

7. BEC shall provide assistance during the bidding process, including but not limited to answering bidders questions, providing addendums and issuing conformed documents.

Task 2 – General Services during Construction

1. Shop Drawing Review - Review and approve (or take other appropriate action in respect of) Shop Drawings and samples, the results of tests and inspections and other data which each Contractor is required to submit, but only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents (but such review and approval or other action shall not exceed to means, methods, sequences, techniques or procedures of construction or to safety precautions and programs incident thereto); and receive and review (for general content as required by the Specifications) maintenance and operating schedules and instruction, guarantees, bonds and certificates of inspection which are to be assembled by Contractor(s) in accordance with the Contract Documents.
2. Issue Clarifications - Issue all instructions of OWNER to Contractor(s); issue necessary interpretations and clarifications of the Contract Documents; have authority, as OWNER's representative to require special inspection or testing of the work; act as initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work thereunder, and make decisions on all claims of OWNER and Contractor(s) relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work. The ENGINEER shall render all interpretations or decisions in good faith and in accordance with the requirements of the Contract Documents.
3. Site Visits - Make visits to the site at periods appropriate to the various stages of construction to observe, as an experienced and qualified professional, the progress and quality of the executed work of Contractor(s) and to determine in general if such work is proceeding in accordance with the Contract Documents. Prepare trip reports to document observations made during these inspections. ENGINEER shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by Contractor(s) or the safety precautions and programs incident to the work of Contractor(s). ENGINEER's efforts will be directed toward providing a greater degree of confidence for OWNER that the completed work of Contractor(s) will conform to the Contract Drawings, but ENGINEER shall not be responsible for the failure of Contractor(s) to perform the work in accordance with the Contract Drawings. During such visits and on the basis of on-site observations, ENGINEER shall keep OWNER informed of the progress of the work, shall endeavor to guard OWNER against defects and deficiencies in such work and may disapprove or reject work failing to conform to the Contract Documents.

Our scope of work shall be as outlined above. Services not specifically outlined above are excluded. Our fee for this work shall be billed monthly and shall be payable as follows:

	Work Effort
<u>Task 1 – Design Services</u>	
90 and 100% Complete	\$ 10,800.00
<u>Bid and Permitting</u>	<u>\$ 1,200.00</u>
Sub Total Design:	\$ 12,000.00
<u>Task 2 – General Services during Construction</u>	
Shop Drawings	\$ 2,200.00
Issue Clarifications	\$ 2,000.00
<u>Site Visits</u>	<u>\$ 3,600.00</u>
Sub Total Construction:	\$ 7,800.00
Total:	\$ 19,800.00

Very truly yours,



Stephen E. Bailey, P.E.

ACCEPTED _____ DATE _____

CAS-18-004DG



TOWN OF GOLDEN BEACH

One Golden Beach Drive
Golden Beach, FL 33160

MEMORANDUM

Date: October 30, 2018

To: Honorable Mayor Glenn Singer &
Town Council Members

From: Alexander Diaz
Town Manager

Item Number:

10

Subject: Resolution No. 2582.18- Adopting a Stormwater Facilities
Improvement Plan for a State Revolving Loan Fund

Recommendation:

It is recommended that the Town Council adopt the attached Resolution No. 2582.18 as presented.

Background:

As we consider the design and construction of a new Stormwater Pump Station for Center Island, we will be required to secure funding for the project. As with all stormwater projects the Town has undertaken, we fund them through the State of Florida, State Revolving Loan Fund (SRF). A condition of the SRF loan application is that the Town Council adopt a Facility Plan for the project.

This resolution adopts the facilities plan (attached) and allows the Town to commence the application process for funding of the project. All final negotiations, loan commitments and funding will come before the Town Council for final approval.

Fiscal Impact:

The project has an anticipated cost estimate of \$900,000.00. We intend to secure funding through the SRF loan program at a very low rate. This program was created by the State of Florida specifically for these types of projects.

TOWN OF GOLDEN BEACH, FLORIDA

RESOLUTION NO. 2582.18

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, ADOPTING A STORMWATER FACILITIES IMPROVEMENT PLAN FOR A STATE REVOLVING LOAN FUND PROGRAM; PROVIDING FOR IMPLEMENTATION AND AN EFFECTIVE DATE.

WHEREAS, the Florida Statutes provide for loans to local government agencies to finance the construction of stormwater facilities; and

WHEREAS, Florida Administrative Code requires the formal authorization and adoption of a facility plan outlining necessary stormwater facility improvements to comply with State of Florida funding requirements; and

WHEREAS, the Town of Golden Beach has prepared a proposed facility plan, attached to this Resolution as Exhibit “A” (the “Facility Plan”), as required for the Town to participate in the State Revolving Loan Fund Program; and

WHEREAS, the Town Council of the Town of Golden Beach, Florida agrees with the findings and summary of necessary improvements as outlined in the Facility Plan for the purpose of providing flood relief to the Center Island area of the Town.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA AS FOLLOWS: Section

Section 1. Recitals Adopted. Each of the above-stated recitals are hereby adopted and confirmed.

Section 2. Approval of Facility Plan. The Facility Plan attached as Exhibit “A” to this Resolution is hereby approved and adopted.

Section 3. Implementation. The Town Manager and/or Town Mayor are hereby authorized to take all action necessary to implement the Facility Plan.

Section 4. Effective Date. This Resolution shall be effective immediately upon adoption.

The Motion to adopt the foregoing Resolution was offered by _____, seconded by _____, and on roll call the following vote ensued:

Mayor Glenn Singer	_____
Vice Mayor Jaime Mendal	_____
Councilmember Kenneth Bernstein	_____
Councilmember Amy Isackson-Rojas	_____
Councilmember Judy Lusskin	_____

PASSED AND ADOPTED by the Town Council of the Town of Golden Beach, Florida this 30th day of October, 2018.

MAYOR GLENN SINGER

ATTEST:

LISSETTE PEREZ
TOWN CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

STEPHEN J. HELFMAN
TOWN ATTORNEY

Craig A. Smith & Associates

TOWN OF GOLDEN BEACH



STORMWATER MASTER PLAN

AMENDMENT NO. 1 (FACILITIES PLAN)

OCTOBER 2018

CAS PROJECT No. 17-1971

PREPARED BY



Corporate Office:

21045 Commercial Trail
Boca Raton, FL
Tel : (561) 314-4445

Branch Offices:

Palm Beach County
Broward County
Miami-Dade County

INTRODUCTION

On behalf of the Town of Golden Beach, Florida, Craig A. Smith & Associates (CAS) is pleased to provide the Florida Department of Environmental Protection (Department) an amendment to the Town's current Stormwater Master Plan (SWMP), otherwise known as the Facilities Plan (FP), to apply for State funding through the Clean Water State Revolving Fund program (CWSRF). Briefly, the intent of this amendment is to provide additional flood protection and provide water quality treatment for the Town's existing Center Island service area (refer to Exhibit A for location maps).

LOCATION

The Town is located within the northeast corner of Miami-Dade County and is bounded by Massina Ave. to the north, Terracina Ave. to the south, the Intracoastal Waterway (ICWW) to the west and the Atlantic Ocean to the east. This amendment to the Town's current Stormwater Master Plan focuses on improvements to Center Island (refer to Exhibit A for additional project location information).

EXISTING FACILITIES

The Town's current FP implemented improvements in six (6) phases and was executed in 2004. All proposed improvements, Phases 1 through 6, were completed by March of 2011 (see Exhibit B for reference to the original SWMP and existing facilities).

Center Island, which was part of Phase 6, is served by two gravity drainage systems with positive drainage to the ICWW. These systems discharge with two outfalls, both equipped with backflow prevention devices to keep high tide water from directly entering the drainage system and flooding the streets and yards.

NEED FOR PROJECT

Center Island is low in elevation (with an average street elevation of 2.5-ft NGVD) and has limited positive head to gravity outfall during a high tide condition. Tidal seepage (during periods of high tide) from the ICWW occurs and seeps through the ground which ultimately makes it way to the drainage system via overland flow. This occurrence cannot be deterred with the existing backflow prevention devices as the seepage bypasses the devices. To make matters worse during these high tide conditions, heavy rainfall can prolong street flooding until the tide recedes and the drainage system can outflow by gravity into the ICWW.

PROJECT ALTERNATIVES

CAS has explored three viable options to help remedy the flooding situation on Center Island. Cost breakdown for all three alternatives can be found in Exhibit C. An outline of these alternatives are as follows:

The first alternative is to reconstruct the roads at higher elevations for on the entire island by approximately 21.75-inches. Raising the roadway elevations to approximately 4.5-ft NVGD would bring them above peak high tide events thus limit flooding on all roadways. The additional work associated with this alternative includes importing of approved fill, reconstruction of valley gutters, adjustments to existing drainage structure inlets, adjustments to other surface utilities, grading of roadside green areas and driveway reconstruction/ harmonization. This alternative would have the least operating and maintenance costs. The probable construction cost for this alternative is estimated at approximately \$2,298,356 with the total project cost, including engineering design and construction services estimated at \$2,778,921.

The next alternative, which addresses the discharge of the existing gravity system directly, is to install a stormwater pump station at the system's outfall as a bypass mechanism to allow stormwater to be pumped into the ICWW. Planning document, Exhibit D, evaluates in detail two different pump station design capacities. The first pump station considered is a duplex submersible pump station with an 8,960 GPM (20 cfs) flow capacity. The additional work associated with this alternative includes the installation of two rectangular manholes (inserted into the existing system), additional gravity drainage piping, one water quality treatment device, valve vault, control panel, forcemain and roadway/landscape restoration. With the pumping scenario during this alternative, flood durations are lessened and begin later in the storm event with recovery within 1.5 hours of a 10-year 1-day rainfall event (as per the findings in Exhibit D). The probable cost of this alternative is estimated at \$2,009,045 which includes engineering design, construction costs and engineering services during construction.

The third alternative includes all the proposed improvements as the second alternative except the proposed duplex submersible pump station would have about half the flow capacity at 4,032 GPM (9 cfs). With the pumping scenario during this alternative, flood durations are lessened and begin later in the storm event with recovery within 2.5 hours of a 10-year 1-day rainfall event (as per the findings in Exhibit D). The probable cost of this alternative is estimated at \$915,773 which includes engineering design, construction costs and engineering services during construction.

SELECTION OF AN ALTERNATIVE

CAS recommends the third alternative (4,032 GPM duplex submersible pump station) as the most viable solution to the flooding problem for the Town of Golden Beach's Center Island. This alternative directly addresses the issues associated with the gravity collection system's discharge during high tide conditions, is less expensive (to build and maintain) than the higher capacity pump station. The Preliminary Site Plan for the proposed improvements for said alternative can be found in Exhibit E. Additional planning documents associated with this alternative can be found in Exhibit D.

PUBLIC PARTICIPATION

The Town of Golden Beach has been communicating with the current residents of Center Island and its potential solutions over the last year. This document is to be presented at the Towns Council Meeting of October 29th, 2018. At that point, the public will be officially informed of the proposed improvements and this document will be made available for viewing to the public. Additionally, the Town will be presenting a CWSRF resolution which will also be made public. A copy of said draft resolution is presented in Exhibit F.

FINANCIAL IMPACTS

The Town of Golden Beach is currently seeking financial assistance through the Florida Department of Environmental Protection (FDEP) Clean Water State Revolving Fund program (CWSRF) to construct the proposed project. Ultimately, the costs for said improvements will be shared amongst all Town residents and spread out over the repayment period of the anticipated loan. The Town's current Capital Financing Plan is now being revised and will be included, as required, with the submission of the CWSRF Request for Inclusion (RFI).

ADDITIONAL INFORMATION

This document is a proposed amendment to the Town's current Stormwater Master Plan (SWMP). Please refer to Exhibits B and D for additional background information associated with the required design permit(s) (Miami-Dade County, Class II Permit is anticipated) existing facilities, proposed improvements, environmental benefits, environmental impacts (none anticipated), protection of endangered species (remains unchanged), impacts to wetlands (none anticipated) and impacts to low-income areas (none anticipated).

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**

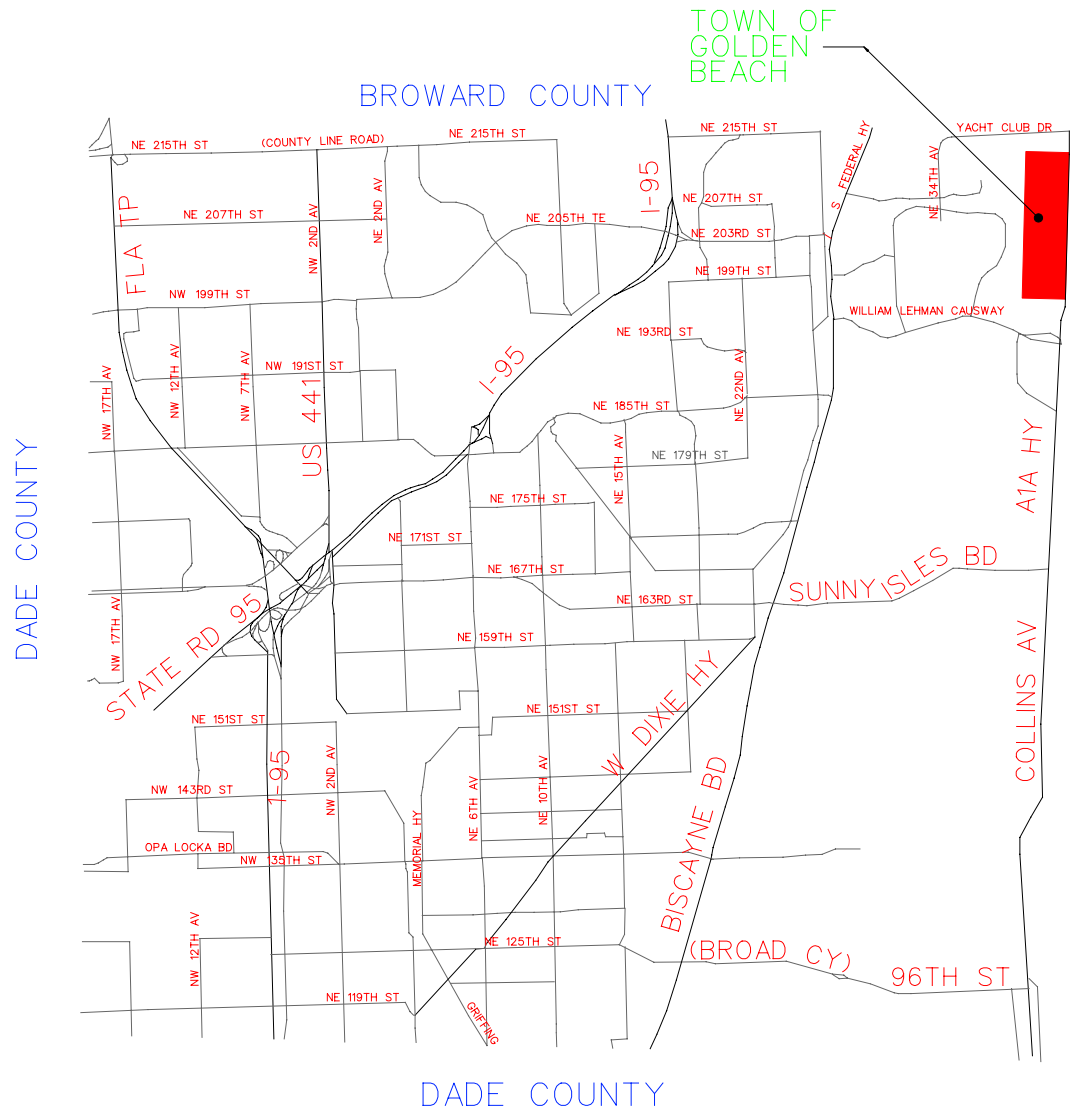
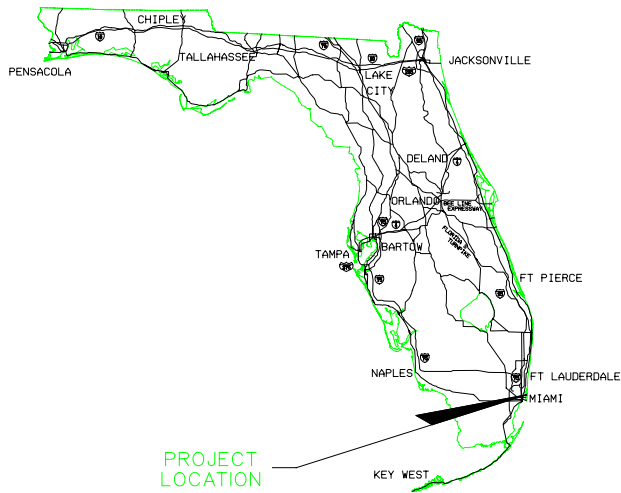


EXHIBIT A

PROJECT LOCATION MAPS

EXHIBIT A

LOCATION MAP



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EXHIBIT A

PROJECT LOCATION



**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT B

**TOWN OF GOLDEN BEACH
2004 STORMWATER MASTER PLAN**

**THE 2004 TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN (ALSO
KNOWN AS THE FACILITIES PLAN) CAN
BE PROVIDED UPON REQUEST (DUE TO
THE LARGE SIZE OF THIS DOCUMENT)**

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT C

**PROJECT ALTERNATIVES,
ENGINEER'S OPINION OF
PROBABLE COSTS**

**TOWN OF GOLDEN BEACH STORMWATER IMPROVEMENTS
CONCEPTUAL COST ESTIMATE FOR CENTER ISLAND
ALTERNATIVE NO. 1**

ITEM No.	DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
1	Mobilization	5.0%	1	LS	\$ 82,260.42	\$ 82,260.42
2	Maintenance of Traffic	4.0%	1	LS	\$ 65,808.33	\$ 65,808.33
3	Survey Stakeout and As-Builts	3.0%	1	LS	\$ 49,356.25	\$ 49,356.25
4	Density Testing	2.0%	1	LS	\$ 32,904.17	\$ 32,904.17
5	Clearing and Stripping	8.0%	1	LS	\$ 131,616.67	\$ 131,616.67
6	Environmental Compliance	5.0%	1	LS	\$ 82,260.42	\$ 82,260.42
Project Alternative - Elevate Roads (avg - 21.75")						
7	1" of SP 12.5 Asphalt		3,000	SY	\$13.00	\$ 39,000.00
8	1" of SP 9.5 Asphalt		3,000	SY	\$15.00	\$ 45,000.00
9	8" Limerock Base		3,450	SY	\$ 19.00	\$ 65,550.00
10	Clean fill for compacted Subbase (~11.75")		3,968	SY	\$10	\$ 39,675.00
11	Valley Gutter		3,150	LF	\$31	\$ 97,650.00
12	Driveway Harmonizations		1	LS	\$525,000	\$ 525,000.00
Drainage Structures Adjustments						
13	Remove Existing Brick, install 12" Conc Risers with New Brick & Reinstall Grate/Rim		20	EA	\$ 2,500.00	\$ 50,000.00
Miscellaneous (Include Full Restoration)						
14	Adjustment of Existing Surface Utilities (Non-drainage)		1	LS	\$ 25,000.00	\$ 25,000.00
15	Roadside Green Area Grading & Drainage w/Landscape Adjustments & Sodding		21,666.67	SY	\$ 35.00	\$ 758,333.33
					SUBTOTAL	\$ 2,089,414.58
					10% CONTINGENCY	\$ 208,941.46
PROBABLE CONSTRUCTION COST TOTAL						\$ 2,298,356.04
Professional Surveying/Engineering Services						
	Surveying	2%				\$ 41,788.29
	Civil Engineering Design	4%				\$ 83,576.58
	Legal (Driveway Harmonization Agreements)	1%				\$ 20,894.15
	Geotechnical Engineering	3%				\$ 62,682.44
	Permitting (MDC-RER)	1%				\$ 20,894.15
	Quantities/Cost Est/Bid Docs & Bidding	2%				\$ 41,788.29
	Engineering Services During Construction	4%				\$ 83,576.58
	Construction Observation Services	6%				\$ 125,364.88
		23%				\$ 480,565.35
TOTAL PROJECT COST						\$ 2,778,921.40

**TOWN OF GOLDEN BEACH STORMWATER IMPROVEMENTS
CONCEPTUAL COST ESTIMATE FOR CENTER ISLAND 20 CFS PUMP STATION
ALTERNATIVE NO. 2**

ITEM No.	DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
1	Mobilization	5.0%	1	LS	\$ 68,119.40	\$ 68,119.40
2	Maintenance of Traffic	2.0%	1	LS	\$ 27,247.76	\$ 27,247.76
3	Survey Stakeout and As-Builts	1.0%	1	LS	\$ 13,623.88	\$ 13,623.88
4	Density Testing	2.0%	1	LS	\$ 27,247.76	\$ 27,247.76
5	Clearing and Stripping	1.0%	1	LS	\$ 13,623.88	\$ 13,623.88
6	Environmental Compliance	2.0%	1	LS	\$ 27,247.76	\$ 27,247.76
Structures (Include Full Restoration)						
7	10' x 5' Weir Box			EA	\$ 8,500.00	\$ -
8	5' x 3' MH w/USF 580		2	EA	\$ 5,500.00	\$ 11,000.00
9	8' Diameter CDS Water Quality Structure		1	EA	\$ 58,500.00	\$ 58,500.00
10	Duplex Stormwater Pumping Station (10' x 10' x 10') & Vault with all piping & Electrical Components		1	EA	\$1,057,280	\$ 1,057,280.00
11	Generator		1	EA	\$90,000	\$ 90,000.00
Pipe (Include Full Restoration)						
12	18" PVC Pipe			LF	\$ 54.00	\$ -
13	24" A2000 PVC		65	LF	\$ 72.00	\$ 4,680.00
14	36" A2000 PVC			LF	\$ 90.00	\$ -
15	48" RCP Pipe		8	LF	\$ 175.00	\$ 1,400.00
16	10" DIP Force Main		80	LF	\$ 60.00	\$ 4,800.00
17	30" DIP Force Main			LF	\$ 175.00	\$ -
Miscellaneous (Include Full Restoration)						
18	Core Exist. Sea Wall & Connect FM			LS	\$ 15,000.00	\$ -
19	3-Phase Power/FPL		1	LS	\$ 105,728.00	\$ 105,728.00
20	Augered Piles (For Proposed Drainage Structures, Drainage Pipes & Force Main)		18	EA	\$ 1,500.00	\$ 27,000.00
21	Manatee Grate for FM			EA	\$ 5,000.00	\$ -
22	Remove Existing Pipe Sections and connect existing pipes to new structures (2)		1	LS	\$ 2,000.00	\$ 2,000.00
23	Core Exist. Structure and Connect Pipe			LS	\$ 500.00	\$ -
					SUBTOTAL	\$ 1,539,498.44
					10% CONTINGENCY	\$ 153,949.84
PROBABLE CONSTRUCTION COST TOTAL						\$ 1,693,448.28
Professional Surveying/Engineering Services						
	Surveying	0.50%				\$ 7,697.49
	Civil Engineering Design	6.00%				\$ 92,369.91
	Electrical Engineering Design	1.00%				\$ 15,394.98
	Geotechnical Engineering	1.00%				\$ 15,394.98
	Permitting (MDC-RER)	1.00%				\$ 15,394.98
	Quantities/Cost Est/Bid Docs & Bidding	1.00%				\$ 15,394.98
	Engineering Services During Construction	4.00%				\$ 61,579.94
	Construction Observation Services	6.00%				\$ 92,369.91
						\$ 315,597.18
TOTAL PROJECT COST						\$ 2,009,045.46

TOWN OF GOLDEN BEACH STORMWATER IMPROVEMENTS
CONCEPTUAL COST ESTIMATE FOR CENTER ISLAND 9 CFS PUMP STATION - ROAD INSTALLATION
ALTERNATIVE NO. 3

ITEM	DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
No.						
1	Mobilization	5.0%	1	LS	\$ 28,812.39	\$ 28,812.39
2	Maintenance of Traffic	3.0%	1	LS	\$ 17,287.44	\$ 17,287.44
3	Survey Stakeout and As-Builts	1.0%	1	LS	\$ 5,762.48	\$ 5,762.48
4	Density Testing	3.0%	1	LS	\$ 17,287.44	\$ 17,287.44
5	Clearing and Stripping	2.0%	1	LS	\$ 11,524.96	\$ 11,524.96
6	Environmental Compliance	2.0%	1	LS	\$ 11,524.96	\$ 11,524.96
Structures (Include Full Restoration)						
7	10' x 5' Weir Box			EA	\$ 8,500.00	\$ -
8	5' x 3' MH w/USF 580		2	EA	\$ 5,500.00	\$ 11,000.00
9	8' Diameter CDS Water Quality Structure		1	EA	\$ 58,500.00	\$ 58,500.00
10	Duplex Stormwater Pumping Station (10' x 10' x 10') & Vault with all piping & Electrical Components		1	EA	\$380,607	\$ 380,607.18
11	Generator		1	EA	\$50,000	\$ 50,000.00
Pipe (Include Full Restoration)						
12	18" PVC Pipe			LF	\$ 54.00	\$ -
13	24" A2000 PVC		65	LF	\$ 72.00	\$ 4,680.00
14	36" A2000 PVC			LF	\$ 90.00	\$ -
15	48" RCP Pipe		8	LF	\$ 175.00	\$ 1,400.00
16	10" DIP Force Main		50	LF	\$ 60.00	\$ 3,000.00
17	30" DIP Force Main			LF	\$ 175.00	\$ -
Miscellaneous (Include Full Restoration)						
18	Core Exist. Sea Wall & Connect FM			LS	\$ 15,000.00	\$ -
19	3-Phase Power/FPL		1	LS	\$ 38,060.72	\$ 38,060.72
20	Augered Piles (For Proposed Drainage Structures, Drainage Pipes & Force Main)		18	EA	\$ 1,500.00	\$ 27,000.00
21	Manatee Grate for FM			EA	\$ 5,000.00	\$ -
22	Remove Existing Pipe Sections and connect existing pipes to new structures (2)		1	LS	\$ 2,000.00	\$ 2,000.00
23	Core Exist. Structure and Connect Pipe			LS	\$ 500.00	\$ -
					SUBTOTAL	\$ 668,447.56
				10%	CONTINGENCY	\$ 66,844.76
					PROBABLE CONSTRUCTION COST TOTAL	\$ 735,292.32
Professional Surveying/Engineering Services						
	Surveying	1%				\$ 6,684.48
	Civil Engineering Design	8%				\$ 53,475.80
	Electrical Engineering Design	2%				\$ 13,368.95
	Geotechnical Engineering	2%				\$ 13,368.95
	Permitting (MDC-RER)	2%				\$ 13,368.95
	Quantities/Cost Est/Bid Docs & Bidding	2%				\$ 13,368.95
	Engineering Services During Construction	4%				\$ 26,737.90
	Construction Observation Services	6%				\$ 40,106.85
		27%				\$ 180,480.84
					TOTAL PROJECT COST	\$ 915,773.16

**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT D

**PROPOSED IMPROVEMENTS
PRELIMINARY PLANNING
DOCUMENTS**

Center Island Project Summary

Craig A Smith & Associates (CAS) is pleased to present the Town of Golden Beach with a summary of the impacts from a 1-in-10 year storm event occurring during a Spring high tide event. Three scenarios were evaluated with this condition. The first scenario is the analysis with the existing drainage system which functions via gravity outfalls when tailwater conditions allow. The other two scenarios considered the inclusion of a stormwater pumping station; one with a discharge capacity of 4,032 GPM (9 cfs) and the other with a discharge capacity of 8,960 GPM (20 cfs). The opinion of probable cost estimates for the small and larger pump stations are \$864,688 and \$2,009,045, respectively.

Scope: Perform a hydrologic and hydraulic analysis of a 10-year rainfall event to the Town Golden Beach, FL Center Island with relative tide data correlating to the peak of the storm. Probable cost estimates of the potential solutions are made part of this scope.

Background: Center Island is served by water tight gravity drainage systems with positive drainage to the Intra Coastal Waterway (ICWW). Center Island has two outfalls with backflow prevention devices to keep high tide water from directly entering the drainage system and flooding the streets and yards. Center Island is low in elevation and has limited positive head to gravity outfall during a high tide condition with a moderate to severe rain event. The analysis showed that this is what occurred during the rainfall from Hurricane Irma of 2017.

Storm & Tide: A design 10-year 1-day rainfall value of 8 inches was used in the analysis along with an April tide with the peak of the tide occurring during the peak of the storm to show worst case scenario. The 8-inch rainfall is greater than the rainfall from the real time event under Hurricane Irma-2017. The rainfall from that real-time event had an estimated 36-hour period for which 7.05 inches of rainfall occurred.

Tide data was obtained from the Dumfoundling Bay Station (See Figure 1). Mean Sea Level (MSL) data relative to Mean Low-Low Water (MLLW) was used in the analysis as a tailwater condition for the storm event. All elevations in the analysis have a datum referenced of 1929 National Geodetic Vertical Datum.

Both Tide and Rainfall data were correlated and used in the analyses and can be seen graphically in (See Figure 2). The peak of the 24-hour design storm occurs at around hour 12.

Figure 1

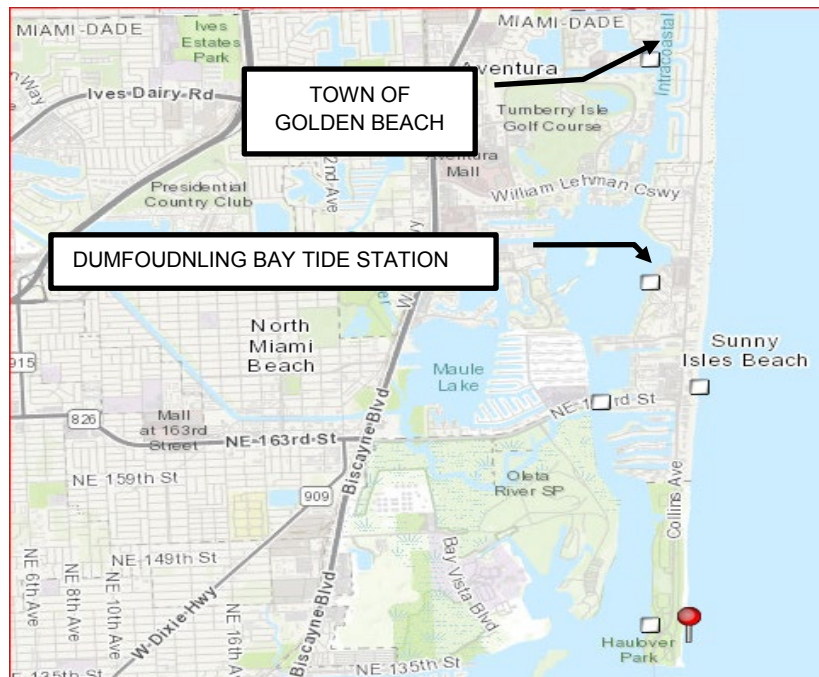
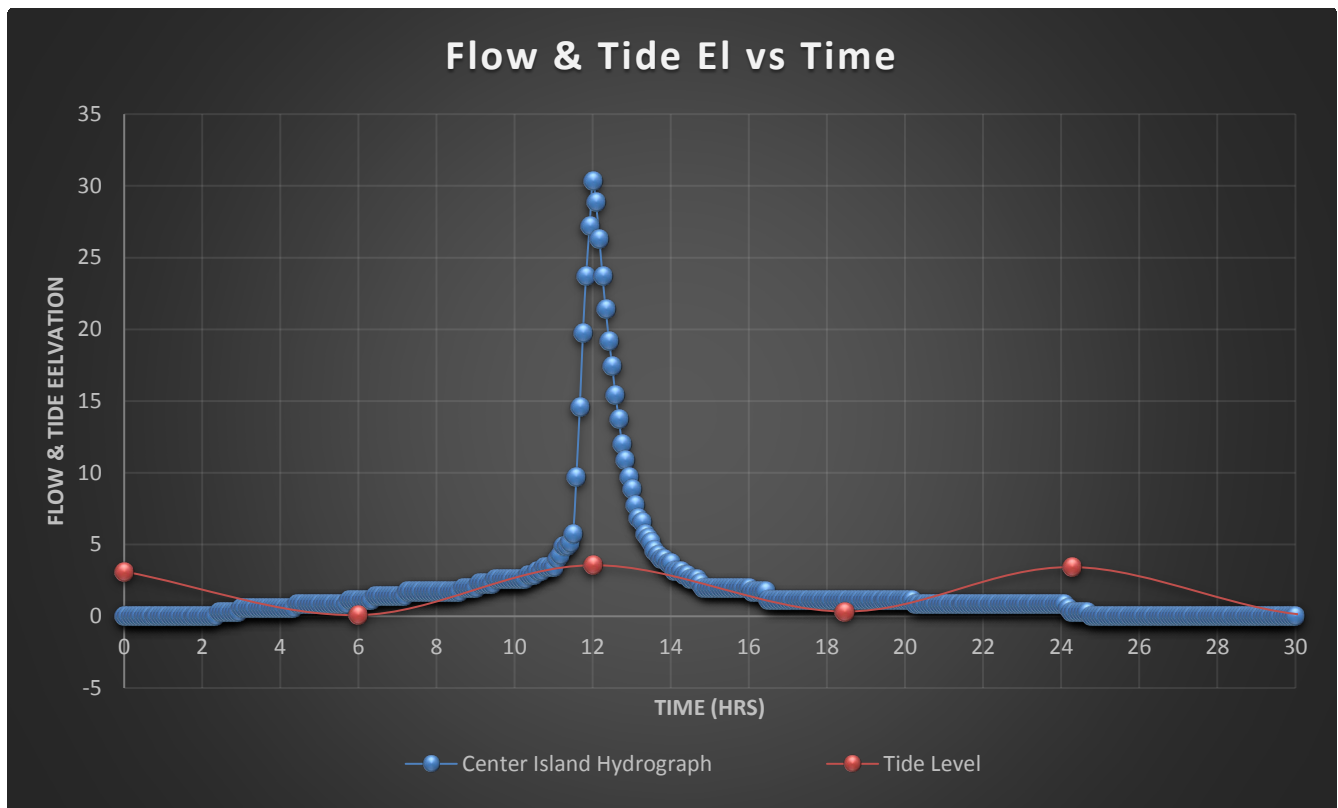
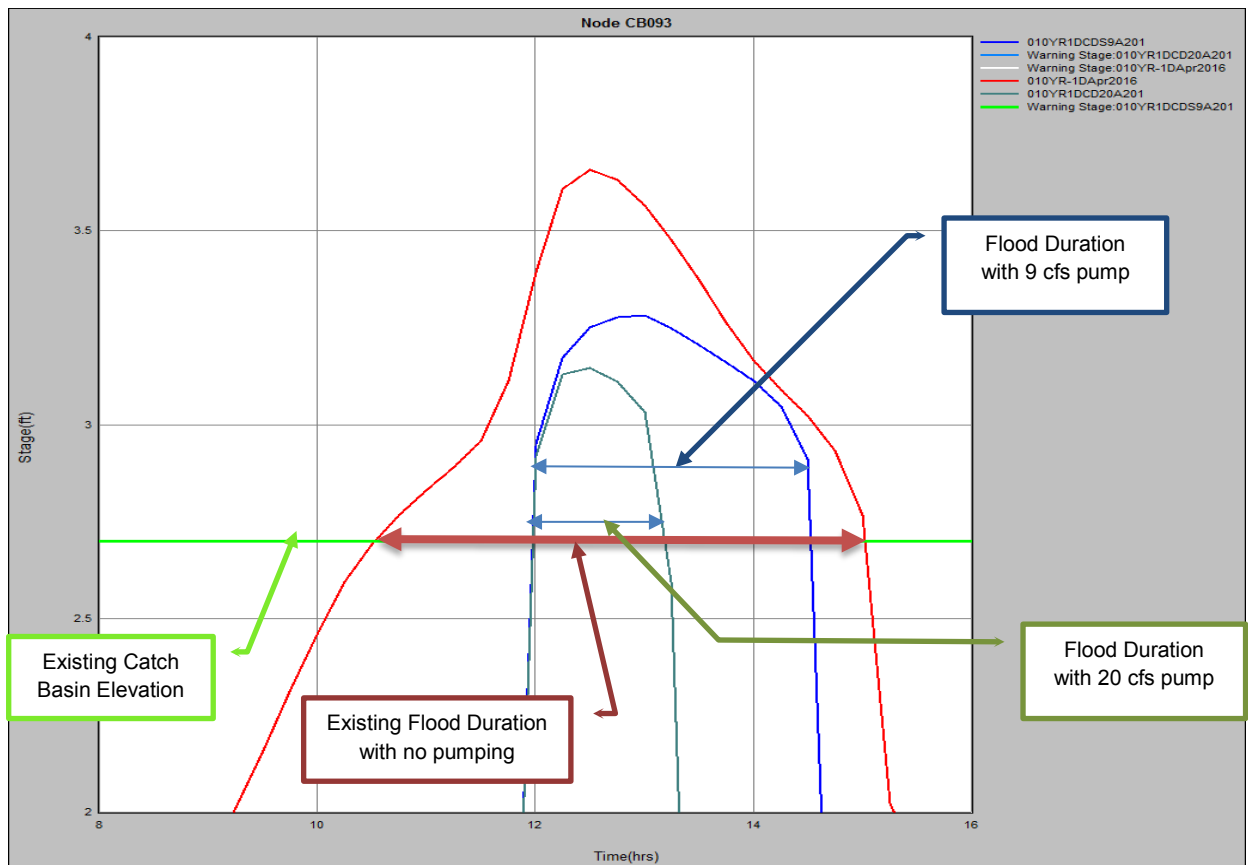


Figure 2



- Stormwater Modeling:** The flood routing calculations reflect Streamline Technologies' Advanced Inter-Connected Pond Routing (ICPR) model Ver. 3.10. The ICPR model is a hydrodynamic numerical model that approximates solutions to many equations governing flows. For comparison purposes, three scenarios were created to represent the existing condition and two proposed pumping scenarios. A model of the storm event was executed for each scenario and the results were compared. Basins (catch basin areas) were created for the systems and were assigned to a corresponding node, correlating to the structure number shown on the as-built plans. As-built grades and dimensions were used in the model. Other model input assumptions are as follows:
- Existing land use:** Right-of-way (ROW) area calculations were made with respect to pervious and impervious coverages. Basins were further subdivided into a road and residential basins and assigned to the respective catch basin numbered node.
- Existing Topography:** Road ROW survey data was used to establish stage-area curves. Existing catch basin or manhole rim elevations were used as reference points to quantify flood depths and duration above these elevations for the existing and proposed conditions. A sample graph of a structure reflecting the model results is provided in the following figure.

Figure 3Figure 4



for Catch Basin 96 in Center Island which reflects the three model simulations.

**Time of concentration
(Tc):**

A Tc of 10 minutes was assumed for each road basin due to the small basin size and 15 minutes was assumed for each residential basin due to the small basin size.

**Soil Conservation Service
Curve Number (CN):**

Depressional soil storage values were assumed in the models as identified in the District's Basis of Review permit manual.

Basin Surface Storage:

The Stage-vs-Area method was used as shown in the attached calculations.

**Tailwater Assumptions
and its impacts:**

April 2016 tide data from the nearby Dumfoundling Bay station was used. The 2016 data was utilized for no particular reason other than the fact that field measured-observations were made in January of that year. Peak tide elevations ranged from elevation 0' NGVD to 3.58'±. Note that the drivable pavement on Center Island is well below the peak tide elevations.

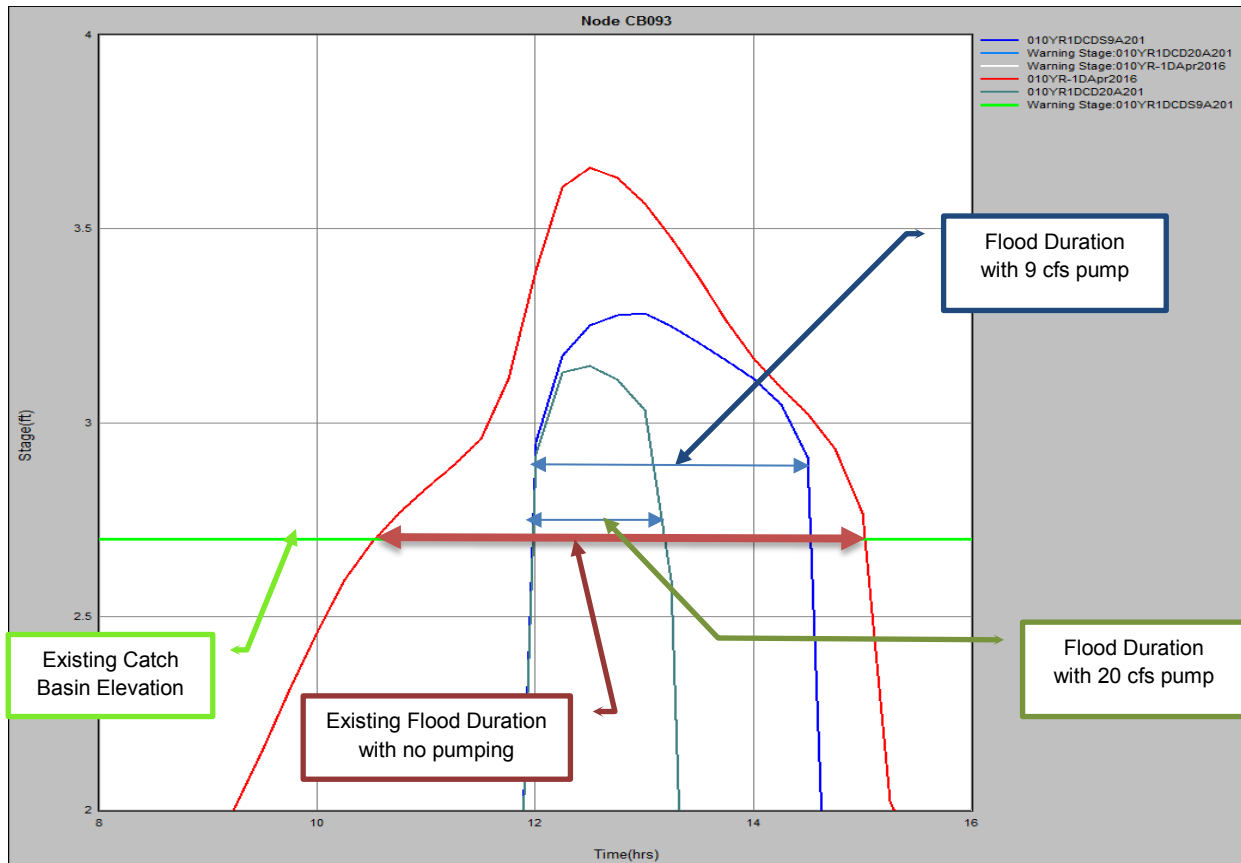
Proposed Improvements: The proposed improvements consist of a duplex stormwater pumping station that would be sized to reasonably handle an event when adverse tide conditions are prevalent. It is the intent of the proposed improvements to keep the existing gravity discharges to the ICWW as the primary outfalls for this island and to operate the station when tide conditions prevent gravity discharge during a storm event.

The gravity system would be connected to the station system containing a water quality treatment structure, a weir box, storm pipes, and pumping station with vault and force main. Pump station discharge capacities of 4,032 GPM (9 cfs) and 8,960 GPM (20 cfs) were analyzed under the two proposed scenarios. The latter station would be a duplicate of the stations serving South & North Park less one water quality treatment device. The results for each pumping scenario showed lowered peak flood stages and lowered flood durations. Flood durations are lowered because the pumps are not impeded by the tailwater to discharge stormwater.

Figure 4 illustrates the reduction in flood depths and duration below the existing catch basin elevation (Catch Basin no. 93) shown as a "Warning Stage." in the graph.

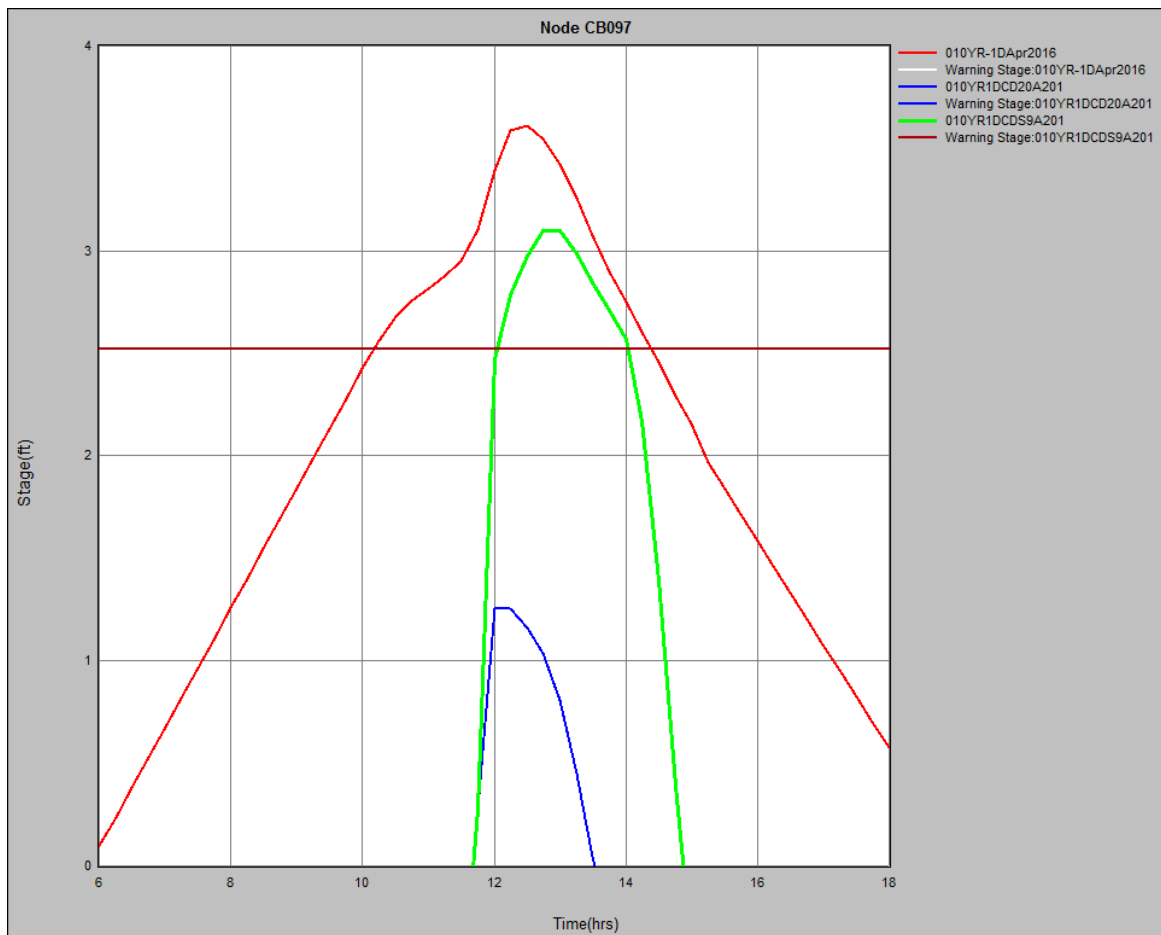
Under the existing gravity system, flooding above the catch basin may last up to ~5.5 hrs. and occurs sooner in the storm event. With the pumping scenarios, flood durations are lessened and begin later in the storm with recovery within 2.5 hrs and 1.5 hrs for the 9 cfs and 20 cfs pump stations, respectively. This occurs because the pumps can be turned on sooner when stormwater is in the drainage system to stay ahead of the storm. The red line represents the existing condition, the blue line represents the 9 cfs pump station, and the green represents the 20 cfs pump station. The horizontal line represents the catch basin elevation.

Figure 4



We will note that since the pump acts as a drawdown system, the areas closer to the pump station will fare better than areas on the upstream ends of the drainage system due to hydraulics of the system. For example, catch basin no. 97 is located nearly adjacent to the proposed pump station and flooding is shown to be removed for the 20 cfs station scenario. With the 9 cfs pump station, flood duration is within 2 hrs; about ½ hour less than upstream catch basins.

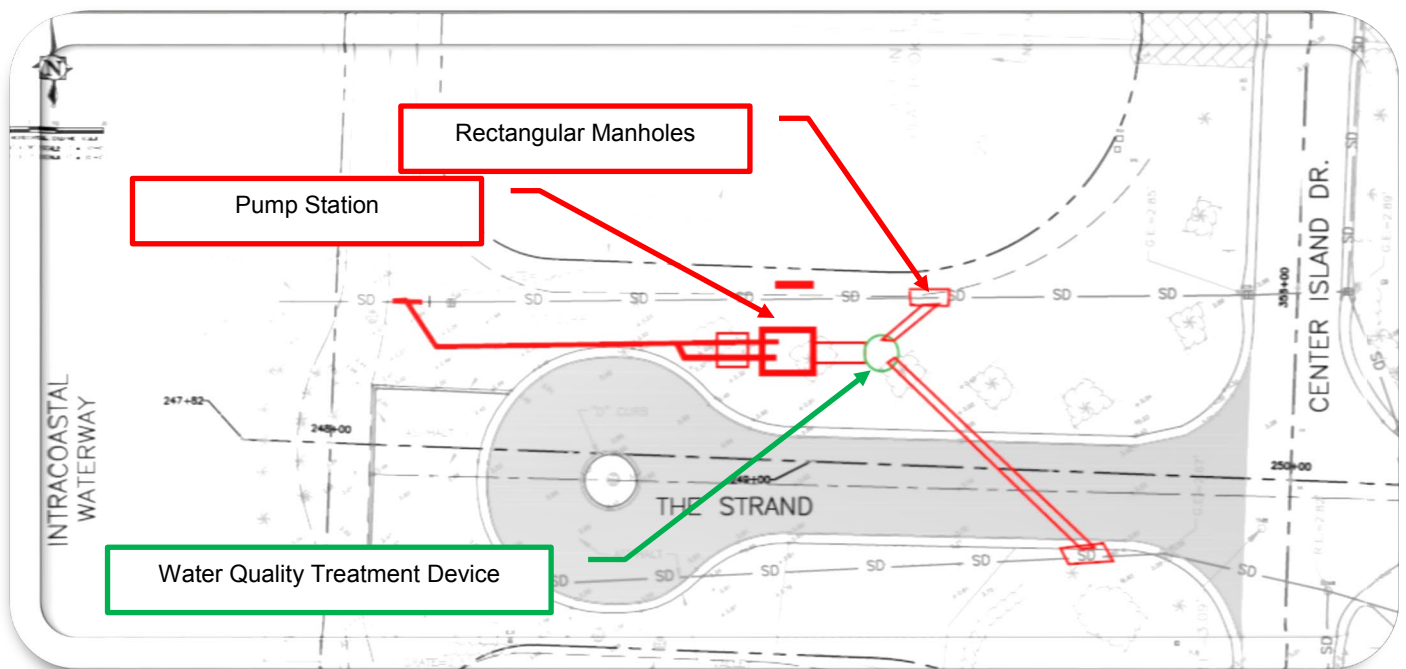
Figure 5



The anticipated modification to the existing drainage system is shown in the following schematic. The intent is to have the least amount of intrusive work performed on the project and this location appears to be better suited.

The proposed work will involve the installation of two rectangular manholes on the north and south side to intercept gravity flows from the existing drainage system when the tide is high. These manholes will be connected to a water quality treatment device which will discharge into the proposed pump station. The pump station force main will be connected to the existing northern outfall.

Figure 6



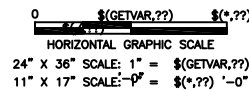
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**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT E

PRELIMINARY SITE PLAN



EXIST. BACKFLOW PREVENTOR
(TO REMAIN)

PROP. STORM PIPE

PROP. STORM PIPE -

EXIST. BACKFLOW PREVENTOR
(TO REMAIN)

— PROP. STORMWATER
PUMP STATION & VAULT

-PROP. STORM MH

-PROP. STORM PIPE

—PROP. WATER QUALITY
TREATMENT DEVICE

—EXIST. STORM PIPE
(TO REMAIN)

—EXIST. STORM PIPE
(TO REMAIN)

PROP. STORM MH

DE = 300',

$\gamma_{G.E.} = 2.97$



**TOWN OF GOLDEN BEACH
STORMWATER MASTER PLAN,
AMENDMENT NO. 1**



EXHIBIT F

**PROPOSED IMPROVEMENT,
DRAFT RESOLUTION**

TOWN OF GOLDEN BEACH, FLORIDA

RESOLUTION NO. _____.18

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, ADOPTING A STORMWATER FACILITIES IMPROVEMENT PLAN FOR A STATE REVOLVING LOAN FUND PROGRAM; PROVIDING FOR IMPLEMENTATION AND AN EFFECTIVE DATE.

WHEREAS, the Florida Statutes provide for loans to local government agencies to finance the construction of stormwater facilities; and

WHEREAS, Florida Administrative Code requires the formal authorization and adoption of a facility plan outlining necessary stormwater facility improvements to comply with State of Florida funding requirements; and

WHEREAS, the Town of Golden Beach has prepared a proposed facility plan, attached to this Resolution as Exhibit “A” (the “Facility Plan”), as required for the Town to participate in the State Revolving Loan Fund Program; and

WHEREAS, the Town Council of the Town of Golden Beach, Florida agrees with the findings and summary of necessary improvements as outlined in the Facility Plan for the purpose of providing flood relief to the Center Island area of the Town.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA AS FOLLOWS: Section

Section 1. Recitals Adopted. Each of the above-stated recitals are hereby adopted and confirmed.

Section 2. Approval of Facility Plan. The Facility Plan attached as Exhibit “A” to this Resolution is hereby approved and adopted.

Section 3. Implementation. The Town Manager and/or Town Mayor are hereby authorized to take all action necessary to implement the Facility Plan.

Section 4. Effective Date. This Resolution shall be effective immediately upon adoption.

The Motion to adopt the foregoing Resolution was offered by Councilmember _____, seconded by _____, and on roll call the following vote ensued:

Mayor Glenn Singer	_____
Vice Mayor Judy Lusskin	_____
Councilmember Kenneth Bernstein	_____
Councilmember Amy Isackson-Rojas	_____
Councilmember Jaime Mendal	_____

PASSED AND ADOPTED by the Town Council of the Town of Golden Beach, Florida this _____ day of October 2018.

MAYOR GLENN SINGER

ATTEST:

LISSETTE PEREZ
TOWN CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

STEPHEN J. HELFMAN
TOWN ATTORNEY



TOWN OF GOLDEN BEACH

One Golden Beach Drive
Golden Beach, FL 33160

MEMORANDUM

Date: October 30, 2018

To: Honorable Mayor Glenn Singer &
Town Council Members

From: Alexander Diaz
Town Manager

Item Number:

11

Subject: Resolution No. 2583.18- Authorizing the Submittal and
Processing of Permits for Canal Dredging

Recommendation:

It is recommended that the Town Council adopt the attached Resolution No. 2583.18 as presented.

Background:

During the last few years, the Town has undertaken an in-depth analysis of the needs to maintain a usable and navigable canal system. This process has allowed us to meet with residents, engineers, permitting agencies boat owners and those affected by a proposed dredging of the canals. What we learned has helped develop our Canal Maintenance Program.

The Canal Maintenance Program will allow for the Town's six (6) canals to maintain a 5 foot clear draft at low tide; a reasonable depth for the largest vessel that can be moored in Town.

The attached packet is the final hurdle prior to the Town securing proposals for the work to be undertaken. In the coming weeks we will begin drafting the necessary proposals to secure a qualified most responsible provider.

The final selection and award of work to commence the project will go before the Town Council for final award.

Fiscal Impact:

None

TOWN OF GOLDEN BEACH, FLORIDA

RESOLUTION NO. 2583.18

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA, AUTHORIZING THE SUBMITTAL AND PROCESSING OF PERMITS FOR CANAL DREDGING; PROVIDING FOR IMPLEMENTATION AND EFFECTIVE DATE.

WHEREAS, over decades, the canals within the Town have filled with sediment and other material that impede navigation through the canals; and

WHEREAS, this condition effects the use, enjoyment, health, safety and welfare of the residents' properties as well as the value of their properties; and

WHEREAS, the Town wishes to help alleviate this condition within the canals through the maintenance dredging of the canals; and

WHEREAS, the Town Manager and Mayor have developed a program for maintenance dredging of the canals and intend to secure the necessary environmental permits to commence the work.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF GOLDEN BEACH, FLORIDA AS FOLLOWS: Section

Section 1. Recitals Adopted. Each of the above-stated recitals are hereby adopted and confirmed.

Section 2. Authorization and Approval of Dredging Plan. The plan to dredge the canals is hereby authorized and approved.

Section 3. Implementation. The Town Manager and/or Town Mayor are hereby authorized and directed to take all action necessary to implement a canal dredging

program for all canals within the Town, including the submittal and processing of all required governmental permits.

Section 4. **Effective Date.** This Resolution shall be effective immediately upon adoption.

The Motion to adopt the foregoing Resolution was offered by _____,
seconded by _____, and on roll call the following vote ensued:

Mayor Glenn Singer	_____
Vice Mayor Jaime Mendal	_____
Councilmember Kenneth Bernstein	_____
Councilmember Amy Isackson-Rojas	_____
Councilmember Judy Lusskin	_____

PASSED AND ADOPTED by the Town Council of the Town of Golden Beach,
Florida this 30th day of October, 2018.

MAYOR GLENN SINGER

ATTEST:

LISSETTE PEREZ
TOWN CLERK

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY:

STEPHEN J. HELFMAN
TOWN ATTORNEY

ENVIRONMENTAL SOLUTIONS INTERNATIONAL, LLC

October 15, 2018

Golden Beach Canal Dredging Project Project Narrative – Revised

Re: CLI-2018-0318

Ms. Alhale:

The applicant (Town of Golden Beach) has previously submitted a Class I application and project narrative for the dredging of the 3 canals surrounding the islands on the east side of the ICWW due to sediment accumulation.

On 9/26/18, Olin Hydrographic conducted a second biological survey of the canals (during the seagrass growing season). The results of the most recent survey showed the complete absence of seagrass within the canals. As such, the project no longer proposes to impact seagrass during the dredging activities. Please see the attached revised permit sketches.

The project still proposes to dredge approximately 1,968 CY of material from the canals, and dredge to a maximum depth of -5' MLW. As the project will no longer impact marine resources, the applicant no longer proposes to conduct a mitigation project in connection with the dredging activities.

Enclosed with this letter, please find the following:

- Revised permit application
- Revised permit sketches
- Exemption Verification letter from the Dept. of Environmental Protection

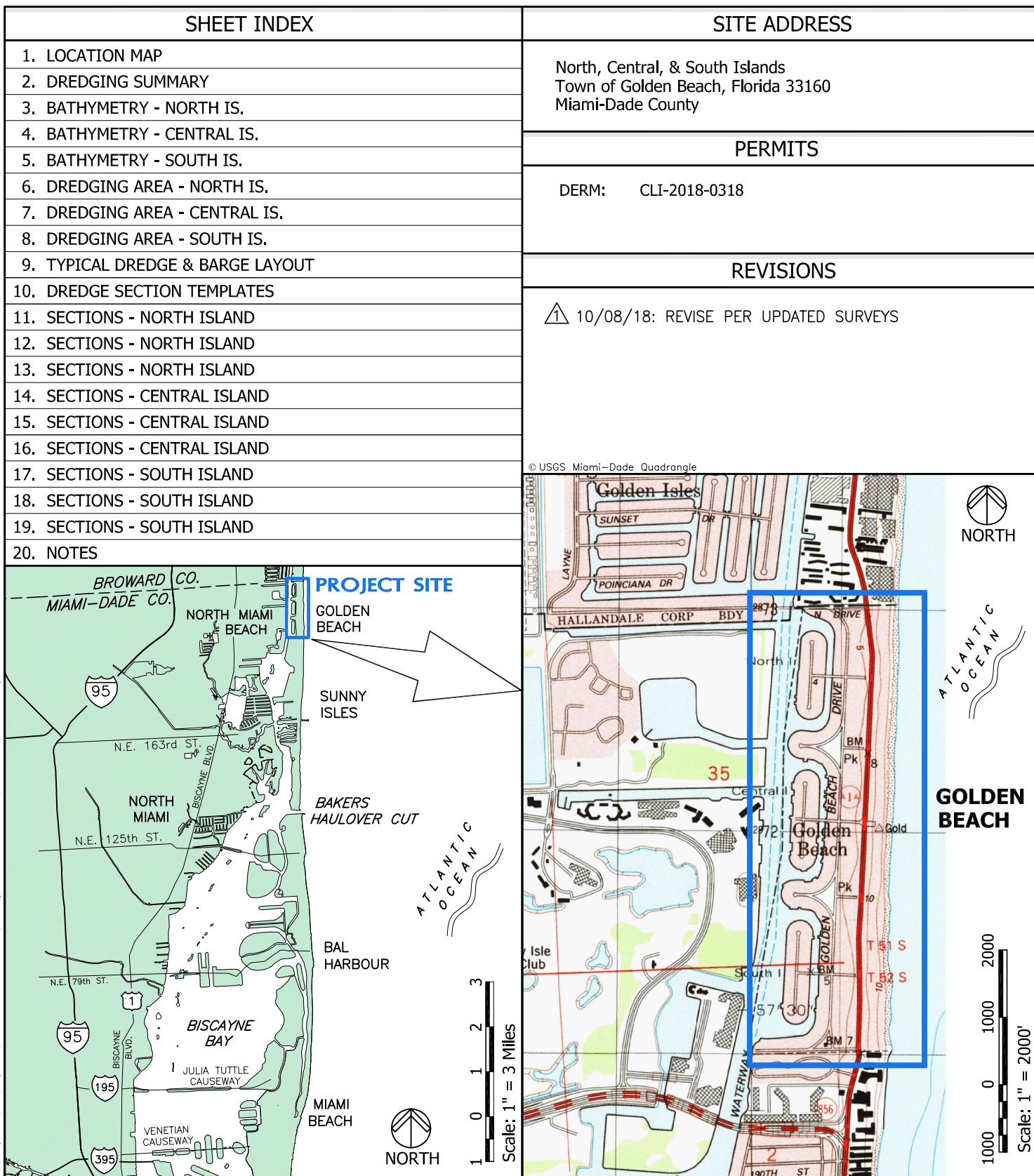
Please don't hesitate to contact me at jared@envtlsolutions.com or 305-479-8346 if you have any questions or concerns while reviewing the attached information.

Sincerely,
Environmental Solutions International



Jared W. Zemantauski
President

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DAVID G. OLIN
FL.REG.57555

Town of Golden Beach

1 Golden Beach Drive
Golden Beach, FL 33160



OLIN HYDROGRAPHIC SOLUTIONS, INC.

16334 Port Dickinson Drive, Jupiter, FL 33477

Tel: 305/619-2800 Fax: 305/860-4411

STATE OF FLORIDA PE #57555, CA #26050

Consulting Engineering, Environmental, and Mapping Services

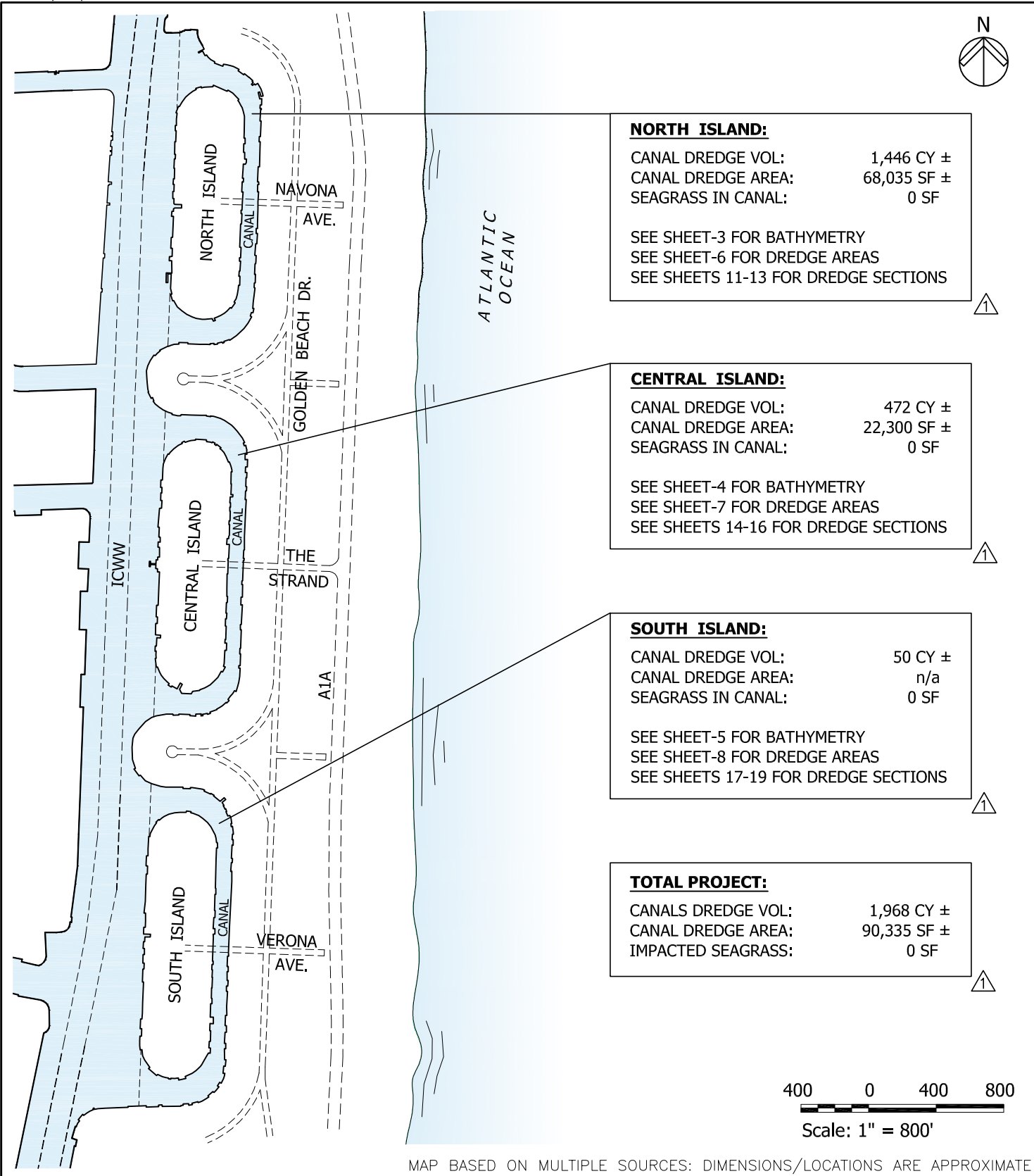
GOLDEN BEACH CANALS PROPOSED DREDGING

LOCATION MAP

JOB: 17-013 DATE: 03/27/2018

BY: TS SHEET 1 OF 20

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MAP BASED ON MULTIPLE SOURCES: DIMENSIONS/LOCATIONS ARE APPROXIMATE

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FL.REG.57555

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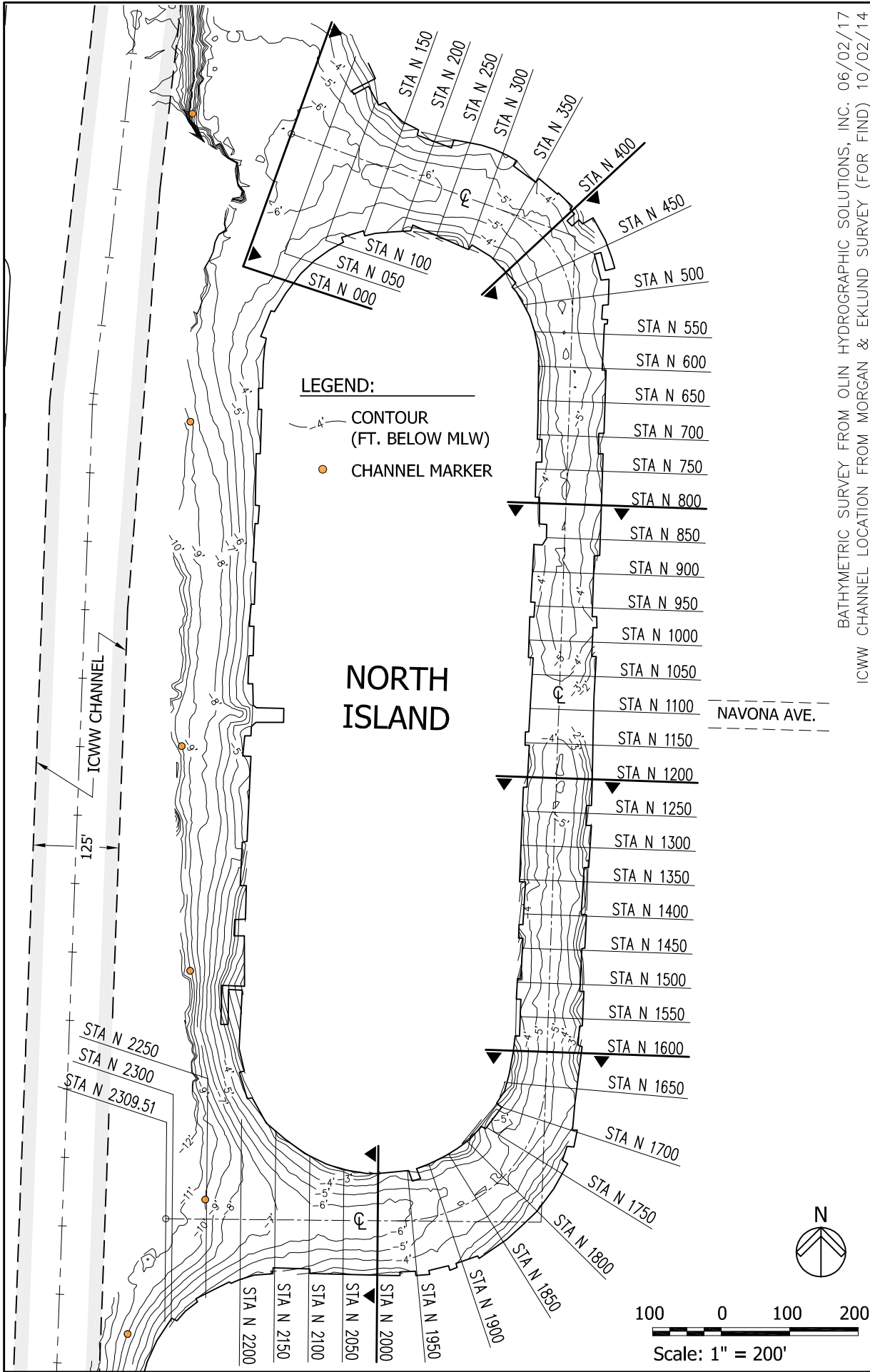
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GOLDEN BEACH CANALS PROPOSED DREDGING

DREDGING SUMMARY

JOB:	17-013	DATE:	03/27/2018
BY:	TS	SHEET	2 OF 20



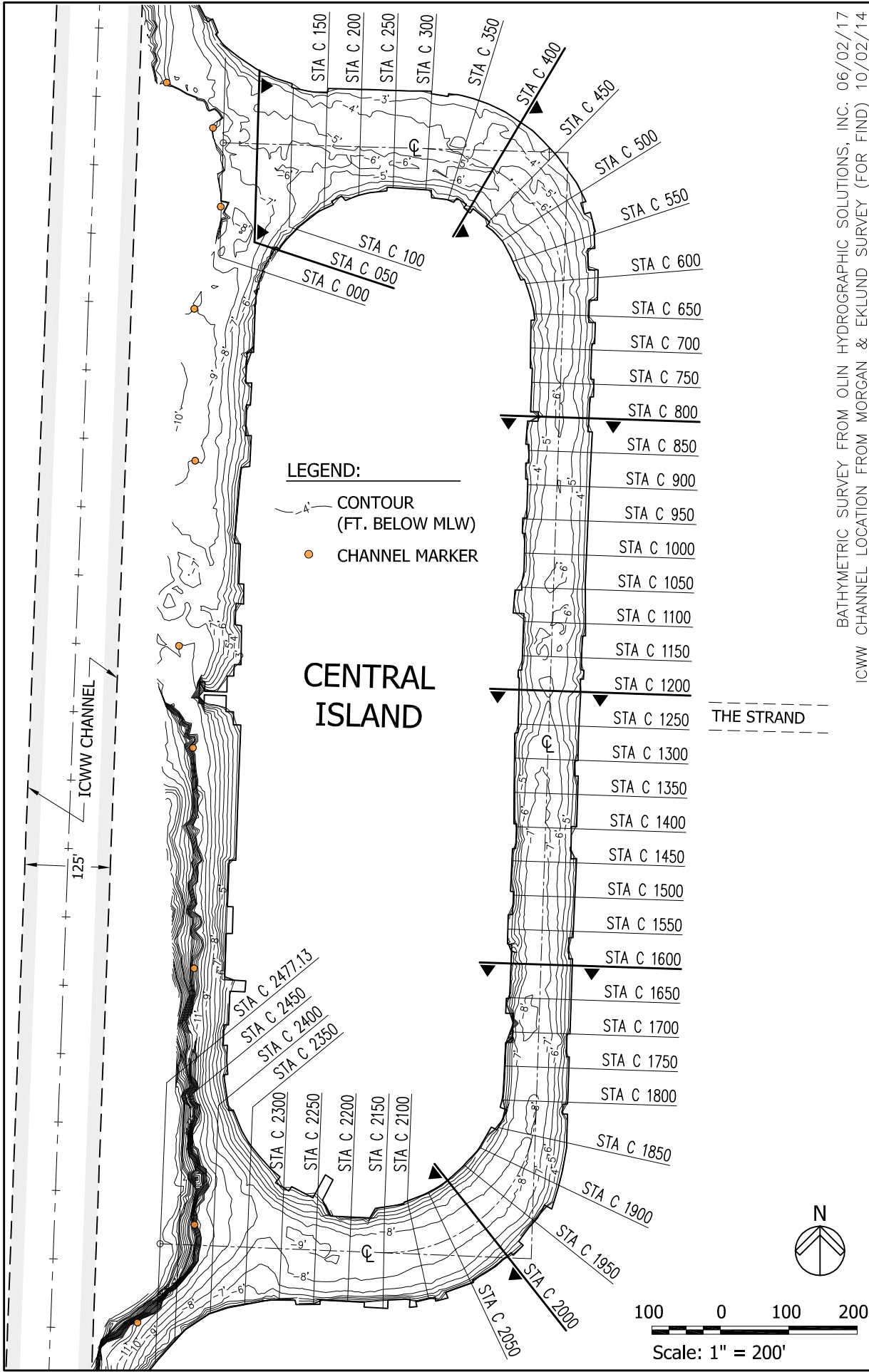
BATHYMETRIC SURVEY FROM OLIN HYDROGRAPHIC SOLUTIONS, INC. 06/02/17
ICWW CHANNEL LOCATION FROM MORGAN & EKLUND SURVEY (FOR FIND) 10/02/14

GOLDEN BEACH CANALS PROPOSED DREDGING	
BATHYMETRY - NORTH IS.	
JOB: 17-013	DATE: 03/27/2018
BY: TS	SHEET 3 OF 20

Town of Golden Beach
1 Golden Beach Drive
Golden Beach, FL 33160

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BATHYMETRIC SURVEY FROM OLIN HYDROGRAPHIC SOLUTIONS, INC. 06/02/17
ICWW CHANNEL LOCATION FROM MORGAN & EKLUND SURVEY (FOR FIND) 10/02/14

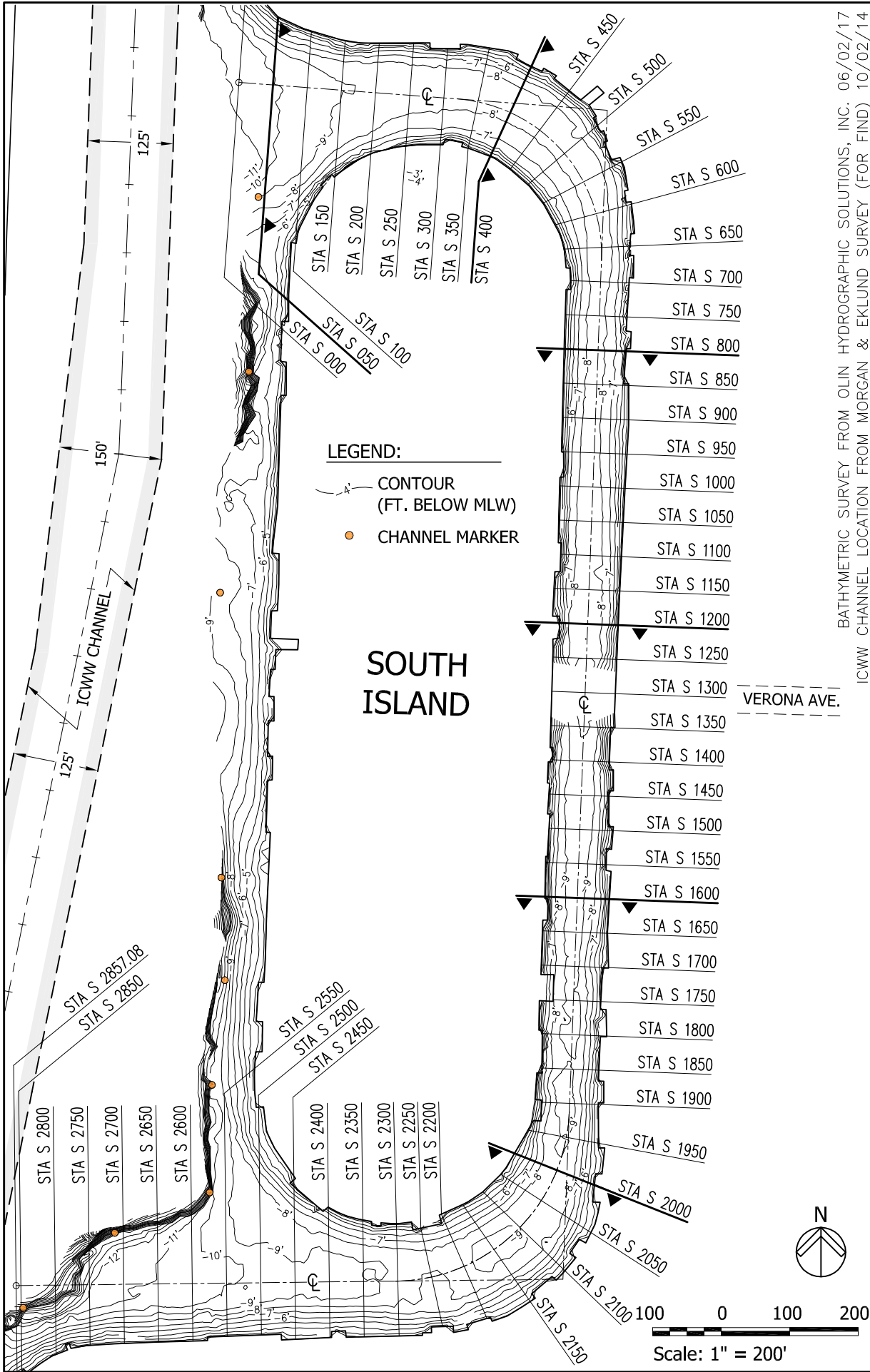
GOLDEN BEACH CANALS PROPOSED DREDGING	
BATHYMETRY - CENTRAL IS.	
JOB: 17-013	DATE: 03/27/2018
BY: TS	SHEET 4 OF 20

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BATHYMETRIC SURVEY FROM OLIN HYDROGRAPHIC SOLUTIONS, INC. 06/02/17
ICWW CHANNEL LOCATION FROM MORGAN & EKLUND SURVEY (FOR FIND) 10/02/14

GOLDEN BEACH CANALS PROPOSED DREDGING	
BATHYMETRY - SOUTH IS.	
JOB: 17-013	DATE: 03/27/2018
BY: TS	SHEET 5 OF 20

Town of Golden Beach
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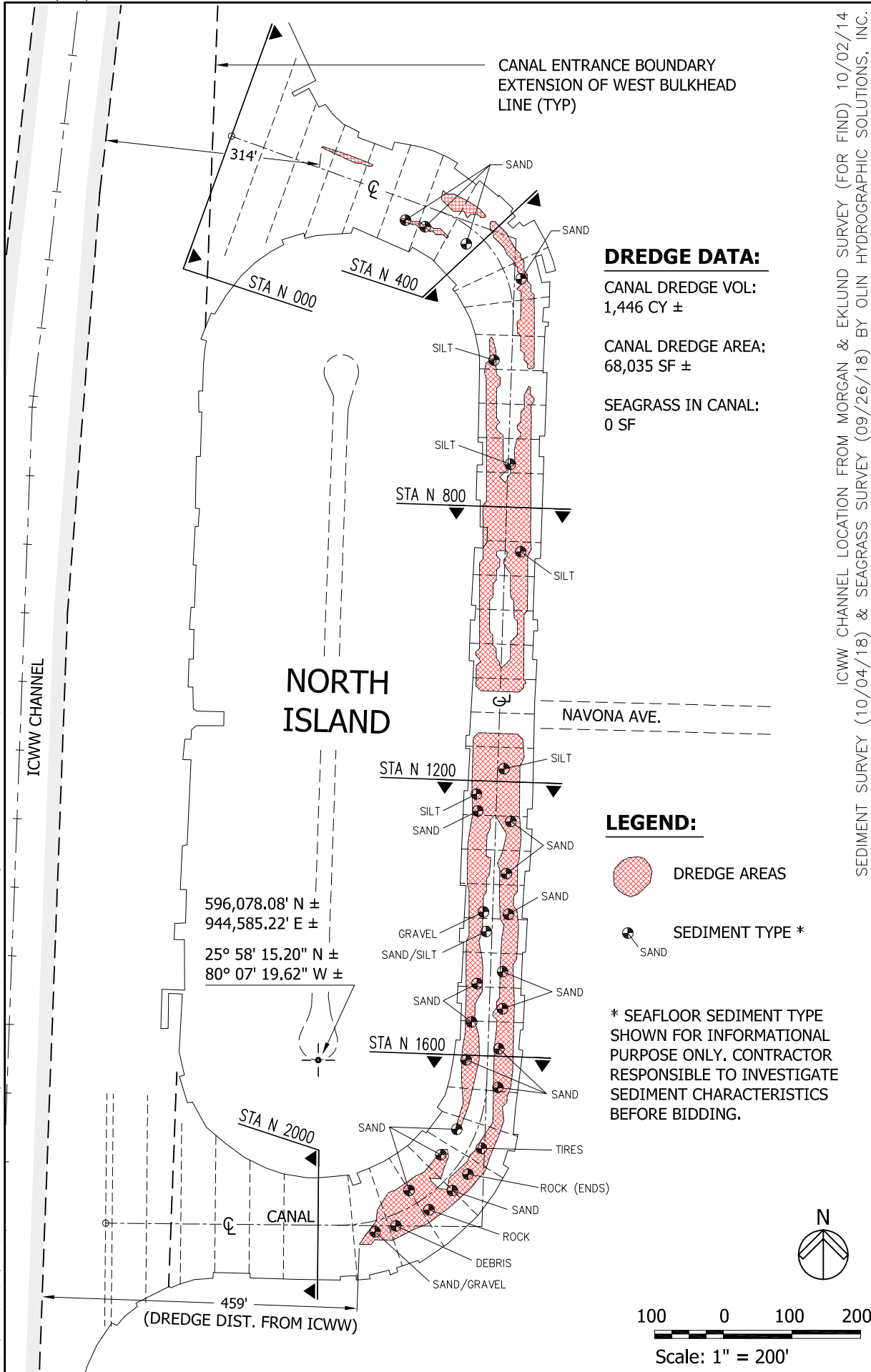
OLIN HYDROGRAPHIC SOLUTIONS, INC.
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OLIN
Hydrographic
Solutions, Inc.

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10/08/18: REVISE PER UPDATED SURVEYS



ICWW CHANNEL LOCATION FROM MORGAN & EKLUND SURVEY (FOR FIND) 10/02/14
SEDIMENT SURVEY (10/04/18) & SEAGRASS SURVEY (09/26/18) BY OLIN HYDROGRAPHIC SOLUTIONS, INC.

Town of Golden Beach
1 Golden Beach Drive
Golden Beach, FL 33160

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16334 Port Dickinson Drive, Jupiter, FL 33477
Tel: 305/619-2800 Fax: 305/860-4411

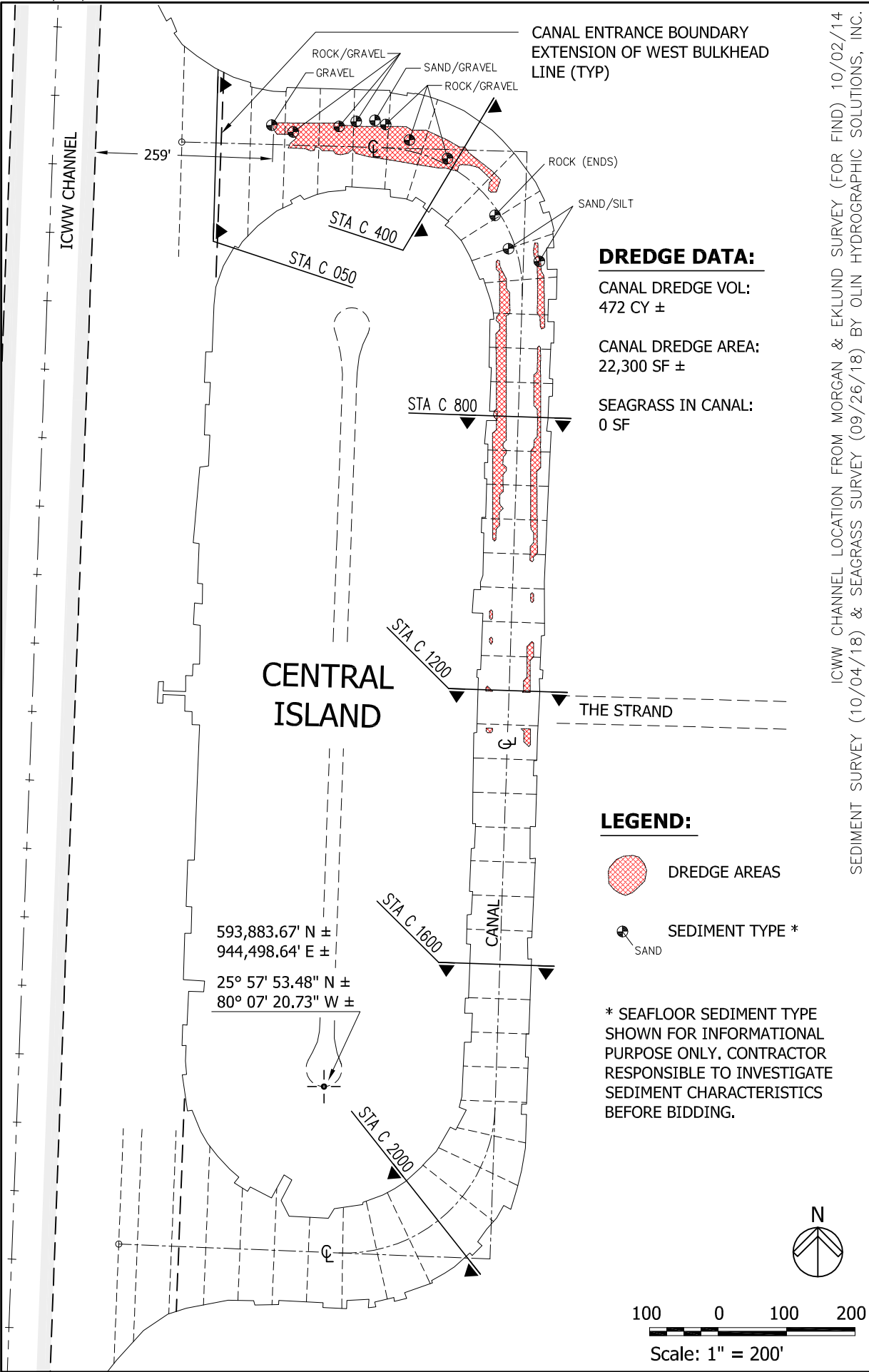


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GOLDEN BEACH CANALS PROPOSED DREDGING	
DREDGING AREA - NORTH IS.	
JOB: 17-013	DATE: 03/27/2018
BY: TS	SHEET 6 OF 20

10/08/18: REVISE PER UPDATED SURVEYS

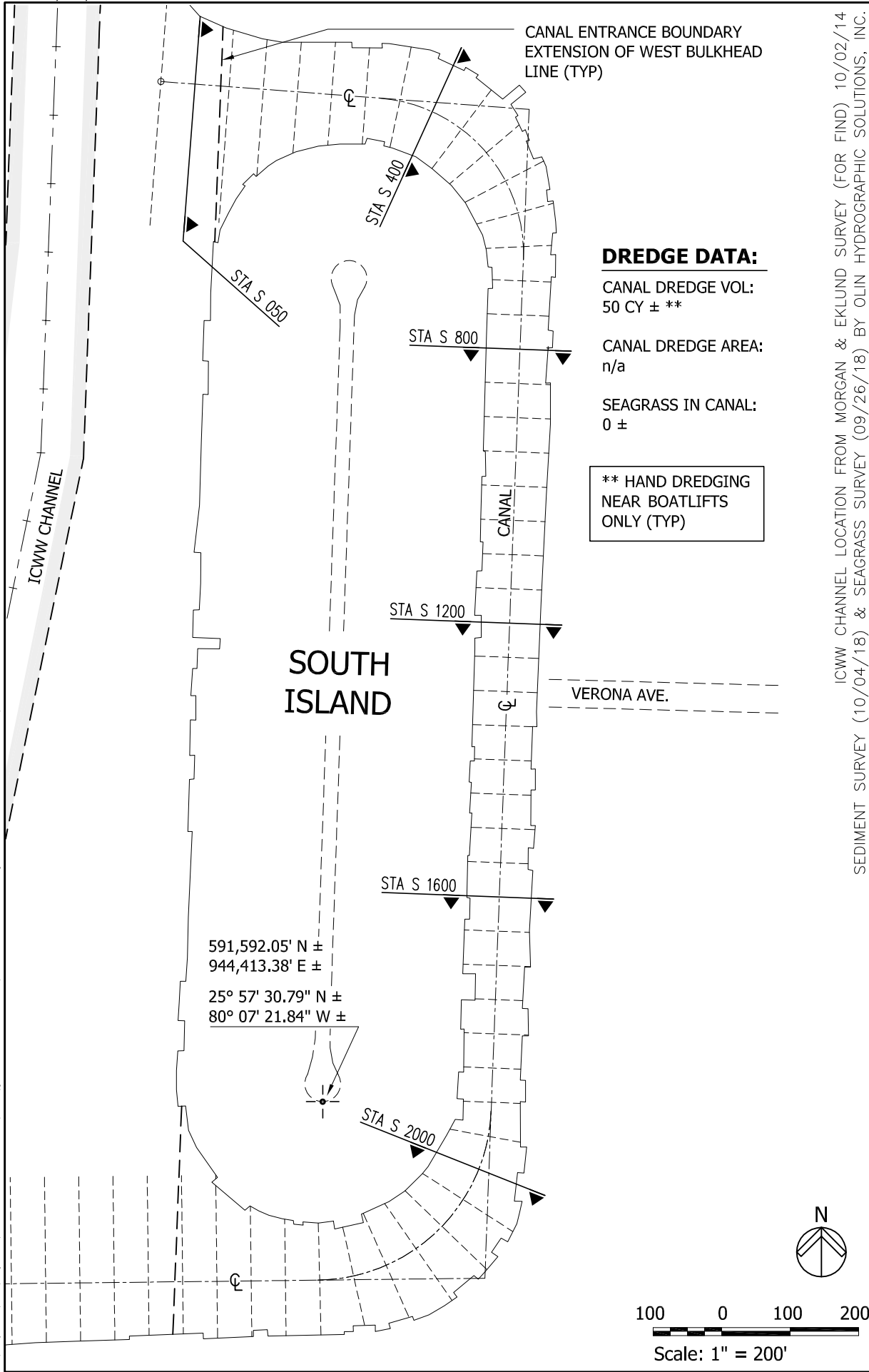


GOLDEN BEACH CANALS PROPOSED DREDGING	
DREDGING AREA - CENTRAL IS.	
JOB: 17-013	DATE: 03/27/2018
BY: TS	SHEET 7 OF 20

Town of Golden Beach
1 Golden Beach Drive
Golden Beach, FL 33160

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10/08/18: REVISE PER UPDATED SURVEYS



ICWW CHANNEL LOCATION FROM MORGAN & EKLUND SURVEY (FOR FIND) 10/02/14
 SEDIMENT SURVEY (10/04/18) & SEAGRASS SURVEY (09/26/18) BY OLIN HYDROGRAPHIC SOLUTIONS, INC.

GOLDEN BEACH CANALS PROPOSED DREDGING	
DREDGING AREA - SOUTH IS.	
JOB: 17-013	DATE: 03/27/2018
BY: TS	SHEET 8 OF 20

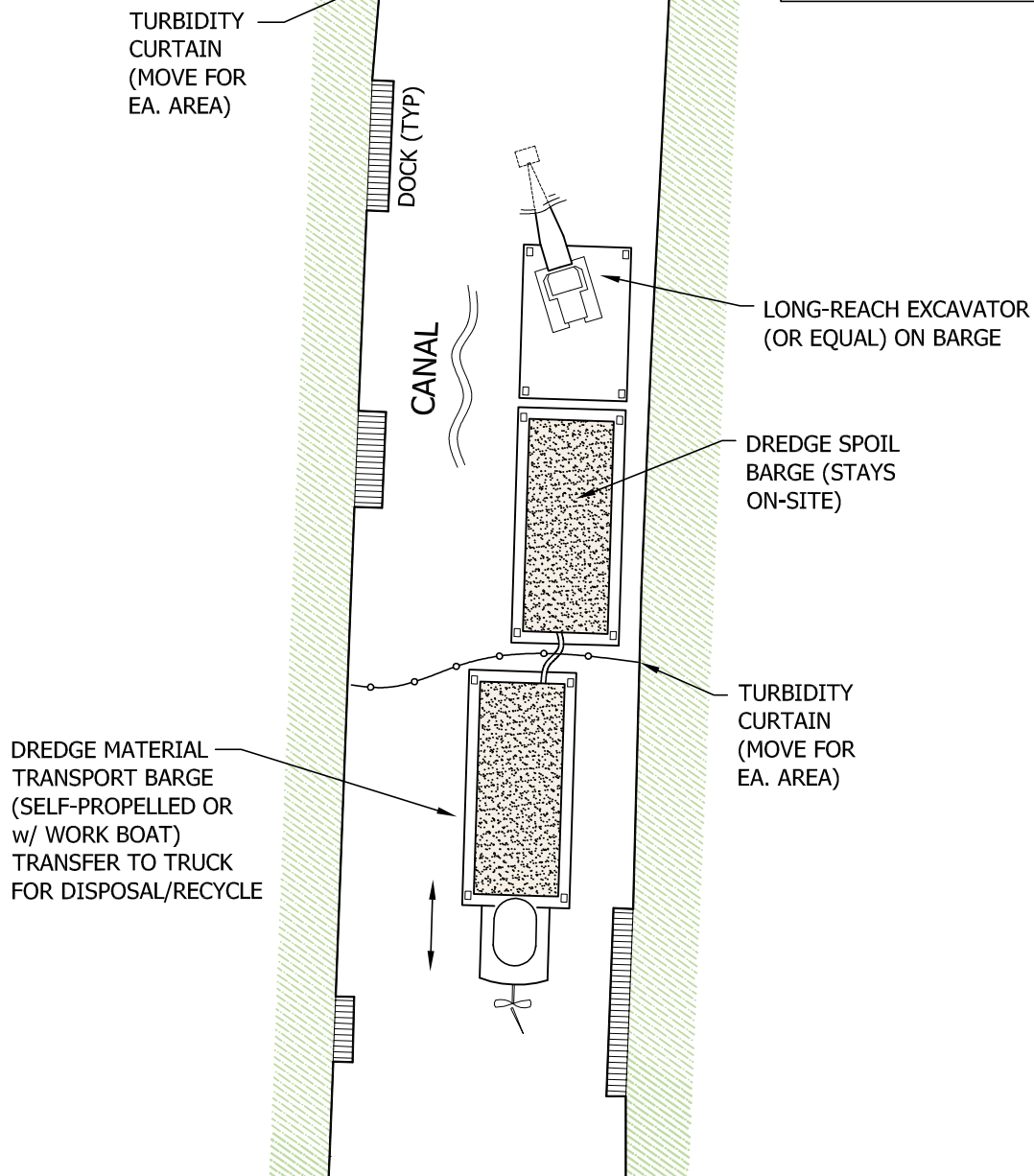
Town of Golden Beach
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 Hydrographic
 Solutions, Inc.

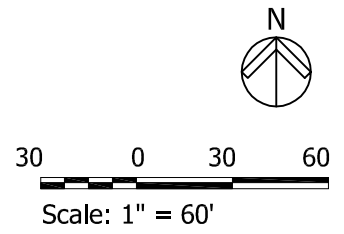
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* GENERAL ARRANGEMENT SHOWN
EQUIPMENT TYPE AND SIZE
MAY VARY BY CONTRACTOR

Plan View: Typical Dredging Layout



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FL.REG.57555

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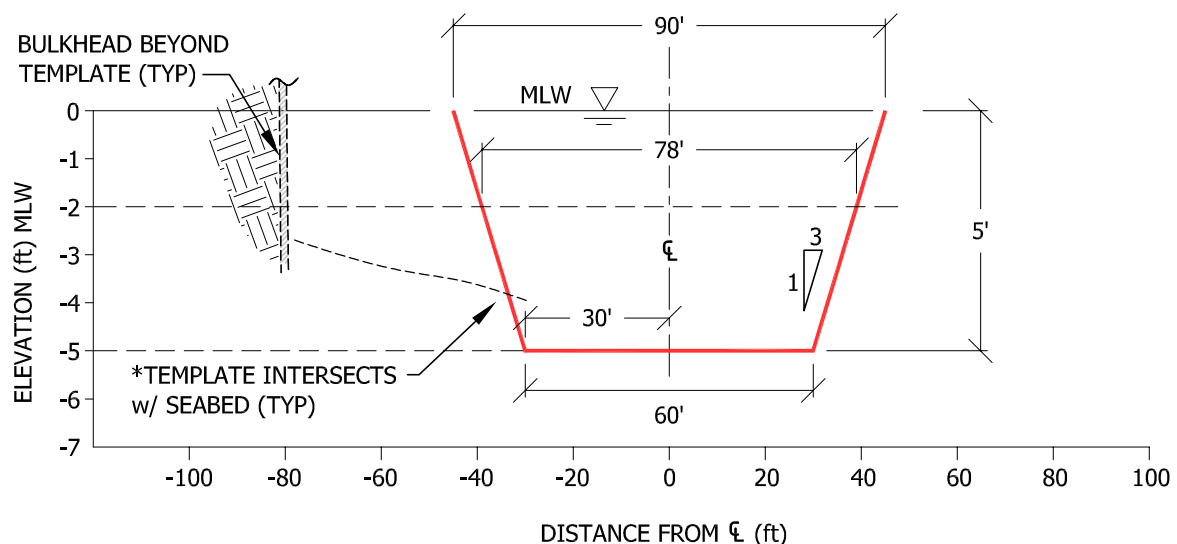
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STATE OF FLORIDA PE #57555, CA #26050
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GOLDEN BEACH CANALS PROPOSED DREDGING

TYP. DREDGE & BARGE LAYOUT

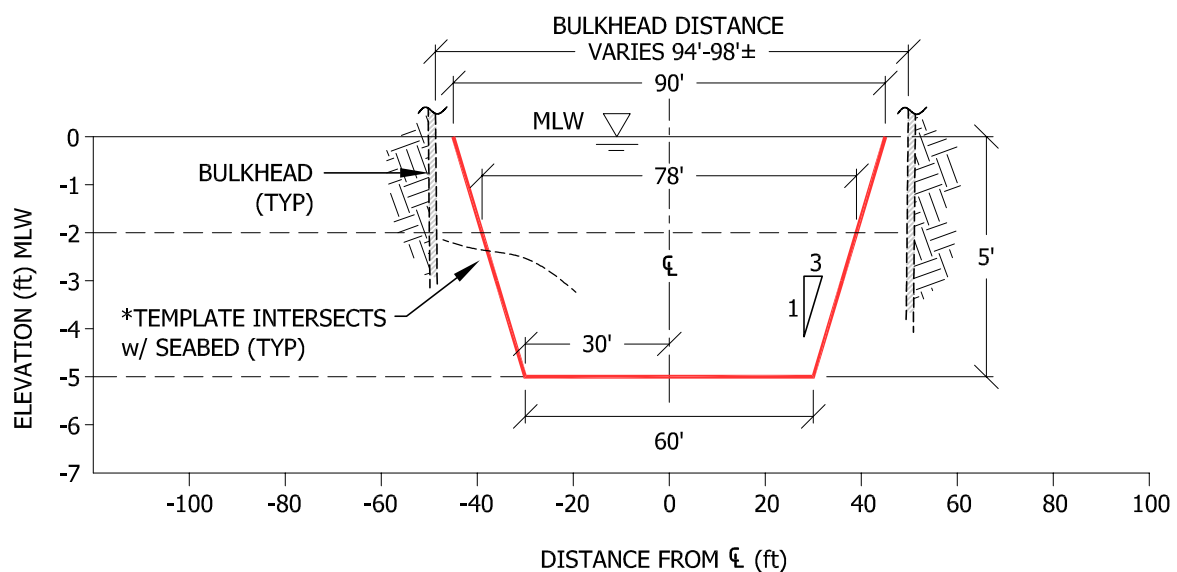
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BY:	TS	SHEET	9 OF 20

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Typ. Dredge Section

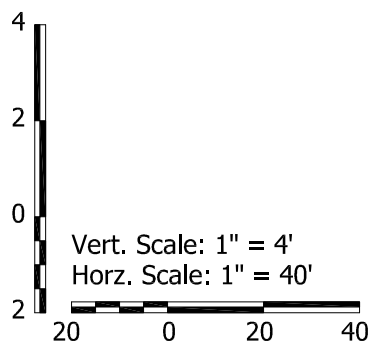
Stations 000' to 600'± and 1850'± to end (canal entrances)



Typ. Dredge Section

Stations 650'± to 1800'± (straight canal segment)

* NOTE: SINGLE DREDGE TEMPLATE w/ 1:3 SIDE SLOPES AND 60' WIDTH AT BASE USED FOR ENTIRE PROJECT. DREDGING INCLUDING OVERDEPTH NOT TO EXTEND BELOW ELEVATION -5' MLW.



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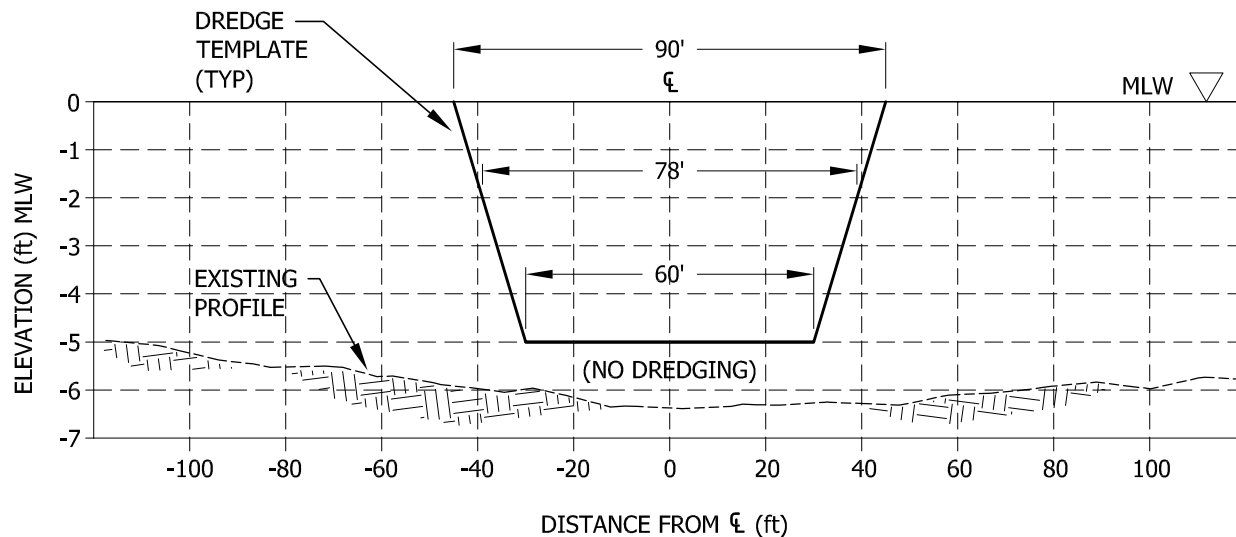
GOLDEN BEACH CANALS
PROPOSED DREDGING

DREDGE SECTION TEMPLATE

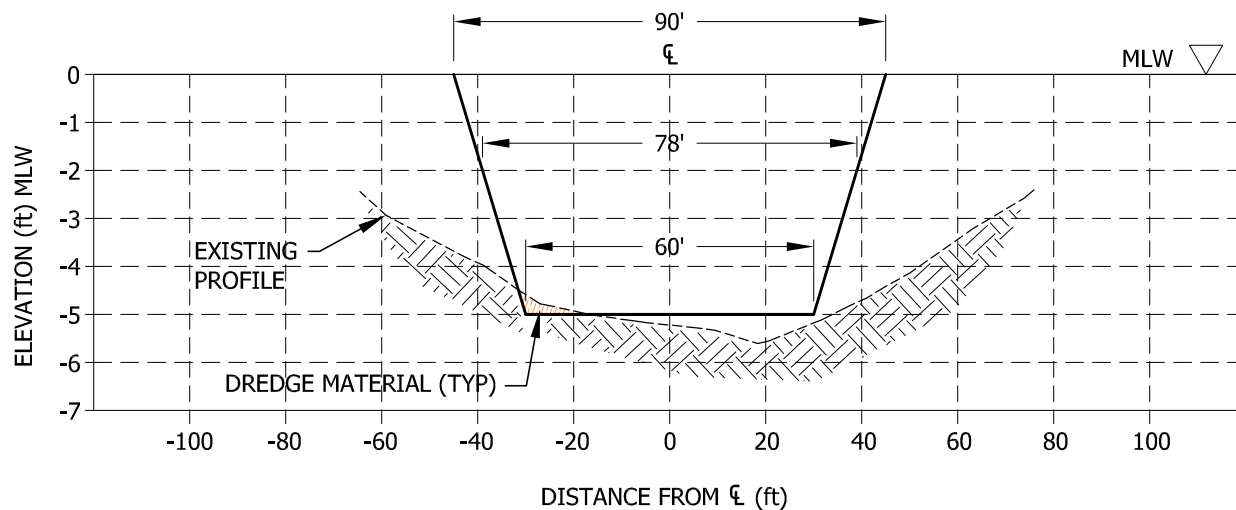
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BY: TS SHEET 10 OF 20

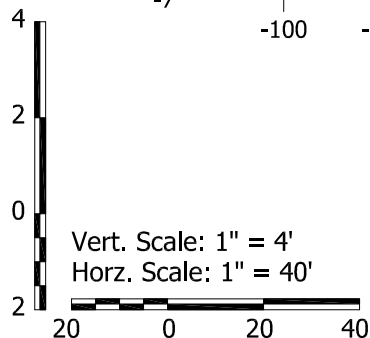
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Section @ Sta. N 000'



Section @ Sta. N 400'



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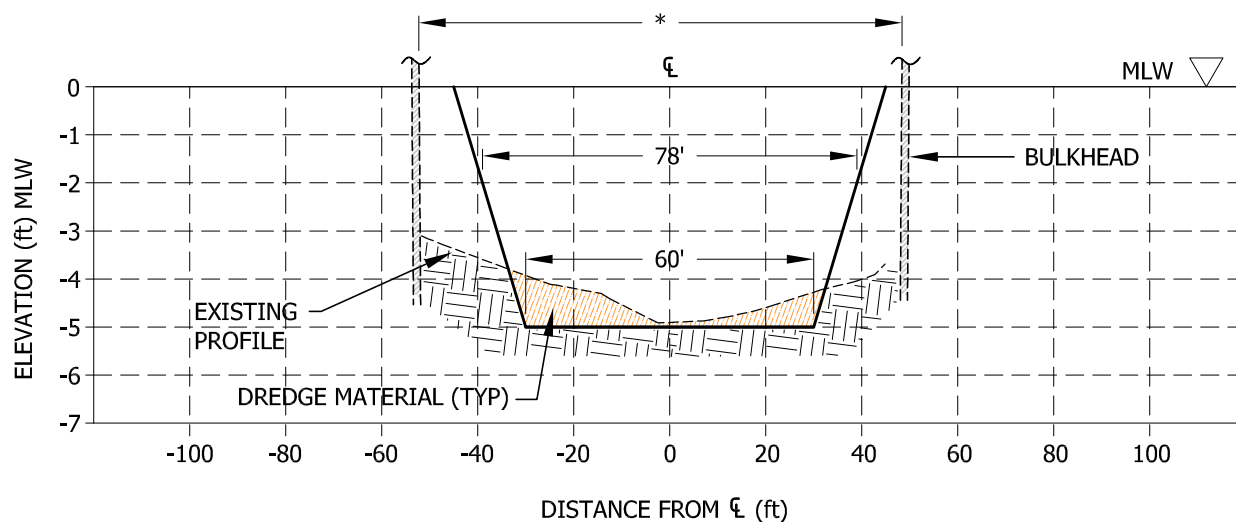
GOLDEN BEACH CANALS PROPOSED DREDGING

SECTIONS - NORTH ISLAND

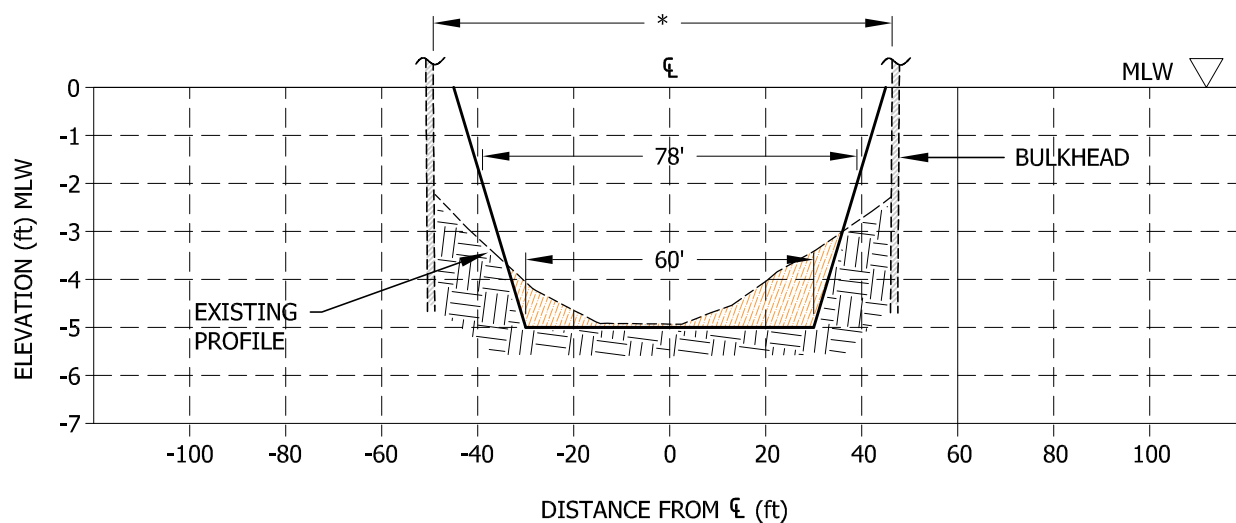
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BY: TS SHEET 11 OF 20

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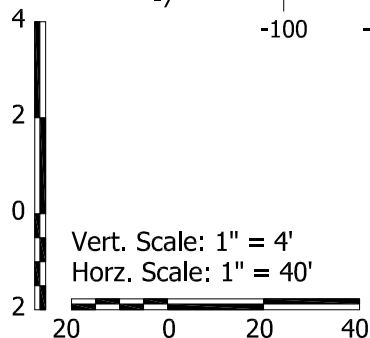


Section @ Sta. N 800'



Section @ Sta. N 1200'

* DISTANCE BETWEEN
BULKHEADS VARIES 94'-98'±



DAVID G. OLIN
FL.REG.57555

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STATE OF FLORIDA PE #57555, CA #26050

Consulting Engineering, Environmental, and Mapping Services

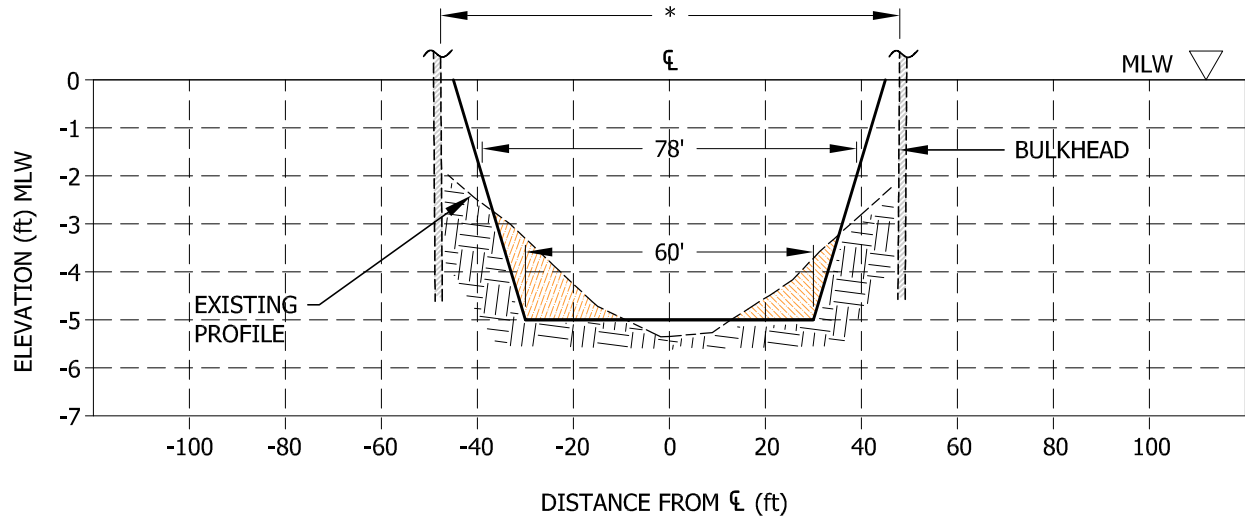
GOLDEN BEACH CANALS
PROPOSED DREDGING

SECTIONS - NORTH ISLAND

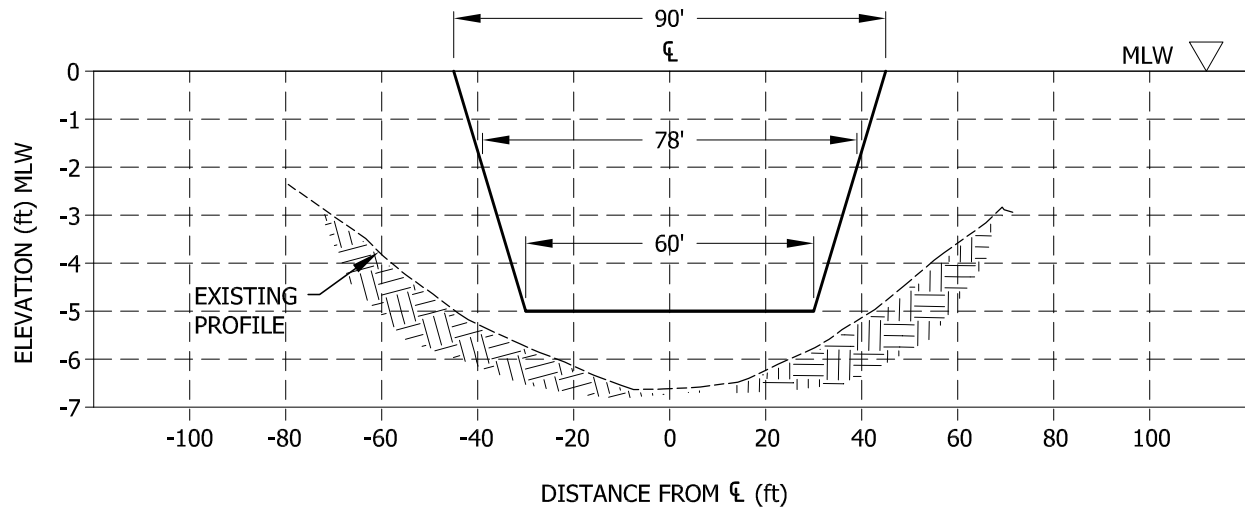
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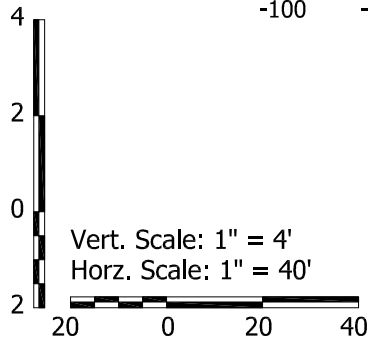
Section @ Sta. N 1600'



Section @ Sta. N 2000'

* DISTANCE BETWEEN
BULKHEADS VARIES 94'-98'±

Vert. Scale: 1" = 4'
Horz. Scale: 1" = 40'



DAVID G. OLIN
FL.REG.57555

Town of Golden Beach

1 Golden Beach Drive
Golden Beach, FL 33160



OLIN HYDROGRAPHIC SOLUTIONS, INC.

16334 Port Dickinson Drive, Jupiter, FL 33477

Tel: 305/619-2800 Fax: 305/860-4411

STATE OF FLORIDA PE #57555, CA #26050

Consulting Engineering, Environmental, and Mapping Services

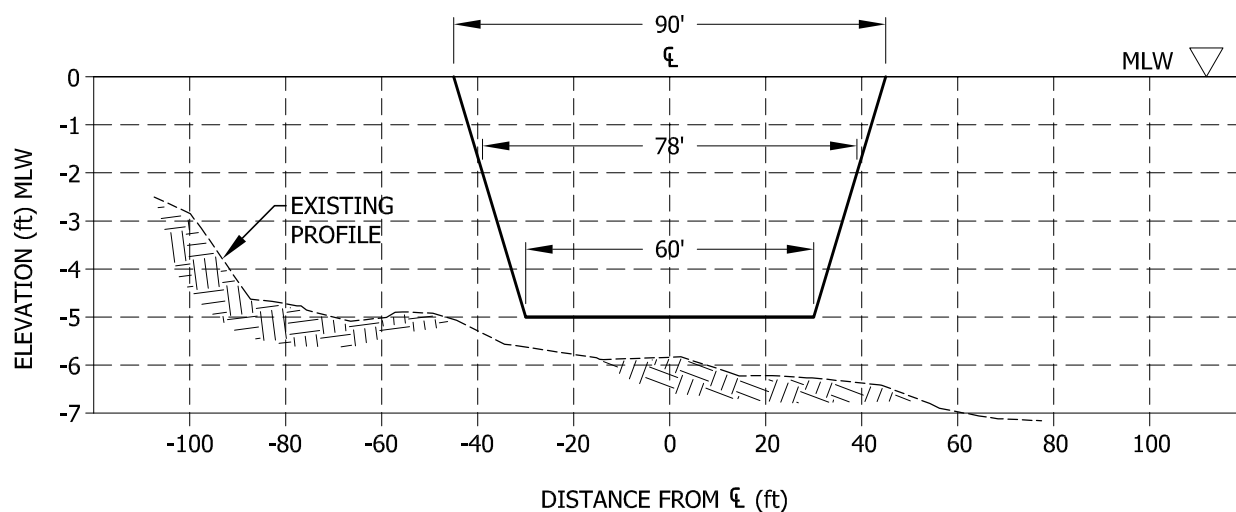
GOLDEN BEACH CANALS
PROPOSED DREDGING

SECTIONS - NORTH ISLAND

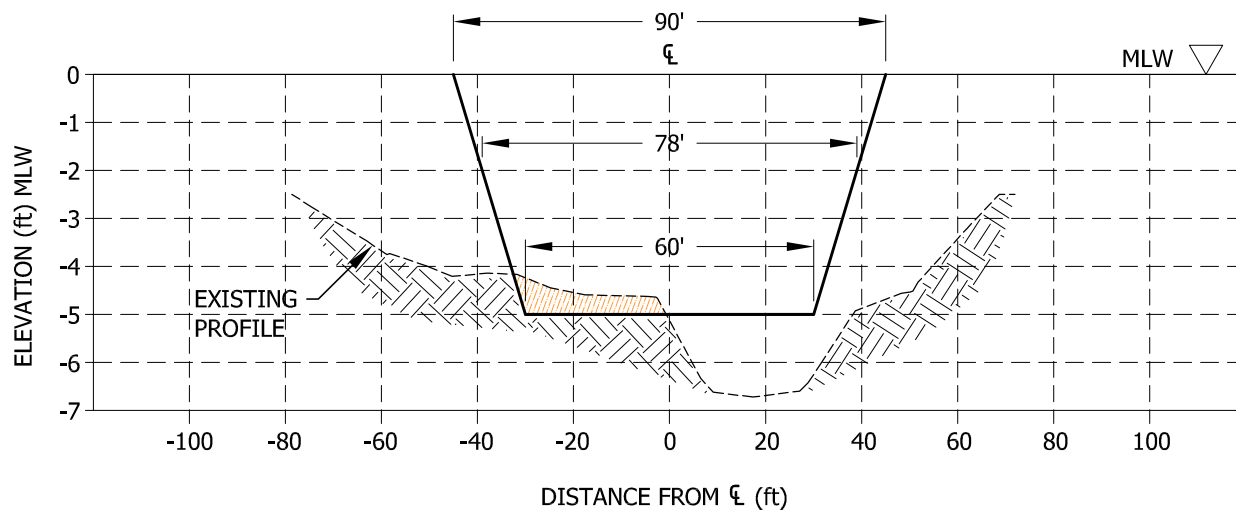
JOB: 17-013 DATE: 03/27/2018

BY: TS SHEET 13 OF 20

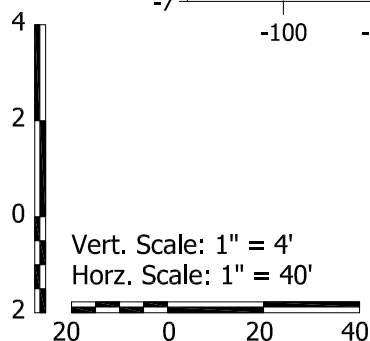
D:\Projects\DO_projects\Golden Beach Canals\DWG\golden_bch_canals_permit_100518_a.dwg Mon, 8 Oct 2018 - 2:45pm



Section @ Sta. C 050'



Section @ Sta. C 400'



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FL.REG.57555

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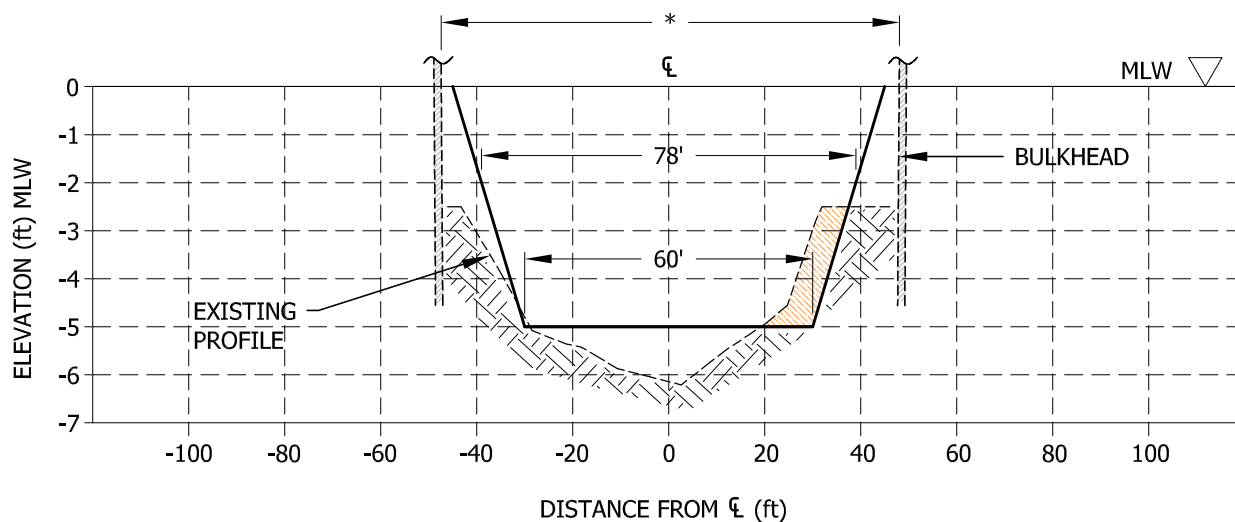
GOLDEN BEACH CANALS PROPOSED DREDGING

SECTIONS - CENTRAL ISLAND

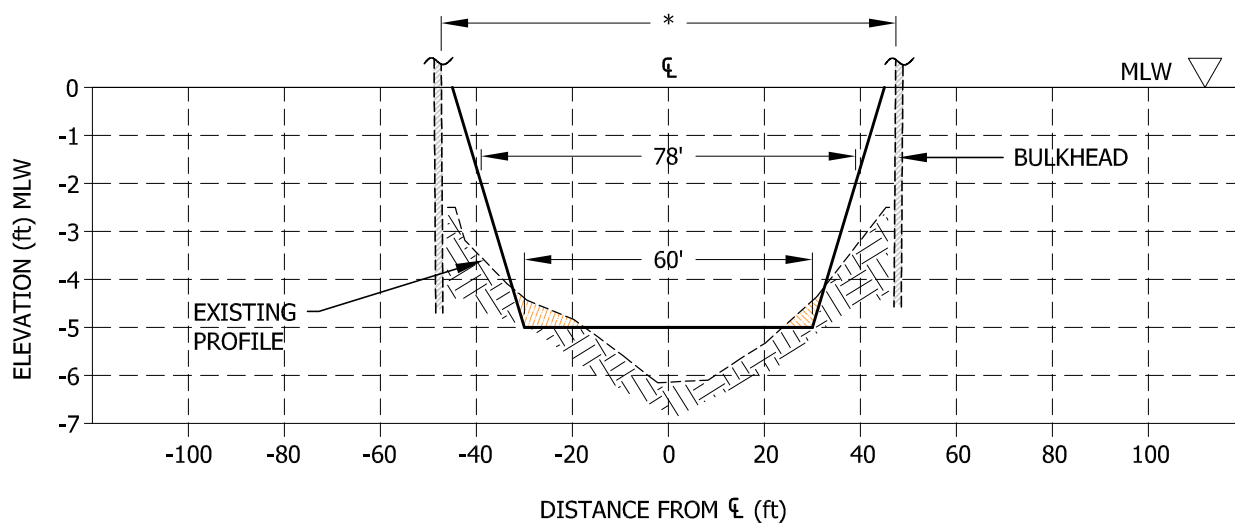
JOB: 17-013 DATE: 03/27/2018

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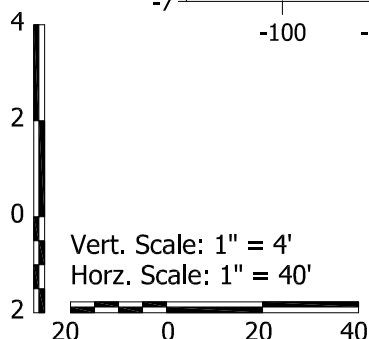
Section @ Sta. C 800'



Section @ Sta. C 1200'

* DISTANCE BETWEEN
BULKHEADS VARIES 94'-98'±

Vert. Scale: 1" = 4'
Horz. Scale: 1" = 40'



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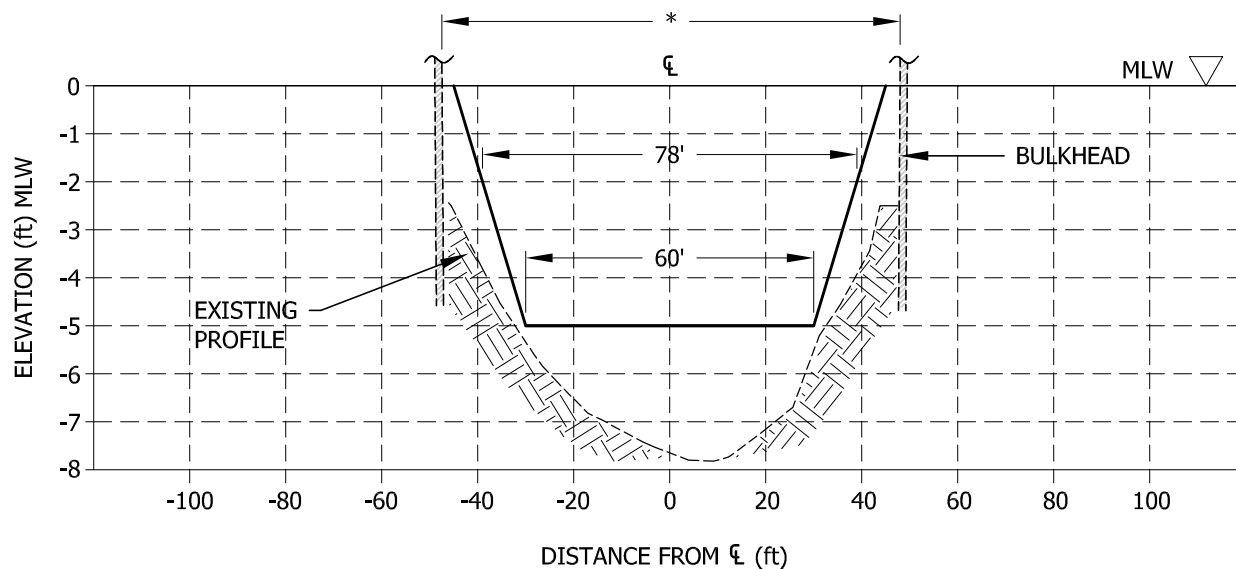
GOLDEN BEACH CANALS
PROPOSED DREDGING

SECTIONS - CENTRAL ISLAND

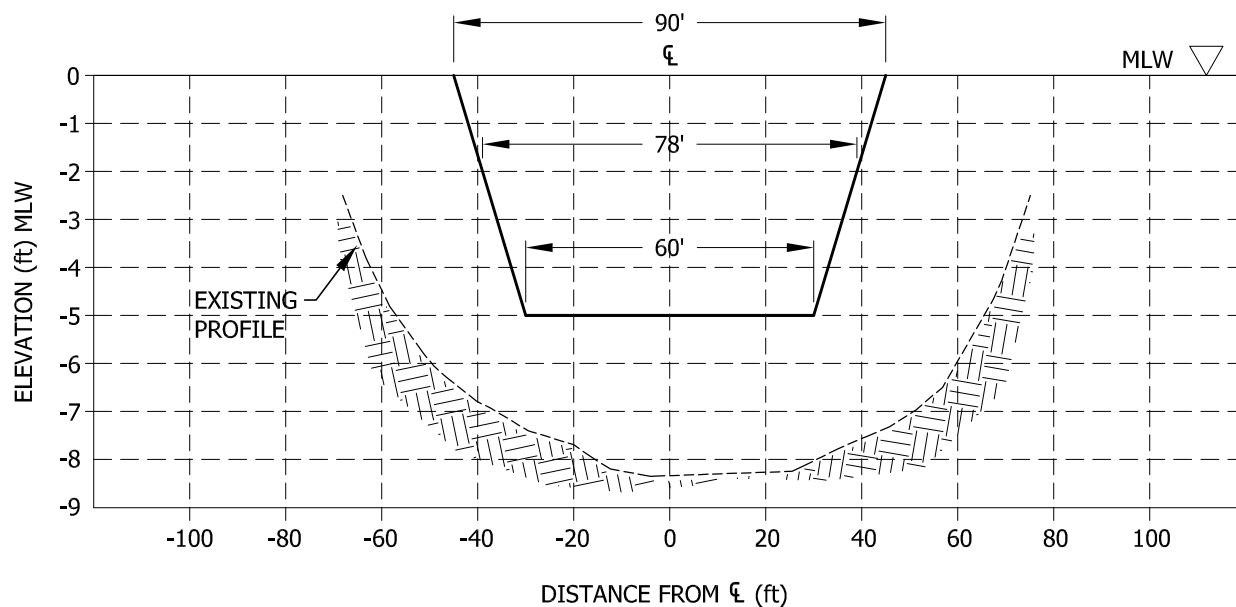
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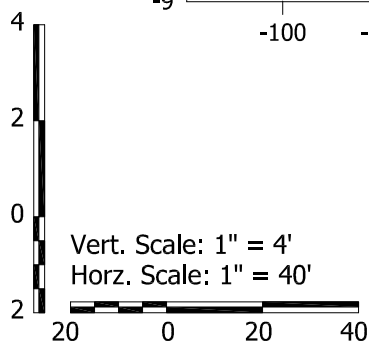
Section @ Sta. C 1600'



Section @ Sta. C 2000'

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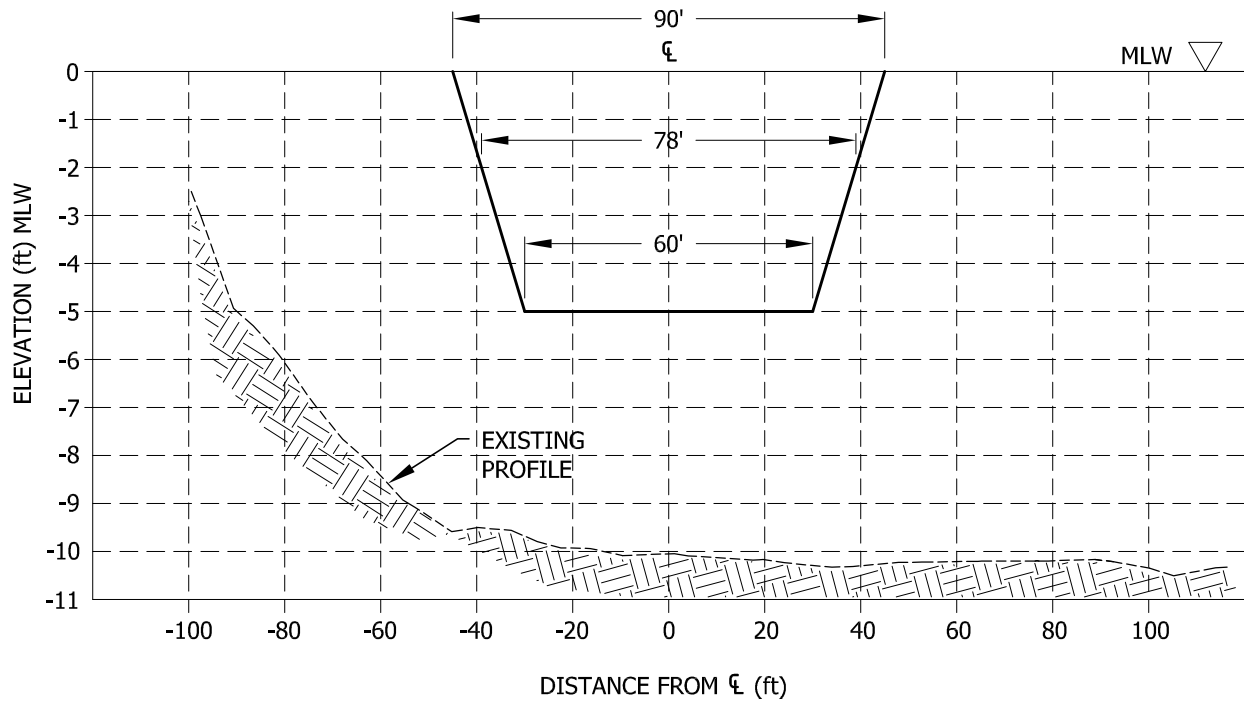
**GOLDEN BEACH CANALS
PROPOSED DREDGING**

SECTIONS - CENTRAL ISLAND

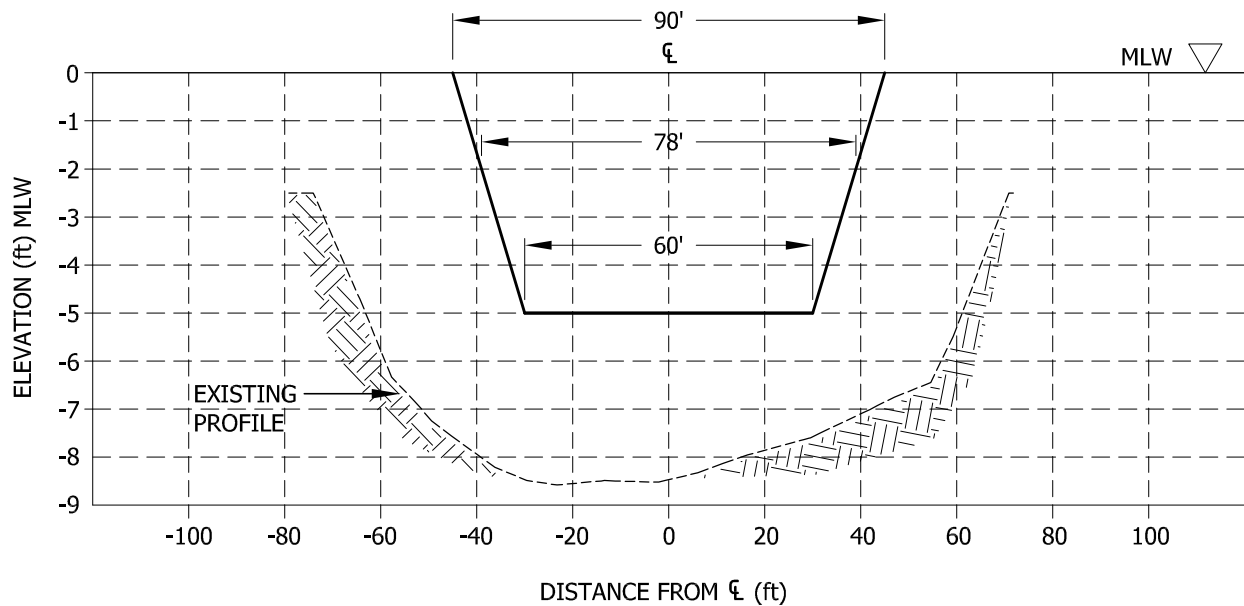
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BY: TS SHEET 16 OF 20

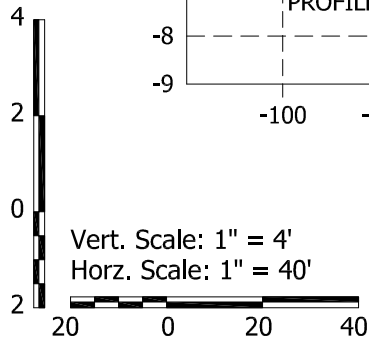
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Section @ Sta. S 050'



Section @ Sta. S 400'



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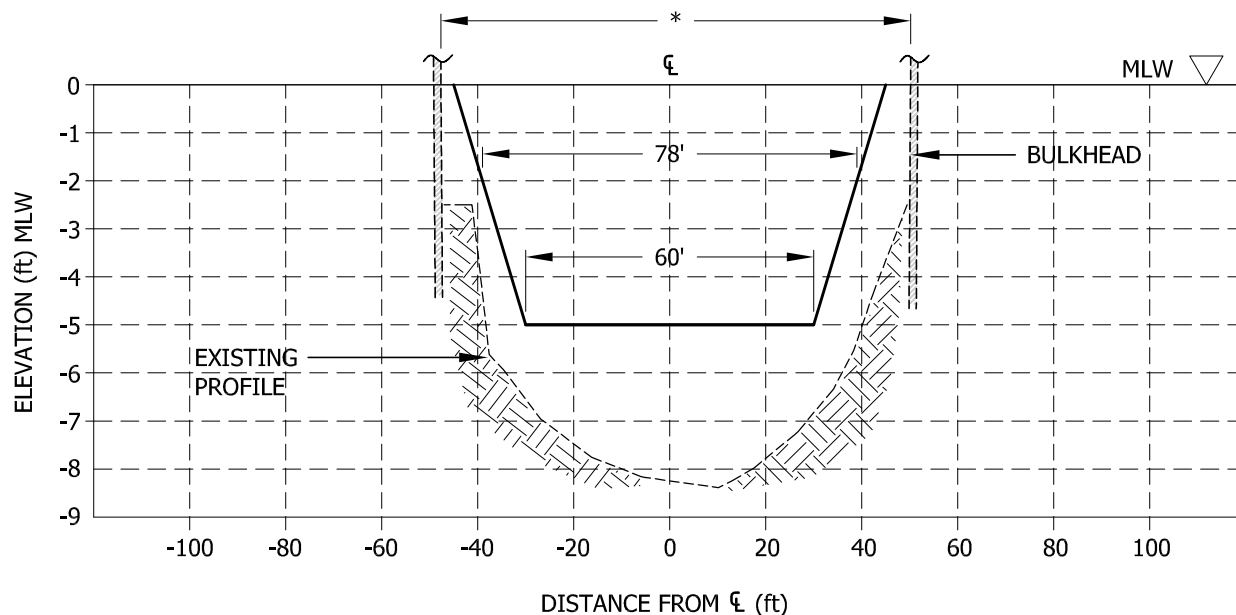
GOLDEN BEACH CANALS
PROPOSED DREDGING

SECTIONS - SOUTH ISLAND

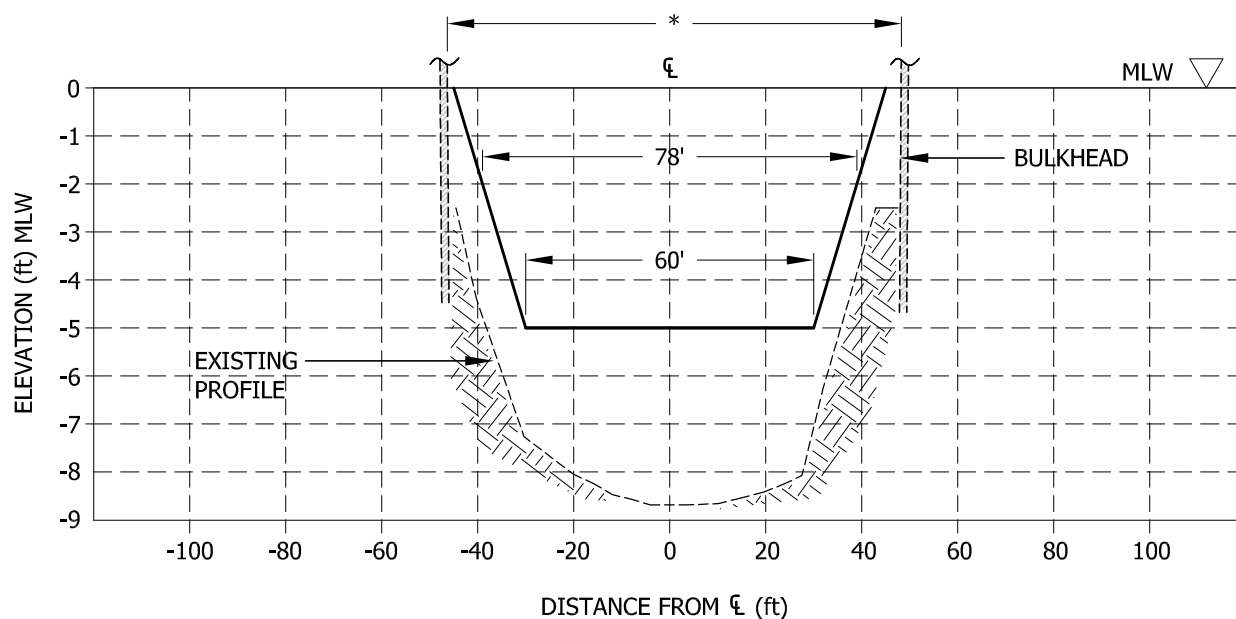
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Section @ Sta. S 800'



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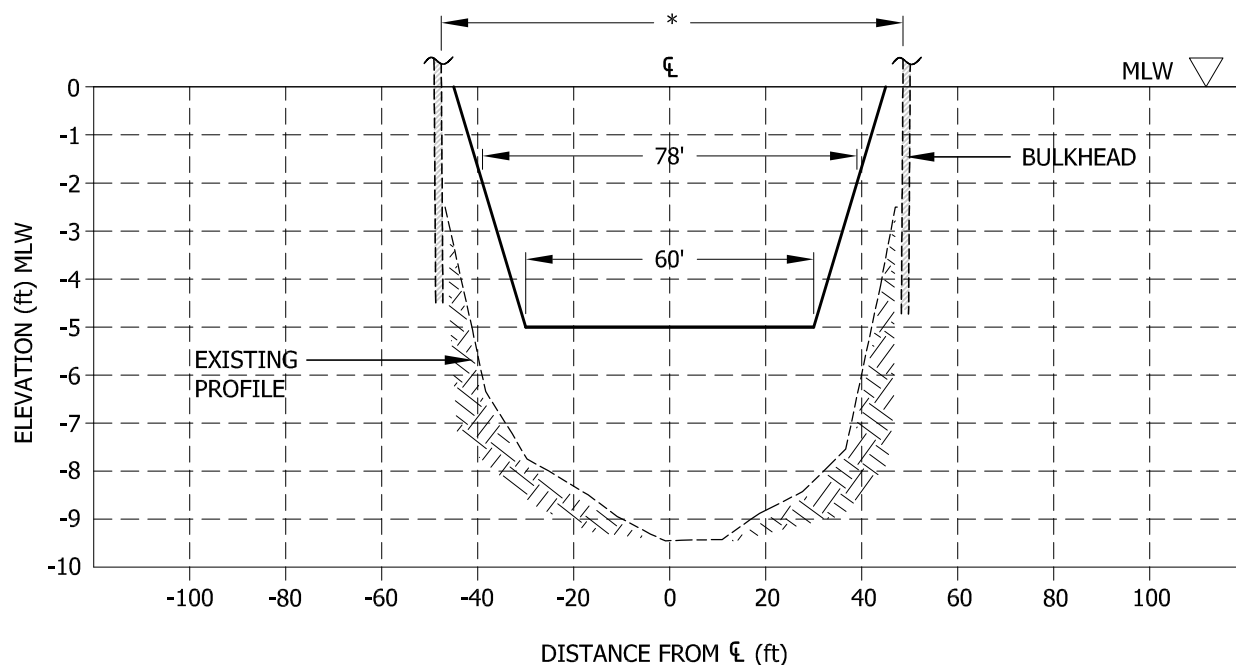
GOLDEN BEACH CANALS
PROPOSED DREDGING

SECTIONS - SOUTH ISLAND

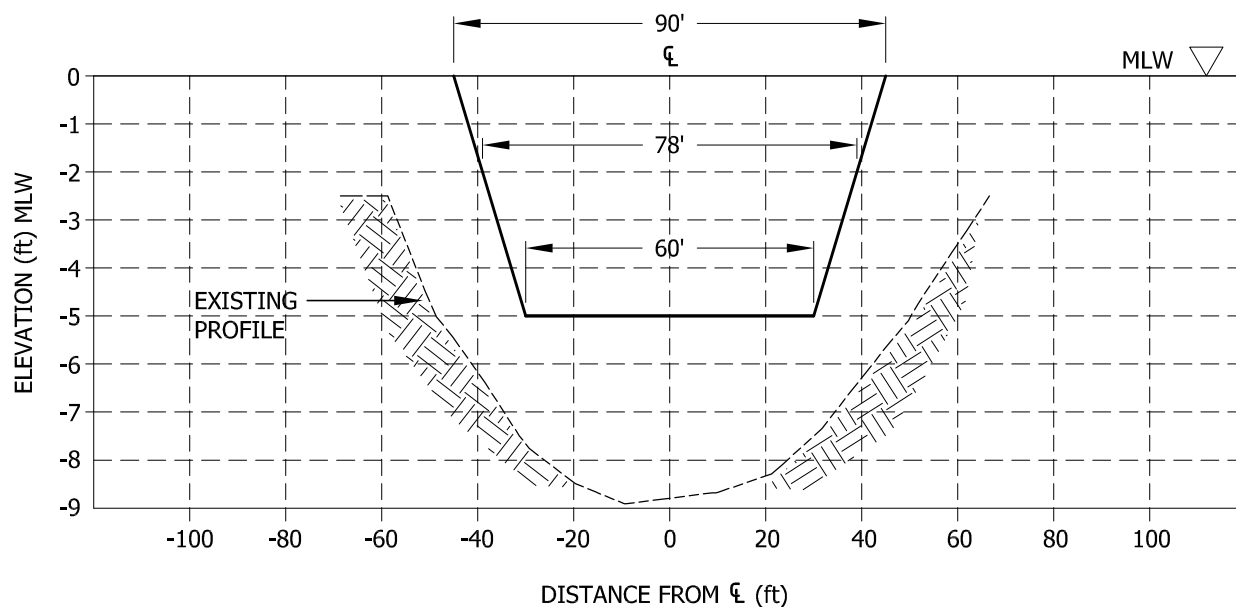
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PROPOSED DREDGING

SECTIONS - SOUTH ISLAND

JOB: 17-013 DATE: 03/27/2018

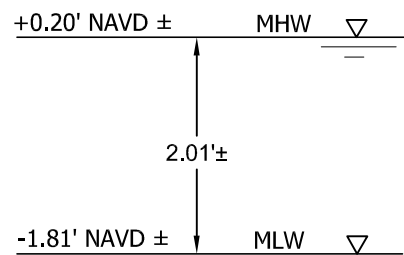
BY: TS SHEET 19 OF 20

NOTES:

1. ALL ELEVATIONS REFER TO THE LOCAL *Mean Low Water* (MLW) DATUM AND ARE EXPRESSED IN FEET (0.0' MLW = -1.81' NAVD88 ±). HORIZONTAL CONTROL BASED ON NAD83, 0901 FLORIDA EAST ZONE. VERTICAL CONTROL BASED ON TIDAL BENCH MARK #872 3073 (BAKERS HAULOVER INLET - INSIDE).
2. TURBIDITY CURTAIN SHALL BE PLACED AROUND EACH SEGMENT OF DREDGING OPERATIONS TO MAINTAIN AMBIENT WATER QUALITY IN THE PROJECT VICINITY AT ALL TIMES.
3. CONTRACTOR IS RESPONSIBLE FOR ALL TURBIDITY MONITORING, MANATEE LOGS, AND ALL OTHER CONDITIONS OF THE REGULATORY PERMITS.
4. DREDGING SHALL UTILIZE LONG-REACH EXCAVATOR (OR EQUAL) WITH SPOIL COLLECTION BARGE. TRANSFER VIA TRANSPORT BARGE TO TRUCKS FOR UPLAND DISPOSAL/RECYCLE TO APPROVED SITE.
5. DUE TO THE PRESENCE OF LARGE ROCKS (6" TO 12") HYDRAULIC DREDGING IS PRECLUDED.
6. SEAFLOOR SEDIMENT TYPE IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR RESPONSIBLE TO INVESTIGATE SEDIMENT CHARACTERISTICS BEFORE BIDDING.
7. THE EXCAVATED DEWATERED MATERIAL SHALL BE HAULED IN WATER-TIGHT TRUCKS, TRAILERS OR OTHER APPROVED VEHICLES, AVOIDING ANY LEAKAGE AND/OR SPILLS.
8. CONTRACTOR IS RESPONSIBLE FOR ALL LANDFILL DISPOSAL FEES.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INCIDENTAL DAMAGE FROM DREDGING & DISPOSAL ACTIVITIES, INCLUDING BUT NOT LIMITED TO: DOCK STRUCTURES, BOATS & BOAT LIFTS, MOORING PILES, SEAWALLS, UPLAND STRUCTURES, TREES & LANDSCAPE, ROADWAYS, AND DRIVES.
10. CONTRACTOR TO SUBMIT AS-BUILT SURVEY OF POST DREDGE DEPTHS. NO PAYMENTS FOR OVER DREDGE.

TIDE ELEVATION DATUMS:

N.T.S.



N.O.S. Station ID: 872 3073
Bakers Haulover (inside)

LAT: 25° 54.2'
LONG: 80° 07.6'

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GOLDEN BEACH CANALS PROPOSED DREDGING

NOTES

JOB:	17-013	DATE:	03/27/2018
BY:	TS	SHEET	20 OF 20