



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

January 24, 2020

CESAJ-RD-WT
Regulatory Division
West Branch
Tampa Permits Section

PUBLIC NOTICE

Permit Application No. SAJ-2000-00050 (SP-RGH)

TO WHOM IT MAY CONCERN: The Jacksonville District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403) as described below:

APPLICANT: Isaac Brownman
Public Works Director, Town of Longboat Key
600 General Harris Street
Longboat Key, Florida 34228
941-316-1988
ibrownman@longboatkey.org

WATERWAY AND LOCATION: The project would affect waters of the United States associated with Sarasota Bay. The project site is located within Longboat Key, in Sections 15, 22, 23, 24, 25, & 36, Township 35 South, Range 16 East; Sections 5, 8, 21, 22, & 27, Township 36 South, Range 17 East, Longboat Key, Manatee and Sarasota Counties, Florida.

Directions to the site are as follows: As the proposed project involves residential canals, project sites area generally accessible by boat. There are public boat ramps on the north (Coquina Beach South Boat Ramp) and south (Ken Thompson Boat Ramp) ends of Longboat Key. To access these ramps, from I-75 S take exit 228 to I-275 N, travel for 1 mile, then take exit 2 to US-41 S/Tamiami Trail. Continue for about 7 miles, then h1rn right onto FL-64 W/Manatee Avenue. From there, drive for 4.5 miles, tum left onto 75th Street W, travel for 2.3 miles then turn right onto SR 684/Cortez Rd. Continue straight for 4 miles, then turn left onto Gulf Drive N. Going straight through any roundabout, travel for about 1.5 miles. The entrance to the Coquina Beach South Boat Ramp will be on your left. To get to Ken Thompson Boat Ramp, continue past Coquina Beach for another 10.8 miles. Turn left onto Ken Thompson Parkway, drive for 0.4 mile, take a right, and the ramp will be straight ahead.

APPROXIMATE CENTRAL COORDINATES:

Canal	Latitude	Longitude
01	27.44060833	-82.68484194
02	27.43384806	-82.68324722
02B	27.43235778	-82.6798325
03	27.43006528	-82.67709639
06	27.42871694	-82.67511667
18	27.41622611	-82.65815417
20P	27.41131472	-82.65457028
21A	27.41116028	-82.65385611
21P	27.40694528	-82.65146306
22A	27.4066775	-82.64847194
32P	27.38026556	-82.61900111
49	27.34008056	-82.59467861
55	27.33404778	-82.58378083
55A	27.33238167	-82.58610472

PROJECT PURPOSE:

Basic: Maintenance Dredge.

Overall: Maintenance Dredge residential canals within Longboat Key.

EXISTING CONDITIONS: The existing canals are in various stages of silting in since the last maintenance dredge effort was permitted in 2000. Seagrass has recolonized some parts of the proposed dredge footprint. The existing area surrounding the project area consists of residential homes with docks with some mangroves.

PROPOSED WORK: Applicant proposes to perform the maintenance dredging of 14 residential canals in the Town of Longboat Key, Sarasota & Manatee Counties, Florida. The proposed maintenance dredging to remove about 9,053 cubic yards (yd³) of material from 14 existing residential canals, located along the length of the Longboat Key. Natural resources within the project dredging vicinity include seagrasses and oyster reefs. To avoid and minimize impacts to those resources to the extent practicable the dredge template has been refined to reflect a range of bottom cut widths. The residential canals will be dredged to a maximum depth of – 5ft Mean Lower Low Water (MLLW) or previously authorized depth with bottom cut widths ranging from 0 feet (ft) to 30 ft depending on the existing channel alignment, available space, and presence of natural resources, for a total of 4.43 acres (including side-slopes). Some areas of seagrasses could not be avoided while maintaining safe navigation; 7 of the 14 canals may result in seagrass impacts of approximately 1.37 acres. Canal dredging will be performed by mechanical means. Contractor equipment will be stored along a designated area at Overlook Park. The sediment will be mechanically dredged, placed into a shallow draft hopper barge, and transported by barge to the east side of Sarasota

Bay for placement within a designated mitigation area. The work is expected to require approximately 6–8 months.

AVOIDANCE AND MINIMIZATION INFORMATION – The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

Seagrass impacts were avoided and minimized by adjusting the dredging widths within the canals as well as adjusting the proposed dredging footprint. However, the project will result in a total of approximately 1.37 acres of unavoidable seagrass impacts within 7 of the 14 canals. As part of this project, a mitigation site has been identified to compensate for seagrass impacts. No other impacts to listed species or habitat is anticipated.

COMPENSATORY MITIGATION – The applicant has offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment:

Mitigation was designed to meet the assumed 2:1 mitigation to impact ratio typically requested by NOAA Fisheries Habitat Conservation Division (HCD). To mitigate for the seagrass impacts, the applicant has identified an abandoned channel located along the east side of the Sarasota Bay east of the North end of the key. The mitigation site is approximately 7.12 acres in size, with a bottom elevation of -10 ft North American Vertical Datum of 1988 (NAVD 88) (about 6 ft deeper than the adjacent bay bottom elevations), 2,000 ft long, and 150 to 200 ft wide.

Sediments dredged from the residential canals and other sources will fill 2.74 acres of the mitigation site to surrounding bottom elevations prior to seagrass planting (salvaged from the seagrass impact areas).

The mitigation site will require approximately 23,000 yd³ of fill to achieve suitable seagrass habitat elevations within the 2.74-acre mitigation area. Canal maintenance dredging will produce about 9,053 yd³ of fill. Material from a 20,000 yd³ upland stockpile of sediments from the recent Charlotte County Myakka River Dredging Project and/or other appropriate source is expected to provide the remaining fill. The Town will coordinate with the material owner to obtain and transport the necessary fill from the upland stockpile location to the project site. Sediment sampling of the dredged Charlotte County material, the Town of Longboat key canals, and the proposed seagrass mitigation site has been performed to evaluate material compatibility.

If used, the Charlotte County material will be truck-hauled to a designated stockpile area located on the south end of Longboat Key at Overlook Park. Material will be stored at Overlook Park until used by the selected contractor. Overlook Park will also provide an equipment staging area for the contractor. Overlook Park is within an FDOT right of way, situated on the northwest side of the New Pass bridge abutment. As the Charlotte County material has a higher fraction of fines (sediments passing a US #200 sieve) it

will be placed at the mitigation area first. The coarser sediments from the Longboat Key canals will then cover the Charlotte County fill. Once the mitigation site has been filled to match the surrounding grade (approximately -4 feet-NAVD) and has settled sufficiently, the contractor will begin seagrass transplanting. The same construction sequence would occur if another source is used.

CULTURAL RESOURCES:

The Corps has determined the permit area has been extensively modified by previous work and there is little likelihood a historic property may be affected.

ENDANGERED SPECIES:

The U.S. Army Corps of Engineers (Corps) has determined the project “May affect, not likely to adversely affect” the West Indian manatee (*Trichechus manatus*). Potential impacts to the endangered manatee were evaluated using The Corps of Engineers, Jacksonville District, and the State of Florida Effect Determination Key for the Manatee in Florida (Manatee Key), dated April 2013. Use of the Manatee Key resulted in the following sequential determination: (A>B>C>D>E>F>G>N>O>P: NLAA). Project is in an Important Manatee Area (IMA) and per the 2013 Manatee Key, dedicated observers shall be required for manatee observation and no night-time clamshell dredging will be allowed. Per Key stipulation, no further consultation with FWS is required.

The Corps has determined the proposed project “may affect, but is not likely to adversely affect” the smalltooth sawfish (*Pristis pectinata*), green sea turtles (*Chelonia mydas*), loggerhead sea turtles (*Caretta caretta*), and Kemp’s ridley sea turtles (*Lepidochelys kempii*). The Corps will initiate programmatic consultation (JAXBO) via e-mail with National Marine Fisheries Service- Protected Resources Division. The Corps will provide certification that the project will be implemented in accordance with the Project Design Criterion (PDC) and certification that the net effects are consistent with those anticipated in the programmatic consultation document.

The Corps has determined the proposal would have no effect on Wood Stork (*Mycteria Americana*) and Piping Plover (*Charadrius melodus*).

ESSENTIAL FISH HABITAT (EFH): This notice initiates consultation with the National Marine Fisheries Service on EFH as required by the Magnuson-Stevens Fishery Conservation and Management Act 1996. The proposal would impact approximately 4.43 acres of shallow residential man-made canal. Project site has SAV and oyster reef to be utilized by various life stages of postlarval, juvenile and subadult shrimp; postlarval, juvenile and adult red drum; postlarval, juvenile and adult gray snapper; juvenile red and gag groupers; and juvenile and adult yellowtail and lane snappers.

A field resource assessment of the project area was conducted on July 19, 2019 with the assistance of Mark Sramek (NMFS HDC) and observed seagrasses, oyster reef and mangroves. Approximately 1.37 acres of seagrass will be impacted.

Our initial determination is that the proposed action will have an adverse impact on EFH or federally managed fisheries in the Gulf of Mexico, however with the proposed seagrass mitigation area, the Corps believes that the project effects will be successfully offset. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The jurisdictional line has not been verified by Corps personnel.

AUTHORIZATION FROM OTHER AGENCIES: Water Quality Certification may be required from the Florida Department of Environmental Protection and/or one of the state Water Management Districts.

COMMENTS regarding the potential authorization of the work proposed should be submitted in writing to the attention of the District Engineer through the Tampa Permits Section, 10117 Princess Palm Avenue, Suite 120, Tampa, Florida 33610-8302 within 21 days from the date of this notice.

The decision whether to issue or deny this permit application will be based on the information received from this public notice and the evaluation of the probable impact to the associated wetlands. This is based on an analysis of the applicant's avoidance and minimization efforts for the project, as well as the compensatory mitigation proposed.

QUESTIONS concerning this application should be directed to the project manager, Ryan Hendren, in writing at the Tampa Permits Section, 10117 Princess Palm Avenue, Suite 120, Tampa, Florida 33610-8302; by electronic mail at Ryan.G.Hendren@usace.army.mil or, by telephone at 813-769-7075.

IMPACT ON NATURAL RESOURCES: Coordination with U.S. Fish and Wildlife Service, Environmental Protection Agency (EPA), the National Marine Fisheries Services, and other Federal, State, and local agencies, environmental groups, and concerned citizens generally yields pertinent environmental information that is instrumental in determining the impact the proposed action will have on the natural resources of the area.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from

the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

The US Army Corps of Engineers (Corps) is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COASTAL ZONE MANAGEMENT CONSISTENCY: In Florida, the State approval constitutes compliance with the approved Coastal Zone Management Plan.

REQUEST FOR PUBLIC HEARING: Any person may request a public hearing. The request must be submitted in writing to the District Engineer within the designated comment period of the notice and must state the specific reasons for requesting the public hearing.

LONGBOAT KEY CANAL MAINTENANCE DREDGING

MANATEE & SARASOTA COUNTIES, FLORIDA



DRAWING INDEX

- C-1 TITLE SHEET
- C-2 PROJECT OVERVIEW
- C-3 TYPICAL SECTION AND REQUIRED DREDGING TABLE
- C-4 CANAL OVERVIEW
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- C-6 CANAL OVERVIEW
- C-7 CANAL OVERVIEW
- C-8 CANAL 1 DREDGING PLAN
- C-9 CANAL 2 & 2B DREDGING PLAN
- C-10 CANAL 3 DREDGING PLAN
- C-11 CANAL 6 DREDGING PLAN
- C-12 CANAL 18 DREDGING PLAN
- C-13 CANAL 20P & 21A DREDGING PLAN
- C-14 CANAL 21P DREDGING PLAN
- C-15 CANAL 22A DREDGING PLAN
- C-16 CANAL 32P AND 49 DREDGING PLAN
- C-17 CANAL 55 & 55A DREDGING PLAN
- C-18 TYPICAL CROSS-SECTIONS
- C-19 DREDGED MATERIAL AND EQUIPMENT STAGING AREA
- C-20 MITIGATION PLAN AND CROSS-SECTIONS
- C-21 EROSION CONTROL DETAILS

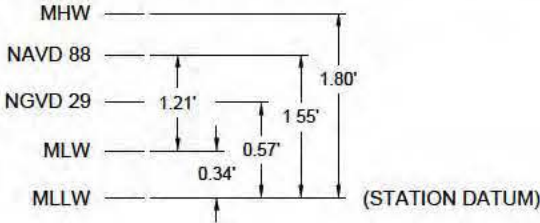


VICINITY MAP
1" = 2 MILES

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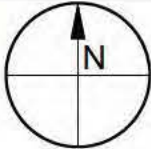
- GENERAL NOTES:
- 1. ELEVATIONS REFERENCE MEAN LOW WATER (MLW) ON ALL SHEETS EXCEPT FOR SHEET C-20
 - 2. MITIGATION PLAN AND CROSS-SECTIONS
 - 3. SURVEY BY HYATT SURVEY INC, AUGUST 2017
 - 4. ALL DREDGE CUTS PROPOSED IN ACCORDANCE WITH REQUIRED DREDGE SUMMARY TABLE SHOWN ON SHEET C-3
 - 5. CONTRACTOR STAGING AREA LOCATED AT OVERLOOK PARK ADJACENT TO THE NEW PASS BRIDGE ABUTMENT IN SOUTH LONGBOAT KEY
 - 6. STAGING AREA MAY BE USED TO STOCKPILE MATERIALS AND EQUIPMENT
 - 7. CHANNEL BOTTOM CUT WITH VARIES
 - 8. CHANNEL BOTTOM CUT WITH VARIES
 - 9. CONTRACTOR SHALL PERFORM SPOT DREDGING ONLY AS IDENTIFIED BY CROSS-HATCHED AREAS

TIDAL DATUM REFERENCE (NOAA CORTEZ STATION 8726217):
NOTE: 0 NAVD-88 = +1.21 MLW



SAV IMPACT SUMMARY TABLE

CANAL	IMPACT AREA (SQ. FT.)	IMPACT AREA (ACRES)
1	1654	0.04
18	360	0.01
21A	9341	0.21
21P	23744	0.55
22A	18068	0.41
55	2763	0.06
55A	3945	0.09
TOTAL	59875	1.37





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FIGURE C-2
PROJECT OVERVIEW
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

PROJECT	C2016-006
DRAWN BY	AF
SHEET	2 of 21
DATE	SEPT 2019

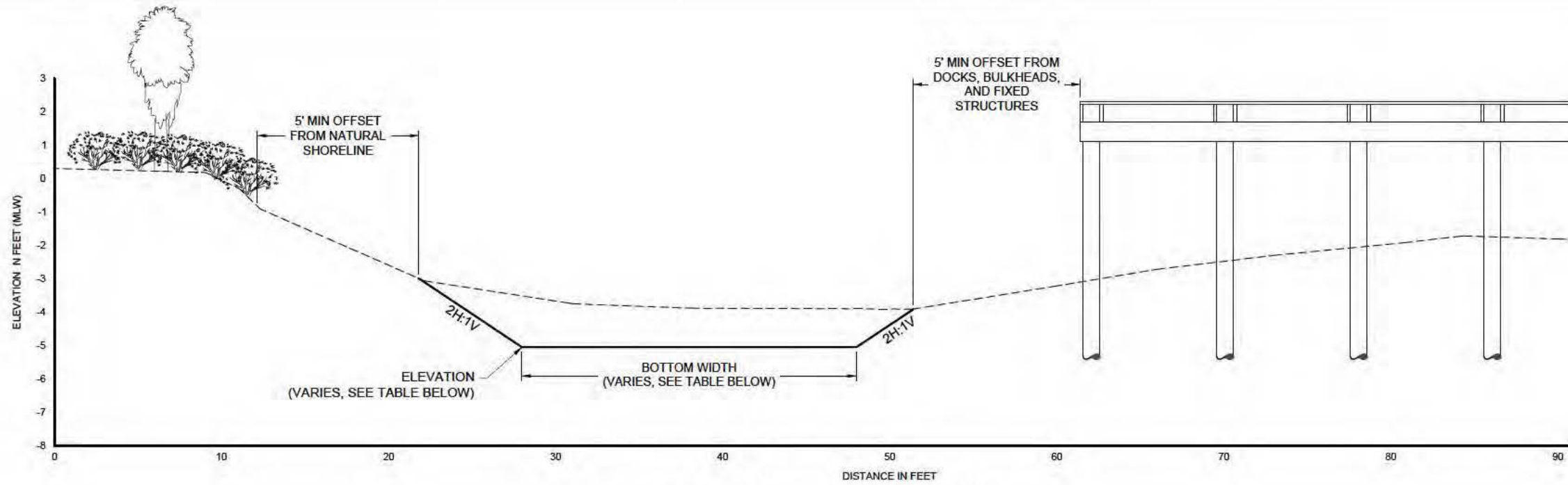
SEAL

YEHYA S. SODOUKI P.E. #17400

DATE

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

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TYPICAL CANAL DREDGING SECTION
NOT TO SCALE

PROPOSED CANAL DREDGING SUMMARY TABLE

CANAL	SEGMENT	STATION START	STATION END	BOTTOM WIDTH	ELEVATION (MLW)	CUT VOLUME (CY)	SEE SHEET
CANAL 01	1	9+14	11+29	20	-4	9	C-8
	2	11+98	13+79	20	-4	24	C-8
	3	14+68	18+08	20	-4	260	C-8
	4	18+74	19+43	20	-4	48	C-8
CANAL 02	1	0+00	3+94	30	-5	1000	C-9
	2	3+94	6+19	3	-5	99	C-9
CANAL 02B	1	0+48	1+75	15	-5	117	C-9
CANAL 03	1	0+00	7+27	2	-4	254	C-10
CANAL 06	1	0+00	4+06	4	-4	92	C-11
	2	4+06	8+96	10	-4	126	C-11
CANAL 18	1	0+00	3+03	0	-3	44	C-12
	2	3+03	18+55	4	-3	218	C-12
CANAL 20P	1	1+61	2+21	15	-5	61	C-13
	2	2+21	3+51	0	-3	37	C-13
	3	3+51	4+44	15	-5	102	C-13
CANAL 21A	1	0+46	2+94	20	-5	363	C-13
	2	6+95	8+94	20	-5	301	C-13
CANAL 21P	1	1+07	9+44	10	-5	1529	C-14
	2	10+64	13+28	10	-5	293	C-14
	3	16+16	16+70	10	-5	42	C-14
	4	16+70	17+44	0	-5	42	C-14
	5	17+44	18+72	10	-5	207	C-14
CANAL 22A	1	1+39	13+81	15	-5	1819	C-15
CANAL 32P	1	45+15	51+56	20	-5	1000	C-16
	2	64+54	67+52	20	-5	453	C-16
CANAL 49	1	0+00	0+95	15	-5	88	C-16
CANAL 55	1	20+30	22+29	15	-5	218	C-17
CANAL 55A	1	1+27	5+80	2	-5	207	C-17
TOTAL						9051	

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FIGURE C-4
CANAL OVERVIEW
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

PROJECT	C2016-006
DRAWN BY	AF
SHEET	4 of 21
DATE	SEPT 2019

SEAL

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

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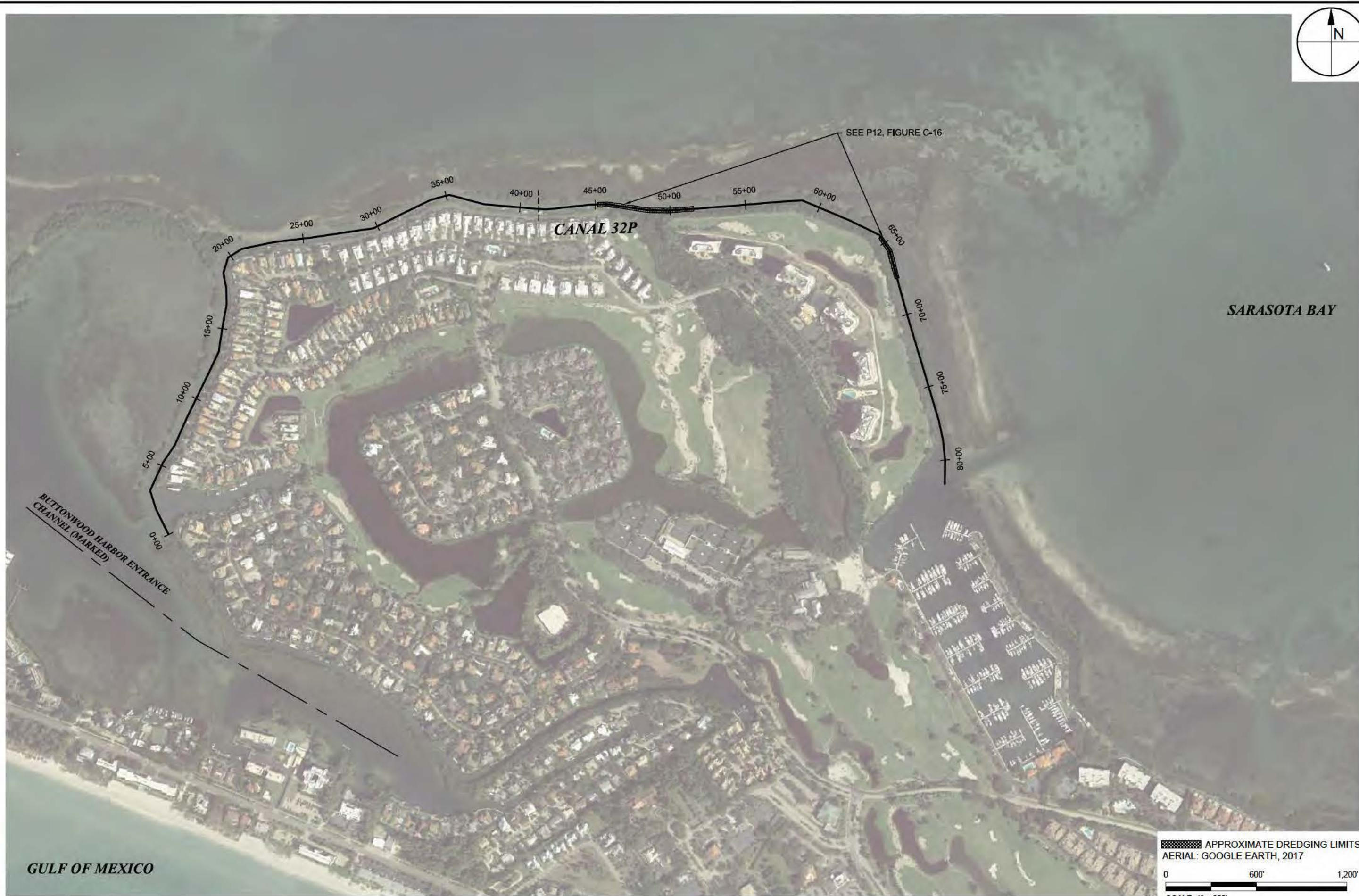
FIGURE C-5
CANAL OVERVIEW
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

PROJECT	C2016-006	SEAL
DRAWN BY	AF	
SHEET	5 of 21	
DATE	SEPT 2019	

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FIGURE C-6
CANAL OVERVIEW
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

PROJECT	C2016-006	SEAL
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SHEET	6 of 21	
DATE	SEPT 2019	

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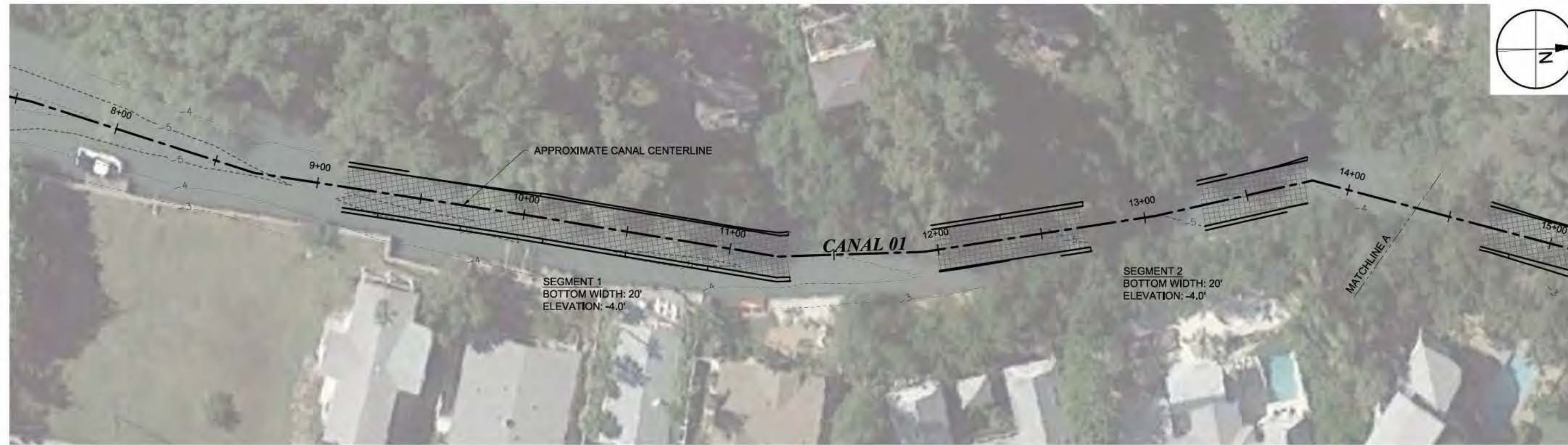
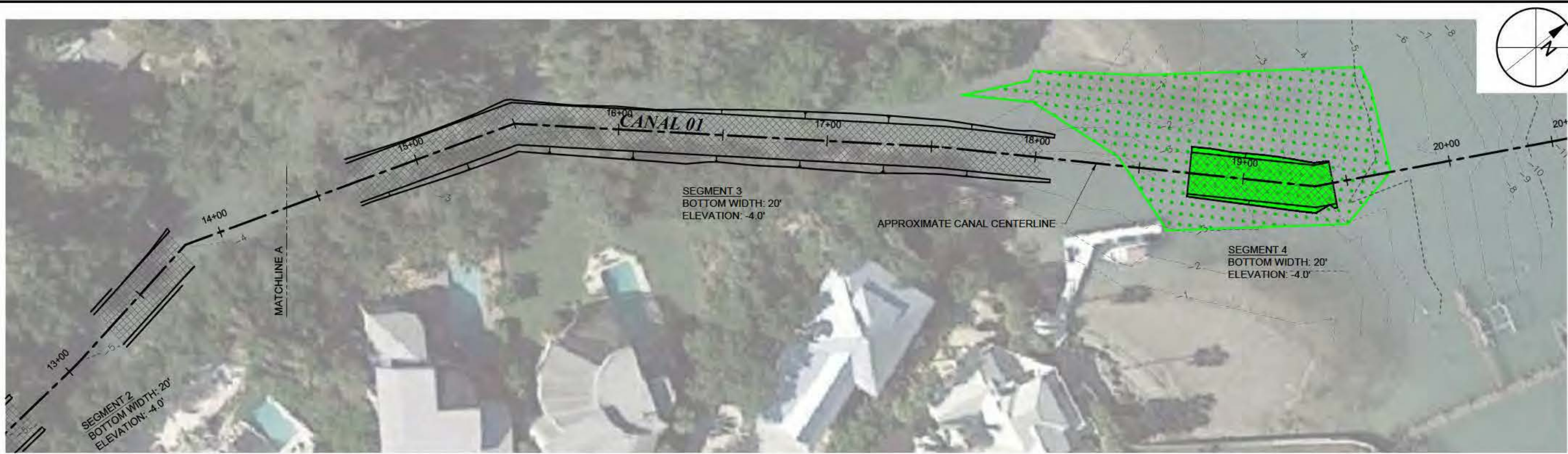
FIGURE C-7
CANAL OVERVIEW
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

PROJECT	C2016-006	SEAL
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SHEET	7 of 21	
DATE	SEPT 2019	

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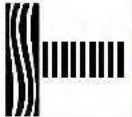


LEGEND:

- 0--- EXISTING BATHYMETRY
- CANAL BOTTOM LIMITS
- CANAL CENTERLINE
- APPROXIMATE DREDGING LIMITS
- SAV LIMIT
- SAV IMPACTS
- 2H:1V SIDE SLOPES

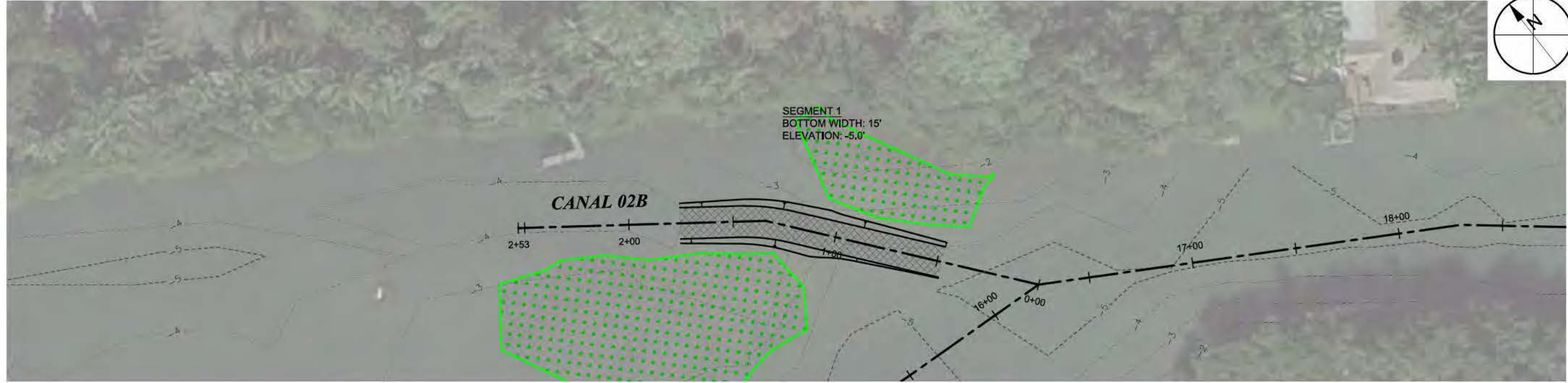
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P02 CANAL 01
C-4 SCALE: 1" = 50' 0 50'

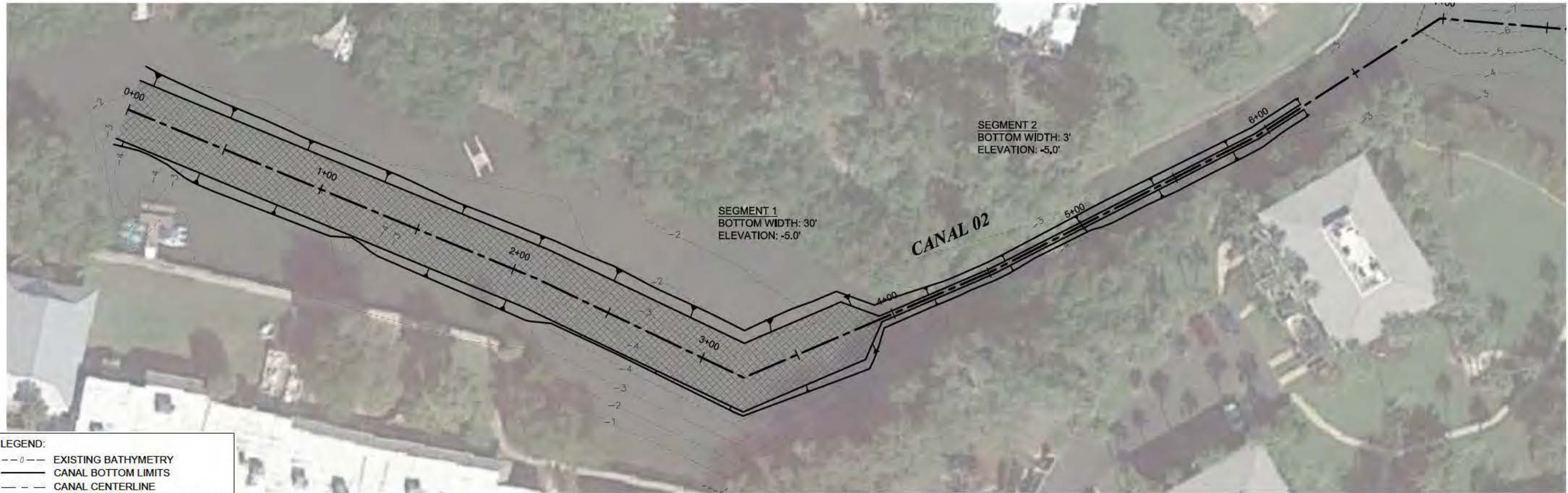
		TAYLOR ENGINEERING INC. 1800 2ND STREET SUITE 714 SARASOTA, FLORIDA 34236 CERTIFICATE OF AUTHORIZATION # 4815	
FIGURE C-8 CANAL 1 DREDGING PLAN LONGBOAT KEY CANAL MAINTENANCE DREDGING MANATEE & SARASOTA COUNTIES, FLORIDA			
PROJECT	C2016-006	DRAWN BY	AF
SHEET	8 of 21	DATE	SEPT 2019
SEAL		DATE	
		YEHYA S. SODOUKI P.E. #7400	

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P04
C-4
CANAL 02B
SCALE: 1" = 50'
0 50'



P03
C-4
CANAL 02
SCALE: 1" = 50'
0 50'

LEGEND:

- EXISTING BATHYMETRY
- CANAL BOTTOM LIMITS
- CANAL CENTERLINE
- APPROXIMATE DREDGING LIMITS
- SAV LIMIT
- SAV IMPACTS
- 2H:1V SIDE SLOPES

AERIAL: GOOGLE EARTH, 2017

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	FIGURE C-9 CANAL 2 & 2B DREDGING PLAN LONGBOAT KEY CANAL MAINTENANCE DREDGING MANATEE & SARASOTA COUNTIES, FLORIDA			
	PROJECT C2016-006	DRAWN BY AF	SHEET 9 of 21	DATE SEPT 2019
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P05
C-4 CANAL 03
SCALE: 1" = 50' 0 50'

LEGEND:

- 0--- EXISTING BATHYMETRY
- CANAL BOTTOM LIMITS
- CANAL CENTERLINE
- APPROXIMATE DREDGING LIMITS
- SAV LIMIT
- SAV IMPACTS
- 2H:1V SIDE SLOPES

AERIAL: GOOGLE EARTH, 2017

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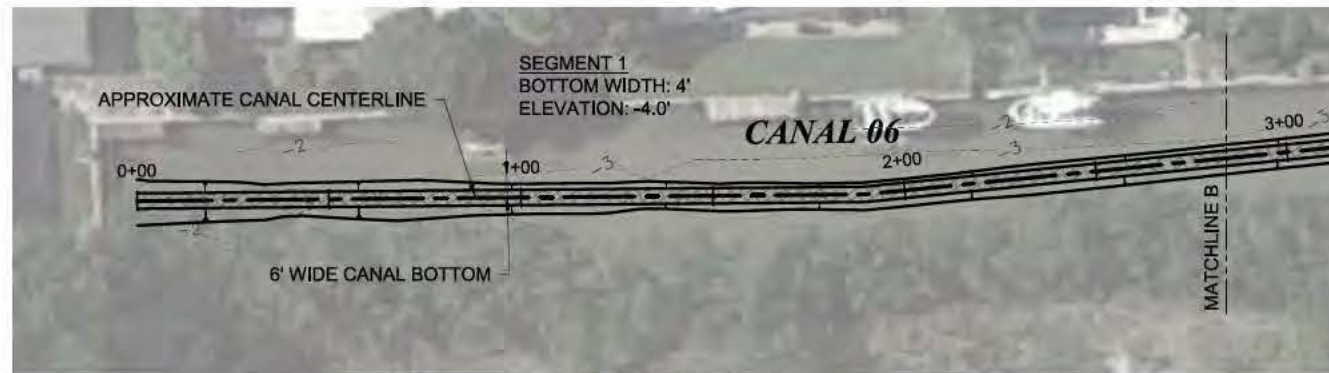
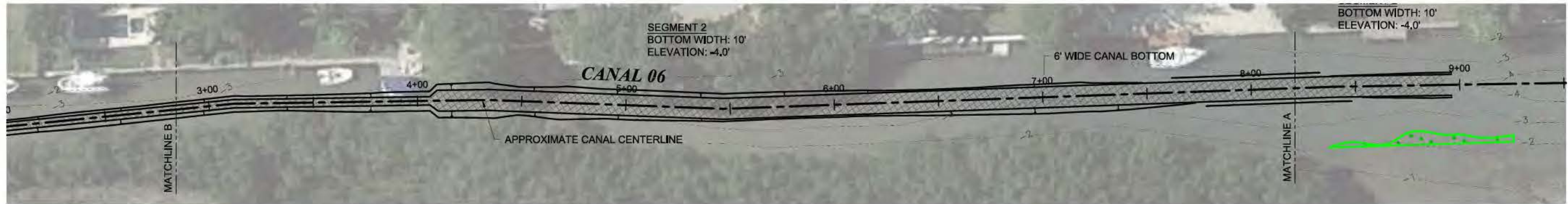
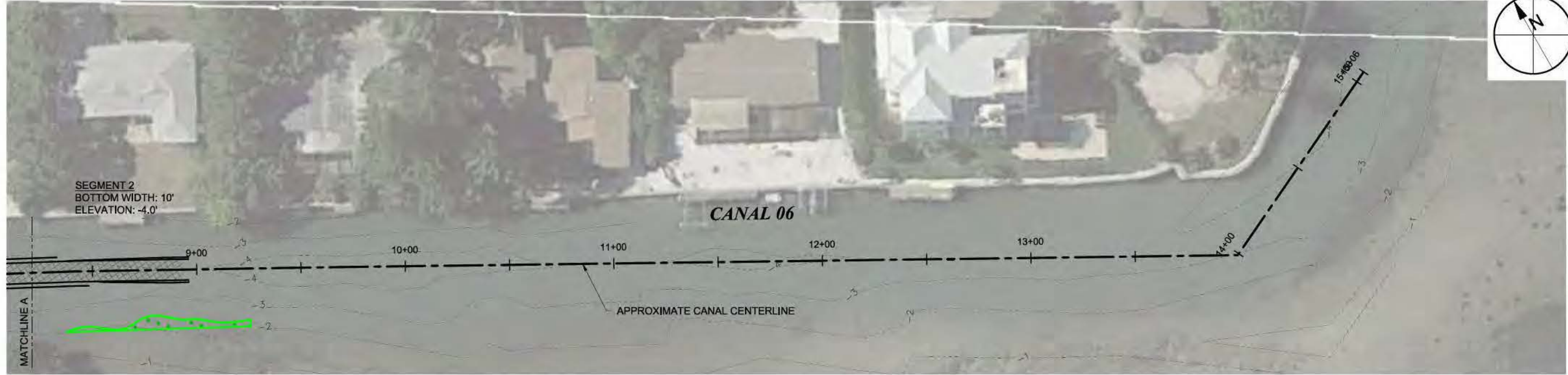
FIGURE C-10
CANAL 3 DREDGING PLAN
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

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DATE	SEPT 2019	

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LEGEND:

- EXISTING BATHYMETRY
- CANAL BOTTOM LIMITS
- CANAL CENTERLINE
- APPROXIMATE DREDGING LIMITS
- SAV LIMIT
- SAV IMPACTS
- 2H:1V SIDE SLOPES

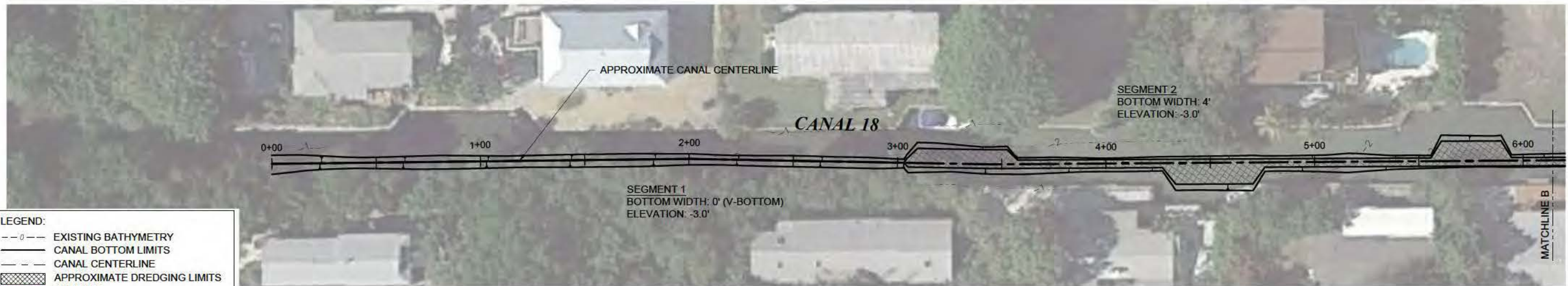
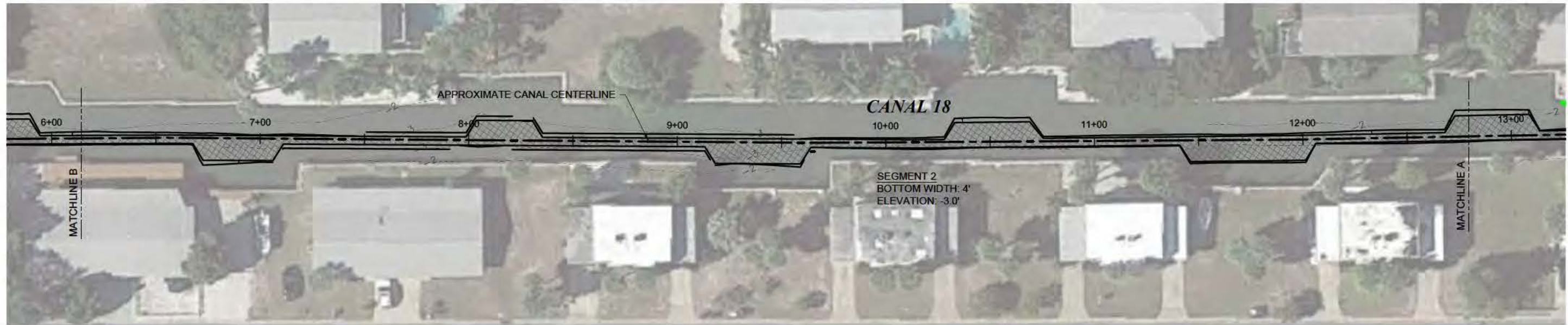
AERIAL: GOOGLE EARTH, 2017

P06 CANAL 06
C-4 SCALE: 1" = 50' 0 50'

	
TAYLOR ENGINEERING INC. 1800 2ND STREET SUITE 714 SARASOTA, FLORIDA 34236 CERTIFICATE OF AUTHORIZATION # 4815	
FIGURE C-11 CANAL 6 DREDGING PLAN LONGBOAT KEY CANAL MAINTENANCE DREDGING MANATEE & SARASOTA COUNTIES, FLORIDA	
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DATE	SEPT 2019
SEAL	
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LEGEND:

- 0--- EXISTING BATHYMETRY
- CANAL BOTTOM LIMITS
- CANAL CENTERLINE
- APPROXIMATE DREDGING LIMITS
- SAV LIMIT
- SAV IMPACTS
- 2H:1V SIDE SLOPES

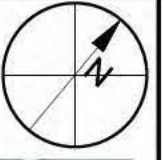
AERIAL: GOOGLE EARTH, 2017

P07
C-5

CANAL 18

SCALE: 1" = 50'

0 50'



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DATE		SEPT 2019	

FIGURE C-12
CANAL 18 DREDGING PLAN
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

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LEGEND:

EXISTING BATHYMETRY

CANAL BOTTOM LIMITS

CANAL CENTERLINE

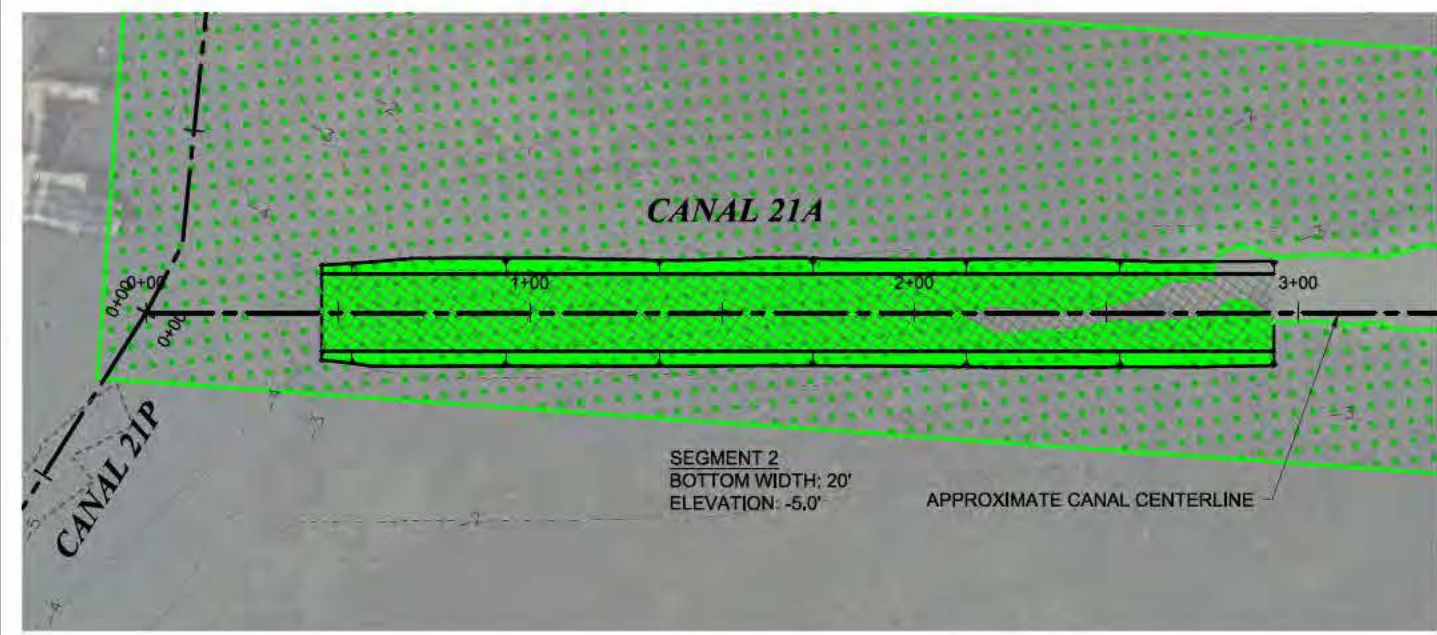
APPROXIMATE DREDGING LIMITS

SAV LIMIT

SAV IMPACTS

2H:1V SIDE SLOPES

AERIAL: GOOGLE EARTH, 2017

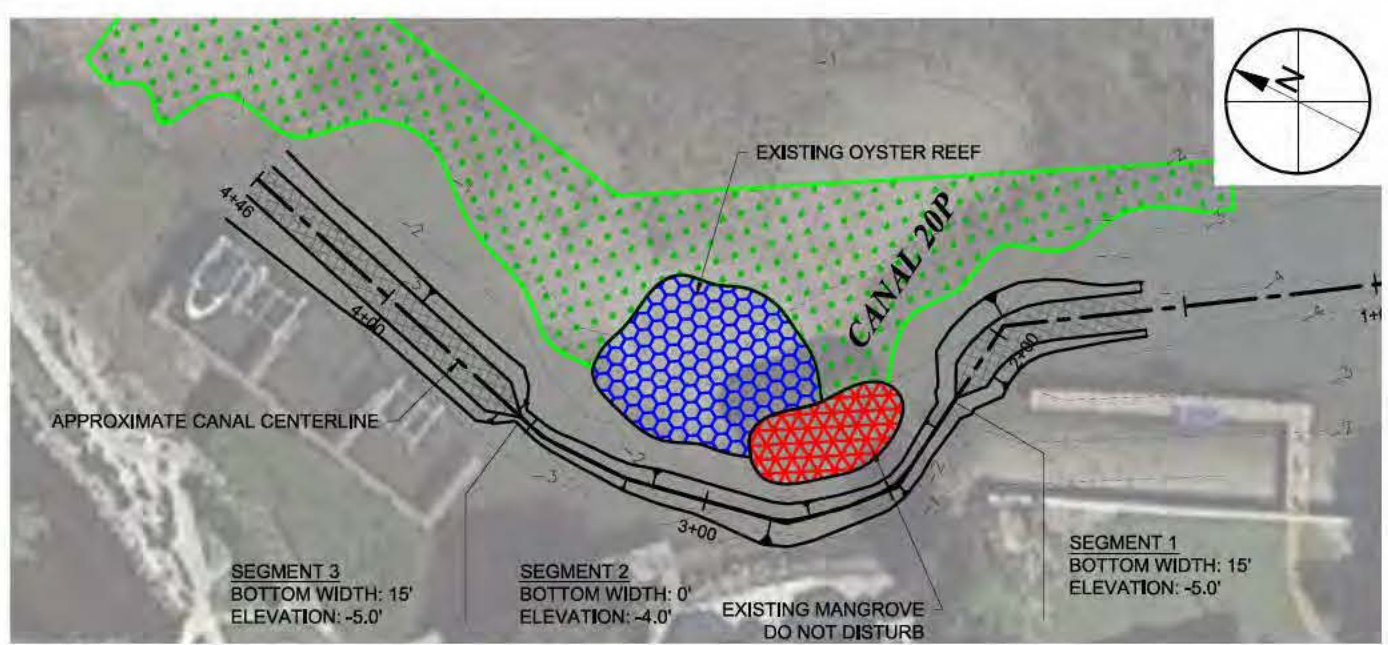


P09
C-5

CANAL 21A

SCALE: 1" = 50'

050'

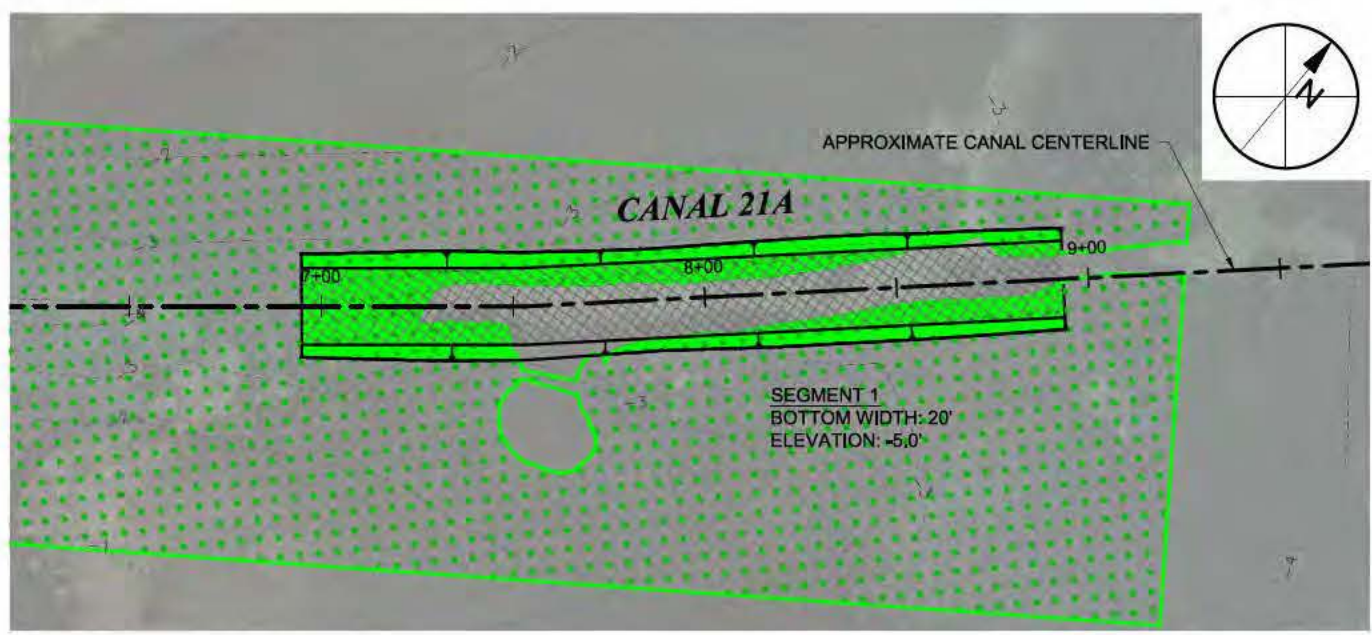


P08
C-5

CANAL 20P

SCALE: 1" = 50'

050'



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FIGURE C-13

CANAL 20P & 21A DREDGING PLAN

LONGBOAT KEY CANAL MAINTENANCE DREDGING

MANATEE & SARASOTA COUNTIES, FLORIDA

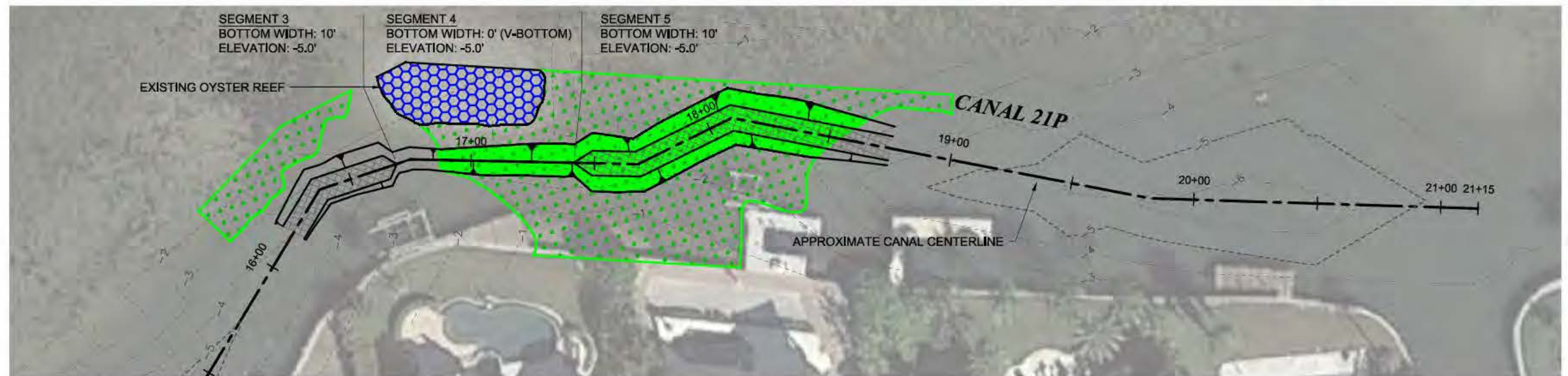
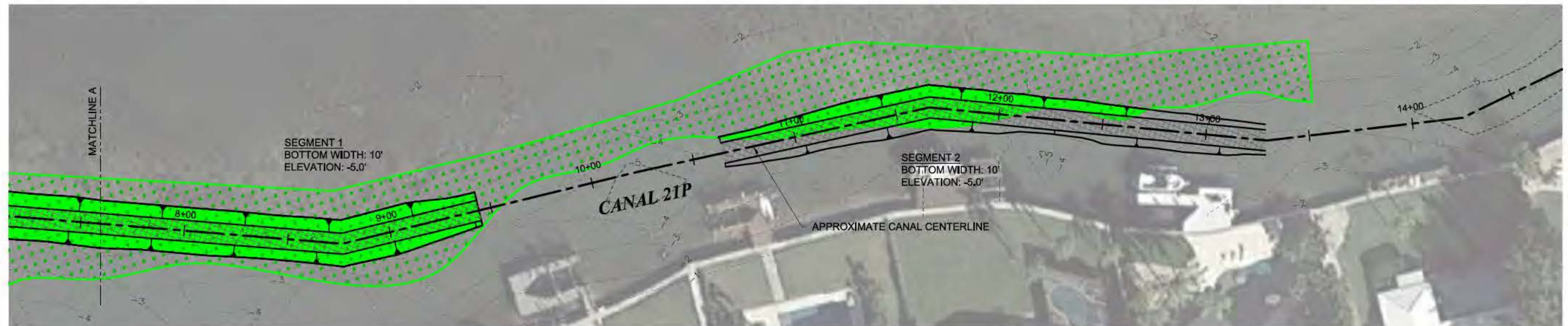
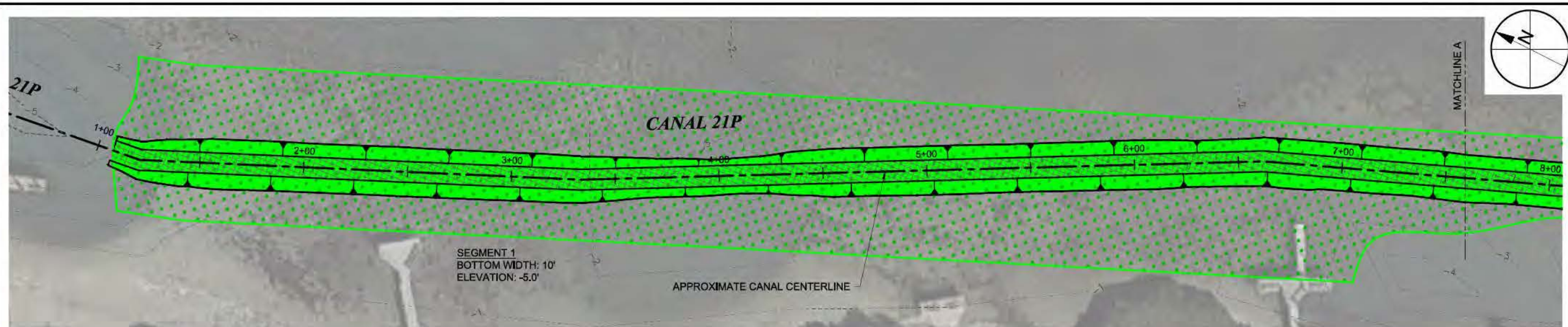
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LEGEND:	
	EXISTING BATHYMETRY
	CANAL BOTTOM LIMITS
	CANAL CENTERLINE
	APPROXIMATE DREDGING LIMITS
	SAV LIMIT
	SAV IMPACTS
	2H:1V SIDE SLOPES
AERIAL: GOOGLE EARTH, 2017	

P10
C-5
CANAL 21P
SCALE: 1" = 50'
0 50'

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FIGURE C-14
CANAL 21P DREDGING PLAN
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

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EXISTING BATHYMETRY

CANAL BOTTOM LIMITS

CANAL CENTERLINE

APPROXIMATE DREDGING LIMITS

SAV LIMIT

SAV IMPACTS

2H:1V SIDE SLOPES

LEGEND:

AERIAL: GOOGLE EARTH, 2017

P-11

C-5

CANAL 22A

SCALE: 1" = 50'

0

50'

SEGMENT 1
BOTTOM WIDTH: 15'
ELEVATION: -5.0'

APPROXIMATE CANAL CENTERLINE

CANAL 22A

MATCHLINE A

SEGMENT 1
BOTTOM WIDTH: 15'
ELEVATION: -5.0'

APPROXIMATE CANAL CENTERLINE

CANAL 22A

MATCHLINE A

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FIGURE C-15
CANAL 22A DREDGING PLAN
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

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DATE	SEPT 2019

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DATE

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LEGEND:

EXISTING BATHYMETRY

CANAL BOTTOM LIMITS

CANAL CENTERLINE

APPROXIMATE DREDGING LIMITS

SAV LIMIT

SAV IMPACTS

2H:1V SIDE SLOPES

AERIAL: GOOGLE EARTH, 2017

P15 CANAL 55A
C-7 SCALE: 1" = 50'

P14 CANAL 55
C-7 SCALE: 1" = 50'

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FIGURE C-17
CANAL 55 & 55A DREDGING PLAN
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

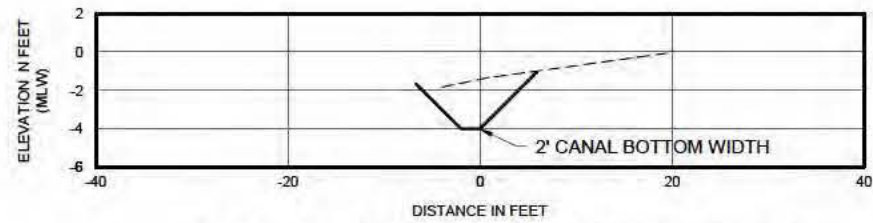
PROJECT	C2016-006
DRAWN BY	AF
SHEET	17 of 21
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SEAL

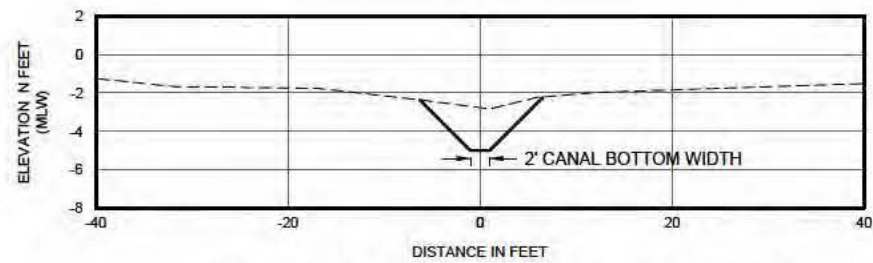
YEHYA S. SIDDIQUI P.E. #87400

DATE

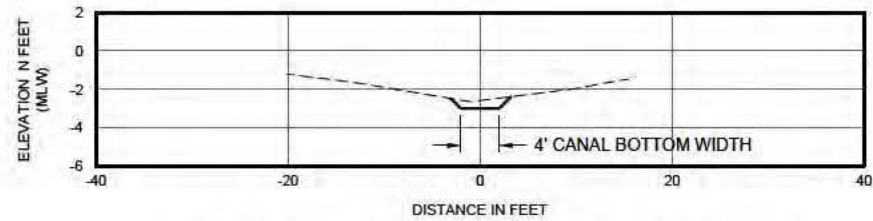
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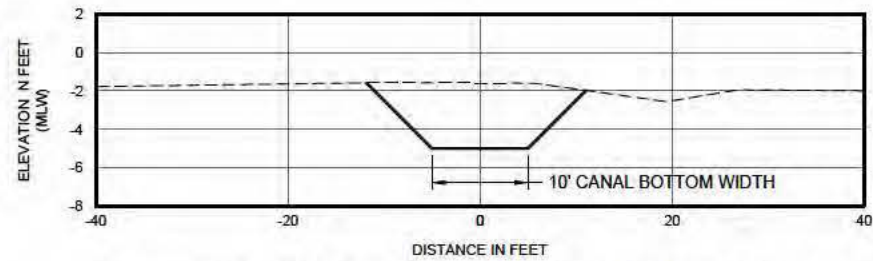
TYPICAL 0-FT CANAL BOTTOM WIDTH
CANAL 03 STA:2+00



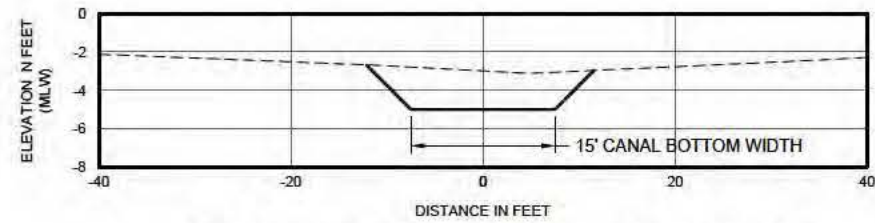
TYPICAL 2-FT CANAL BOTTOM WIDTH
CANAL 55A STA:4+00



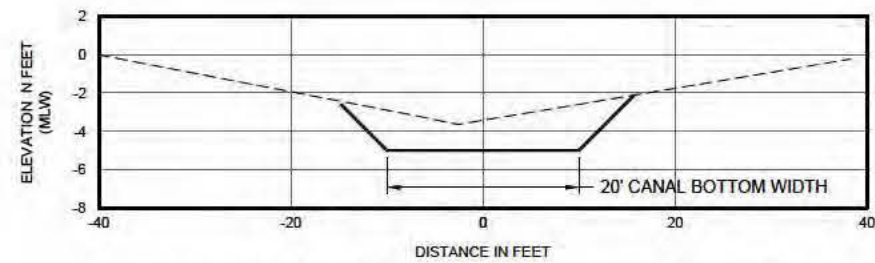
TYPICAL 4-FT CANAL BOTTOM WIDTH
CANAL 18 STA:15+00



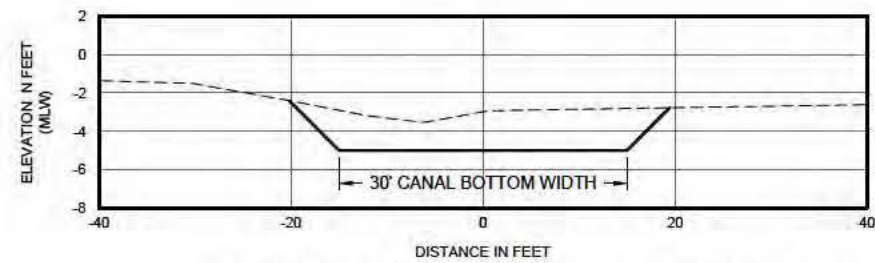
TYPICAL 10-FT CANAL BOTTOM WIDTH
CANAL 21P STA:7+00



TYPICAL 15-FT CANAL BOTTOM WIDTH
CANAL 22A STA:8+00

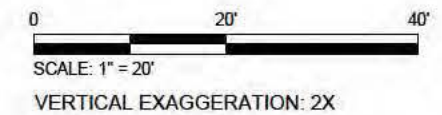


TYPICAL 20-FT CANAL BOTTOM WIDTH
CANAL 32P STA:49+00



TYPICAL 30-FT CANAL BOTTOM WIDTH
CANAL 2 STA:1+00

LEGEND:
----- EXISTING GRADE
————— PROPOSED GRADE
NOTE: ALL SIDE SLOPES 2H:1V



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FIGURE C-18
TYPICAL CROSS-SECTIONS
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA



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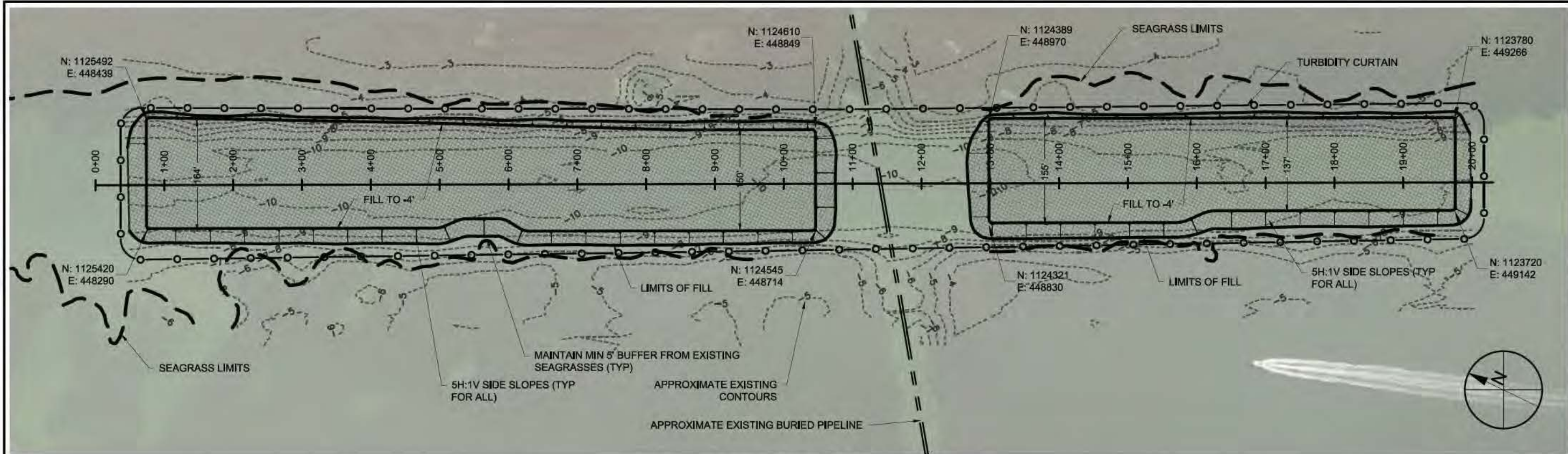
YEHYA S. SODOUJIP E #7400

DATE



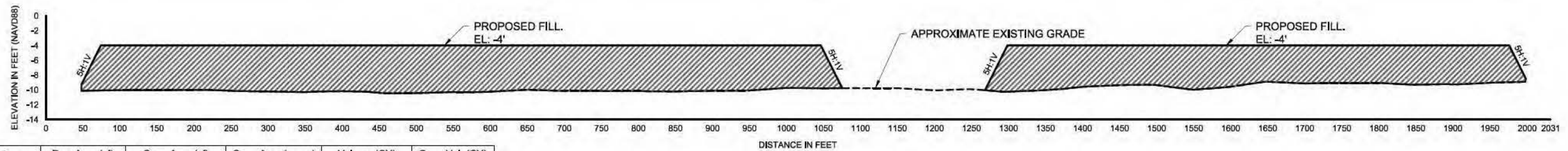
 TAYLOR ENGINEERING INC. 1800 2ND STREET SUITE 714 SARASOTA, FLORIDA 34236 CERTIFICATE OF AUTHORIZATION # 4815	FIGURE C-19 DREDGED MATERIAL AND EQUIPMENT STAGING AREA LONGBOAT KEY CANAL MAINTENANCE DREDGING MANATEE & SARASOTA COUNTIES, FLORIDA		PROJECT	C2016-006	
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MITIGATION PLAN VIEW

SCALE: 1" = 150'



Station	Raw Area (sf)	Cum. Area (sf)	Cum. Area (acres)	Volume (CY)	Cum. Vol. (CY)
0-100	9283	9283	0.21	1729	1729
100-200	18595	27877	0.64	3428	5158
200-300	18575	46453	1.07	3419	8577
300-400	18327	64780	1.49	3463	12040
400-500	18180	82960	1.90	3547	15587
500-600	17999	100959	2.32	3481	19068
600-700	18121	119080	2.73	3421	22489
700-800	17963	137044	3.15	3508	25997
800-900	17872	154916	3.56	3542	29539
900-1000	17796	172712	3.96	3456	32995
1000-1100	12836	185548	4.26	1679	34674
1100-1200	0	185548	4.26	0	34674
1200-1300	4798	190346	4.37	1667	36341
1300-1400	18150	208496	4.79	3232	39573
1400-1500	17969	226466	5.20	3045	42618
1500-1600	17802	244268	5.61	2918	45536
1600-1700	17040	261308	6.00	2760	48296
1700-1800	16587	277896	6.38	2641	50937
1800-1900	16508	294404	6.76	2621	53558
1900-2000	15727	310131	7.12	1301	54860

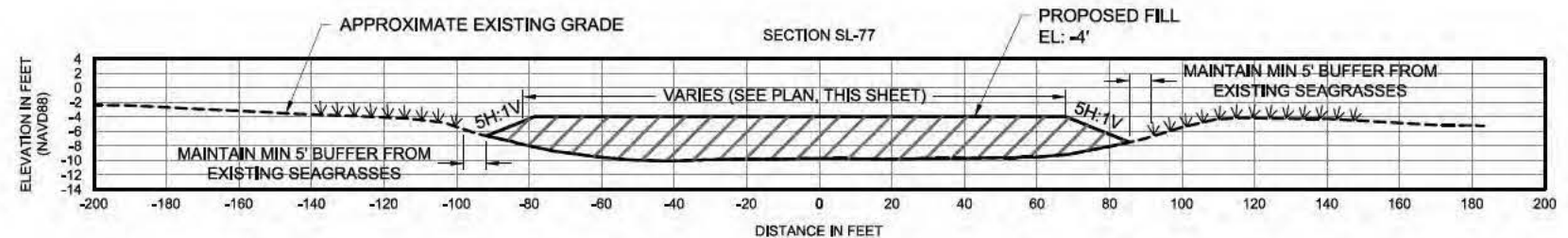
MITIGATION PLAN AREA AND VOLUME TABLE

MITIGATION PROFILE

SCALE: 1" = 150'
VERTICAL EXAGGERATION: 10X

NOTES

- BATHYMETRIC SURVEY DATA SHOWN ON THIS SHEET REFERENCE TO NAVD-88
- TOTAL SEAGRASS RESTORATION AREA IS 7.12 ACRES, OF WHICH ONLY 2.74 ACRES TO BE RESTORED FOR THIS PROJECT



TYPICAL MITIGATION SECTION

SCALE: 1" = 50'
VERTICAL EXAGGERATION: 2X

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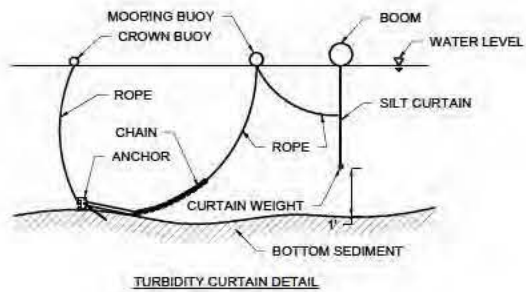
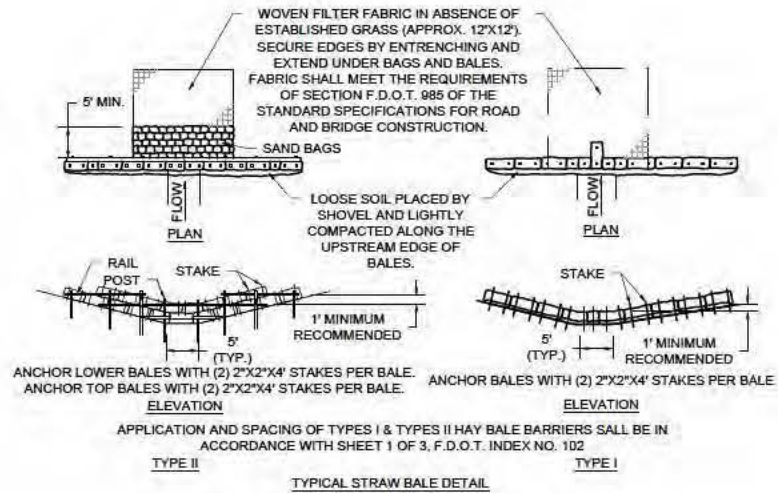
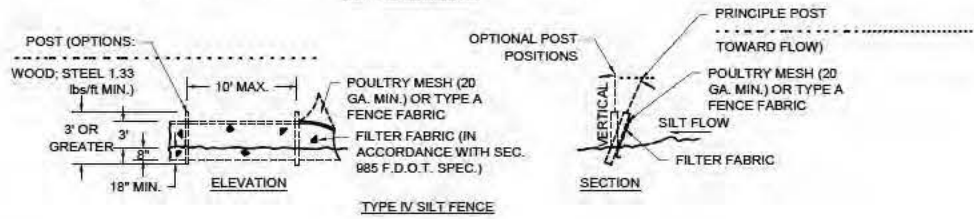
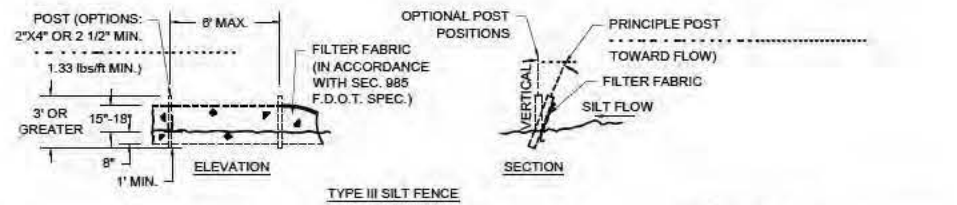
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FIGURE C-20
MITIGATION PLAN AND CROSS-SECTIONS
LONGBOAT KEY CANAL MAINTENANCE DREDGING
MANATEE & SARASOTA COUNTIES, FLORIDA

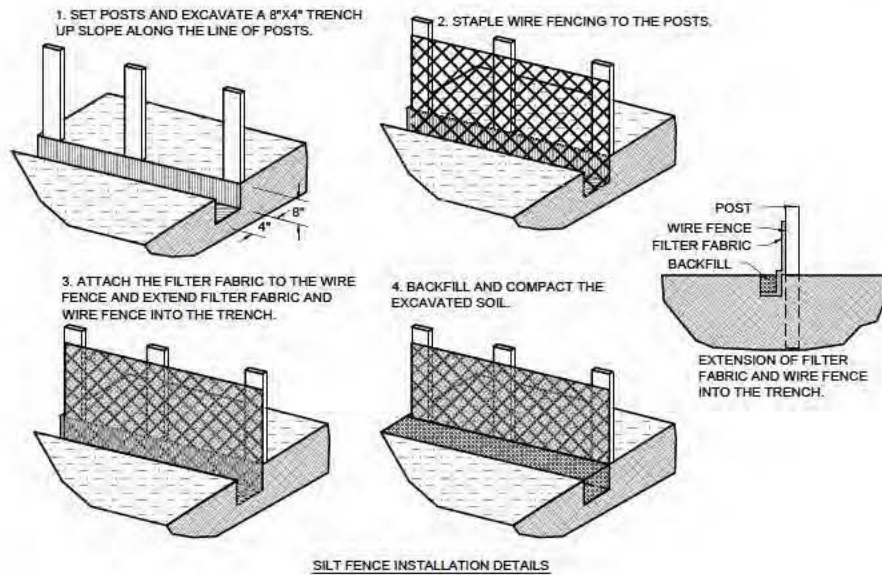
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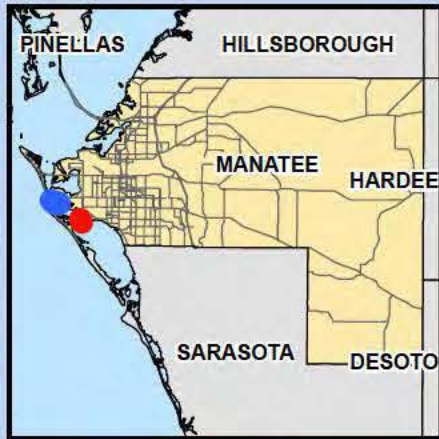
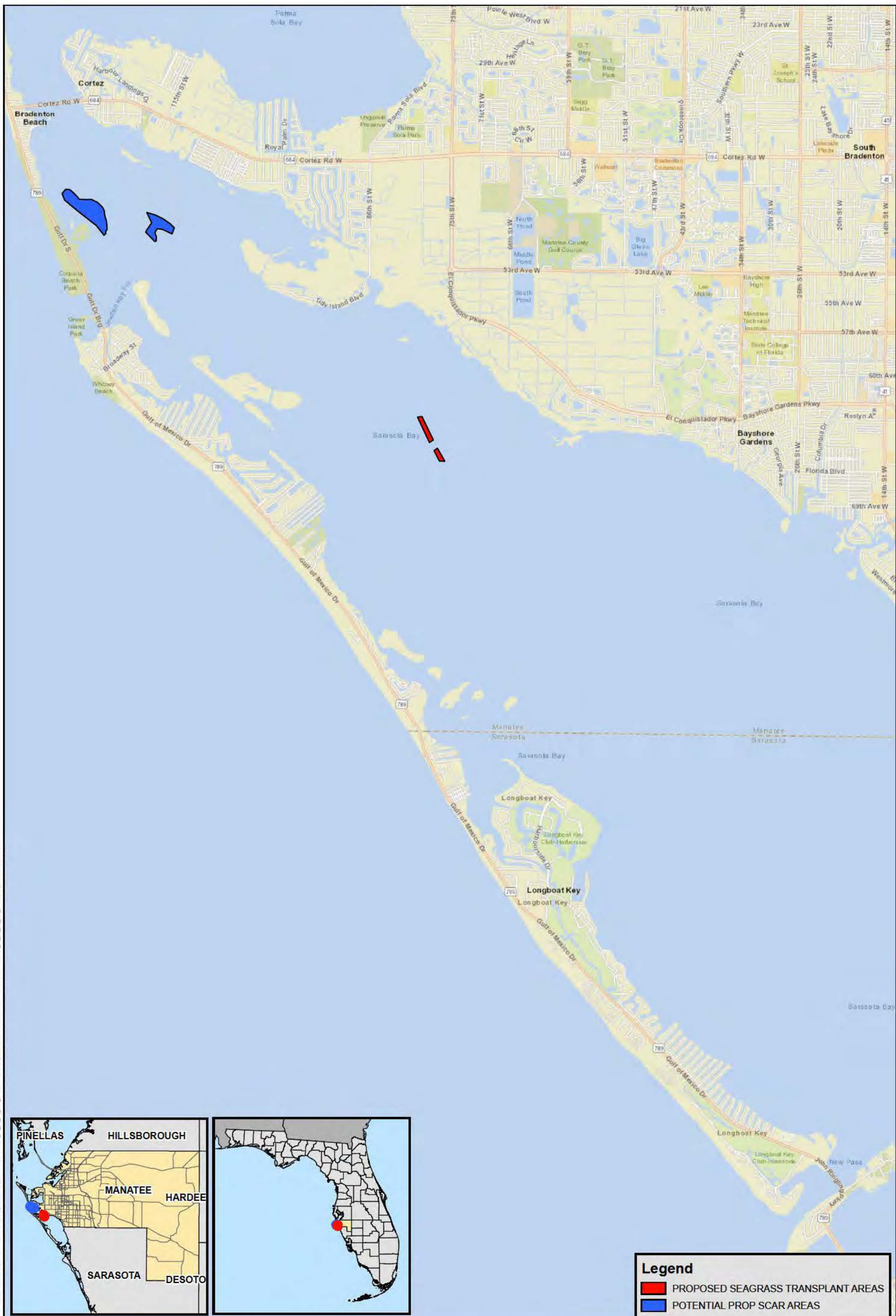
ANTON FLEWELLING X:\SYS\PROJECTS\C2016-006-P-EROSION CONTROL.DWG 9/13/2019 2:10:10 PM




DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.




PROJECT: C2016-006		DRAWN BY: AF		SHEET: 21 of 21		DATE: SEPT 2019	
FIGURE C-21 EROSION CONTROL DETAILS LONGBOAT KEY CANAL MAINTENANCE DREDGING MANATEE & SARASOTA COUNTIES, FLORIDA							
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Legend

 PROPOSED SEAGRASS TRANSPLANT AREAS

 POTENTIAL PROP SCAR AREAS

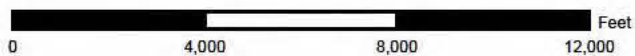
Data Source:
- ESA
Imagery Source:
- ESRI Streets

Coordinate System:
NAD 1983 Florida
State Plane West



Figure 1 - Project Location Map

Longboat Key Canal Seagrass Mitigation
Manatee County, Florida



All data within this map are supplied as is, without warranty. This product has not been prepared for legal, engineering, or survey purposes. Users of this information should review or consult the primary data sources to ascertain the usability of the information.

