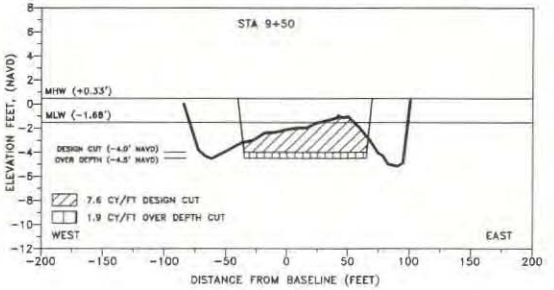










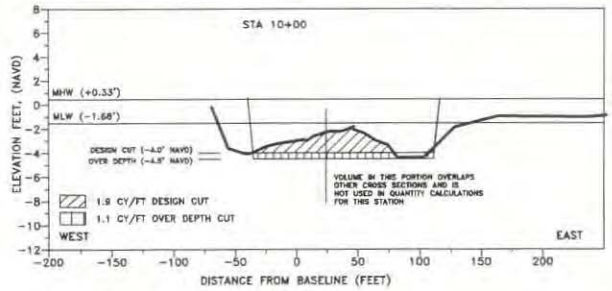


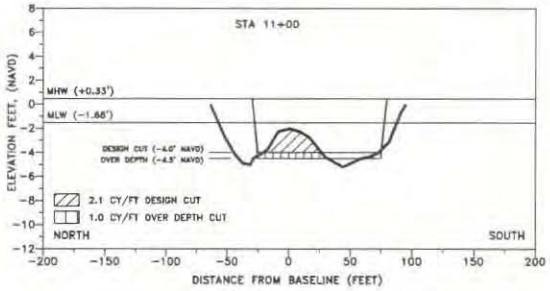
NOTES:

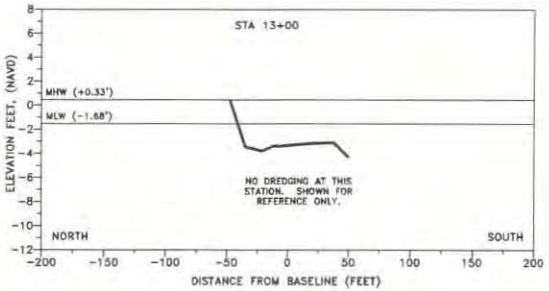
1. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. DISTANCES SHOWN IN FEET.
3. PROFILES BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
4. DREDGE TO MAINTAIN A MINIMUM BUFFER FROM MANGROVE ROOTS CONSISTENT WITH THE CLAM BAY NATURAL RESOURCE PROTECTION AREA (NRPA) MANAGEMENT PLAN.

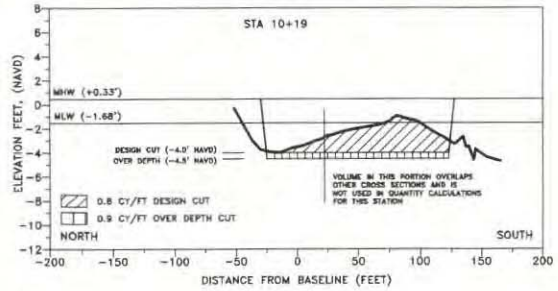
HUMISTON & MOORE ENGINEERS COASTAL ENGINEERING DESIGN AND PERMITTING	CLAM PASS MAINTENANCE DREDGING PROJECT CROSS SECTIONS – DREDGE		
	FOR: PELICAN BAY SERVICES DISTRICT		
	DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
	JOB: 13078	DATUM: NAVD88	SHEET: 9

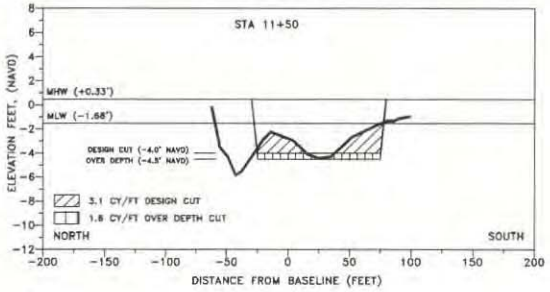
5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

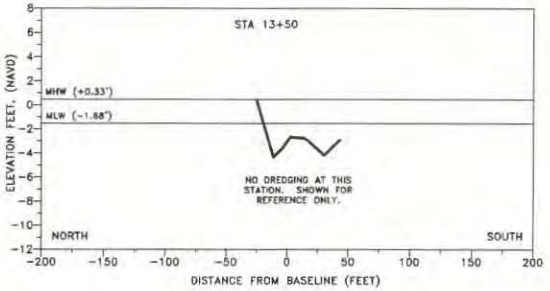


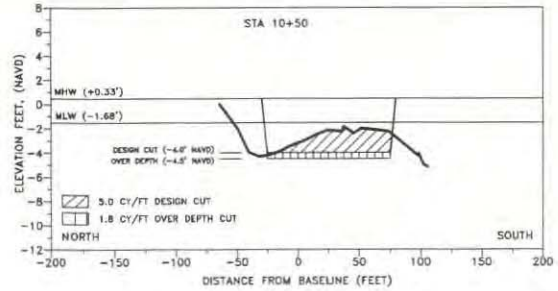


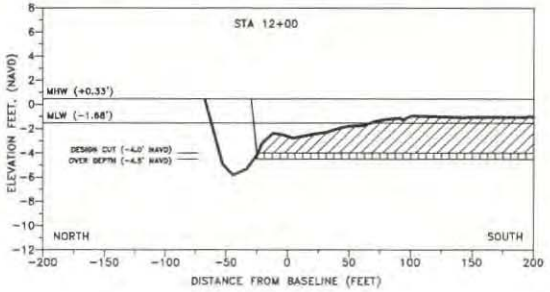


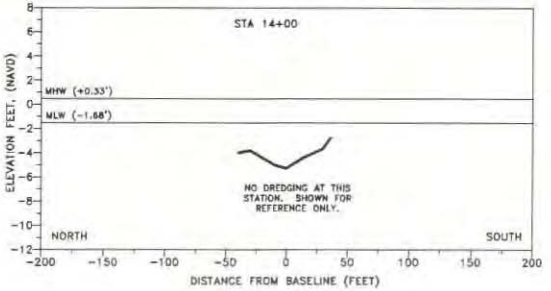












NOTES:

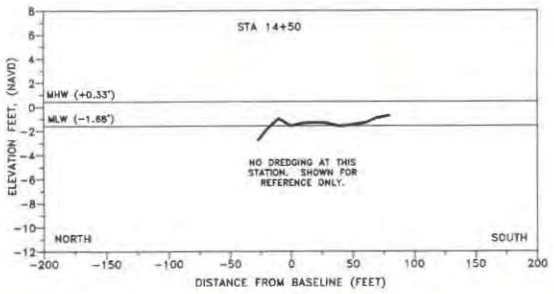
1. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. DISTANCES SHOWN IN FEET.
3. PROFILES BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
4. DREDGE TO MAINTAIN A MINIMUM BUFFER FROM MANGROVE ROOTS CONSISTENT WITH THE CLAM BAY NATURAL RESOURCE PROTECTION AREA (NRPA) MANAGEMENT PLAN.

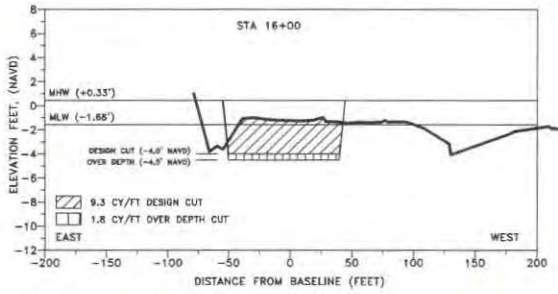
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

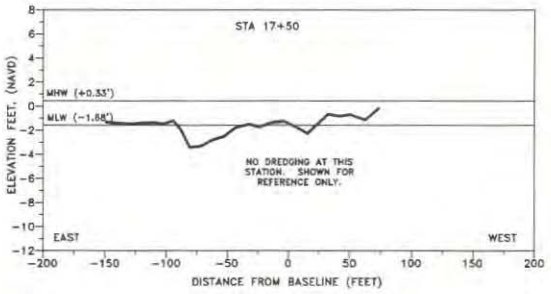
CLAM PASS MAINTENANCE DREDGING PROJECT
CROSS SECTIONS – DREDGE

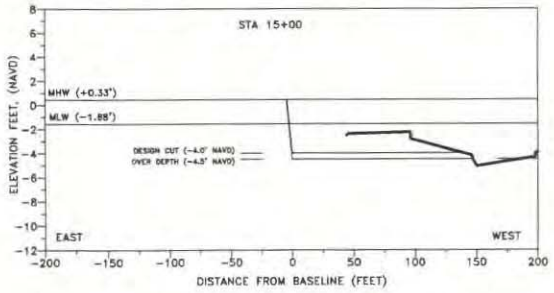
FOR: PELICAN BAY SERVICES DISTRICT		
DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 10

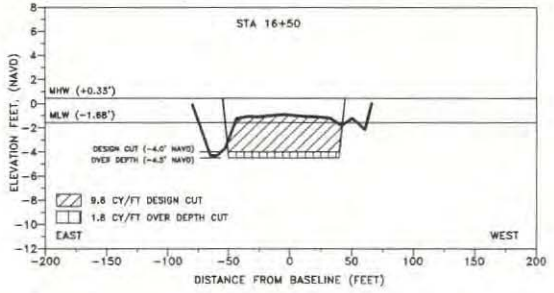
5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

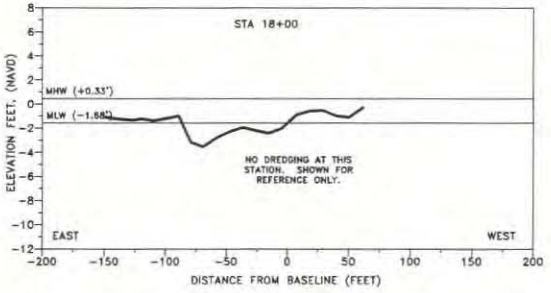


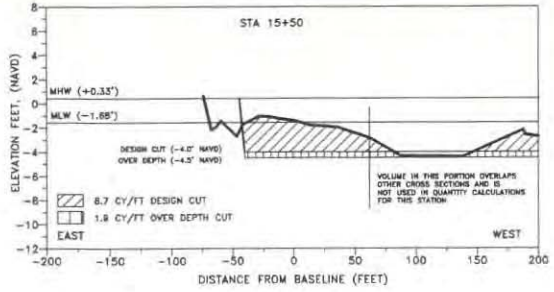


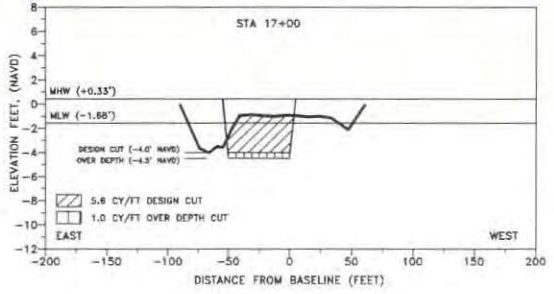


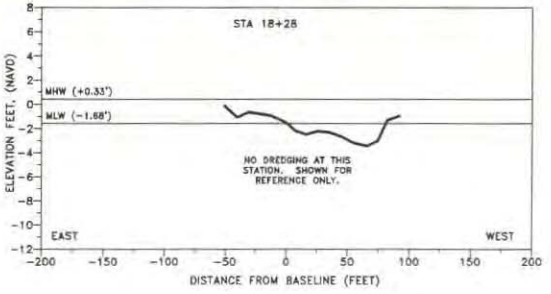












NOTES:

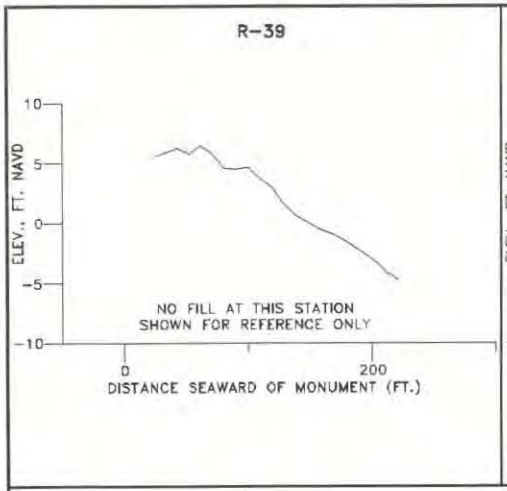
1. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. DISTANCES SHOWN IN FEET.
3. PROFILES BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
4. DREDGE TO MAINTAIN A MINIMUM BUFFER FROM MANGROVE ROOTS CONSISTENT WITH THE CLAM BAY NATURAL RESOURCE PROTECTION AREA (NRPA) MANAGEMENT PLAN.

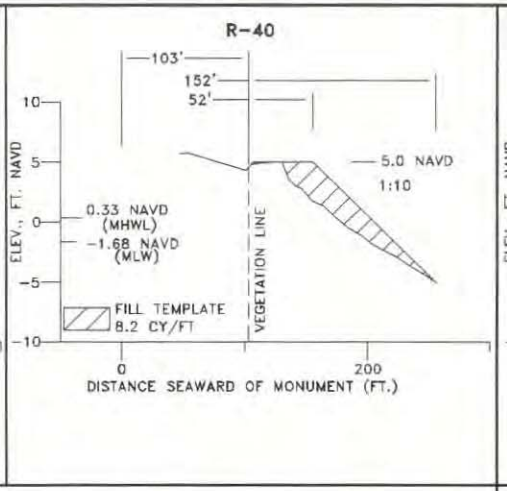
HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING, DESIGN AND PERMITTING

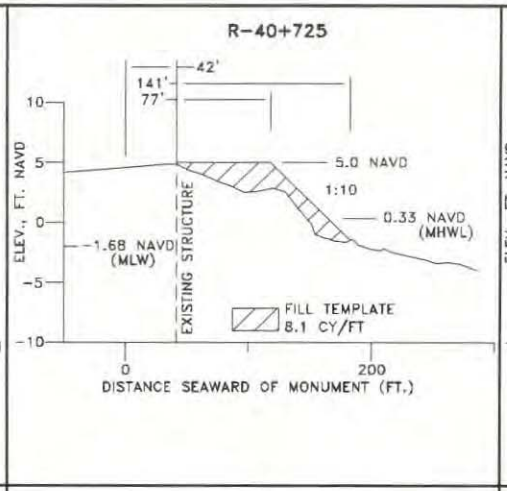
CLAM PASS MAINTENANCE DREDGING PROJECT
CROSS SECTIONS - DREDGE
FOR: PELICAN BAY SERVICES DISTRICT

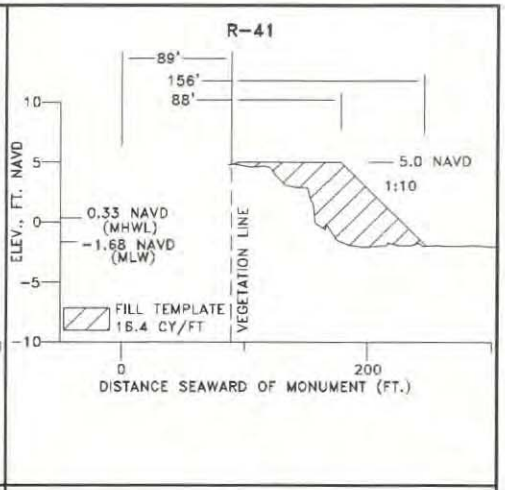
DATE: 11/21/14	FILE: PLAN	SCALE: SHOWN
JOB: 13078	DATUM: NAVD88	SHEET: 11

5679 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com





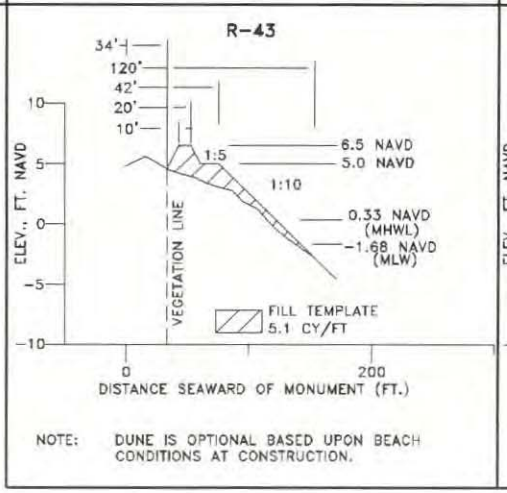




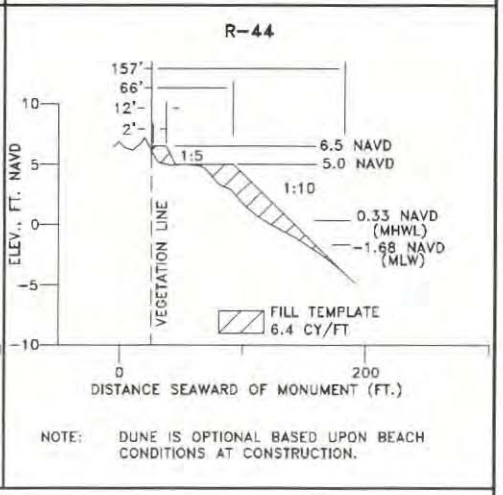
FILL TEMPLATE INFORMATION

MONUMENT ID	NORTHING (FEET)	EASTING (FEET)	AZIMUTH (DEGREES)	MONUMENT ELEVATION NAVD* (FEET)	EFFECTIVE DISTANCE (FEET)	AVAILABLE FILL VOLUME (CY/FT)	AVAILABLE FILL VOLUME (CY)
R-38	689818.1	387783.7	270.0	3.73	-	-	-
R-39	688799.5	387874.7	270.0	4.84	-	-	-
R-40	687793.8	387963.8	270.0	2.97	613	8.2	5,036
R40+725	687068.8	387963.8	270.0		505	8.1	4,092
R-41	686785.6	388051.6	270.0	3.24	142	16.4	2,330
			TOTAL AVAILABLE VOLUME - NORTH FILL TEMPLATE:				11,500
R-42	685731.0	388209.4	265.0	4.23	-	-	-
R-43	684692.3	388248.5	270.0	4.84	1279	5.1	6,535
R-44	683701.5	388359.1	270.0	6.74	749	6.4	4,768
			TOTAL AVAILABLE VOLUME - SOUTH FILL TEMPLATE:				11,300
			TOTAL AVAILABLE VOLUME - ALL FILL TEMPLATES:				22,800

*PUBLISHED BY FLORIDA DEP



NOTE: DUNE IS OPTIONAL BASED UPON BEACH CONDITIONS AT CONSTRUCTION.



NOTE: DUNE IS OPTIONAL BASED UPON BEACH CONDITIONS AT CONSTRUCTION.

NOTES:

1. PROFILES BASED ON SURVEY CONDUCTED BY AGNOLI, BARBER, & BRUNDAGE, INC. COMPLETED OCTOBER 14, 2014.
2. COORDINATES SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN DATUM OF 1983, EAST ZONE (NAD83).
3. ELEVATIONS SHOWN ARE IN FEET BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
4. AREA LANDWARD OF DUNE FILL TO BE GRADED BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION.

HUMISTON & MOORE ENGINEERS
COASTAL ENGINEERING DESIGN AND PERMITTING

CLAM PASS MAINTENANCE DREDGING PROJECT
CROSS SECTIONS - BEACH FILL
FOR: PELICAN BAY SERVICES DISTRICT
DATE: 11/21/14 | FILE: XSEC | SCALE: SHOWN
JOB: 13078 | DATUM: NAVD88 | SHEET: 12

5579 STRAND COURT
NAPLES, FL 34110
FAX: (239) 594-2025
PHONE: (239) 594-2021
www.humistonandmoore.com

ATTACHMENT B

11. Within 30 days after completion of construction or completion of a subsequent maintenance event authorized by this permit, the Permittee shall submit to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer) and the appropriate District office of the Department a written statement of completion and certification by a registered professional engineer. This certification shall state that all locations and elevations specified by the permit have been verified; the activities authorized by the permit have been performed in compliance with the plans and specifications approved as a part of the permit, and all conditions of the permit; or shall describe any deviations from the plans and specifications, and all conditions of the permit. When the completed activity differs substantially from the permitted plans, any substantial deviations shall be noted and explained on two paper copies and one electronic copy of as-built drawings submitted to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer).

SPECIFIC CONDITIONS:

1. All reports or notices relating to this permit shall be sent to the DEP, Bureau of Beaches and Coastal Systems, JCP Compliance Officer, 3900 Commonwealth Boulevard, Mail Station 300, Tallahassee, Florida 32399-3000 (e-mail address: JCP Compliance@dep.state.fl.us).

2. The Permittee shall not store or stockpile tools, equipment, materials, etc., within littoral zones or elsewhere within surface waters of the state without prior written approval from the Department. Storage, stockpiling or access of equipment on, in, over or through seagrass (or other aquatic vegetation) beds, or wetlands is prohibited unless within a work area or ingress/egress corridor specifically approved by this permit. Anchoring or spudding of vessels and barges within beds of aquatic vegetation or over hardbottom areas is also prohibited.

3. The Permittee shall not conduct project operations or store project-related equipment in, on or over dunes, or otherwise impact dune vegetation, outside the approved staging, beach access and dune nourishment areas designated in the permit drawings.

4. No work shall be conducted under this permit until the Permittee has received a written notice to proceed from the Department. At least 30 days prior to the requested date of issuance of the notice to proceed, the Permittee shall submit a written request for a Notice to Proceed and the following items for review and approval by the Department:

    a. The Permittee shall submit the ***final plans and specifications*** for this project, which must be consistent with the project description of this permit and the approved permit drawings. The Permittee shall point out any deviations from the project description or the approved permit drawings, and any significant changes would require a permit modification. Submittal shall include one (1) hardcopy (sized 11 inches by 17 inches or greater, with all text legible) and one (1) electronic copy of the final plans and specifications. The plans and specifications shall be accompanied by a letter

indicating the project name, the permit number, the type of construction activity, the specific type of equipment to be used, the anticipated volume of material to be moved (if applicable) and the anticipated schedule. Further, the Permittee shall specify any anticipated sites that will be used (such as a disposal or re-use location) and appropriate contact information for those facilities. The final plans and specifications submitted under this condition must comply with all conditions set forth in this permit.

b. The final plans and specifications for each maintenance dredging event shall include a topographic survey of Clam Pass and adjacent beaches within the project area where activities are anticipated to occur. The survey shall be conducted within six months prior to the requested date of the issuance of the notice to proceed. The survey and deliverables shall be consistent with the Department's Monitoring Standards for Beach Erosion Control Projects.

c. ***Turbidity monitoring qualifications***. Construction at the project site shall be monitored closely by persons with professional experience in monitoring turbidity for beach restoration or nourishment projects to assure that turbidity levels do not exceed the compliance standards established in this permit. Also, an individual familiar with beach construction techniques and turbidity monitoring shall be present at all times when fill material is discharged on the beach. This individual shall have authority to alter construction techniques or shut down the dredging or beach construction operations if turbidity levels exceed the compliance standards established in this permit. The names and qualifications of those individuals performing these functions, along with 24-hour contact information, shall be submitted for approval.

5. **Pre-Construction Conference.** The Permittee shall conduct a pre-construction conference to review the specific conditions and monitoring requirements of this permit with Permittee's contractors, the engineer of record, the Florida Fish and Wildlife Conservation Commission (FWC), the U.S. Fish and Wildlife Service (FWS), the JCP compliance officer, the permitted sea turtle surveyor and other species surveyors as appropriate, prior to each construction event. The meeting will provide an opportunity for explanation and/or clarification of the protection measures as well as additional guidelines when construction occurs during nesting season, such as staging equipment and reporting within the work area as well as follow up meetings during construction. In order to ensure that appropriate representatives are available, at least twenty-one (21) days prior to the intended commencement date for the permitted construction, the Permittee is advised to contact the Department, and the other agency representatives listed below:

DEP, Bureau of Beaches & Coastal Systems
JCP Compliance Officer
Mail Station 300
3900 Commonwealth Boulevard

Tallahassee, Florida 32399-3000
phone: (850) 414-7716
e-mail: JCP Compliance@dep.state.fl.us

DEP South District Office
Submerged Lands & Environmental Resources
2295 Victoria Avenue
Suite 364
Fort Myers, FL 33901-2896
(239)334-5600

Imperiled Species Management Section
Florida Fish & Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600
phone: (850) 922-4330
fax: (850) 921-4369 or email: marineturtle@myfwc.com

The Permittee is also advised to schedule the pre-construction conference at least a week prior to the intended commencement date. At least seven (7) days in advance of the pre-construction conference, the Permittee shall provide written notification, advising the participants (listed above) of the agreed-upon date, time and location of the meeting, and also provide a meeting agenda and a teleconference number.

6. Sediment quality will be assessed as outlined in the Sediment QA/AC plan (attached). Any occurrences of unacceptable material will be handled according to the protocols set forth in the Sediment QA/QC plan. The sediment testing result will be submitted to FDEP within 90 days following the completion of beach construction.

Fish and Wildlife Protection Conditions for Dredging Activities:

7. ***In-water Activity.*** The 2011 Standard Manatee and Marine Turtle Construction Conditions for In-water Work shall be followed for all in-water activity.

   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/NoWake" at all times while in the immediate area and while in water where

the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow routes of deep water whenever possible.

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, shall be shutdown if a manatee(s) comes within 50 feet of the operation. Activities shall 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 shall 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 (FWS) in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the Permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" 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 MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

Fish and Wildlife Protection Conditions for Beach Placement of Material:

8. ***Beach Maintenance.*** All excavations and temporary alterations of the beach topography shall be filled or leveled to the natural beach profile prior to 9 p.m. each day.

9. ***Seabird and Shorebird Surveys.*** Surveys shall be conducted to identify and document the presence of nesting seabirds and shorebirds (shorebird). Nesting shorebird surveys should be conducted by trained, dedicated individuals (Shorebird Observer) with proven shorebird identification skills and avian survey experience. Credentials of the Shorebird Observer shall be submitted to the FWC Regional Species Biologist (**contact**

information attached) for review and approval. Shorebird Observers shall use the following survey protocols:

a. Shorebird Observers shall review and become familiar with the general information and data collection protocol outlined on the FWC's Florida Shorebird Database website (www.FLShorebirdDatabase.org). An outline of data to be collected, including downloadable field data sheets, is available on the website.

b. The nesting season is April 1 – September 1 for seabirds, but flightless young may be present through September. In addition, snowy plover may nest as early as February (found along the west coast of Florida) and the American oystercatcher may initiate nesting as early as March 15. Nesting season surveys must begin on the first day of nesting season (February 15 in potential snowy plover habitat, March 15 in areas where American oystercatchers have historically nested, or April 1 elsewhere) or 10 days prior to project commencement (including surveying activities and other pre-construction presence on the beach), whichever is later. Surveys shall be conducted through August or until all nesting activity has concluded, whichever is later.

c. Nesting season surveys shall be conducted in all potential beach-nesting bird habitat within the project boundaries that may be impacted by construction or pre-construction activities during the nesting season. Portions of the project in which there is no potential for project-related activity during the nesting season may be excluded.

d. During the pre-construction and construction phases of the project, surveys for detecting new nesting activity will be completed on a daily basis prior to movement of equipment, operation of vehicles, or other activities that could potentially disrupt nesting behavior or cause harm to the birds or their eggs or young.

e. Surveys shall be conducted by walking the length of the project area and visually inspecting, using binoculars or spotting scope, for the presence of shorebirds exhibiting breeding behavior.

i.) If an ATV or other vehicle is needed to cover large project areas, operators shall adhere to the FWC's Best Management Practices for Operating Vehicles on the Beach (http://myfwc.com/conservation/you-conserve/wildlife/beach-driving/). Specifically, the vehicle must be operated at a speed <6 mph and be run at or below the high-tide line. The Shorebird Observer shall stop at no greater than 200 meter intervals to visually inspect for nesting activity.

f. Once breeding is confirmed by the presence of a scrape, eggs, or young, the Shorebird Observer shall notify the FWC Regional Species Biologist (**contact information attached**) within 24 hours. All breeding activity shall be reported to the Florida Shorebird Database website within one week of data collection.

10. ***Seabird and Shorebird Buffer Zones and Travel Corridors.*** Within the project area, the Permittee shall establish a 300 foot-wide disturbance-free buffer zone around any location where shorebirds have been engaged in nesting behavior, including territory defense. All human disturbances shall be prohibited in the buffer zone.

a. The width of the buffer zone shall be increased if birds appear agitated or disturbed by construction or other human activities.

b. Site-specific buffers may be implemented upon approval by the FWC Regional Species Biologist (Ricardo Zambrano, at 561-625-5122) as needed.

c. Reasonable and traditional pedestrian access should not be blocked where nesting birds will tolerate pedestrian traffic. This is generally the case with lateral movement of beach-goers walking parallel to the beach at or below the highest tide line. Pedestrian traffic may also be tolerated when nesting was initiated within 300 feet of an established beach access pathway. The Permittee shall work with the FWC Regional Species Biologist to determine if pedestrian access can be accommodated without compromising nesting success.

d. Designated buffer zones shall be identified with posts, twine, and clearly marked signs (“No Entry”) around the perimeter. The signs shall include the name and a phone number of the entity responsible for posting. Posts should not exceed 3’ in height. Symbolic fencing (twine, string, or rope) should be placed between all posts at least 2 feet above the ground and rendered clearly visible to pedestrians. If pedestrian pathways are approved by the FWC Regional Species Biologist within the 300-foot buffer zone, these should be clearly marked. The posted area shall be maintained in good repair until nesting is completed or terminated. Although solitary nesters may leave the posted area with their chicks, the posted area continues to provide a potential refuge for the family until nesting is complete. Nesting is not considered to be completed until all chicks have fledged.

e. No construction activities, movement of vehicles, or stockpiling of equipment shall be allowed within the buffer area.

f. Heavy equipment and other vehicles should not be operated on the beach when flightless chicks are present outside the posted area. If movement of vehicles or equipment on the beach is necessary, the operator must be accompanied by the shorebird observer who will insure no flightless birds are in the path of the moving

vehicle and no tracks capable of trapping flightless young result.

11. ***Seabird and Shorebird Notification.*** If shorebird nesting occurs within the project area, a bulletin board shall be placed and maintained in the construction staging area with the location map of the construction site showing the bird nesting areas and a warning, clearly visible, stating that "NESTING BIRDS ARE PROTECTED BY LAW INCLUDING THE FLORIDA ENDANGERED AND THREATENED SPECIES ACT AND THE STATE and FEDERAL MIGRATORY BIRD ACTS".

12. ***Marine Turtle Nest Surveys and Relocation.*** For sand placement projects that occur during the period from May 1 through October 31, daily early morning (before 9 a.m.) surveys shall be conducted, and eggs shall be relocated per the requirements below (a to c) until completion of the project. Monitoring and reporting shall continue throughout the nesting season and shall be conducted according to *Post-construction Monitoring and Reporting Marine Turtle Protection Conditions* included in this document.

    Nesting surveys shall be initiated 65 days prior to sand placement activities or by April 15, whichever is later. Nesting surveys and egg relocations shall continue through the end of the project or September 30, whichever is earlier. If nests are laid in areas where they may be affected by construction activities, eggs shall be relocated per the requirements listed in a through c below. Monitoring should resume the following nesting season and should be conducted according to *Post-construction Monitoring and Reporting Marine Turtle Protection Conditions* included in this document.

    a. Nesting surveys and egg relocations shall only be conducted by persons with prior experience and training in these activities and who are duly authorized to conduct such activities through a valid permit issued by FWC, pursuant to F.A.C 68E-1. Please contact FWC's Marine Turtle Management Program in Tequesta at MTP@myfwc.com for information on the permit holder in the project area. It is the responsibility of the Permittee to ensure that nesting surveys are completed. Nesting surveys shall be conducted daily between sunrise and 9 a.m. (in all time zones).

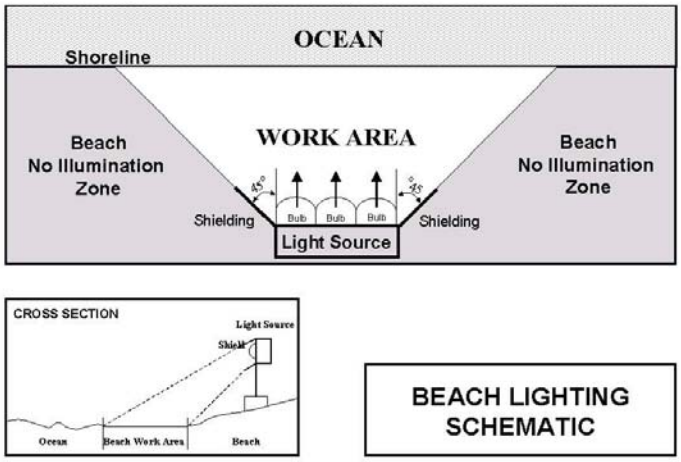
    b. Only those nests in the area where sand placement shall occur shall be relocated. Nest relocation shall not occur upon completion of sand placement. Nests requiring relocation shall be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Relocated nests shall not be placed in organized groupings. Relocated nests shall be randomly staggered along the length and width of the beach in settings that are not expected to experience daily inundation by high tides or known to routinely experience severe erosion and egg loss, or that are subject to artificial lighting. Nest relocations in association with construction activities shall cease when sand placement activities no longer threaten nests.

c. Nests deposited within areas where construction activities have ceased or will not occur for 65 days or nests laid in the nourished berm prior to tilling shall be marked and left in place unless other factors threaten the success of the nest. The turtle permit holder shall install an on-beach marker at the nest site and/or a secondary marker at a point as far landward as possible to assure that future location of the nest will be possible should the on-beach marker be lost. No activity will occur within this area nor will any activities occur which could result in impacts to the nest. Nest sites shall be inspected daily to assure nest markers remain in place and the nest has not been disturbed by the project activity.

13. ***Marine Turtle or Nest Encounters.*** Upon locating a dead or injured sea turtle adult, hatchling or egg that may have been harmed or destroyed as a direct or indirect result of the project, the Corps, applicant, and/or local sponsor shall be responsible for notifying FWC Wildlife Alert at 1-888-404-FWCC (3922). Care shall be taken in handling injured sea turtles or eggs to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for egg relocation for the project shall be notified immediately so the eggs can be moved to a suitable relocation site.

14. ***Equipment Storage and Placement.*** Staging areas for construction equipment shall be located off the beach, if off-beach staging areas are available. Nighttime storage of construction equipment not in use shall be off the beach to minimize disturbance to shorebird and sea turtle nesting and hatching activities. In addition, all construction pipes that are placed on the beach shall be located as far landward as possible without compromising the integrity of the existing or reconstructed dune system. Pipes placed parallel to the dune shall be 5 to 10 feet away from the toe of the dune. Temporary storage of pipes shall be off the beach to the maximum extent possible. If it will be necessary to extend construction pipes past a known shorebird nesting site or over-wintering area for piping plovers, then whenever possible those pipes should be placed landward of the site before birds are active in that area. No pipe or sand shall be placed seaward of a shorebird nesting site during the shorebird nesting season.

15. ***Project Lighting.*** Direct lighting of the beach and nearshore waters shall be limited to the immediate construction area during the sea turtle nesting season and shall comply with safety requirements. Lighting on offshore or onshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the water's surface and nesting beach while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity of lighting equipment shall be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields shall be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area (**Figure below**).



16.

17. ***Fill Restrictions.*** During the sea turtle nesting season, the contractor shall not extend the beach fill more than 500 feet along the shoreline between dusk and the following day until the daily nesting survey has been completed and the beach cleared for fill advancement. An exception to this may occur if there is permitted sea turtle surveyor present on-site to ensure no nesting and hatching sea turtles are present within the extended work area. If the 500 feet is not feasible for the project, an agreed upon distance shall be established during the preconstruction meeting. Once the beach has been cleared and the necessary nest relocations have been completed, the contractor will be allowed to proceed with the placement of fill during daylight hours until dusk at which time the 500-foot length limitation shall apply.

18. ***Compaction Sampling.*** For Collier County, sand compaction shall be monitored in the area of sand placement immediately after completion of the project and prior to April 15th for three (3) subsequent years, and shall be monitored in accordance with a protocol agreed to by the U.S. Fish & Wildlife Service (FWS), FWC and the applicant or local

sponsor. The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post-construction compaction levels. Out-year compaction monitoring and remediation are not required if placed material no longer remains on the beach.

At a minimum, the protocol provided under a. and b. below shall be followed. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area shall be tilled immediately prior to the following date listed above. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the FWC or FWS will be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling will not be required.

a. Compaction sampling stations shall be located at 500-foot intervals along the project area. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station shall be midway between the dune line and the high water line (normal wrack line).

b. At each station, the cone penetrometer shall be pushed to a depth of 6, 12, and 18 inches three times (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible, without interacting with the previous hole and/or disturbed sediments. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports will include all 18 values for each transect line, and the final 6 averaged compaction values.

19. ***Tilling Requirements.*** If tilling is required as specified above, the area shall be tilled to a depth of 36 inches. All tilling activity shall be completed prior to the marine turtle nesting season. If tilling occurs during shorebird nesting season (February 15-August 31), shorebirds surveys prior to tilling may be required per the Shorebird Conditions included within this document. Each pass of the tilling equipment shall be overlapped to allow thorough and even tilling. If the project is completed during the marine turtle nesting season, tilling will not be performed in areas where nests have been left in place or relocated. If compaction measurements are taken, a report on the results of the compaction monitoring shall be submitted electronically to FWC at marineturtle@myfwc.com prior to any tilling actions being taken.

a. No tilling shall occur within 300 feet of any shorebird nest.

b. If flightless shorebird young are observed within the work zone or equipment travel corridor, a Shorebird Monitor shall be present during the operation to ensure that equipment does not operate within 300 feet of the flightless young.

c. A relatively even surface, with no deep ruts or furrows, shall be created during tilling. To do this, chain-linked fencing or other material shall be dragged over those areas as necessary after tilling.

d. Tilling shall occur landward of the wrack line and avoid all vegetated areas 3 square feet or greater with a 3-square-foot buffer around the vegetated areas. The slope between the mean high water line and the mean low water line must be maintained in such a manner as to approximate natural slopes.

20. ***Escarpment Surveys.*** Visual surveys for escarpments along the project area shall be made immediately after completion of the sand placement project and during March 15 to April 15 for three (3) subsequent years if sand from the project area still remains on the beach.

Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of at least 100 feet shall be leveled and the beach profile shall be reconfigured to minimize scarp formation by April 15. Any escarpment removal shall be reported by location. If the project is completed during the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. FWC shall be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the FWS or FWC will provide a brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken shall be submitted electronically to marineturtle@myfwc.com along with the annual summary as described below. If escarpment removal occurs during shorebird nesting season (February 15-August 31), shorebirds surveys may be required per the *Shorebird Conditions* included within this document prior to removal. (NOTE: Out-year escarpment monitoring and remediation are not required if placed material no longer remains on the dry beach).

Post-construction Monitoring and Reporting Marine Turtle Protection Conditions:

21. Reports on all marine turtle nesting activity shall be provided for the initial marine turtle nesting season (***May 1 through September 15***) and for up to three additional nesting seasons as follows:

a. For the initial nesting season and the following year, the number and type of emergences (nests or false crawls) shall be reported per species in accordance with the **Table below**. An additional year of nesting surveys may be required if nesting success for any species on the nourished beach is less than 40%.

b. For the initial nesting season, reproductive success shall be reported per species in accordance with the **Table below**. Reproductive success shall be reported for all loggerhead, green and leatherback nests if possible. Otherwise a statistically significant number of nests for each species shall be reported.

c. In the event that the reproductive success documented by species meets or exceeds required criteria (e.g., 60% or greater for hatching success and emergence success with no statistical difference when compared to hatching success) for each species, monitoring for reproductive success shall be recommended, but not required for the second year post-construction.

d. Monitoring of nesting activity in the seasons following construction shall include daily surveys and any additional measures authorized by the FWC. Summaries shall include all crawl activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any) by species, project name and applicable project permit numbers and dates of construction.

Data should be reported for the nourished areas in accordance with the **Table below** and should include number of nests lost to erosion or washed out. Summaries of nesting activity shall be submitted in electronic format (Excel spreadsheets) to the FWC Imperiled Species Management section at MTP@myfwc.com. All summaries shall be submitted by January 15 of the following year. The FWC Excel spreadsheet is available upon request from MTP@myfwc.com.

22. Two lighting surveys shall be conducted of all artificial lighting visible from the nourished berm. The first survey shall be conducted between May 1 and May 15 the first nesting season following construction or immediately after placement if construction is not completed until after May 15, and a second survey between July 15 and August 1. The survey shall be conducted by the Permittee or local sponsor and should be conducted to include a landward view from the seaward most extent of the new beach profile. The survey shall follow standard techniques for such a survey and include number and type of visible lights, location of lights and photo documentation. For each light source visible, it must be documented that the property owner(s) have been notified of the problem light with recommendations for correcting the light. Recommendations must be in accordance with the Florida Model Lighting Ordinance for Marine Turtle Protection (Chapter 62B-55, F.A.C.) and local lighting restrictions. In addition to local code enforcement, actions must be taken by the Permittee to ensure that no lights or light sources are visible from the newly elevated beach within their respective areas. A report summarizing all lights

visible shall be submitted to FWC Imperiled Species Management Section at marineturtle@myfwc.com by the 1st of the month following survey. A summary report documenting what corrective actions have been taken provided and all compliance and enforcement actions shall also be submitted by December 15 of that year. After the annual report is completed, a meeting shall be set up with the Permittee or local sponsor, county or municipality, FWC and the FWS to discuss the survey report as well as any documented sea turtle disorientations in or adjacent to the project area.

Marine Turtle Monitoring Table for Beach Placement of Material

Metric	Duration	Variable	Criterion
Nesting Success	Year of construction, one year to two or three years postconstruction if placed sand remains on the beach and variable does not meet criterion based on the previous year monitoring	Number of nests and non-nesting emergences by day by species	40% or greater
Hatching Success	Year of construction and one to three years postconstruction if placed sand remains on the beach and variable does not meet criterion based on the previous year monitoring	Number of hatchlings by species to completely escape egg	Average of 60% or greater (data must include washed out nests)
Emergence Success	Year of construction and one to three years postconstruction if placed sand remains on the beach and variable does not meet success criterion based on the previous year monitoring	Number of hatchlings by species to emerge from nest onto beach naturally	Average must not be statistically different than the average hatching success
Disorientation	Year of construction and one to three years postconstruction if placed sand remains on the beach	Number of nests and individuals that misorient or disorient	
Lighting Surveys	Two surveys year following construction , one survey between May 1 and May 15 and second survey between July 15 And August 1	Number, location and photographs of lights visible from elevated berm, corrective actions and notifications made	100% reduction in light sources directly visible from nourished berm within one to two month period
Compaction	Not required if the beach is tilled prior to nesting season each year placed sand remains on the beach	Shear resistance	Less than 500 psi
Escarpment Surveys	Weekly during nesting season for up to three years each year placed sand remains on the beach	Number of scarps 18 inches or greater extending for more than 100 feet that persist for more than two weeks	Successful remediation of all persistent scarps within three weeks of documentation

23. In the event that additional requirements are specified in any subsequent U.S. Fish and Wildlife Service Incidental Take Authorization and Biological Opinion, additional marine turtle protection conditions may be incorporated into this final order through a minor modification.

24. Turbidity curtains shall be used at the northeast bend in Clam Pass to protect the small shoal grass beds.

MONITORING REQUIRED:

24. Water Quality - Turbidity shall be monitored as follows:

Units: Nephelometric Turbidity Units (NTUs).

Frequency: 2 times daily at least 4 hours apart during all dredging and sand placement operations, when the highest turbidity levels reach the edge of the mixing zone.

Location: Background: At mid-depth clearly outside the influence of any artificially generated turbidity plume.

Dredge Site: approximately 150 meters in the opposite direction of the prevailing current flow.

Beach Site: approximately 500 meters upcurrent of the point where the return water from the dredged discharge reenters the Gulf of Mexico and the same distance offshore as the associated compliance sample.

Compliance: At mid-depth, within the densest portion of any visible turbidity plume generated by this project.

Dredge Site: Samples shall be collected 140 meters downcurrent from the dredge head into Clam Pass, in the densest portion of any visible turbidity plume.

Additionally, Turbidity curtains shall be used at the northeast bend to protect seagrass beds within the circular loop.

Beach Site: Samples shall be collected where the densest portion of the turbidity plume crosses the edge of the mixing zone, which measures 75 meters offshore and 150 meters downcurrent from the point where the return water from the dredged discharge reenters the Gulf of Mexico.

25. The **compliance** locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If monitoring reveals turbidity levels at the **compliance** sites that are greater than 29 NTUs above the corresponding background turbidity levels, construction activities shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. Any such occurrence shall also be immediately reported to the Department's Bureau of Beaches and Coastal Systems (BBCS) in Tallahassee via email at JCP Compliance@dep.state.fl.us and include in the subject line, "TURBIDITY EXCEEDANCE", and the Project Name and Permit Number. Also notify the Department's South District office.

26. Turbidity Reports. All turbidity monitoring data shall be submitted within one week of analysis, along with documents containing the following information:

    a. time of day samples were taken;
    b. dates of sampling and analysis;
    c. depth of water body;
    d. depth of each sample;
    e. antecedent weather conditions, including wind direction and velocity;
    f. tidal stage and direction of flow;
    g. water temperature;
    h. a map indicating the sampling locations, dredging and discharge locations, and direction of flow;
    i. a statement describing the methods used in collection, handling, storage and analysis of the samples;
    j. a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, calibration of the meter and accuracy of the data;
    k. When samples cannot be collected, include an explanation in the report. If unable to collect samples due to severe weather conditions, include a copy of a current report from a reliable, independent source, such as an online weather service.

    Monitoring reports shall be submitted by email to the BBCS in Tallahassee (attn: JCP Compliance Officer) and to the Department's South District office. In the subject line of the reports, include the Project Name, Permit Number and the dates of the monitoring interval. Failure to submit reports in a timely manner constitutes grounds for revocation of the permit. When submitting this information to the Department, on the cover page of the report, and at the top of each page, please state: "This information is provided in partial fulfillment of the monitoring requirements in Permit No. 0296087-001-JC, for the Clam Pass Maintenance Dredging Project."

ATTACHMENT C

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, Enforcement Section, 1520 Royal Palm Square Boulevard Suite 310, Fort Myers, Florida,33919. If you have questions regarding this requirement, please contact the Enforcement Branch at 904-232-3131.

1. Department of the Army Permit Number: SAJ-1996-02789(SP-BEM)

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

_____ _____ _____

City State ZIP

(Affix Seal)

_____ _____

Date Telephone Number

Identify any deviations from the approved permit drawings and/or special conditions (attach additional pages if necessary):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ATTACHMENT D

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

February 18, 2016

Colonel Jason A. Kirk
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service CPA Code:	41420-2010-CPA-0395
Service Consultation Code:	41420-2010-F-0249
Service Re-initiation Code:	41420-2010-F-0249-R001
Corps Application Number:	SAJ-1996-02789 (SP-BEM)
Date Received:	March 19, 2015
Consultation Initiation Date:	February 1, 2016
Project:	Clam Pass dredging to maintain tidal exchange for estuary ecological improvements
Applicant:	Collier County, Pelican Bay Services Division
County:	Collier

Dear Colonel Kirk:

This document transmits the U.S. Fish and Wildlife Service's (Service) Biological Opinion to the U.S. Army Corps of Engineers (Corps) based on our review of the proposed Clam Pass dredging and sand placement project to maintain tidal exchange for estuary ecological improvements (Project). Collier County, Pelican Bay Services Division (Applicant) proposes to maintenance dredge Clam Pass and place the dredge material along approximately 0.85 mile (mi) of shoreline north and south of Clam Pass, Collier County, Florida (Figure 1). The Corps determined the proposed Project may affect, and is likely to adversely affect the threatened piping plover (*Charadrius melodus*), the threatened red knot (*Calidris canutus rufa*), the threatened Northwest Atlantic Ocean (NWAO) Distinct Population Segment (DPS) of the loggerhead sea turtle (*Caretta caretta*), the endangered leatherback sea turtle (*Dermochelys coriacea*), the endangered green sea turtle (*Chelonia mydas*), the endangered hawksbill sea turtle (*Eretmochelys imbricata*), and the endangered Kemp's ridley sea turtle (*Lepidochelys kempii*); and may affect, but is not likely to adversely affect the endangered West Indian manatee (*Trichechus manatus*; manatee) and terrestrial loggerhead sea turtle designated critical habitat. For the purposes of this document, the five identified sea turtles will be referred to collectively as sea turtles. This document is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

Piping plover

The Project may lead to temporarily diminished quantity and quality of intertidal foraging and roosting habitats within the Project area, resulting in decreased survivorship of migrating and wintering piping plovers and temporary adverse effects to suitable foraging and roosting habitat. The Applicant has agreed to follow and implement the minimization measures, Reasonable and Prudent Measures (RPMs), and Terms and Conditions outlined in the Programmatic Piping Plover Biological Opinion (P^3BO; Service 2013). The Service has determined the Project effects along the 0.85 mi of beach and 0.32 mi within Clam Pass inlet and channel are consistent with those analyzed in the P^3BO. Based on the Applicant's commitment to implement the minimization measures, RPMs, and the Terms and Conditions identified in the P^3BO, the Project's take coverage for piping plovers is henceforth covered under the P^3BO. All monitoring and reporting requirements must be submitted as outlined in the P^3BO.

Sea turtles

The Project has the potential to adversely affect nesting female sea turtles, nests, and hatchlings within the action area. Potential effects include destruction of nests deposited within the boundaries of the Project, harassment in the form of disturbing or interfering with female sea turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities, and behavior modification of nesting females due to escarpment formation within the Project area during the nesting season resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs. The quality of the dredge material could affect the ability of female sea turtles to nest, the suitability of the nest incubation environment, and the ability of hatchling to emerge from the nest.

The Service has determined the Project effects along the 0.85 mi of beach are consistent with those analyzed in the revised Statewide Programmatic Biological Opinion (2015-SPBO; Service 2015). Based on the Applicant's commitment to implement the RPMs, and the Terms and Conditions identified in 2015-SPBO that apply to the Project, the Project's take coverage for listed sea turtles is henceforth covered under the 2015-SPBO. All monitoring and reporting requirements must be submitted as outlined in 2015-SPBO.

Terrestrial loggerhead sea turtle critical habitat

The Project encompasses terrestrial loggerhead sea turtle Critical Habitat Unit LOGG-T-FL-26 – Wiggins Pass – Clam Pass, Collier County (north of Clam Pass), and Critical Habitat Unit LOGG-T-FL-27 – Clam Pass – Doctors Pass, Collier County (south of Clam Pass). Unit LOGG-T-FL-26 consists of 4.8 mi of mainland shoreline along the Gulf of Mexico and extends from Wiggins Pass to Clam Pass. The 0.32 mi of Project shoreline north of Clam Pass includes 6.67 percent of Critical Habitat Unit LOGG-T-FL-26, and 0.05 percent of all designated critical habitat in the NWAO DPS. Unit LOGG-T-FL-27 consists of 3.0 mi of island shoreline along the Gulf of Mexico and extends from Clam Pass to Doctors Pass. The 0.53 mi of Project shoreline south of Clam Pass includes 17.67 percent of Critical Habitat Unit LOGG-T-FL-27, and 0.08 percent of all designated critical habitat in

the NWAO DPS.

The Project will temporarily directly and/or indirectly impact biological and physical features of critical habitat for the NWAO DPS of the loggerhead sea turtle along 0.85 mi of beach along the Gulf of Mexico, Naples, Collier County, Florida. The effects of the Project on critical habitat are consistent with the analysis of the effects of beach nourishment projects on critical habitat conducted in the 2015-SPBO. Therefore, the Service concurs that the Project may affect, but is not likely to adversely affect terrestrial loggerhead sea turtle critical habitat.

This Biological Opinion is based on information provided in the Corps' Public Notice and letter dated February 20, 2015, and March 10, 2015, respectively. The effects of the Project on piping plovers, sea turtles, and terrestrial loggerhead sea turtle critical habitat will not be discussed further based on the assessment above. A complete record of this consultation is on file at the South Florida Ecological Services Office, Vero Beach, Florida.

Consultation History

On March 19, 2015, the Service received a copy of the Corps' Public Notice and letter dated February 20, 2015, and March 10, 2015, respectively; requesting initiation of formal consultation on the proposed Project in Collier County, Florida.

On January 26 and 28, 2016, the Service emailed the Corps requests for additional information.

On January 28, 2016, the Service received partial responses from the Corps and consultant concerning our requests for additional information.

On January 28 and February 1, 2016, the Service received responses from the consultant concerning our request for additional information.

On February 2, 2016, the Service completed their review of the Project and initiated consultation with the Corps concerning the potential effects of the Project on piping plovers, red knots, sea turtles, designated terrestrial loggerhead sea turtle critical habitat, and manatees.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The Applicant proposes to dredge approximately 11,800 cubic yards (cy) (could be as much as 22,800 cy in subsequent dredging events) of beach compatible sand from Clam Pass inlet and channel, Collier County, Florida (Figure 1). The intent of the proposed Project is in part to protect, preserve, and maintain the Clam Bay Natural Resource Protection Area as outlined in the November 2014 Clam Bay Natural Resources Protection Area Management Plan.

Using a combination of hydraulic and mechanical dredges, approximately 1,700 linear feet (ft) of Clam Pass inlet and channel will be dredged between Stations 0+00 and 17+00 (Figure 2). The proposed dredge template elevation is -5.0 ft North American Vertical Datum (NAVD) between Stations 0+00 and 3+64.5 (Figure 2). A 0.5-ft over-dredge allowance will be authorized. The profile of all dredge cuts within this section of work will consist of a 1 vertical ft: 1 horizontal ft slope. The proposed dredge template between Stations 3+64.5 and 17+00 will be similar except for an elevation of -4.0 NAVD. A maximum 50-ft wide (bottom width) entrance cut will be mechanically dredged, which will allow access for a shallow-draft, barge-mounted hydraulic dredge inside Clam Pass. Appropriate buffers (5 to 15 ft), as outlined in the Clam Bay Natural Resource Protection Area Management Plan, will be maintained between the dredge cuts and adjacent mangroves and/or seagrasses to minimize the potential for adverse impacts to adjacent resources.

All excavated and dredged beach compatible material will be deposited within the fill template (Florida Department of Environmental Protection [DEP] reference monument R-39+733 ft to R-41, and R-42 ft to R-44+500 ft [total fill template is approximately 0.85 mi]), and graded using bulldozers or other appropriate grading equipment, to the permitted design fill profile (1 vertical ft : 10 horizontal ft slope with an elevation of +5.0 and +6.6 ft NAVD in the north and south fill template, respectively). Construction vehicles will either access the shoreline at one of two beach corridors located approximately 2.4 and 2 mi north and south of Clam Pass, respectively, or may be delivered directly to the site by barge. All sand placed within the fill template must be approved by the DEP and meet all requirements as outlined in the Florida Administrative Code subsection 62B-41.007. Although not anticipated, any non-beach compatible material will be stockpiled on the upland and ultimately disposed of landward of the Coastal Construction Control Line at the Collier County Landfill. All loose debris will be removed and properly disposed of prior to sand placement.

Construction vehicles and equipment may traverse or be stored at the staging areas, stockpile area, and/or within the pipeline corridor. Existing vegetated habitat at these sites and corridors shall be protected to the maximum extent practicable. Any impacted vegetation at each of these sites and corridors shall be restored to preconstruction conditions. In addition, if heavy equipment and vehicles are required to traverse the dry beach above the mean high water line, the path will be tilled to 3 ft to avoid compaction impacts prior to the following sea turtle nesting season.

The Project is expected to take between 45 and 75 days to complete and may take place 24 hours a day, 7 days a week. Project commencement is expected prior to March 15, 2016, in order to complete dredging before the 2016 sea turtle nesting season. If not feasible, and Clam Pass remains open, the Project will commence in November 2016.

Minimization measures

As previously stated, the Applicant will follow and implement the minimization measures, RPMs, and the Terms and Conditions of the P^3BO. These RPMs and the Terms and Conditions

will also minimize effects to red knots.

To minimize impacts to manatees from the Project, the Applicant will implement the Florida Fish and Wildlife Conservation Commission's (FWC) Standard Manatee Conditions for In-Water Work (FWC 2011) and the minimization measures outlined for manatees in the 2015-SPBO.

Action Area

The action area is defined as all areas to be affected directly or indirectly by the action and not merely the immediate area involved in the action. The Service identifies the action area to include the dredge template, sand fill template (0.85 mi), beach corridors, pipeline corridors, staging areas, and the upland disposal site. The Project is located along the Gulf of Mexico, in Collier County, Florida, at latitude 26.2197 and longitude -81.8169.

SPECIES NOT LIKELY TO BE ADVERSELY AFFECTED BY THE PROPOSED ACTION

West Indian manatee

The Project occurs within the geographic range of the manatee. As previously indicated, the Applicant has agreed to follow and implement the Standard Manatee Conditions for In-Water Work (FWC 2011) and the minimization measures outlined in the 2015-SPBO to avoid potential impacts on manatees. Based on the proposed protection measures, the Service concurs with the Corps' determination that the Project may affect, but is not likely to adversely affect the species; therefore, the manatee will not be considered further in this Biological Opinion.

STATUS OF THE SPECIES/CRITICAL HABITAT

Please see http://www.fws.gov/verobeach/StatusoftheSpecies.html for the current Status of the Species for the red knot (November 2015). Critical habitat has not been designated for the red knot; therefore, critical habitat will not be affected by the Project.

Analysis of the species/critical habitat likely to be affected

Red knot

The proposed action has the potential to adversely affect migrating and wintering red knots and their habitat within the action area. The construction activities may lead to temporarily diminished quantity and quality of intertidal foraging and roosting habitats within the Project area, resulting in decreased survivorship of migrating and wintering red knots and temporary adverse effects to suitable intertidal foraging and roosting habitat. The length of construction activities may delay the recovery of prey species due to the prolonged disturbance of the benthic fauna. The detailed effects of the proposed action on red knots and their habitat will be

considered further in the Effects of the Action sections of this Biological Opinion.

ENVIRONMENTAL BASELINE

Status of the species within the action area

Assessing the number of red knots within the Project area during winter and migration periods is difficult because the number of birds utilizing the shoreline and intertidal areas vary from year to year and throughout each migration and wintering season.

Piping plover monitoring has been conducted adjacent to Clam Pass since January 2013 in accordance to monitoring requirements associated with the Clam Pass dredging and sand placement event performed in 2013. Monitoring has been conducted twice monthly from January 1 through March 30, 2013, and from July 15th through March 15th for the 2013/14 and 2014/15 seasons. The 2015/16 shorebird monitoring is ongoing. Red knots were observed on two occasions. In March 2013 and January 2014, two red knots were observed approximately 0.4 mile south of Clam Pass, and an undisclosed number of red knots observed foraging and resting on the shoreline immediately south of Clam Pass, respectively. No additional red knots have been documented within the Project area based on subsequent survey efforts.

Our Geographic Information System database has 1 documented red knot located approximately 1.8 mi north of Clam Pass in 2006. According to red knot data provided by eBird, 2 red knots were document approximately 2 mile north of Clam Pass in November 2012 (eBird 2016).

Factors affecting the species habitat within the action area

Coastal development

Shoreline development throughout the wintering range poses a threat to all populations of red knots. Beach maintenance and nourishment, inlet dredging, and artificial structures, such as jetties and groins, can eliminate wintering areas and alter sedimentation patterns leading to the loss of nearby habitat. Structural development along the shoreline or manipulation of natural inlets upsets the dynamic processes and results in habitat loss or degradation (Melvin et al. 1991). Increased coastal development brings other recreational disturbances that are known to prevent bird usage of an area, including human disturbance, predation or disturbance by domestic animals, beach raking and cleaning, and habitat degradation by off-road vehicles. Recreational management techniques, such as vehicle restrictions, pet restrictions, and symbolic fencing (usually sign posts and string) of roosting and foraging habitats, can help to address anthropogenic disturbances to wintering red knots. Educational materials, such as informational signs or brochures, can also provide valuable information to assist the public in understanding the need for conservation measures. Although these measures can be effective, they are not implemented consistently throughout the State.

Accelerated sea-level rise

Potential effects of sea-level rise on coastal beaches vary regionally due to subsidence or uplift as well as the geological character of the coast and nearshore. Low elevations and proximity to the coast make all nonbreeding coastal red knot foraging and roosting habitats vulnerable to the effects of rising sea-level including the Project area. Furthermore, areas with small astronomical tidal ranges (*e.g.*, sand spits, shoals, and portions of the Gulf Coast where intertidal range is less than 3.3 ft) are the most vulnerable to loss of intertidal wetlands and flats induced by sea-level rise (Environmental Protection Agency 2009). Accelerated sea-level rise is a major component of climate change. A detailed discussion of additional effects of climate change across the range of the red knot can be found in the Status of the Species.

Sand placement activities

Sand placement projects, such as the proposed Project, have the potential to alter red knot habitat and have historically occurred in the action area. Beach nourishment can create a beach seaward of existing hard stabilization or heavy development, where the beach has been lost due to erosion and/or sea-level rise, restoring associated ecosystem functions. Although dredge and fill projects that place sand on beaches or dunes may restore lost or degraded habitat, these projects may degrade habitat by altering the natural sediment composition and depressing the invertebrate base. This hinders habitat migration with sea-level rise, and replaces the natural dune beach nearshore system with artificial geomorphology (Service 2012). Lott et al. (2009) found a strong negative correlation between sand placement projects and the presence of shorebirds on the Gulf Coast of Florida; however, he noted additional research was needed to clarify whether the cause was the sand placement project or the tendency for these projects to be located on highly developed shorelines. Harrington (2008) noted the need for a better understanding of the potential effects of inlet-related projects, such as jetties, on bird habitats.

Conversely, in areas where the shoreline is highly eroded, sand placement activities can improve red knot foraging and roosting habitat. Sand placement activities add sand to the sediment budget, increasing the beach width and providing a sand source for emergent nearshore features to form. Although there is some research related to the management of beach nourishment projects to better maintain the habitat for shorebirds, much of this research is focused on beaches in the northern U.S. where breeding occurs (Melvin et al. 1991). In their wintering grounds, increasing beach width is an important aspect of beach nourishment projects in highly developed, eroding areas. The timing of the project is also important in preventing impacts to red knots as a result of sand placement activities.

Sediment transport - dredging

The common practice of inlet and nearshore dredging can affect red knot habitat. Dredging often involves removal of sediment from sand bars, shoals, and inlets in the near-shore zone, directly impacting optimal red knot roosting and foraging habitats (Winn and Harrington in Guilfoyle et al. 2006; Harrington in Guilfoyle et al. 2007; Harrington 2008). These ephemeral habitats are even

more valuable to red knots because they tend to receive less recreational use than the main beach strand. In addition to causing this direct habitat loss, the dredging of sand bars and shoals can preclude the creation and maintenance of red knot habitats by removing sand sources that would otherwise act as natural breakwaters and weld onto the shore over time (Morton 2003; Hayes and Michel 2008). Further, removing these sand features can cause or worsen localized erosion by altering depth contours and changing wave refraction (Hayes and Michel 2008), potentially degrading other nearby red knot habitats indirectly because inlet dynamics exert a strong influence on the adjacent shorelines. Studying barrier islands in Virginia and North Carolina, Fenster and Dolan (1996) found inlet influences extend 3.4 to 8.1 mi, and that inlets dominate shoreline changes for up to 2.7 mi. Changing the location of dominant channels at inlets can create profound alterations to the adjacent shoreline (Nordstrom 2000).

EFFECTS OF THE ACTION

Factors to be considered

The Project will occur within habitat that is used by wintering/migrating (mid-July to late April) red knots. Since red knots can be present on these beaches for up to 10 months per year, construction is likely to occur while the species is utilizing these beaches and associated habitats. Project activities may affect red knots by flushing birds from roosting or foraging habitat hindering their ability to 1) recuperate from the energy expenditure of their migration, 2) survive on their wintering areas, and/ or 3) to build fat reserves in preparation for migration back to their breeding grounds. In addition, effects of the Project may also include changes in the habitat including the physical characteristics of the beach from the placement of the sand.

Analyses for effects of the action

Direct effects

Direct effects are those direct or immediate effects of a project on the species and/or its habitat. Heavy machinery and equipment (*e.g.*, off road vehicles and bulldozers) operating within the Project area, placement of the dredge pipeline along the shoreline, and sand disposal, may affect migrating wintering red knots by disrupting their normal activities such as roosting and foraging by flushing them from the beach. Because red knots are highly mobile and can quickly move from harm's way, we do not anticipate that any individuals will be injured or killed by the proposed Project. Birds that are flushed may shift slightly up or down the beach to other available habitat adjacent to the action area, or they may travel greater distances to find an alternative stopover location. Although studies have shown that plovers tend to remain within a 2-mi wintering home range, it is unknown how far red knots will travel within specific areas during migration stopovers and within wintering areas due to local disturbance or to find a more abundant food source.

Dredging of 0.32 mi within Clam Pass inlet and channel is expected to impact potentially suitable red knot habitat. The inlet and channel represents an ephemeral intertidal foraging and roosting area

for red knots and the amount of available habitat varies throughout the year based on weather and ocean conditions. This habitat is currently dredged from the inlet and channel on an average 4 to 5 year interval for purposes of maintaining proper tidal exchange to the Clam Bay estuary system. Based on current conditions and practices, the removal of intertidal foraging and/or roosting habitat as a result of the proposed action would be variable based on the amount existing, but would likely represent an increase from status quo. Therefore, inlet and channel dredging would decrease the quantity of available intertidal foraging and roosting habitat in Clam Pass.

Sand placement may also adversely affect red knots by decreasing the intertidal benthic prey species abundance along the 0.85 mi of beach. Sand placement temporarily reduces wrack prey species occurrence and can bury and suffocate prey species. Overtime the natural wrack would be restored through normal tidal events and benthic species recruitment and re-establishment following sand placement events is anticipated to be from 6 months up to 2 years.

Indirect effects

Indirect effects are those that are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. The disturbance to normal red knot foraging and roosting behavior and decrease prey availability, during construction and immediately post-construction, may decrease the survival and fitness of individuals by limiting the ability of birds to rest and replenish their fat reserves for spring migration and summer breeding. Furthermore, the increased energy expenditure and a potential lack of adequate food supplies could lead to reduced fecundity, and over-wintering survival. Such effects would be minimal for birds wintering or migrating through the action area because of the presence of suitable roosting and foraging habitat immediately north and south of the Project area. Furthermore, these effects are expected to be temporary, occurring during construction and up to 2 years following (for prey species to re-establish).

Beneficial effects

Beneficial effects are contemporaneous positive effects without any adverse effects to the species. The Project will introduce sediment into the system that will be reworked and redistributed through the natural processes of wind, wave action, and storm events. As previously stated, in areas where the shoreline is highly eroded, sand placement activities can improve red knot foraging and roosting habitat. The additional sediment will allow for formation of red knot habitat through natural processes, thus maintaining and/or enhancing the features for suitable red knot habitat. The renourishment and maintenance of such coastal habitats are important for maintaining healthy red knot populations.

Species response to the proposed action

Routine dredging and beach nourishment is expected on a 4-5 year interval. Timing of construction activities may vary in duration depending on the amount of work needed (routine

nourishment, emergency nourishment, hot spot nourishment), weather conditions, and equipment mobilization and maintenance. The number of birds that may be present during dredging and beach nourishment activities is not known and is expected to vary annually based on the timing of migration and the timing of the activity. However, based on historic surveys we estimate that this number could be between zero and two or more individuals. Regardless of the number, the behavior of any birds present will be disrupted when they are flushed from the foraging and roosting habitat. Because the habitat immediately north and south of the Project area consists of sandy beaches (suitable habitat), we anticipate that most birds will travel only a short distance. A worst-case scenario would be that the adjacent habitat is unsuitable for a particular year and individuals are forced to travel greater distances, thereby reducing their overall fitness and potential to survive and reproduce.

Dredging of the 0.32 mi within Clam Pass inlet and channel may result in a temporary loss of available habitat. Any birds that arrive in the area following a dredging event may find a reduction in habitat compared to previous years. We anticipate that in most cases birds will travel a short distance to suitable habitat immediately north and south of the Project, or possibly further east in Clam Pass channel. This could result in a reduced fitness due to energy expenditure moving up and down the beach and could ultimately lead to a reduction of the individual's ability to survive and reproduce.

Sand placement is expected to temporarily decrease the quality of the existing foraging habitat. Foraging quality of the 0.85 mi of shoreline will be temporarily reduced for 6 months up to 2 years while the intertidal benthic fauna (prey base) recovers to normal population levels and natural wrack returns to the newly created island shoreline. If birds arrive during this period of recovery, they may have to seek alternative foraging/stopover locations because of the lower food availability. We anticipate that in most cases birds will travel a short distance to suitable habitat immediately north and south of the Project; however, in some cases, fitness of individuals could be lowered due to the lower food availability. Similar to the reduced fitness due to energy expenditure moving up and down the beach, this reduced prey availability could ultimately lead to a reduction of the individual's ability to survive and reproduce.

Although the Project will have repeated temporary adverse effects on red knots on average every 4-5 years, the sand placement Project is ultimately anticipated to have an overall beneficial effect on the red knot by maintaining suitable habitat along 0.85 mi of beach.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any specific activities that would be considered cumulative effects.

CONCLUSION

The survival and recovery of all breeding populations of red knots are fundamentally dependent on the continued availability of sufficient habitat in their coastal migration and wintering ranges, where those species spend more than two-thirds of their annual cycle. All red knot populations are inherently vulnerable to even small declines in their most sensitive vital rates (*i.e.,* survival of adults and fledged juveniles).

After reviewing the current status of the red knot, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Project, as proposed, is not likely to jeopardize the continued existence of the red knot. We have reached this conclusion because 1) the implementation of the Project is not likely to directly kill any red knots since they are highly mobile and can move out of harm's way; 2) the amount of increased energy expenditure searching for suitable habitat and searching for prey during construction is anticipated to be minimal because birds will only shift a short distance to the adjacent beach; 3) even if the disturbance and decreased food availability leads to a reduction of fitness that ultimately reduces survival and reproduction, the number of individuals effected would be relatively small (one to two individuals); and 4) the Project is anticipated to have a long-term beneficial effect by maintaining sand along the 0.85 mi of beach creating suitable red knot habitat for migration/stopovers.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered or threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the Applicant so they become binding conditions of any grant or permit issued to the Applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Applicant has a continuing duty to regulate the activity covered by this incidental take statement. If the Applicant (1) fails to assume and implement the terms and conditions or (2) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact

of incidental take, the Applicant must report the progress of the action and its impacts on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

All red knots that occupy the beach and the Clam Pass inlet and channel during winter and migration, could be taken in the form of harm and harassment as a result of the proposed action. The actual number of red knots that may be affected is difficult to quantify because migration and wintering bird survey data indicate the number of birds within and adjacent to the Project area for the duration of project construction and intertidal benthic recovery vary both seasonally (spring and fall) and annually (year to year). Furthermore, of the birds that occupy the Project area, the subset that may be adversely affected by a reduction in fitness leading to a decrease in productivity or over-winter survivorship would be difficult to identify because these affects may only be measurable on the breeding grounds the subsequent breeding season. Therefore, the Service will use the amount of beach (0.85 mi) and 0.32 mi within Clam Pass inlet and channel as a surrogate for the number of red knots that may be taken by the proposed Project. If the Applicant expands the Project outside of the 0.85 mi of sandy beach or 0.32 mi within Clam Pass inlet and channel, the amount or extent of incidental take for red knots will be considered exceeded. This incidental take statement will expire in 2026, 10 years after issuance of the Corps permit. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the RPMs provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the RPMs.

EFFECT OF THE TAKE

In the accompanying Biological Opinion, the Service determined this level of anticipated take is not likely to result in jeopardy to the red knot.

REASONABLE AND PRUDENT MEASURES

The Service and Corps have worked together to develop minimization measures for the proposed action to reduce the take and to minimize impacts of incidental take of red knots in this Biological Opinion. Consequently, there are no additional RPMs or terms and conditions.

MONITORING AND REPORTING REQUIREMENTS

Pursuant to 50 Code of Federal Regulations 402. l4(i)(3), the Corps and the Applicant must provide adequate monitoring and reporting to determine if the amount or extent of take is approached or exceeded. The Corps or Applicant must report the number of mi of beach renourished following each sand placement event and mi of Clam Pass inlet and channel dredged. The P^3BO also contains additional reporting requirements that must be submitted to the Service by July 31 of each year in which monitoring is completed.

DISPOSITION OF DEAD OR INJURED SPECIMEMS

Upon locating a dead, injured, or sick threatened red knot specimen, initial notification shall be made to the Service's Office of Law Enforcement (Groveland, Florida; 352-429-1037). Additional notification shall be made to FWC at 1-888-404-3922 and the Service's South Florida Ecological Services Office (1339 20th Street, Vero Beach, Florida 32960-3559; 772-562-3909). Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure evidence intrinsic to the specimen is not unnecessarily disturbed.

COORDINATION OF INCIDENTAL TAKE STATEMENT WITH OTHER LAWS, REGULATIONS, AND POLICIES

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the provisions of the MBTA, it is unlawful "by any means or manner to pursue, hunt, take, capture or kill any migratory bird except as permitted by regulations issued by the Service. The term "take" is not defined in the MBTA, but the Service has defined it by regulation to mean to pursue, hunt, shoot, wound, kill, trap, capture or collect any migratory bird, or any part, nest or egg or any migratory bird covered by the conventions or to attempt those activities.

The Service carries out its mission to protect migratory birds by fostering relationships with entities that have taken effective steps to avoid take, by encouraging others to implement measures to avoid take, and through investigations and enforcement when appropriate. Companies are encouraged to work closely with the Service to identify available protective measures when developing project plans to safeguard wildlife and to implement those measures where applicable. Ultimately, those parties involved with the planning, design, construction, operation, maintenance, and decommissioning of projects are responsible for conducting relevant evaluations of the area and for determining which, if any, bird species may be affected.

All sand placement events have the potential to impact nesting shorebirds protected under the MBTA (16 U.S.C. 701 *et seq.*). In order to minimize potential take of migratory birds protected under the MBTA the Applicant shall comply with the FWC standard shorebird protection guidelines to protect against impacts to nesting shorebirds during implementation of the Project.

The Service will not refer the incidental take of red knots associated with this Project for prosecution under the MBTA, as amended (16 U.S.C. 703-712), if such take is in compliance with the terms and conditions specified here.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. The Corps should facilitate a meeting between the Service, FWC, and the Applicant to discuss steps for the long-term protection of wrack within the Project area.
2. The Applicant should avoid dredging submerged and emergent shoals to preserve beach dynamics and shorebird habitat.
3. The Applicant should support pre-and post-construction benthic invertebrate surveys.
4. The Applicant should consider the creation of habitat features such as ephemeral tide pools, irregular shorelines and extended flats to enhance feeding and roosting habitats.
5. The Corps should work with the Service, FWC, and the Applicant to reduce human disturbance to red knots (*e.g.,* symbolic fencing around important roosting areas, enactment and enforcement of dog regulations, signage, outreach materials regarding red knots and beaches, bird stewards where high human use and red knots overlap).

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if:

1. The amount or extent of incidental take is exceeded;
2. New information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Biological Opinion;
3. The agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Biological Opinion; and
4. A new species is listed or critical habitat designated that may be affected by the action.

In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation in the effort to protect fish and wildlife resources. Should you have additional questions or require clarification, please contact Jeff Howe at 772-469-4283.

Sincerely yours,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services Office

cc: electronic only
Corps, Fort Myers, Florida (Brianne McGuffie)
DEP, Tallahassee, Florida (Tom Jacobs)
EPA, West Palm Beach, Florida (Ron Miedema)
FWC, Tallahassee, Florida (FWC-CPS)
Service, Jacksonville, Florida (Billy Brooks)
Service, St. Petersburg, Florida (Ann Marie Lauritsen, Peter Plage)

LITERATURE CITED

eBird. 2016. An online database of bird distribution and abundance [Internet]. Cornell Lab of Ornithology; Ithaca, New York [cited January 28, 2016]. Available from: http://www.ebird.org.

Environmental Protection Agency. 2009. Coastal zones and sea level rise. Available from: http://www.epa.gov/climatechange/effects/coastal/index/html.

Fenster, M. and R. Dolan. 1996. Assessing the impact of tidal inlets on adjacent barrier island shorelines. Journal of Coastal Research 12(1):294-310.

Florida Fish and Wildlife Conservation Commission (FWC). 2011. Standard Manatee Conditions for In-Water Work 2011. Available from: http://myfwc.com/wildlifehabitats/managed/manatee/permit-review/#Main

Guilfoyle, M.P., R.A. Fischer, D.N. Pashley, and C.A. Lott, editors. 2006. Summary of first regional workshop on dredging, beach nourishment, and birds on the south Atlantic coast. ERDC/EL TR-06-10. U.S. Army Corps of Engineers; Washington, D.C. Available from: http://www.fws.gov/raleigh/pdfs/ES/trel06-10.pdf.

Guilfoyle, M.P., R.A. Fischer, D.N. Pashley, and C.A. Lott, editors. 2007. Summary of second regional workshop on dredging, beach nourishment, and birds on the north Atlantic coast. ERDC/EL TR-07-26. U.S. Army Corps of Engineers; Washington, D.C. Available from: http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA474358.

Harrington, B.A. 2008. Coastal inlets as strategic habitat for shorebirds in the southeastern United States. DOER technical notes collection. U.S. Army Engineer Research and Development Center; Vicksburg, Mississippi. Available from: http://el.erdc.usace.army.mil/elpubs/pdf/doere25.pdf.

Hayes, M.O. and J. Michel. 2008. A coast for all seasons: A naturalist's guide to the coast of South Carolina. Pandion Books; Columbia, South Carolina.

Lott, C.A., C.S. Ewell Jr., and K.L. Volanky. 2009. Habitat associations of shoreline-dependent birds in barrier island ecosystems during fall migration in Lee County, Florida. Prepared for U.S. Army Corps of Engineers; Engineer Research and Development Center; Technical Report.

Melvin, S.M., C.R. Griffin, and L.H. MacIvor. 1991. Recovery strategies for piping plovers in managed coastal landscapes. Coastal Management 19: 21-34.

Morton, R.A. 2003. An overview of coastal land loss: With emphasis on the southeastern United States. USGS Open File Report 03-337. U.S. Geological Survey Center for Coastal and Watershed Studies; St. Petersburg, Florida. Available from: http://pubs.usgs.gov/of/2003/of03-337/pdf.html.

Nordstrom, K.F. 2000. Beaches and dunes of developed coasts. Cambridge University Press; Cambridge, United Kingdom.

U.S. Fish and Wildlife Service (Service). 2012. Comprehensive conservation strategy for the piping plover (*Charadrius melodus*) in its coastal migration and wintering range in the continental United States. U.S. Fish and Wildlife Service; East Lansing, Minnesota. Available from: http://www.fws.gov/midwest/endangered/pipingplover/pdf/CCSpiplNoApp2012.pdf.

U.S. Fish and Wildlife Service (Service). 2013. Programmatic piping plover biological opinion to the U.S. Army Corps of Engineers (Service Consultation Code 04EF1000-2013-F-0124) for shore protection activities in the geographical region of the north and south Florida Ecological Services Field Offices (May 22, 2013). Jacksonville and Vero Beach Field Offices, Florida.

U.S. Fish and Wildlife Service (Service). 2015. Revised statewide programmatic biological opinion to the U.S. Army Corps of Engineers (FWS Log No. 41910-2011-F-0170) for shore protection activities along the coast of Florida (February 27, 2015). Jacksonville, Panama City, and Vero Beach Field Offices, Florida.

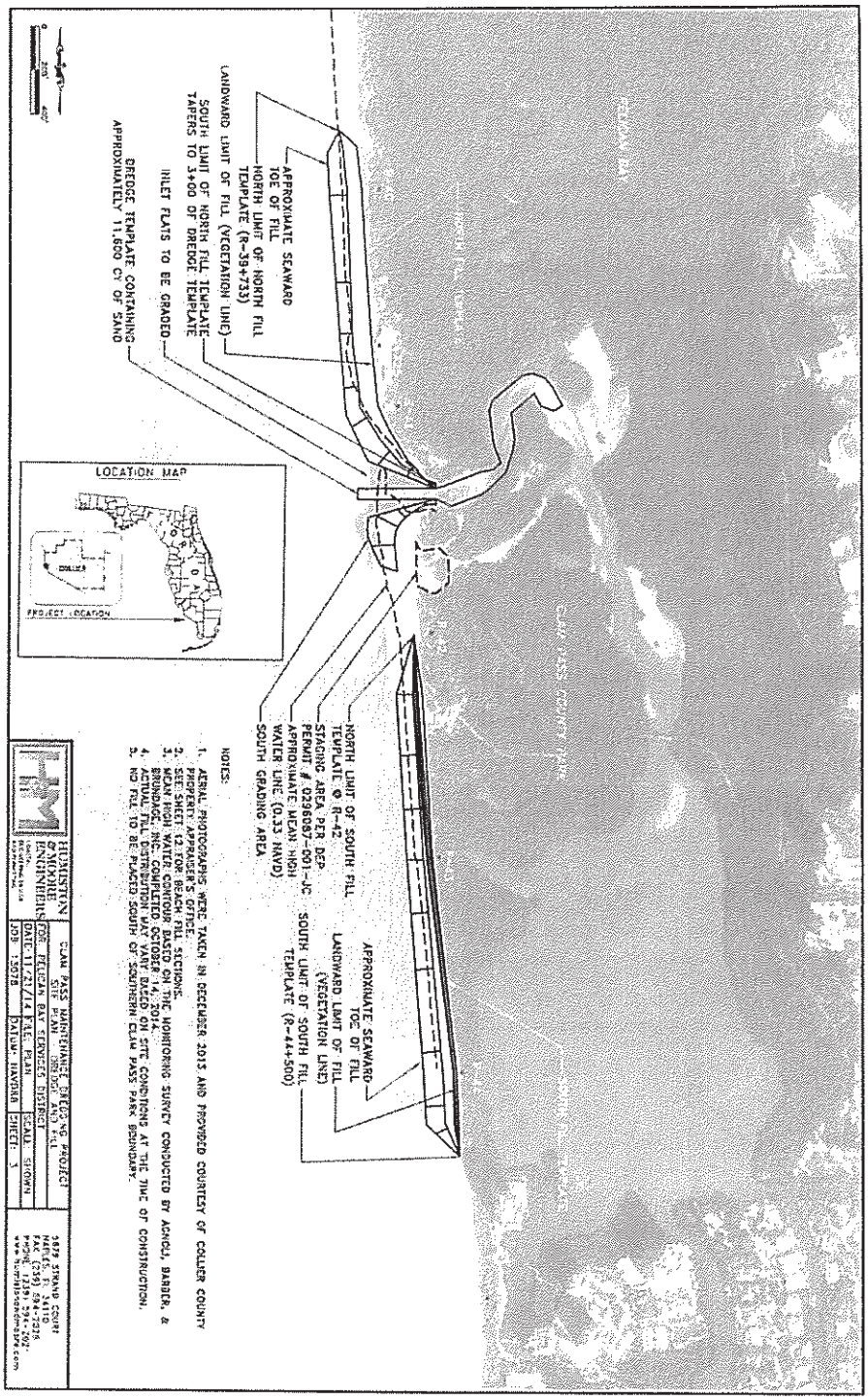


Figure 1. Location of the dredging template and sand fill template, Clam Pass, Collier County, Florida.

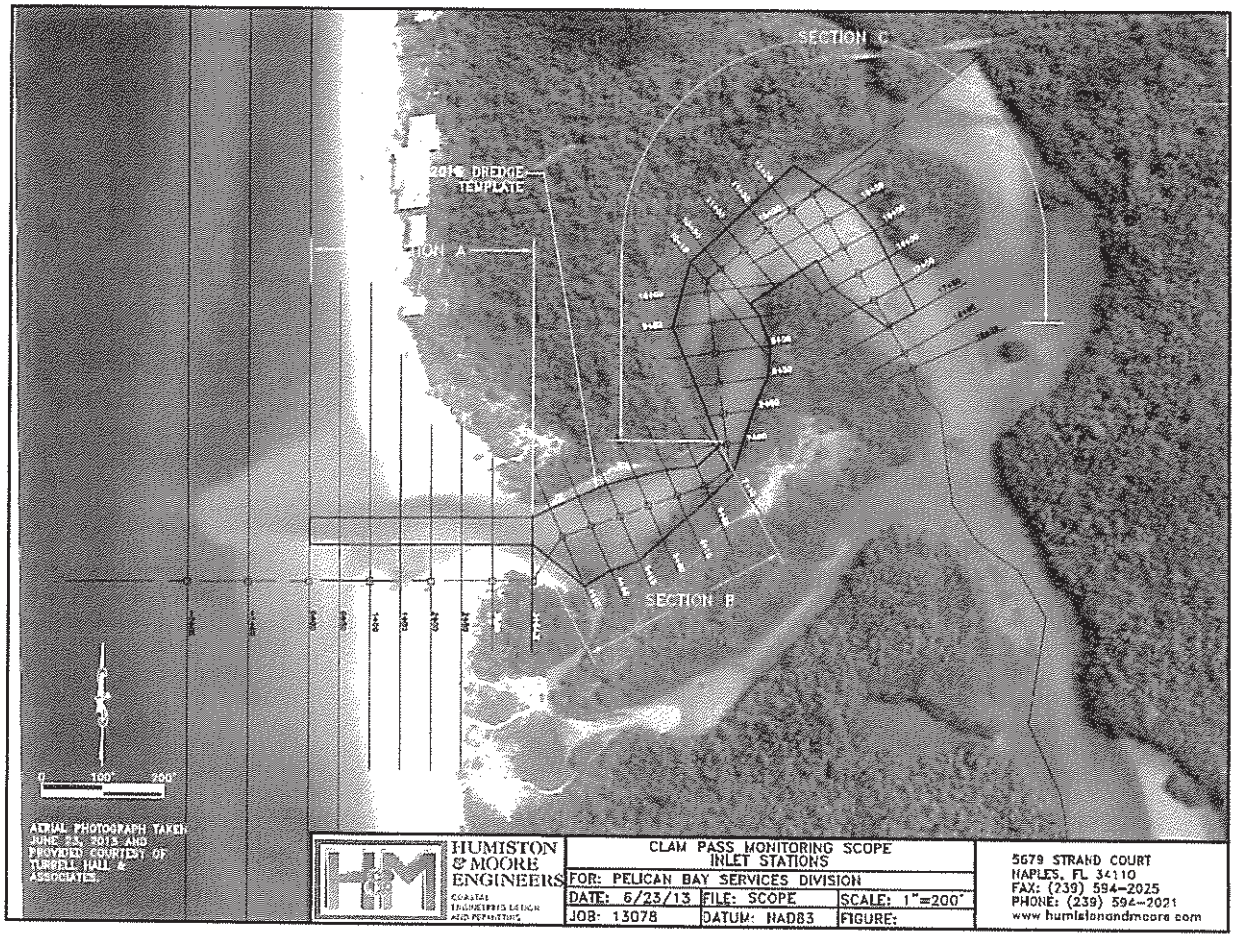


Figure 2. Proposed dredging template and elevations in Clam Pass, Collier County, Florida.

ATTACHMENT E

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 Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" 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 MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

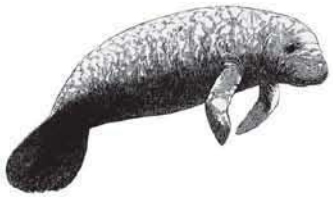
All project vessels

IDLE SPEED / NO WAKE

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

SHUT DOWN

Report any collision with or injury to a manatee:



Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

ATTACHMENT F

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