Port Royal Canal Dredging Project

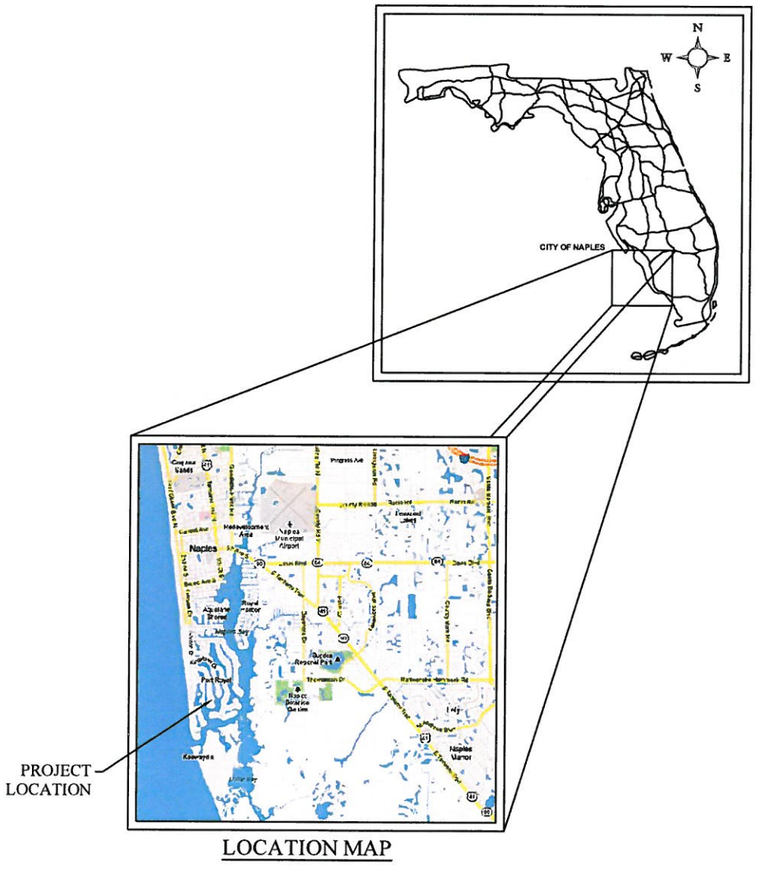
Construction Contract Documents
City of Naples

June 2013

Erickson Consulting Engineers, Inc.
7201 Delainey Court, Sarasota., FL 34240
Telephone: (941) 373-6460
www.ericksonconsultingengineers.com

Appendix A Construction Drawings

CONSTRUCTION DRAWINGS
FOR
PORT ROYAL CANAL DREDGE PROJECT
CITY OF NAPLES, FLORIDA



LOCATION MAP

Date: May 2013

DRAWING INDEX

PREPARED FOR:

CITY OF NAPLES
735 EIGHT STREET SOUTH
NAPLES, FL 34102

PREPARED BY:

ERICKSON CONSULTING ENGINEERS, INC.
7201 DELAINEY COURT
SARASOTA FL, 34240
941-373-6460

ATTENTION IS DIRECTED TO THE FACT THAT THE SCALE OF THESE PLANS MAY HAVE BEEN CHANGED BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

APPROVED BY: KARYN M. ERICKSON, PE
FLORIDA REG. No. 41897

SIGNATURE: _____

DATE: 5/16/2013

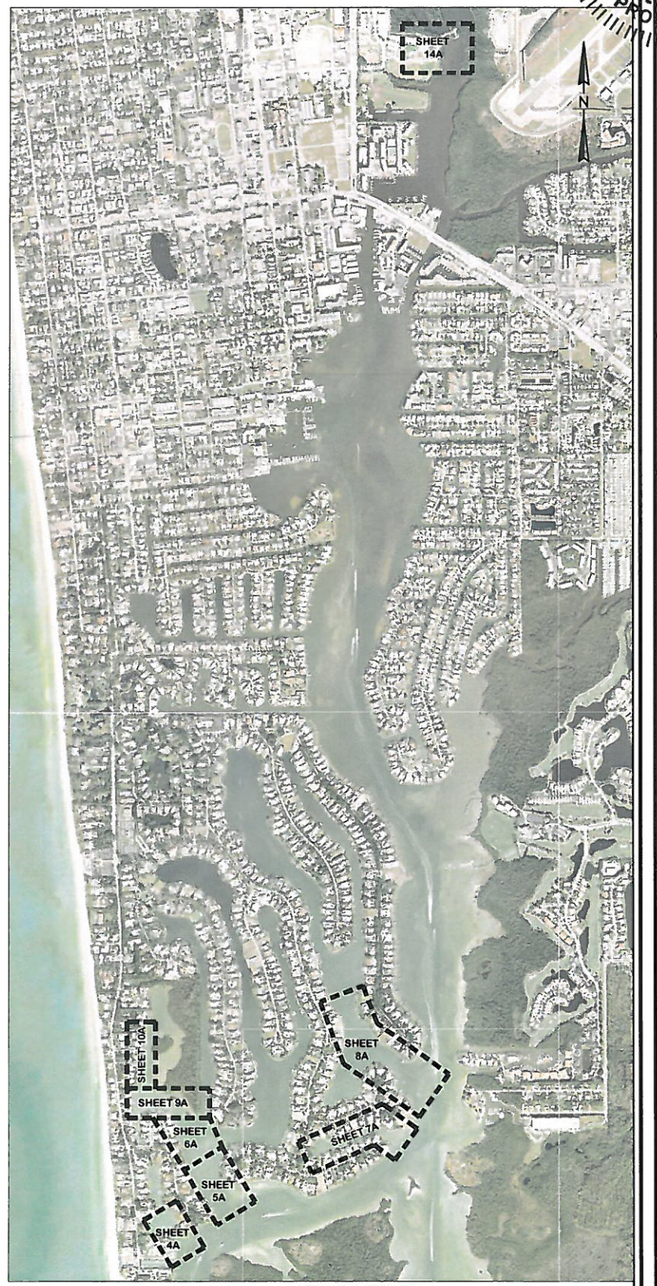
DEWATERING SITE
ADDRESS: 50 RIVERSIDE CIRCLE, NAPLES, FL.
SCALE: 1" = 200'

Canal ID	Design Dredge Depth	Permitted Dredge Depth (1 ft overdredge)				Base Dredge Volume	Max Pay Dredge Volume
	ft NAVD	ft NAVD	ft MLW	ft MLLW		CY	CY
Cutlass Cove	-9.3	-10.3	-8.6	-8.0		1,660	1,940
Doubloon Bay Entrance	-11.3	-12.3	-10.6	-10.0		1,520	1,790
Harbor Head	-9.3	-10.3	-8.6	-8.0		3,520	4,325
Harbor Head	-8.3	-9.3	-7.6	-7.0			
Galleon Cove	-10.3	-11.3	-9.6	-9.0		5,075	6,195
Doubloon Bay	-9.3	-10.3	-8.6	-8.0		5,080	6,160
Champney Bay	-9.0	-9.3	-7.6	-7.0			
					Total	16,795	20,410

Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Max pay dredge volumes include 4 inch over dredge.

NOTE:
1. AERIAL FLIGHT 2012 (LABINS)

LEGEND:
- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA



SHEET KEY
SCALE: 1" = 2400'

KARYN M. ERICKSON
LICENSE No. 70597
STATE OF FLORIDA
PROFESSIONAL ENGINEER

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BC | DRAWN AS | CHECKED CP
DATE 05/10/2013
JOB NO. 12-227
SCALE AS NOTED

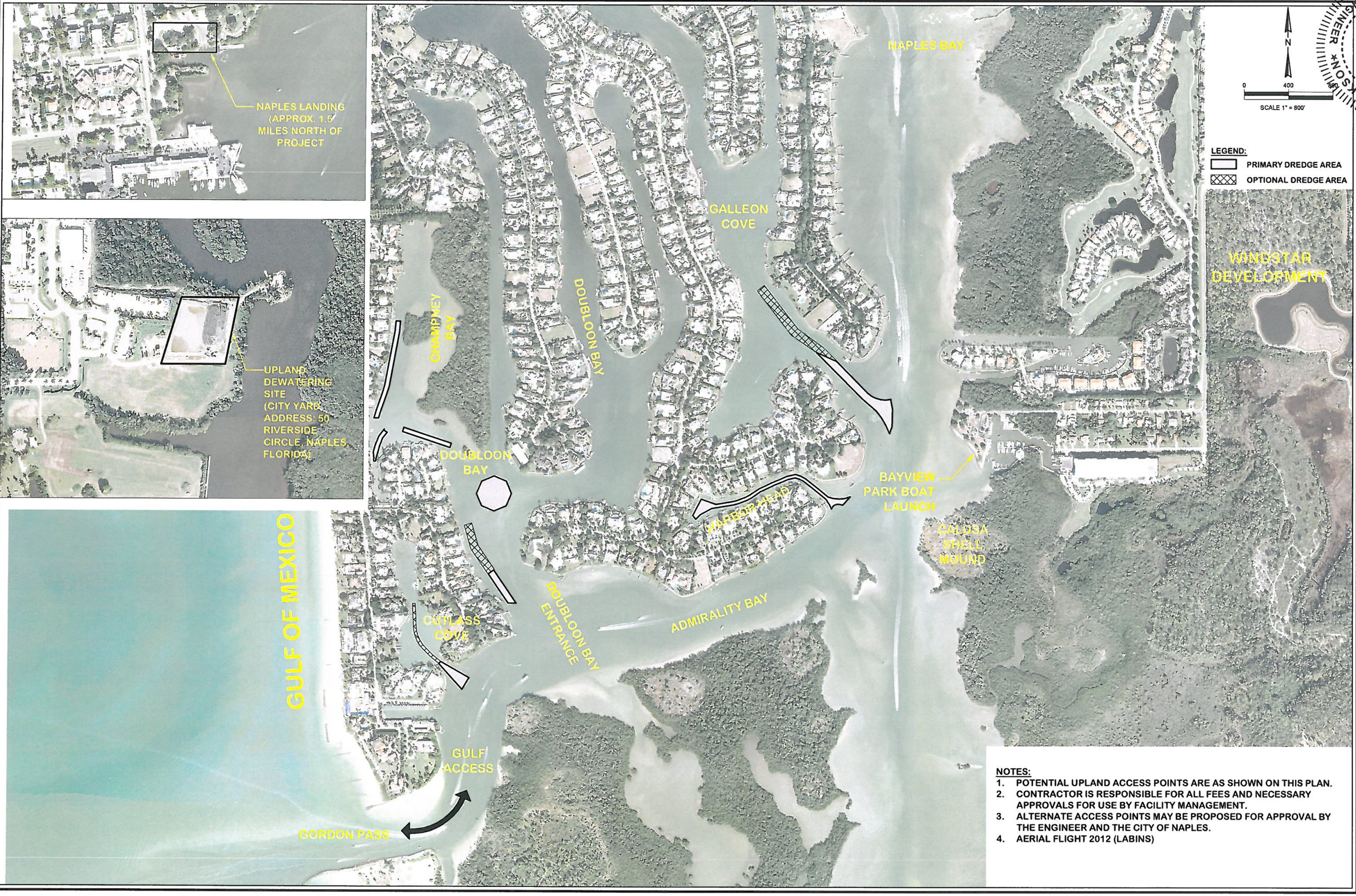
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

OVERALL SITE PLAN AND SHEET KEY

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
2
SHEET 2 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples – Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\2_Overall Site Plan.dwg May 17, 2013-11:27am



NOTES:

1. POTENTIAL UPLAND ACCESS POINTS ARE AS SHOWN ON THIS PLAN.
2. CONTRACTOR IS RESPONSIBLE FOR ALL FEES AND NECESSARY APPROVALS FOR USE BY FACILITY MANAGEMENT.
3. ALTERNATE ACCESS POINTS MAY BE PROPOSED FOR APPROVAL BY THE ENGINEER AND THE CITY OF NAPLES.
4. AERIAL FLIGHT 2012 (LABINS)

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\3_Construction Access and Staging.dwg May 16, 2013-5:14pm

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

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BC	AS	CP
DATE: 05/15/2013		
JOB NO. 12-227		
SCALE: AS NOTED		

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CONSTRUCTION ACCESS AND STAGING

Erickson Consulting Engineers, Inc.
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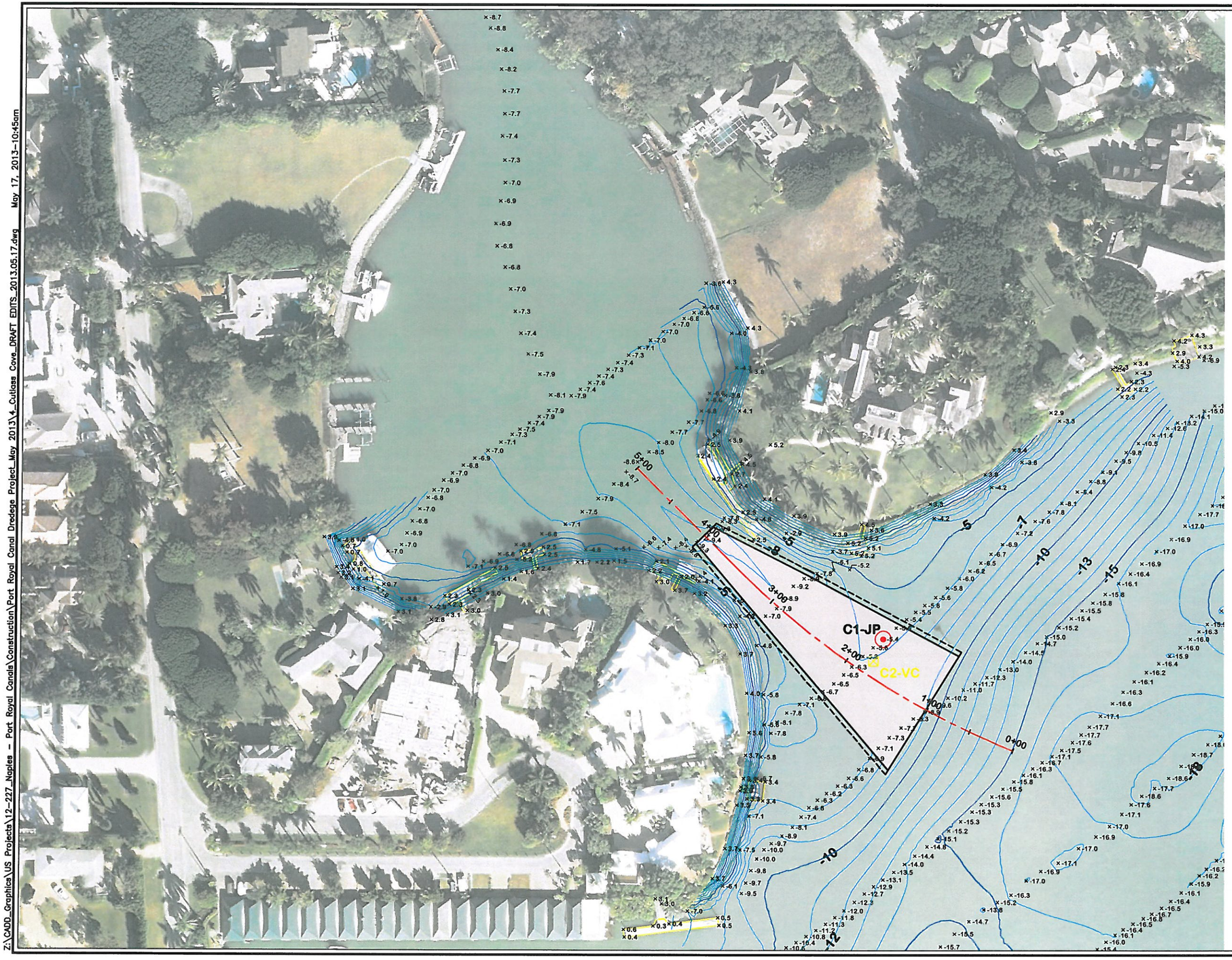
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER 3
SHEET 3 OF 37



N

0 50 100

SCALE 1" = 50'

LEGEND:

- DREDGE AREA
- SEAGRASS AREA
- BASELINE
- 2+00 STATIONS
- SPOT ELEVATION
- -5- CONTOURS
- DOCK OR BOAT HOUSE
- JET PROBE (B1-JP)
- VIBRACORE (C2-VC)

BASELINE STATION COORDINATE TABLE

STA	NORTHING	EASTING
0+00	641559'	394220'
1+00	641597'	394128'
2+00	641636'	394036'
2+88	641670'	393955'
3+00	641682'	393947'
4+00	641750'	393874'
5+00	641820'	393803'

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. PRE-CONSTRUCTION HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. JET PROBES (APRIL 2012), VIBRACORES (AUGUST 2012) & BIOLOGICAL SURVEY (APRIL 2012) BY ECE.
4. AERIAL FLIGHT 2011 (CITY OF NAPLES)

KARYN M. ERICKSON LICENSE No. 59067 STATE OF FLORIDA PROFESSIONAL ENGINEER

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED: SC | DRAWN: AS | CHECKED: CP | DATE: 05/15/2013 | JOB NO.: 12-227 | SCALE: AS NOTED

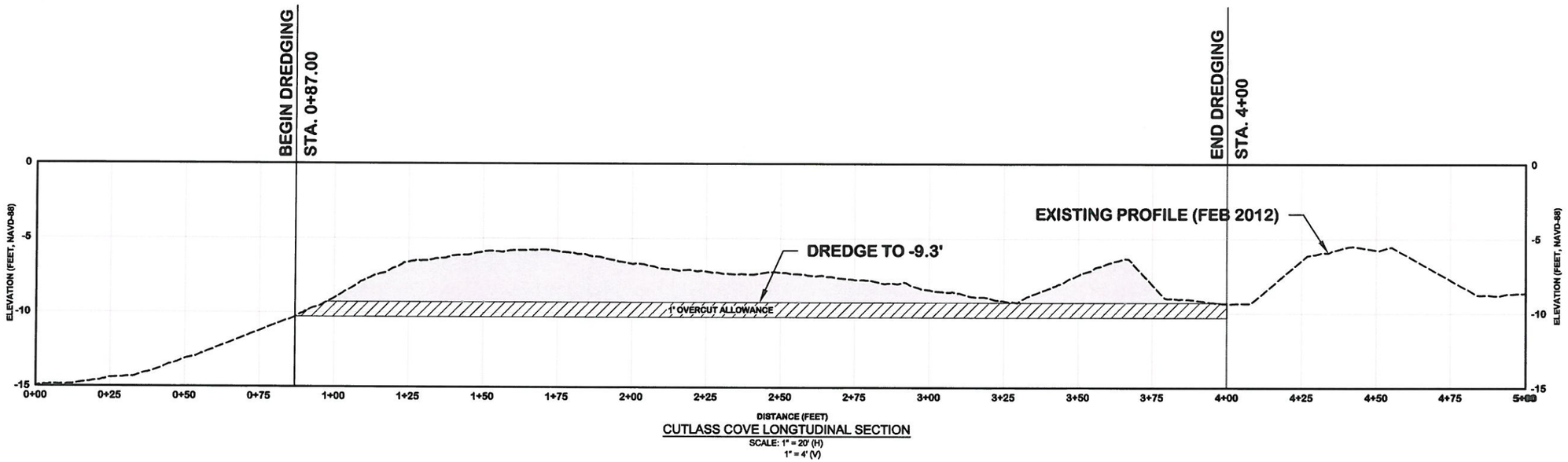
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW
CUTLASS COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
4A
SHEET 4 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\4_Cutlass Cove_DRAFT EDITS_2013.05.17.dwg May 17, 2013-10:45am



CUTLASS COVE LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)

LEGEND:

- DREDGE AREA
- 1 FT. OVERCUT ALLOWANCE
- ----- EXISTING BOTTOM

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\4_Cutlass Cove_DRAFT EDITS_2013.05.16_V2.dwg May 16, 2013-5:16pm

Professional Engineer
No. 41897
STATE OF FLORIDA

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

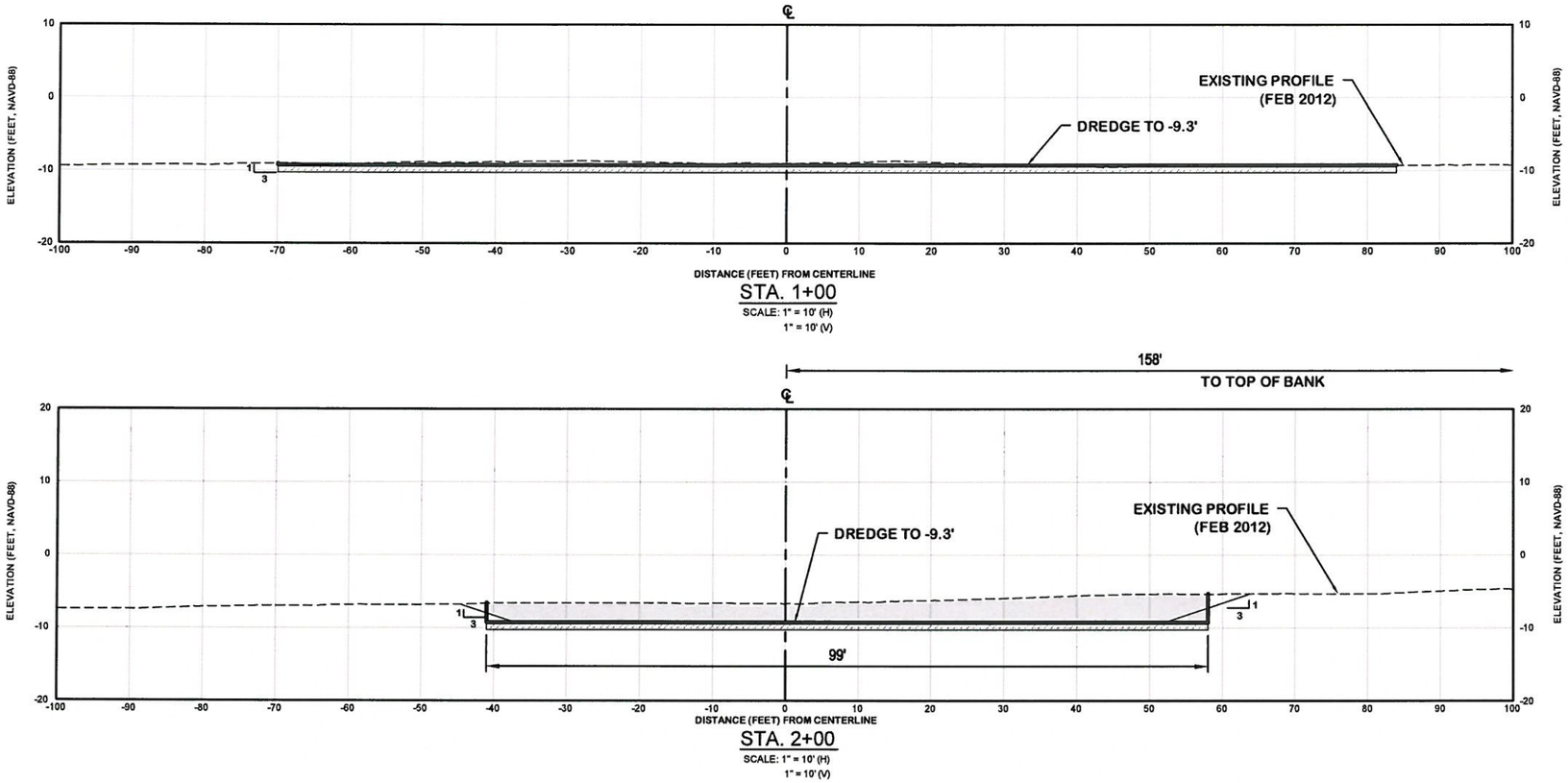
DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/16/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE
CUTLASS COVE

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6480

DRAWING NUMBER
4B
SHEET 5 OF 37

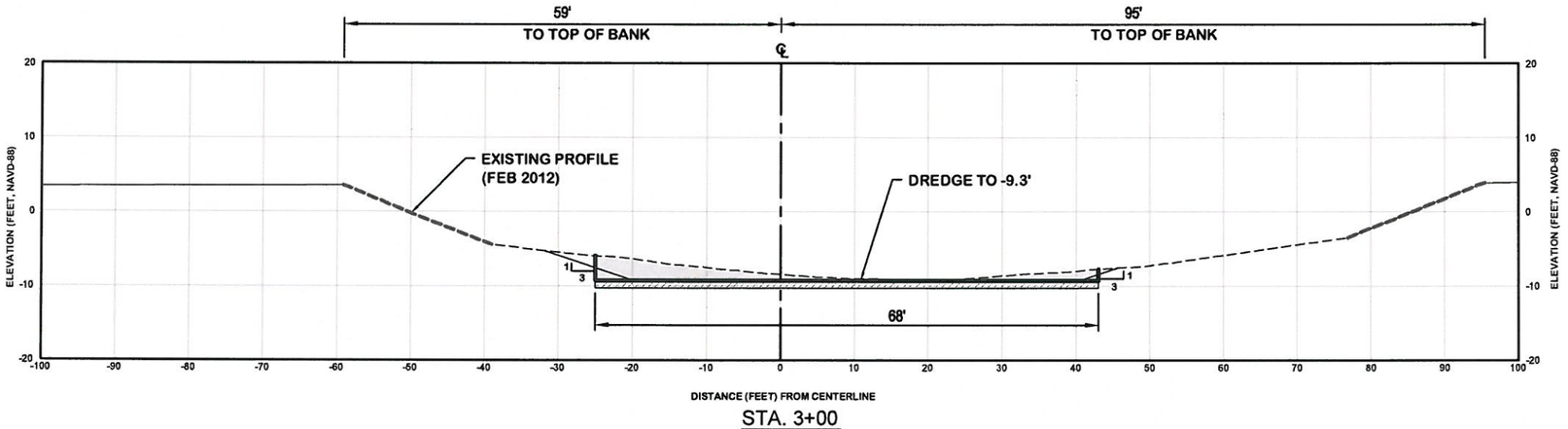


STA. 1+00

SCALE: 1" = 10' (H)
1" = 10' (V)

STA. 2+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 3+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1:3 DESIGN SLOPE

KARYN M. ERICKSON
LICENSE
No. 41997
STATE OF FLORIDA
PROFESSIONAL ENGINEER
KARYN M. ERICKSON, P.E. No. 41997
Not valid without the signature and the original raised seal of a Florida licensed engineer

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED SIC | DRAWN AS | CHECKED CP
DATE 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS CUTLASS COVE

Erickson Consulting Engineers, Inc.
7201 Delciney Court
Sarasota, FL 32420
(941) 373-8480

DRAWING NUMBER
4C
SHEET 6 OF 37

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MATCH LINE - SEE SHEET 6A

D2-JP

D2-VC

D6-VC

D1-JP

0+00

1+00

2+00

3+00

4+00

5+00

N

0 50 100

SCALE 1" = 50'

LEGEND:

- DREDGE AREA
- SEAGRASS AREA
- BASELINE
- 2+00 STATIONS
- x2.4 SPOT ELEVATION
- -5- CONTOURS
- DOCK OR BOAT HOUSE
- JET PROBE (B1-JP)
- VIBRACORE (C2-VC)

BASELINE STATION COORDINATE TABLE

STA	NORTHING	EASTING
0+00	642190'	394592'
1+00	642273'	394537'
2+00	642356'	394481'
3+00	642439'	394425'
4+00	642521'	394369'
5+00	642604'	394313'

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. PRE-CONSTRUCTION HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. JET PROBES (APRIL 2012), VIBRACORES (AUGUST 2012) & BIOLOGICAL SURVEY (APRIL 2012) BY ECE.
4. AERIAL FLIGHT 2012 (LABINS)

STATE OF FLORIDA
KAREN M. ERICKSON
No. 41897
PROFESSIONAL ENGINEER
5/16/13

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED: EIC | DRAWN: AS | CHECKED: CF
DATE: 05/15/2013 | JOB NO.: 12-227 | SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW DOUBLOON BAY ENTRANCE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
5A
SHEET 7 OF 37

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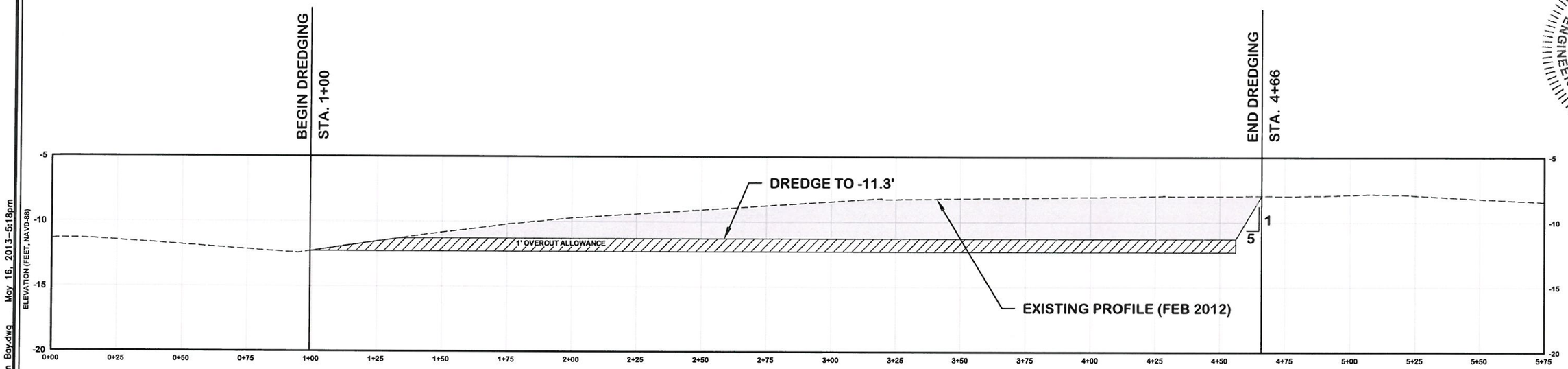


DOUBLOON BAY ENTRANCE LONGTUDINAL SECTION

SCALE: 1" = 20 (H)
1" = 4' (V)

LEGEND:

- DREDGE AREA
- 1 FT. OVERCUT ALLOWANCE
- ----- EXISTING BOTTOM

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\5-6_Doubloon Bay.dwg May 16, 2013-5:18pm

NO.	DATE	DRWN	CHKD
		BT	BT

REMARKS

DESIGNED	DRAWN	CHECKED
BC	AS	CP

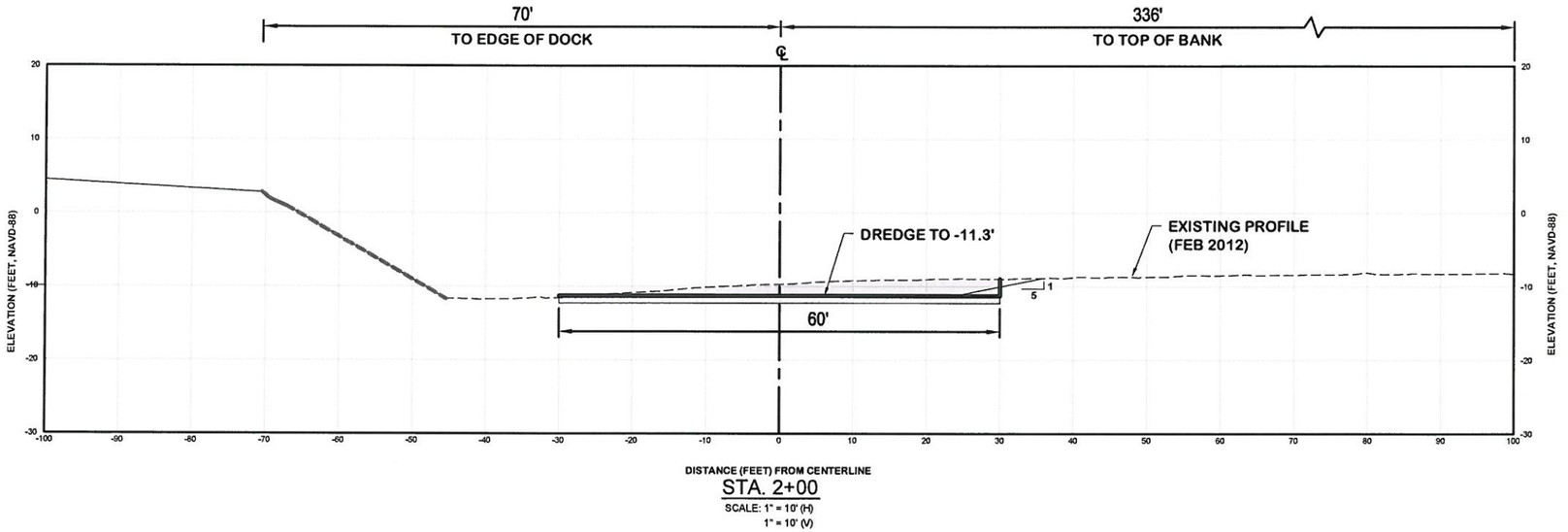
DATE: 05/15/2013
JOB NO.: 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE
DOUBLOON BAY ENTRANCE

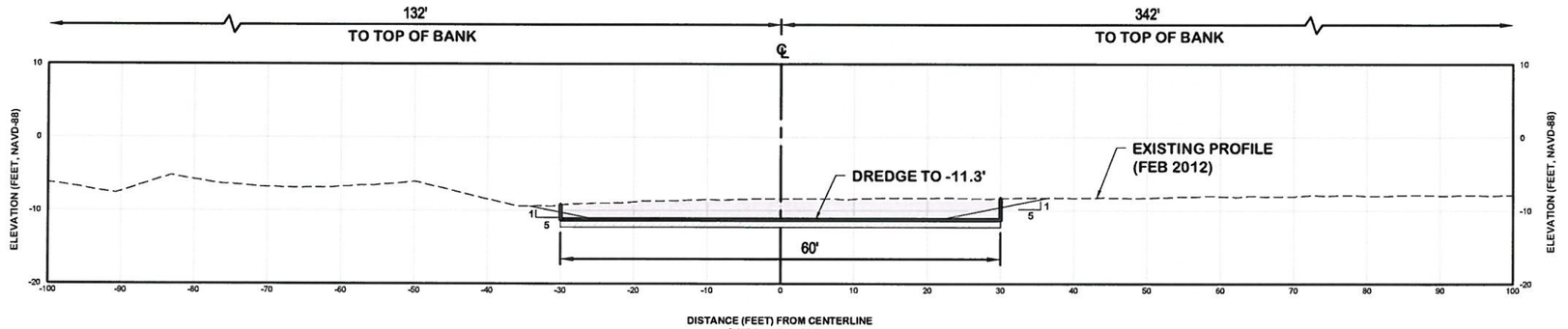
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
5B
SHEET 6 OF 37



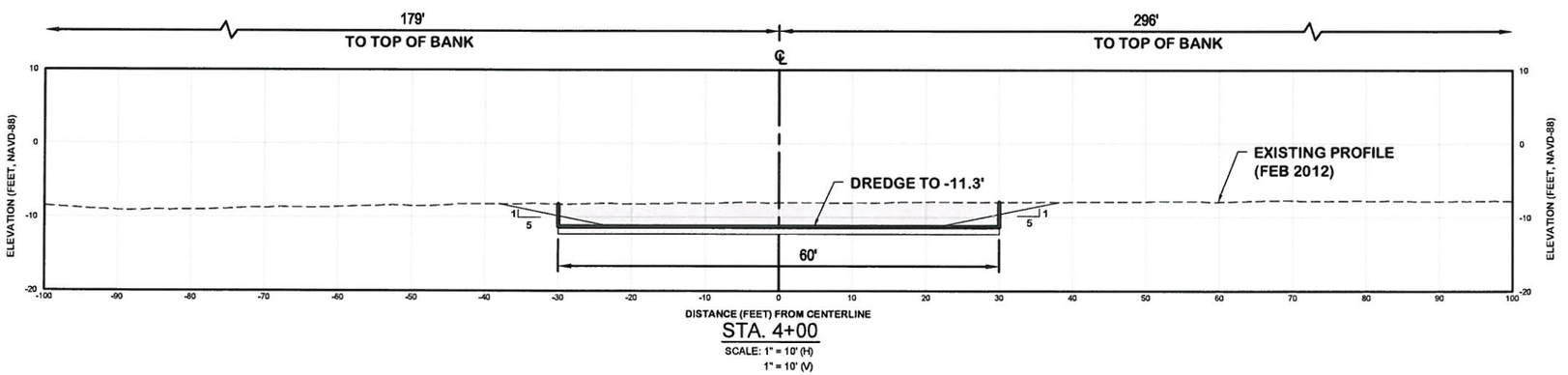
STA. 2+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 3+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 4+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1:5 DESIGN SLOPE

STATE OF FLORIDA
No. 41997
PROFESSIONAL ENGINEER
Professional Engineer # 41997
5/16/13

NO.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/10/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
DOUBLOON BAY ENTRANCE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
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DRAWING NUMBER
5C
SHEET 9 OF 37

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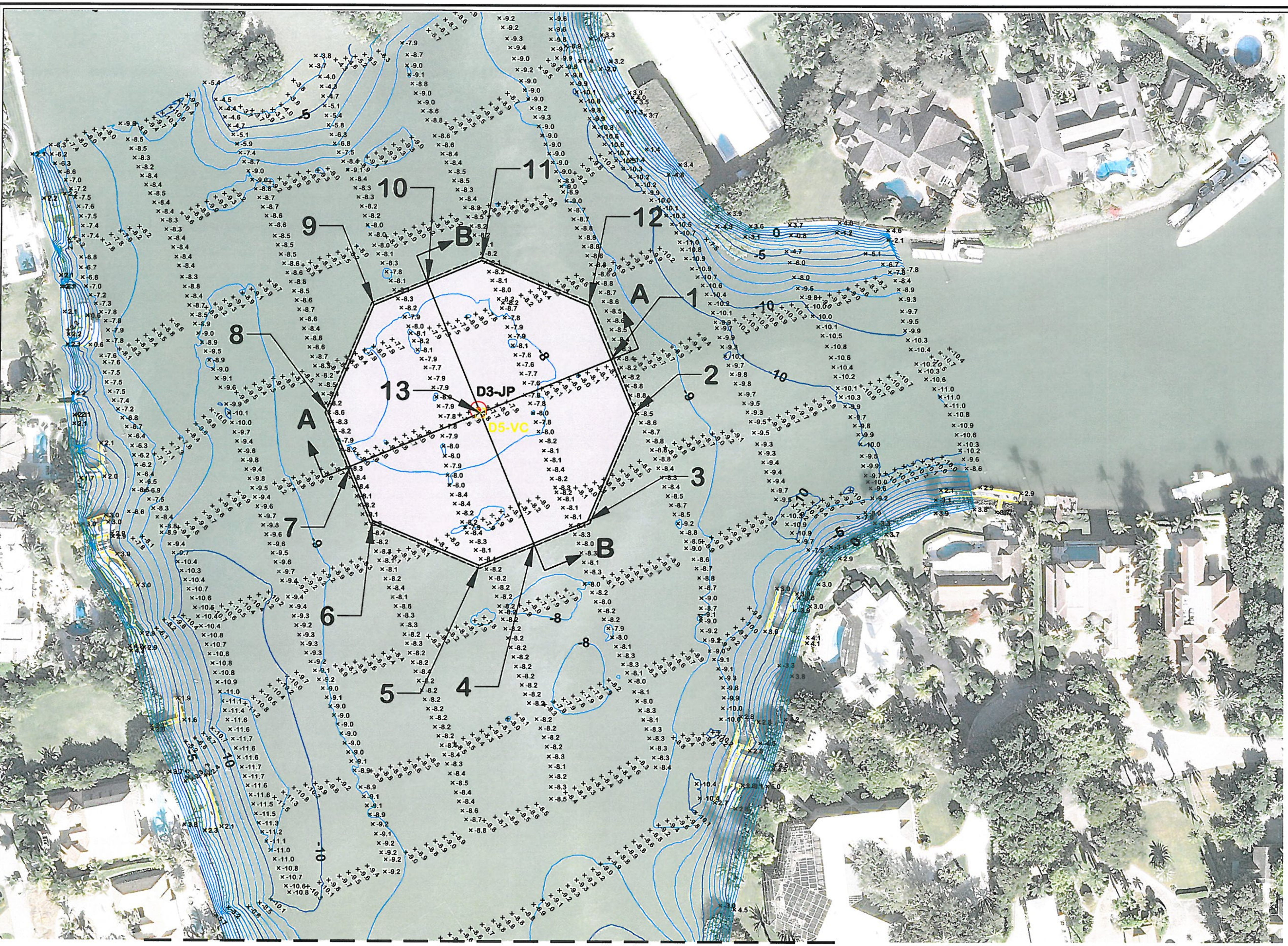


MATCH LINE - SEE SHEET 5A

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\5-6_Doubloon Bay.dwg May 16, 2013-5:18pm

N

0 50 100

SCALE 1" = 50'

LEGEND:

- DREDGE AREA
- SEAGRASS AREA
- BASELINE
- 2+00 STATIONS
- SPOT ELEVATION
- CONTOURS
- DOCK OR BOAT HOUSE
- JET PROBE (B1-JP)
- VIBRACORE (C2-VC)

DREDGE AREA COORDINATE TABLE

POINT	NORTHING	EASTING
1	643331'	394490'
2	643275'	394513'
3	643165'	394467'
4	643142'	394412'
5	643119'	394357'
6	643165'	394246'
7	643223'	394223'
8	643275'	394201'
9	643386'	394246'
10	643409'	394301'
11	643431'	394357'
12	643386'	394467'
13	643275'	394357'

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. PRE-CONSTRUCTION HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. JET PROBES (APRIL 2012), VIBRACORES (AUGUST 2012) & BIOLOGICAL SURVEY (APRIL 2012) BY ECE.
4. AERIAL FLIGHT 2012 (LABINS)

STATE OF FLORIDA PROFESSIONAL ENGINEER KARYN M. ERICKSON, P.E. 41897 — Signature — Date 5/16/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED	DRAWN	CHECKED
BC	AS	CP

DATE: 05/15/2013

JOB NO. 12-227

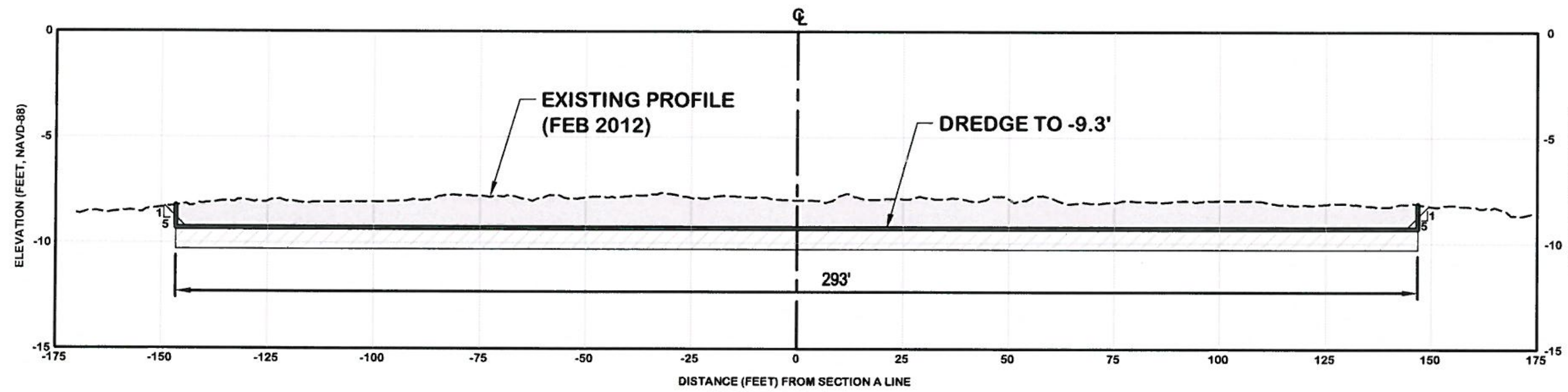
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

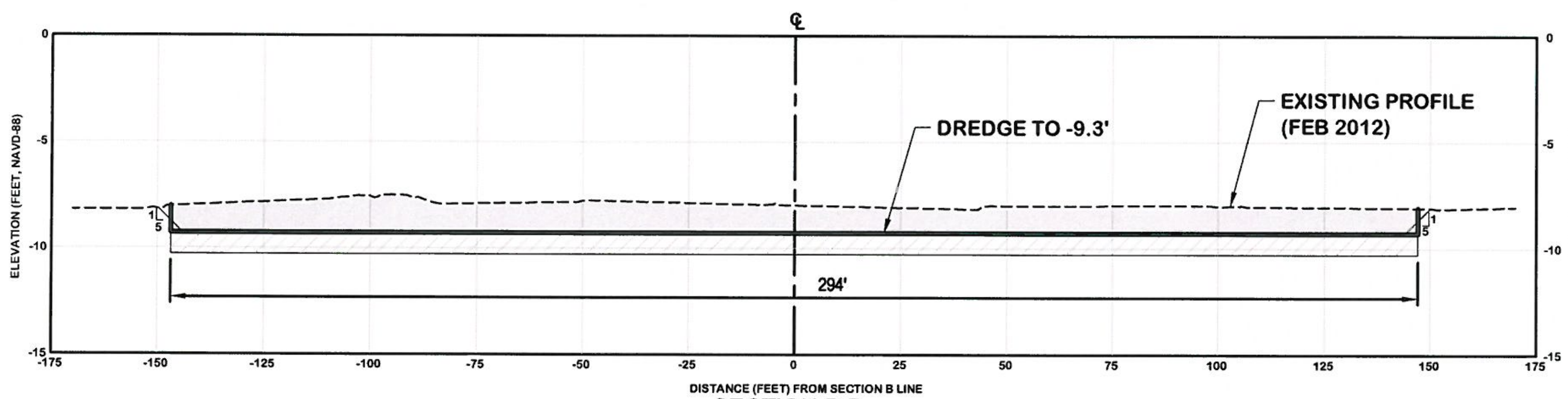
DREDGE AREA - PLAN VIEW DOUBLOON BAY

Erickson Consulting Engineers, Inc.
ECE
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
6A
SHEET 10 OF 37



SECTION A-A
SCALE: 1" = 20' (H)
1" = 4' (V)



SECTION B-B
SCALE: 1" = 20' (H)
1" = 4' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- DESIGN SLOPE (1 : 5)

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
DOUBLOON BAY

DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

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(941) 373-6460

DRAWING NUMBER
6B
SHEET 11 OF 37

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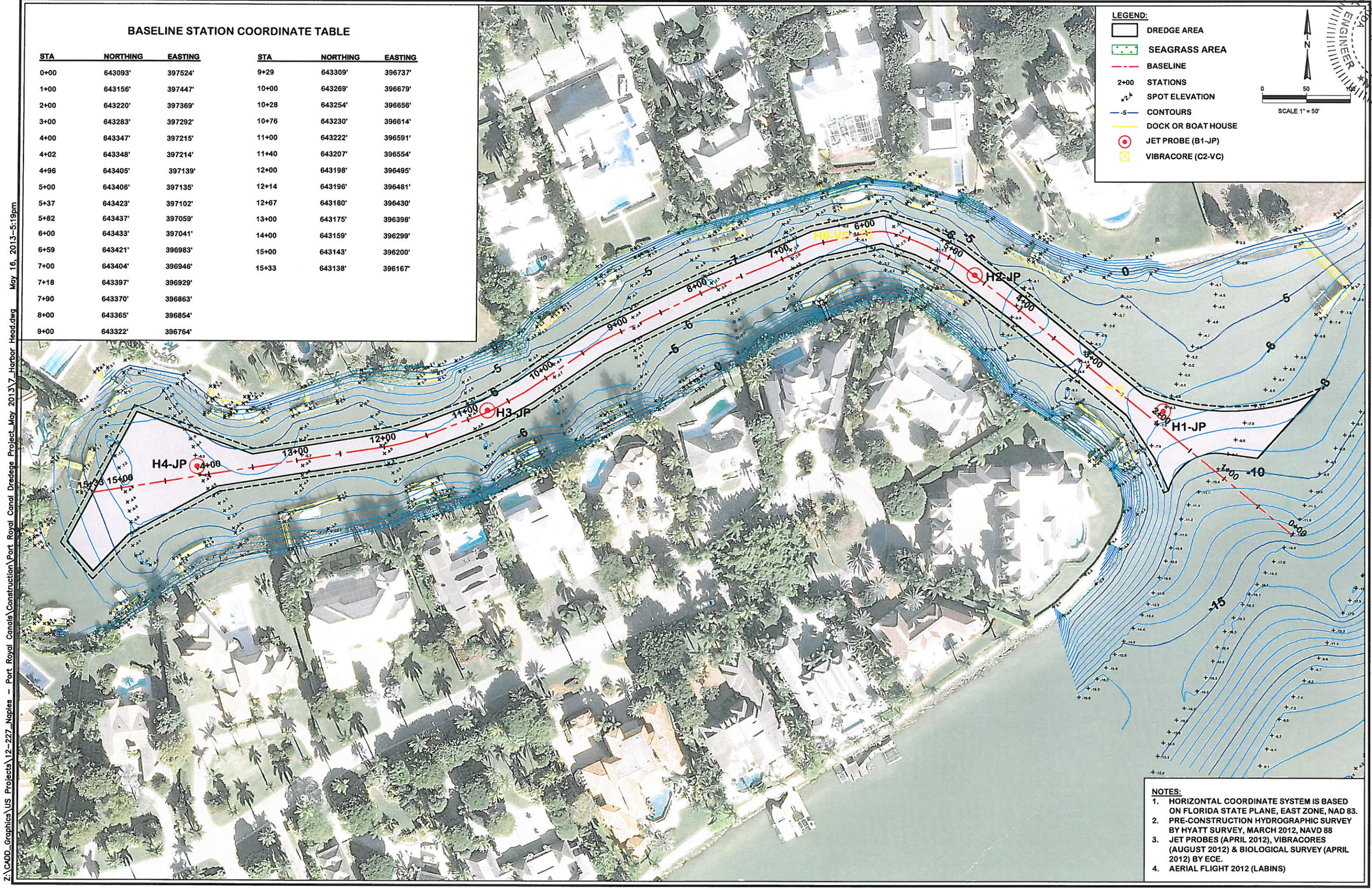
BASELINE STATION COORDINATE TABLE

STA	NORTHING	EASTING	STA	NORTHING	EASTING
0+00	643093'	397524'	9+29	643309'	396737'
1+00	643156'	397447'	10+00	643269'	396679'
2+00	643220'	397369'	10+28	643254'	396656'
3+00	643283'	397292'	10+76	643230'	396614'
4+00	643347'	397215'	11+00	643222'	396591'
4+02	643348'	397214'	11+40	643207'	396554'
4+96	643405'	397139'	12+00	643198'	396495'
5+00	643406'	397135'	12+14	643196'	396481'
5+37	643423'	397102'	12+67	643180'	396430'
5+82	643437'	397059'	13+00	643175'	396398'
6+00	643433'	397041'	14+00	643159'	396299'
6+59	643421'	396983'	15+00	643143'	396200'
7+00	643404'	396946'	15+33	643138'	396167'
7+18	643397'	396929'			
7+90	643370'	396863'			
8+00	643365'	396854'			
9+00	643322'	396764'			



NOTES:
1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. PRE-CONSTRUCTION HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. JET PROBES (APRIL 2012), VIBRACORES (AUGUST 2012) & BIOLOGICAL SURVEY (APRIL 2012) BY ECE.
4. AERIAL FLIGHT 2012 (LABINS)

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\7_Harbor Head.dwg May 16, 2013-5:19pm

KARY L. ERICKSON — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Date: 5/16/13
Signature of Florida Licensed Professional Engineer
KARY L. ERICKSON, P.E.
Florida License No. 47191

REV. No.	DATE	DRAWN	CHKD
		BR	BR

REMARKS

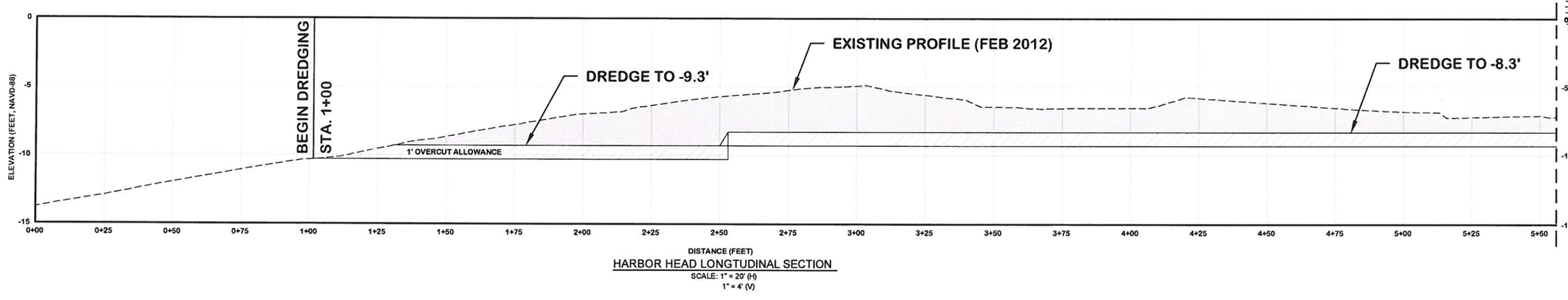
DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO.: 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW HARBOR HEAD

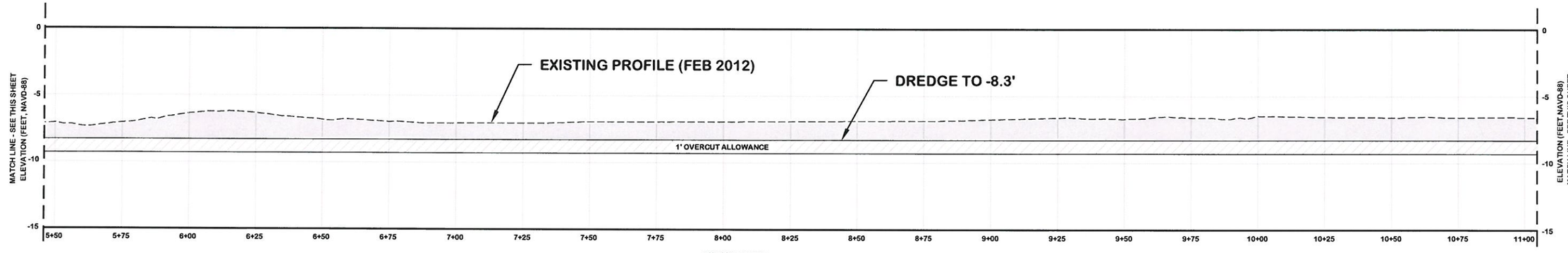
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6480

DRAWING NUMBER
7A
SHEET 12 OF 37



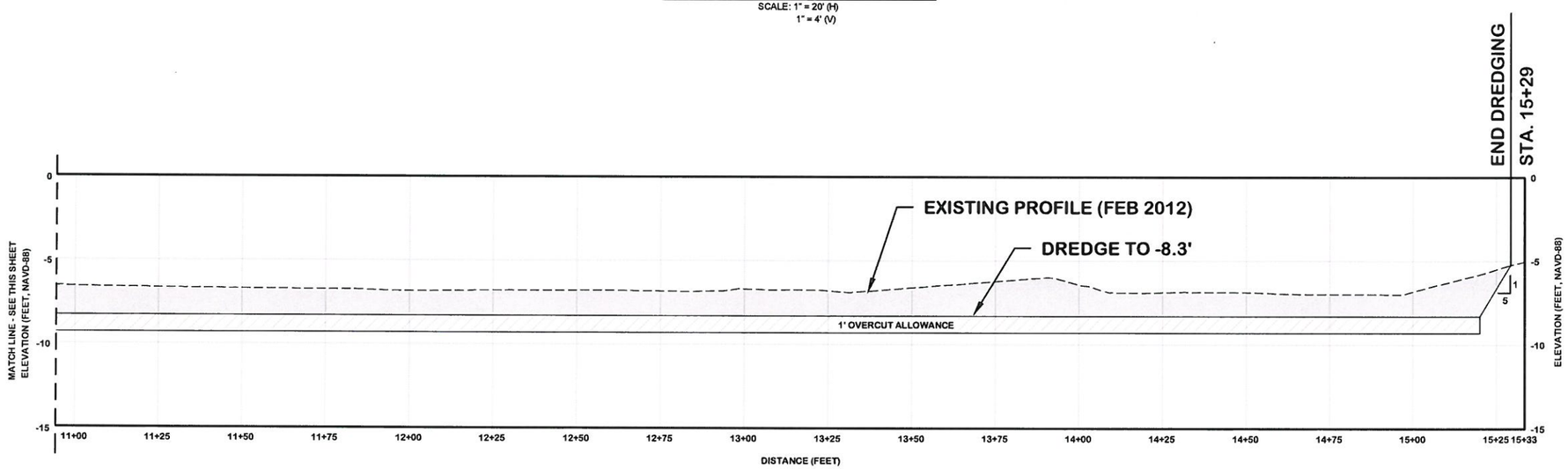
HARBOR HEAD LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)



HARBOR HEAD LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)



HARBOR HEAD LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)

LEGEND:

- DREDGE AREA
- 1 FT. OVERCUT ALLOWANCE
- EXISTING BOTTOM

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BJC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

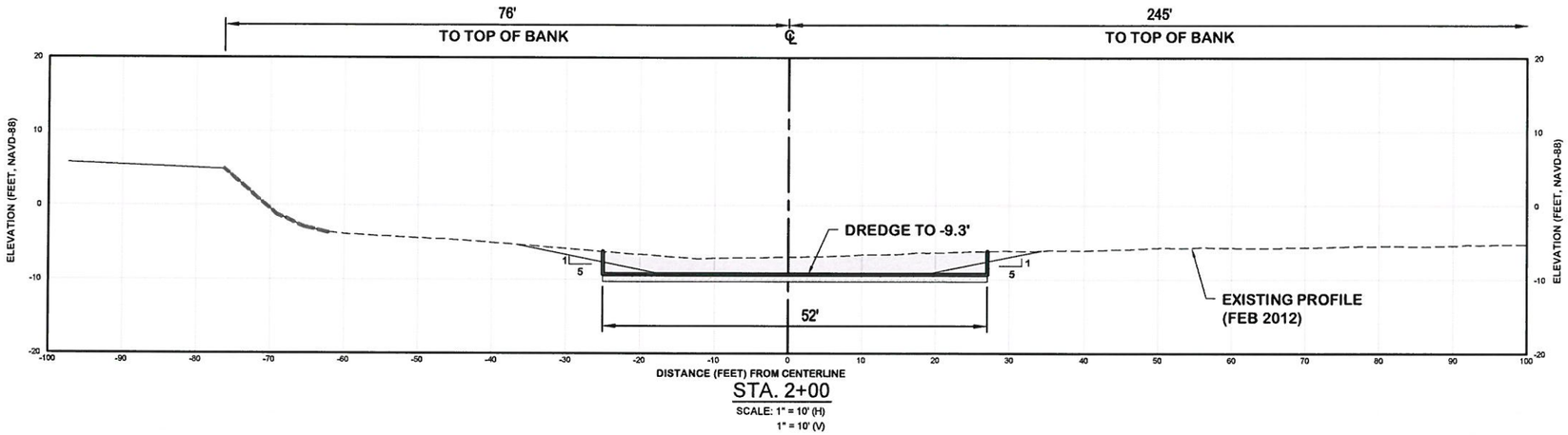
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE HARBOR HEAD

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

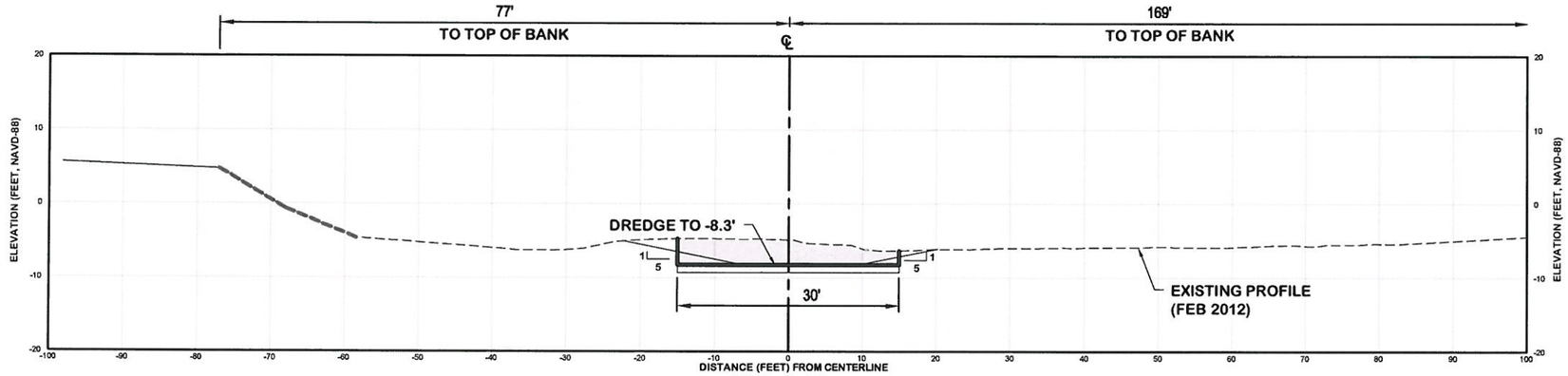
DRAWING NUMBER
7B
SHEET 13 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\7_Harbor Head.dwg May 16, 2013-5:20pm



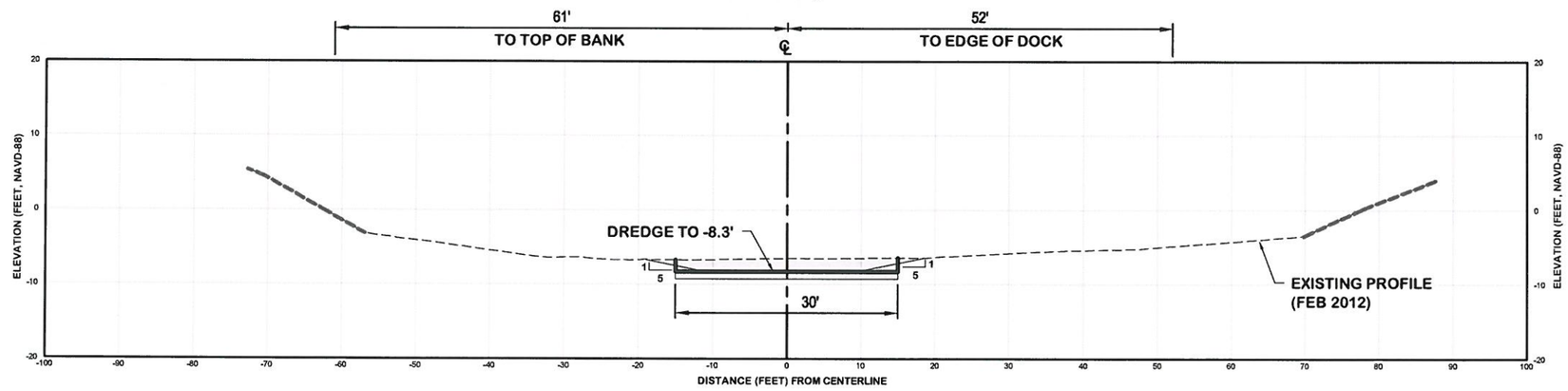
STA. 2+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 3+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 4+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1:5 DESIGN SLOPE

STATE OF FLORIDA
REGISTERED ENGINEER
No. 47627
LICENSED
Scott A. Erickson, P.E.
Professional Engineer
5/6/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED EC | DRAWN AS | CHECKED CP
DATE 04/15/2013 | JOB NO. 12-227 | SCALE: AS NOTED

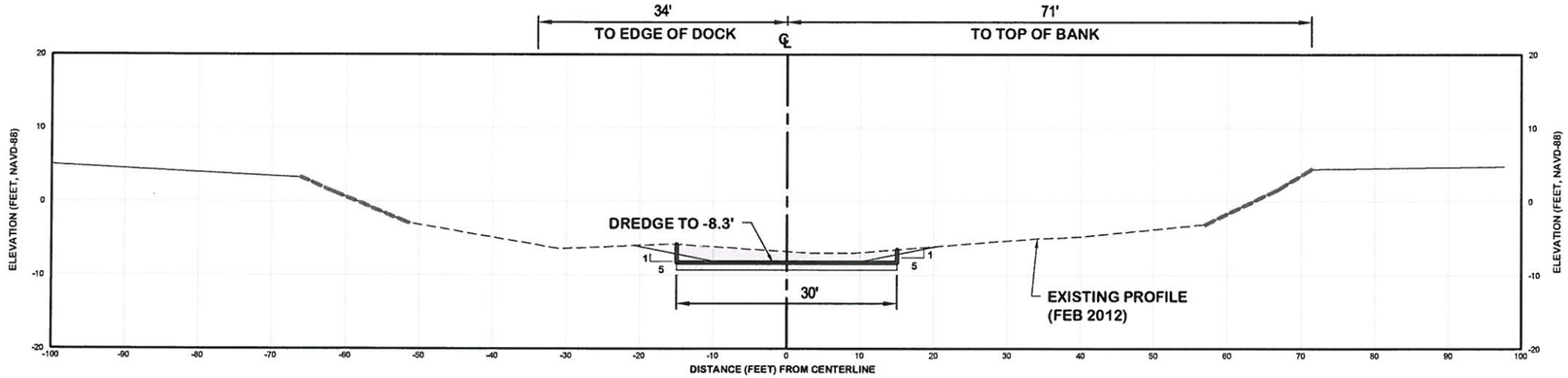
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS HARBOR HEAD

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-8480

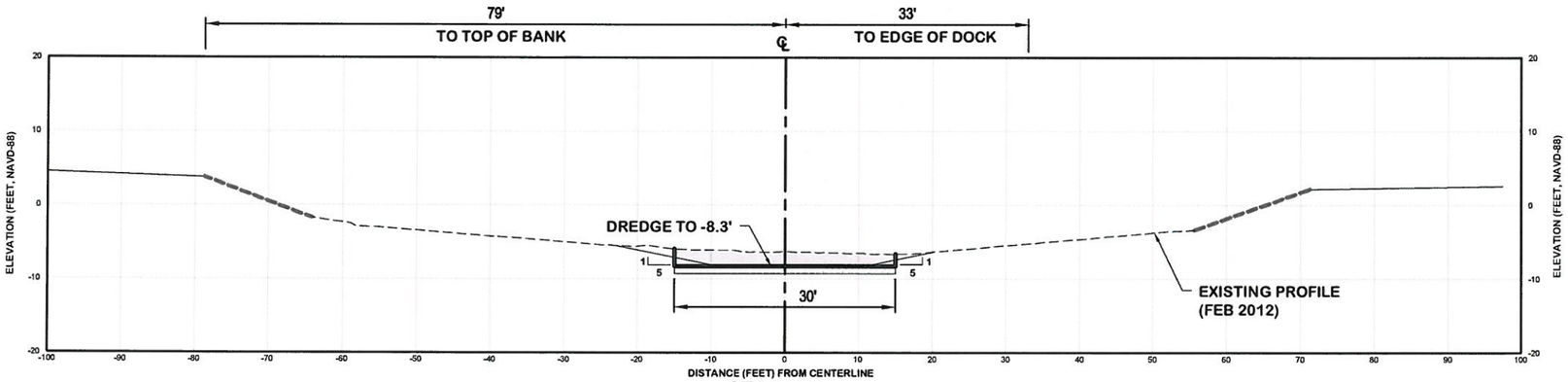
DRAWING NUMBER
7C
SHEET 14 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\7_Harbor Head.dwg May 16, 2013-5:20pm



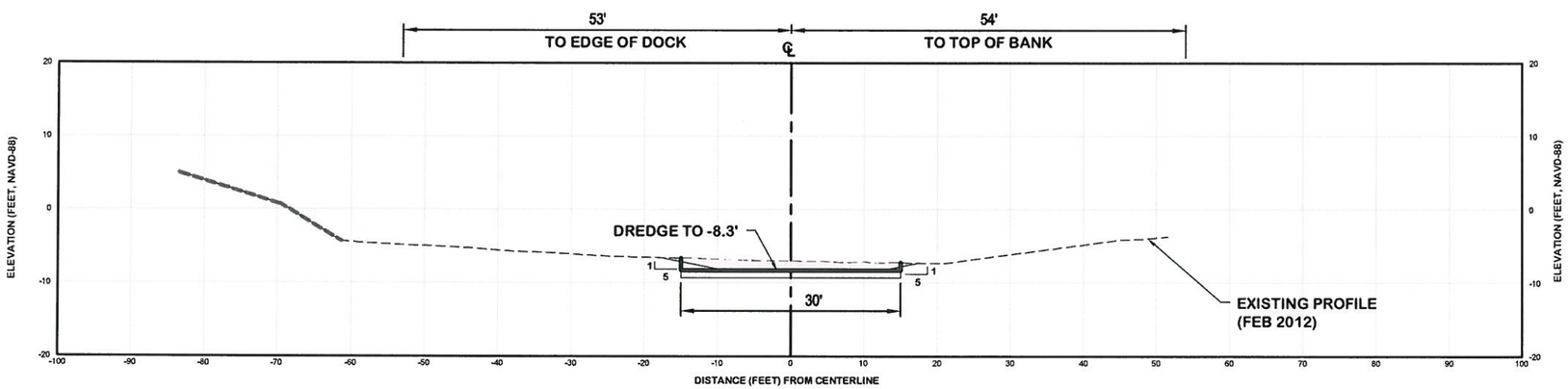
STA. 5+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 6+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 7+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- DESIGN SLOPE (1 : 5)

KATHRYN M. ERICKSON — LICENSE — No. 41997 — STATE OF FLORIDA — REGISTERED PROFESSIONAL ENGINEER — Mapping & Marine Engineering
5/16/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BJC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS HARBOR HEAD

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
7D
SHEET 15 OF 37

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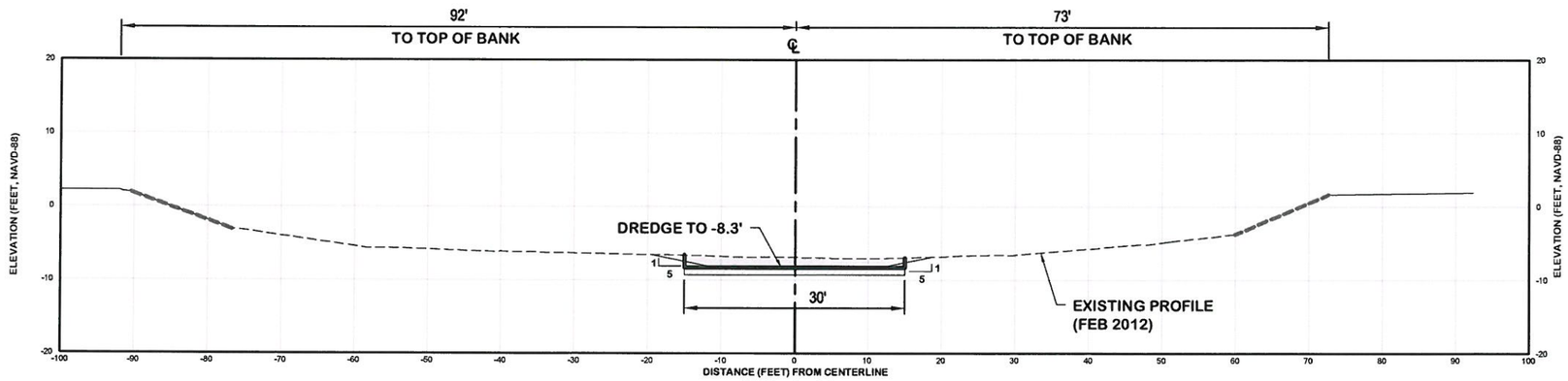
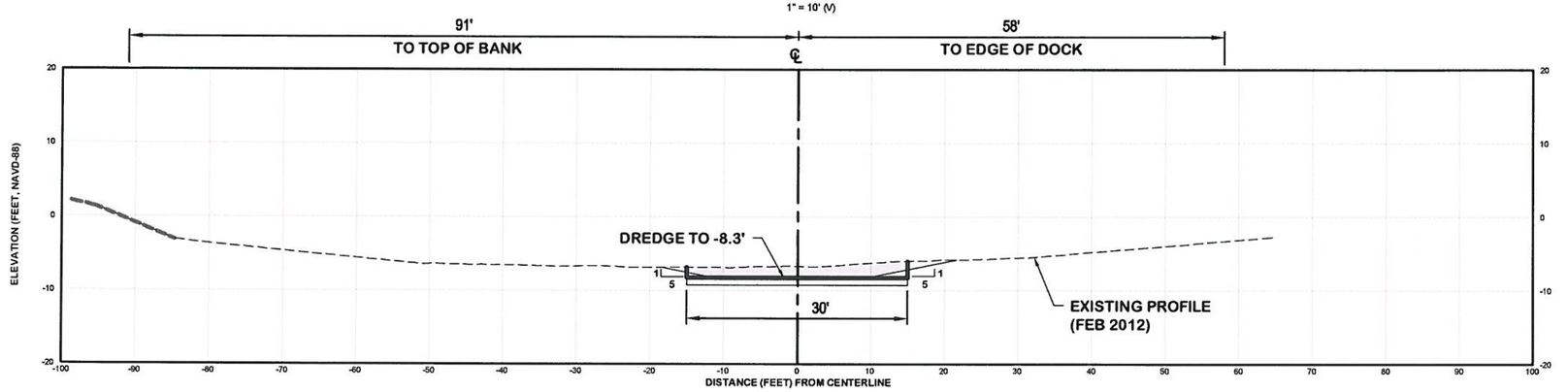


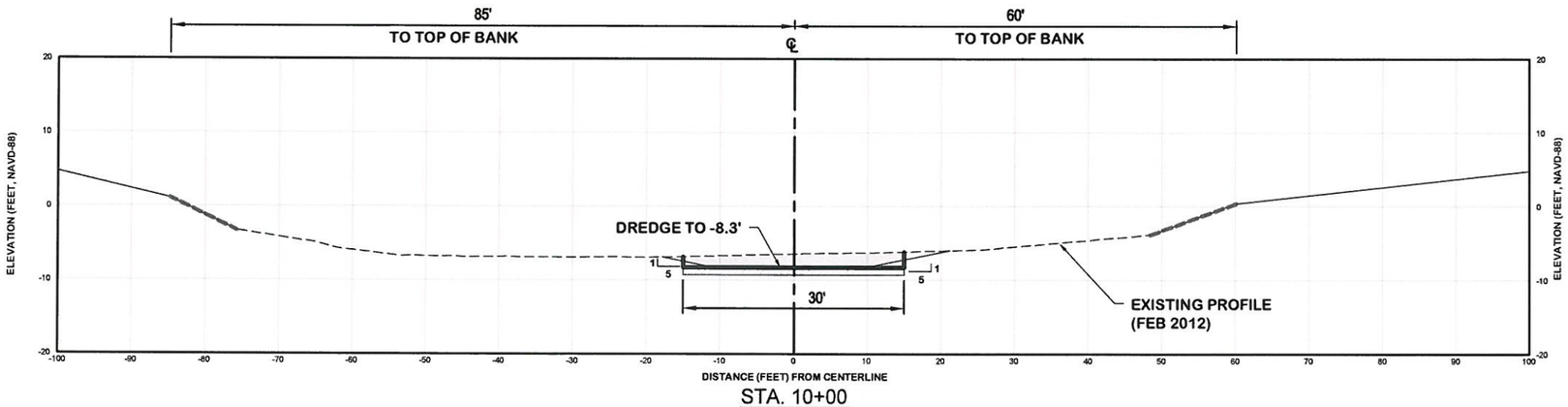
STA. 8+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 9+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 10+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1:5 DESIGN SLOPE

KARYN M. ERICKSON — LICENSE NO. 14067 — STATE OF FLORIDA — PROFESSIONAL ENGINEER — Karyn Erickson, P.E. — Professional Engineer — Date: 5/15/2013

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED: KC | DRAWN: AS | CHECKED: CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS HARBOR HEAD

Erickson Consulting Engineers, Inc.
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Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
7E
SHEET 16 OF 37

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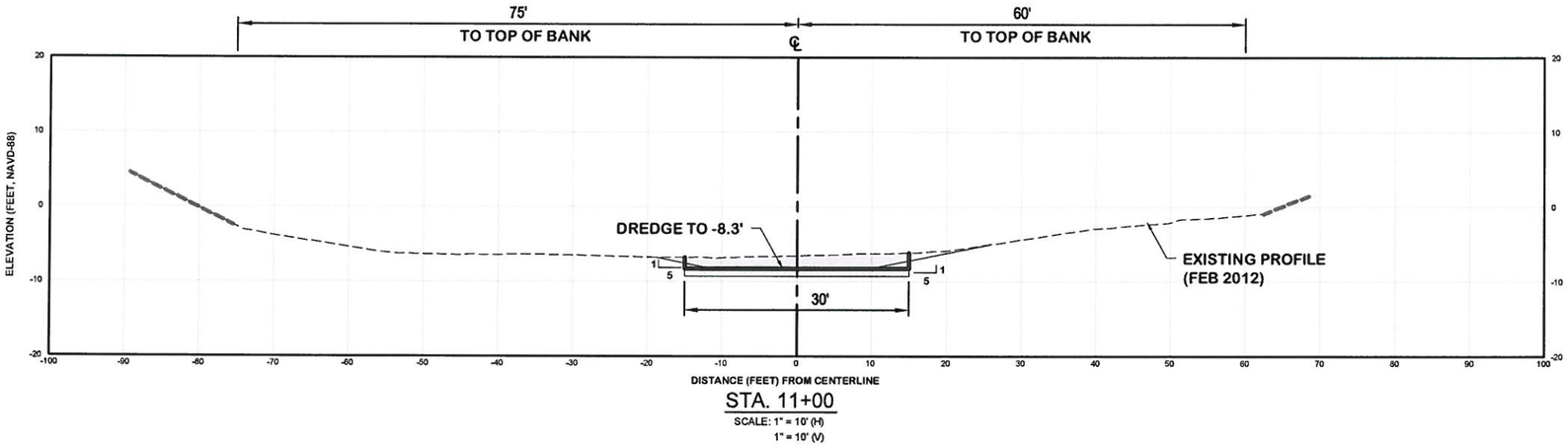
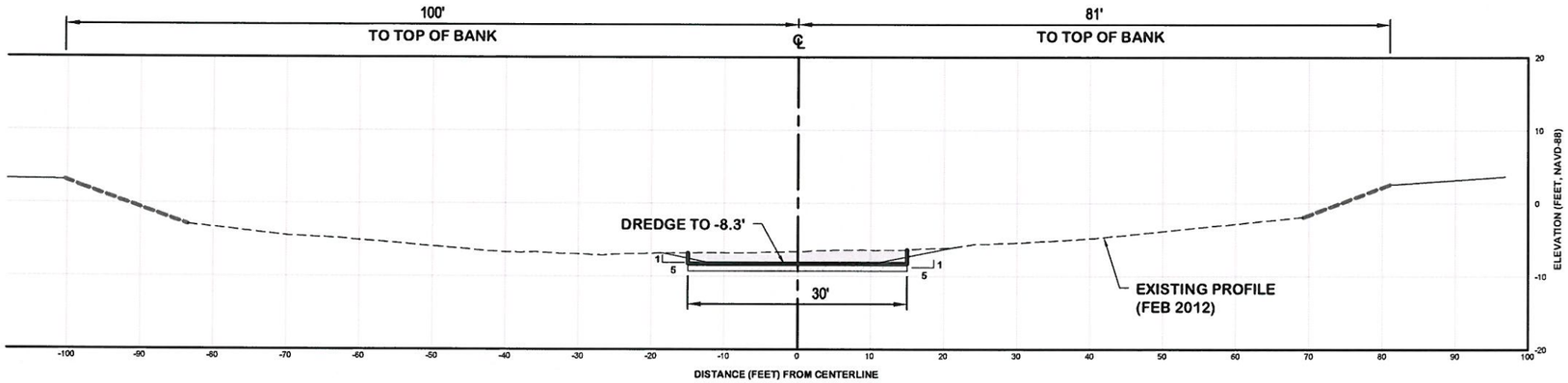


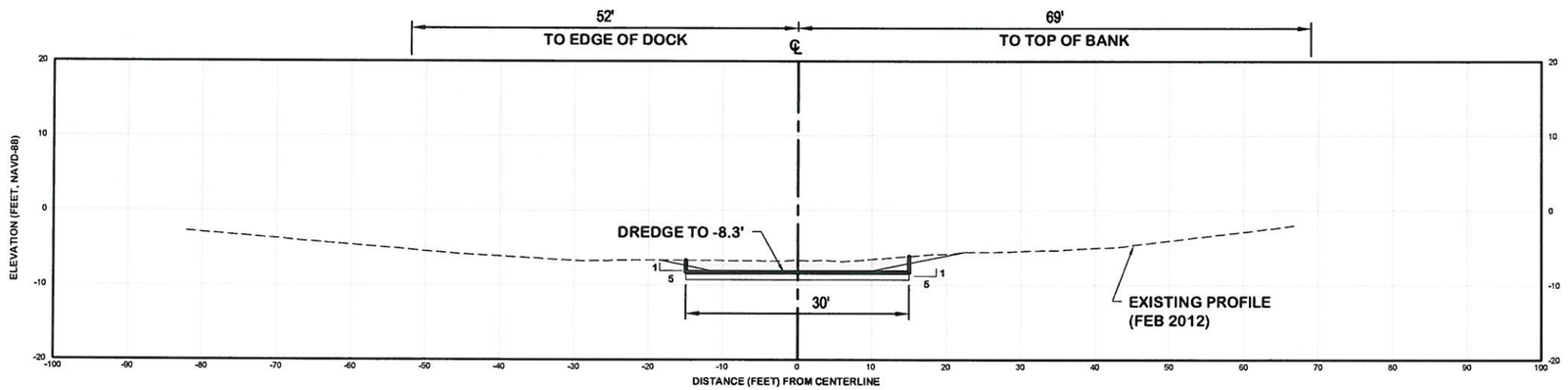
STA. 11+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 12+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 13+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1:5 DESIGN SLOPE

KEVIN W. ERICKSON — LICENSE NO. 51663 — STATE OF FLORIDA — PROFESSIONAL ENGINEER — Date: 5/16/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED: BC | DRAWN: AS | CHECKED: CP
DATE: 05/15/2013
JOB NO.: 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS HARBOR HEAD

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7201 Delaney Court
Sarasota, FL 32420
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DRAWING NUMBER
7F
SHEET 17 OF 37

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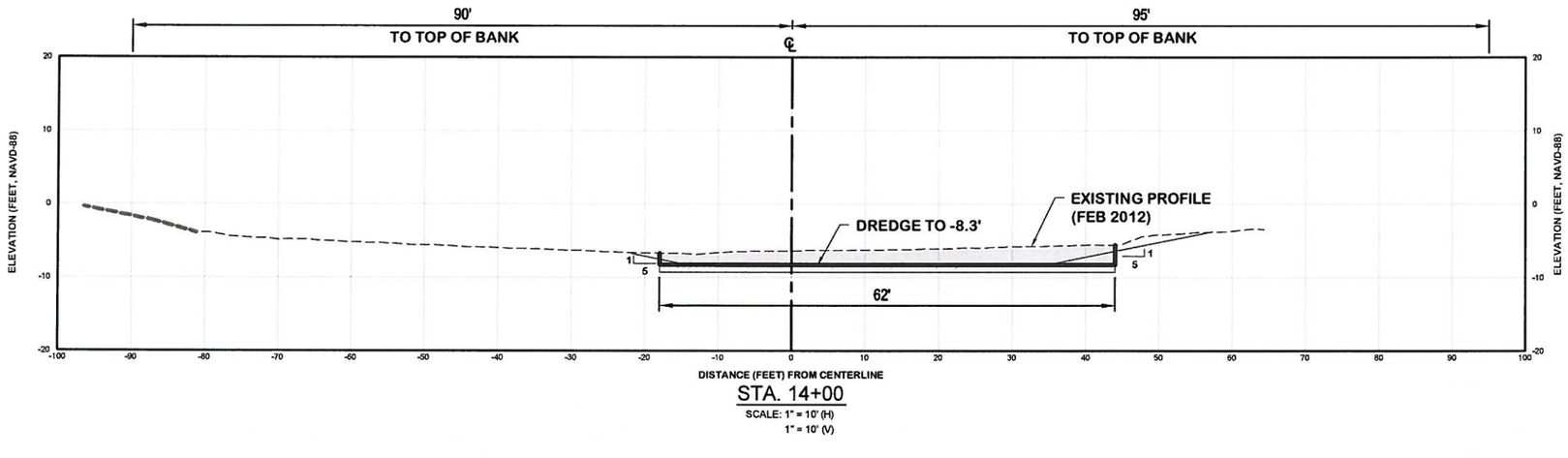
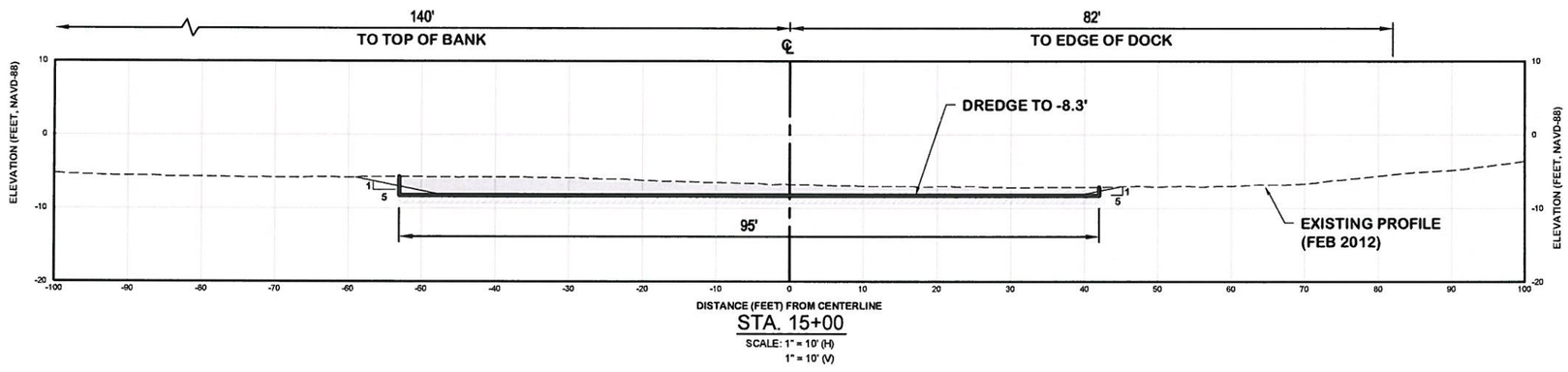


STA. 14+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 15+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- DESIGN SLOPE (1 : 5)

KAREN E. ERICKSON — LICENSE NO. 44987 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

Signature Date: 5/16/13

Karen E. Erickson, P.E. No. 44987
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO.: 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS HARBOR HEAD

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7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
7G
SHEET 18 OF 37

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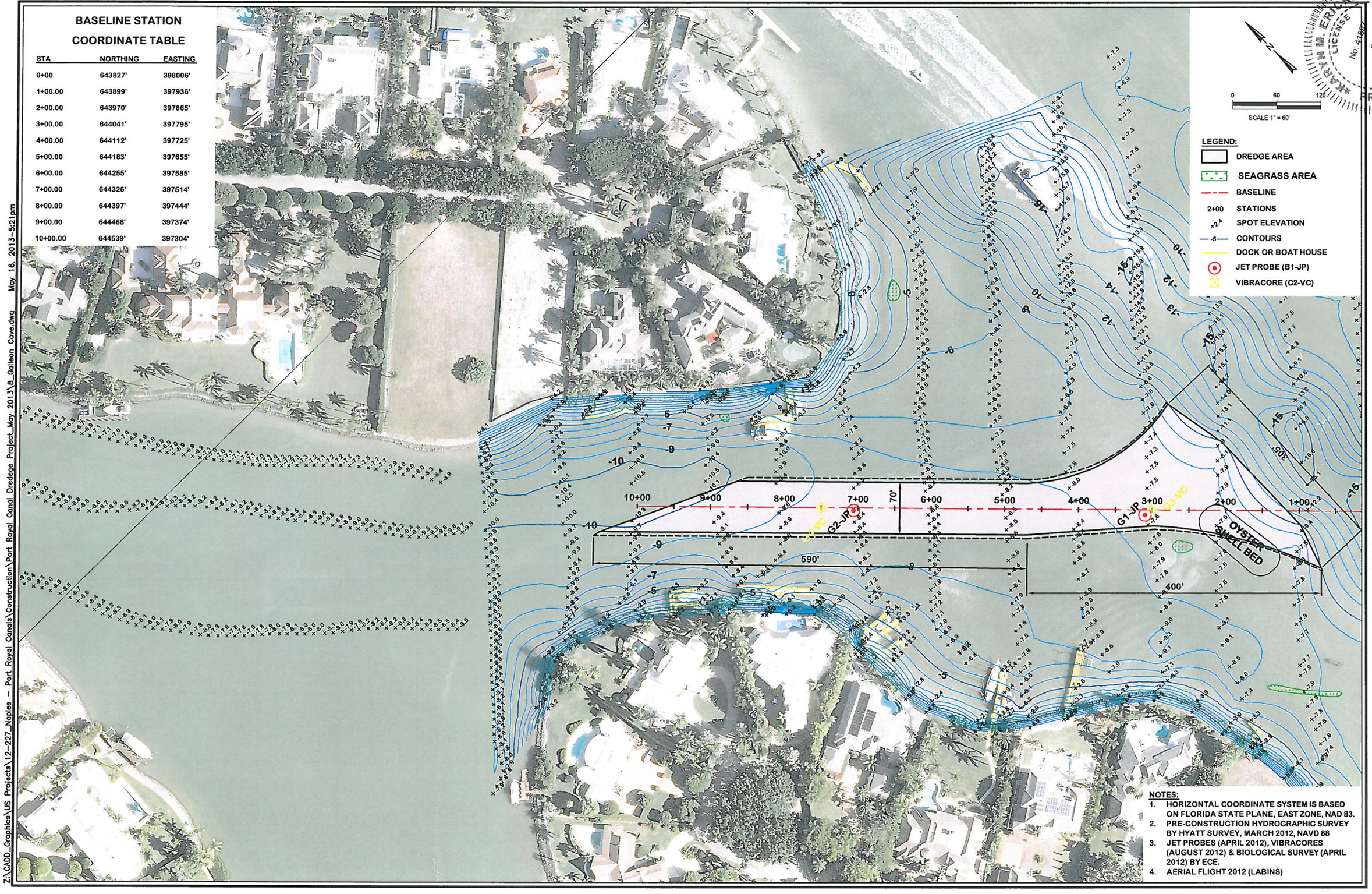
BASELINE STATION COORDINATE TABLE

STA	NORTHING	EASTING
0+00	643827'	398006'
1+00.00	643899'	397936'
2+00.00	643970'	397865'
3+00.00	644041'	397795'
4+00.00	644112'	397725'
5+00.00	644183'	397655'
6+00.00	644255'	397585'
7+00.00	644326'	397514'
8+00.00	644397'	397444'
9+00.00	644468'	397374'
10+00.00	644539'	397304'



NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. PRE-CONSTRUCTION HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. JET PROBES (APRIL 2012), VIBRACORES (AUGUST 2012) & BIOLOGICAL SURVEY (APRIL 2012) BY ECE.
4. AERIAL FLIGHT 2012 (LABINS)

STATE OF FLORIDA
PROFESSIONAL ENGINEER
KARYNA A. ERICKSON
License No. 41887
Professional Engineer
Date: 5/16/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED: EEC | DRAWN: AS | CHECKED: CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

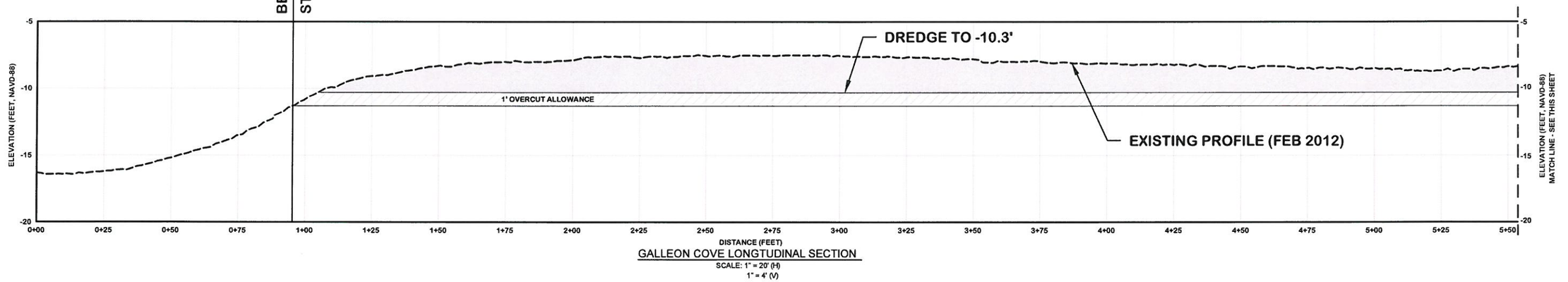
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6480

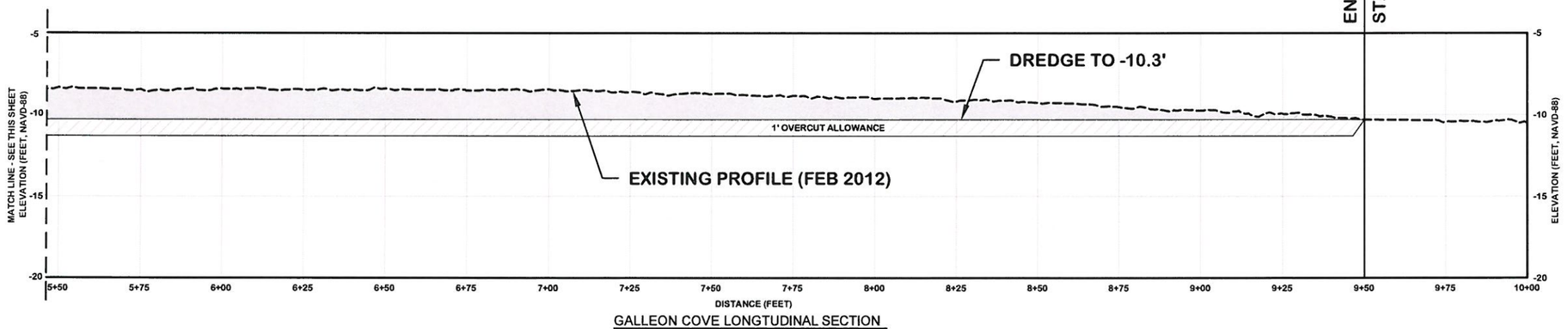
DRAWING NUMBER
8A
SHEET 19 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\8_Galleon Cove.dwg May 16, 2013-5:21pm



GALLEON COVE LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)



GALLEON COVE LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)

LEGEND:

- DREDGE AREA
- 1 FT. OVERCUT ALLOWANCE
- ----- EXISTING BOTTOM

MARK M. ERICKSON
LICENSE No. 41967
STATE OF FLORIDA
5/16/13
Mark M. Erickson, P.E.
Florida Registration No. 41967

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED: EIC | DRAWN: AS | CHECKED: CP
DATE: 05/15/2013
JOB NO.: 12-227
SCALE: AS NOTED

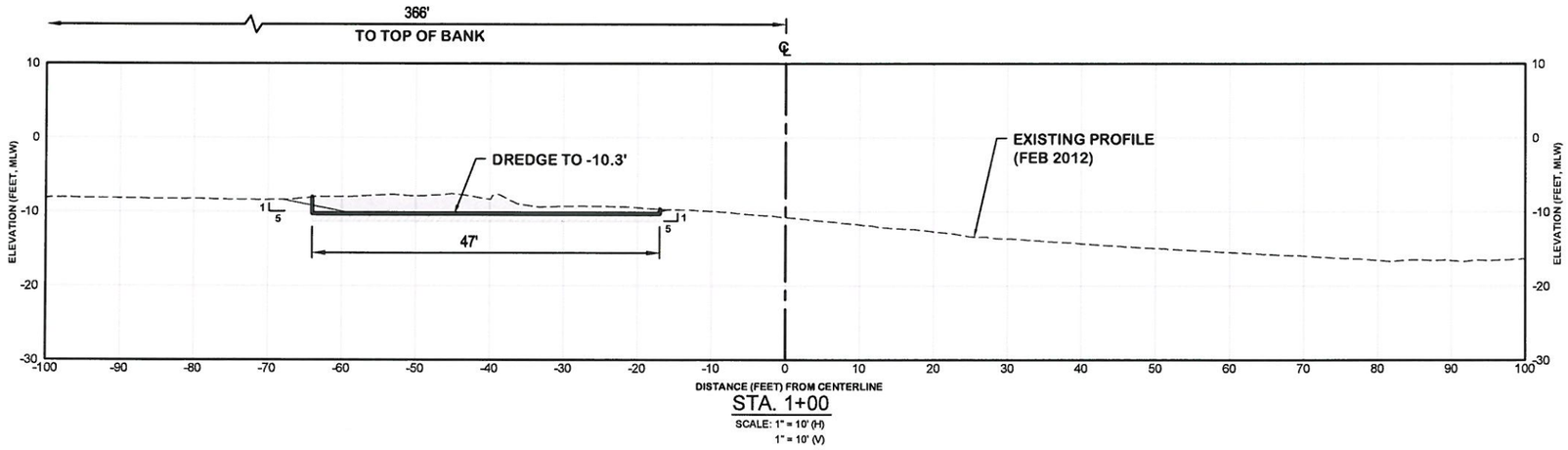
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGITUDINAL CENTER LINE PROFILE
GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

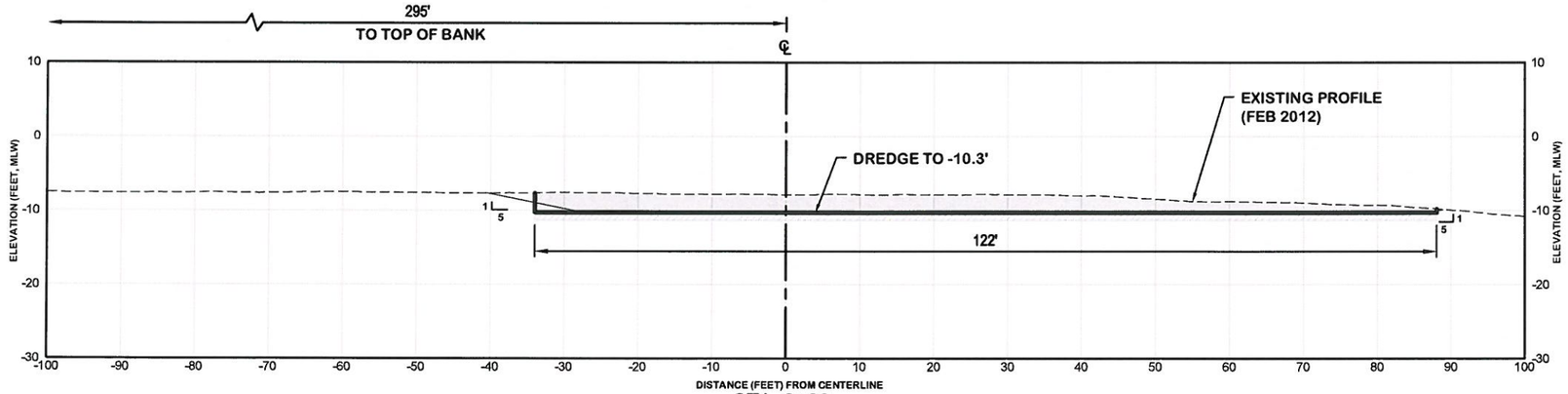
DRAWING NUMBER
8B
SHEET 20 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\8_Galleon Cove.dwg May 16, 2013-5:23pm



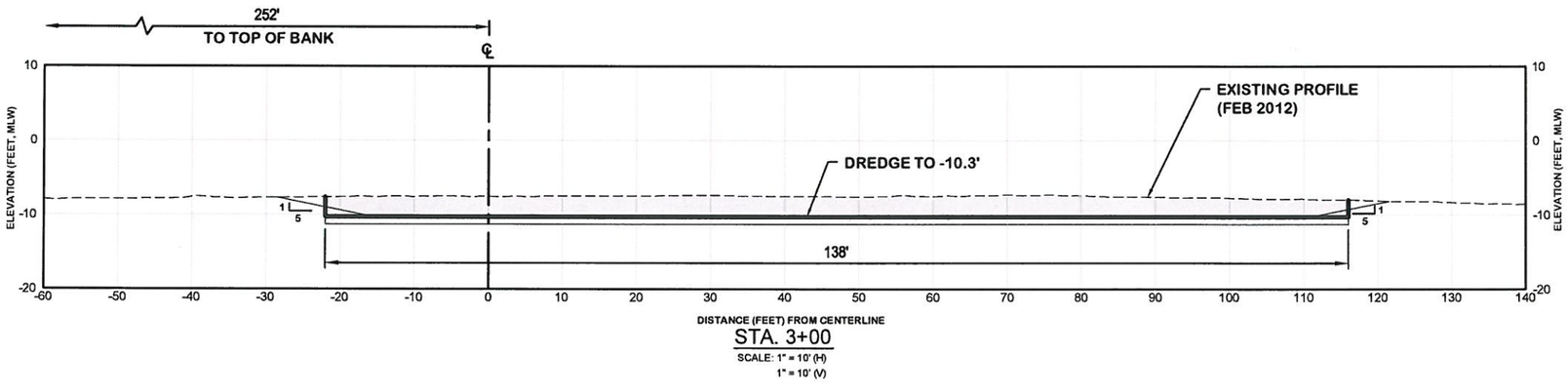
STA. 1+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 2+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 3+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- BOX CUT
- 1:5 DESIGN SLOPE

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-8480

DESIGNED BC | DRAWN AS | CHECKED CP | DATE: 05/15/2013 | JOB NO. 12-227 | SCALE: AS NOTED

REMARKS

DRAWING NUMBER
8C
SHEET 21 OF 37

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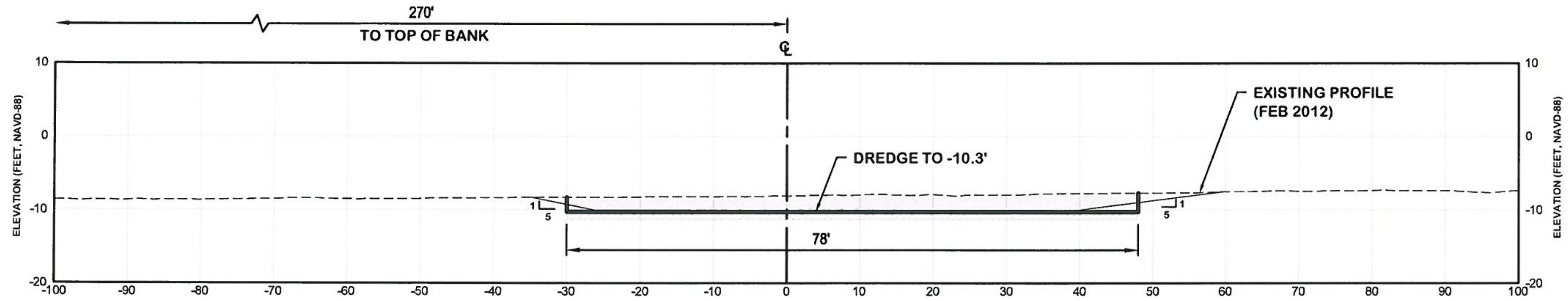
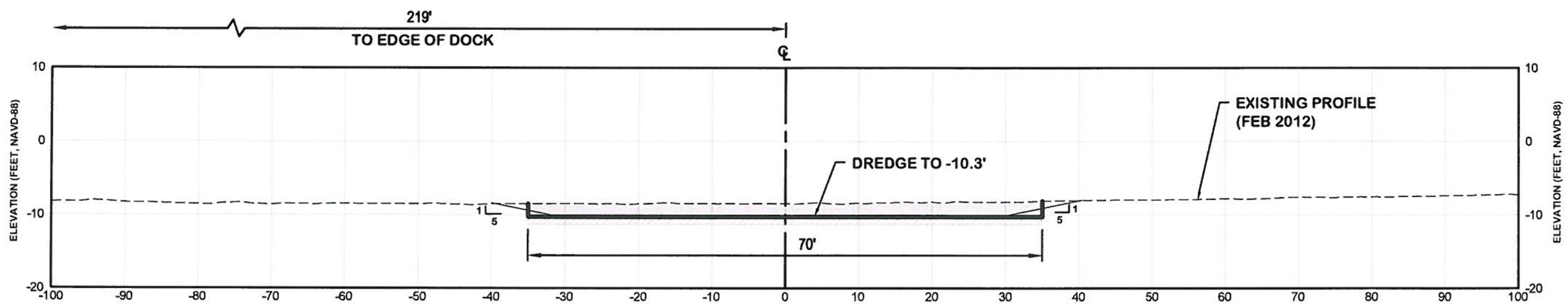


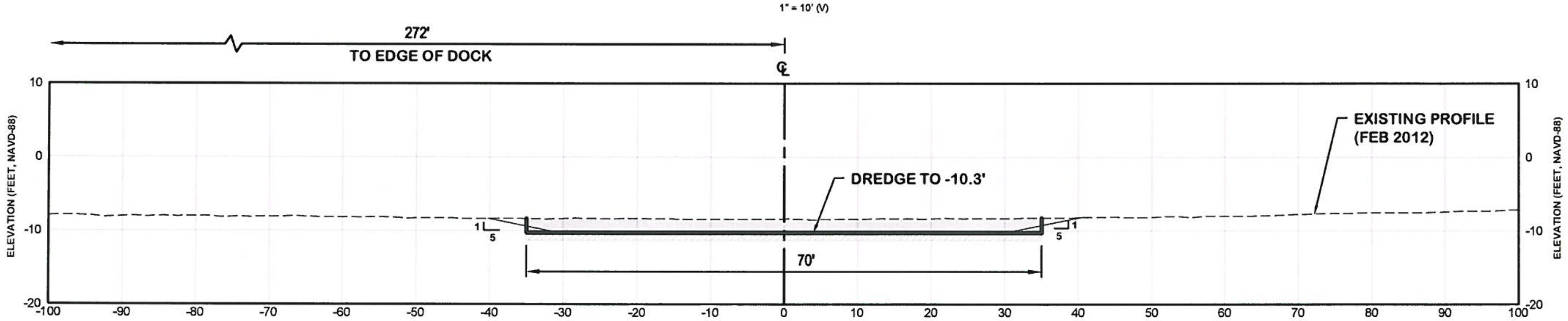
STA. 4+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 5+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 6+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- BOX CUT
- DESIGN SLOPE (1 : 5)

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REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED	DRAWN	CHECKED
BC	AS	CP

DATE: 05/15/2013

JOB NO. 12-227

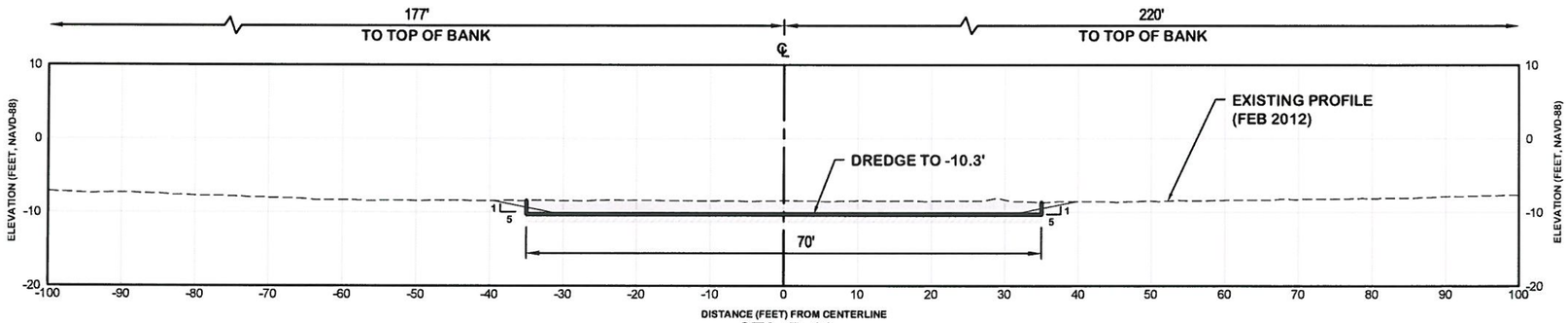
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

**CROSS SECTIONS
GALLEON COVE**

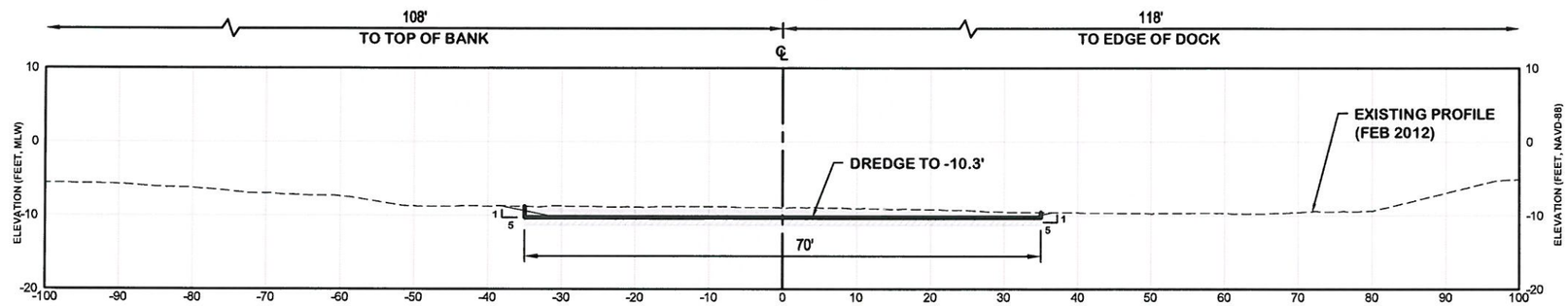
Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
8D
SHEET 22 OF 37



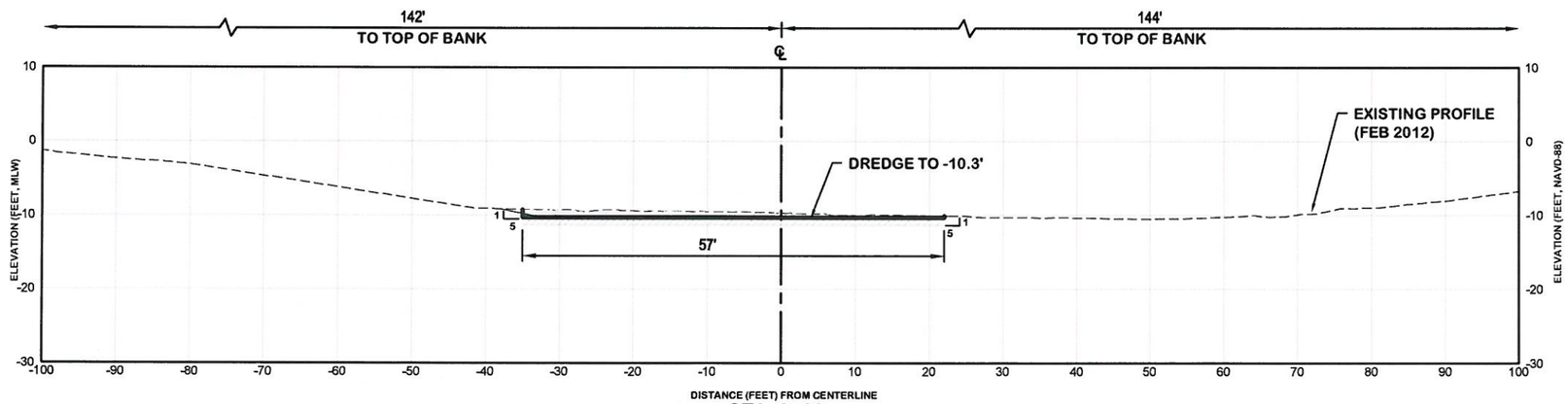
STA. 7+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 8+00

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 9+00

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- BOX CUT
- 1:5 DESIGN SLOPE

RYAN M. ERICKSON — LICENSE — STATE OF FLORIDA — Professional Engineer

NO.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BJC | DRAWN AS | CHECKED CP | DATE: 05/15/2013 | JOB NO.: 12-227 | SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
8E
SHEET 23 OF 37

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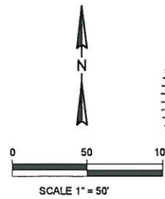
MATCH LINE - SEE SHEET 10A



LEGEND:

- DREDGE AREA
- SEAGRASS AREA
- BASELINE
- 2+00 STATIONS
- SPOT ELEVATION
- -5- CONTOURS
- DOCK OR BOAT HOUSE
- JET PROBE (B1-JP)
- VIBRACORE (C2-VC)

EAST BASELINE STATION COORDINATE TABLE

STA	NORTHING	EASTING
0+00	643705'	393965'
1+00	643736'	393870'
2+00	643768'	393775'
3+00	643800'	393680'
4+00	643832'	393585'
4+50	643848'	393538'

SOUTH BASELINE STATION COORDINATE TABLE

STA	NORTHING	EASTING
0+00	643860'	393397'
1+03	643778'	393335'
1+00	643779'	393338'
1+76	643710'	393308'
2+00	643687'	393301'
2+48	643640'	393289'
3+00	643588'	393283'
3+38	643555'	393281'

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. PRE-CONSTRUCTION HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. JET PROBES (APRIL 2012), VIBRACORES (AUGUST 2012) & BIOLOGICAL SURVEY (APRIL 2012) BY ECE.
4. AERIAL FLIGHT 2012 (LABINS)

STATE OF FLORIDA
PROFESSIONAL ENGINEER
ERICKSON
LICENSE
5/15/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BC | DRAWN AS | CHECKED CP
DATE 05/15/2013 | JOB NO. 12-227 | SCALE AS NOTED

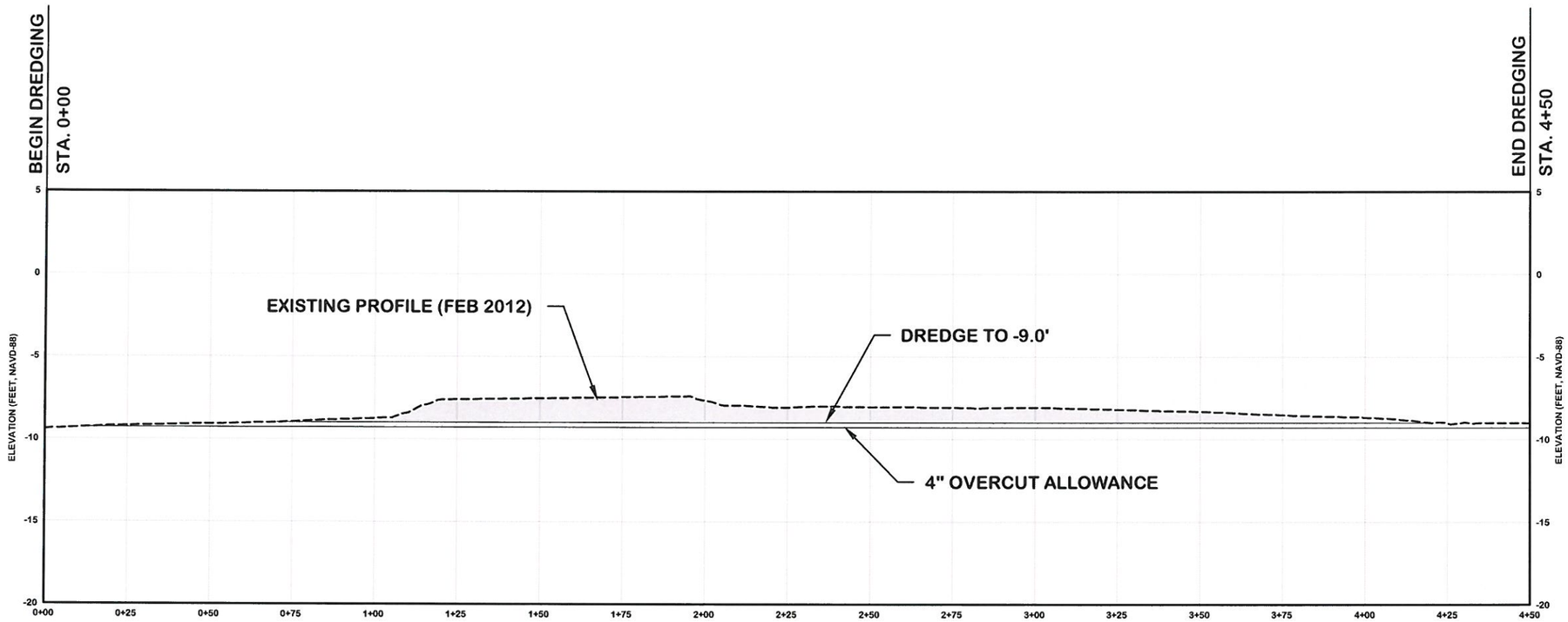
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW CHAMPNEY BAY (EAST & SOUTH)

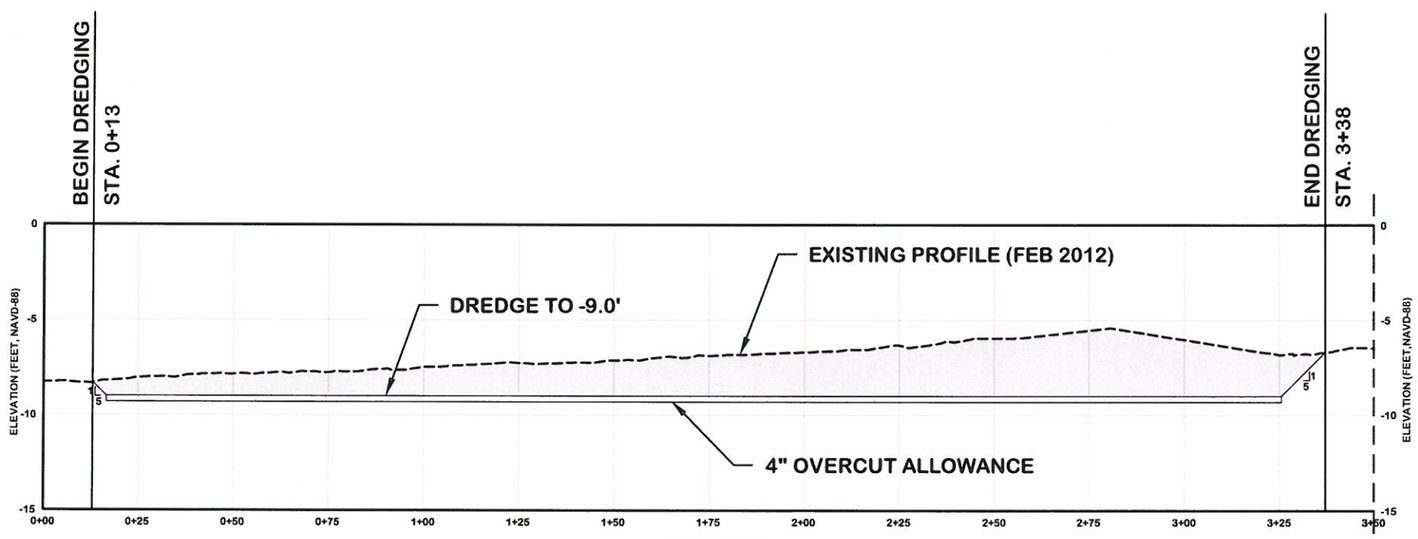
Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-8460

DRAWING NUMBER
9A
SHEET 24 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\9-10_Champney Bay.dwg May 16, 2013-5:25pm



CHAMPNEY BAY (EAST) LONGTUDINAL SECTION
SCALE: 1" = 20' (H)
1" = 4' (V)



CHAMPNEY BAY (SOUTH) LONGTUDINAL SECTION
SCALE: 1" = 20' (H)
1" = 4' (V)

LEGEND:

- DREDGE AREA
- 4 IN. OVERCUT ALLOWANCE
- EXISTING BOTTOM

KATHRYN M. ERICKSPAN
LICENSE NO. 41807
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5/16/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED: SCC | DRAWN: AS | CHECKED: CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE
CHAMPNEY BAY (SOUTH & EAST)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
9B
SHEET 25 OF 37

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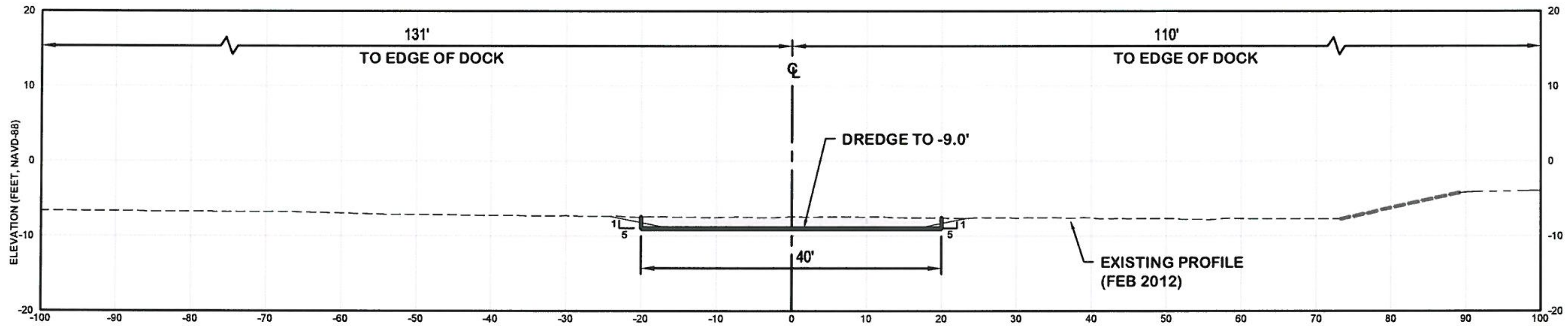
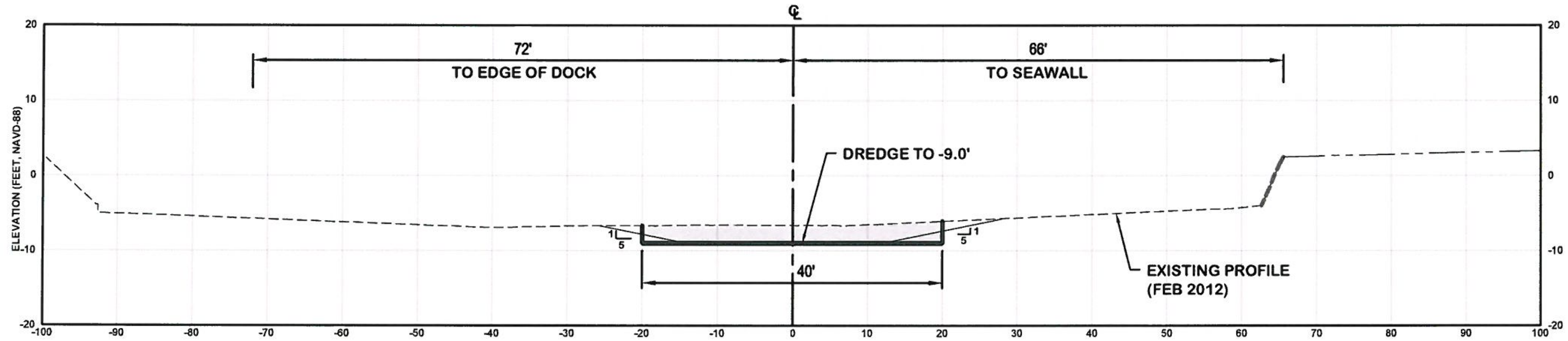


DISTANCE (FEET) FROM CENTERLINE

STA. 1+00 (SOUTH)

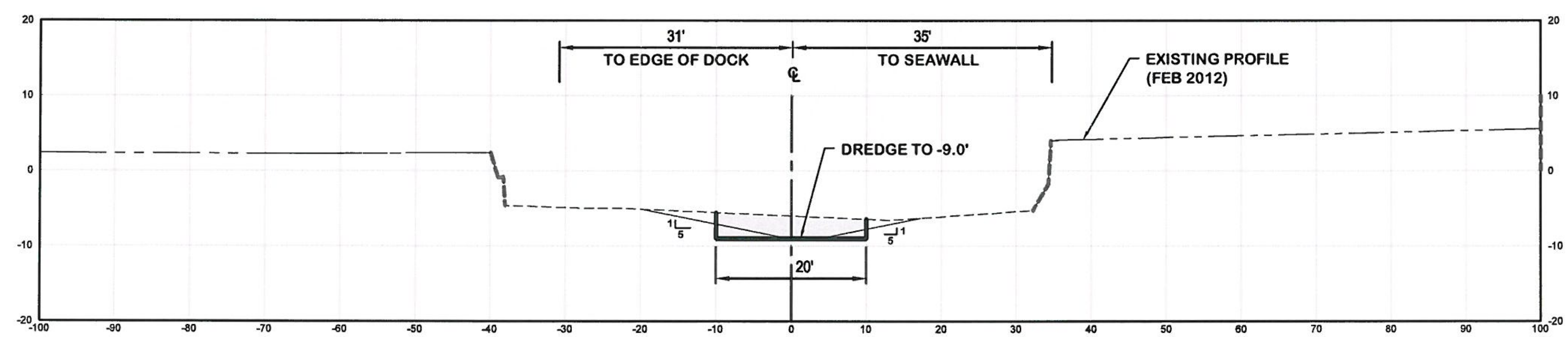
SCALE: 1" = 10' (H)
1" = 10' (V)



DISTANCE (FEET) FROM CENTERLINE

STA. 2+00 (SOUTH)

SCALE: 1" = 10' (H)
1" = 10' (V)



DISTANCE (FEET) FROM CENTERLINE

STA. 3+00 (SOUTH)

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 4" OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- DESIGN SLOPE (1:5)

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
CHAMPNEY BAY (SOUTH)

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DESIGNED: KC | DRAWN: AS | CHECKED: CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

REV. No. | DATE | DRAWN BY | CHKD BY | REMARKS

DRAWING NUMBER
9C
SHEET 26 OF 37

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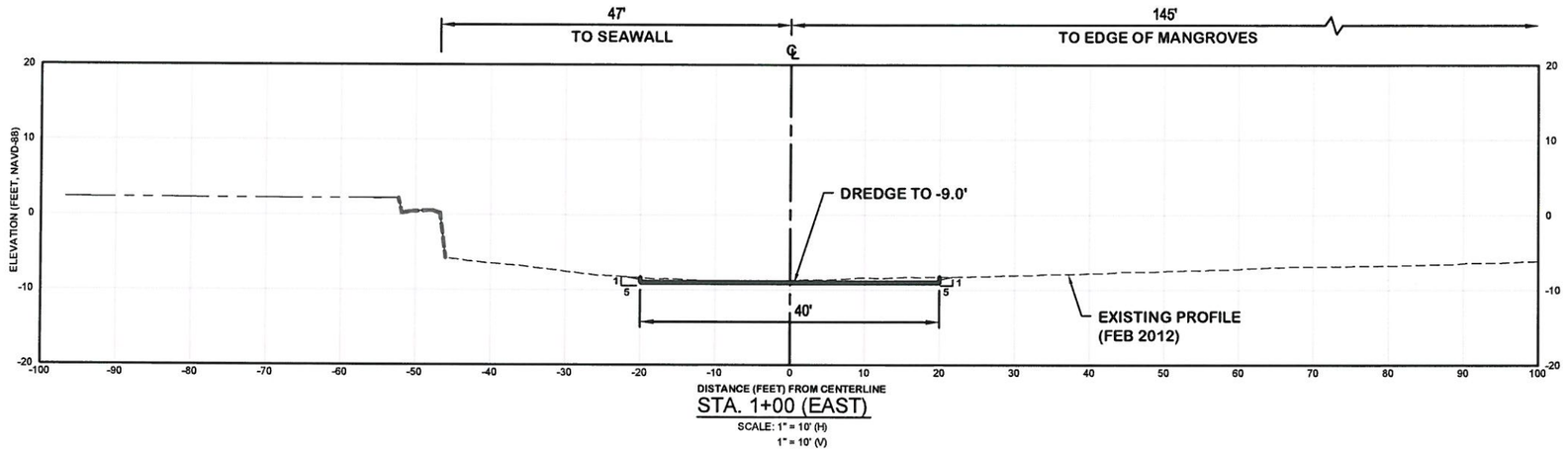
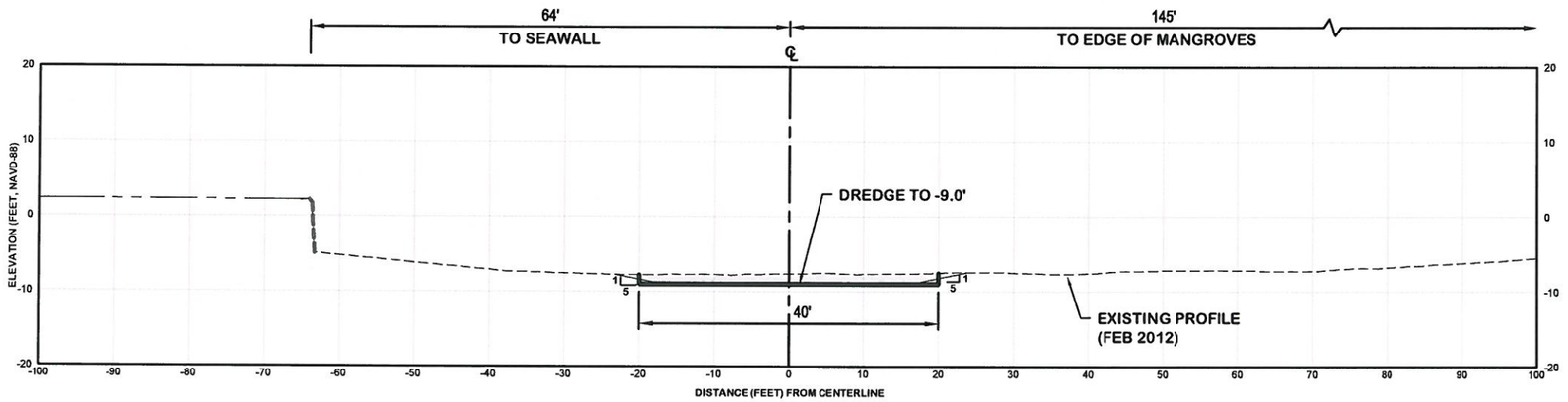


STA. 1+00 (EAST)

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 2+00 (EAST)

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 4" OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- DESIGN SLOPE (1:5)

KARYN M. ERICKSON
STATE OF FLORIDA
PROFESSIONAL ENGINEER
LICENSE NO. 41897

Karyn M. Erickson, P.E.
Professional Engineer # 41897

REV. NO.	DATE	DRWN BY	CHKD BY	REMARKS

DESIGNED EC | DRAWN AS | CHECKED CP

DATE: 05/15/2013 | JOB NO. 12-227 | SCALE: AS NOTED

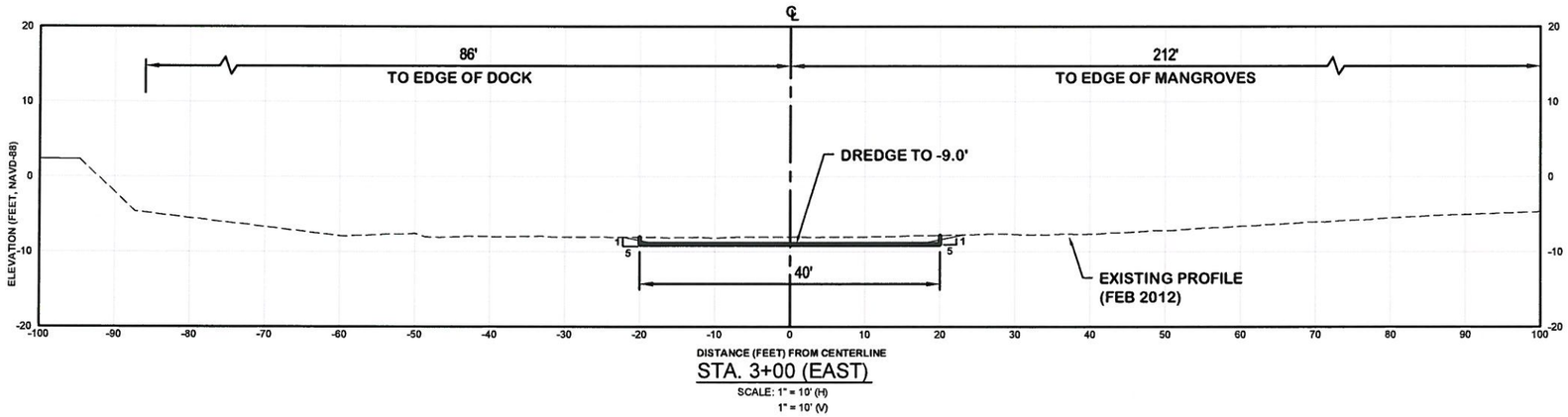
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
CHAMPNEY BAY (EAST)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

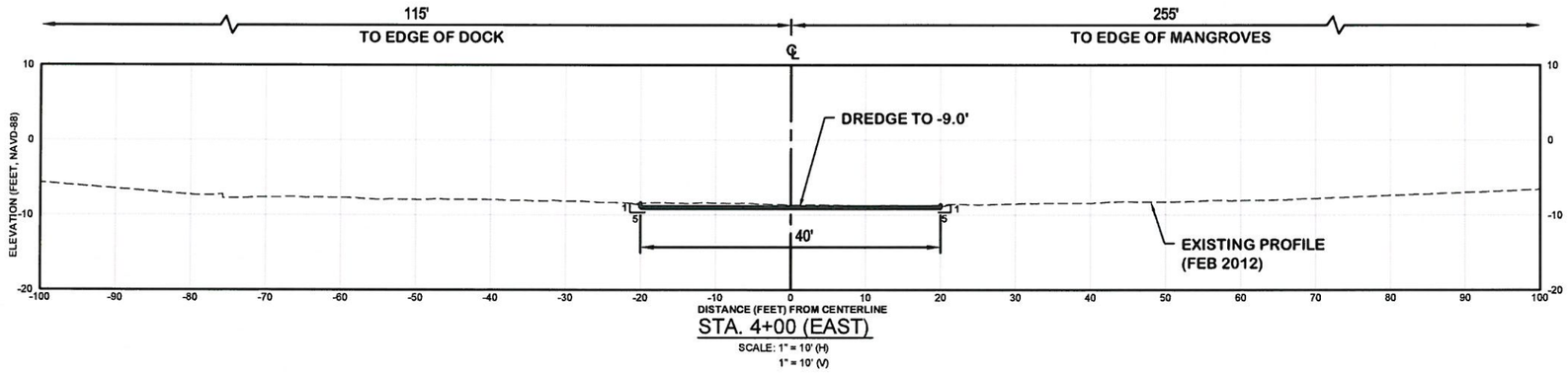
DRAWING NUMBER
9D
SHEET 27 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\9-10_Champney Bay.dwg May 16, 2013-5:26pm



STA. 3+00 (EAST)

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 4+00 (EAST)

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 4" OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1:5 DESIGN SLOPE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
CHAMPNEY BAY (EAST)

DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

REVISIONS

REV. No.	DATE	DRAWN BY	CHKD BY

DRAWING NUMBER
9E
SHEET 28 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\9-10_Champney Bay.dwg May 16, 2013-5:26pm

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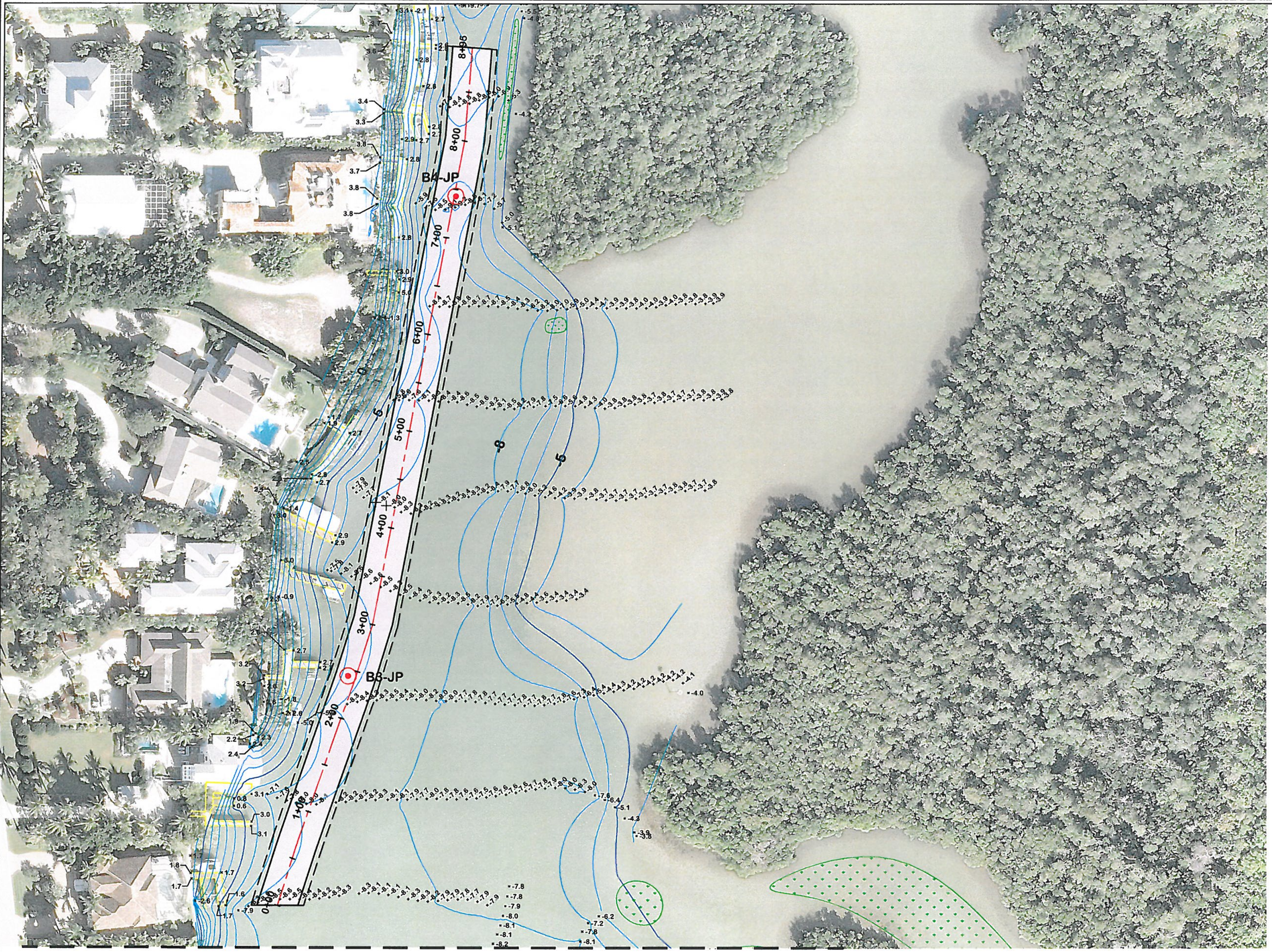


MATCH LINE - SEE SHEET 9A

SCALE 1" = 50'

LEGEND:

- DREDGE AREA
- SEAGRASS AREA
- BASELINE
- 2+00 STATIONS
- 2.4 SPOT ELEVATION
- CONTOURS
- DOCK OR BOAT HOUSE
- JET PROBE (B1-JP)
- VIBRACORE (C2-VC)

BASELINE STATION COORDINATE TABLE

STA	NORTHING	EASTING
0+00	643950'	393293'
0+67	644014'	393313'
1+00	644045'	393324'
2+00	644140'	393356'
2+41	644178'	393370'
2+99	644234'	393387'
3+00	644235'	393387'
3+10	644245'	393390'
4+00	644333'	393406'
5+00	644431'	393424'
6+00	644530'	393442'
7+00	644628'	393460'
8+00	644726'	393478'
8+02	644729'	393479'
8+95	644821'	393486'

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. PRE-CONSTRUCTION HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. JET PROBES (APRIL 2012), VIBRACORES (AUGUST 2012) & BIOLOGICAL SURVEY (APRIL 2012) BY ECE.
4. AERIAL FLIGHT 2012 (LABINS)

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED	DRAWN	CHECKED
BC	AS	CP

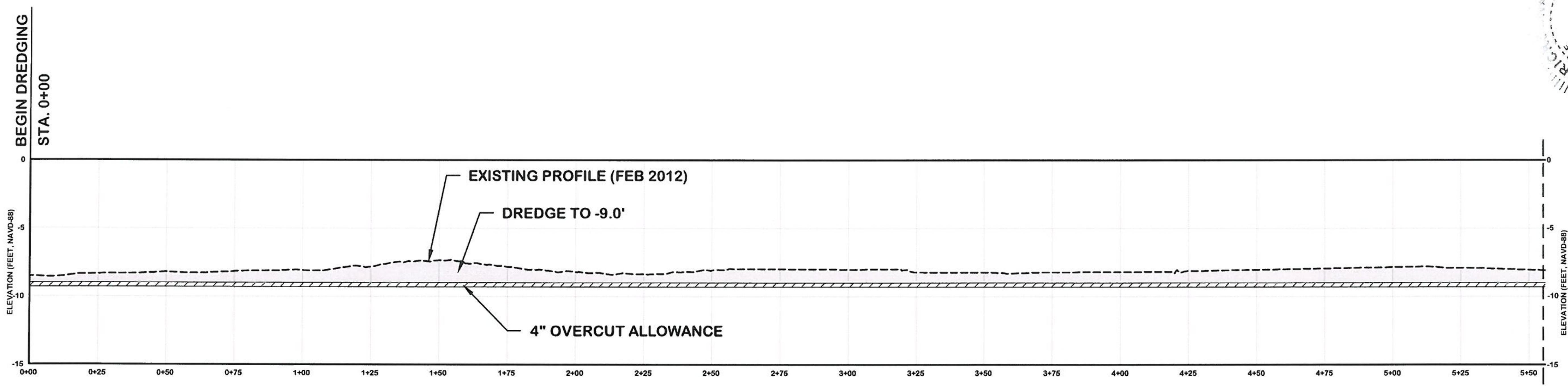
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

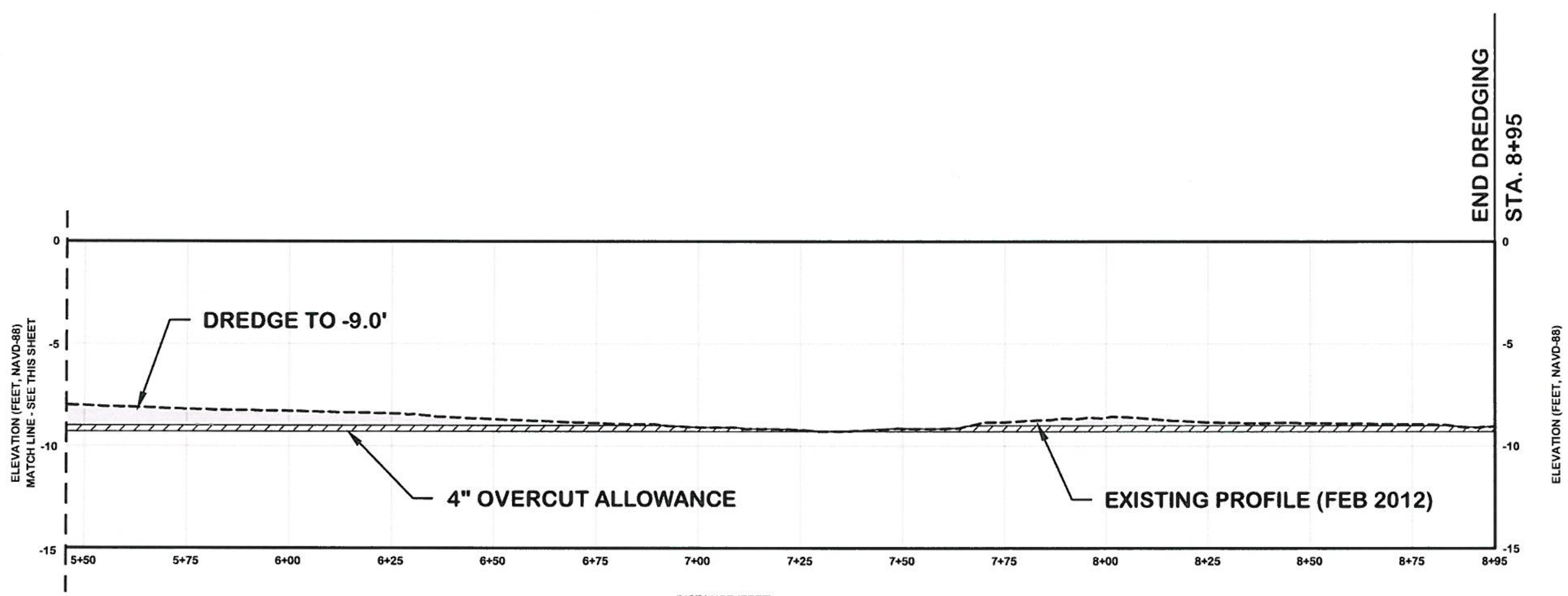
DREDGE AREA - PLAN VIEW CHAMPNEY BAY (NORTH)

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
10A
SHEET 29 OF 37



CHAMPNEY BAY (NORTH) LONGTUDINAL SECTION
SCALE: 1" = 20' (H)
1" = 4' (V)



CHAMPNEY BAY (NORTH) LONGTUDINAL SECTION
SCALE: 1" = 20' (H)
1" = 4' (V)

LEGEND:

- DREDGE AREA
- 4 IN. OVERCUT ALLOWANCE
- ------ EXISTING BOTTOM

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED	DRAWN	CHECKED
BC	AS	CP

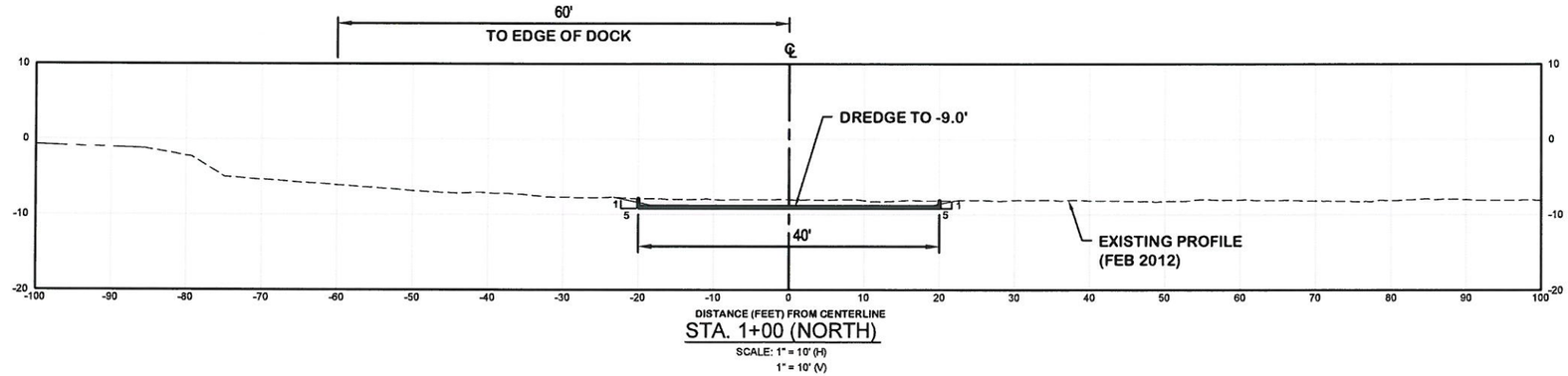
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE
CHAMPNEY BAY (NORTH)

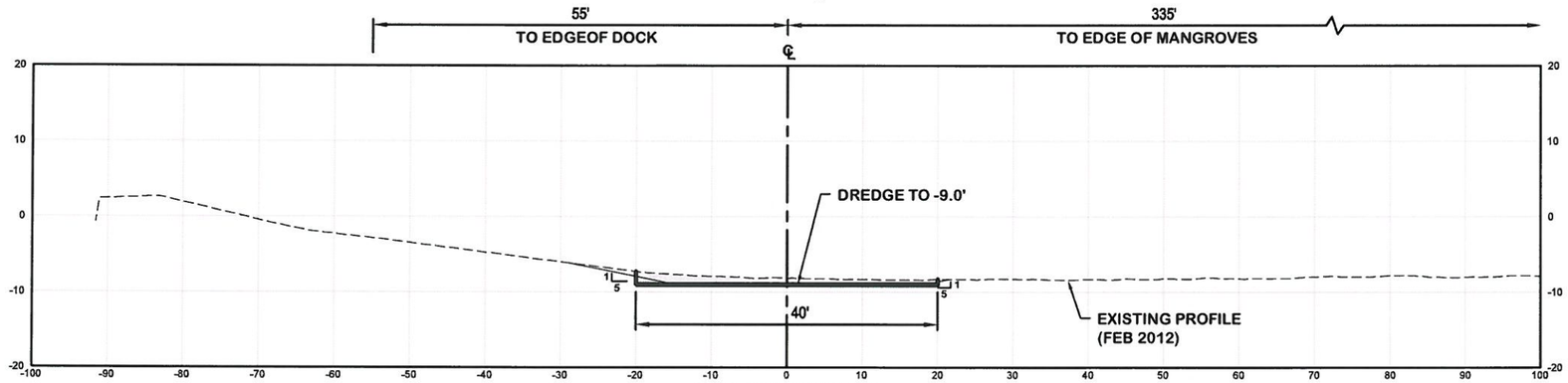
Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
10B
SHEET 30 OF 37



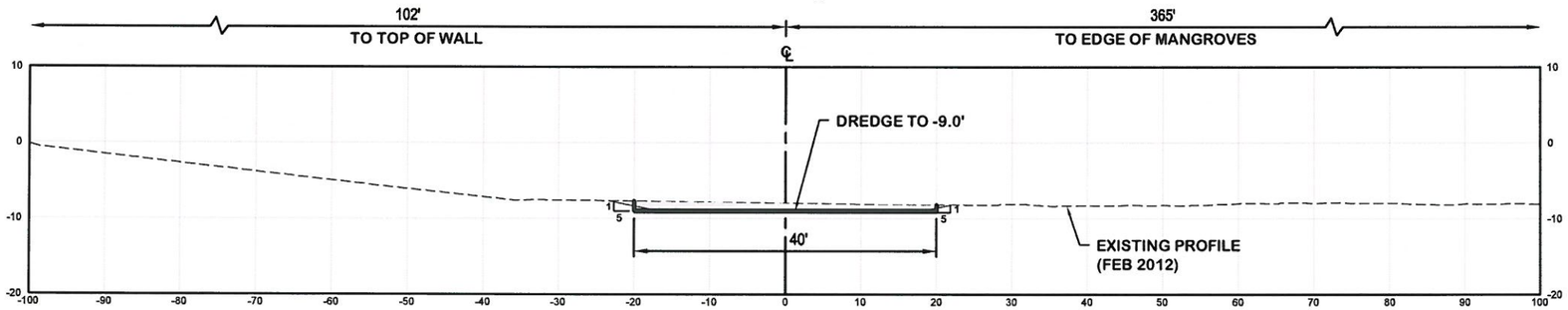
STA. 1+00 (NORTH)

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 2+00 (NORTH)

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 3+00 (NORTH)

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 4" OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- DESIGN SLOPE (1 : 5)

STATE OF FLORIDA — NO. 43897 — PROFESSIONAL ENGINEER — ERICKSON CONSULTING ENGINEERS, INC.
Signed 5/16/13
Kristy Erickson, P.E.
Professional Engineer

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS

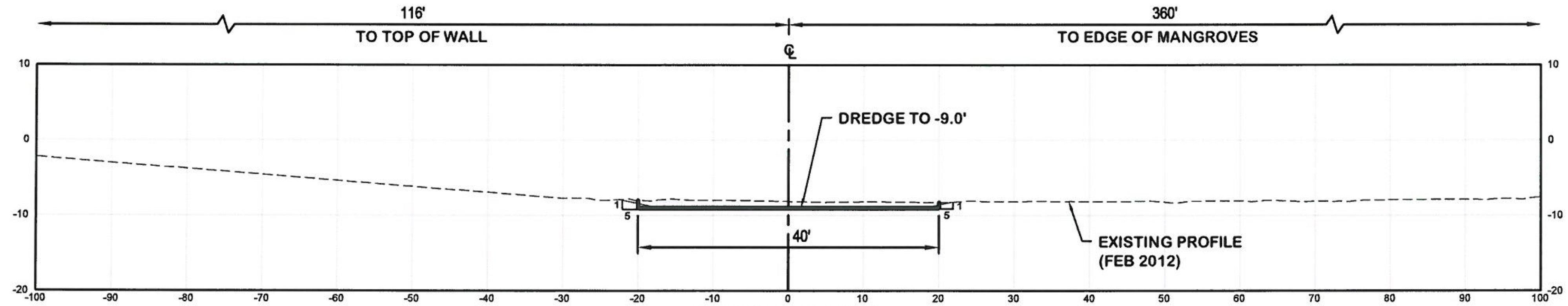
DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO.: 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

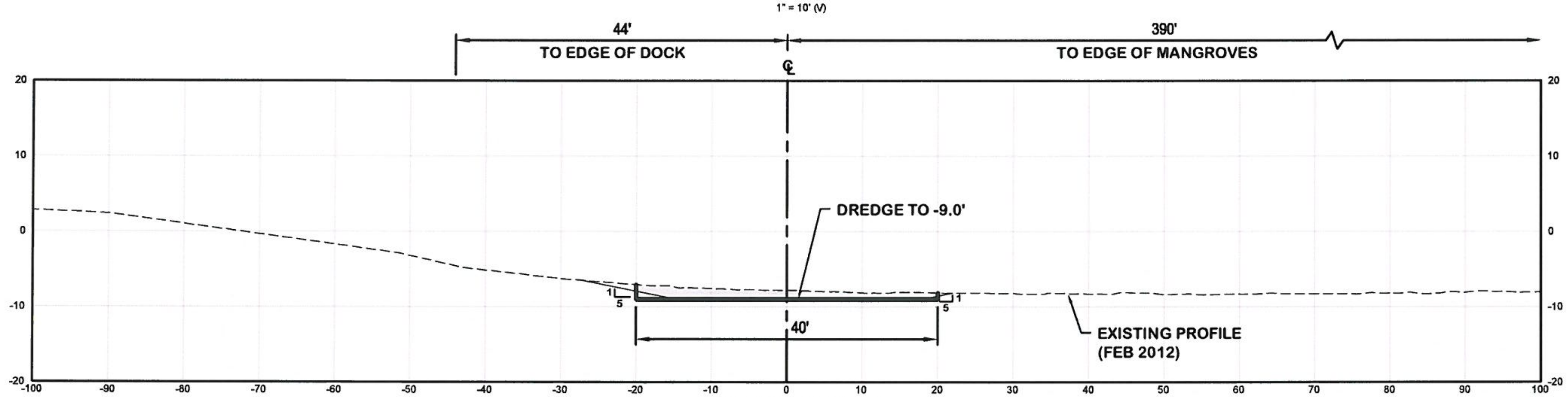
CROSS SECTIONS
CHAMPNEY BAY (NORTH)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

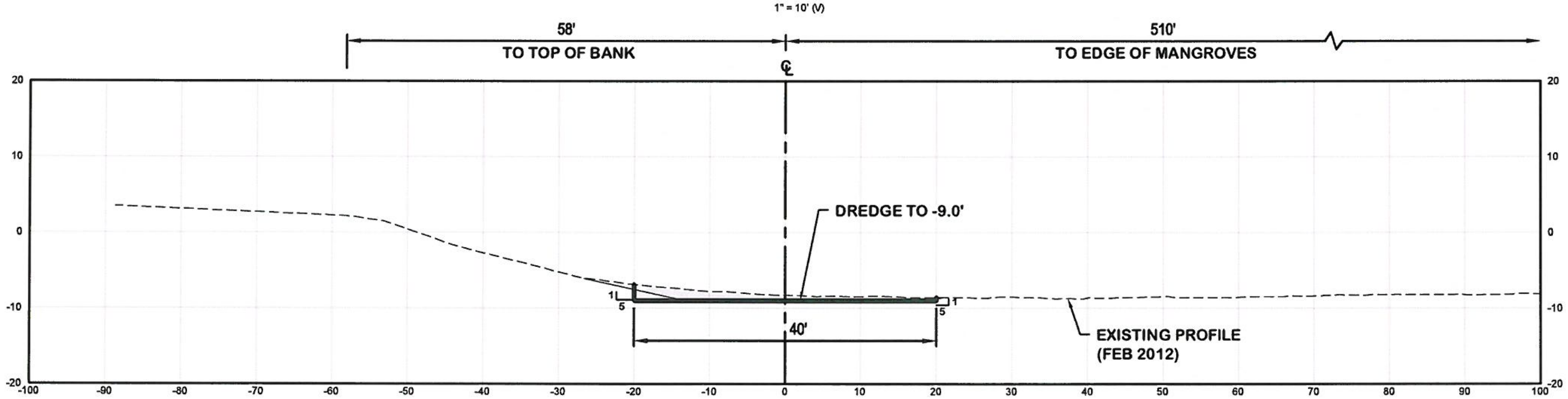
DRAWING NUMBER
10C
SHEET 31 OF 37



STA. 4+00 (NORTH)
SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 5+00 (NORTH)
SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 6+00 (NORTH)
SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 4" OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1 / 5 DESIGN SLOPE

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
CHAMPNEY BAY (NORTH)

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

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DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

REV. No. | DATE | DRAWN BY | CHKD BY | REMARKS

PROFESSIONAL ENGINEER, STATE OF FLORIDA

DRAWING NUMBER
10D
SHEET 32 OF 37

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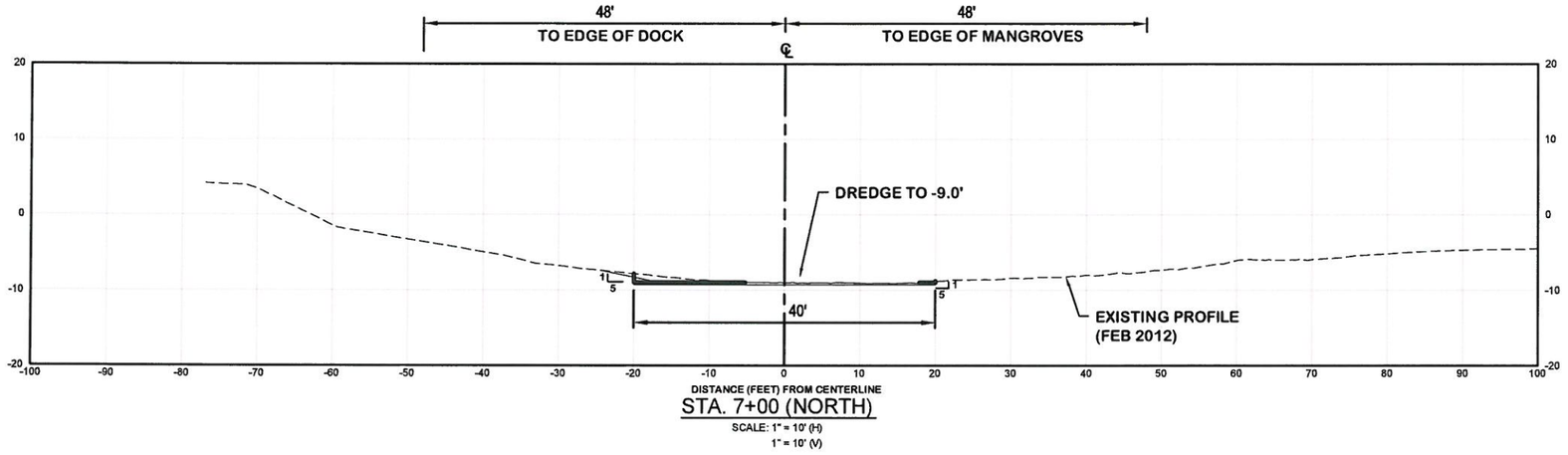
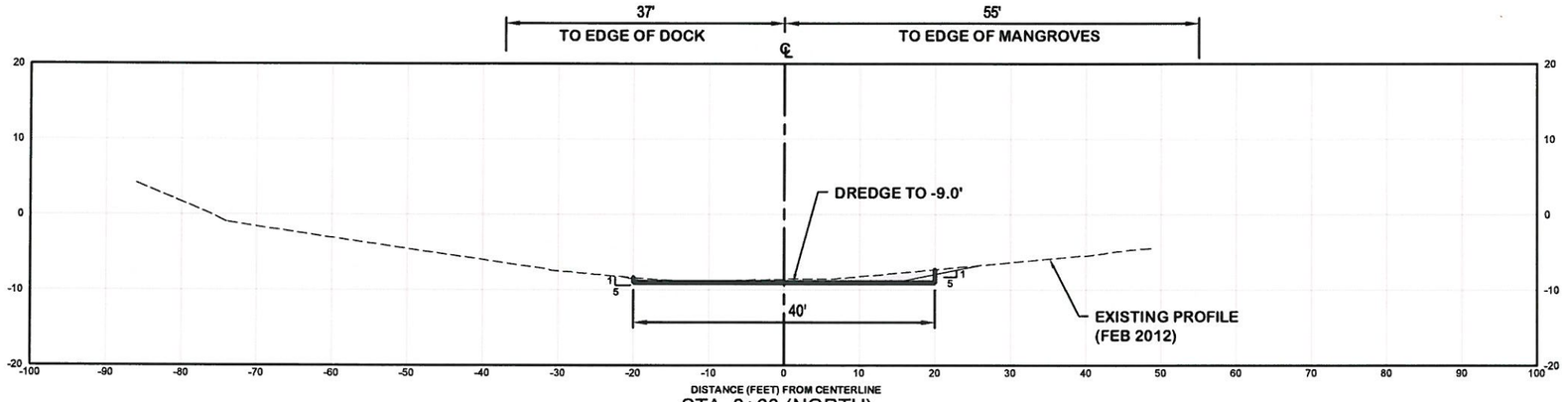


STA. 7+00 (NORTH)

SCALE: 1" = 10' (H)
1" = 10' (V)



STA. 8+00 (NORTH)

SCALE: 1" = 10' (H)
1" = 10' (V)

LEGEND:

- DREDGE AREA
- 4" OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- BOX CUT
- 1:5 DESIGN SLOPE

KARYN L. ERICKSON — Professionally Certified — STATE OF FLORIDA PROFESSIONAL ENGINEER

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

DESIGNED BC | DRAWN AS | CHECKED CP

DATE: 05/15/2013

JOB NO. 12-227

SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
CHAMPNEY BAY (NORTH)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
10E
SHEET 33 OF 37

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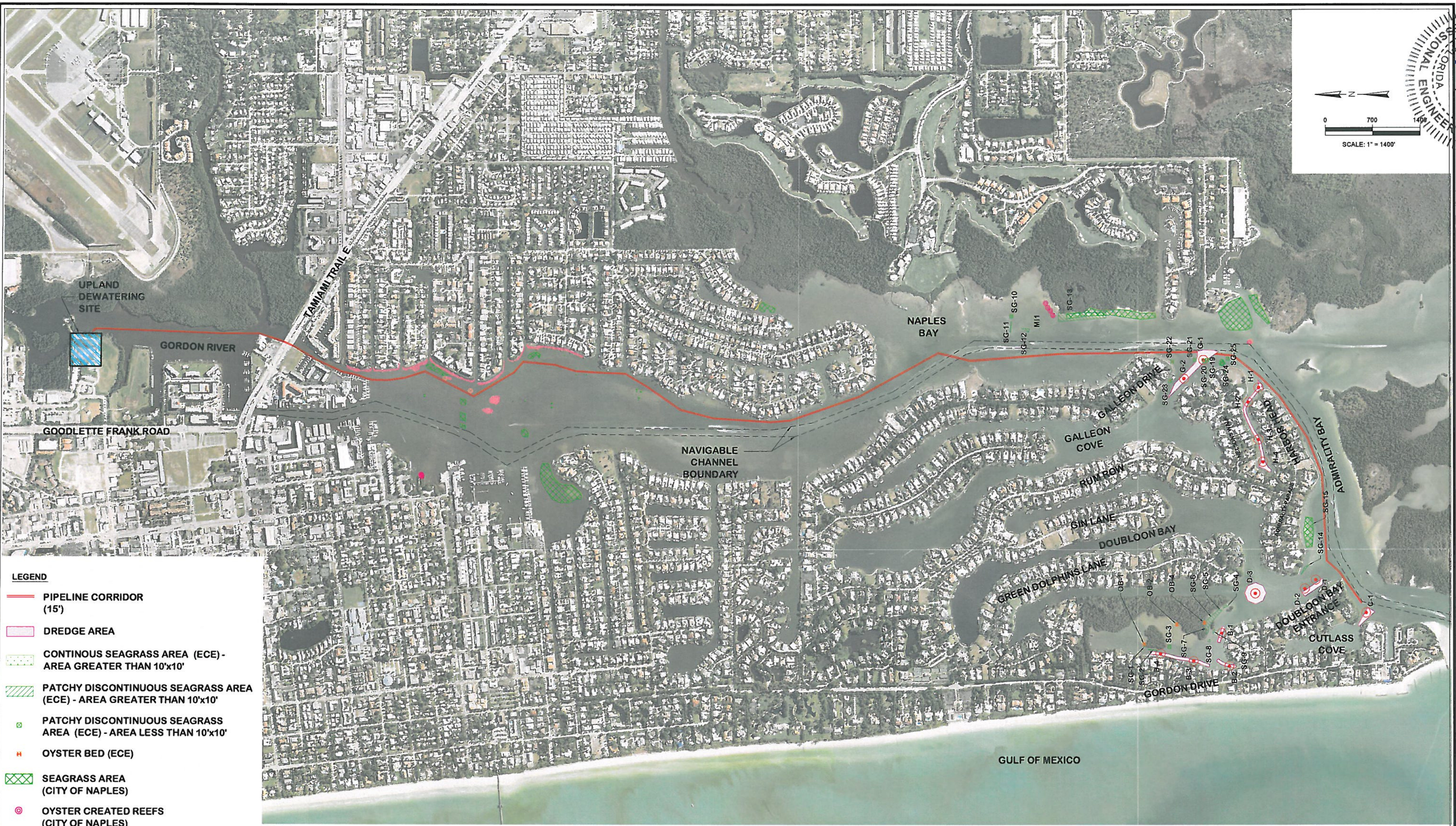

LEGEND

- PIPELINE CORRIDOR (15')
- DREDGE AREA
- CONTINOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA LESS THAN 10'x10'
- OYSTER BED (ECE)
- SEAGRASS AREA (CITY OF NAPLES)
- OYSTER CREATED REEFS (CITY OF NAPLES)
- OYSTER ISOLATED REEFS (CITY OF NAPLES)
- OYSTER BED (CITY OF NAPLES)

NOTES

1. AERIAL FLIGHT 2012 (LABINS).
2. BENTHIC RESOURCES, AS SHOWN, ARE BASED ON CITY OF NAPLES DATA, BIOLOGICAL SURVEYS BY ECE (APRIL 2012), BIOLOGICAL SURVEYS BY ATKINS (MAY 2007 AND AUGUST 2007) AND CITY OF NAPLES GIS DATABASE.
3. THE UPLAND DEWATERING SITE IS LOCATED AT 50 RIVERSIDE CIRCLE, NAPLES, FL.
4. PIPELINE CORRIDOR, AS SHOWN, IS APPROXIMATE. THE BOOSTER PUMP LOCATION(S) MAY BE EITHER WATER OR LAND BASED. FINAL PIPELINE PLAN TO BE PROVIDED TO BY THE CONTRACTOR A MINIMUM OF 30 DAYS PRIOR TO CONSTRUCTION FOR CITY OF NAPLES/ENGINEER APPROVAL.
5. PIPELINE SHALL BE SUBMERGED EXCEPT AT THE INTAKE, THE BOOSTER PUMP(S) AND AT THE OUTFALL.
6. A PRE-CONSTRUCTION BIOLOGICAL SURVEY OF THE PIPELINE ROUTE IS REQUIRED WITHIN 30 DAYS OF COSNTRUCTION AND PRIOR TO LAYING PIPELINE.
7. CHANNEL BOUNDARY OBTAINED FROM USACE MARCH 2010 DRAWINGS.

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DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

PIPELINE PLAN

Erickson Consulting Engineers, Inc.
ECE
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
11
SHEET 34 OF 37

N

0 40 80

SCALE: 1" = 80'

LEGEND:

- DEWATERING BASIN AREA
- STAGING AND STORAGE AREA
- EASEMENT
- FLOATING TURBIDITY BARRIER
- APPROXIMATE PROPERTY BOUNDARY (COLLIER COUNTY PROPERTY APPRAISER)

NOTES

1. AERIAL FLIGHT 2012 (LABINS).
2. BENTHIC RESOURCES, AS SHOWN, ARE BASED ON CITY OF NAPLES DATA, BIOLOGICAL SURVEYS BY ECE (APRIL 2012) AND BIOLOGICAL SURVEYS BY ATKINS (MAY 2007 AND AUGUST 2007).
3. THE UPLAND DEWATERING SITE IS LOCATED AT 50 RIVERSIDE CIRCLE, NAPLES, FL.
4. PIPELINE CORRIDOR, AS SHOWN, IS APPROXIMATE. THE BOOSTER PUMP LOCATION(S) MAY BE EITHER WATER OR LAND BASED. FINAL PIPELINE PLAN TO BE PROVIDED TO BY THE CONTRACTOR A MINIMUM OF 30 DAYS PRIOR TO CONSTRUCTION FOR CITY OF NAPLES/ENGINEER APPROVAL.
5. PIPELINE SHALL BE SUBMERGED EXCEPT AT THE INTAKE, THE BOOSTER PUMP(S) AND AT THE OUTFALL.

ROWING CLUB DOCK ACCESS

BURIED DEWATERING BASIN OUTFALL

180'

132'

DEWATERING BASIN OUTFALL STRUCTURE

10'

3:1

TOP OF BERM EL = 10.0'

DEWATERING BASIN OUTFALL

FLOATING TURBIDITY BARRIER

46' (TYP)

289'

DEWATERING BASIN APPROX 1.2 AC.

CONTRACTOR STAGING & STORAGE APPROX 0.8 AC.

CONTRACTOR SHALL EMPLOY ANY AND ALL MEASURES TO AVOID SHORELINE EROSION WITHIN DISCHARGE AREA

INFLOW TO DEWATERING BASIN

BURIED DREDGE PIPELINE

15' PIPELINE CORRIDOR

60' WIDE EASEMENT

692'

GORDON RIVER

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\12A-B_Dewatering Plan.dwg May 16, 2013-5:31pm

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS

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DATE: 05/15/2013

JOB NO. 12-227

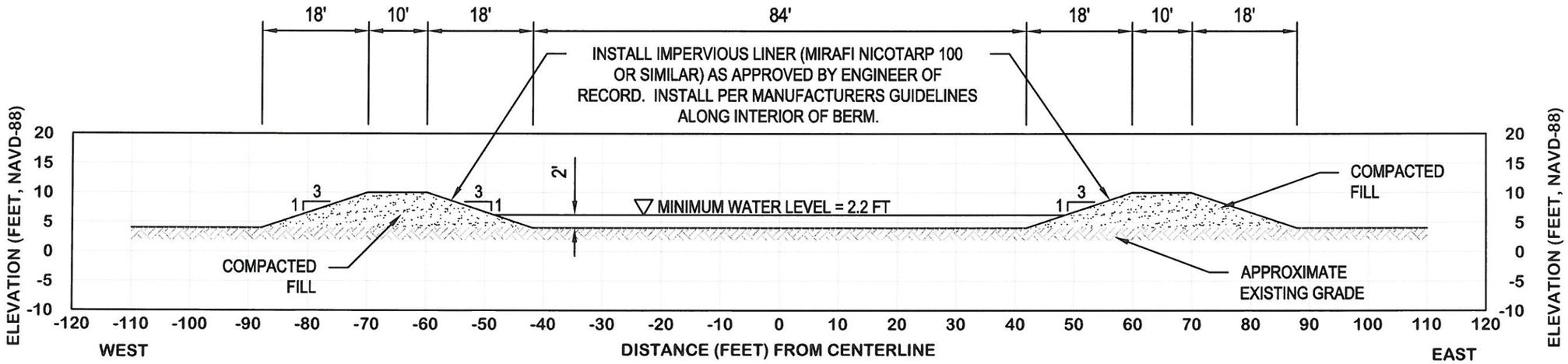
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

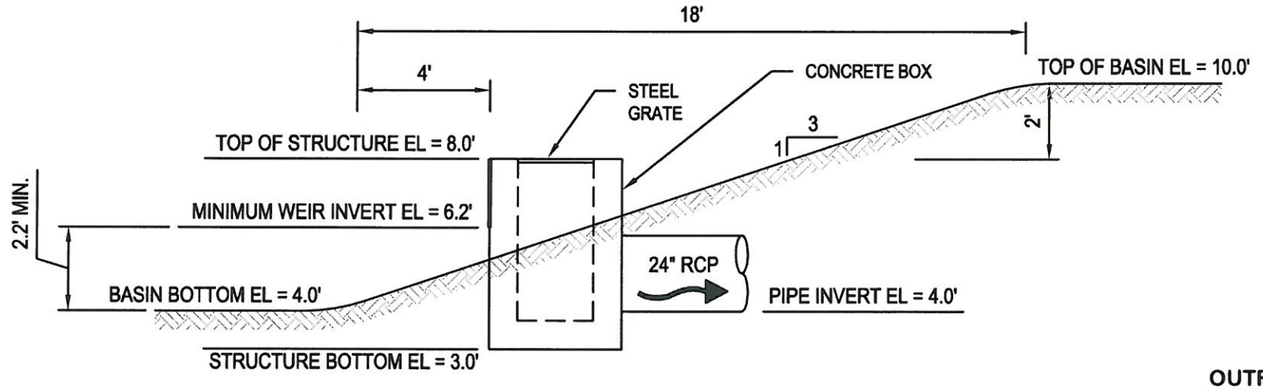
DEWATERING PLAN VIEW

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6480

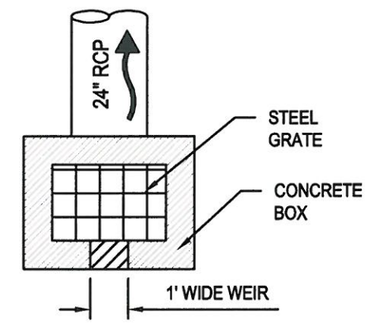
DRAWING NUMBER
12A
SHEET 35 OF 37



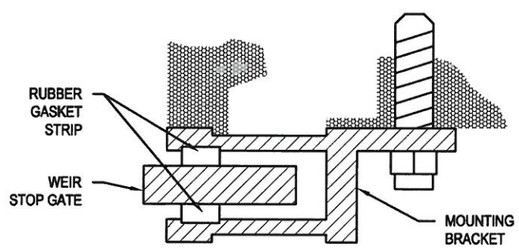
DEWATERING BASIN TYPICAL SECTION
SCALE: 1" = 20'(H)
1" = 20'(V)



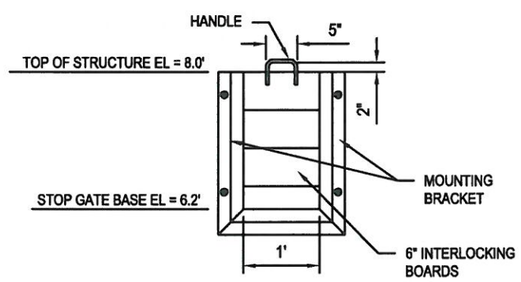
OUTFALL STRUCTURE SECTION
SCALE: 1" = 4'



OUTFALL STRUCTURE PLAN VIEW
SCALE: 1" = 4'



MOUNTING BRACKET DETAIL (PLAN VIEW)
SCALE: 1" = 2'



WEIR STOP GATE
SCALE: 1" = 2'

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA
DEWATERING DETAILS

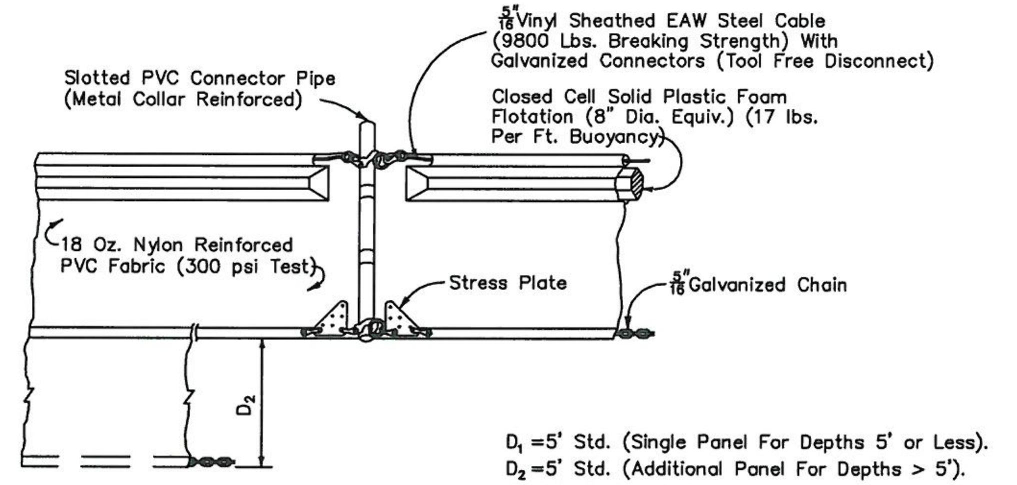
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DESIGNED BC | DRAWN AS | CHECKED CP | DATE: 05/15/2013 | JOB NO. 12-227 | SCALE: AS NOTED

REMARKS | REV. No. | DATE | DRAWN BY | CHKD BY

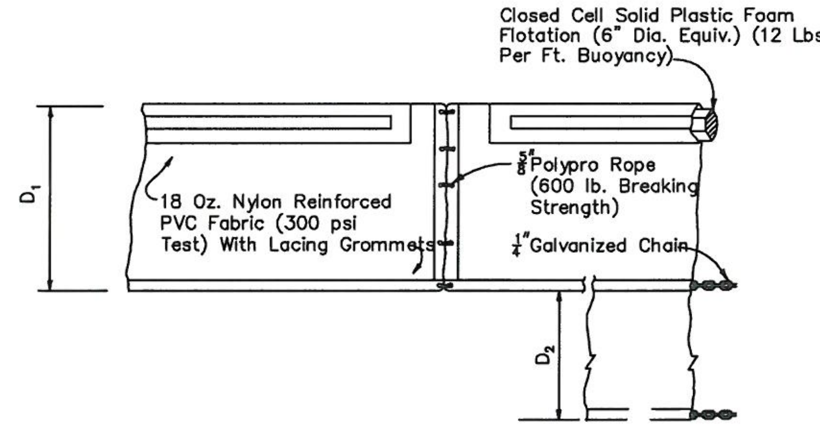
DRAWING NUMBER 12B
SHEET 36 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredege Project_May 2013\12A-B_Dewatering Plan.dwg May 16, 2013-5:31pm



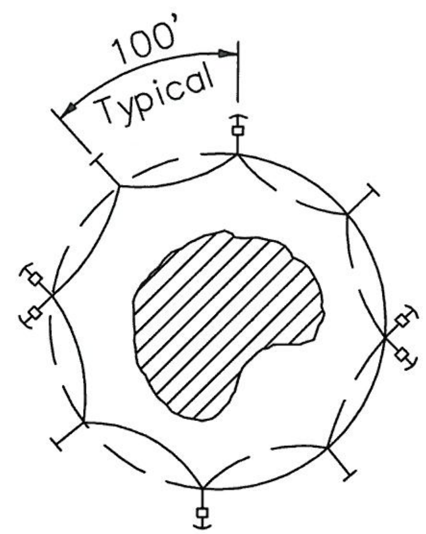
D_1 =5' Std. (Single Panel For Depths 5' or Less).
D_2 =5' Std. (Additional Panel For Depths > 5').
Curtain To Reach Bottom Up To Depths Of 10 Feet.

TYPE II

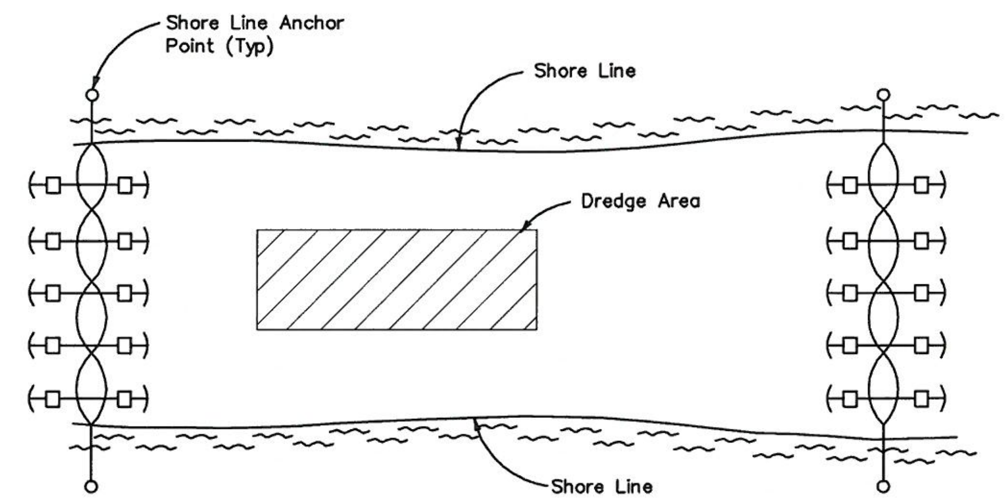


TYPE I

FLOATING TURBIDITY BARRIERS



OPEN WATER



CANAL INTERIOR DETAIL

GENERAL NOTES:

1. Turbidity barriers to be used in all permanent bodies of water regardless of water depth.
2. Type I floating turbidity barriers may be used when dredging canal interiors.
3. Type II floating turbidity barriers are required when dredging or filling near canal entrances and the habitat island size (e.g. open water areas).
4. Components of type I and II may be similar or identical to proprietary designs.
5. Number and spacing of anchors dependent on current velocities.
6. Deployment of barriers may vary to accommodate construction operations.
7. Navigation may require segmenting barrier during construction operations.

LEGEND

Dredge Or Fill Area
Mooring Buoy w/Anchor
Anchor
Barrier Movement Due To Current Action

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

TURBIDITY CONTROL PLAN

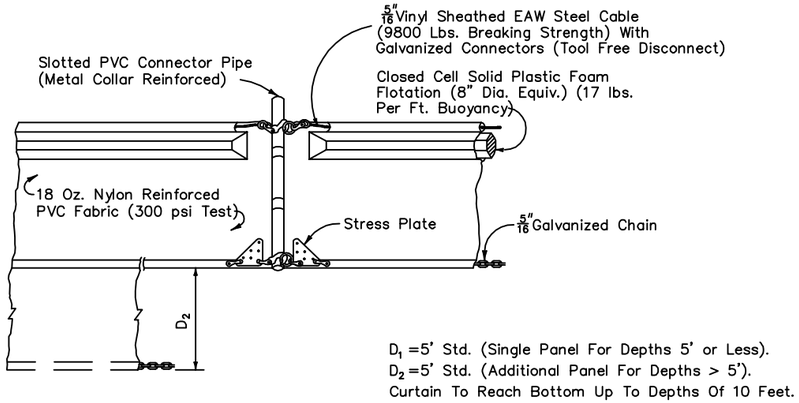
DESIGNED BC | DRAWN AS | CHECKED CP
DATE: 05/15/2013
JOB NO. 12-227
SCALE: AS NOTED

REV. No. | DATE | DRAWN BY | CHKD BY | REMARKS

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 34240
(941) 373-6460

DRAWING NUMBER 13
SHEET 37 OF 37

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Construction\Port Royal Canal Dredge Project_May 2013\13_Turbidity Control Plan.dwg May 16, 2013-5:31pm



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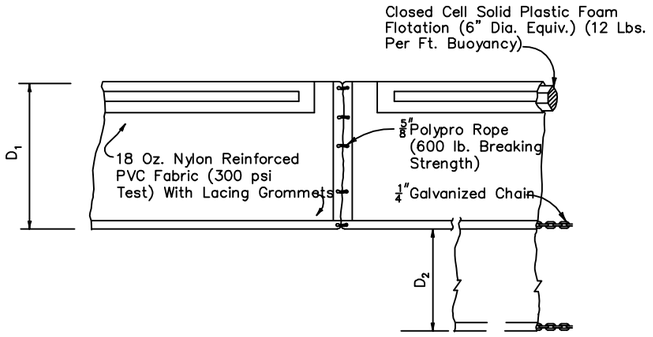
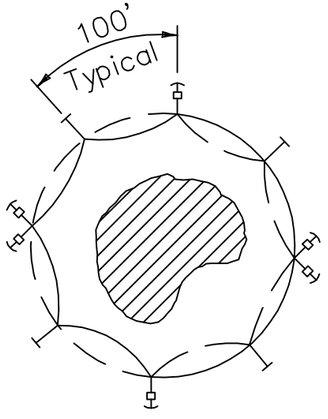
D_2 =5' Std. (Additional Panel For Depths > 5').
Curtain To Reach Bottom Up To Depths Of 10 Feet.

TYPE II

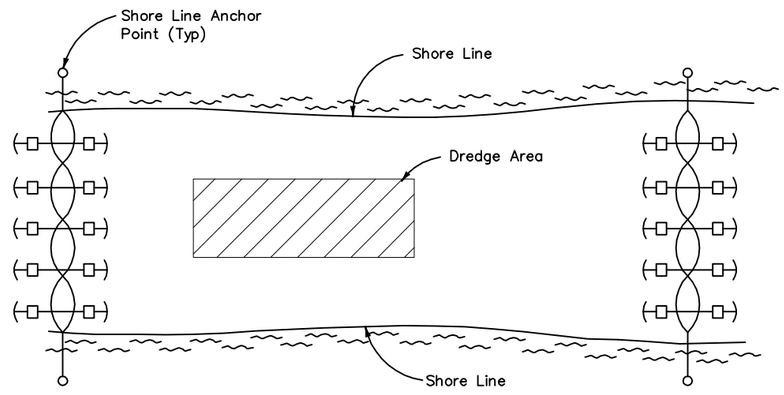


TYPE I

FLOATING TURBIDITY BARRIERS



OPEN WATER



CANAL INTERIOR DETAIL

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4. Components of type I and II may be similar or identical to proprietary designs.
5. Number and spacing of anchors dependent on current velocities.
6. Deployment of barriers may vary to accommodate construction operations.
7. Navigation may require segmenting barrier during construction operations.

LEGEND

- Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action

Date
Signature
KARYN M. ERICKSON, P.E.
Professional Engineer # 41817

REMARKS

REV. No.	DATE	DRAWN BY	CHKD BY

DESIGNED BJC | DRAWN AS | CHECKED CP
DATE: 06/15/2013
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

TURBIDITY CONTROL PLAN

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
13
SHEET 37 OF 37

Appendix B Permits

Note: The permits reference the construction of a habitat island which is not included in the Project's scope of work.

FDEP Environmental Resource Permit

No. 11-0312776-001

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
South District Office
P.O. Box 2549
Fort Myers, FL 33902-2549

RICK SCOTT
GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

VIA ELECTRONIC MAIL

June 11, 2013

City of Naples
Karyn M. Erickson, P.E., D.CE
Erickson Consulting Engineers, Inc.
7201 Delainey Court, Sarasota, FL 34240
christin@ericksonconsultingengineers.com

Re: Collier County – ERP
File No. 11-0312776-002
Modification of 11-0312776-001
BOT # 110236845

Dear Ms. Erickson:

Your request to modify this permit has been received and reviewed by Department staff. The proposed permit modifications are to:

(1) allow the use of sand from an upland mine as an alternative source for creation of the habitat island;
(2) allow phasing of project – Phase 1 consisting of dredging primary areas, Phase 2 consisting of the habitat island creation, and Phase 3 consisting of dredging primary and optional areas;
(3) allow temporary placement of a pipeline to transport dredged material from the dredge sites to an upland temporary disposal site, following the pipeline route authorized in permit no. 11-0295486-001 for a portion of the proposed pipeline; and
(4) allow use of an upland temporary disposal site.

After review by staff, the proposed modifications are not expected to adversely affect water quality and will not be contrary to the public interest, provided the permit is amended as follows:

Sovereignty Submerged Lands Authorization

From:

As staff to the Board of Trustees, the Department has determined that: (1) the proposed dredging of sovereignty submerged lands qualifies for a Letter of Consent

as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein, including payment of required severance fees; and (2) the proposed Island requires a public easement. The final documents required to execute the easement will be sent to the Department's Division of State Lands. The Department intends to issue the easement upon satisfactory execution of those documents, and compliance with the conditions in the previously issued Consolidated Notice of Intent to Issue. **You may not begin deposition of spoil material on sovereignty submerged lands as described above until you receive a copy of the executed public easement from the Department.**

To:

As staff to the Board of Trustees, the Department has determined that: (1) the proposed dredging of sovereignty submerged lands and temporary placement of a pipeline to transport dredged material from the dredge sites to an upland temporary disposal site qualify for a Letter of Consent as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein, including payment of required severance fees; and (2) the proposed Island requires a public easement. The final documents required to execute the easement will be sent to the Department's Division of State Lands. The Department intends to issue the easement upon satisfactory execution of those documents, and compliance with the conditions in the previously issued Consolidated Notice of Intent to Issue. **You may not begin deposition of spoil material on sovereignty submerged lands as described above until you receive a copy of the executed public easement from the Department.**

PROJECT DESCRIPTION:

From:

The permittee is authorized to: (1) create a habitat island ("island") for habitat enhancement not to exceed 146,680 square feet (3.3-acres) by: (a) placing up to 38,860 cubic yards of the dredged material in Naples Bay from the existing bottom to varying top elevations (top of island elevation at approximately 2 ft above MHW on the western side, at approximately MLLW in the interior and at approximately MHW at the eastern side); (b) placing sand-filled geotextile containers within the footprint of the proposed island and around the island's perimeter; and (c) stabilizing the island by placing up to 5,600 cubic yards of riprap around the perimeters of the island, and up to 2,100 cubic yards of oyster shell on the eastern perimeter; and (2) dredging approximately 16,445 to 38,860 cubic yards (CY) of material (between approximately 325,960 and 429,290 square feet) to a maximum depth of -10.6 feet Mean Low Water (MLW) inclusive of a 1 foot allowable over dredge depth, at seven distinct dredge areas to maintain navigable access to

residential properties adjacent to man-altered waterbodies within the Port Royal area of Naples.

To:

The permittee is authorized to:

(1) create a habitat island ("island") for habitat enhancement not to exceed 146,680 square feet (3.3-acres) and maintain existing navigation routes in the Port Royal area through a three-phase plan as follows:

(a) Phase 1 consisting of dredging primary areas;
(b) Phase 2 consisting of the habitat island creation; and
(c) Phase 3 consisting of dredging primary and optional areas.

The habitat island will be created by:
(a) depositing up to 38,860 cubic yards of sand from an upland mine and/or the material dredged in Naples Bay associated with this project, with varying top elevations (top of island elevation at approximately 2 feet above MHW on the western side, at approximately MLLW in the interior and at approximately MHW at the eastern side);
(b) placing sand-filled geotextile containers within the footprint of the proposed island and around the island's perimeter; and
(c) stabilizing the island by placing up to 5,600 cubic yards of riprap around the perimeters of the island, and up to 2,100 cubic yards of oyster shell on the eastern perimeter;

(2) excavate approximately 16,445 to 38,860 cubic yards (CY) of material (between approximately 325,960 and 429,290 square feet) to a maximum depth of -10.6 feet Mean Low Water (MLW) inclusive of a 1 foot allowable over dredge depth, at seven distinct dredge areas to maintain navigable access to residential properties adjacent to man-altered waterbodies within the Port Royal area of Naples; and

(3) temporarily place a pipeline to transport dredged material from the dredge sites to an upland temporary disposal site, with a portion of the pipeline following the pipeline route authorized in permit no. 11-0295486-001; and

(4) use of an upland temporary disposal site as shown on the attached permit drawings.

SPECIFIC CONDITIONS - PRIOR TO CONSTRUCTION

From:

3. Prior to any deviation from the specific permit conditions, permit drawings, and all attachments, the Permittee shall notify the Department of such proposed deviation to enable the Department to determine whether such deviation requires modification of this permit and submittal of the appropriate processing fee.

To:

3. (a) The Department has determined that the proposed activity, because of its size, potential effect on the environment or the public, controversial nature, or location, is likely to have a heightened public concern or likelihood of request for administrative proceedings. Therefore, pursuant to Section 373.413(4), F.S., and Section 62-343.090(2)(k), F.A.C., you (the Permittee) are required to publish at your own expense this permit modification. The notice is required to be published one time within thirty (30) days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, 'publication in a newspaper of general circulation in the area affected' means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The Permittee shall provide proof of publication to: Florida Department of Environmental Protection, P.O. Box 2549, Fort Myers, FL 33902-2549.

(b) Prior to any deviation from the specific permit conditions, permit drawings, and all attachments, the Permittee shall notify the Department of such proposed deviation to enable the Department to determine whether such deviation requires modification of this permit and submittal of the appropriate processing fee.

PERMIT DRAWINGS:

Delete:

Project Drawings and Design Specs., October 2012, 38 pages
Sediment Management Plan, dated October 2012, 8 pages
Construction Methods and Sequencing Plan, dated October 2012, 11 pages

Add:

Project Drawings and Design Specs., dated April 2013, 41 pages
Sediment Management Plan, dated April 2013, 9 pages
Construction Methods and Sequencing Plan, dated April 2013, 12 pages

PIPELINE MANAGEMENT PLAN

Add:

Pipeline Plan, dated April 2013, 8 pages

Since the proposed modifications along with the above amended permit conditions and monitoring requirements are not expected to result in any adverse environmental impact and water quality degradation, the permit is hereby modified as requested. By copy of this letter and the attached drawings, we are notifying all necessary parties of the modification.

This letter does not alter the permit other than as described above. This letter and referenced enclosures must be attached to the original permit.

This modification and intent to grant an easement of sovereign submerged lands is hereby granted unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, Florida Statutes, (F.S.), before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. The actual terms of the easement will be formally executed at the later date and shall include provisions for rents and such other provisions as normally are included in such easement.

Mediation is not available.

A person whose substantial interests are affected by the Department's action may petition or an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below an must be filed (received by the clerk) in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Because the administrative hearing process is designed to redetermine final agency action on the application, the filing of a petition for an administrative hearing may result in a modification of the permit or even a denial of the application. If a sufficient petition for an administrative hearing or request for an extension of time to file a petition is timely filed, this permit automatically becomes only proposed agency action on the application, subject to the result of the administrative review process. Accordingly, the applicant is advised not to commence construction or other activities under this permit until the deadlines noted below for filing a petition for an administrative hearing, or request for an extension of time have expired.

Under Rule 62-110.106(4), Florida Administrative Code (F.A.C.), a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may,

for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

In the event that a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Any intervention will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

In accordance with Rules 28-106.111(2) and 62-110.106(3)(a)(4), F.A.C., petitions for an administrative hearing by the applicant or any of the parties listed below must be filed within 14 days of receipt of this written notice. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first.

Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 14 days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;
(b) The name, address and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
(c) A statement of when and how the petitioner received notice of the agency decision;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
(f) A statement of the specific rules and statutes that the petitioner contends require reversal or modification of the agency's proposed action; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C. Under Sections 120.569(2)(c) and (d), F.S., a petition for administrative hearing must be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed.

The action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of the Department.

This permit modification constitutes an order of the Department. The applicant has the right to seek judicial review of the order under Section 120.68, F.S., by the filing of a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department. The applicant, or any party within the meaning of Section 373.114(1)(a), F.S., may also seek appellate review of this

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order Section 373.114(1), F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when the final order is filed with the Clerk of the Department.

Sincerely,

Jon M. Iglehart
Director of District Management

JMI/mrm

Attachments:

Project Drawings and Design Specs., dated October 24, 2012, 38 pages, VOID
Sediment Management Plan, dated October 2012, 8 pages, VOID
Construction Methods and Sequencing Plan, dated October 2012, 11 pages, VOID
Project Drawings and Design Specs., dated April 2013, 41 pages
Sediment Management Plan, dated April 2013, 9 pages
Construction Methods and Sequencing Plan, April 2013, 12 pages
Pipeline Plan, dated April 2013, 8 pages

Copies furnished to:

DEP, Office of General Counsel (electronically)
U.S. Army Corps of Engineers Corps # 1956-222 (electronically)
FWC, Imperiled Species Management Section
Collier County Property Appraiser (electronically)
Bureau of Public Lands Administration, BOT #110236845
Robert Diffenderfer, Lewis, Longman and Walker PA (electronically)
U.S. Coast Guard
Department of Economic Opportunity (for docking facilities in OFWs, Class II Waters, or in areas frequented by manatees)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this document, including all copies, was mailed before the close of business on June 11, 2013, to the above listed person(s).

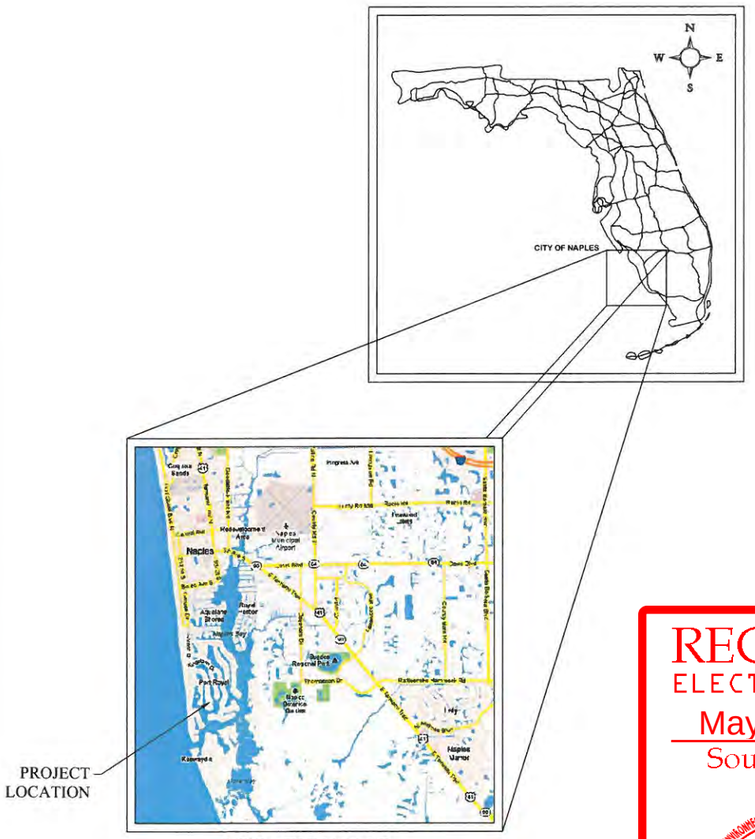
FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated Department clerk, receipt of which is hereby acknowledged.

Marie Vidrine — June 11, 2013

Clerk — Date

PERMIT DRAWINGS
FOR
HABITAT ISLAND AND CANAL DREDGE PROJECT
(PORT ROYAL)
CITY OF NAPLES, FLORIDA



LOCATION MAP

Date: April 2013

PREPARED FOR:

CITY OF NAPLES
735 EIGHT STREET SOUTH
NAPLES, FL 34102

PREPARED BY:

ECE
Erickson Consulting Engineers

ERICKSON CONSULTING ENGINEERS, INC.
7201 DELAINEY COURT
SARASOTA FL, 34240
941-373-6460

DRAWING INDEX

APPROVED BY: KARYN E. ERICKSON, PE
FLORIDA REG. NO. 41897
SIGNATURE: _____
DATE: _____

KARYN E. ERICKSON LICENSE No. 41897 STATE OF FLORIDA PROFESSIONAL ENGINEER

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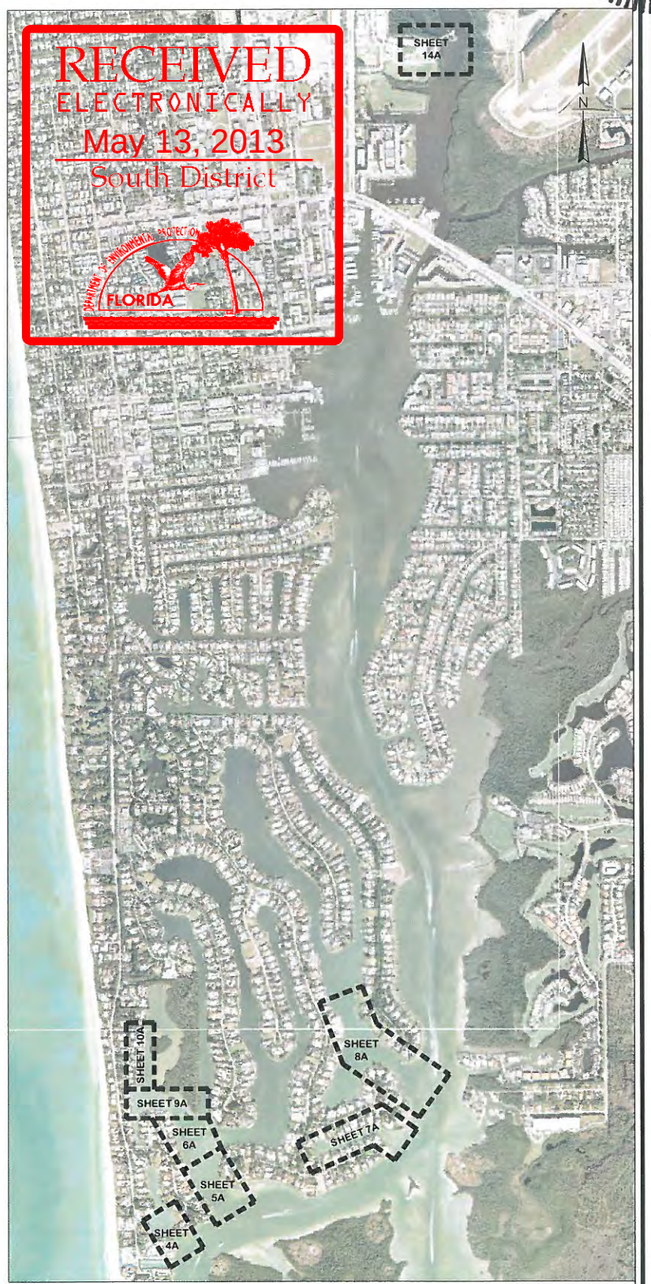
DEWATERING SITE
ADDRESS: 50 RIVERSIDE CIRCLE, NAPLES, FL.
SCALE: 1" = 200'

NOTE:
1. AERIAL FLIGHT 2012 (LABINS)

LEGEND:
- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA

RECEIVED
ELECTRONICALLY
May 13, 2013
South District
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA



SHEET KEY
SCALE: 1" = 2400'

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

STATE OF FLORIDA
KARIN L. ERICKSON
LICENSE NO. 61807
PROFESSIONAL ENGINEER
Signature
KARIN L. ERICKSON
Professional Engineer

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/13	BKG	CLP	FDEP RAI #1
2	4/24/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

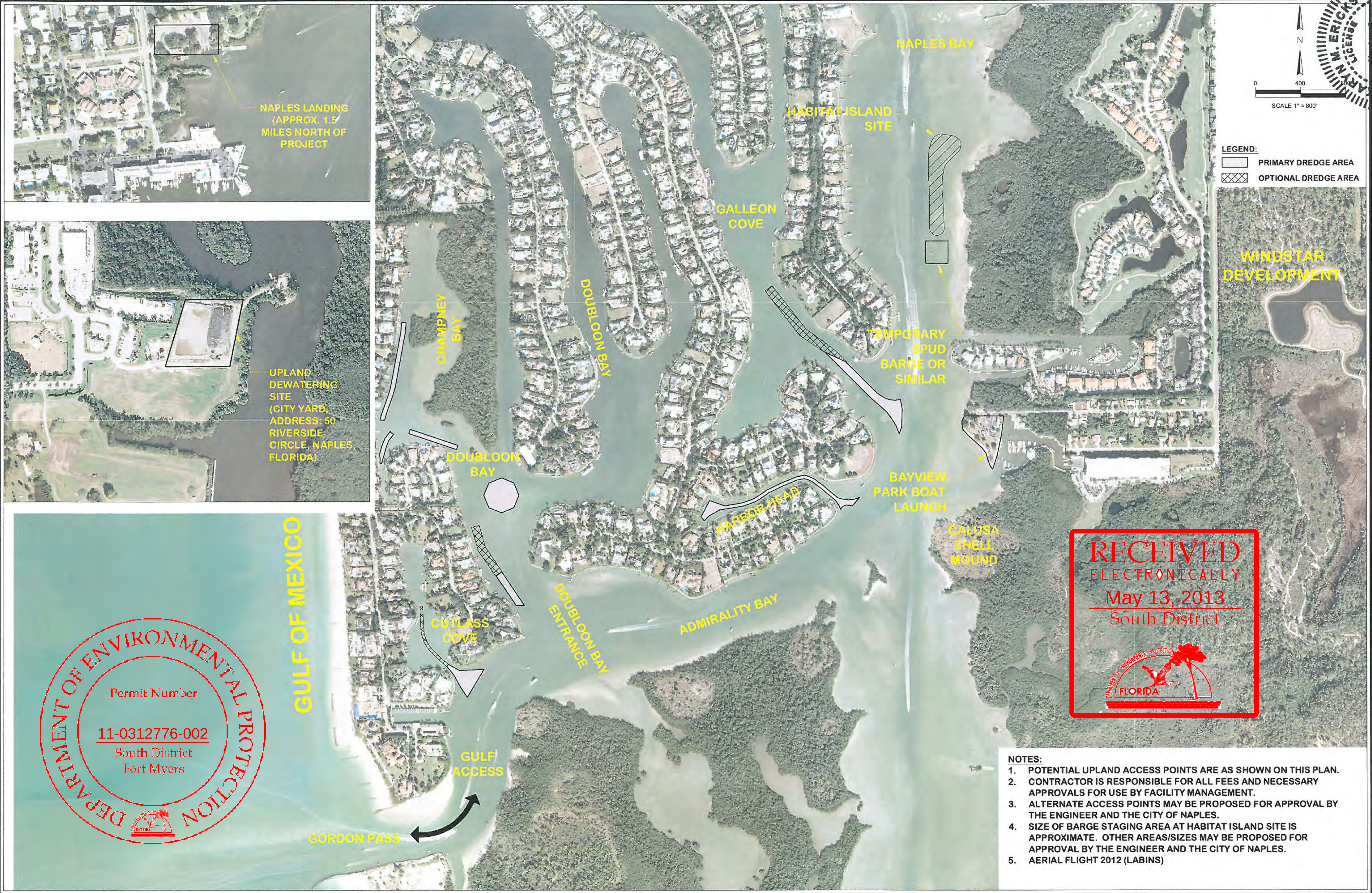
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

OVERALL SITE PLAN AND SHEET KEY

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
2
SHEET 2 OF 41

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\2_Overall Site Plan.dwg May 07, 2013-11:26am



NOTES:
1. POTENTIAL UPLAND ACCESS POINTS ARE AS SHOWN ON THIS PLAN.
2. CONTRACTOR IS RESPONSIBLE FOR ALL FEES AND NECESSARY APPROVALS FOR USE BY FACILITY MANAGEMENT.
3. ALTERNATE ACCESS POINTS MAY BE PROPOSED FOR APPROVAL BY THE ENGINEER AND THE CITY OF NAPLES.
4. SIZE OF BARGE STAGING AREA AT HABITAT ISLAND SITE IS APPROXIMATE. OTHER AREAS/SIZES MAY BE PROPOSED FOR APPROVAL BY THE ENGINEER AND THE CITY OF NAPLES.
5. AERIAL FLIGHT 2012 (LABINS)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number 11-0312776-002
South District
Fort Myers

RECEIVED ELECTRONICALLY
May 13, 2013
South District

Z:\CADD_Graphics\US Projects\12-227_Naples – Port Royal Canals\Permit\FDEP\3_Construction Access and Staging.dwg May 07, 2013–11:51am

KARYN M. ERICKSON LICENSE No. 41007 STATE OF FLORIDA PROFESSIONAL ENGINEER
KARYN M. ERICKSON Professional Engineer # 41007

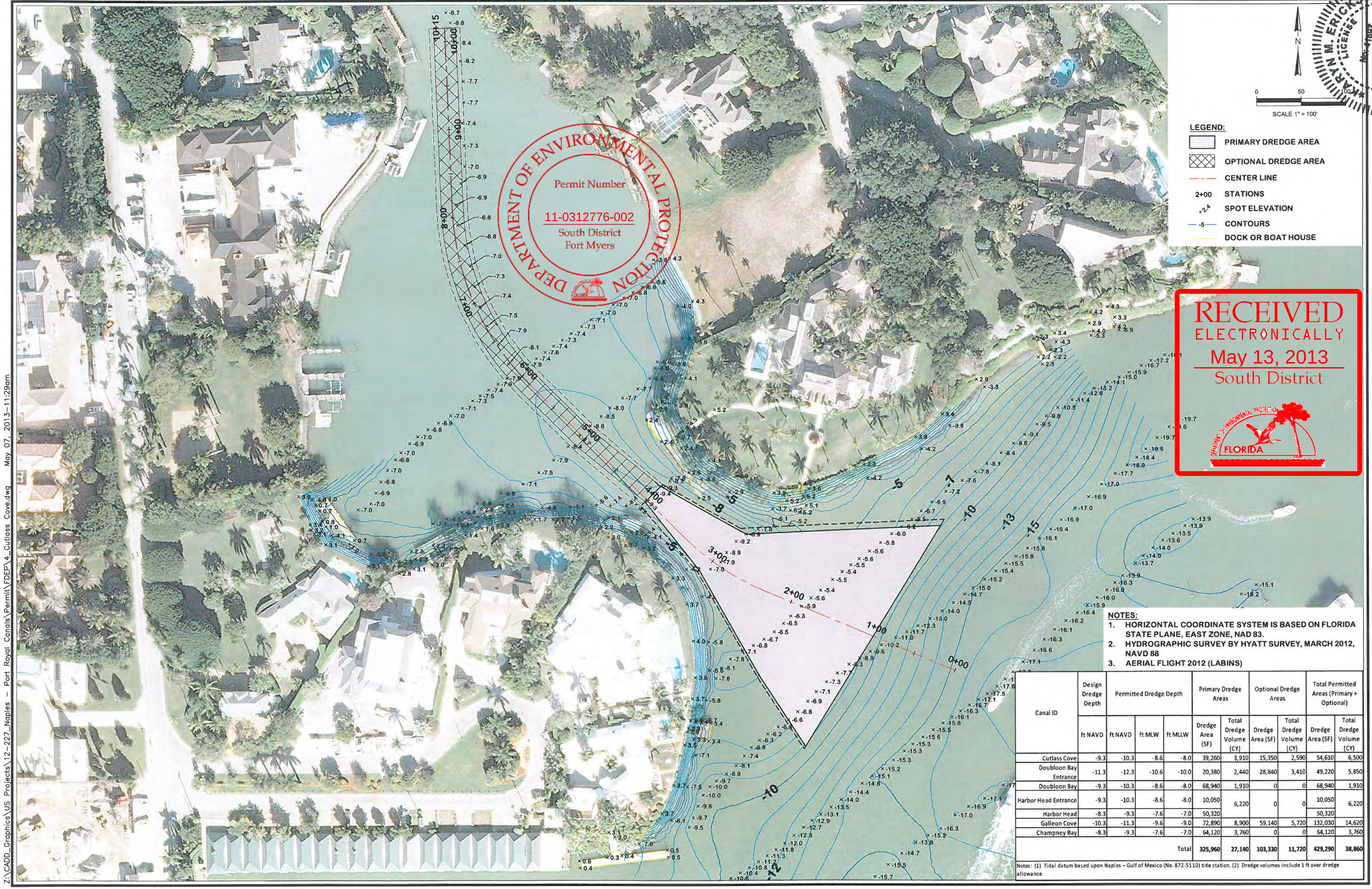
REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA
CONSTRUCTION ACCESS AND STAGING

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER 3
SHEET 3 OF 41



LEGEND:

- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA
- CENTER LINE
- 2+00 STATIONS
- ×2.4 SPOT ELEVATION
- -5- CONTOURS
- DOCK OR BOAT HOUSE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

RECEIVED
ELECTRONICALLY
May 13, 2013
South District
FLORIDA

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. AERIAL FLIGHT 2012 (LABINS)

Canal ID	Design Dredge Depth	Permitted Dredge Depth			Primary Dredge Areas		Optional Dredge Areas		Total Permitted Areas (Primary + Optional)	
	ft NAVD	ft NAVD	ft MLW	ft MLLW	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)
Cutlass Cove	-9.3	-10.3	-8.6	-8.0	39,260	3,910	15,350	2,590	54,610	6,500
Doubloon Bay Entrance	-11.3	-12.3	-10.6	-10.0	20,380	2,440	28,840	3,410	49,220	5,850
Doubloon Bay	-9.3	-10.3	-8.6	-8.0	68,940	1,910	0	0	68,940	1,910
Harbor Head Entrance	-9.3	-10.3	-8.6	-8.0	10,050	6,220	0	0	10,050	6,220
Harbor Head	-8.3	-9.3	-7.6	-7.0	50,320				50,320	
Galleon Cove	-10.3	-11.3	-9.6	-9.0	72,890	8,900	59,140	5,720	132,030	14,620
Champney Bay	-8.3	-9.3	-7.6	-7.0	64,120	3,760	0	0	64,120	3,760
				Total	**325,960**	**27,140**	**103,330**	**11,720**	**429,290**	**38,860**

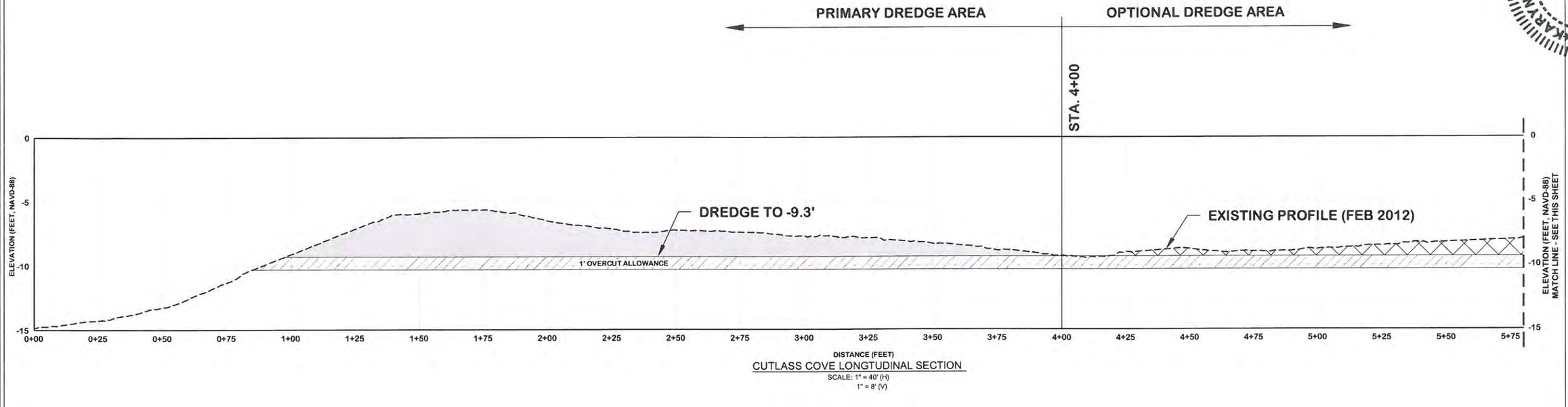
Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Dredge volumes include 1 ft over dredge allowance

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW
CUTLASS COVE

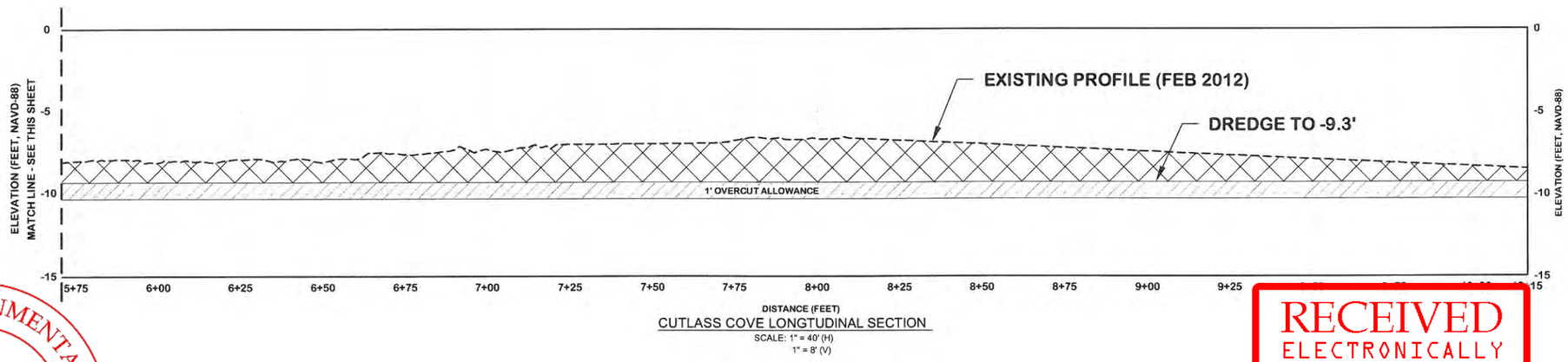
Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
4A
SHEET 4 OF 41



CUTLASS COVE LONGTUDINAL SECTION

SCALE: 1" = 40' (H)
1" = 8' (V)



CUTLASS COVE LONGTUDINAL SECTION

SCALE: 1" = 40' (H)
1" = 8' (V)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

RECEIVED
ELECTRONICALLY
May 13, 2013
South District
DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

LEGEND:

- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA

KARIN M. ERICKSON
LICENSE No. 49007
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Signature not valid without the raised seal of a Florida licensed engineer
KARIN M. ERICKSON, P.E. No. 49007
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLF	FDEP RAI #1
2	4/29/13	AS	EC	FDEP PERMIT MODIFICATION #1

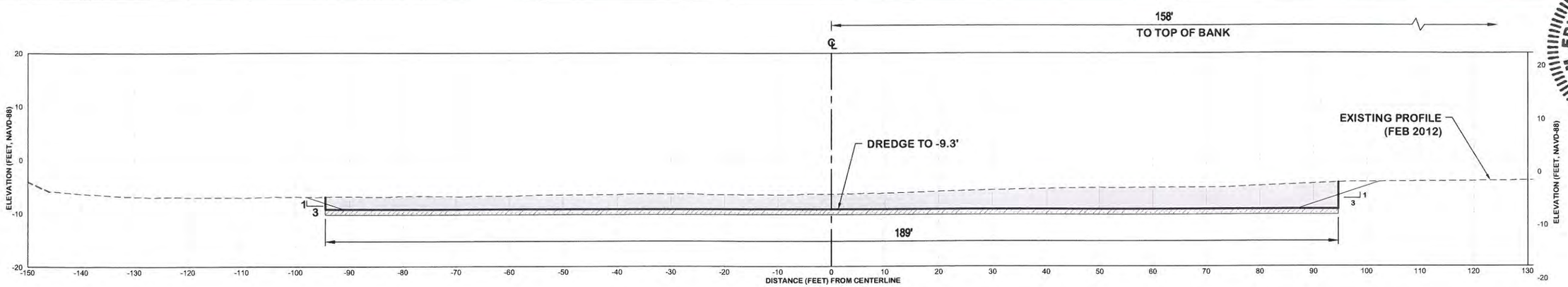
DESIGNED: EC | DRAWN: DP | CHECKED: CF
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE CUTLASS COVE

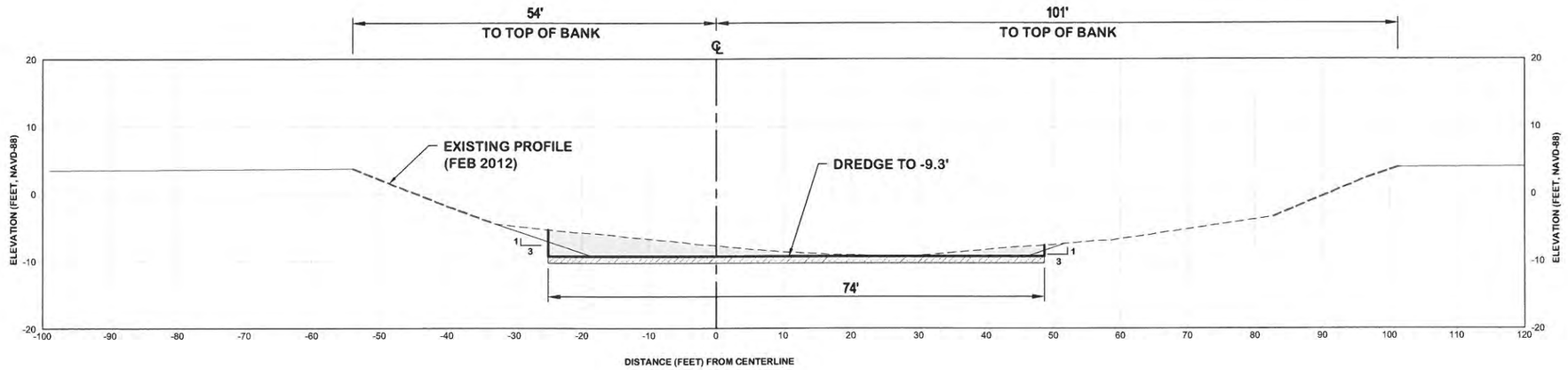
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
4B
SHEET 5 OF 41



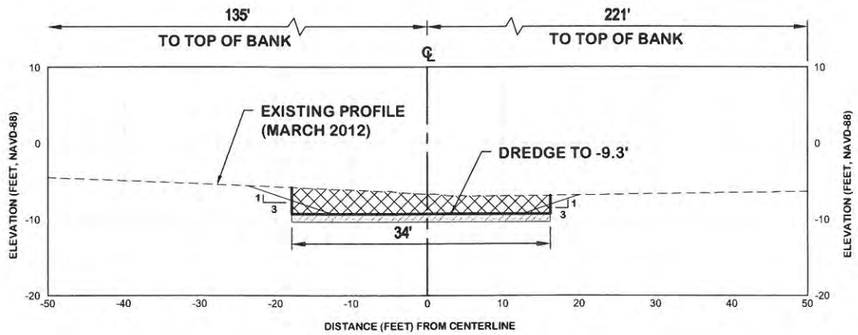
STA. 2+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 3+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 8+00

SCALE: 1" = 20' (H)
1" = 20' (V)

RECEIVED
ELECTRONICALLY
May 13, 2013
South District

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

LEGEND:

- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- DESIGN SLOPE (1 : 3)

KARSTEN M. ERICKSON — LICENSED PROFESSIONAL ENGINEER — STATE OF FLORIDA — No. 71507 — Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/19/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

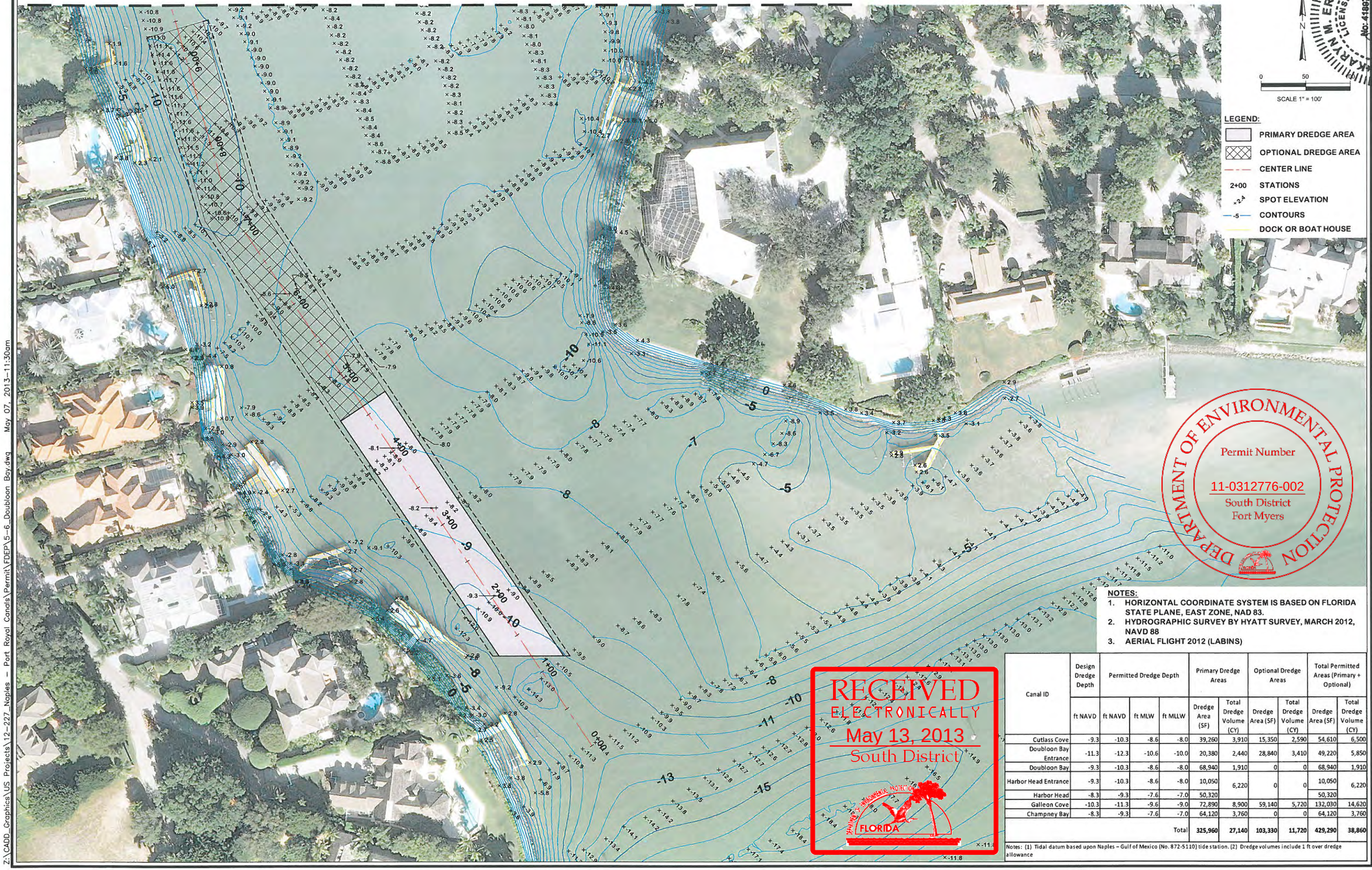
CROSS SECTIONS
CUTLASS COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
4C
SHEET 6 OF 41

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\4_Cutlass Cove.dwg May 07, 2013-11:29am

MATCH LINE - SEE SHEET 5A



NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. AERIAL FLIGHT 2012 (LABINS)

Canal ID	Design Dredge Depth	Permitted Dredge Depth			Primary Dredge Areas		Optional Dredge Areas		Total Permitted Areas (Primary + Optional)	
	ft NAVD	ft NAVD	ft MLW	ft MLLW	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)
Cutlass Cove	-9.3	-10.3	-8.6	-8.0	39,260	3,910	15,350	2,590	54,610	6,500
Doubloon Bay Entrance	-11.3	-12.3	-10.6	-10.0	20,380	2,440	28,840	3,410	49,220	5,850
Doubloon Bay	-9.3	-10.3	-8.6	-8.0	68,940	1,910	0	0	68,940	1,910
Harbor Head Entrance	-9.3	-10.3	-8.6	-8.0	10,050	6,220	0	0	10,050	6,220
Harbor Head	-8.3	-9.3	-7.6	-7.0	50,320				50,320	
Galleon Cove	-10.3	-11.3	-9.6	-9.0	72,890	8,900	59,140	5,720	132,030	14,620
Champney Bay	-8.3	-9.3	-7.6	-7.0	64,120	3,760	0	0	64,120	3,760
				Total	**325,960**	**27,140**	**103,330**	**11,720**	**429,290**	**38,860**

Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Dredge volumes include 1 ft over dredge allowance

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ELECTRONICALLY
May 13, 2013
South District
FLORIDA

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

KARYN M. ERICKSON
LICENSE No: 41897
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Signature of Engineer
KARYN M. ERICKSON, P.E.
Professional Engineer

REV. No.	DATE	DRAWN	CHKD
		BF	BF
1	10/24/12	BKG	CLP
2	4/24/13	AS	BC

REMARKS
1 - FDEP RAI #1
2 - FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

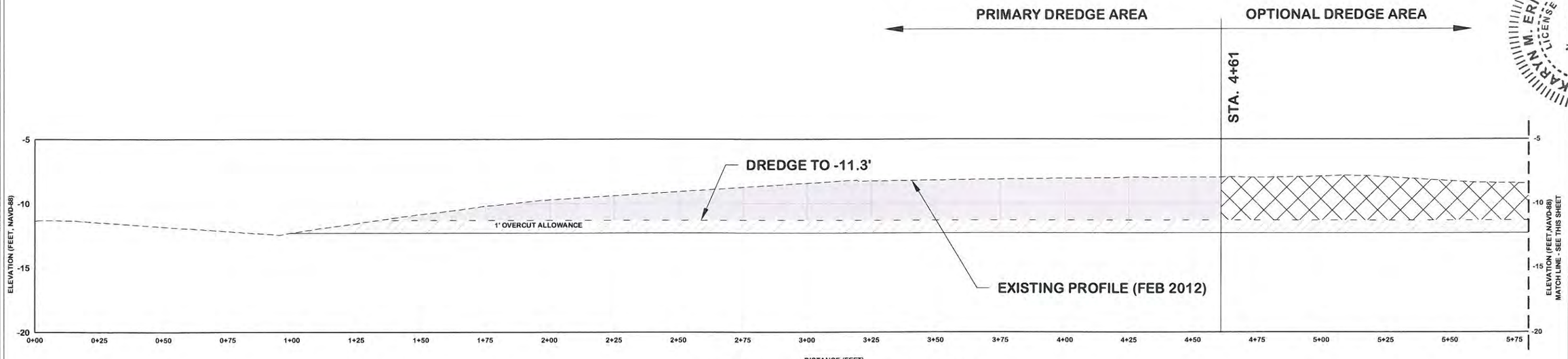
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW
DOUBLOON BAY ENTRANCE

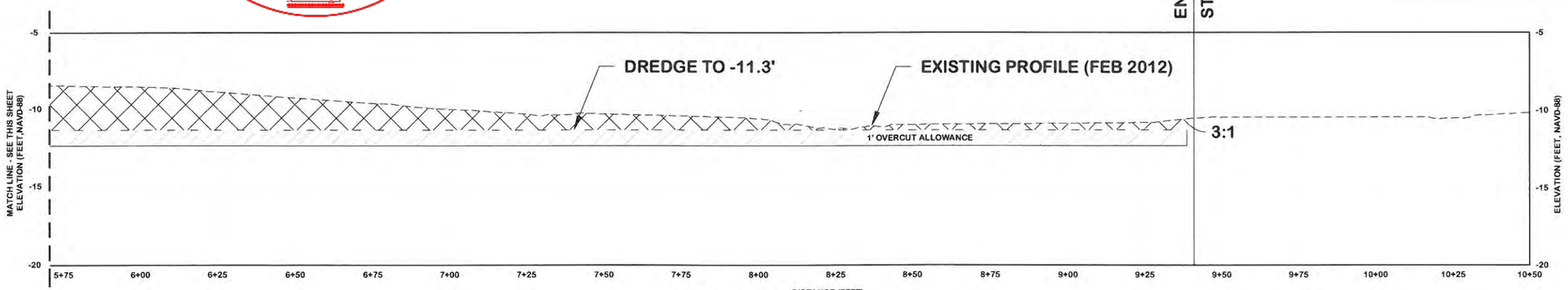
Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
5A
SHEET 7 OF 41

May 07, 2013–11:30am Z:\CADD_Graphics\US Projects\12-227_Naples – Port Royal Canals\Permit\FDEP\5-6_Doubloon Bay.dwg



DOUBLOON BAY ENTRANCE LONGTUDINAL SECTION
SCALE: 1" = 40' (H)
1" = 8' (V)



DOUBLOON BAY ENTRANCE LONGTUDINAL SECTION
SCALE: 1" = 40' (H)
1" = 8' (V)

LEGEND:
- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA

KARYN M. ERICKSON
LICENSE NO. 44697
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

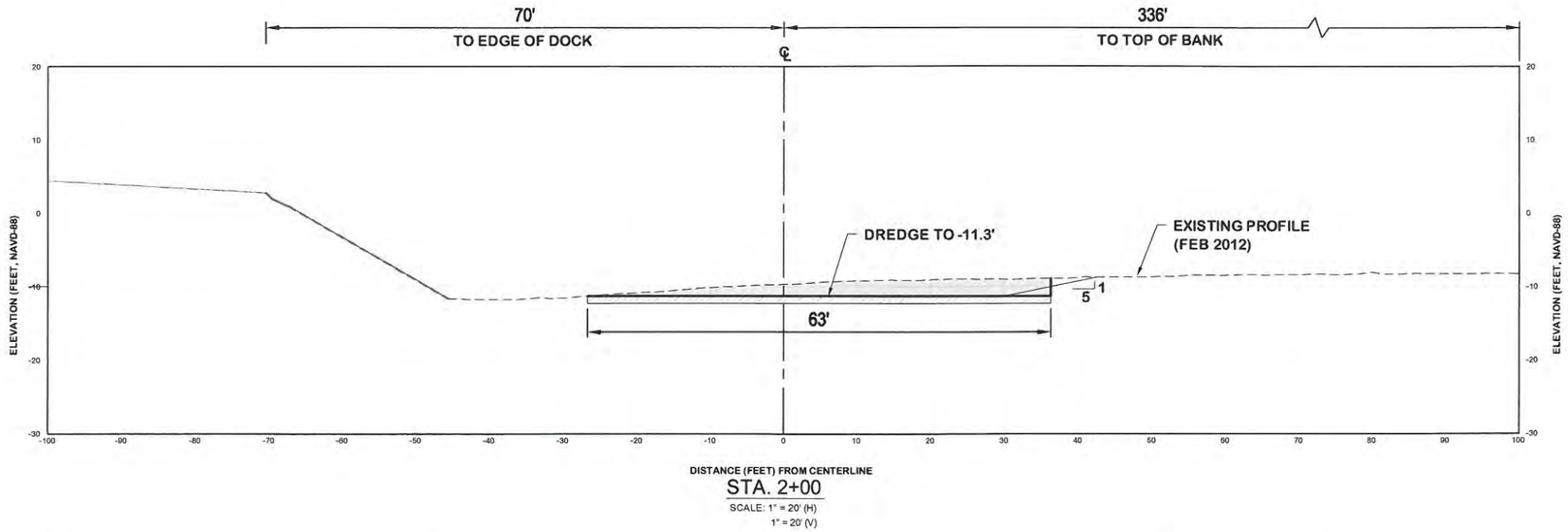
DESIGNED BC | DRAWN DP | CHECKED DP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE
DOUBLOON BAY ENTRANCE

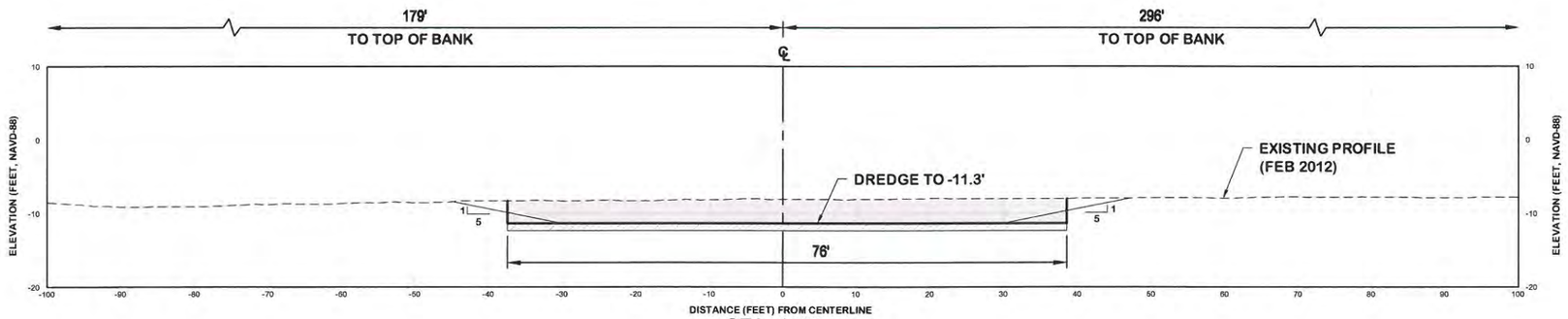
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
5B
SHEET 8 OF 41



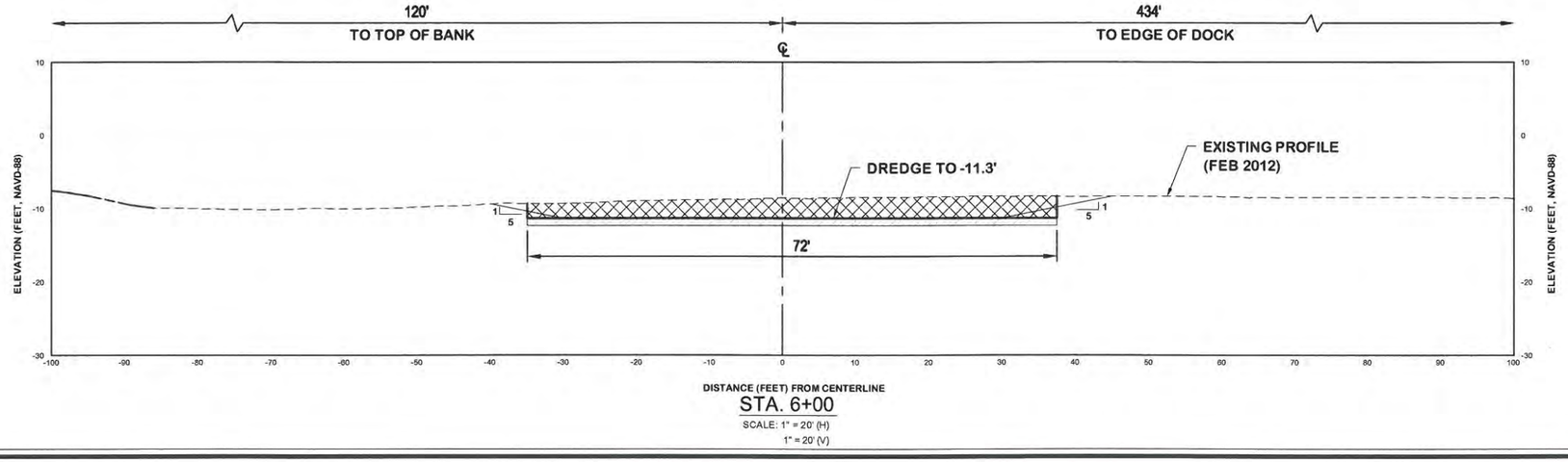
STA. 2+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 4+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 6+00

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

KARYN M. ERICKSON * LICENSE * No. 41887 * STATE OF FLORIDA * PROFESSIONAL ENGINEER *

Karyn M. Erickson, P.E.
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/13	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BG	FDEP PERMIT MODIFICATION #1

DESIGNED BY: BG | DRAWN BY: CLP | CHECKED BY: CLP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
DOUBLOON BAY ENTRANCE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

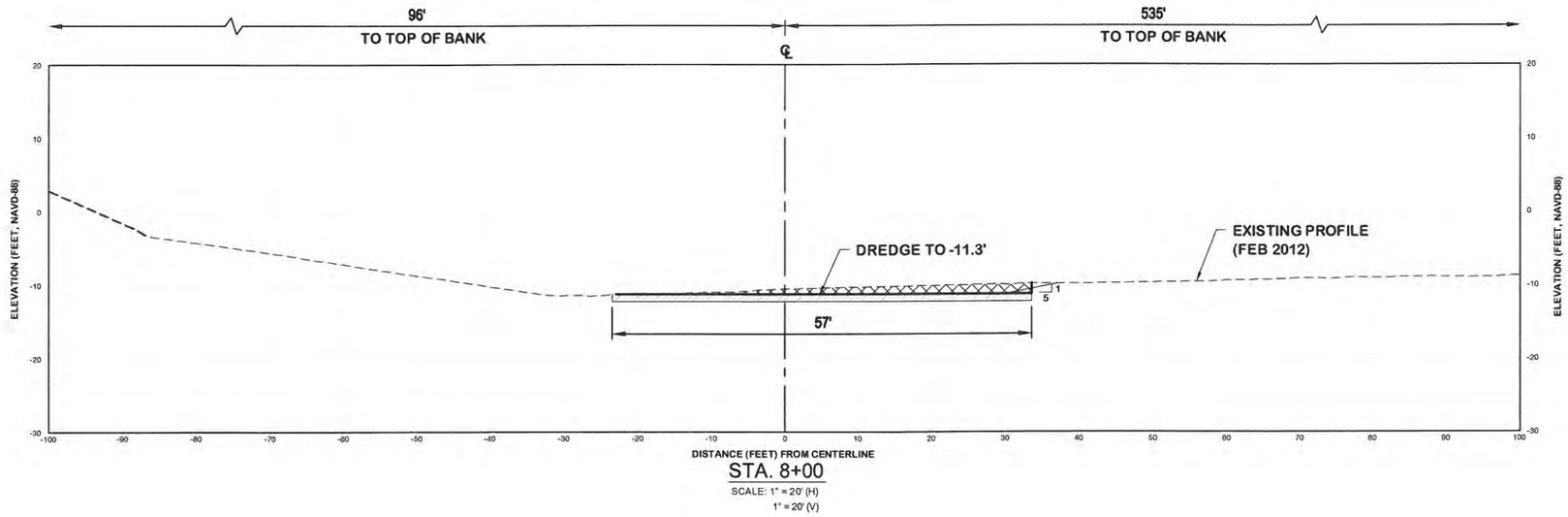
RECEIVED
ELECTRONICALLY
May 13, 2013
South District

DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

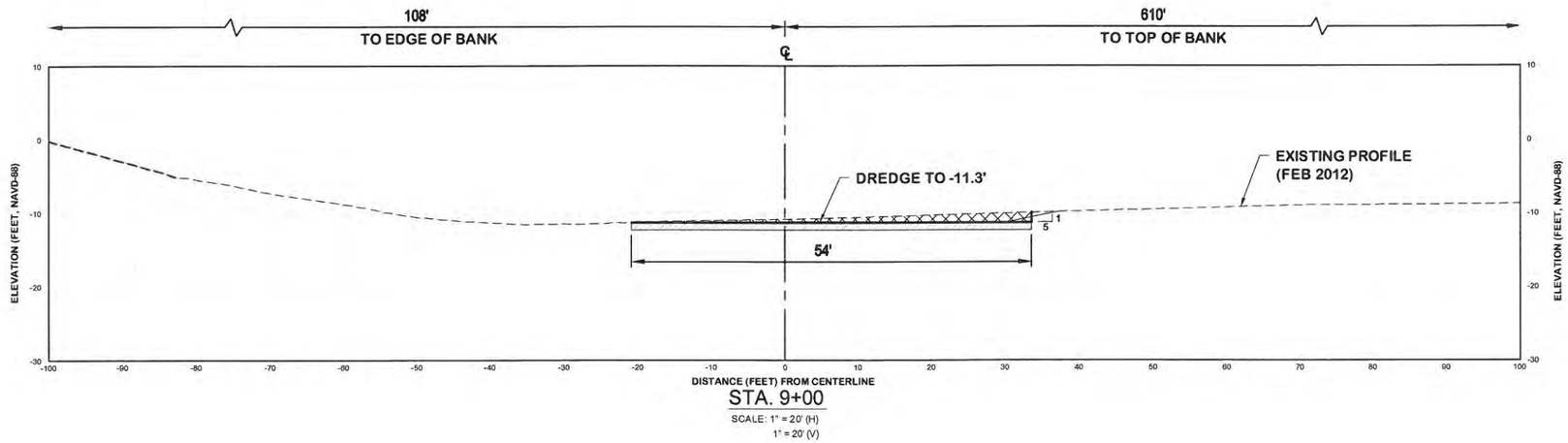
DRAWING NUMBER
5C
SHEET 9 OF 41

Z:\CADD_Graphics\US_Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\5-6_Doubloon Bay.dwg May 07, 2013-5:18pm



STA. 8+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 9+00

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

KARYN M. ERICKSON — STATE OF FLORIDA — PROFESSIONAL ENGINEER — No. 41697 — Signature Valid Only When Raised — Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	SKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-237
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
DOUBLOON BAY ENTRANCE

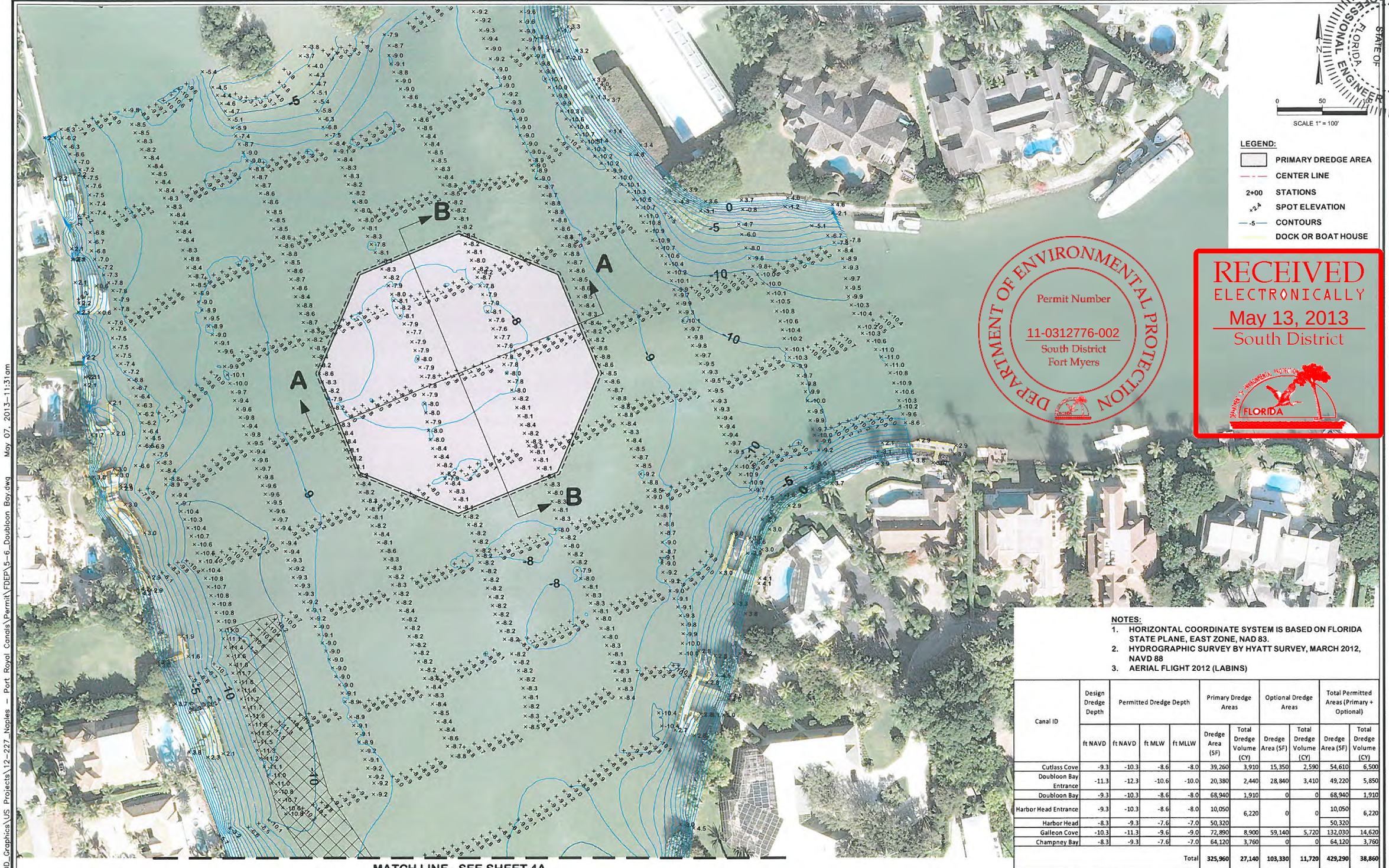
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

RECEIVED
ELECTRONICALLY
May 13, 2013
South District
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
5D
SHEET 10 OF 41

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\5-6_Doubloon Bay.dwg May 07, 2013-5:18pm



MATCH LINE - SEE SHEET 4A

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

RECEIVED
ELECTRONICALLY
May 13, 2013
South District

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. AERIAL FLIGHT 2012 (LABINS)

Canal ID	Design Dredge Depth	Permitted Dredge Depth			Primary Dredge Areas		Optional Dredge Areas		Total Permitted Areas (Primary + Optional)	
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Harbor Head	-8.3	-9.3	-7.6	-7.0	50,320				50,320	
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				Total	**325,960**	**27,140**	**103,330**	**11,720**	**429,290**	**38,860**

Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Dredge volumes include 1 ft over dredge allowance

STATE OF FLORIDA
KARYN M. ERICKSON
No: 41897
PROFESSIONAL ENGINEER
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/04/12	BKG	CLP	FDEP PAA #1
2	4/24/13	AS	BC	FDEP PERMIT MODIFICATION #1

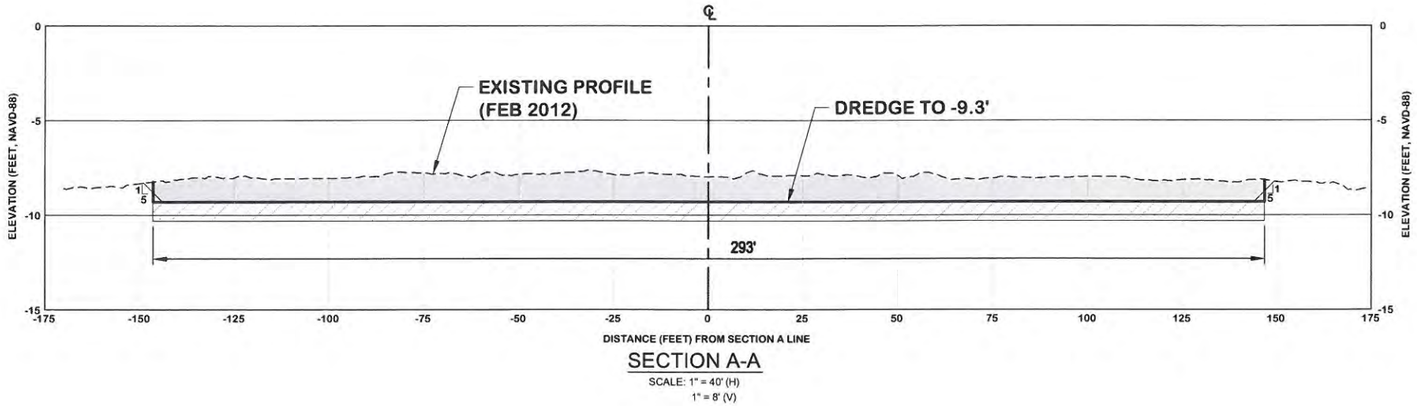
DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW
DOUBLOON BAY

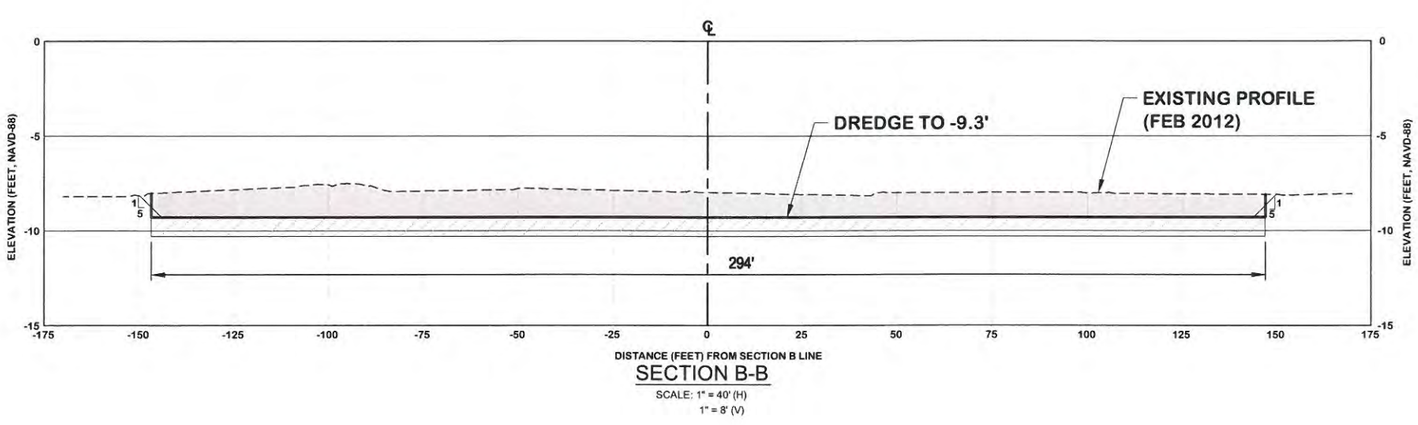
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
6A
SHEET 11 OF 41



SECTION A-A

SCALE: 1" = 40' (H)
1" = 8' (V)



SECTION B-B

SCALE: 1" = 40' (H)
1" = 8' (V)

LEGEND:

- PRELIMINARY DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- DESIGN SLOPE (1 : 5)

KARYN M. ERICKSON LICENSE No. 41807
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Signature Not Valid Without Raised Seal
KARYN M. ERICKSON, P.E.
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/29/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
DOUBLOON BAY

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

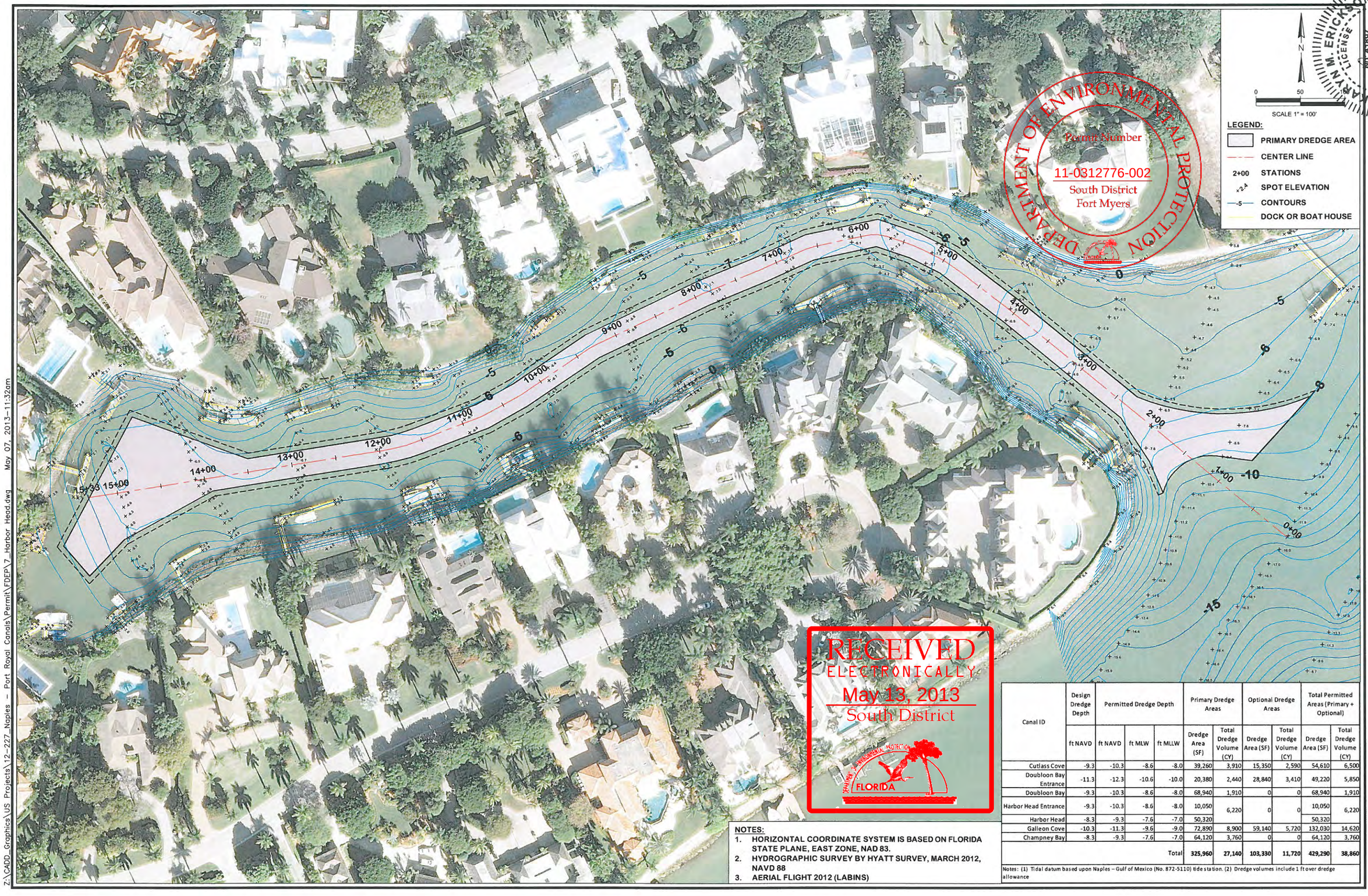
RECEIVED
ELECTRONICALLY
May 13, 2013
South District

DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
6B
SHEET 12 OF 41

Z:\CADD_Graphics\US_Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\5-6_Doubloon Bay.dwg May 07, 2013-11:32am



NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. AERIAL FLIGHT 2012 (LABINS)

Canal ID	Design Dredge Depth	Permitted Dredge Depth			Primary Dredge Areas		Optional Dredge Areas		Total Permitted Areas (Primary + Optional)	
	ft NAVD	ft NAVD	ft MLW	ft MLLW	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)
Cutlass Cove	-9.3	-10.3	-8.6	-8.0	39,260	3,910	15,350	2,590	54,610	6,500
Doubloon Bay Entrance	-11.3	-12.3	-10.6	-10.0	20,380	2,440	28,840	3,410	49,220	5,850
Doubloon Bay	-9.3	-10.3	-8.6	-8.0	68,940	1,910	0	0	68,940	1,910
Harbor Head Entrance	-9.3	-10.3	-8.6	-8.0	10,050	6,220	0	0	10,050	6,220
Harbor Head	-8.3	-9.3	-7.6	-7.0	50,320				50,320	
Galleon Cove	-10.3	-11.3	-9.6	-9.0	72,890	8,900	59,140	5,720	132,030	14,620
Champney Bay	-8.3	-9.3	-7.6	-7.0	64,120	3,760	0	0	64,120	3,760
				Total	**325,960**	**27,140**	**103,330**	**11,720**	**429,290**	**38,860**

Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Dredge volumes include 1 ft over dredge allowance

KAREN M. ERICKSON — LICENSE NO. 41887 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
Signature Not Valid Without the Raised Seal of the Florida Licensed Professional Engineer

REV. No.	DATE	DRAWN	CHKD	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/29/13	AS	EC	FDEP PERMIT MODIFICATION #1

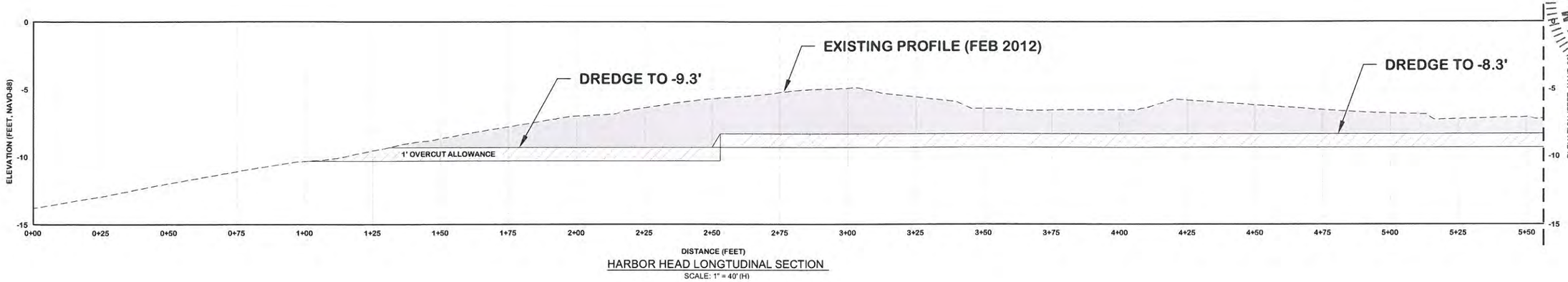
DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB No. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW HARBOR HEAD

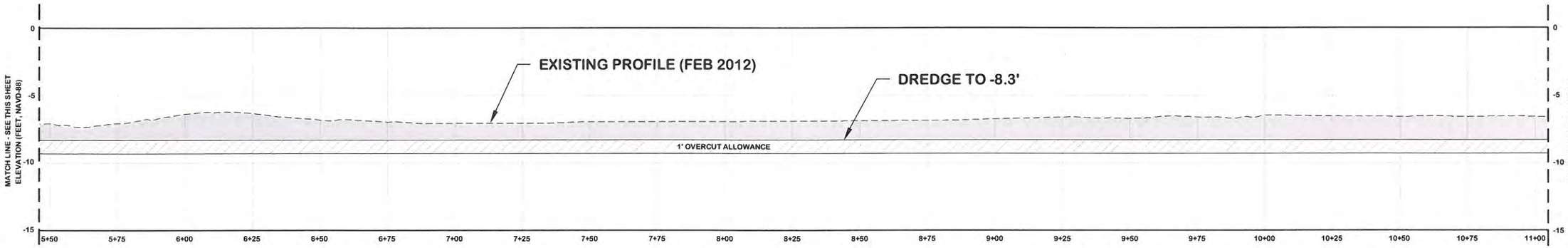
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
7A
SHEET 13 OF 41



HARBOR HEAD LONGTUDINAL SECTION

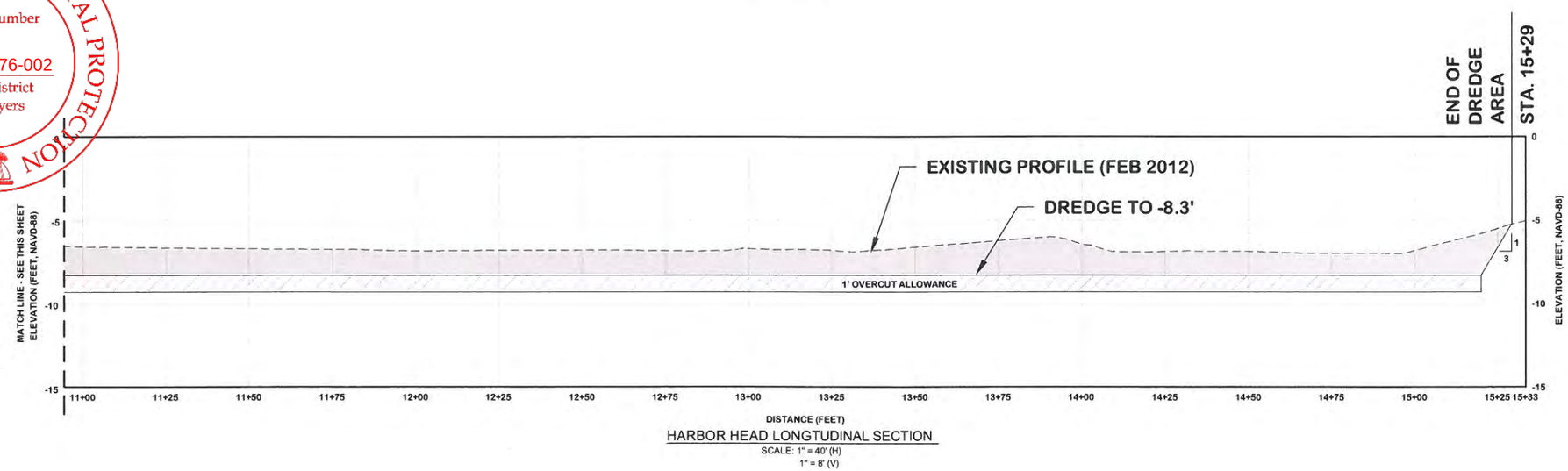
SCALE: 1" = 40' (H)



HARBOR HEAD LONGTUDINAL SECTION

SCALE: 1" = 40' (H)

1" = 8' (V)



HARBOR HEAD LONGTUDINAL SECTION

SCALE: 1" = 40' (H)

1" = 8' (V)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

RECEIVED
ELECTRONICALLY
May 13, 2013
South District
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA

LEGEND:

PRIMARY DREDGE AREA

HAROLD M. ERICKSON
LICENSE
No. 11907
STATE OF FLORIDA
5/7/13
Signature and Date
Printed, Typed or Stamped Name
Florida Registered Engineer
Professional ENGINEER

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	SKG	CLP	FDEP RAI #1
2	4/29/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC	DRAWN DP	CHECKED CP
DATE: 03/15/2012		
JOB NO.: 12-227		
SCALE: AS NOTED		

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE HARBOR HEAD

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
7B
SHEET 14 OF 41

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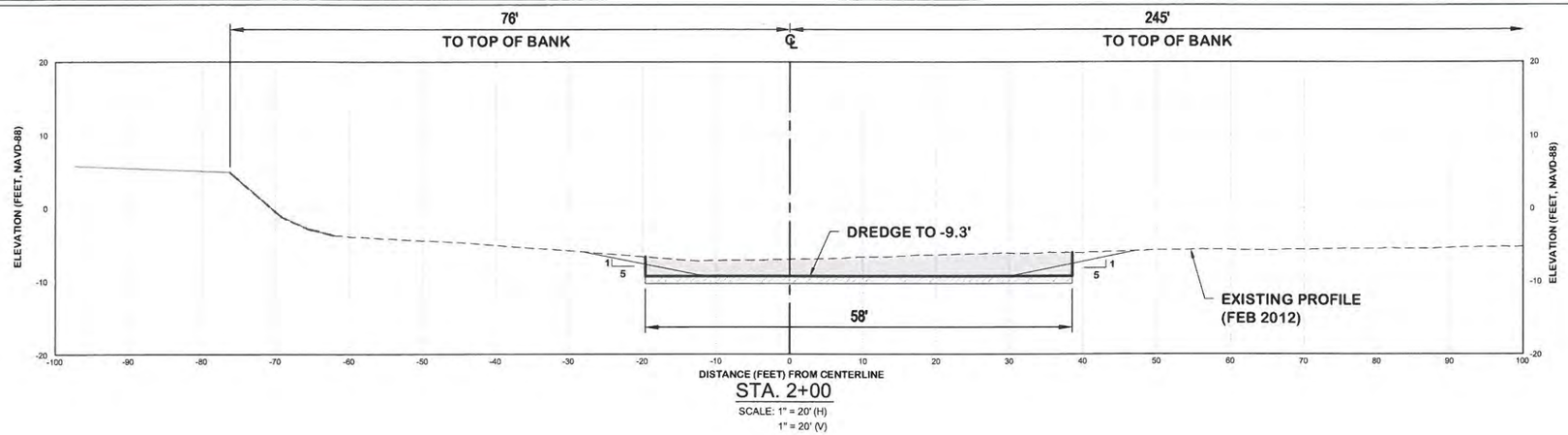
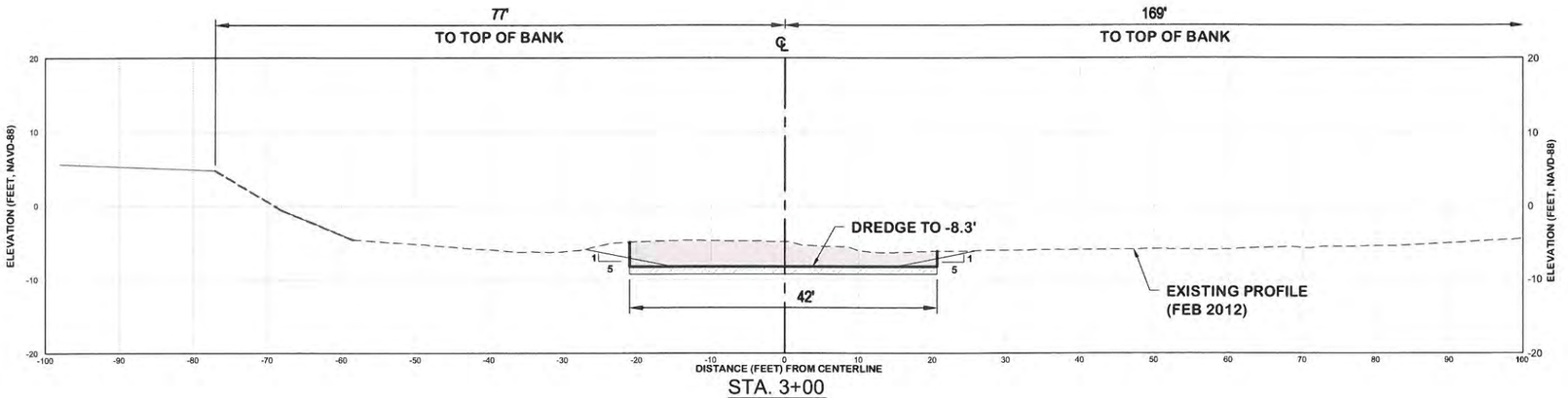


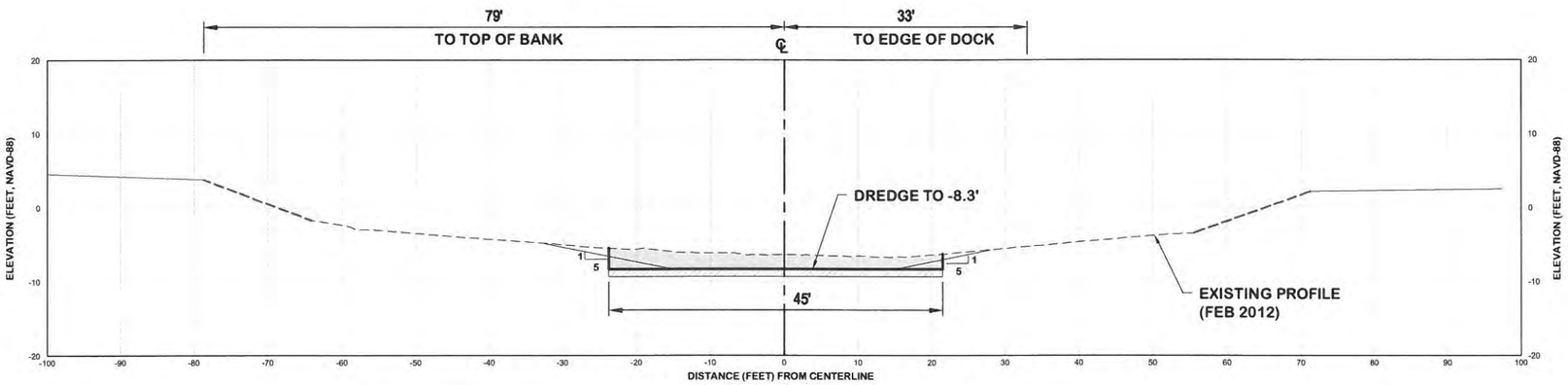
STA. 2+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 3+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 6+00

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

ERYN M. ERICKSON
LICENSE NO. 41807
STATE OF FLORIDA
PROFESSIONAL ENGINEER

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKB	CLP	FDEP RAI #1
2	4/5/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED	DRAWN	CHECKED
BC	DP	CP

DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
HARBOR HEAD

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

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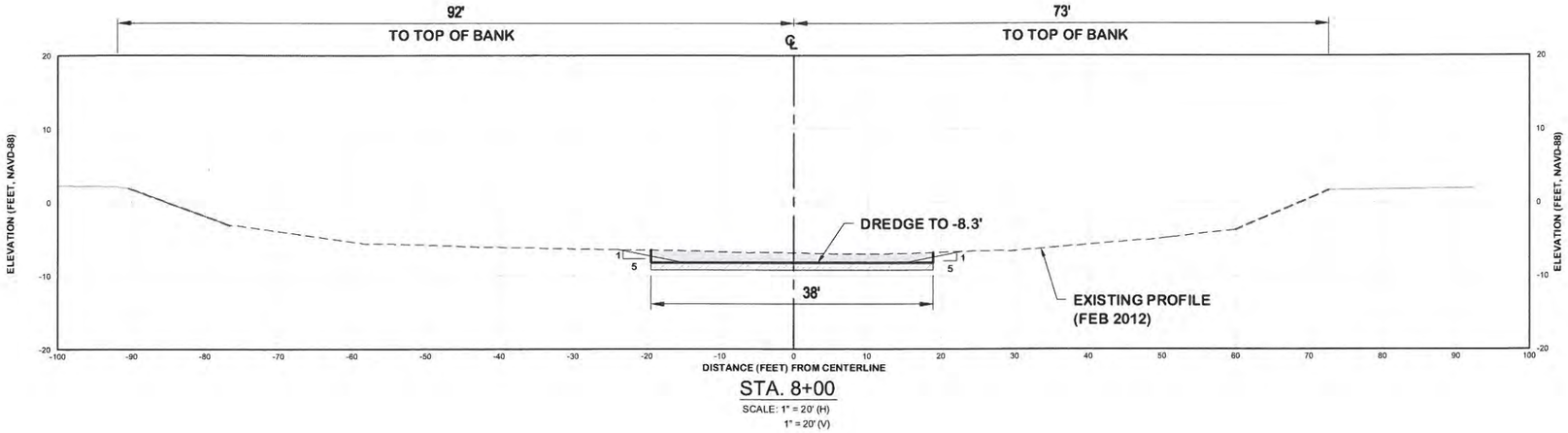
May 13, 2013
South District

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

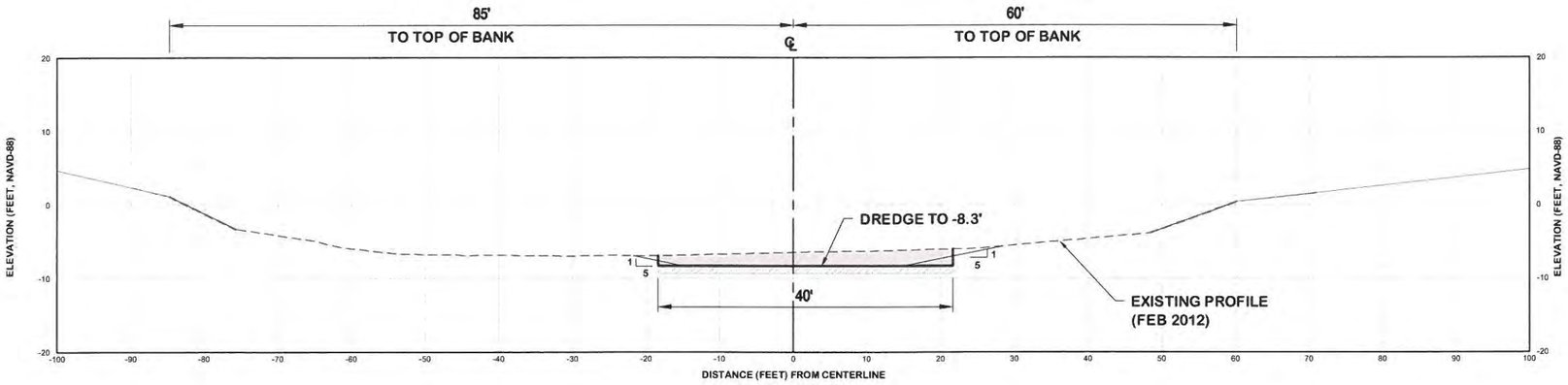
DRAWING NUMBER
7C
SHEET 15 OF 41

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\7_Harbor Head.dwg May 07, 2013-11:33am



STA. 8+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 10+00

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

STATE OF FLORIDA
PROFESSIONAL ENGINEER
KARYNN M. ERICKSON
LICENSE No. 44697
Professional Engineer, Licensed in Florida

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BG	FDEP PERMIT MODIFICATION #1

DESIGNED	DRAWN	CHECKED
BG	DP	CP

DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
HARBOR HEAD

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

RECEIVED
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May 13, 2013
South District

DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
7D
SHEET 16 OF 41

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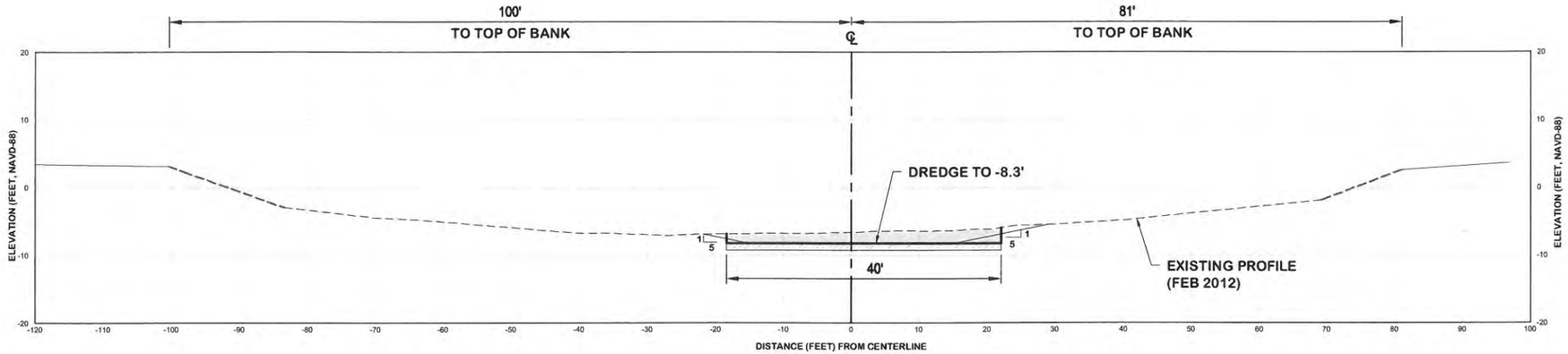
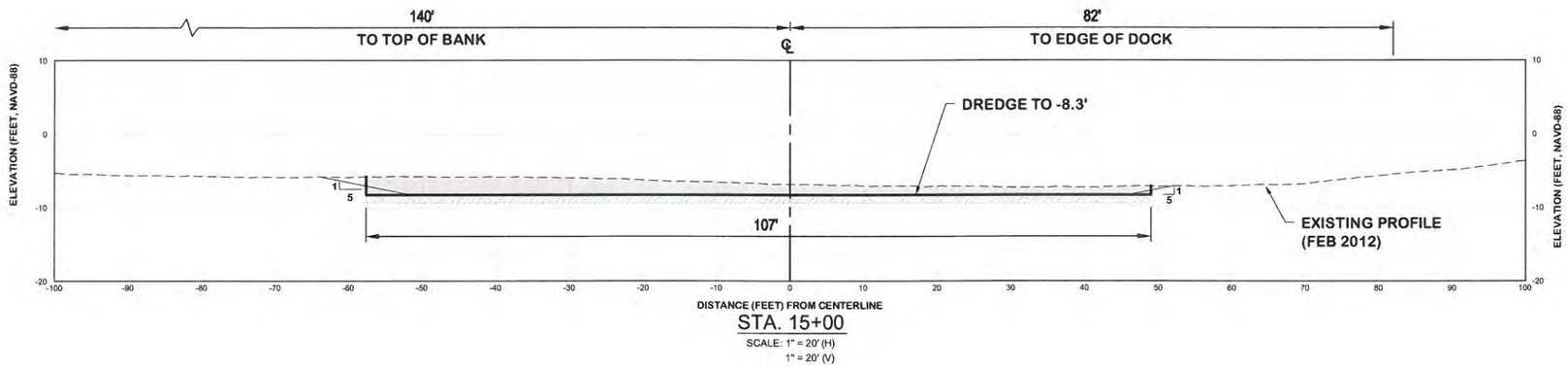


STA. 12+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 15+00

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- DESIGN SLOPE (1 : 5)

KARYN M. ERICKSON LICENSE NO. 41897
STATE OF FLORIDA PROFESSIONAL ENGINEER
Karyn M. Erickson, P.E. Date
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BRB	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

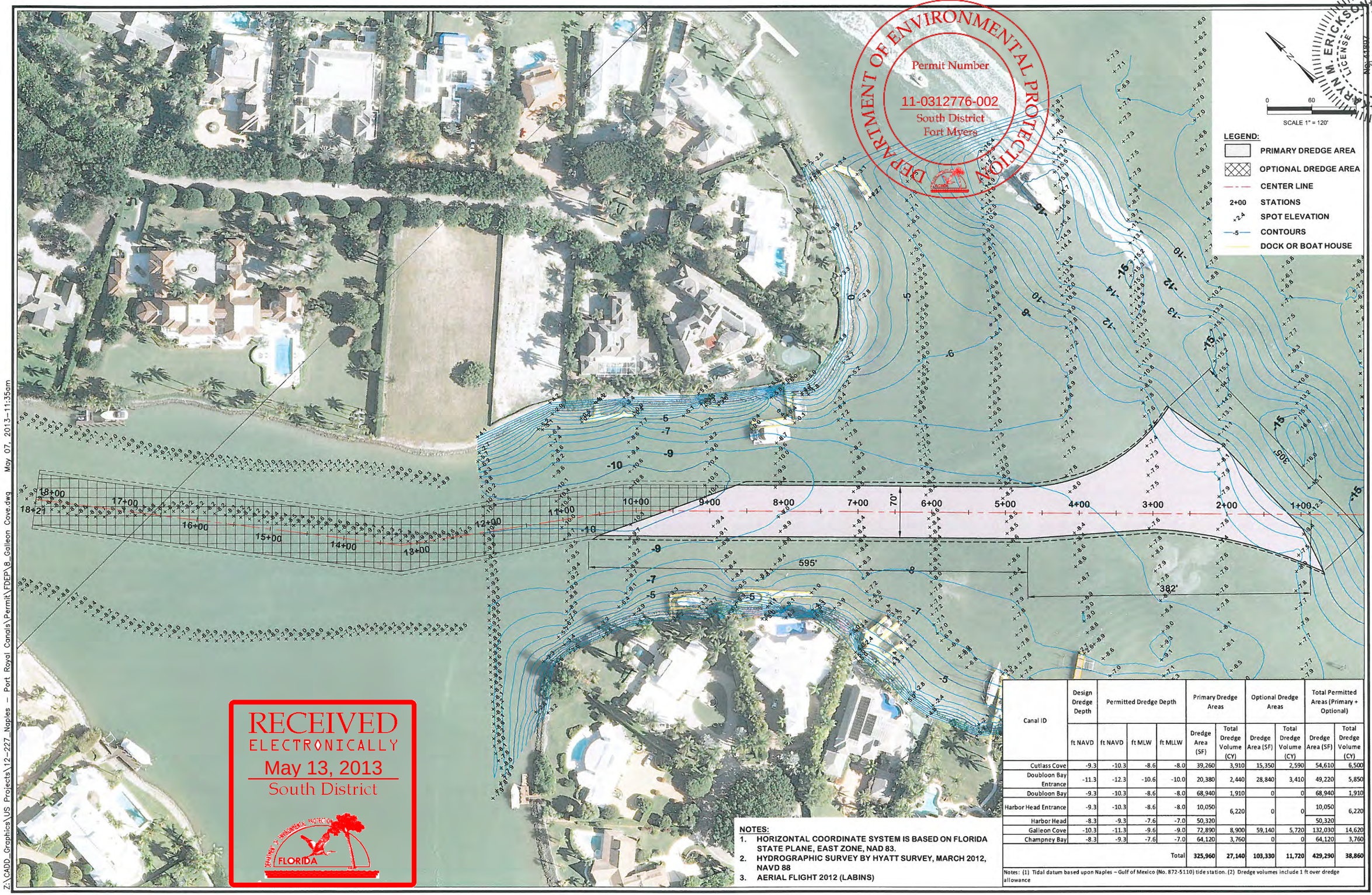
DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
HARBOR HEAD

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
7E
SHEET 17 OF 41



NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. AERIAL FLIGHT 2012 (LABINS)

Canal ID	Design Dredge Depth	Permitted Dredge Depth			Primary Dredge Areas		Optional Dredge Areas		Total Permitted Areas (Primary + Optional)	
	ft NAVD	ft NAVD	ft MLW	ft MLLW	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)
Cutlass Cove	-9.3	-10.3	-8.6	-8.0	39,260	3,910	15,350	2,590	54,610	6,500
Doubloon Bay Entrance	-11.3	-12.3	-10.6	-10.0	20,380	2,440	28,840	3,410	49,220	5,850
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Harbor Head	-8.3	-9.3	-7.6	-7.0	50,320				50,320	
Galleon Cove	-10.3	-11.3	-9.6	-9.0	72,890	8,900	59,140	5,720	132,030	14,620
Champney Bay	-8.3	-9.3	-7.6	-7.0	64,120	3,760	0	0	64,120	3,760
				Total	**325,960**	**27,140**	**103,330**	**11,720**	**429,290**	**38,860**

Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Dredge volumes include 1 ft over dredge allowance

M. ERICKSON
LICENSE
No. 44807
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Seamus M. Erickson, P.E.
Florida Professional Engineer, License No. 44807

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BMS	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/19/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW
GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460
ECE
Erickson Consulting Engineers

DRAWING NUMBER
8A
SHEET 18 OF 41

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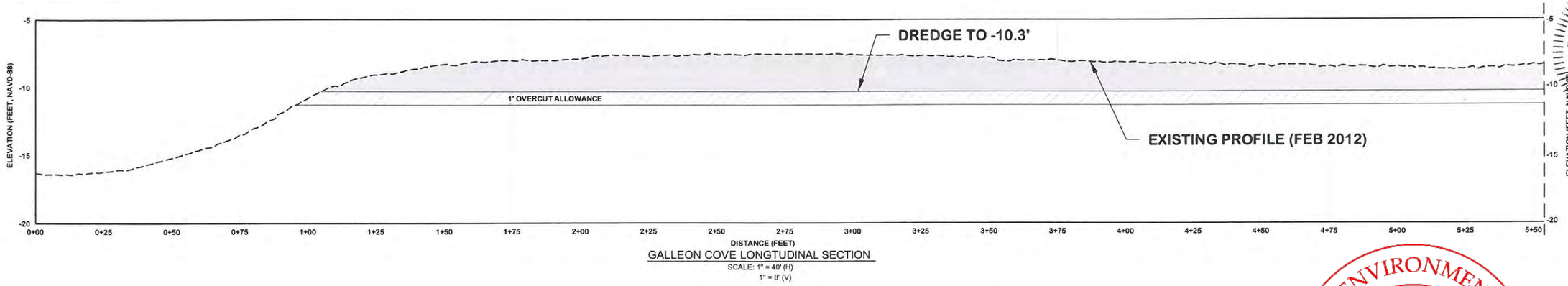
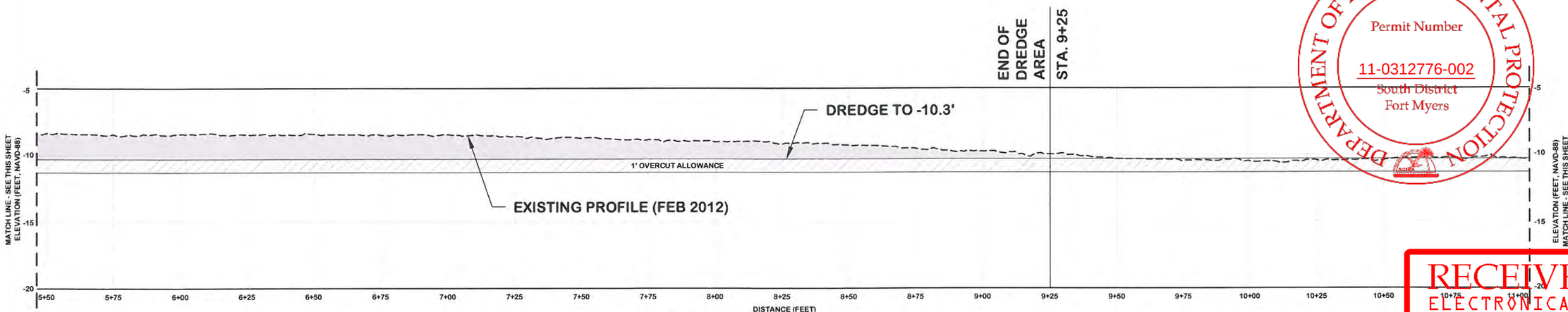
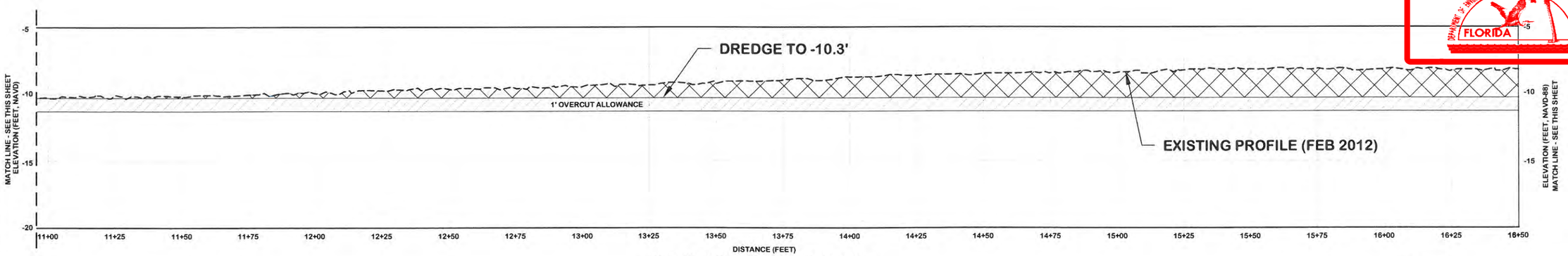


GALLEON COVE LONGTUDINAL SECTION
SCALE: 1" = 40' (H)
1" = 8' (V)

END OF DREDGE AREA STA. 9+25



GALLEON COVE LONGTUDINAL SECTION
SCALE: 1" = 40' (H)
1" = 8' (V)



GALLEON COVE LONGTUDINAL SECTION
SCALE: 1" = 40' (H)
1" = 8' (V)

LEGEND:
- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA

KARTHIK M. ERICKSON
LICENSE
No. 41887
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Scanned with CamScanner
KARTHIK M. ERICKSON
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BRS	CLP	FDEP RAI #1
2	4/26/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGITUDINAL CENTER LINE PROFILE GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
8B
SHEET 19 OF 41

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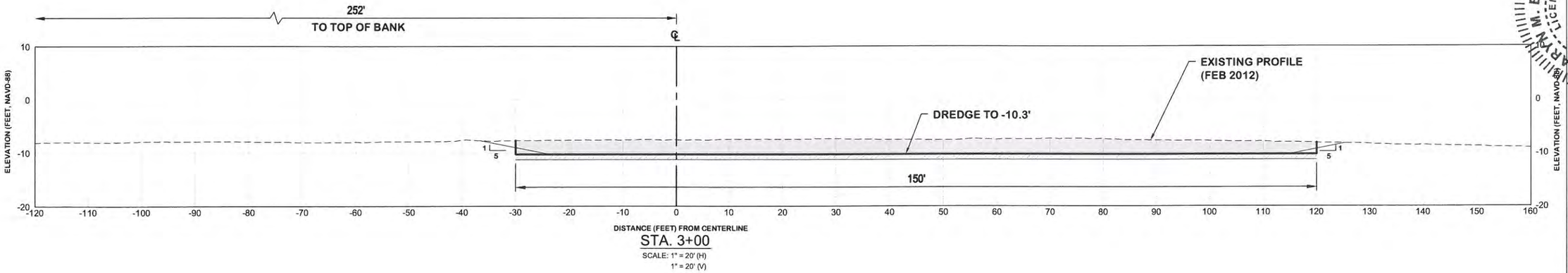
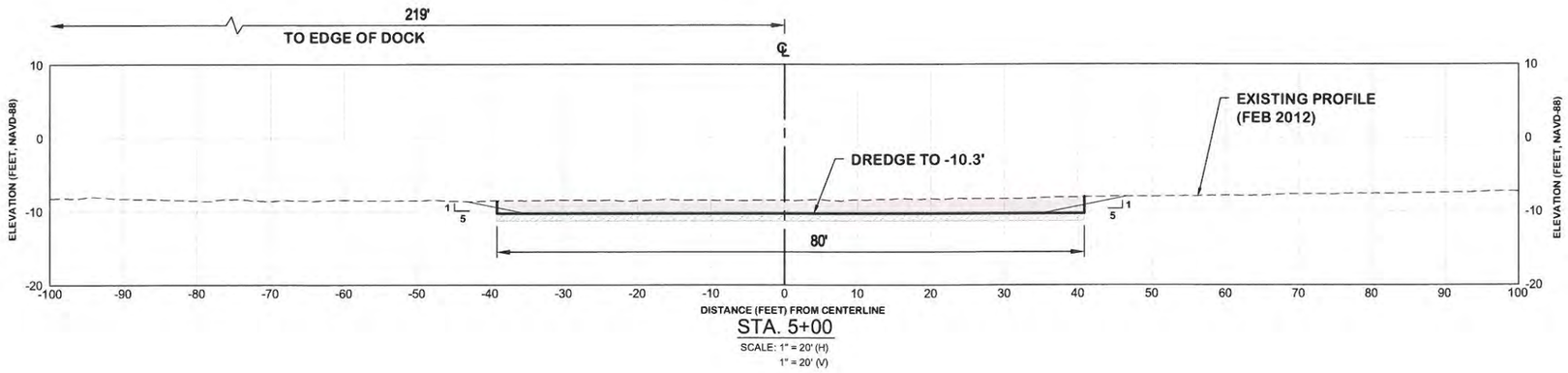


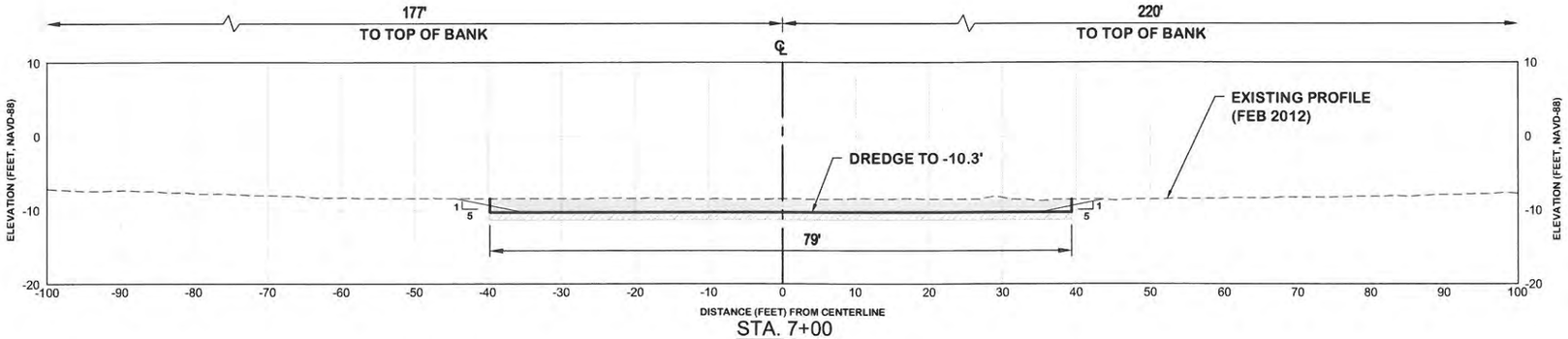
STA. 3+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 5+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 7+00

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

ERIC M. ERICKSON
LICENSE No. 41807
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Signature of Florida Professional Engineer
Kathryn Erickson, P.E.
Florida Professional Engineer No. 41807

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	11/24/12	BKG	CLP	FDEP RAI #1
2	4/23/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CF
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
8C
SHEET 20 OF 41

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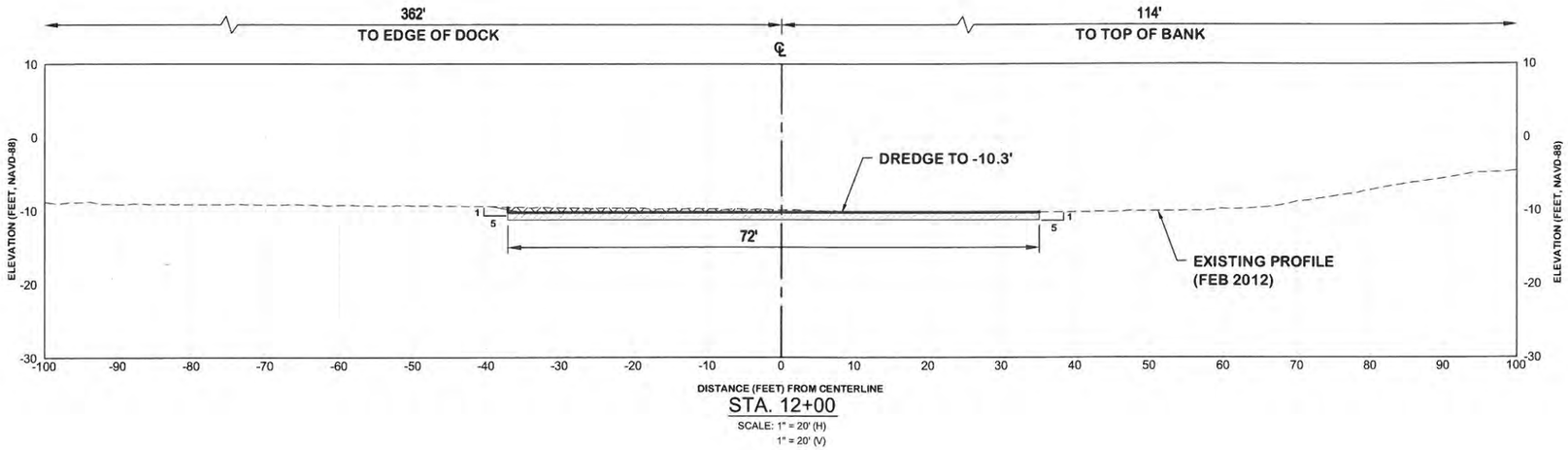
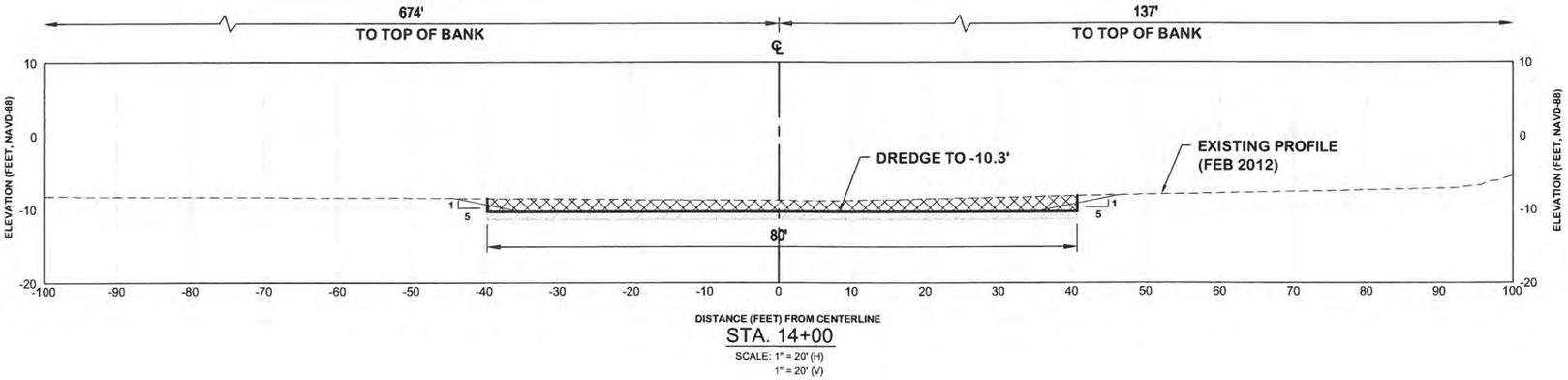


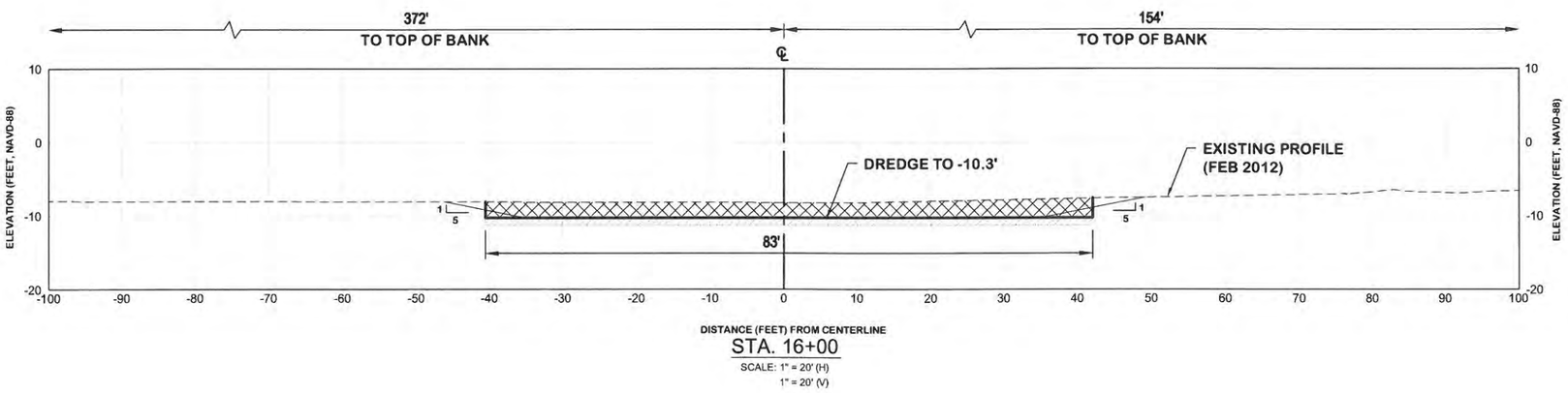
STA. 12+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 14+00

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 16+00

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

RECEIVED
ELECTRONICALLY
May 13, 2013
South District

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

ARYN M. ERICKSON
LICENSE
No. 41867
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Signature & Original Raised Seal Required
Kathryn M. Erickson, P.E.
Professional Engineer (#41867)

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/29/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

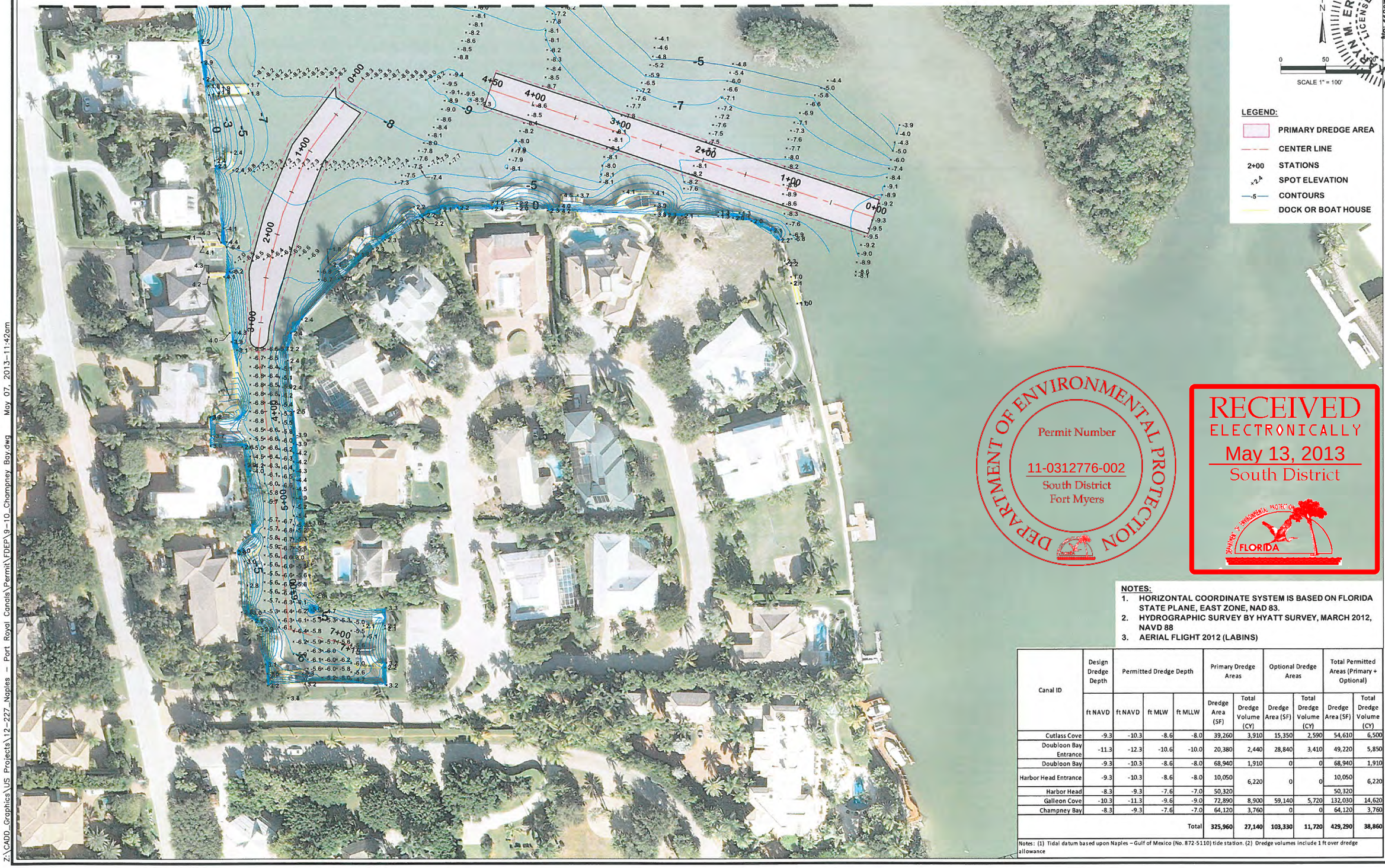
CROSS SECTIONS
GALLEON COVE

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
8D
SHEET 21 OF 41

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\8_Galleon Cove.dwg May 07, 2013-11:42am

MATCH LINE - SEE SHEET 10A



LEGEND:

- PRIMARY DREDGE AREA
- CENTER LINE
- 2+00 STATIONS
- SPOT ELEVATION
- -5 CONTOURS
- DOCK OR BOAT HOUSE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

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May 13, 2013
South District
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA

NOTES:

1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. AERIAL FLIGHT 2012 (LABINS)

Canal ID	Design Dredge Depth	Permitted Dredge Depth			Primary Dredge Areas		Optional Dredge Areas		Total Permitted Areas (Primary + Optional)	
	ft NAVD	ft NAVD	ft MW	ft MLLW	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)
Cutlass Cove	-9.3	-10.3	-8.6	-8.0	39,260	3,910	15,350	2,590	54,610	6,500
Doubloon Bay Entrance	-11.3	-12.3	-10.6	-10.0	20,380	2,440	28,840	3,410	49,220	5,850
Doubloon Bay	-9.3	-10.3	-8.6	-8.0	68,940	1,910	0	0	68,940	1,910
Harbor Head Entrance	-9.3	-10.3	-8.6	-8.0	10,050	6,220	0	0	10,050	6,220
Harbor Head	-8.3	-9.3	-7.6	-7.0	50,320				50,320	
Galleon Cove	-10.3	-11.3	-9.6	-9.0	72,890	8,900	59,140	5,720	132,030	14,620
Champney Bay	-8.3	-9.3	-7.6	-7.0	64,120	3,760	0	0	64,120	3,760
				Total	**325,960**	**27,140**	**103,330**	**11,720**	**429,290**	**38,860**

Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Dredge volumes include 1 ft over dredge allowance

STATE OF FLORIDA
PROFESSIONAL ENGINEER
KARL M. ERICKSON
LICENSE No. 43807
Karl M. Erickson, P.E.
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/24/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW
CHAMPNEY BAY (EAST & SOUTH)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32240
(941) 373-6460

DRAWING NUMBER
9A
SHEET 22 OF 41

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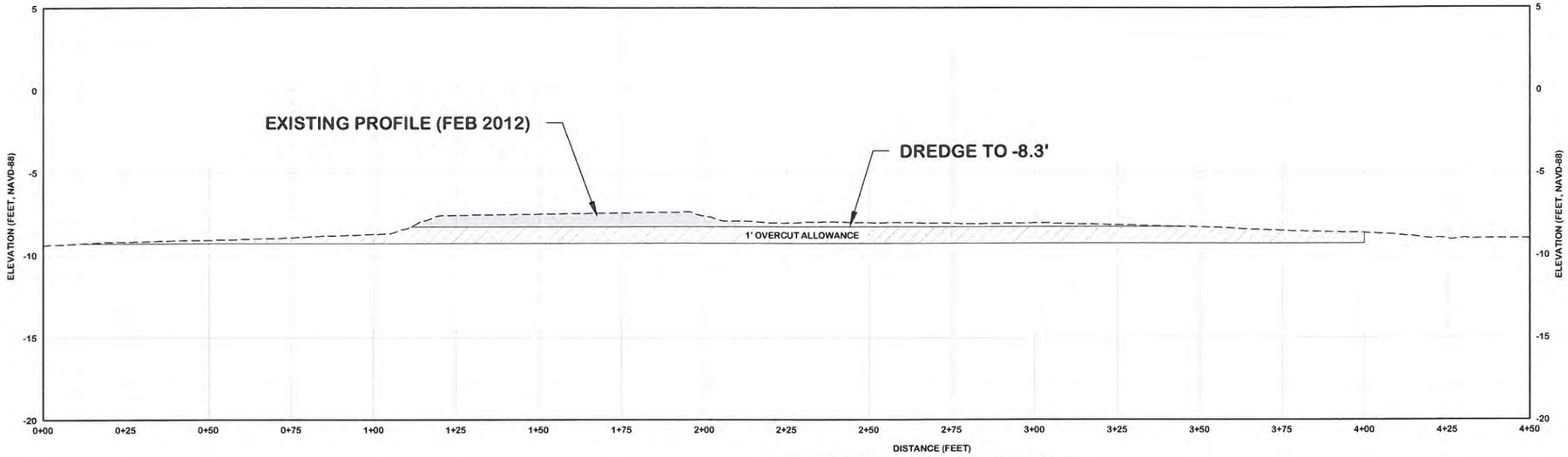
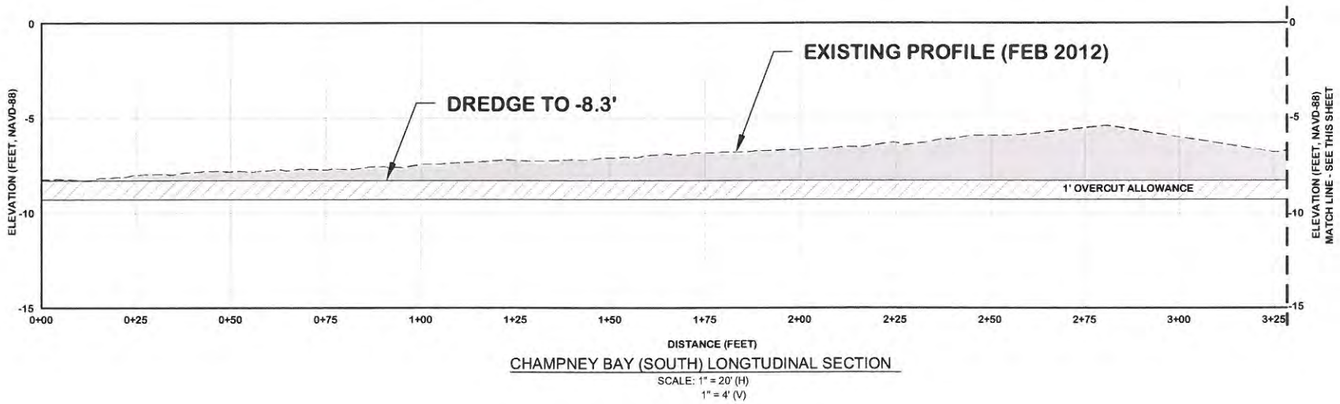


CHAMPNEY BAY (EAST) LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)



CHAMPNEY BAY (SOUTH) LONGTUDINAL SECTION

SCALE: 1" = 20' (H)
1" = 4' (V)

LEGEND:

PRIMARY DREDGE AREA

KARYN M. ERICKSON LICENSE No. 71097 STATE OF FLORIDA PROFESSIONAL ENGINEER

Signature & Florida Professional Engineer, Karyn M. Erickson, License No. 71097

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

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South District

DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE
CHAMPNEY BAY (SOUTH & EAST)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
9B
SHEET 23 OF 41

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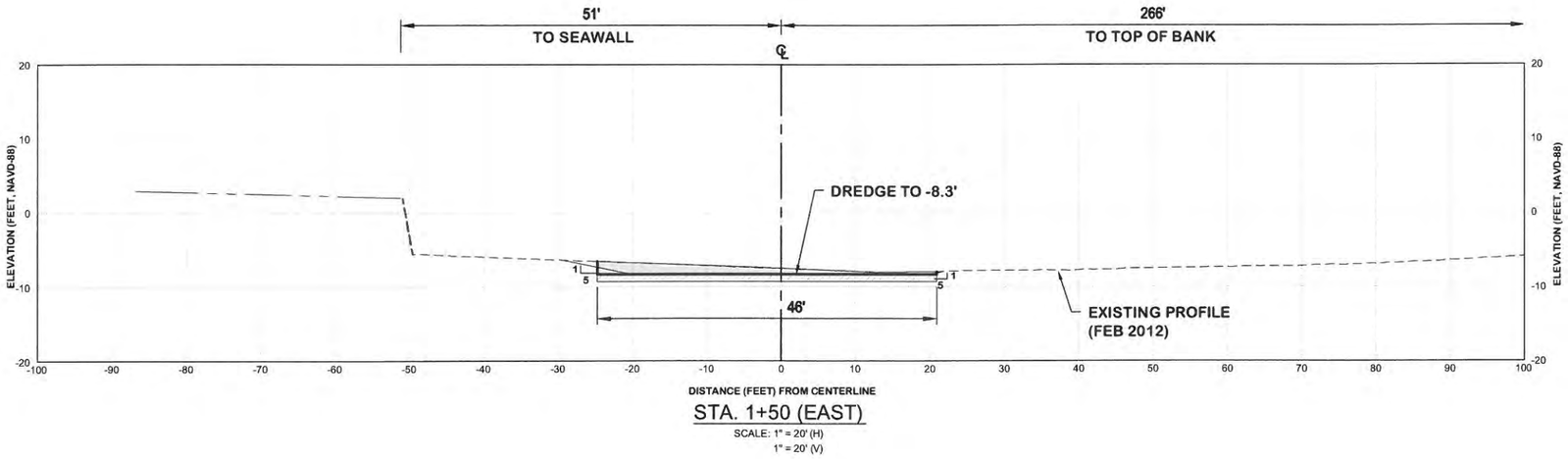
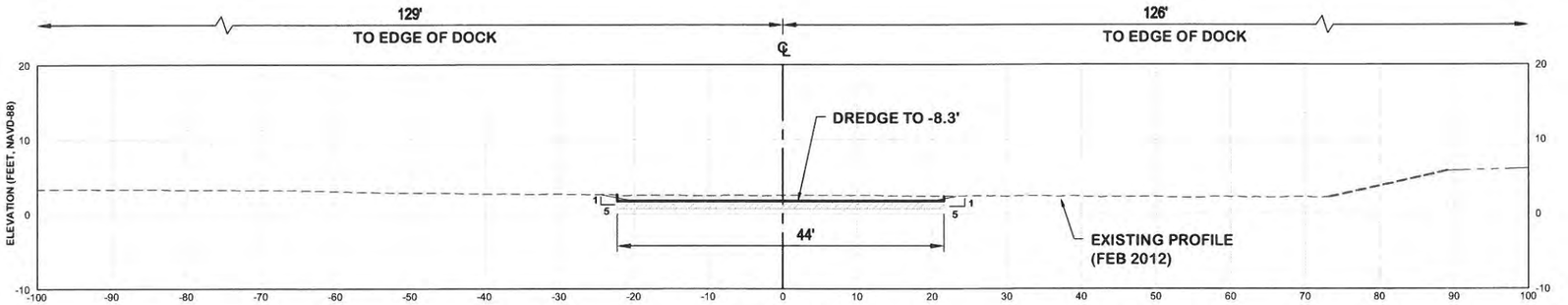


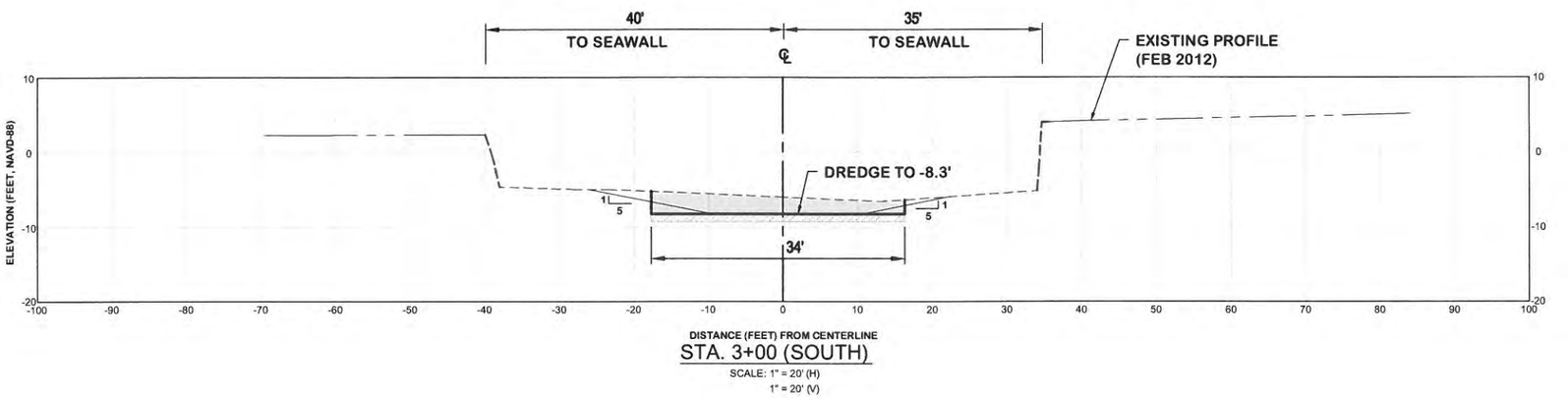
STA. 1+50 (EAST)

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 1+00 (SOUTH)

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 3+00 (SOUTH)

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

RECEIVED
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May 13, 2013
South District
DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

BRYAN M. ERICKSON LICENSE No. 41097 STATE OF FLORIDA PROFESSIONAL ENGINEER
Bryan M. Erickson, P.E.
Florida Registration No. 41097
Professional Engineer (This item has been electronically signed and sealed)

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
CHAMPNEY BAY (EAST & SOUTH)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
9C
SHEET 24 OF 41

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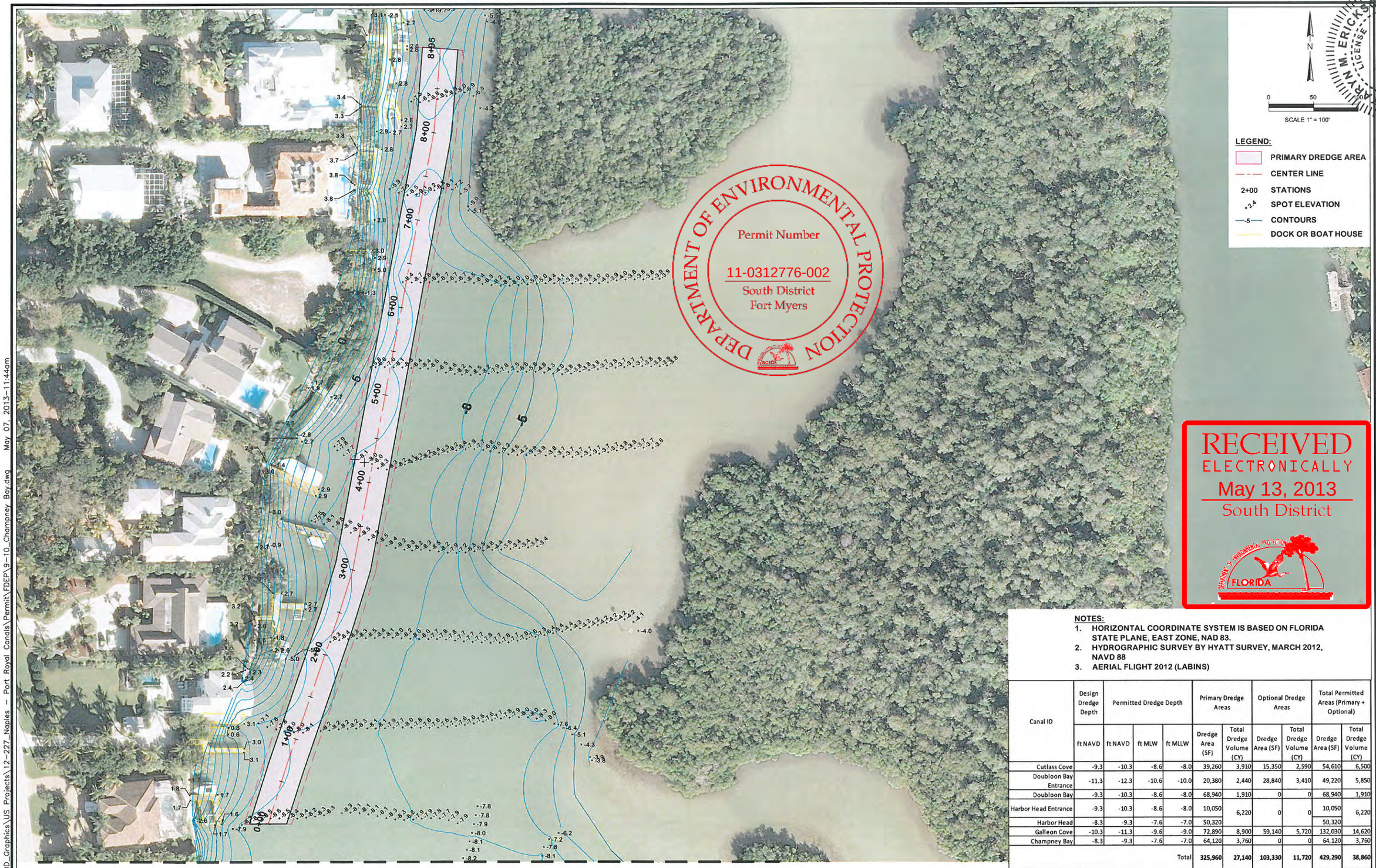

NOTES:
1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88
3. AERIAL FLIGHT 2012 (LABINS)

Canal ID	Design Dredge Depth	Permitted Dredge Depth			Primary Dredge Areas		Optional Dredge Areas		Total Permitted Areas (Primary + Optional)	
	ft NAVD	ft NAVD	ft MLW	ft MLLW	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)	Dredge Area (SF)	Total Dredge Volume (CY)
Cutlass Cove	-9.3	-10.3	-8.6	-8.0	39,260	3,910	15,350	2,590	54,610	6,500
Doubloon Bay Entrance	-11.3	-12.3	-10.6	-10.0	20,380	2,440	28,840	3,410	49,220	5,850
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Harbor Head Entrance	-9.3	-10.3	-8.6	-8.0	10,050	6,220	0	0	10,050	6,220
Harbor Head	-8.3	-9.3	-7.6	-7.0	50,320				50,320	
Galleon Cove	-10.3	-11.3	-9.6	-9.0	72,890	8,900	59,140	5,720	132,030	14,620
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				Total	**325,960**	**27,140**	**103,330**	**11,720**	**429,290**	**38,860**

Notes: (1) Tidal datum based upon Naples – Gulf of Mexico (No. 872-5110) tide station. (2) Dredge volumes include 1 ft over dredge allowance

KARL M. ERICKSON
No. 41807
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Karl M. Erickson, P.E.
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BIC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DREDGE AREA - PLAN VIEW
CHAMPNEY BAY (NORTH)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
10A
SHEET 25 OF 41

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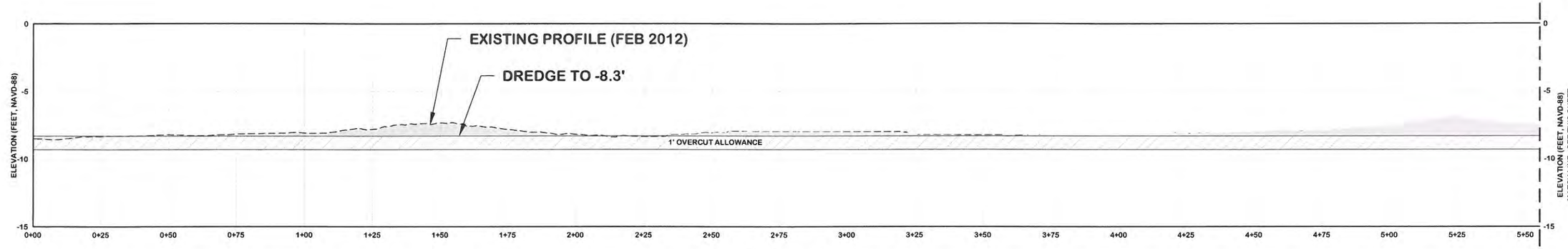
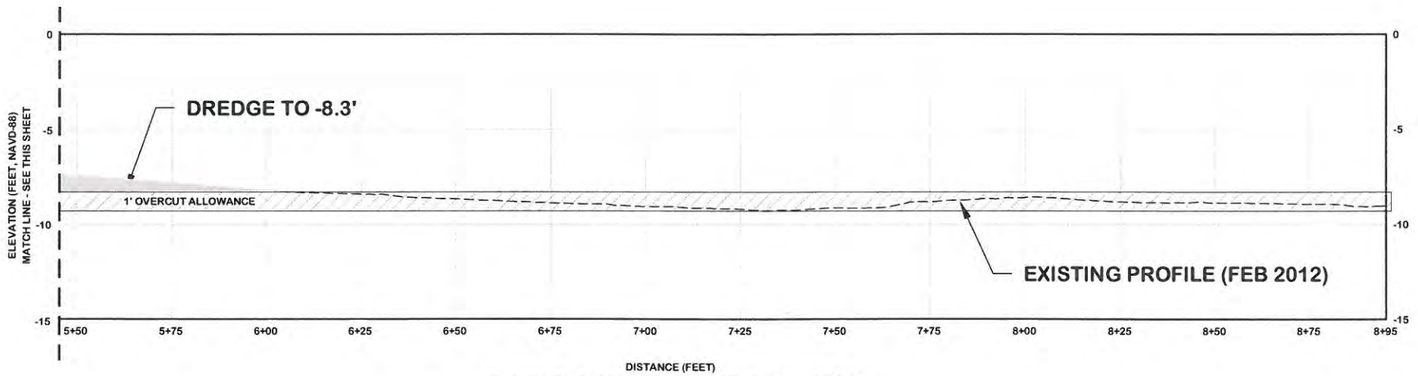


CHAMPNEY BAY (NORTH) LONGTUDINAL SECTION

SCALE: 1" = 40' (H)
1" = 8' (V)



CHAMPNEY BAY (NORTH) LONGTUDINAL SECTION

SCALE: 1" = 40' (H)
1" = 8' (V)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

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DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

BRYAN M. ERICKSON LICENSE No. 41807 STATE OF FLORIDA Professional ENGINEER

Date: 5/7/13

REV No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKB	CLP	FDEP RAI #1
2	4/09/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO.: 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGTUDINAL CENTER LINE PROFILE
CHAMPNEY BAY (NORTH)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460
ECE

DRAWING NUMBER
10B
SHEET 26 OF 41

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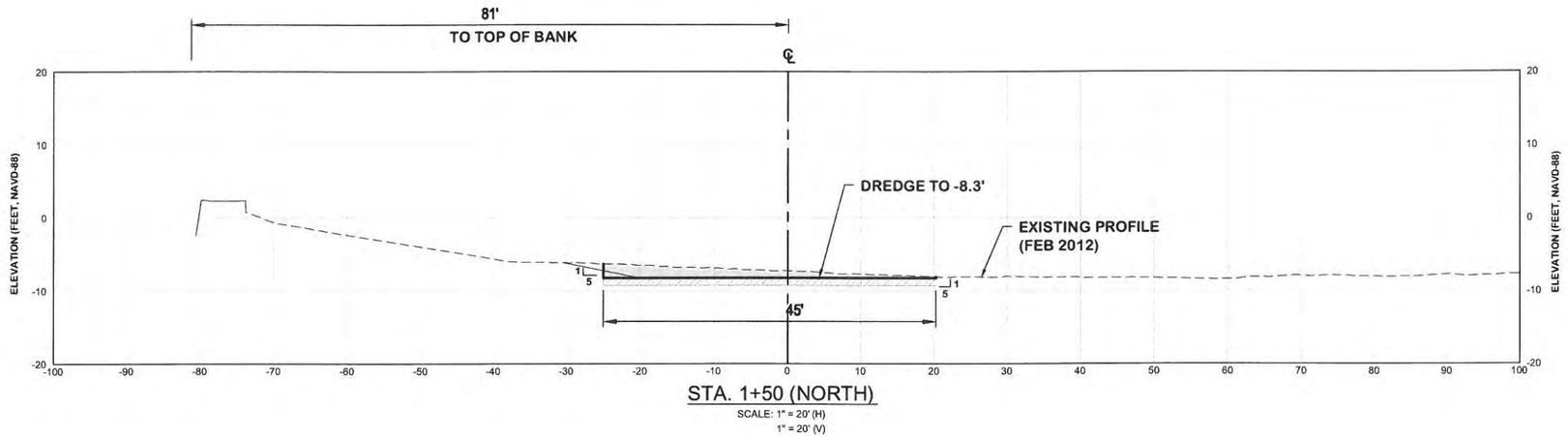
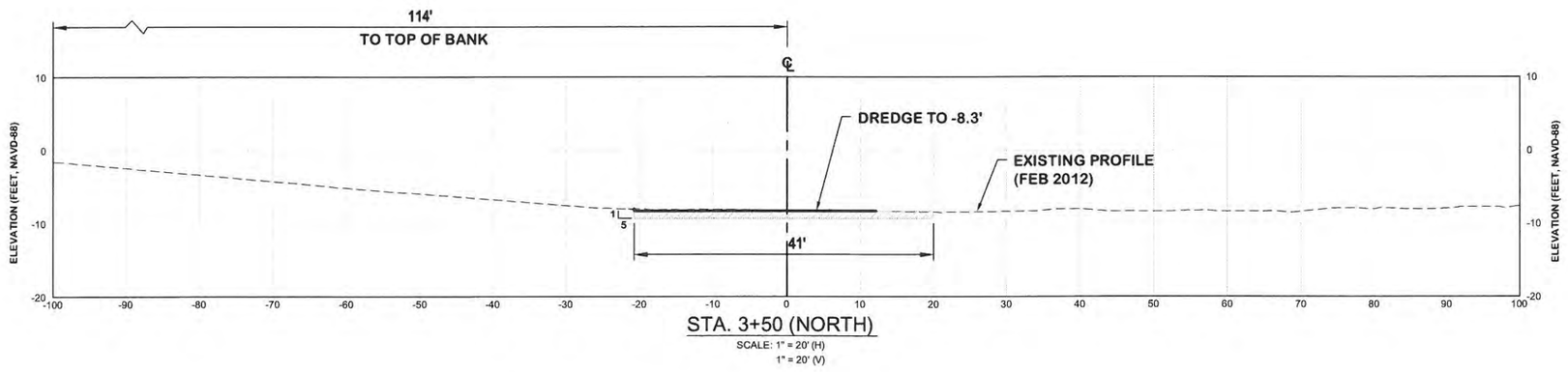


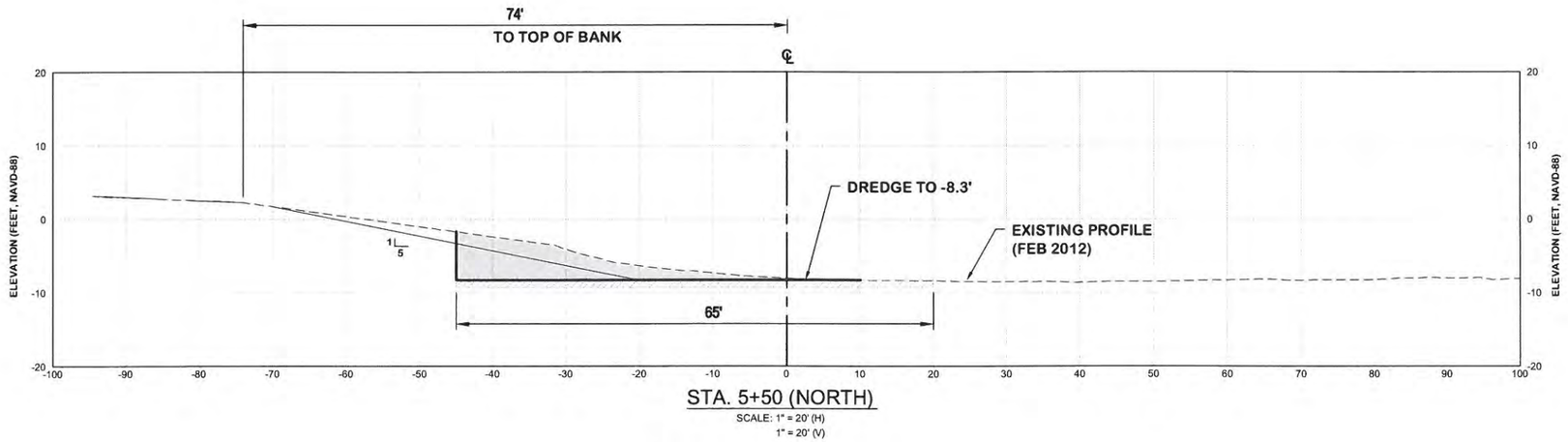
STA. 1+50 (NORTH)

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 3+50 (NORTH)

SCALE: 1" = 20' (H)
1" = 20' (V)



STA. 5+50 (NORTH)

SCALE: 1" = 20' (H)
1" = 20' (V)

LEGEND:

- PRIMARY DREDGE AREA
- 1' OVERCUT ALLOWANCE
- EXISTING BOTTOM
- REVETMENT
- UPLAND
- DREDGE TEMPLATE
- 1:5 DESIGN SLOPE

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

KARYN M. ERICKSON
LICENSE
No. 41897
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Signature not valid without the signature and original raised seal of a Florida Licensed Professional Engineer

REV. No	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

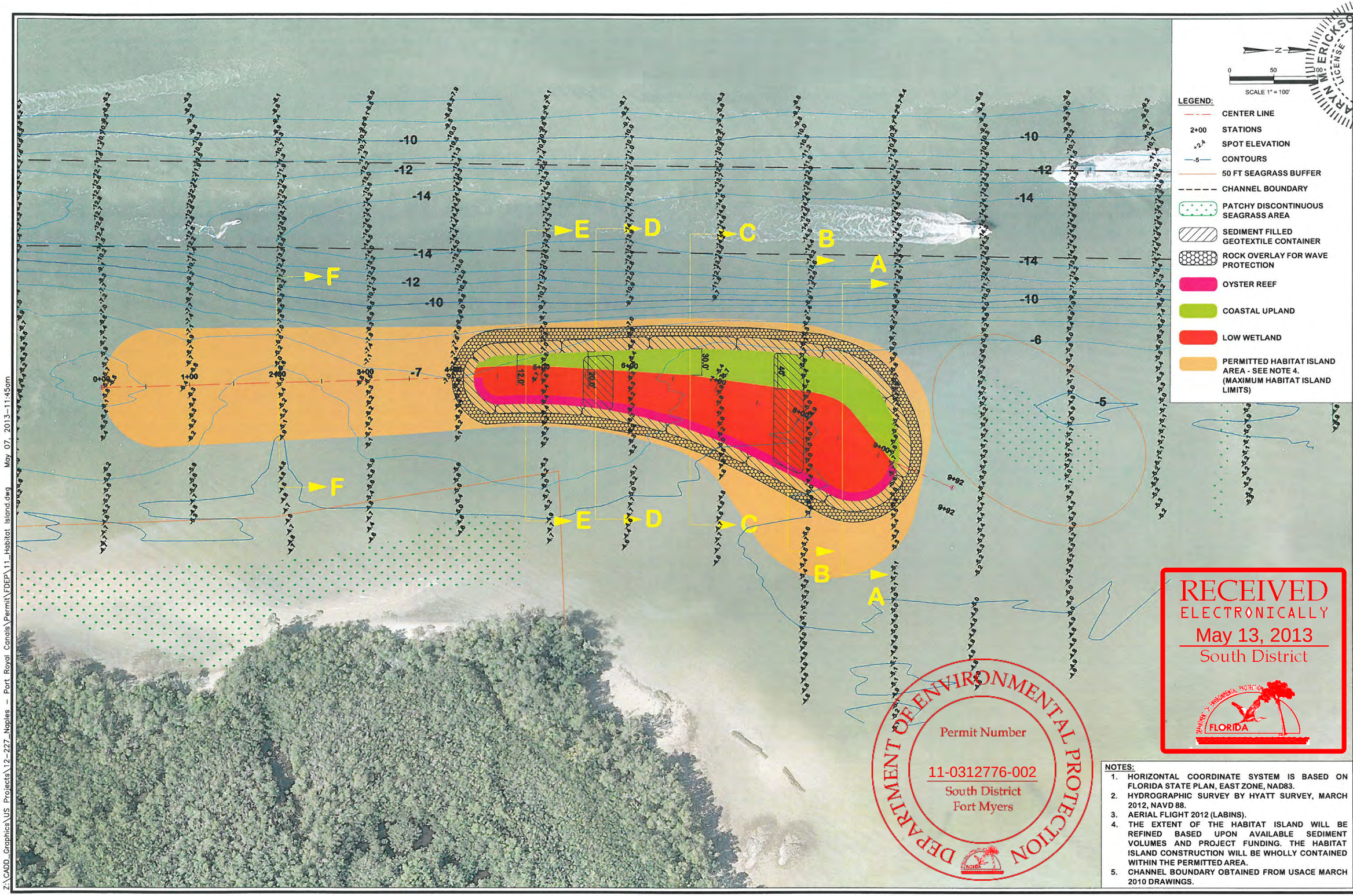
DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
CHAMPNEY BAY (NORTH)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
10C
SHEET 27 OF 41



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DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

NOTES:
1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLAN, EAST ZONE, NAD83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88.
3. AERIAL FLIGHT 2012 (LABINS).
4. THE EXTENT OF THE HABITAT ISLAND WILL BE REFINED BASED UPON AVAILABLE SEDIMENT VOLUMES AND PROJECT FUNDING. THE HABITAT ISLAND CONSTRUCTION WILL BE WHOLLY CONTAINED WITHIN THE PERMITTED AREA.
5. CHANNEL BOUNDARY OBTAINED FROM USACE MARCH 2010 DRAWINGS.

M. ERICKSON LICENSE NO. 41897
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Kathryn Erickson, P.E. #41897
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLF	FDEP RAI #1
2	4/19/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

PLAN VIEW
HABITAT ISLAND (MINIMUM)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
11A
SHEET 28 OF 41

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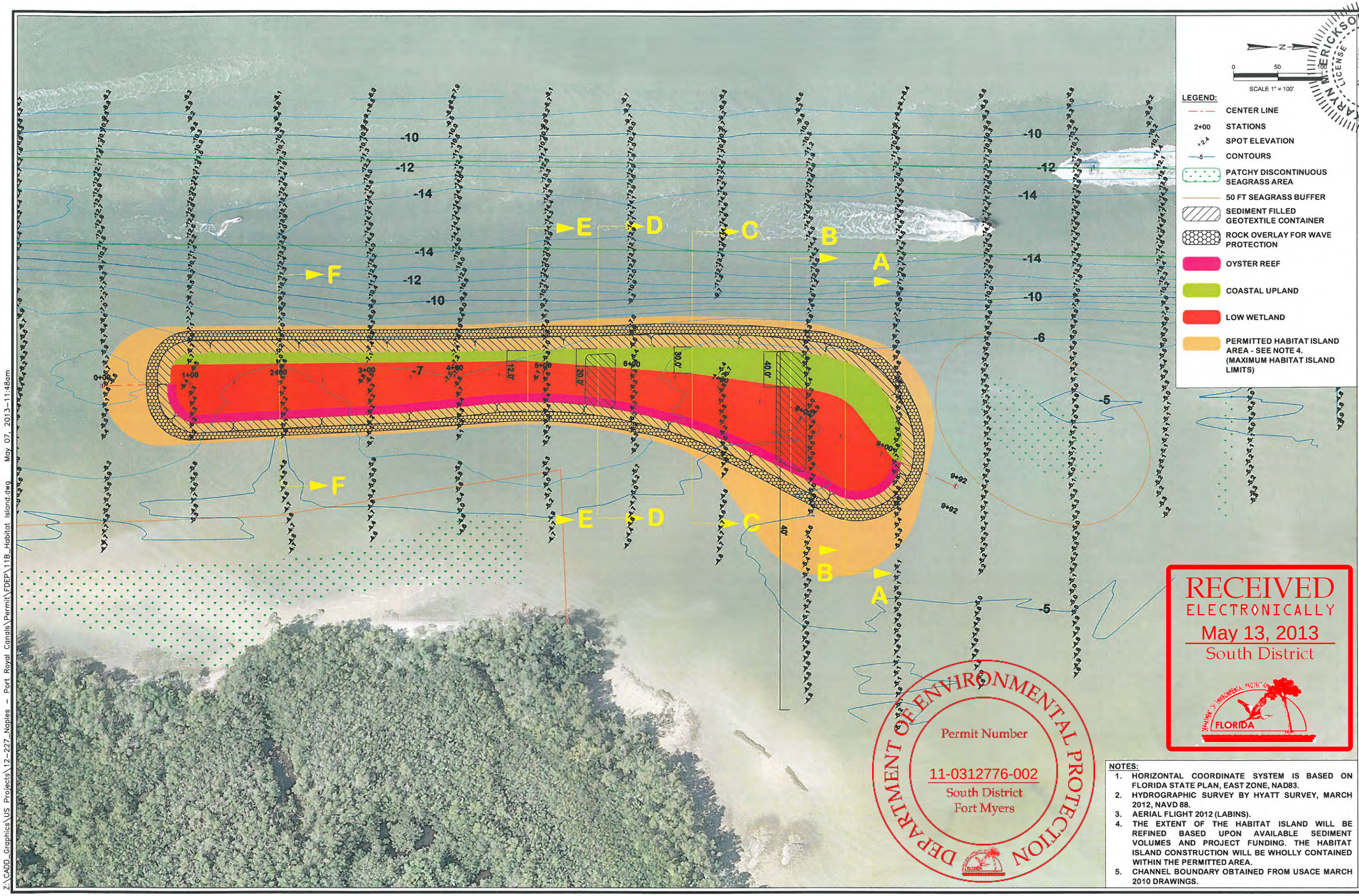

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South District

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

NOTES:
1. HORIZONTAL COORDINATE SYSTEM IS BASED ON FLORIDA STATE PLAN, EAST ZONE, NAD83.
2. HYDROGRAPHIC SURVEY BY HYATT SURVEY, MARCH 2012, NAVD 88.
3. AERIAL FLIGHT 2012 (LABINS).
4. THE EXTENT OF THE HABITAT ISLAND WILL BE REFINED BASED UPON AVAILABLE SEDIMENT VOLUMES AND PROJECT FUNDING. THE HABITAT ISLAND CONSTRUCTION WILL BE WHOLLY CONTAINED WITHIN THE PERMITTED AREA.
5. CHANNEL BOUNDARY OBTAINED FROM USACE MARCH 2010 DRAWINGS.

MARK M. ERICKSON LICENSE No. 14067 STATE OF FLORIDA PROFESSIONAL ENGINEER
ORIGINAL SIGNED AND SEALED
Mark M. Erickson, P.E.
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/29/13	AS	EC	FDEP PERMIT MODIFICATION #1

DESIGNED EC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

PLAN VIEW
HABITAT ISLAND (PERMIT AREA)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
11B
SHEET 29 OF 41

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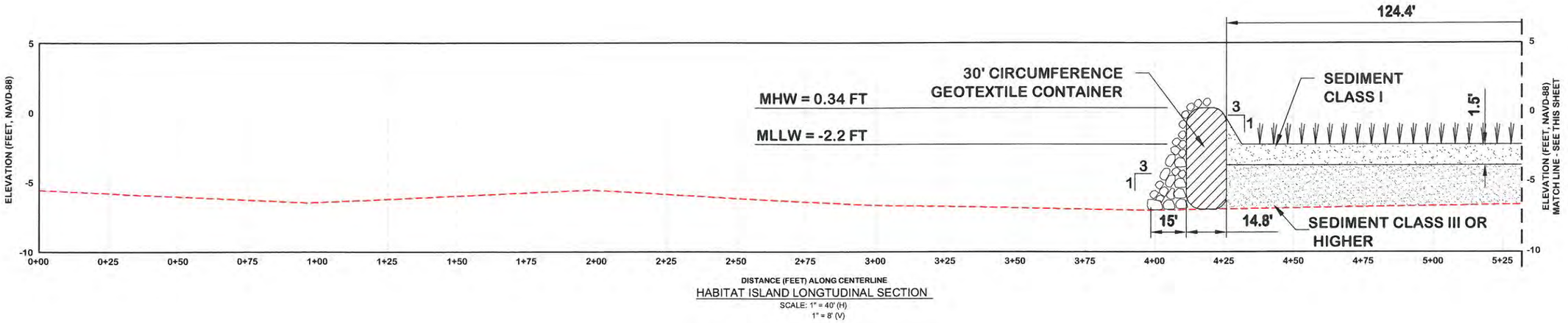
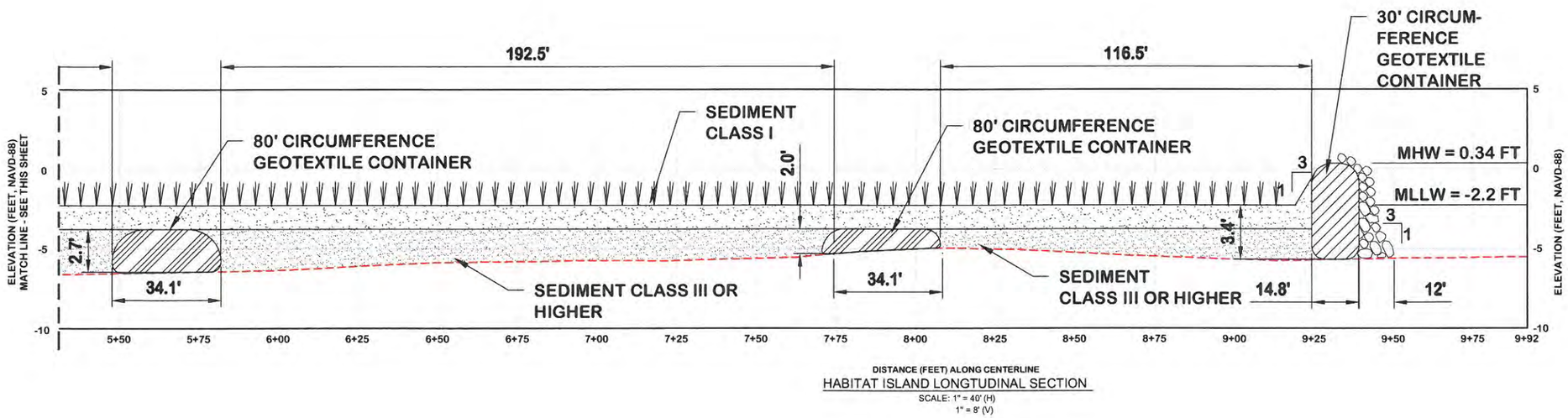


HABITAT ISLAND LONGTUDINAL SECTION

SCALE: 1" = 40' (H)
1" = 8' (V)



HABITAT ISLAND LONGTUDINAL SECTION

SCALE: 1" = 40' (H)
1" = 8' (V)

NOTES:

1. SEE SEDIMENT MANAGEMENT PLAN FOR SEDIMENT CHARACTERISTICS.
2. GEOWEB LAYER MAY BE ELIMINATED WHEN USING UPLAND SAND SOURCE (CLEAN, MEDIUM GRAINED SAND) AT THE DISCRETION OF THE ENGINEER.

LEGEND:

CLASS I SEDIMENT (<20% FINES)

CLASS II - III SEDIMENT (>20% FINES)

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
South District
Fort Myers

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May 13, 2013
South District

M. ERICKSON — LICENSE — STATE OF FLORIDA — No. 61807 — Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/24/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CF
DATE: 03/12/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

LONGITUDINAL CENTER LINE PROFILE
HABITAT ISLAND

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
11C
SHEET 30 OF 41

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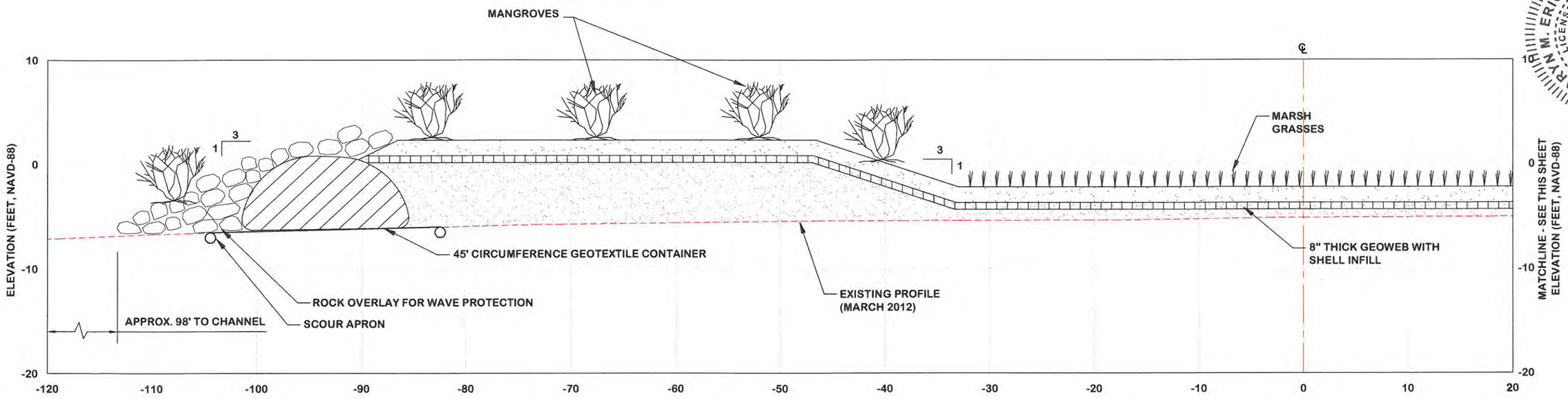
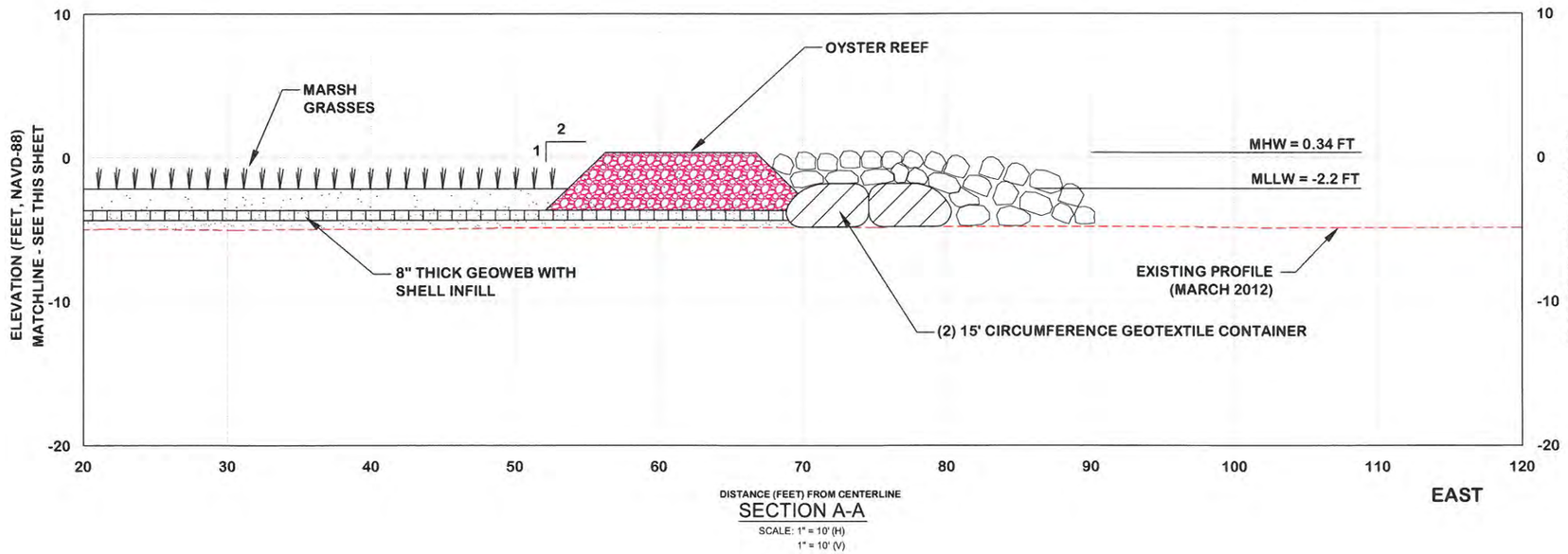


SECTION A-A

SCALE: 1" = 10' (H)
1" = 10' (V)



SECTION A-A

SCALE: 1" = 10' (H)
1" = 10' (V)

NOTES:

1. SEE SEDIMENT MANAGEMENT PLAN FOR SEDIMENT CHARACTERISTICS.
2. GEOWEB LAYER MAY BE ELIMINATED WHEN USING UPLAND SAND SOURCE (CLEAN, MEDIUM GRAINED SAND) AT THE DISCRETION OF THE ENGINEER.

LEGEND:

- CLASS I SEDIMENT (<20% FINES)
- CLASS II - III SEDIMENT (>20% FINES)
- OYSTER REEF

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLF	FDEP RAI #1
2	4/30/13	AS	EC	FDEP PERMIT MODIFICATION #1

DESIGNED	DRAWN	CHECKED
EC	DP	CF

DATE: 03/15/2012
JOB NO.: 12-227
SCALE: AS NOTED

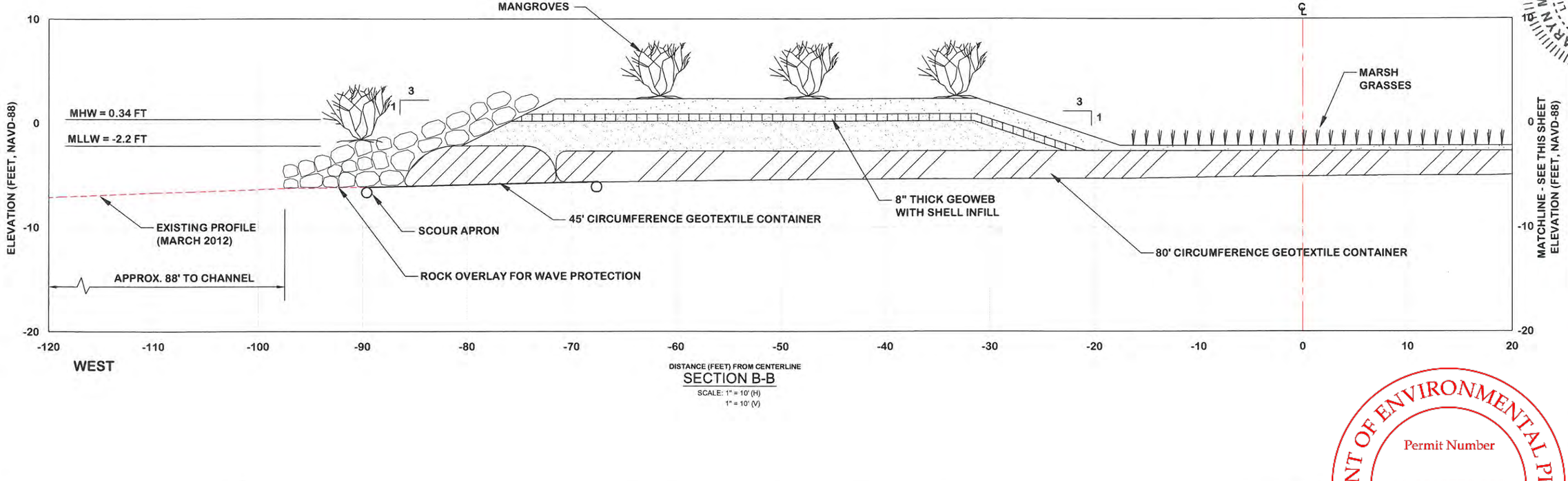
PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
HABITAT ISLAND

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
11D
SHEET 31 OF 41

Z:\CADD_Graphics\US_Projects\12-227_Naples - Port Royal Canals\Permit\FDEP\11_Habitat Island.dwg May 07, 2013-11:46am



NOTES:

1. SEE SEDIMENT MANAGEMENT PLAN FOR SEDIMENT CHARACTERISTICS.
2. GEOWEB LAYER MAY BE ELIMINATED WHEN USING UPLAND SAND SOURCE (CLEAN, MEDIUM GRAINED SAND) AT THE DISCRETION OF THE ENGINEER.

LEGEND:

- CLASS I SEDIMENT (<20% FINES)
- CLASS II - III SEDIMENT (>20% FINES)
- OYSTER REEF

KARREN M. ERICKSON LICENSE No. 41807 STATE OF FLORIDA Professional Engineer
Signature & Seal Date
Karren M. Erickson, P.E.
Florida Registration No. 41807
Professional Engineer, Florida License No. 41807

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

CROSS SECTIONS
HABITAT ISLAND

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
11E
SHEET 32 OF 41

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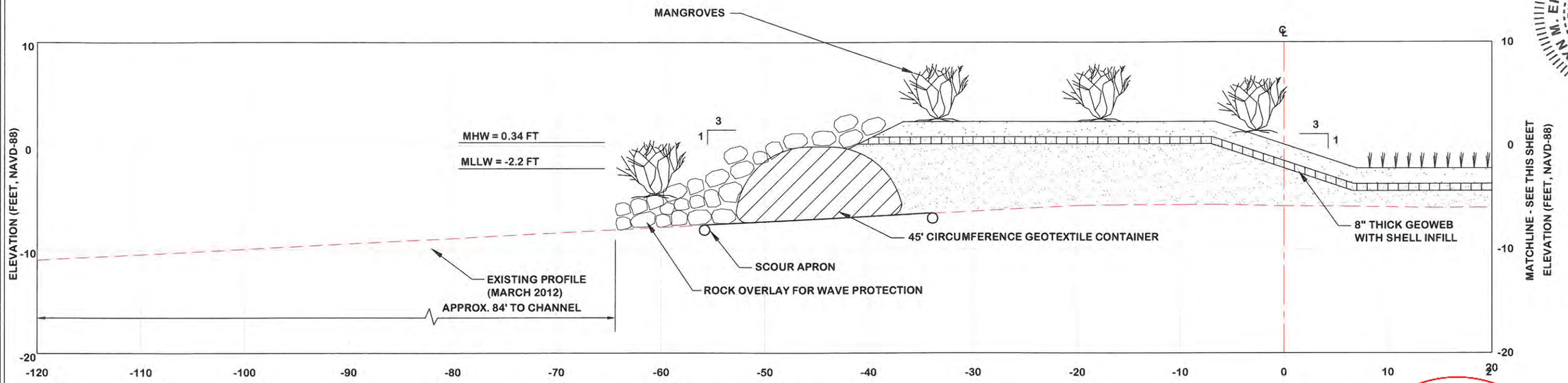
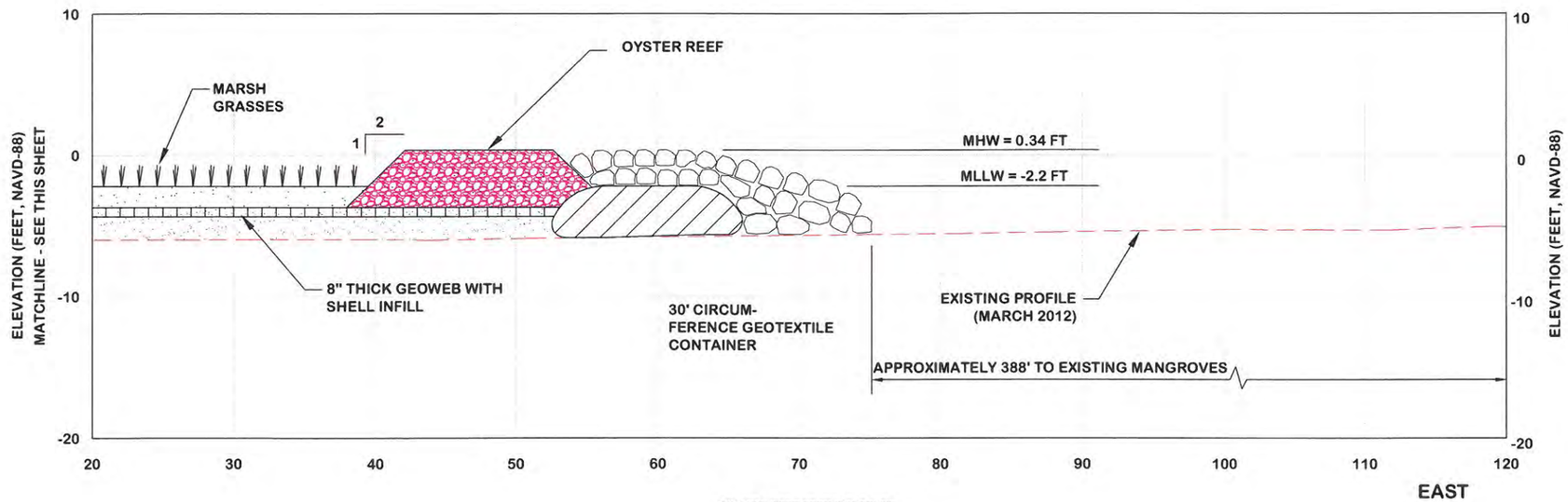


SECTION C-C

SCALE: 1" = 20' (H)
1" = 20' (V)



SECTION C-C

SCALE: 1" = 20' (H)
1" = 20' (V)

NOTES:

1. SEE SEDIMENT MANAGEMENT PLAN FOR SEDIMENT CHARACTERISTICS.
2. GEOWEB LAYER MAY BE ELIMINATED WHEN USING UPLAND SAND SOURCE (CLEAN, MEDIUM GRAINED SAND) AT THE DISCRETION OF THE ENGINEER.

LEGEND:

- CLASS I SEDIMENT (<20% FINES)
- CLASS II - III SEDIMENT (>20% FINES)
- OYSTER REEF

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Permit Number
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South District
Fort Myers

BRYAN M. ERICKSON LICENSE NO. 41807 STATE OF FLORIDA PROFESSIONAL ENGINEER
Signature Date 5/7/13
Bryan M. Erickson, P.E.
Florida Registration No. 41807
Professional Engineer

REV No.	DATE	DRAWN BY	CHKD BY	REMARKS
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DATE: 03/15/2012
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PORT ROYAL CANALS
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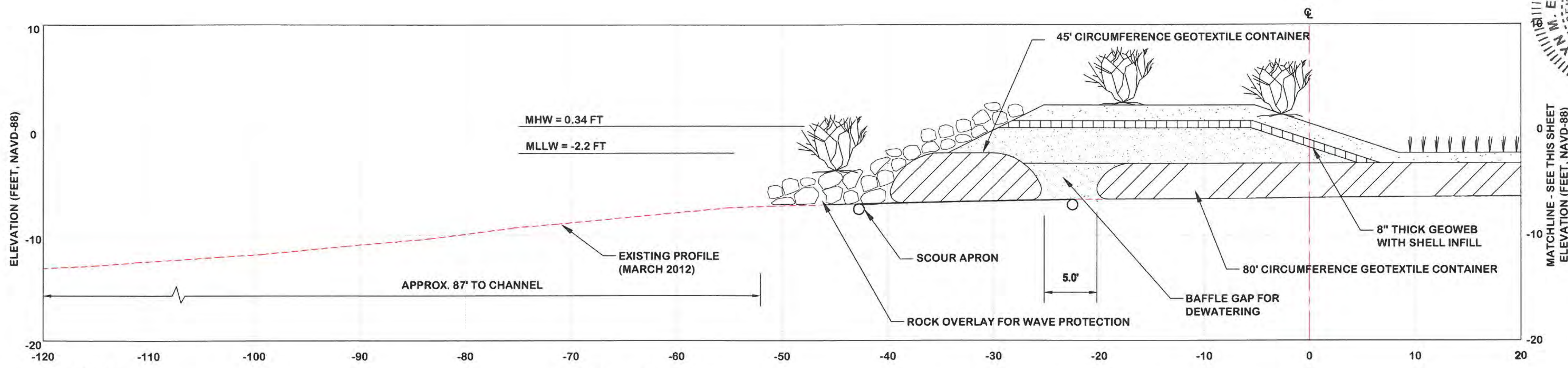
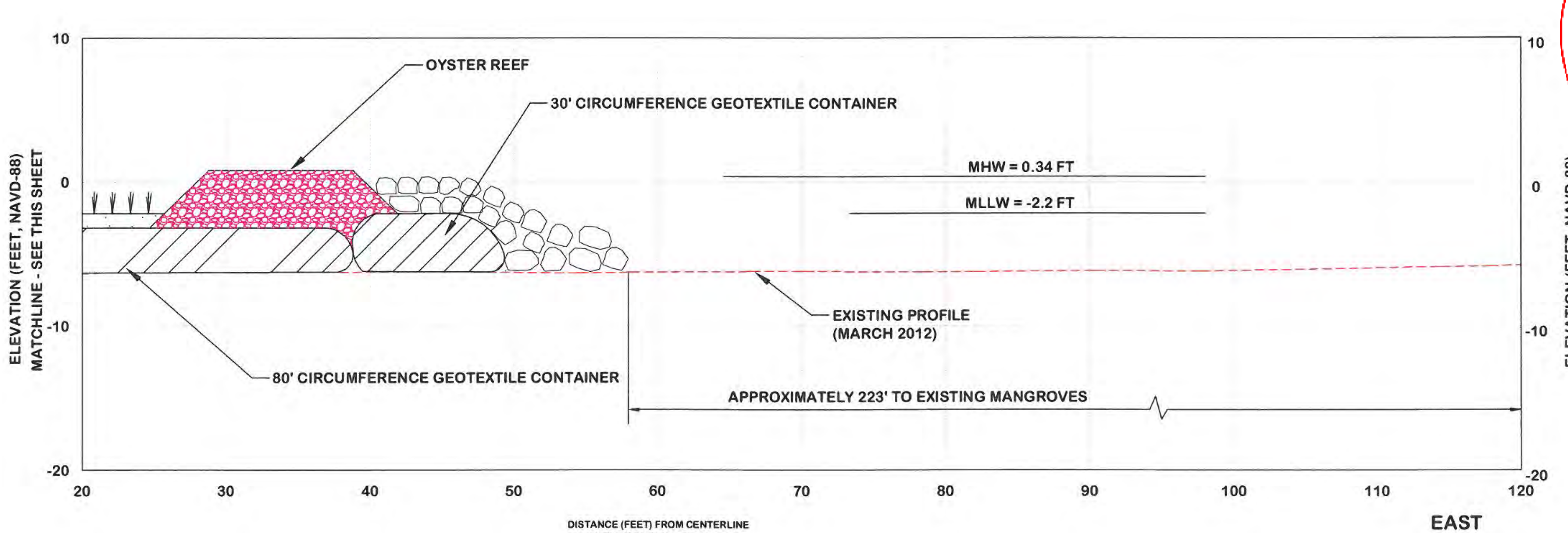


DISTANCE (FEET) FROM CENTERLINE

SECTION D-D

SCALE: 1" = 10' (H)
1" = 10' (V)



DISTANCE (FEET) FROM CENTERLINE

SECTION D-D

SCALE: 1" = 10' (H)
1" = 10' (V)

NOTES:

1. SEE SEDIMENT MANAGEMENT PLAN FOR SEDIMENT CHARACTERISTICS.
2. GEOWEB LAYER MAY BE ELIMINATED WHEN USING UPLAND SAND SOURCE (CLEAN, MEDIUM GRAINED SAND) AT THE DISCRETION OF THE ENGINEER.

LEGEND:

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- CLASS II - III SEDIMENT (>20% FINES)
- OYSTER REEF

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Sarasota, FL 32420
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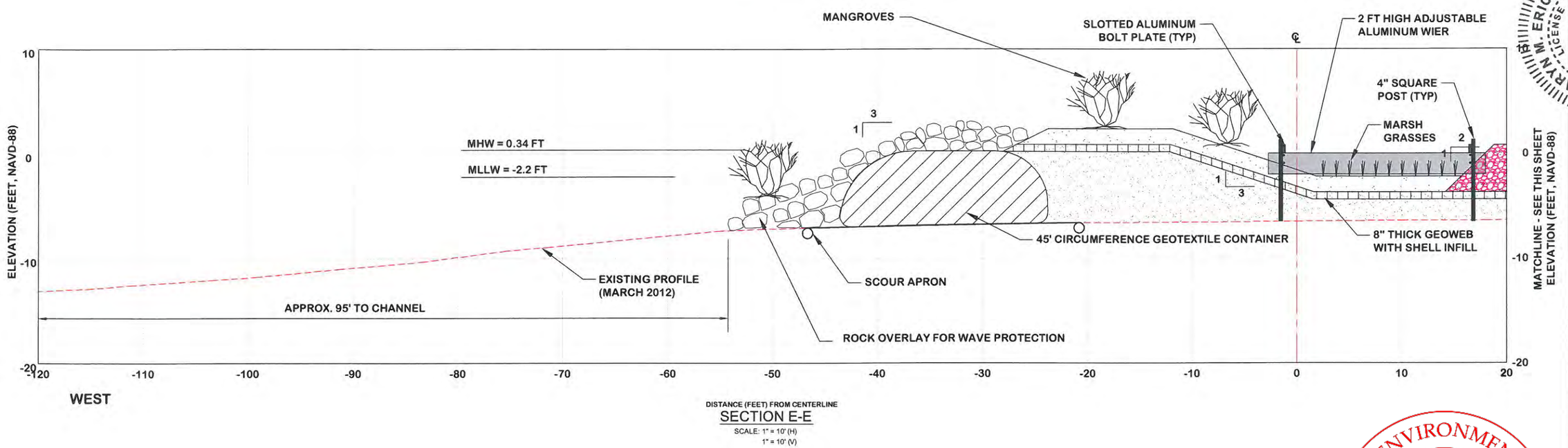
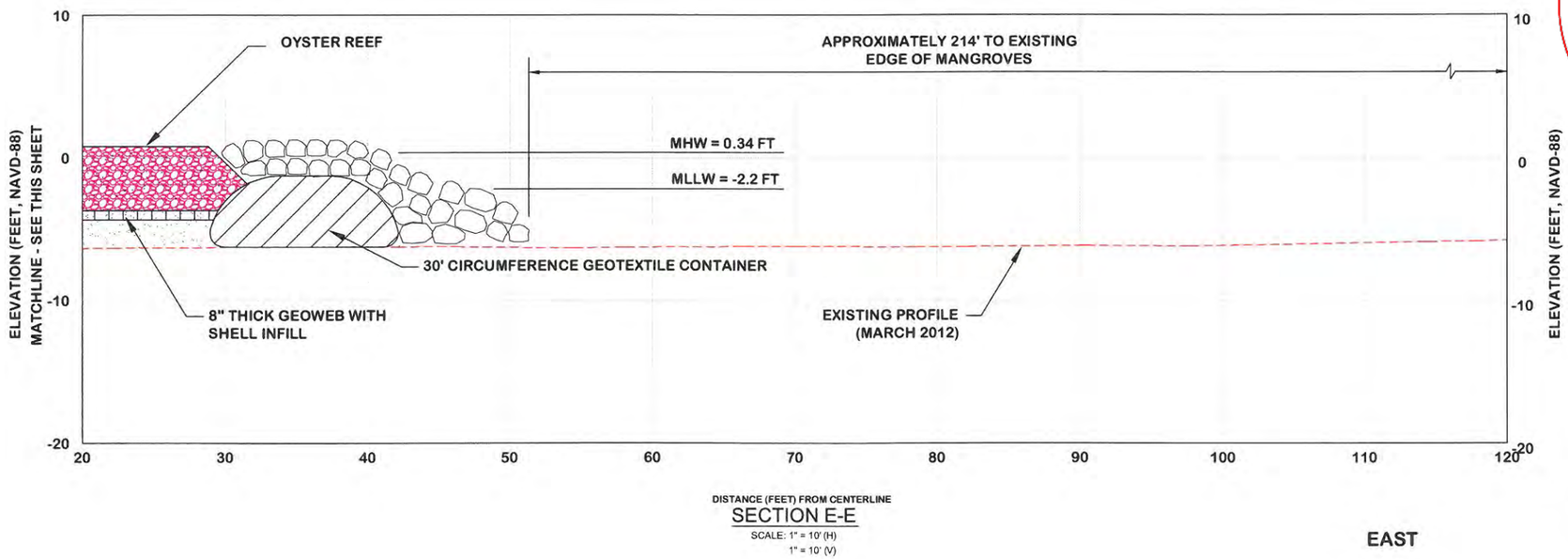


DISTANCE (FEET) FROM CENTERLINE

SECTION E-E

SCALE: 1" = 10' (H)
1" = 10' (V)



DISTANCE (FEET) FROM CENTERLINE

SECTION E-E

SCALE: 1" = 10' (H)
1" = 10' (V)

NOTES:

1. SEE SEDIMENT MANAGEMENT PLAN FOR SEDIMENT CHARACTERISTICS.
2. GEOWEB LAYER MAY BE ELIMINATED WHEN USING UPLAND SAND SOURCE (CLEAN, MEDIUM GRAINED SAND) AT THE DISCRETION OF THE ENGINEER.

LEGEND:

- CLASS I SEDIMENT (<20% FINES)
- CLASS II - III SEDIMENT (>20% FINES)
- OYSTER REEF

KEVIN M. ERICKSON
LICENSE
No. 41897
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Kevin M. Erickson, P.E.
Florida Registration No. 41897
Professional Engineer (General Area)

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/26/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN CP | CHECKED CP

DATE: 03/19/2012

JOB NO. 12-227

SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

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(941) 373-6460

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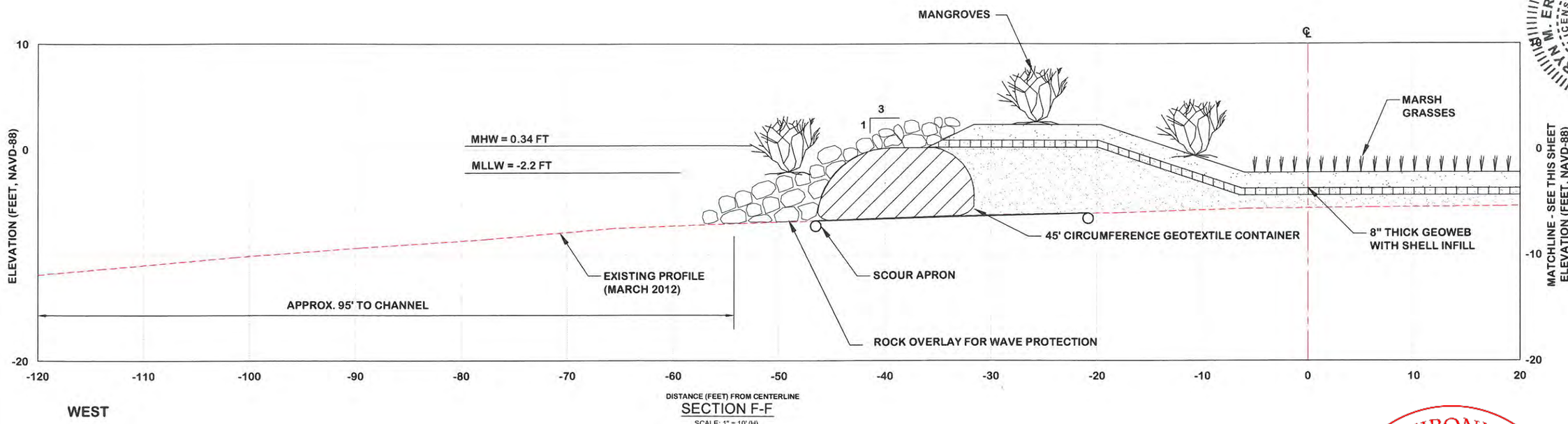
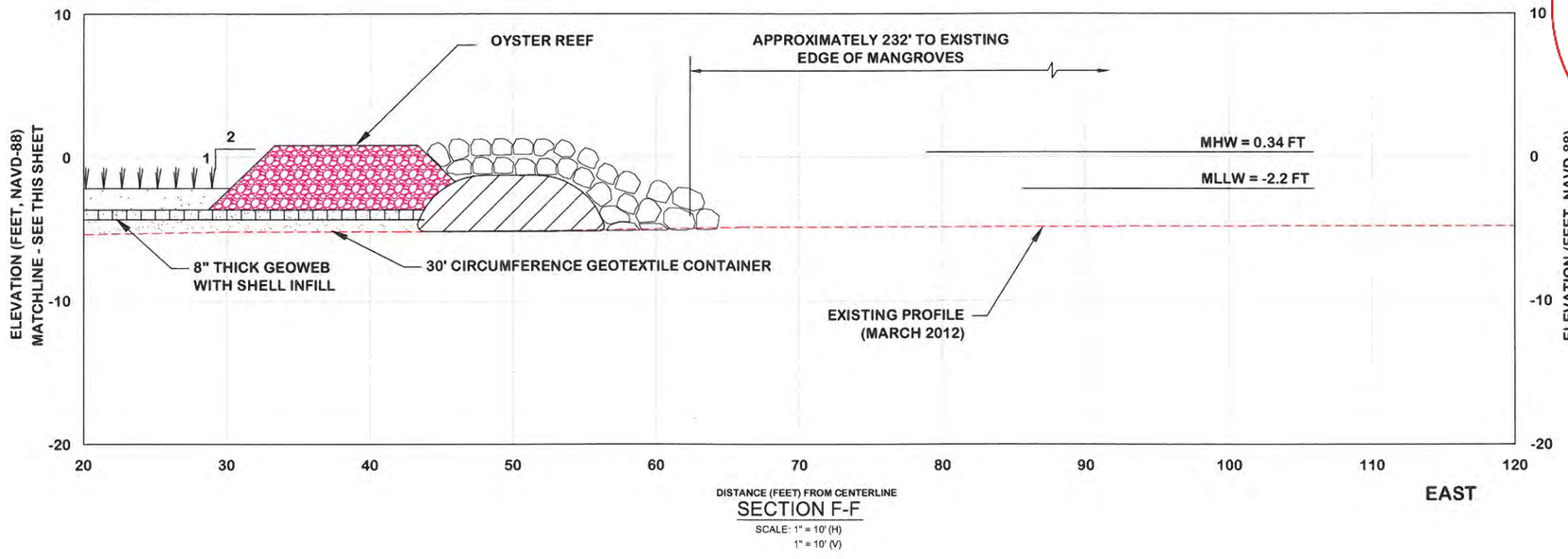


SECTION F-F

SCALE: 1" = 10' (H)
1" = 10' (V)



SECTION F-F

SCALE: 1" = 10' (H)
1" = 10' (V)

NOTES:

1. SEE SEDIMENT MANAGEMENT PLAN FOR SEDIMENT CHARACTERISTICS.
2. GEOWEB LAYER MAY BE ELIMINATED WHEN USING UPLAND SAND SOURCE (CLEAN, MEDIUM GRAINED SAND) AT THE DISCRETION OF THE ENGINEER.

LEGEND:

- CLASS I SEDIMENT (<20% FINES)
- CLASS II - III SEDIMENT (>20% FINES)
- OYSTER REEF

BRYAN M. ERICKSON LICENSE 67177 STATE OF FLORIDA PROFESSIONAL ENGINEER
Kathryn Bryan Erickson, P.E.
Florida License No. 67177
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BRE	CLP	FDEP RAI #1
2	4/24/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/12/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

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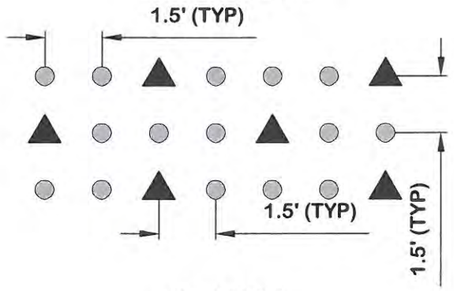
CORDGRASS / NEEDLERUSH TYPICAL LAYOUT



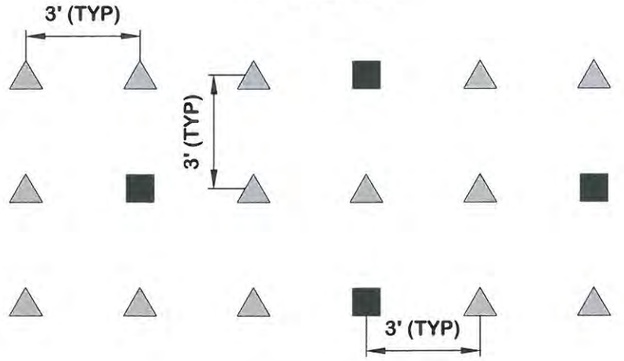
PLAN VIEW
SCALE: 1"=2'

NOTES:
1. PLANT SPACING @ 18" ON CENTER.
2. PLANTS TO BE INSTALLED MANUALLY FROM PRE-FERTILIZED CONTAINERS.

LEGEND

- 4 INCH LINER CORDGRASS/ NEEDLERUSH PLANTS
- 1 GALLON CORDGRASS/ NEEDLERUSH PLANTS

MANGROVE PLANTINGS TYPICAL LAYOUT



PLAN VIEW
SCALE: 1"=2'

NOTES:
1. PLANT SPACING @ 3 FT ON CENTER.
2. PLANTS TO BE INSTALLED MANUALLY FROM PRE-FERTILIZED CONTAINERS.

LEGEND

- 1 GALLON MANGROVE PLANTS
- 3 GALLON MANGROVE PLANTS

Plant Name	Size	Spacing (ft)	Area (sf)	Quantity
Red & Black Mangrove (Rhizophora mangle) (avicennia germinans)	1 gallon	3	14,650	2,500
	3 gallon	3	14,650	700
Smooth Cordgrass (Spartina alterniflora)	4" liner	1.5	24,390	7,500
	1 gallon	1.5	24,390	2,800
Black Needlerush (Juncus roemerianus)	4" liner	1.5	24,390	7,500
	1 gallon	1.5	24,390	2,800

NOTE:
QUANTITIES BASED ON DREDGING OF PRIMARY AREAS ONLY.

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GARY M. ERICKSON LICENSE NO. 41897 STATE OF FLORIDA PROFESSIONAL ENGINEER
Signature of Florida Professional Engineer
Gary M. Erickson, P.E.
Florida Registration Number 41897
Date: 5/7/13

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BRG	CLP	FDEP RAI #1
2	4/30/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED	DRAWN	CHECKED
BC	DP	CP

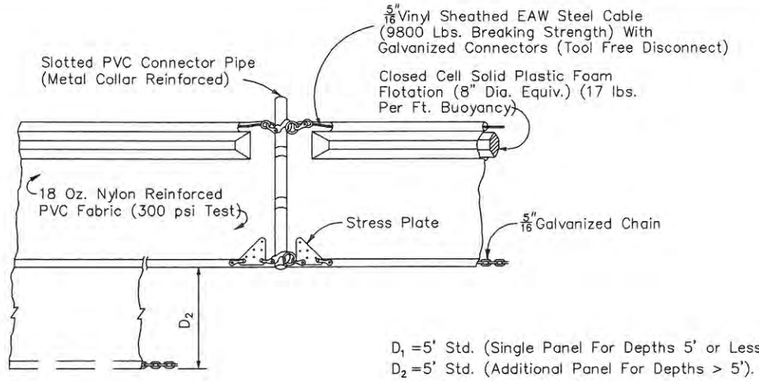
DATE: 03/19/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

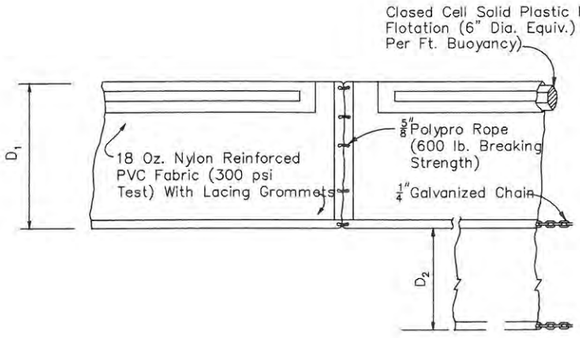
PLANTING DETAILS
HABITAT ISLAND

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
11J
SHEET 37 OF 41



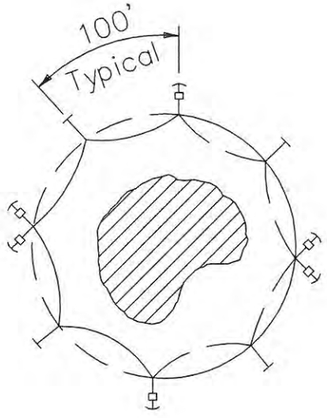
TYPE II



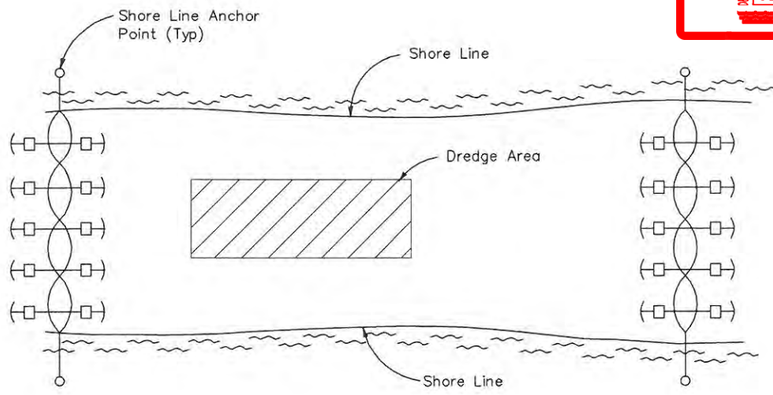
TYPE I

D_1 =5' Std. (Single Panel For Depths 5' or Less).
D_2 =5' Std. (Additional Panel For Depths > 5').
Curtain To Reach Bottom Up To Depths Of 10 Feet.

FLOATING TURBIDITY BARRIERS



OPEN WATER



CANAL INTERIOR DETAIL

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FLORIDA

GENERAL NOTES:

1. Turbidity barriers to be used in all permanent bodies of water regardless of water depth.
2. Type I floating turbidity barriers may be used when dredging canal interiors.
3. Type II floating turbidity barriers are required when dredging or filling near canal entrances and the habitat island size (e.g. open water areas).
4. Components of type I and II may be similar or identical to proprietary designs.
5. Number and spacing of anchors dependent on current velocities.
6. Deployment of barriers may vary to accommodate construction operations.
7. Navigation may require segmenting barrier during construction operations.

LEGEND

- Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action

M. ERICKSON LICENSE No. 41697 STATE OF FLORIDA ENGINEER
PROFESSIONAL ENGINEER
Jeffrey M. Erickson, P.E.
Registration Number 41697

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BMD	CLP	FDEP RAI #1
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PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

TURBIDITY CONTROL PLAN

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER 12
SHEET 38 OF 41

LEGEND

- PIPELINE CORRIDOR (15')
- DREDGE AREA
- CONTINOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA LESS THAN 10'x10'
- OYSTER BED (ECE)
- SEAGRASS AREA (CITY OF NAPLES)
- OYSTER CREATED REEFS (CITY OF NAPLES)
- OYSTER ISOLATED REEFS (CITY OF NAPLES)
- OYSTER BED (CITY OF NAPLES)

NOTES

1. AERIAL FLIGHT 2012 (LABINS).
2. BENTHIC RESOURCES, AS SHOWN, ARE BASED ON CITY OF NAPLES DATA, BIOLOGICAL SURVEYS BY ECE (APRIL 2012), BIOLOGICAL SURVEYS BY ATKINS (MAY 2007 AND AUGUST 2007) AMD CITY OF NAPLES GIS DATABASE.
3. THE UPLAND DEWATERING SITE IS LOCATED AT 50 RIVERSIDE CIRCLE, NAPLES, FL.
4. PIPELINE CORRIDOR, AS SHOWN, IS APPROXIMATE. A BOOSTER(S) PUMP WILL BE REQUIRED TO CONVEY DREDGED MATERIAL TO THE UPLAND DEWATERING SITE. THE BOOSTER(S) PUMP LOCATION(S) MAY BE EITHER WATER OR LAND BASED. FINAL PIPELINE PLAN TO BE PROVIDED TO BY THE CONTRACTOR A MINIMUM OF 30 DAYS PRIOR TO CONSTRUCTION FOR CITY OF NAPLES/ENGINEER APPROVAL.
5. PIPELINE SHALL BE SUBMERGED EXCEPT AT THE INTAKE, THE BOOSTER PUMP(S) AND AT THE OUTFALL.
6. A PRE-CONSTRUCTION BIOLOGICAL SURVEY OF THE PIPELINE ROUTE IS REQUIRED WITHIN 30 DAYS OF COSNTRUCTION AND PRIOR TO LAYING PIPELINE.
7. CHANNEL BOUNDARY OBTAINED FROM USACE MARCH 2010 DRAWINGS.

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KAREN M. ERICKSON LICENSE No: 41897 STATE OF FLORIDA PROFESSIONAL ENGINEER
Karen M. Erickson, P.E. No. 41897
Professional Engineer

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
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PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

PIPELINE PLAN

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460
ECE

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SHEET 39 OF 41

N

0 40 80

SCALE: 1" = 80'

LEGEND:

- DEWATERING BASIN AREA
- STAGING AND STORAGE AREA
- EASEMENT
- FLOATING TURBIDITY BARRIER
- APPROXIMATE PROPERTY BOUNDARY (COLLIER COUNTY PROPERTY APPRAISER)

NOTES

1. AERIAL FLIGHT 2012 (LABINS).
2. BENTHIC RESOURCES, AS SHOWN, ARE BASED ON CITY OF NAPLES DATA, BIOLOGICAL SURVEYS BY ECE (APRIL 2012) AND BIOLOGICAL SURVEYS BY ATKINS (MAY 2007 AND AUGUST 2007).
3. THE UPLAND DEWATERING SITE IS LOCATED AT 50 RIVERSIDE CIRCLE, NAPLES, FL.
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5. PIPELINE SHALL BE SUBMERGED EXCEPT AT THE INTAKE, THE BOOSTER PUMP(S) AND AT THE OUTFALL.

ROWING CLUB DOCK ACCESS

BURIED DEWATERING BASIN OUTFALL

180'

132'

DEWATERING BASIN OUTFALL STRUCTURE

10'

3:1

TOP OF BERM EL = 10.0'

DEWATERING BASIN OUTFALL

FLOATING TURBIDITY BARRIER

46' (TYP)

DEWATERING BASIN APPROX 1.2 AC.

CONTRACTOR STAGING & STORAGE APPROX 0.8 AC.

289'

INFLOW TO DEWATERING BASIN

CONTRACTOR SHALL EMPLOY ANY AND ALL MEASURES TO AVOID SHORELINE EROSION WITHIN DISCHARGE AREA

BURIED DREDGE PIPELINE

15' PIPELINE CORRIDOR

60' WIDE EASEMENT

692'

GORDON RIVER

DEPARTMENT OF ENVIRONMENTAL PROTECTION
South District
Fort Myers
11-0312776-002
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May 13, 2013
South District

KARYN M. ERICKSON
LICENSE
No: 41697
STATE OF FLORIDA
PROFESSIONAL ENGINEER
KARYN M. ERICKSON, P.E.
Professional Engineer # 41697

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PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA

DEWATERING PLAN VIEW

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

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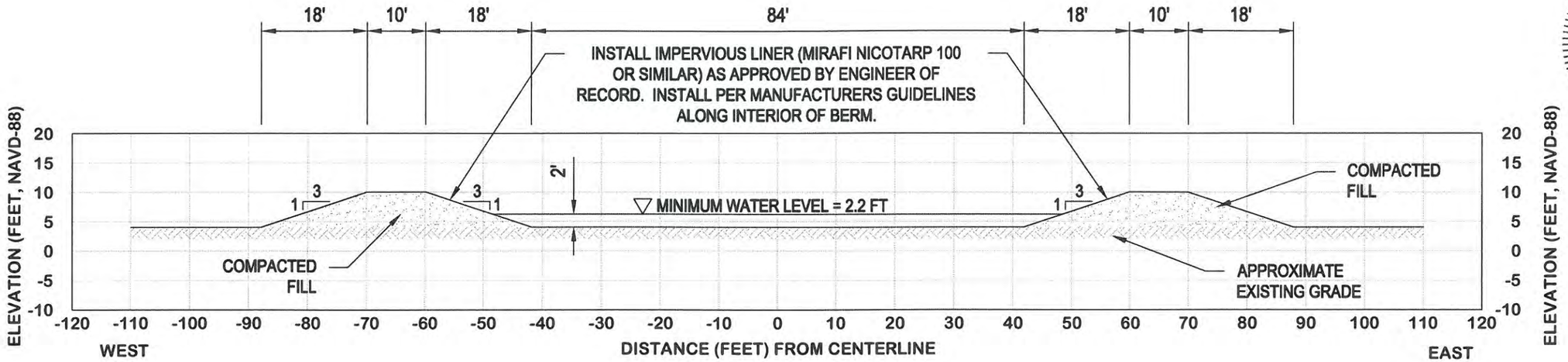
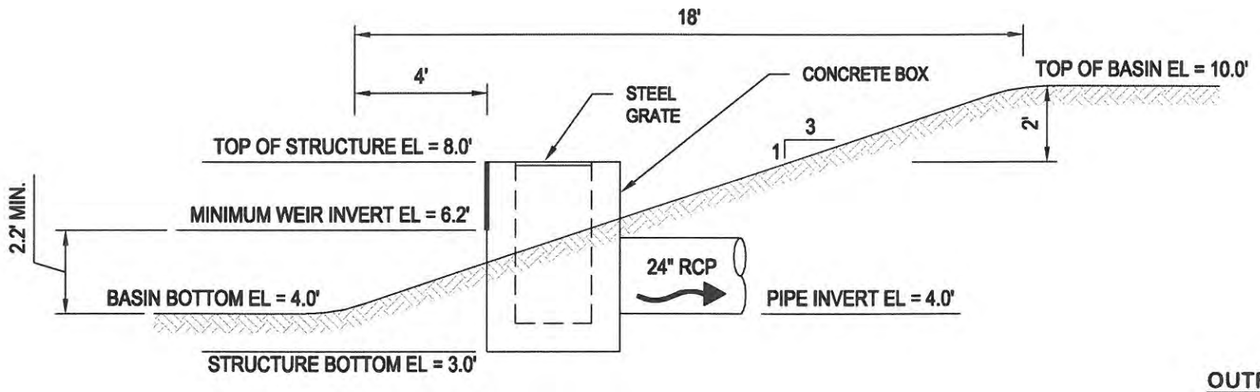
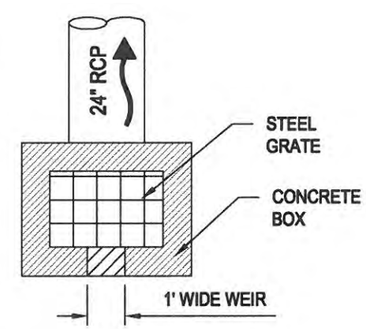
14A
SHEET 40 OF 41



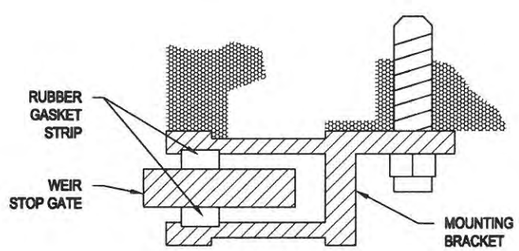
DEWATERING BASIN TYPICAL SECTION
SCALE: 1" = 20'(H)
1" = 20'(V)



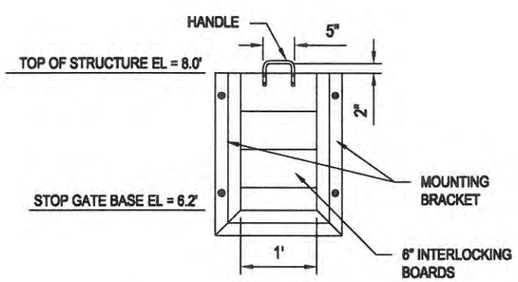
OUTFALL STRUCTURE SECTION
SCALE: 1" = 4'



OUTFALL STRUCTURE PLAN VIEW
SCALE: 1" = 4'



MOUNTING BRACKET DETAIL (PLAN VIEW)
SCALE: 1" = 2'



WEIR STOP GATE
SCALE: 1" = 2'

STATE OF FLORIDA
KARYN M. ERICKSON
LICENSE No: 41897
PROFESSIONAL ENGINEER
Karyn M. Erickson, P.E.
Professional Engineer # 41897

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/24/12	BKG	CLP	FDEP RAI #1
2	4/29/13	AS	BC	FDEP PERMIT MODIFICATION #1

DESIGNED BC | DRAWN DP | CHECKED CP
DATE: 03/15/2012
JOB NO. 12-227
SCALE: AS NOTED

PORT ROYAL CANALS
CITY OF NAPLES, FLORIDA
DEWATERING DETAILS

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Permit Number
11-0312776-002
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Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
14B
SHEET 41 OF 41

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City Of Naples (Port Royal)

Habitat Island and Canal Dredging Project

Sediment Management Plan

1.0 INTRODUCTION

The purpose of the Sediment Management Plan ("The Plan") is to evaluate the Project's sediment characteristics to determine the appropriate construction methods and sediment re-use. The plan includes the project description, an outline of the project sediment composition, the sediment specifications to be met, and dredge and re-use location plans.

2.0 PROJECT DESCRIPTION

The proposed habitat island and Port Royal canals are located adjacent (north) to Gordon Pass in the City of Naples, Florida (Figure 1). The purpose of the Project is to create a habitat island to achieve:

(1) Reduction of shoreline erosion of the mangroves;

(2) Increased flows and therefore improve circulation within the embayment east of the waterway and specifically between the habitat island and the easterly shoreline; and

(3) Creation of an enhanced habitat for birds, fish and invertebrates.

Portions of the sediment to construct the island may be excavated from the nearby Port Royal Canal System. This provides an added benefit of restoring the navigable canal system for the residents of the Port Royal subdivision and constructing a sustainable project based upon sustainability's triple bottom line including achieving measurable environmental, economic and social benefits.

Two dredge areas are permitted as follows (Figure 1):

(1) "Primary Dredge Area" – areas of dredging required to fulfill the intent established by the City's Resolution for the Project. These areas represent the minimum dredge areas required to re-establish navigability to the Port Royal canals based upon the current use by the residents.

(2) "Optional Dredge Area" – areas of dredging recommended to allow for the optimal use of the canals by the residents as well as reduce the future time interval between required maintenance events. This area may or may not be dredged during the life of the permit based upon the City's funding.

The project will be phased based upon the available funding mechanisms as follows:

- Phase 1: Dredge Port Royal canals (primary dredge areas) with upland dewatering and sediment disposal
- Phase 2: Construction the habitat island with some combination of sand procured from an upland mine and/or sediment dredged from the "optional" Port Royal dredge areas.
- Phase 3: Maintenance dredging of the Port Royal canals (primary and optional dredge areas) for the duration of the 10YR permit with either upland disposal or expansion of the island.

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Fort Myers

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CP	DP	CP

DATE: 5/11/2012
JOB NO. 12-227
SCALE: AS NOTED

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

PROJECT LOCATION

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

FIGURE 1

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Sediment dredged from the Port Royal Canals and/or sand obtained from an upland mine may be used to create a habitat island within Naples Bay as shown on Figure 1. Based on a geotechnical analysis of the sediment to be dredged, the sediment can be classified as either fine sand (Class I, <20% fines) or silts and clays (Class 2, 20-60% fines and Class III, >60% fines). Sediment filled geotextile containers will be used to stabilize the island perimeter. Several small interior containment baffles may also be constructed of geotextile containers to control dewatering and formation of the island. For portions of the island created with the dredged sediment, the island itself will be comprised of a mixture of Sediment Classes II and III and will be capped with fine sand (Class I) of at least 1.5 ft cap thickness. For portions of the island constructed purely from an upland sand source, the island will be constructed entirely of Class I sediment. In such instances, the 8 inch geoweb layer may be eliminated at the discretion of the engineer. The basic layout of the habitat island by sediment classification is as shown in Figure 2.

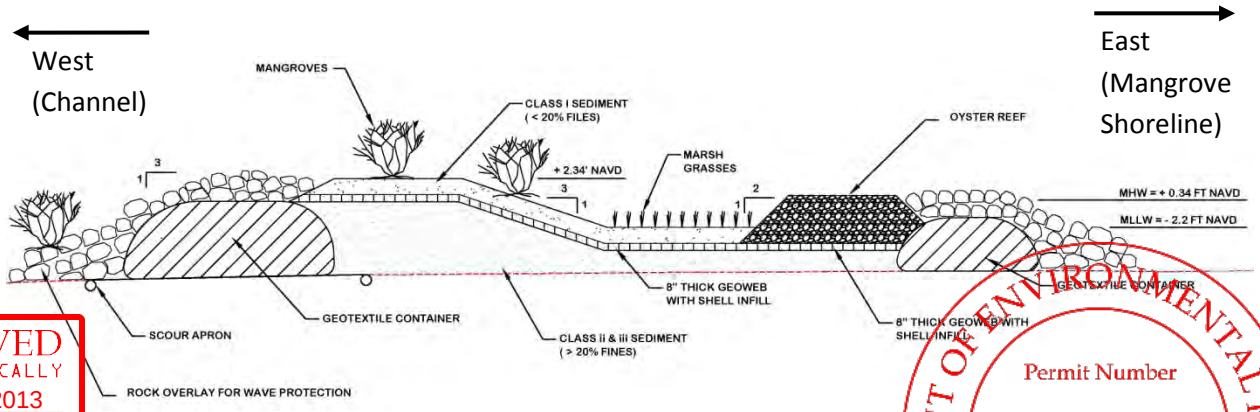


Figure 2 – Typical Habitat Island Layout by Sediment Class

3.0 DREDGED SEDIMENT COMPOSITION

As described in the stand alone Geotechnical Report for the Canal Dredging (Revised October 2012), the excavation areas have been divided into three major classifications (Figure 3) based on the quality of sediment. Approximately 14% of the sediment to be dredged is composed of fine sand with less than 20% fines (Class I Sediment), 53% is

composed of sediment with a fines content between 20-60% (Class II Sediment) and the remaining 32% is composed of sediment with a fines content exceeding 60% (Class III Sediment).

Composite sediment characteristics for each dredge area are summarized in Table 1. Additional detail can be found in the June 2012 Geotechnical Report by ECE.

Table 1. Port Royal Canals Sediment Composition

Canal ID	Dredge Volume (CY)	Percent Of Project	Mean (mm)	Mean (Phi)	Sorting (Phi)	Silt Content	Sediment Classification
Cutlass Cove	3,060	14%	0.10	3.38	-0.02	19%	Class I (<20% Silts)
Champney Bay	2,480	12%	0.09	6.26	-3.52	48%	Class II (20-60% Silts)
Doubloon Entrance	2,070	10%	0.08	3.95	-0.85	42%	Class II (20-60% Silts)
Galleon Cove	6,680	32%	0.06	5.43	-1.28	53%	Class II (20-60% Silts)
Doubloon Circle	1,440	7%	0.03	9.03	-5.10	84%	Class III (>60% Fines)
Harbor Head	5,380	25%	0.07	4.30	-1.19	82%	Class III (>60% Silts)
Project Composite	**21,110**	**100%**	**0.07**	**5.04**	**-1.56**	**56%**	

Note: The volumes reported in the table above represent the design volumes plus a 4" overdredge allowance. The actual dredge volumes will vary between the design volume (17,500 CY) to a volume encompassing a 1 ft overdredge allowance (28,900 CY). These volumes are based on the "Primary Dredge Areas" only.

GULF OF MEXICO

CHAMPNEY BAY

GREEN DOLPHINS LANE

GIN LANE

DOUBLOON BAY

RUM ROW

GALLEON COVE

GALLEON DRIVE

NAPLES BAY

HABITAT ISLAND SITE

GORDON DRIVE

DOUBLOON BAY

NELSONS WALK

HARBOR HEAD

ADMIRALTY PARADE

CUTLASS LANE

CUTLASS COVE

DOUBLOON BAY ENTRANCE

ADMIRALITY BAY

CALUSA SHELL MOUND

GORDON PASS

N

0 400 800

SCALE: 1" = 800'

NOTE:
1. AERIAL FLIGHT 2011 (CITY OF NAPLES)

LEGEND:
- PRIMARY DREDGE AREA
- OPTIONAL DREDGE AREA
- CLASS 1 SEDIMENT (≤ 20% FINES)
- CLASS 2 SEDIMENT (20-60% FINES)
- CLASS 3 SEDIMENT (>60% FINES)

Canal ID	Dredge Volume (CY)	Percent	Sediment Classification
Cutlass Cove	3,060	14%	Class I (<20% Silts)
Champney Bay	2,480	12%	Class II (20-60% Silts)
Doubloon Entrance	2,070	10%	Class II (20-60% Silts)
Galleon Cove	6,680	32%	Class II (20-60% Silts)
Doubloon Circle	1,440	7%	Class III (>60% Fines)
Harbor Head	5,380	25%	Class III (>60% Silts)
Project Composite	**21,110**	**100%**	

Note: The volumes reported in the table above represent the design volumes plus a 4" overdredge allowance. The actual dredge volumes will vary between the design volume (17,500 CY) to a volume encompassing a 1 ft overdredge allowance (28,900 CY). These volumes are based on the "Primary Dredge Areas" only.

DESIGNED CP | DRAWN DP | CHECKED CP
DATE: 10/23/12
JOB NO.: 12-227
SCALE: AS NOTED

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

SEDIMENT CHARACTERIZATION

Erickson Consulting Engineers, Inc.
7201 Delcrimey Court
Sarasota, FL 32420
(941) 373-6460

FIGURE 3

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Exhibits\FDEP\FIG-3 Sediment Characterization.dwg Oct 23, 2012-10:00am

4.0 IMPORTED FILL SEDIMENT COMPOSITION

Sediment imported from an upland mine is required to meet the sediment specifications as shown in Table 2.

Table 2. Sediment Criteria for Imported Fill

Sediment Parameter	Compliance Value
Max Silt Content (% Passing #200 Sieve)	5%
Mean Grain Size Range	0.35 to 0.65mm
Max Rock Content (% Retained on 5/8" Sieve)	10%
Shall be free of construction debris, toxic material or other foreign matter	

5.0 SEDIMENT VOLUMES AND PLACEMENT LOCATIONS

Sediment will be used to construct the island as generally described in Table 3.

Table 3. Sediment Class by Final Placement Location

Sediment Type	Approximate Net Sediment Volume (CY) for 1.7 Acre Island (Min)	Approximate Net Sediment Volume (CY) for 3.5 Acre Island (Max)	Final Placement Location
Class 1	2,500	3,500	Island Sand Cap
Class II or Higher	2,300	3,800	Perimeter Geotextile Containers
Class III or Higher	7,000	9,500	Interior Weir Geotextile Containers and Island Base
Total	**12,000**	**18,000**	

Notes:

1. The final size of the island will be dependent upon project funding; however, the anticipated minimum and maximum island sizes and the associated sediment volumes are as generally described above.

2. Sand volumes are approximate and are based on the net volume required (does not account for sediment compaction or losses during dredging/dewatering). The Cut-Fill ratio for the dredged sediment is expected to be on the order of 2:1 while the Import-Fill ratio for the upland sand is expected to be closer to 1.2:1.

6.0 HANDLING OF FINES

A polymer/flocculent may be required to aid in dewatering and settlement of the large fraction of fines found in the sediment to be dredged within the Port Royal Canals. The polymer mix and dosing will be custom tailored to the soil type and chemistry associated with the project. ECE is currently undergoing consultation with a polymer supplier to establish the most suitable polymer mix and dosing for the project. The following information will be provided to the Department at least 60 days prior to the use of polymer:

a. Name and Material Safety Data Sheet (MSDS) for the polymer / flocculant that will be used;
b. Description / schematic of treatment system, including maximum dosage rates.
c. Description of control measures in place to ensure residual polymer is not being discharged. This should include descriptions of any testing methods in place to measure residual polymer and the frequency that these measurements will be conducted;
d. A detailed explanation of the methodology and rationale for choosing the proposed polymer, considering the nature of the suspended solids, the volume of material to be treated, dosing rates and volumes, discharge rates and volumes, mixing (stirring) methodology, water conditions (fresh vs. saline), and location of treatment vs. discharge;
e. A detailed discussion of the treatment process, including equipment, intakes, discharges, stirring processes, volumes to be treated, nature of the material to be treated;
f. Full literature on the polymer that is proposed for use, including chemical composition of the polymer, molecular weight, residual (unreacted) monomer content, percentage of active ingredient;
g. Anticipated concentrations of polymer to be discharged from the treatment area;
h. Possible effects of product decomposition on dissolved oxygen and biochemical oxygen demand

i. The degradation rate (half-life) of the proposed polymer under expected field conditions;

j. Toxicity bioassay data for an invertebrate and fish species and

k. A Polymer Testing and Monitoring Plan including protocol and requirements for acute elutriate toxicity testing, chronic elutriate effluent toxicity testing, and on-going construction monitoring requirements.

The Department's "Sampling and Analysis for Polymers and Other Flocculating Agents" Guide dated March 30, 2012 will be followed during the selection, testing and protocol development. The full protocol will be provided to the Department at least 60 days prior to the commencement of dredging.

7.0 RELATED DOCUMENTS

- Permit Drawings (April 2013)
- Construction Methods and Sequencing Plan (April 2013)
- Geotechnical Report (October 2012)

City Of Naples (Port Royal)

Habitat Island and Canal Dredging Project

Pipeline Layout Plan

1.0 INTRODUCTION

The purpose of the pipeline layout plan is to document the location of the pipeline corridor to be used for Phase 1, and potentially Phase 3, of the proposed Port Royal dredging project. The pipeline corridor is proposed from the canal dredging locations to an upland spoil site at the City of Naples "City Yard" located at 50 Riverside Circle in Naples (Figure 1).

2.0 PROJECT DESCRIPTION

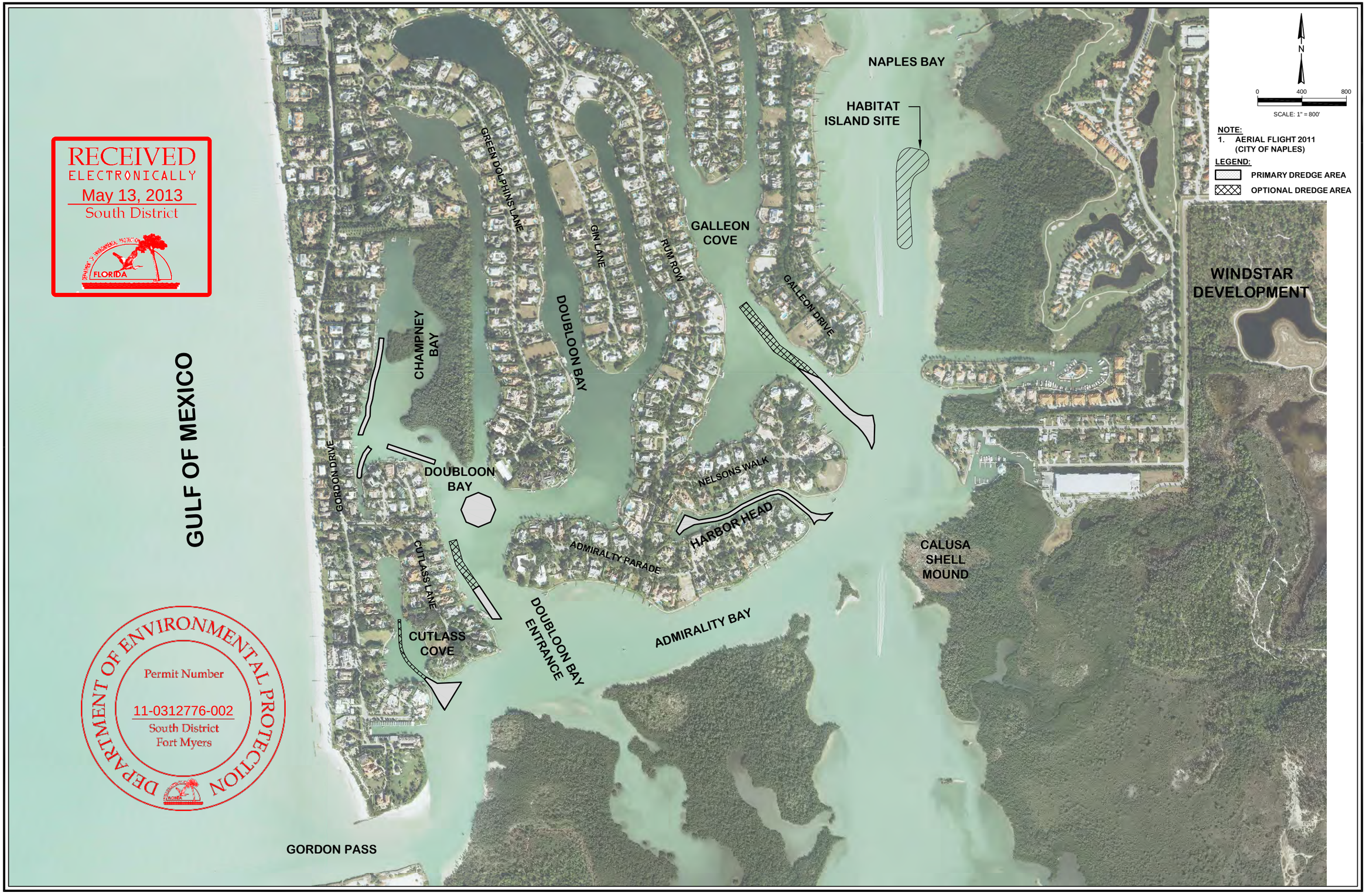
The proposed habitat island and Port Royal canals are located adjacent (north) to Gordon Pass in the City of Naples, Florida (Figure 1). The purpose of the Project is to create a habitat island to achieve:

(1) Reduction of shoreline erosion of the mangroves;

(2) Increased flows and therefore improve circulation within the embayment east of the waterway and specifically between the habitat island and the easterly shoreline; and

(3) Creation of an enhanced habitat for birds, fish and invertebrates.

Portions of the sediment to construct the island may be excavated from the nearby Port Royal Canal System. This provides an added benefit of restoring the navigable canal system for the residents of the Port Royal subdivision and constructing a sustainable project based upon sustainability's triple bottom line including achieving measurable environmental, economic and social benefits.



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South District
Fort Myers

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CP	DP	CP

DATE: 5/11/2012
JOB NO. 12-227
SCALE: AS NOTED

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

PROJECT LOCATION

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

FIGURE 1

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Exhibits\FDEP\FIG-1 Project Location.dwg Jul 06, 2012-12:44pm

Two dredge areas are permitted as follows (Figure 1):

(1) "Primary Dredge Area" – areas of dredging required to fulfill the intent established by the City's Resolution for the Project. These areas represent the minimum dredge areas required to re-establish navigability to the Port Royal canals based upon the current use by the residents.

(2) "Optional Dredge Area" – areas of dredging recommended to allow for the optimal use of the canals by the residents as well as reduce the future time interval between required maintenance events. This area may or may not be dredged during the life of the permit based upon the City's funding.

The project will be phased based upon the available funding mechanisms as follows:

- Phase 1: Dredge Port Royal canals (primary dredge areas) with upland dewatering and sediment disposal
- Phase 2: Construction the habitat island with some combination of sand procured from an upland mine and/or sediment dredged from the "optional" Port Royal dredge areas.
- Phase 3: Maintenance dredging of the Port Royal canals (primary and optional dredge areas) for the duration of the 10YR permit with either upland disposal or expansion of the island.

For Phase 1 of the project, the sediments will be dewatered at the "City Yard" located at 50 Riverside Circle in Naples. The dewatering site is approximately 4 miles to the north limit of the Port Royal canal system. Sediments will be dewatered into a constructed basin sized to allow for settling of particles. BMPs will be implemented so that all effluent discharges will meet State water quality standards. The dredged sediments will be re-used and/or disposed of at one or more of the following upland locations:

(1) Naples Airport (City Owned Land);

(2) Naples "City Yard" (sediment cap for an old landfill site); or

(3) Collier County Landfill.

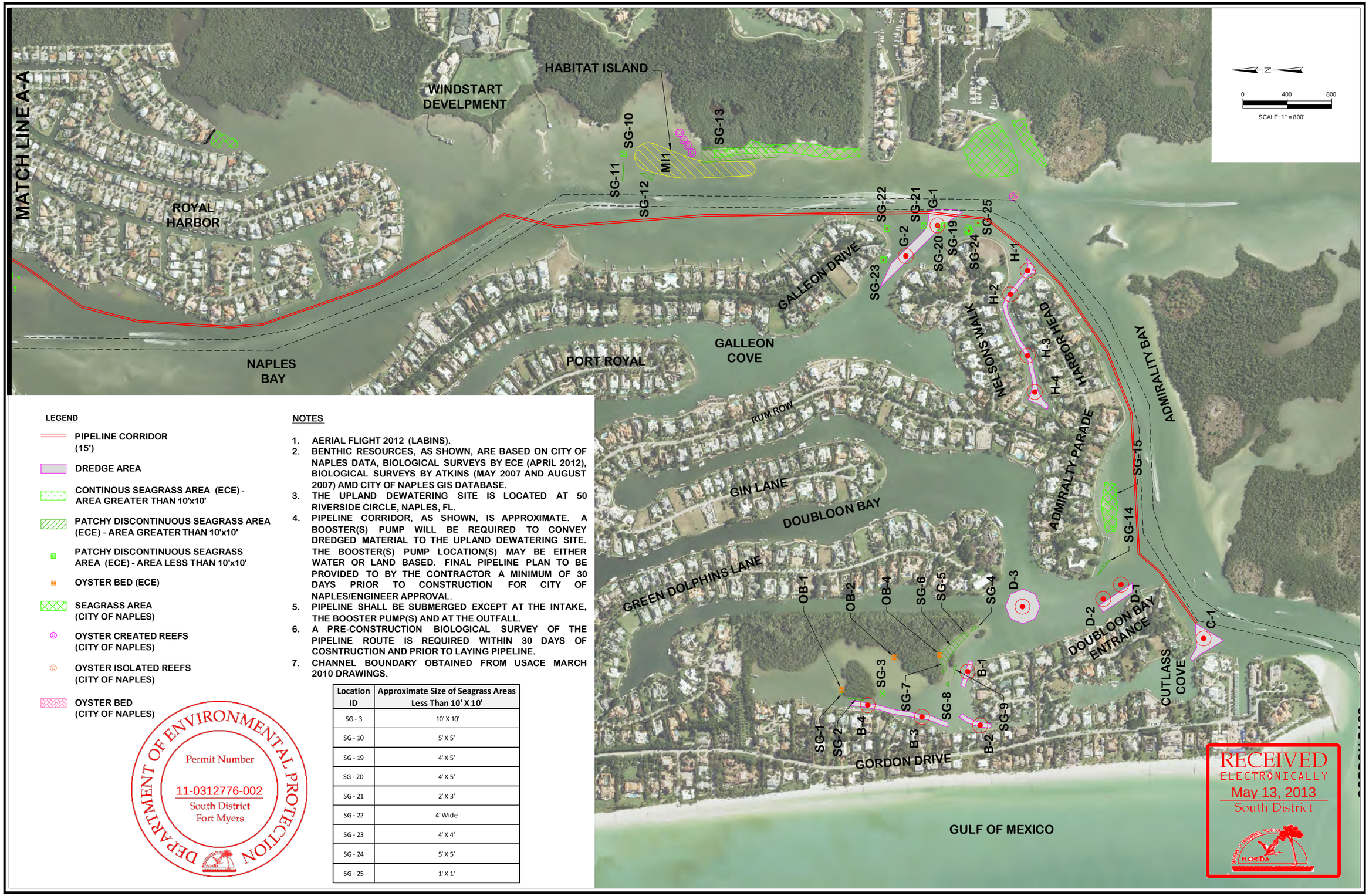
3.0 PIPELINE CORRIDOR

The pipeline corridor will follow the previously permitted corridor for the East Naples Bay dredging project (ERP No. 11-0295686-001) which authorized dredging of existing man-made canals in the Golden Shores, Oyster Bay and Royal Harbor sections of Naples Bay. From the upland dewatering site, the pipeline will follow along west side of the Gordon River crossing under the eastern reach of the Tamiami Trail Bridge. The pipe will continue south along the east side of Naples Bay adjacent to the East Naples Bay communities. Once past the Royal Harbor canals, the pipeline will cross to the west side of the Intracoastal Waterway along the Port Royal canals. When dredging by hydraulic means, booster pump(s) will be required to convey the dredged sediment to the upland dewatering site. The booster pump location(s) may be either water or land based. The pipeline shall be submerged except at the intake, booster(s) and outfall. The final pipeline plan is to be provided by the Contractor a minimum of 30 days prior to construction. The tentative pipeline route is shown in Figures 2A and 2B.

Biological resources occurring within the Project Area include submerged aquatic vegetation (SAV) communities, mangrove communities, oyster beds, manatee habitats, macro invertebrate habitat and waterbird habitats surrounded by conservation lands and residential development areas.

A 15 ft pipeline corridor from the dredging areas to the upland disposal site has been located to avoid any impacts with benthic resources. The benthic resources, including seagrass and oyster reefs, have been identified using previously collected data. These include:

- City of Naples field reconnaissance and GIS database,
- Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute (FWRI) GIS data,



LEGEND

- PIPELINE CORRIDOR (15')
- DREDGE AREA
- CONTINOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA LESS THAN 10'x10'
- OYSTER BED (ECE)
- SEAGRASS AREA (CITY OF NAPLES)
- OYSTER CREATED REEFS (CITY OF NAPLES)
- OYSTER ISOLATED REEFS (CITY OF NAPLES)
- OYSTER BED (CITY OF NAPLES)

NOTES

1. AERIAL FLIGHT 2012 (LABINS).
2. BENTHIC RESOURCES, AS SHOWN, ARE BASED ON CITY OF NAPLES DATA, BIOLOGICAL SURVEYS BY ECE (APRIL 2012), BIOLOGICAL SURVEYS BY ATKINS (MAY 2007 AND AUGUST 2007) AMD CITY OF NAPLES GIS DATABASE.
3. THE UPLAND DEWATERING SITE IS LOCATED AT 50 RIVERSIDE CIRCLE, NAPLES, FL.
4. PIPELINE CORRIDOR, AS SHOWN, IS APPROXIMATE. A BOOSTER(S) PUMP WILL BE REQUIRED TO CONVEY DREDGED MATERIAL TO THE UPLAND DEWATERING SITE. THE BOOSTER(S) PUMP LOCATION(S) MAY BE EITHER WATER OR LAND BASED. FINAL PIPELINE PLAN TO BE PROVIDED TO BY THE CONTRACTOR A MINIMUM OF 30 DAYS PRIOR TO CONSTRUCTION FOR CITY OF NAPLES/ENGINEER APPROVAL.
5. PIPELINE SHALL BE SUBMERGED EXCEPT AT THE INTAKE, THE BOOSTER PUMP(S) AND AT THE OUTFALL.
6. A PRE-CONSTRUCTION BIOLOGICAL SURVEY OF THE PIPELINE ROUTE IS REQUIRED WITHIN 30 DAYS OF COSNTRUCTION AND PRIOR TO LAYING PIPELINE.
7. CHANNEL BOUNDARY OBTAINED FROM USACE MARCH 2010 DRAWINGS.

Location ID	Approximate Size of Seagrass Areas Less Than 10' X 10'
SG - 3	10' X 10'
SG - 10	5' X 5'
SG - 19	4' X 5'
SG - 20	4' X 5'
SG - 21	2' X 3'
SG - 22	4' Wide
SG - 23	4' X 4'
SG - 24	5' X 5'
SG - 25	1' X 1'

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FLORIDA

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BC	AS	BC
DATE: 5/11/2012		
JOB NO. 12-227		
SCALE: AS NOTED		

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

DREDGE PIPELINE CORRIDOR
SUBMERGED RESOURCES

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

FIGURE 2A

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May 13, 2013
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South District
Fort Myers

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SCALE: 1" = 800'

UPLAND DEWATERING SITE

TAMIAMI TRAIL E

GOLDEN SHORES

OYSTER BAY

GORDON RIVER

NAPLES BAY

GOODLETTE FRANK ROAD

MATCH LINE A-A

LEGEND

- PIPELINE CORRIDOR (15')
- DREDGE AREA
- CONTINOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA GREATER THAN 10'x10'
- PATCHY DISCONTINUOUS SEAGRASS AREA (ECE) - AREA LESS THAN 10'x10'
- OYSTER BED (ECE)
- SEAGRASS AREA (CITY OF NAPLES)
- OYSTER CREATED REEFS (CITY OF NAPLES)
- OYSTER ISOLATED REEFS (CITY OF NAPLES)
- OYSTER BED (CITY OF NAPLES)

NOTES

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5. PIPELINE SHALL BE SUBMERGED EXCEPT AT THE INTAKE, THE BOOSTER PUMP(S) AND AT THE OUTFALL.
6. A PRE-CONSTRUCTION BIOLOGICAL SURVEY OF THE PIPELINE ROUTE IS REQUIRED WITHIN 30 DAYS OF COSNTRUCTION AND PRIOR TO LAYING PIPELINE.
7. CHANNEL BOUNDARY OBTAINED FROM USACE MARCH 2010 DRAWINGS.

DESIGNED	DRAWN	CHECKED
BC	AS	BC

DATE: 04/16/2013
JOB NO. 12-227
SCALE: AS NOTED

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

DREDGE PIPELINE CORRIDOR
SUBMERGED RESOURCES

Erickson Consulting Engineers, Inc.
7201 Delaney Court
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(941) 373-6460

FIGURE 2B

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Exhibits\FDEP\FDEP_PR BIOLOGICAL EXHIBIT_2013.05.09.dwg May 09, 2013-3:31pm

- Benthic surveys conducted by ECE in June 2012, and
- Benthic surveys by Atkins for the recently permitted and constructed East Naples Bay maintenance dredging project (ERP No. 11-0295486-001).

The Project does not propose any impacts to wetlands, mangroves or benthic resources.

A pre-construction biological survey of the pipeline route will be conducted within 30 days of construction and prior to laying any pipeline. Therefore, small variations to the pipeline corridor alignment may be required as benthic surveys are conducted and updated. If the pre-construction survey occurs outside of the seagrass growing season (May-October), an additional survey will be conducted in the month of May if the project is still under construction.

As observed during the previous dredging project for East Naples Bay, seagrass mapped in the vicinity of the East Naples Bay project, as previously documented in the City's GIS database, was no longer present as a result of the increased freshwater flows entering the system for Golden Gate Canal and down to the Gordon River. This appears to be a trend that is observed seasonally in East Naples Bay and is explained by the large volumes of freshwater entering the bay from the Gordon River. This freshwater is largely the result of the Golden Gate Canal and other storm water run-off from the City of Naples. The result of the increased freshwater from the canal systems is reduced water clarity, increased concentrations of contaminants and nutrients, reduced dissolved oxygen levels and reduced salinity. The City of Naples has been implementing projects to reduce the amount of freshwater entering Naples Bay. For example, a large quantity of freshwater from the Golden Gate Canal will be diverted to Henderson Creek which is in need of additional freshwater input.

The applicant proposes the following actions in support of efforts to avoid and/or minimize impacts to the aquatic environment:

a) Erosion and turbidity control for excavation and return water discharge;

b) Turbidity monitoring during construction;

c) Implement manatee protection guidelines during construction activities;

d) Design the excavation areas for no direct impacts to seagrass or oyster beds;

e) Design pipeline corridor for no direct impacts to seagrass or oyster beds;

f) No mangrove trimming is proposed and no impacts are anticipated; and

g) Applicant has agreed to comply with the Department's standard general permit conditions and construction guidelines.

4.0 RELATED DOCUMENTS

- Permit Drawings (April 2013)

City Resolution No. 11-13008

Agenda Item 7
Meeting of 12/14/11

RESOLUTION 11-13008

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NAPLES, FLORIDA, RELATING TO THE ESTABLISHMENT AND FUNDING OF THE PORT ROYAL CANAL DREDGING ASSESSMENT AREA; RATIFYING AND CONFIRMING THE INITIAL ASSESSMENT RESOLUTION; DETERMINING THAT CERTAIN REAL PROPERTY WILL BE SPECIALLY BENEFITED BY THE PORT ROYAL CANAL DREDGING ASSESSMENT AREA; ESTABLISHING THE METHOD OF ASSESSING THE COSTS OF THE IMPROVEMENTS AGAINST THE REAL PROPERTY THAT WILL BE SPECIALLY BENEFITED THEREBY; ESTABLISHING OTHER TERMS AND CONDITIONS OF THE ASSESSMENTS; APPROVING THE ASSESSMENT ROLL; PROVIDING THE METHOD OF COLLECTION; DIRECTING THE PROVISION OF NOTICE IN CONNECTION THEREWITH; AND PROVIDING AN EFFECTIVE DATE.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NAPLES, FLORIDA:

Section 1. **AUTHORITY.** This Resolution of the City of Naples, Florida (the "City") is adopted pursuant to the City Code in Sections 2-721 through 2-819, City Resolution No. 11-12978 (the "Initial Assessment Resolution"), Chapters 170 and 197, Florida Statutes, and other applicable provisions of law.

Section 2. **DEFINITIONS.** This Resolution is the Final Assessment Resolution. All capitalized terms in this Resolution shall have the meanings defined in the Assessment Ordinance and the Initial Assessment Resolution.

Section 3. **FINDINGS.** Upon duly-provided notice and upon consideration of testimony from affected property owners as to the propriety and advisability of making and funding the purposes for the assessment at a public hearing, it is hereby ascertained, determined and declared that:

(A) The findings provided in Section 1.03 of the Initial Assessment Resolution are hereby ratified, confirmed, and incorporated as if set forth fully herein.

(B) On November 2, 2011, the Council adopted the Initial Assessment Resolution, proposing the funding of the Port Royal Canal Dredging Project, describing the method of assessing the cost of such improvements against the real property that will be specifically benefited thereby, establishing a public hearing to consider imposition of the proposed non-ad valorem assessments, and directing preparation of the preliminary Assessment Roll and provision of the notices required by the Assessment Ordinance.

(C) Pursuant to Section 2-766 of the Assessment Ordinance, the Council is required to repeal or confirm the Initial Assessment Resolution, with such amendments as the Council deems appropriate, after hearing concerns and receiving comments or objections of interested parties.

(D) The Assessment Roll has heretofore been filed at the Office of the City Clerk, 735 8th Street South,

Naples, Florida, and made available for public inspection.

(E) As required by the terms of the Initial Assessment Resolution, notice of a public hearing has been published and mailed to each property owner proposed to be assessed notifying such property owner of the opportunity to be heard; the proof of publication and an affidavit of mailing are attached hereto as Appendices A and B respectively.

(F) A public hearing has been duly held and comments and objections of all interested persons have been heard and considered as required by law.

(G) The Assessments imposed pursuant to this Resolution will be imposed by the Council, not the Property Appraiser or Tax Collector. Any activity of the Property Appraiser or Tax Collector under the provisions of this Resolution shall be construed solely as ministerial.

(H) The benefits derived from the Port Royal Canal Dredging Project exceed the amount of the Assessments levied and imposed hereunder. The Assessment for any Tax Parcel within the Port Royal Assessment Area does not exceed the proportional benefits that such Tax Parcel will receive compared to any other Tax Parcel within such area.

(I) The Council hereby finds and determines that the Assessments to be imposed in accordance with this Resolution provide an equitable method of funding the Port Royal Canal Dredging Project by fairly and reasonably allocating the cost to specially benefited property.

Section 4. RATIFICATION AND CONFIRMATION OF PRIOR ACTIONS AND INITIAL ASSESSMENT RESOLUTION. All actions taken by the Council at its meeting on November 2, 2011 are hereby ratified and confirmed. The Initial Assessment Resolution, as supplemented and modified by this Resolution, is hereby ratified and confirmed.

Section 5. APPROVAL OF ASSESSMENT ROLL. The Assessment Roll, which is on file with the City Clerk, is hereby approved.

Section 6. ASSESSMENTS.

(A) The estimated cost of the Port Royal Canal Dredging Project necessary to serve the Assessment Area is $2,013,369.00 and will be funded by the Assessments imposed hereunder beginning with the property tax bill issued in November, 2013 and each year thereafter for five years.

(B) The Tax Parcels located within the Assessment Area and described in the Assessment Roll are hereby found to be specially benefited by an assessment based upon an apportionment approach as provided in Section 3.03 of the Initial Assessment Resolution.

(C) A non-ad valorem special assessment computed in the manner described in the Initial Assessment Resolution, as supplemented by this Final Assessment

Resolution, is hereby levied and imposed on all Tax Parcels described in the Assessment Roll in order to fund the canal dredging project and shall be imposed over a period of six years.

(D) Upon adoption hereof and the Annual Assessment Resolution for each fiscal year, the Assessments shall constitute a lien against assessed property equal in rank and dignity with the liens of all state, county, city or municipal taxes and other non-ad valorem assessments. Except as otherwise provided by law, such lien shall be superior in dignity to all other liens, titles and claims, until paid. The lien shall be deemed perfected upon validation of the Obligations and adoption by the Council of the Annual Assessment Resolution and shall attach to the property included on the Assessment Roll as of the prior January 1, the lien date for ad valorem taxes.

Section 7. COLLECTION OF ASSESSMENTS. The Assessments shall be collected pursuant to the provisions of the Initial Assessment Resolution and Uniform Assessment Collection Act. Upon adoption of the Annual Assessment Resolution for each fiscal year, the City Manager shall cause the certification and delivery of the Assessment Roll to the Tax Collector by September 15, in the manner prescribed by the Uniform Assessment Collection Act.

Section 8. EFFECT OF FINAL ASSESSMENT RESOLUTION. The adoption of this Final Assessment Resolution shall be the final adjudication of the issues presented herein and in the Initial Assessment Resolution (including, but not limited to, method by which the Assessments will be computed, the Assessment Roll, and the levy and lien of the Assessments), unless proper steps are initiated before the City Council sitting as the Equalization Board, within Twenty (20) days from the date of City Council’s adoption of this Final Assessment Resolution or in a court of competent jurisdiction to secure other relief within twenty (20) days from the date of City Council's adoption of this Final Assessment Resolution.

Section 9. ASSESSMENT NOTICE. Upon validation of the Obligations and prior to certification of the Assessment Roll to the Tax Collector, the City Manager is hereby directed to record a general notice of the Assessments in the Official Records in the office of the Collier County Clerk of Courts. Such notice shall be in substantially the form attached hereto as Appendix C. The preliminary Assessment Roll and each annual Assessment Roll shall be retained by the City Manager and City Clerk and shall be available for public inspection. The foregoing shall not be construed to require that the Assessment Roll be in printed form if the amount of the Assessment for each Tax Parcel can be determined by use of a computer terminal or internet access available to the public.

Section 10. EFFECTIVE DATE. This Resolution shall take effect immediately upon its adoption.

PASSED IN OPEN AND REGULAR SESSION OF THE CITY COUNCIL OF THE CITY OF NAPLES, FLORIDA, THIS 14TH DAY OF DECEMBER, 2011.

_____
Bill Barnett, Mayor

Attest:

Approved as to form and legality:

_____
Tara A. Norman, City Clerk

_____
Robert D. Pritt, City Attorney

M:\REF\COUNCIL\RES\2011\11-13008

Date filed with City Clerk: _____

Appendix "A"
Proof of Publication

NAPLES DAILY NEWS
Published Daily
Naples, FL 34110

Affidavit of Publication

State of Florida
Counties of Collier and Lee

Before the undersigned they serve as the authority, personally appeared MaryLynn Roeller, who on oath says that she serves as the Advertising Accounting Manager of the Naples Daily News, a daily newspaper published at Naples, in Collier County, Florida; distributed in Collier and Lee counties of Florida; that the attached copy of the advertising, being a

PUBLIC NOTICE

in the matter of PUBLIC NOTICE

was published in said newspaper 1 time in the issue on November 10, 2011

Affiant further says that the said Naples Daily News is a newspaper published at Naples, in said Collier County, Florida, and that the said newspaper has heretofore been continuously published in said Collier County, Florida; distributed in Collier and Lee counties of Florida, each day and has been entered as second class mail matter at the post office in Naples, in said Collier County, Florida, for a period of 1 year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

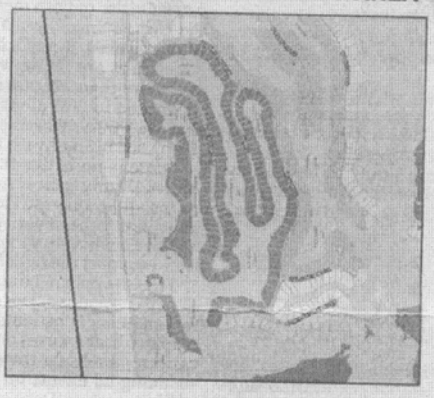
(Signature of affiant)

Sworn to and subscribed before me
This 11th day of November, 2011

(Signature of notary public)

KAROL E KANGAS
Notary Public - State of Florida
My Comm. Expires Jul 29, 2013
Commission # DD 912237

NOTICE OF HEARING TO IMPOSE AND PROVIDE FOR COLLECTION OF SPECIAL ASSESSMENTS IN THE PORT ROYAL ASSESSMENT AREA



Notice is hereby given that the City Council of the City of Naples will conduct a public hearing to consider the collection of special assessments within the Port Royal and Champney Bay area as shown above, through the imposition of non-ad-valorem assessments for the purpose of maintenance dredging of canals. The hearing will be held at 8:30 a.m. on December 14, 2011 at the City Council Chambers, 735 8th Street South, Naples, Florida, for the purpose of receiving public comment on the proposed Assessment Area, special assessments and improvements. All affected property owners have a right to appear and speak at the hearing and to file written objections with the City Council within twenty (20) days of this notice. If a person decides to appeal any decision made by the City Council with respect to any matter considered at the hearing, such person will need a record of the proceedings and may need to ensure that a verbatim record is made, including the testimony and evidence upon which the appeal is to be made. In accordance with the Americans with Disabilities Act, persons needing a special accommodation or an interpreter to participate in this proceeding should contact the City Clerk at 735 8th Street South, Naples, Florida, at least forty-eight (48) hours prior to the date of the hearing.

The assessment for ~~each assessed parcel of property~~ will be based upon the total project cost to dredge each canal, divided equally among the properties adjacent to each canal.

A more specific description of the improvements and the method of computing the assessment for each parcel of property are set forth in the Initial Assessment Resolution adopted by the City Council on November 2, 2011. Copies of the Initial Assessment Resolution and the preliminary Assessment Roll are available for inspection at the office of the City Clerk.

Commencing in November, 2013, the assessments are anticipated to be collected on the ad valorem tax bill by the Collier County Tax Collector, as authorized by Section 197.3632, Florida Statutes. Failure to pay the assessments will cause a tax certificate to be issued against the property which may result in a loss of title. The City Council intends to collect the special assessment for a period of six (6) years.

If you have any questions, please contact the City Manager at (239) 213-1027 or citymanager@naplesgov.com.

No. 678175574 November 10, 2011

Appendix "B"
Affidavit of Mailing
Page 1 of 2

NBS
32605 Temecula Parkway, Suite 100
Temecula, CA 92592
Toll free: 800.676.7516 (P) 951.296.1997
nbsgov.com

December 13, 2011

Ann Marie S. Ricardi
Finance Director
City of Naples
735 8th St. South
Naples, FL 34102

RE: PROOF OF MAILING

Ann Marie,

I, Dave Ketcham, duly swear that NBS mailed, by regular first class USPS mail, on November 10, 2011, a Notice regarding the Port Royal Dredging Assessment Area to each affected owner as identified in the database provided to me by the City.

Sworn by:

Name: Dave Ketcham
Title: Director
Address:
NBS
32605 Temecula Parkway, Suite 100
Temecula, CA 92592
Dated this 13th day of December, 2011

Appendix "B"
Affidavit of Mailing
Page 2 of 2

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of RIVERSIDE }

On 12/13/11 (Date) before me, STACEY M TAYLOR, NOTARY PUBLIC (Here Insert Name and Title of the Officer),

personally appeared DAVE KETCHAM (Name(s) of Signer(s))

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(ies), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature (Signature of Notary Public)

STACEY M. TAYLOR
Commission # 1817337
Notary Public - California
Riverside County
My Comm. Expires Oct 12, 2012

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Proof of Mailing

Document Date: 12/13/11 Number of Pages: 1

Signer(s) Other Than Named Above: N/A

Capacity(ies) Claimed by Signer(s)

Signer's Name: DAVE KETCHAM
☐ Individual
☐ Corporate Officer — Title(s):
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☑ Other: DIRECTOR / NBS
Signer Is Representing:

RIGHT THUMBPRINT OF SIGNER — Top of thumb here

Signer's Name:
☐ Individual
☐ Corporate Officer — Title(s):
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other:
Signer Is Representing:

RIGHT THUMBPRINT OF SIGNER — Top of thumb here

Appendix "C"
Form of Assessment Notice
Page 1 of 2

NOTICE OF ASSESSMENTS FOR THE PORT ROYAL CANAL DREDGING ASSESSMENT AREA

NOTICE IS HEREBY GIVEN THAT on November 2, 2011 the City Council of Naples, Florida (the "City") adopted Resolution No. 11-12978 which levied and imposed special assessments against property located within the Port Royal Canal Dredging Assessment Area ("Assessment Area"), described in Exhibit A attached hereto, for dredging of canals within the Assessment Area. The method for computing assessments to fund the canal dredging project within the Assessment Area is based upon the computation of the total project cost for each canal within the assessment area, divided by the number of parcels adjacent to each canal. Therefore, the assessment shall be equal for each parcel of property adjacent to each canal.

Resolution No. 11-12978 levied and imposed assessments. Collection of the non-ad valorem special assessments will commence with the ad valorem tax bill to be mailed in November, 2013 and will continue for five years thereafter in accordance with the terms and conditions established in the Initial Assessment Resolution No. 11-12978 and the Final Assessment Resolution No. 11-13008. These Resolutions and the special assessment roll which contains a list of the affected tax parcel numbers and property owners (as shown on the Collier County ad valorem tax assessment roll as of the effective date of Resolution No. 11-12978) are on file with the City Manager, 735 8th Street South, Naples, Florida, and open to public inspection.

This notice is recorded at the direction of the City Council of Naples, Florida pursuant to its Resolution No. 11-13008 in order to provide constructive notice of the levy and imposition of assessments upon real property located within the Assessment Area.

The City Council will adopt an annual assessment resolution for each fiscal year. Upon adoption of each annual assessment resolution, assessments shall constitute a lien against assessed property equal in rank and dignity with the liens of all state, county, city or municipal taxes and other non-ad valorem assessments. The lien shall be deemed perfected upon adoption of each annual assessment resolution and shall attach to the property included on the assessment roll as of the prior January 1, the lien date for ad valorem taxes. This notice does not and shall not be construed to require that individual liens or releases be filed in the Official Records.

Dated this _____ day of _____, 20____.

_____
City Manager

Appendix "C"
Form of Assessment Notice
Page 2 of 2

STATE OF FLORIDA)
COUNTY OF COLLIER)

PERSONALLY APPEARED before me, the undersigned authority, A. WILLIAM MOSS, well known to me and known by me to be the City Manager of the City of Naples, Florida, and acknowledged before me that he executed the foregoing instrument on behalf of the City of Naples, Florida, as its true act and deed, and that he was duly authorized to do so.

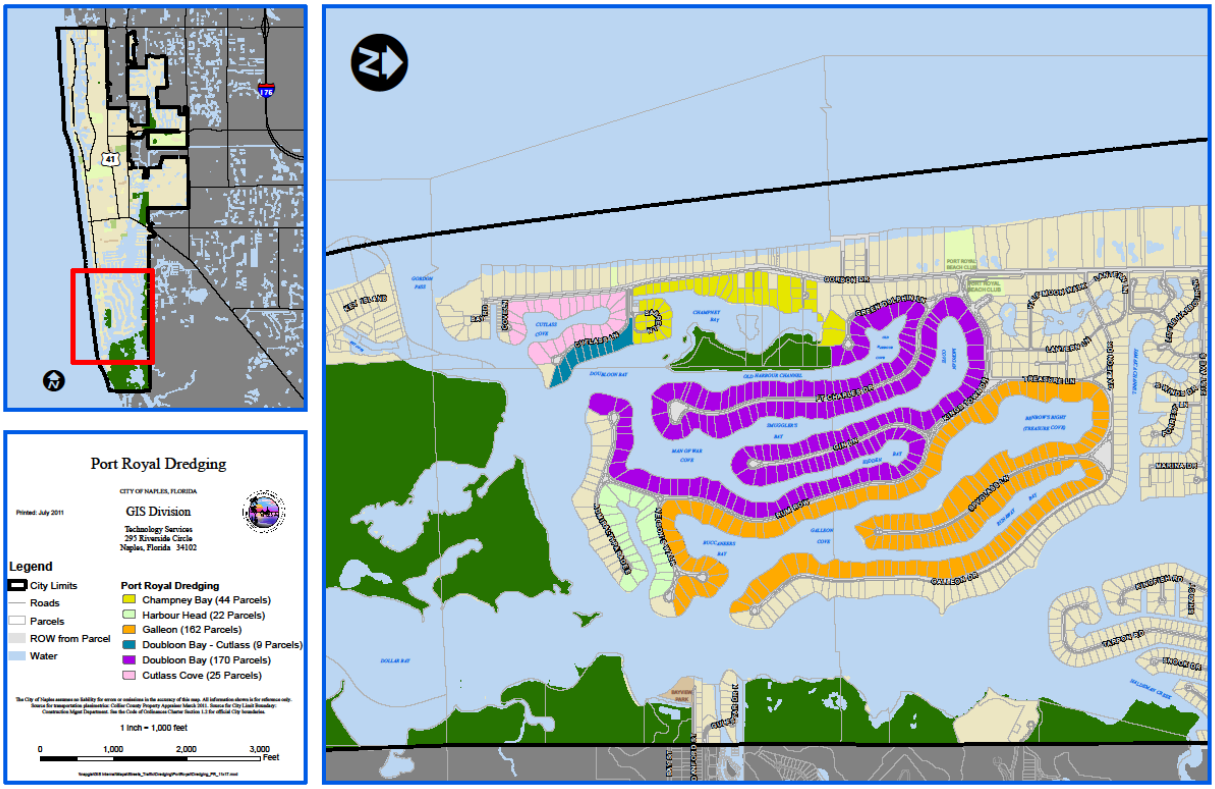
WITNESS my hand and official seal this ___ day of _____, 20__.

_____
, Notary

(SEAL)

EXHIBIT A TO APPENDIX "C"–THE PORT ROYAL CANAL DREDGING ASSESSMENT AREA

The Port Royal Canal Dredging Assessment Area is described:



Appendix C Geotechnical Information

Note: The construction of the habitat island as referenced in the October 2012 Geotechnical Condition Report is not included in the Project's scope of work.

City of Naples (Port Royal)

Habitat Island and Canal Dredging Project

Geotechnical Condition Report

1.0 Introduction

The proposed habitat island and Port Royal canals are located adjacent (north) to Gordon Pass in the City of Naples, Florida (Figure 1). The purpose of the Project is to create a habitat island to achieve:

(1) Reduction of shoreline erosion of the mangroves;

(2) Increased flows and therefore improve circulation within the embayment east of the waterway and specifically between the habitat island and the easterly shoreline; and

(3) Creation of an enhanced habitat for birds, fish and invertebrates.

The sediment to construct the island will be excavated from the nearby Port Royal Canal System. This provides an added benefit of restoring the navigable canal system for the residents of the Port Royal subdivision and constructing a sustainable project based upon sustainability's triple bottom line (environmental, economic and social benefits).

The purpose of this Geotechnical Report is to document the field investigations conducted to evaluate sub-surface sediment characteristics within the canals and habitat island areas.

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Exhibits\FDEP\FIG-1 Project Location.dwg Jul 06, 2012-12:44pm

FIGURE 1

Erickson Consulting Engineers, Inc.
ECE Erickson Consulting Engineers
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

PROJECT LOCATION

DESIGNED	DRAWN	CHECKED
CP	DP	CP

DATE: 5/11/2012
JOB NO. 12-227
SCALE: AS NOTED

2.0 Phase 1 Geotechnical Investigations (Jet Probes and Sediment Samples)

In the design of marine dredging projects, ECE employs sequential geotechnical investigation procedures that maximize resources to effectively characterize the subsurface sediment deposits. The first "reconnaissance" phase of the geotechnical investigations includes the collection of preliminary data over relatively large expanses of initial areas of interest in the form of jet probes and surface grab samples. The second "detailed" investigation phase includes the collection of vibracores in precise target areas. The technical methods, analytical tools, and equipment used in the geotechnical investigations are described below.

3.0 GPS Positioning

The navigation and positioning system used during the Phase 1 geotechnical investigations was a Trimble DGPS Global Positioning System (GPS). A Pathfinder Pro XRS receiver provided differential GPS correction utilizing a Satellite Based Augmented Signal (SBAS). The GPS accuracy, with differential correction used in this study, provides for a position accuracy of one (1) to four (4) feet, which is within the accuracy needed for geotechnical investigations of this nature.

4.0 Jet Probes

Jet probes were used to ascertain the sediment thickness and other selected parameters *(*e.g. grain size, composition, layers of fine materials or coarse rock fragments, shells) that are relevant to the design of the canal dredging and habitat island creation project. Information obtained from jet probes and surface sand samples collectively provide an indication of deposit architecture (presence of fine- or coarse-grained layers, cementation lenses), thickness and general sedimentology of unconsolidated layers.

The jet probing procedure utilizes 12-foot long high pressure "water jet" by driving a galvanized steel pipe into the seafloor using a deck mounted water pump. As the probe penetrates the

sediment on the seafloor, an ECE engineer observes the depth of the probe and the characteristics of the sub-surface sediment. The engineer is able to estimate the resistance of subsurface sediments during jetting (e.g. the "feel" of the probe as it penetrates the sub-surface) to assess the depth of hard layers and rock. Further, the engineer is able to observe the sediments flushed out of the hole during jetting to assess the relative quality of the subsurface strata. For this study, the jet probes extended a minimum of 2 ft below the tentative design dredge depths as specified in the Resolution. A total of 15 jet probes were performed at the locations shown in Figure 2. The results are provided in Table 1.

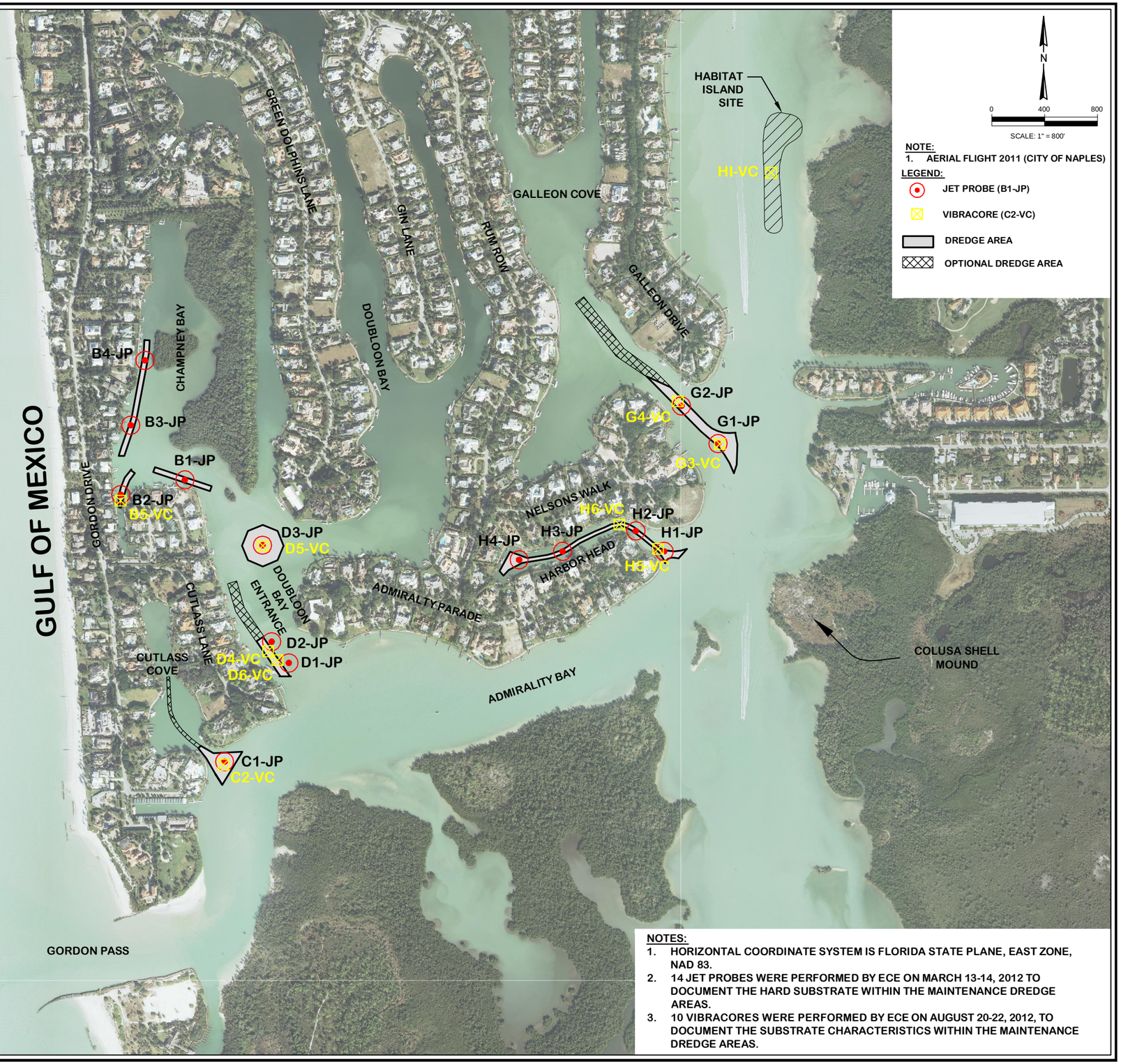
5.0 Vibracores

Vibracoring is a technology used to collect relatively undisturbed core samples in water or wet environment. A typical vibracore is a layered column of various natural sediment types, typically including silt, sand, gravel, clay, shells, and organic matter depending on the site conditions. A self-contained vibracore unit consisting of a gas-driven vibratory hammer mounted assembly, an aluminum coring pipe, and lifting gantry was used to obtain vibracores as shown in the Figure 2.

An aluminum coring pipe (3 inch outside diameter) was utilized to collect the sediment core sample in the field. Each core was cut, capped, and sealed onsite to ensure no loss or disturbance of sampled sediments. After extraction, each core was split offsite and a visual inspection of the material contained within the core was performed. The contents of the core were visually segmented into sediment layers and sediment samples were collected for each observed layer. Sediment layers within the dredge templates were then sent for laboratory sieve analysis to obtain their quantitative sediment characteristics such as mean grain size and silt content. The testing sieve stack included 19 phi intervals from -4.25 phi (19.03mm) to 4.00 phi (0.0625mm). Using the laboratory data, quantitative sediment characteristics, including mean grain size, sorting and percent silt, were computed. The quantitative sediment characteristics for the dredge areas are provided in Table 2.

JET PROBE COORDINATES				
POINT #ID	NORTHING	EASTING	LONGITUDE	LATITUDE
B1-JP	643771.0200	393769.8300	W81.799573	N26.102556
B2-JP	643658.8700	393286.8100	W81.801043	N26.102239
B3-JP	644182.6812	393363.1261	W81.800820	N26.103682
B4-JP	644670.1732	393469.8112	W81.800504	N26.105025
C1-JP	641648.9600	394068.8200	W81.798623	N26.096723
D1-JP	642392.0200	394552.2600	W81.797164	N26.098776
D2-JP	642552.1800	394423.2600	W81.797560	N26.099214
D3-JP	643278.6000	394354.3400	W81.797783	N26.101211
G1-JP	644043.0328	397783.5004	W81.787349	N26.104150
G2-JP	644327.6902	397507.6903	W81.788194	N26.103372
H1-JP	643232.1339	397377.3127	W81.788572	N26.101134
H2-JP	643386.0019	397164.0930	W81.789224	N26.101554
H3-JP	643232.1678	396612.9754	W81.790900	N26.101122
H4-JP	643167.9998	396285.4651	W81.791897	N26.100940

VIBRACORE COORDINATES				
POINT #ID	NORTHING	EASTING	LONGITUDE	LATITUDE
B5-VC	643613.2396	393286.1713	W81.801046	N26.102110
C2-VC	641626.2413	394058.6023	W81.798656	N26.096657
D4-VC	642480.0575	394396.6111	W81.797642	N26.099012
D5-VC	643275.3490	394356.6702	W81.797778	N26.101199
D6-VC	642411.8100	394466.2600	W81.797428	N26.098825
G3-VC	644040.9720	397795.1856	W81.787316	N26.103363
G4-VC	644361.3953	397479.2285	W81.788284	N26.104239
H5-VC	643251.3004	397330.7708	W81.788716	N26.101183
H6-VC	643433.4992	397040.8820	W81.789603	N26.101679
HI-VC	646083.4200	398182.9800	W81.786172	N26.108988



NOTES:
1. HORIZONTAL COORDINATE SYSTEM IS FLORIDA STATE PLANE, EAST ZONE, NAD 83.
2. 14 JET PROBES WERE PERFORMED BY ECE ON MARCH 13-14, 2012 TO DOCUMENT THE HARD SUBSTRATE WITHIN THE MAINTENANCE DREDGE AREAS.
3. 10 VIBRACORES WERE PERFORMED BY ECE ON AUGUST 20-22, 2012, TO DOCUMENT THE SUBSTRATE CHARACTERISTICS WITHIN THE MAINTENANCE DREDGE AREAS.

DESIGNED CP | DRAWN DP | CHECKED CP
DATE: 10/23/12
JOB NO.: 12-227
SCALE: AS NOTED

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

GEOTECHNICAL FIELD INVESTIGATIONS

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

FIGURE 2

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Exhibits\FDEP\FIG-2 Jet Probe Field Investigation.dwg Oct 23, 2012-10:47am

Table 1. Jet Probe Summary Table

Probe ID	Canal ID	Northing (ft)	Easting (ft)	Probe Penetration (ft)	Bottom Elev (ft NAVD)	Elev of Hard Substrate (ft NAVD)	Design Dredge Depth (ft NAVD)	Condition at Refusal Notes
G-1	Galleon Cove	644041.7	397782.8	7	-7.6	-14.6	-10.3	Hard Refusal
G-2		644326.5	397506.9	10	-8.6	-18.6		No Refusal
H-1	Harbor Head	643231.0	397376.5	6.5	-6.3	-12.8	-9.3	Hard Refusal
H-2		643384.6	397163.4	10	-6.9	-16.9		No Refusal
H-3		643230.9	396612.1	10	-6.6	-16.6		No Refusal
H-4		643166.7	396284.5	10	-6.8	-16.8		No Refusal
C-1	Cutlass Cove	641649.0	394068.8	10	-5.4	-15.4	-9.3	Chunky Refusal +/- 3 ft below
D-1	Doubloon Bay Entrance	642392.0	394552.3	10	-8.4	-18.4	-11.3	No Refusal
D-2		642552.2	394423.3	10	-7.9	-17.9		No Refusal
D-3	Doubloon Circle	643278.6	394354.3	10	-7.8	-17.8	-9.3	No Refusal
B-1	Champney East	643771.0	393769.8	10	-8.0	-18.0	-8.3	No Refusal; chunky substrata
B-2	Champney South	643658.9	393286.8	10	-6.4	-16.4		No Refusal
B-3	Champney North	644182.7	393363.1	10	-8.4	-18.4		No Refusal
B-4		644708.6	393448.5	10	-9.2	-19.2		No Real Refusal; possible shell hash +/- 8.5-9 ft pen

Notes: (1) Jet probes performed March 2012 by Erickson Consulting Engineers, Inc.
(2) Hard refusal refers to an impenetrable layer (dense sand, shell or rock).
(3) Horizontal positions refer to State Plane East NAD83

The core logs for each of the fourteen vibracores performed are provided in Appendix A. Granularmetric reports for the sediment layers within the dredge templates are provided in Appendix B. Photographs of the split cores are provided in Appendix C.

Upon completion of the quantitative laboratory assessment, the dredge locations were then assessed for sediment quality by assigning them to one of three sediment categories: (1) Class I Sediment - sediment with less than or equal to 20% fines, (2) Class II Sediment - sediment with 20%-60% fines and (3) Class III Sediment – sediment with greater than 60% fines as shown in Figure 3.

6.0 Summary of Findings

The excavation areas were divided into three major classifications based on the quality of sediment. Approximately 14% of the sediment to be dredged is composed of fine sand with less than 20% fines (Class I Sediment), 53% is composed of sediment with a fines content between 20-60% (Class II Sediment) and the remaining 32% is composed of sediment with a fines content exceeding 60% (Class III Sediment). The handling requirements and final disposal location for each type of sediment is discussed in the stand alone report entitled "Sediment Management Plan."

Canal ID	Dredge Volume (CY)	Percent	Sediment Classification
Cutlass Cove	3,060	14%	Class I (<20% Silts)
Champney Bay	2,480	12%	Class II (20-60% Silts)
Doubloon Entrance	2,070	10%	Class II (20-60% Silts)
Galleon Cove	6,680	32%	Class II (20-60% Silts)
Doubloon Circle	1,440	7%	Class III (>60% Fines)
Harbor Head	5,380	25%	Class III (>60% Silts)
Project Composite	**21,110**	**100%**	

Note: The volumes reported in the table above represent the design volumes plus a 4" overdredge allowance. The actual dredge volumes will vary between the design volume (17,500 CY) to a volume encompassing a 1 ft overdredge allowance (28,900 CY). These volumes are based on the "Primary Dredge Areas" only.

DESIGNED CP | DRAWN DP | CHECKED CP
DATE: 10/23/12
JOB NO.: 12-227
SCALE: AS NOTED

CITY OF NAPLES - PORT ROYAL
CITY OF NAPLES

SEDIMENT CHARACTERIZATION

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

FIGURE 3

Z:\CADD_Graphics\US Projects\12-227_Naples - Port Royal Canals\Exhibits\FDEP\FIG-3 Sediment Characterization.dwg Oct 23, 2012-10:00am

Table 2. Summary of Sediment Within the Dredge Cut Templates

Canal ID	Dredge Volume (CY)	Percent	Sediment Classification
Champney Bay	2,480	12%	Class II (20-60% Silts)
Cutlass Cove	3,060	14%	Class I (<20% Silts)
Doubloon Entrance	2,070	10%	Class II (20-60% Silts)
Doubloon Circle	1,440	7%	Class III (>60% Fines)
Galleon Cove	6,680	32%	Class III (>60% Silts)
Harbor Head	5,380	25%	Class III (>60% Silts)
Project Composite	**21,110**	**100%**	

Note: The volumes reported in the table above represent the design volumes plus a 4" overdredge allowance. The actual dredge volumes will vary between the design volume (17,500 CY) to a volume encompassing a 1 ft overdredge allowance (28,900 CY). These volumes are based on the "Primary Dredge Areas" only.

					Parameters in Phi Units				
Canal ID	Median (Phi)	Median (mm)	Mean (Phi)	Mean (mm)	Sorting (σ)	Skewness (α)	Kurtosis (β)	Munsell Color	Silt %
Champney Bay	4.27	0.06	6.26	0.09	-3.52	-0.59	0.69	10YR 5/1	47.93
Cutlass Cove	3.36	0.10	3.38	0.10	-0.02	-0.44	5.50	10YR 5/1	19.73
Doubloon Entrance	3.75	0.07	3.95	0.08	-0.85	-0.22	0.45	10YR 5/1	41.69
Doubloon Circle	9.03	0.00	9.03	0.03	-5.10	-0.01	0.30	10YR 5/1	83.51
Galleon Cove	5.51	0.05	5.43	0.06	-1.28	-1.93	15.75	10YR 5/1	53.12
Harbor Head	4.07	0.06	4.30	0.07	-1.19	-0.18	0.40	10YR 5/1	81.79
Project Composite	**4.75**	**0.06**	**5.04**	**0.07**	**-1.56**	**-0.81**	**6.03**	**10YR 5/1**	**55.93**

Appendix A

Core Logs

Boring Designation B5-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT: Port Royal - Champney Bay, Naples, FL		9. SIZE AND TYPE OF BIT: 3.0 In. Vibracore	
		10. COORDINATE SYSTEM/DATUM: Florida State Plane East	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: B5-VC	LOCATION COORDINATES: X = 393,286 Y = 643,613	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY: Ardaman & Associates	TESTER'S FILE NO.: 11-7482	12. TOTAL SAMPLES	DISTURBED: / UNDISTURBED (UD): 4
4. NAME OF TESTER: Jerry H. Kuehn, P.E.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL: / BEARING:	14. WATER DEPTH: 8.3 Ft.	
		15. DATE BORING	STARTED: 08-20-12 15:50 / COMPLETED: 08-20-12
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -5.5 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 6.8 Ft.	
8. TOTAL DEPTH OF BORING: 8.3 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-5.5	0.0					
			Gray sandy silt with organics (trace shell fragments), (MH).		1	Sample #B5-VC-1, Depth = 1.8' Mean (mm): 0.08, Phi Sorting: -4.49 Fines (230): 52.00% (MH) 10YR5/1
-8.2	2.7					
			Very dark grayish brown sandy silt with organics, (MH).		2	Sample #B5-VC-2, Depth = 3.0' Mean (mm): 0.07, Phi Sorting: -2.08 Fines (230): 59.10% (MH) 10YR3/2
-8.9	3.4					
			Brown fine sand, (SP).		3	Sample #B5-VC-3, Depth = 5.5' Mean (mm): 0.15, Phi Sorting: 0.46 Fines (230): 1.90% (SP) 10YR5/3
					4	Sample #B5-VC-4, Depth=7.5', Not Tested.
-13.8	8.3					
			End of Boring			

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FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation C2-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Port Royal - Cutlass Cove, Naples, FL
2. BORING DESIGNATION: C2-VC
3. LOCATION COORDINATES: X = 394,059 Y = 641,626
4. TESTING AGENCY: Ardaman & Associates
5. TESTER'S FILE NO.: 11-7482
6. NAME OF TESTER: Jerry H. Kuehn, P.E.
7. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED
8. DEG. FROM VERTICAL:
9. BEARING:
10. THICKNESS OF OVERBURDEN: 0.0 Ft.
11. DEPTH DRILLED INTO ROCK: 0.0 Ft.
12. TOTAL DEPTH OF BORING: 11.1 Ft.
13. SIZE AND TYPE OF BIT: 3.0 In. Vibracore
14. COORDINATE SYSTEM/DATUM: Florida State Plane East
15. HORIZONTAL: NAD 1983
16. VERTICAL: NAVD 88
17. MANUFACTURER'S DESIGNATION OF DRILL: ☐ AUTO HAMMER ☐ MANUAL HAMMER
18. TOTAL SAMPLES: DISTURBED: UNDISTURBED (UD): 5
19. TOTAL NUMBER CORE BOXES:
20. WATER DEPTH: 4.4 Ft.
21. DATE BORING: STARTED 08-21-12 10:20 COMPLETED 08-21-12
22. ELEVATION TOP OF BORING: -6.0 Ft.
23. TOTAL RECOVERY FOR BORING: 10.2 Ft.
24. SIGNATURE AND TITLE OF INSPECTOR:

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-6.0	0.0					
-7.6	1.6		Light gray to gray fine sand with silt, (SP-SM).		1	Sample #C2-VC-1, Depth = 1.0' Mean (mm): 0.12, Phi Sorting: 0.34 Fines (230): 8.90% (SP-SM) 10YR6/1
-8.2	2.2		Gray sandy silt, (MH).			Depth = 1.6' - 2.2', Not Sampled or Tested
-8.5	2.5		Gray silty fine sand, (SM-H).		2	Sample #C2-VC-2, Depth = 2.4' Mean (mm): 0.11, Phi Sorting: 0.40 Fines (230): 19.10% (SM-H) 10YR5/1
-9.5	3.5		Light gray to gray fine sand with silt, (SP-SM).			Depth = 2.5' - 3.5' Not Sampled or Tested
-10.4	4.4		Gray sandy silt, (MH).		3	Sample #C2-VC-3, Depth = 4.0' Mean (mm): 0.07, Phi Sorting: -1.11 Fines (230): 47.10% (MH) 10YR5/1
-10.7	4.7		Gray silty fine sand, (SM-H).			Depth = 4.4' - 4.7', Not Sampled or Tested
-11.4	5.4		Light gray to gray fine sand with silt, (SP-SM).			Depth = 4.7' - 5.4' Not Sampled or Tested
-12.2	6.2		Gray silty fine sand, (SM-H).			Depth = 5.4' - 6.2' Not Sampled or Tested
-12.9	6.9		Gray sandy silt, (MH).			Depth = 6.2' - 6.9' Not Sampled or Tested
-13.4	7.4		Gray fine sand with silt, (SP-SM).		4	Sample #C2-VC-4, Depth = 7.2' Not Tested
-13.8	7.8		Light gray to gray fine sand with silt, (SP-SM).			Depth = 7.4' - 7.8' Not Sampled or Tested
-14.4	8.4		Gray sandy silt, (MH).			Depth = 7.8' - 8.4' Not Sampled or Tested
-17.1	11.1		Gray fine sand, (SM).		5	Sample #C2-VC-5, Depth = 9.8' Not Tested
			End of Boring			

FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation D4-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Port Royal - Doubloon Bay, Naples, FL		9. SIZE AND TYPE OF BIT: 3.0 In. Vibracore	
		10. COORDINATE SYSTEM/DATUM: Florida State Plane East	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: D4-VC	LOCATION COORDINATES: X = 394,397 Y = 642,480	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY: Ardaman & Associates	TESTER'S FILE NO.: 11-7482	12. TOTAL SAMPLES	DISTURBED: / UNDISTURBED (UD): 4
4. NAME OF TESTER: Jerry H. Kuehn, P.E.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL: / BEARING:	14. WATER DEPTH: 8.7 Ft.	
		15. DATE BORING	STARTED: 08-21-12 13:40 / COMPLETED: 08-21-12
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -8.2 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 6.6 Ft.	
8. TOTAL DEPTH OF BORING: 8.3 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-8.2	0.0					0
			Gray clayey silty fine sand (trace shell fragments), (SM-SC).		1	Sample #D4-VC-1, Depth = 1.7' Mean (mm): 0.08, Phi Sorting: -0.84 Fines (230): 40.80% (SM-SC) 10YR5/1
					2	Sample #D4-VC-2, Depth = 4.1', Not Tested. 5
-14.2	6.0					
-14.5	6.3		Pale brown fine sand, (SM).		3	Sample #D4-VC-3, Depth = 6.1' Not Tested
			Gray clayey silty fine sand, (SM-SC).		4	Sample #D4-VC-4, Depth = 7.3' Not Tested
-16.5	8.3					
			End of Boring			

FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation D5-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT: Port Royal - Doubloon Bay, Naples, FL		9. SIZE AND TYPE OF BIT: 3.0 In. Vibracore	
		10. COORDINATE SYSTEM/DATUM: Florida State Plane East	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: D5-VC	LOCATION COORDINATES: X = 394,357 Y = 643,275	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY: Ardaman & Associates	TESTER'S FILE NO.: 11-7482	12. TOTAL SAMPLES	DISTURBED: / UNDISTURBED (UD): 3
4. NAME OF TESTER: Jerry H. Kuehn, P.E.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL: / BEARING:	14. WATER DEPTH: 7.4 Ft.	
		15. DATE BORING	STARTED: 08-21-12 12:40 / COMPLETED: 08-21-12
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -7.8 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 4.6 Ft.	
8. TOTAL DEPTH OF BORING: 6.3 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-7.8	0.0					0
			Gray silt/clay (trace shell fragments), (ML-CL).		1	Sample #D5-VC-1, Depth = 0.2' Mean (mm): 0.03, Phi Sorting: -5.10 Fines (230): 83.40% (ML-CL) 10YR5/1
					2	Sample #D5-VC-2, Depth = 2.5', Not Tested.
-11.8	4.0					
			Dark gray clay, (ML-CL).			Depth = 4.0' - 4.3' Not Sampled or Tested
-12.1	4.3					
			Gray silt/clay (trace shell fragments), (ML-CL).			Depth = 4.3' - 5.5' Not Sampled or Tested
-13.3	5.5					5
			Dark brown fine sand with organics, (SM).		3	Sample #D5-VC-3, Depth = 5.7' Not Tested
-14.1	6.3					
			End of Boring			

FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation D6-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT	Port Royal - Doubloon Bay Naples, FL	9. SIZE AND TYPE OF BIT	3.0 In. Vibracore
		10. COORDINATE SYSTEM/DATUM	Florida State Plane East / NAD 1983 / NAVD 88
2. BORING DESIGNATION	D6-VC	LOCATION COORDINATES	X = 394,467 Y = 642,376
		11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY	Ardaman & Associates	TESTER'S FILE NO.	11-7482
		12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 4
4. NAME OF TESTER	Jerry H. Kuehn, P.E.	13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. WATER DEPTH: 9.5 Ft.
		15. DATE BORING	STARTED: 08-22-12 14:10; COMPLETED: 08-22-12
6. THICKNESS OF OVERBURDEN	0.0 Ft.	16. ELEVATION TOP OF BORING	-9.3 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.	17. TOTAL RECOVERY FOR BORING	8 Ft.
8. TOTAL DEPTH OF BORING	9.7 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-9.3	0.0					
			Gray sandy silt, (MH).		1	Sample #D6-VC-1, Depth = 1.7' Mean (mm): 0.08, Phi Sorting: -0.87 Fines (230): 42.30% (MH) 10YR5/1
					2	Sample #D6-VC-2, Depth = 4.2', Not Tested.
-17.4	8.1					
			Gray silty fine sand, (SM).		3	Sample #D6-VC-3, Depth = 8.7' Not Tested
-18.3	9.0					
			Gray sandy silt, (MH).		4	Sample #D6-VC-4, Depth = 9.4' Not Tested
-19.0	9.7					
			End of Boring			

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FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation G3-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Port Royal - Galleon Cove, Naples, FL		9. SIZE AND TYPE OF BIT: 3.0 In. Vibracore	
		10. COORDINATE SYSTEM/DATUM: Florida State Plane East	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: G3-VC	LOCATION COORDINATES: X = 397,795 Y = 644,041	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY: Ardaman & Associates	TESTER'S FILE NO.: 11-7482	12. TOTAL SAMPLES	DISTURBED: / UNDISTURBED (UD): 5
4. NAME OF TESTER: Jerry H. Kuehn, P.E.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL: / BEARING:	14. WATER DEPTH: 6.0 Ft.	
		15. DATE BORING	STARTED: 08-22-12 11:20 / COMPLETED: 08-22-12
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -8.0 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 6.5 Ft.	
8. TOTAL DEPTH OF BORING: 8.3 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-8.0	0.0					
			Gray silty fine sand (trace shell fragments), (SM).		1	Sample #G3-VC-1, Depth = 1.0' Mean (mm): 0.11, Phi Sorting: 0.52 Fines (230): 15.00% (SM) 10YR5/1
					2	Sample #G3-VC-2, Depth = 3.5', Not Tested.
-12.3	4.3					
			Gray fine sand, (SM).		3	Sample #G3-VC-3, Depth = 5.0' Not Tested
-13.8	5.8					
			Dark gray fine sand, (SM).		4	Sample #G3-VC-4, Depth = 6.5' Not Tested
-14.9	6.9					
			Gray clayey silty fine sand (trace shell fragments), (SM-SC).		5	Sample #G3-VC-5, Depth = 7.8' Not Tested
-16.3	8.3					
			End of Boring			

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FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation G4-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Port Royal - Galleon Cove, Naples, FL		9. SIZE AND TYPE OF BIT: 3.0 In. Vibracore	
		10. COORDINATE SYSTEM/DATUM: Florida State Plane East	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: G4-VC	LOCATION COORDINATES: X = 397,479 Y = 644,361	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY: Ardaman & Associates	TESTER'S FILE NO.: 11-7482	12. TOTAL SAMPLES	DISTURBED: / UNDISTURBED (UD): 3
4. NAME OF TESTER: Jerry H. Kuehn, P.E.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL: / BEARING:	14. WATER DEPTH: 7.5 Ft.	
		15. DATE BORING	STARTED: 08-22-12 09:00 / COMPLETED: 08-22-12
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -8.4 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 7.5 Ft.	
8. TOTAL DEPTH OF BORING: 9.3 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-8.4	0.0				1	Sample #G4-VC-1, Depth = 1' Not Tested
					2	Sample #G4-VC-2; Depth = 5.1' Mean (mm): 0.02, Phi Sorting: -3.04 Fines (230): 90.40% (ML-CL) 10YR5/1
-15.1	6.7		Gray silt/clay with organics, (ML-CL).			
-15.6	7.2		Brown fine sand, (SM).		3	Sample #G4-VC-3, Depth = 6.9' Not Tested
-17.0	8.6		Gray silt/clay with organics, (ML-CL).			Depth = 7.2' - 8.6' Not Sampled or Tested
-17.7	9.3		Brown fine sand, (SM).			Depth = 8.6' - 9.3' Not Sampled or Tested
			End of Boring			

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FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation H5-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT	Port Royal - Harbor Head Naples, FL	9. SIZE AND TYPE OF BIT	3.0 In. Vibracore
		10. COORDINATE SYSTEM/DATUM	Florida State Plane East / NAD 1983 / NAVD 88
2. BORING DESIGNATION	H5-VC	LOCATION COORDINATES	X = 397,331 Y = 643,251
		11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY	Ardaman & Associates	TESTER'S FILE NO.	11-7482
		12. TOTAL SAMPLES	DISTURBED: ; UNDISTURBED (UD): 6
4. NAME OF TESTER	Jerry H. Kuehn, P.E.	13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	
		14. WATER DEPTH	8.5 Ft.
		15. DATE BORING	STARTED 08-21-12 15:45 / COMPLETED 08-21-12
6. THICKNESS OF OVERBURDEN	0.0 Ft.	16. ELEVATION TOP OF BORING	-6.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.	17. TOTAL RECOVERY FOR BORING	6.4 Ft.
8. TOTAL DEPTH OF BORING	7.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-6.0	0.0					
			Gray sandy silt/clay with organics (trace shell fragments), (ML-CL).		1	Sample #H5-VC-1, Depth = 0.5' Mean (mm): 0.07, Phi Sorting: -1.49 Fines (230): 53.80% (ML-CL) 10YR5/1
-7.5	1.5					
			Gray sandy silt/clay with organics (trace shell fragments), (ML-CL).		2	Sample #H5-VC-2, Depth = 3.0' Mean (mm): 0.07, Phi Sorting: -1.02 Fines (230): 49.50% (ML-CL) 10YR5/1
-10.7	4.7					
			Dark brown fine sand with organics, (SM).		3	Sample #H5-VC-3, Depth = 5.0' Not Tested
-11.3	5.3					
			Very fine dark silty gray sand, (SP-SM).		4	Sample #H5-VC-4, Depth = 5.7' Not Tested
-12.4	6.4					
			Gray clayey silts, (ML).			Depth = 6.4' - 6.7' Not Sampled or Tested
-12.7	6.7					
			Dark brown clayey fine sand with organics, (SM-SC).		5	Sample #H5-VC-5, Depth = 7.0' Not Tested
-13.2	7.2					
			Brown fine sand, (SM).		6	Sample #H5-VC-6, Depth = 7.6' Not Tested
-13.9	7.9					

End of Boring

FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation H6-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Port Royal - Harbor Head, Naples, FL		9. SIZE AND TYPE OF BIT: 3.0 In. Vibracore	
		10. COORDINATE SYSTEM/DATUM: Florida State Plane East	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: H6-VC	LOCATION COORDINATES: X = 397,041 Y = 643,433	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY: Ardaman & Associates	TESTER'S FILE NO.: 11-7482	12. TOTAL SAMPLES	DISTURBED: / UNDISTURBED (UD): 4
4. NAME OF TESTER: Jerry H. Kuehn, P.E.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL: / BEARING:	14. WATER DEPTH: 5.5 Ft.	
		15. DATE BORING	STARTED: 08-22-12 10:05 / COMPLETED: 08-22-12
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -7.0 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 5.9 Ft.	
8. TOTAL DEPTH OF BORING: 7.9 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-7.0	0.0		Gray silt/clay with organics (trace shell fragments), (ML-CL).		1	Sample #H6-VC-1, Depth = 1.5' Mean (mm): 0.03, Phi Sorting: -2.83 Fines (230): 87.80% (ML-CL) 10YR5/1
					2	Sample #H6-VC-2, Depth = 3', Not Tested.
-11.0	4.0		Organics with dark brown fine sand, (PT).		3	Sample #H6-VC-3, Depth = 4.5' Not Tested
-12.1	5.1		Brown fine sand with organics, (SM).		4	Sample #H6-VC-4, Depth = 6.5' Not Tested
-14.9	7.9		End of Boring			

0

5

FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

Boring Designation HI-VC

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Port Royal - Habitat Island Site, Naples, FL		9. SIZE AND TYPE OF BIT: 3.0 In. Vibracore	
		10. COORDINATE SYSTEM/DATUM: Florida State Plane East	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: HI-VC	LOCATION COORDINATES: X = 398,196 Y = 646,239	11. MANUFACTURER'S DESIGNATION OF DRILL	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. TESTING AGENCY: Ardaman & Associates	TESTER'S FILE NO.: 11-7482	12. TOTAL SAMPLES	DISTURBED: / UNDISTURBED (UD): 3
4. NAME OF TESTER: Jerry H. Kuehn, P.E.		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL: / BEARING:	14. WATER DEPTH: 5.6 Ft.	
		15. DATE BORING	STARTED: 08-22-12 13:00 / COMPLETED: 08-22-12
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -5.8 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 4.8 Ft.	
8. TOTAL DEPTH OF BORING: 6.6 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-5.8	0.0					
			Gray silty fine sand (trace shell fragments), (SM).		1	Sample #HI-VC-1, Depth = 0.9' Mean (mm): 0.11, Phi Sorting: -0.95 Fines (230): 30.30% (SM) 10YR5/1
-7.8	2.0					
			Dark gray silty fine sand with shell, (SM).		2	Sample #HI-VC-2, Depth = 3.1' Mean (mm): 0.41, Phi Sorting: 2.58 Fines (230): 25.20% (SM) 10YR4/1
-10.0	4.2					
			Gray silty fine sand (trace organics), (SM).		3	Sample #HI-VC-3, Depth = 5.5' Mean (mm): 0.17, Phi Sorting: 0.52 Fines (230): 11.60% (SM) 10YR5/1
-12.4	6.6					
			End of Boring			

0

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FLORIDA DEP ROSS 08-2012 FDEP ROSS CORE LOGS_NAPLES.GPJ FL DEP ROSS.GDT 9/26/12

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Appendix B

Granularmetric Reports Cover

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	B5-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray sandy silt with organics (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
93.3	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.2	0.2	0.2	0.2	99.8
10	-1	2.00	0.1	0.3	0.1	0.3	99.7
14	-0.5	1.41	0.1	0.4	0.1	0.4	99.6
18	0	1.00	0.1	0.5	0.1	0.5	99.5
25	0.5	0.71	0.2	0.7	0.2	0.8	99.2
35	1	0.50	0.3	1.0	0.3	1.1	98.9
45	1.5	0.35	0.3	1.3	0.3	1.4	98.6
60	2	0.25	1.4	2.7	1.5	2.9	97.1
80	2.5	0.18	6.6	9.3	7.1	10.0	90.0
120	3	0.13	21.4	30.7	22.9	32.9	67.1
170	3.5	0.09	11.2	41.9	12.0	44.9	55.1
200	3.75	0.07	1.9	43.8	2.0	46.9	53.1
230	4	0.06	1.1	44.9	1.2	48.1	51.9

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Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	B5-VC-2	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Very dark grayish brown sandy silt with organics	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
33.98	10YR3/2	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.0	0.0	0.0	0.0	100.0
10	-1	2.00	0.0	0.0	0.0	0.0	100.0
14	-0.5	1.41	0.1	0.1	0.3	0.3	99.7
18	0	1.00	0.0	0.1	0.0	0.3	99.7
25	0.5	0.71	0.0	0.1	0.0	0.3	99.7
35	1	0.50	0.1	0.2	0.3	0.6	99.4
45	1.5	0.35	0.2	0.4	0.6	1.2	98.8
60	2	0.25	0.5	0.9	1.5	2.6	97.4
80	2.5	0.18	1.2	2.1	3.5	6.2	93.8
120	3	0.13	4.2	6.3	12.4	18.5	81.5
170	3.5	0.09	4.7	11.0	13.8	32.4	67.6
200	3.75	0.07	1.7	12.7	5.0	37.4	62.6
230	4	0.06	1.2	13.9	3.5	40.9	59.1

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	B5-VC-3	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Brown fine sand	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
277.5	10YR5/3	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.0	0.0	0.0	0.0	100.0
10	-1	2.00	0.0	0.0	0.0	0.0	100.0
14	-0.5	1.41	0.1	0.1	0.0	0.0	100.0
18	0	1.00	0.1	0.2	0.0	0.1	99.9
25	0.5	0.71	0.1	0.3	0.0	0.1	99.9
35	1	0.50	0.5	0.8	0.2	0.3	99.7
45	1.5	0.35	2.2	3.0	0.8	1.1	98.9
60	2	0.25	12.6	15.6	4.5	5.6	94.4
80	2.5	0.18	55.8	71.4	20.1	25.7	74.3
120	3	0.13	127.7	199.1	46.0	71.7	28.3
170	3.5	0.09	64.7	263.8	23.3	95.1	4.9
200	3.75	0.07	6.7	270.5	2.4	97.5	2.5
230	4	0.06	2.1	272.6	0.8	98.2	1.8

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	C2-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Light gray to gray fine sand with silt	Date Received in Lab:	8/28/12
		Date Tested:	9/13/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
218.6	10YR6/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.1	0.1	0.0	0.0	100.0
7	-1.5	2.83	0.1	0.2	0.0	0.1	99.9
10	-1	2.00	0.0	0.2	0.0	0.1	99.9
14	-0.5	1.41	0.0	0.2	0.0	0.1	99.9
18	0	1.00	0.1	0.3	0.0	0.1	99.9
25	0.5	0.71	0.1	0.4	0.0	0.2	99.8
35	1	0.50	0.2	0.6	0.1	0.3	99.7
45	1.5	0.35	0.0	0.6	0.0	0.3	99.7
60	2	0.25	0.2	0.8	0.1	0.4	99.6
80	2.5	0.18	2.5	3.3	1.1	1.5	98.5
120	3	0.13	75.8	79.1	34.7	36.2	63.8
170	3.5	0.09	96.3	175.4	44.1	80.2	19.8
200	3.75	0.07	18.0	193.4	8.2	88.5	11.5
230	4	0.06	6.2	199.6	2.8	91.3	8.7

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	C2-VC-2	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray silty fine sand	Date Received in Lab:	8/28/12
		Date Tested:	9/13/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
133.0	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.0	0.0	0.0	0.0	100.0
10	-1	2.00	0.1	0.1	0.1	0.1	99.9
14	-0.5	1.41	0.0	0.1	0.0	0.1	99.9
18	0	1.00	0.0	0.1	0.0	0.1	99.9
25	0.5	0.71	0.0	0.1	0.0	0.1	99.9
35	1	0.50	0.0	0.1	0.0	0.1	99.9
45	1.5	0.35	0.1	0.2	0.1	0.2	99.8
60	2	0.25	0.0	0.2	0.0	0.2	99.8
80	2.5	0.18	1.2	1.4	0.9	1.1	98.9
120	3	0.13	33.3	34.7	25.0	26.1	73.9
170	3.5	0.09	49.0	83.7	36.8	62.9	37.1
200	3.75	0.07	16.2	99.9	12.2	75.1	24.9
230	4	0.06	7.7	107.6	5.8	80.9	19.1

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Geotechnical, Environmental and Materials Consultants

Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	C2-VC-3	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray sandy silt	Date Received in Lab:	8/28/12
		Date Tested:	9/13/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
116.7	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.0	0.0	0.0	0.0	100.0
10	-1	2.00	0.0	0.0	0.0	0.0	100.0
14	-0.5	1.41	0.0	0.0	0.0	0.0	100.0
18	0	1.00	0.0	0.0	0.0	0.0	100.0
25	0.5	0.71	0.0	0.0	0.0	0.0	100.0
35	1	0.50	0.1	0.1	0.1	0.1	99.9
45	1.5	0.35	0.0	0.1	0.0	0.1	99.9
60	2	0.25	0.1	0.2	0.1	0.2	99.8
80	2.5	0.18	0.6	0.8	0.5	0.7	99.3
120	3	0.13	12.9	13.7	11.1	11.7	88.3
170	3.5	0.09	28.7	42.4	24.6	36.3	63.7
200	3.75	0.07	12.3	54.7	10.5	46.9	53.1
230	4	0.06	7.0	61.7	6.0	52.9	47.1

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	D4-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray clayey silty fine sand (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
185.6	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.1	0.1	0.1	0.1	99.9
7	-1.5	2.83	0.2	0.3	0.1	0.2	99.8
10	-1	2.00	0.1	0.4	0.1	0.2	99.8
14	-0.5	1.41	0.0	0.4	0.0	0.2	99.8
18	0	1.00	0.2	0.6	0.1	0.3	99.7
25	0.5	0.71	0.3	0.9	0.2	0.5	99.5
35	1	0.50	0.3	1.2	0.2	0.6	99.4
45	1.5	0.35	0.3	1.5	0.2	0.8	99.2
60	2	0.25	0.6	2.1	0.3	1.1	98.9
80	2.5	0.18	1.2	3.3	0.6	1.8	98.2
120	3	0.13	15.7	19.0	8.5	10.2	89.8
170	3.5	0.09	50.6	69.6	27.3	37.5	62.5
200	3.75	0.07	25.1	94.7	13.5	51.0	49.0
230	4	0.06	14.8	109.5	8.0	59.0	41.0

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Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	D5-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray silt/clay (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
114.0	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.6	0.6	0.5	0.5	99.5
3.5	-2.5	5.66	0.0	0.6	0.0	0.5	99.5
5	-2	4.00	0.0	0.6	0.0	0.5	99.5
7	-1.5	2.83	0.0	0.6	0.0	0.5	99.5
10	-1	2.00	0.0	0.6	0.0	0.5	99.5
14	-0.5	1.41	0.0	0.6	0.0	0.5	99.5
18	0	1.00	0.0	0.6	0.0	0.5	99.5
25	0.5	0.71	0.1	0.7	0.1	0.6	99.4
35	1	0.50	0.2	0.9	0.2	0.8	99.2
45	1.5	0.35	0.1	1.0	0.1	0.9	99.1
60	2	0.25	1.4	2.4	1.2	2.1	97.9
80	2.5	0.18	2.7	5.1	2.4	4.5	95.5
120	3	0.13	5.6	10.7	4.9	9.4	90.6
170	3.5	0.09	3.4	14.1	3.0	12.4	87.6
200	3.75	0.07	2.8	16.9	2.5	14.8	85.2
230	4	0.06	1.9	18.8	1.7	16.5	83.5

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	D6-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray sandy silt	Date Received in Lab:	8/28/12
		Date Tested:	9/13/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
172.0	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.1	0.1	0.1	0.1	99.9
7	-1.5	2.83	0.0	0.1	0.0	0.1	99.9
10	-1	2.00	0.1	0.2	0.1	0.1	99.9
14	-0.5	1.41	0.0	0.2	0.0	0.1	99.9
18	0	1.00	0.1	0.3	0.1	0.2	99.8
25	0.5	0.71	0.3	0.6	0.2	0.3	99.7
35	1	0.50	0.4	1.0	0.2	0.6	99.4
45	1.5	0.35	0.4	1.4	0.2	0.8	99.2
60	2	0.25	0.5	1.9	0.3	1.1	98.9
80	2.5	0.18	1.4	3.3	0.8	1.9	98.1
120	3	0.13	16.6	19.9	9.7	11.6	88.4
170	3.5	0.09	43.4	63.3	25.2	36.8	63.2
200	3.75	0.07	22.1	85.4	12.8	49.7	50.3
230	4	0.06	13.7	99.1	8.0	57.6	42.4

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	G3-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray silty fine sand (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
248.5	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.3	0.3	0.1	0.1	99.9
7	-1.5	2.83	0.1	0.4	0.0	0.2	99.8
10	-1	2.00	0.3	0.7	0.1	0.3	99.7
14	-0.5	1.41	0.1	0.8	0.0	0.3	99.7
18	0	1.00	0.7	1.5	0.3	0.6	99.4
25	0.5	0.71	0.6	2.1	0.2	0.8	99.2
35	1	0.50	0.6	2.7	0.2	1.1	98.9
45	1.5	0.35	0.4	3.1	0.2	1.2	98.8
60	2	0.25	0.9	4.0	0.4	1.6	98.4
80	2.5	0.18	3.3	7.3	1.3	2.9	97.1
120	3	0.13	41.3	48.6	16.6	19.6	80.4
170	3.5	0.09	111.1	159.7	44.7	64.3	35.7
200	3.75	0.07	36.0	195.7	14.5	78.8	21.2
230	4	0.06	15.9	211.6	6.4	85.2	14.8

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	G4-VC-2	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray silt/clay with organics	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
128.7	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.0	0.0	0.0	0.0	100.0
10	-1	2.00	0.0	0.0	0.0	0.0	100.0
14	-0.5	1.41	0.1	0.1	0.1	0.1	99.9
18	0	1.00	0.0	0.1	0.0	0.1	99.9
25	0.5	0.71	0.0	0.1	0.0	0.1	99.9
35	1	0.50	0.1	0.2	0.1	0.2	99.8
45	1.5	0.35	0.2	0.4	0.2	0.3	99.7
60	2	0.25	0.2	0.6	0.2	0.5	99.5
80	2.5	0.18	0.3	0.9	0.2	0.7	99.3
120	3	0.13	1.0	1.9	0.8	1.5	98.5
170	3.5	0.09	3.3	5.2	2.6	4.0	96.0
200	3.75	0.07	3.4	8.6	2.6	6.7	93.3
230	4	0.06	3.6	12.2	2.8	9.5	90.5

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	H5-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray sandy silt/clay with organics (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
115.9	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.3	0.3	0.3	0.3	99.7
5	-2	4.00	0.0	0.3	0.0	0.3	99.7
7	-1.5	2.83	0.0	0.3	0.0	0.3	99.7
10	-1	2.00	0.1	0.4	0.1	0.3	99.7
14	-0.5	1.41	0.1	0.5	0.1	0.4	99.6
18	0	1.00	0.1	0.6	0.1	0.5	99.5
25	0.5	0.71	0.1	0.7	0.1	0.6	99.4
35	1	0.50	0.3	1.0	0.3	0.9	99.1
45	1.5	0.35	0.3	1.3	0.3	1.1	98.9
60	2	0.25	0.6	1.9	0.5	1.6	98.4
80	2.5	0.18	1.3	3.2	1.1	2.8	97.2
120	3	0.13	10.9	14.1	9.4	12.2	87.8
170	3.5	0.09	24.7	38.8	21.3	33.5	66.5
200	3.75	0.07	9.3	48.1	8.0	41.5	58.5
230	4	0.06	5.3	53.4	4.6	46.1	53.9

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	H5-VC-2	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray sandy silt/clay with organics (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
128.3	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.1	0.1	0.1	0.1	99.9
10	-1	2.00	0.2	0.3	0.2	0.2	99.8
14	-0.5	1.41	0.1	0.4	0.1	0.3	99.7
18	0	1.00	0.3	0.7	0.2	0.5	99.5
25	0.5	0.71	0.4	1.1	0.3	0.9	99.1
35	1	0.50	0.2	1.3	0.2	1.0	99.0
45	1.5	0.35	0.5	1.8	0.4	1.4	98.6
60	2	0.25	0.7	2.5	0.5	1.9	98.1
80	2.5	0.18	1.4	3.9	1.1	3.0	97.0
120	3	0.13	9.6	13.5	7.5	10.5	89.5
170	3.5	0.09	28.6	42.1	22.3	32.8	67.2
200	3.75	0.07	13.4	55.5	10.4	43.3	56.7
230	4	0.06	9.2	64.7	7.2	50.4	49.6

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	H6-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray silt/clay with organics (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/12/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
93.3	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.0	0.0	0.0	0.0	100.0
10	-1	2.00	0.0	0.0	0.0	0.0	100.0
14	-0.5	1.41	0.0	0.0	0.0	0.0	100.0
18	0	1.00	0.1	0.1	0.1	0.1	99.9
25	0.5	0.71	0.1	0.2	0.1	0.2	99.8
35	1	0.50	0.1	0.3	0.1	0.3	99.7
45	1.5	0.35	0.1	0.4	0.1	0.4	99.6
60	2	0.25	0.1	0.5	0.1	0.5	99.5
80	2.5	0.18	0.7	1.2	0.8	1.3	98.7
120	3	0.13	2.2	3.4	2.4	3.6	96.4
170	3.5	0.09	2.7	6.1	2.9	6.5	93.5
200	3.75	0.07	2.4	8.5	2.6	9.1	90.9
230	4	0.06	2.8	11.3	3.0	12.1	87.9

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	HI-VC-1	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray silty fine sand (trace shell fragments)	Date Received in Lab:	8/28/12
		Date Tested:	9/14/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
242.0	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.2	0.2	0.1	0.1	99.9
3.5	-2.5	5.66	0.4	0.6	0.2	0.2	99.8
5	-2	4.00	0.4	1.0	0.2	0.4	99.6
7	-1.5	2.83	1.0	2.0	0.4	0.8	99.2
10	-1	2.00	1.4	3.4	0.6	1.4	98.6
14	-0.5	1.41	0.6	4.0	0.2	1.7	98.3
18	0	1.00	1.3	5.3	0.5	2.2	97.8
25	0.5	0.71	2.0	7.3	0.8	3.0	97.0
35	1	0.50	2.2	9.5	0.9	3.9	96.1
45	1.5	0.35	2.0	11.5	0.8	4.8	95.2
60	2	0.25	4.4	15.9	1.8	6.6	93.4
80	2.5	0.18	18.4	34.3	7.6	14.2	85.8
120	3	0.13	53.1	87.4	21.9	36.1	63.9
170	3.5	0.09	39.1	126.5	16.2	52.3	47.7
200	3.75	0.07	22.2	148.7	9.2	61.4	38.6
230	4	0.06	20.0	168.7	8.3	69.7	30.3

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	HI-VC-2	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Dark gray silty fine sand with shell	Date Received in Lab:	8/28/12
		Date Tested:	9/14/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
144.0	10YR4/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	8.7	8.7	6.0	6.0	94.0
7/16"	-3.5	11.31	7.1	15.8	4.9	11.0	89.0
5/16"	-3	8.00	1.2	17.0	0.8	11.8	88.2
3.5	-2.5	5.66	1.4	18.4	1.0	12.8	87.2
5	-2	4.00	0.9	19.3	0.6	13.4	86.6
7	-1.5	2.83	1.5	20.8	1.0	14.4	85.6
10	-1	2.00	2.1	22.9	1.5	15.9	84.1
14	-0.5	1.41	0.8	23.7	0.6	16.5	83.5
18	0	1.00	1.3	25.0	0.9	17.4	82.6
25	0.5	0.71	2.1	27.1	1.5	18.8	81.2
35	1	0.50	2.1	29.2	1.5	20.3	79.7
45	1.5	0.35	2.6	31.8	1.8	22.1	77.9
60	2	0.25	5.5	37.3	3.8	25.9	74.1
80	2.5	0.18	15.7	53.0	10.9	36.8	63.2
120	3	0.13	30.9	83.9	21.5	58.3	41.7
170	3.5	0.09	15.2	99.1	10.6	68.8	31.2
200	3.75	0.07	5.0	104.1	3.5	72.3	27.7
230	4	0.06	3.5	107.6	2.4	74.7	25.3

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Granularmetric Report

Project Name:	Port Royal	File No.:	11-7482
Sample Name:	HI-VC-3	Date Sampled (by others):	8/20-8/22/12
Sample Description:	Gray silty fine sand (trace organics)	Date Received in Lab:	8/28/12
		Date Tested:	9/14/12

Dry Weight (gms):	Munsell Color (damp):	Calcium Carbonate (%):	Sampled by:
253.8	10YR5/1	N.A.	Client

Sieve Number	Sieve Size (phi)	Sieve Size (mm)	Grams Retained	Cum. Grams Retained	% Weight Retained	Cum. % Weight Retained	Cum. % Weight Passing
3/4"	-4.25	19.03	0.0	0.0	0.0	0.0	100.0
5/8"	-4	16.00	0.0	0.0	0.0	0.0	100.0
7/16"	-3.5	11.31	0.0	0.0	0.0	0.0	100.0
5/16"	-3	8.00	0.0	0.0	0.0	0.0	100.0
3.5	-2.5	5.66	0.0	0.0	0.0	0.0	100.0
5	-2	4.00	0.0	0.0	0.0	0.0	100.0
7	-1.5	2.83	0.1	0.1	0.0	0.0	100.0
10	-1	2.00	0.0	0.1	0.0	0.0	100.0
14	-0.5	1.41	0.1	0.2	0.0	0.1	99.9
18	0	1.00	0.1	0.3	0.0	0.1	99.9
25	0.5	0.71	0.3	0.6	0.1	0.2	99.8
35	1	0.50	1.5	2.1	0.6	0.8	99.2
45	1.5	0.35	5.4	7.5	2.1	3.0	97.0
60	2	0.25	17.2	24.7	6.8	9.7	90.3
80	2.5	0.18	59.3	84.0	23.4	33.1	66.9
120	3	0.13	102.4	186.4	40.3	73.4	26.6
170	3.5	0.09	31.6	218.0	12.5	85.9	14.1
200	3.75	0.07	4.5	222.5	1.8	87.7	12.3
230	4	0.06	2.1	224.6	0.8	88.5	11.5

Jerry H. Kuehn, P.E.
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Appendix C

Core Photos


Core
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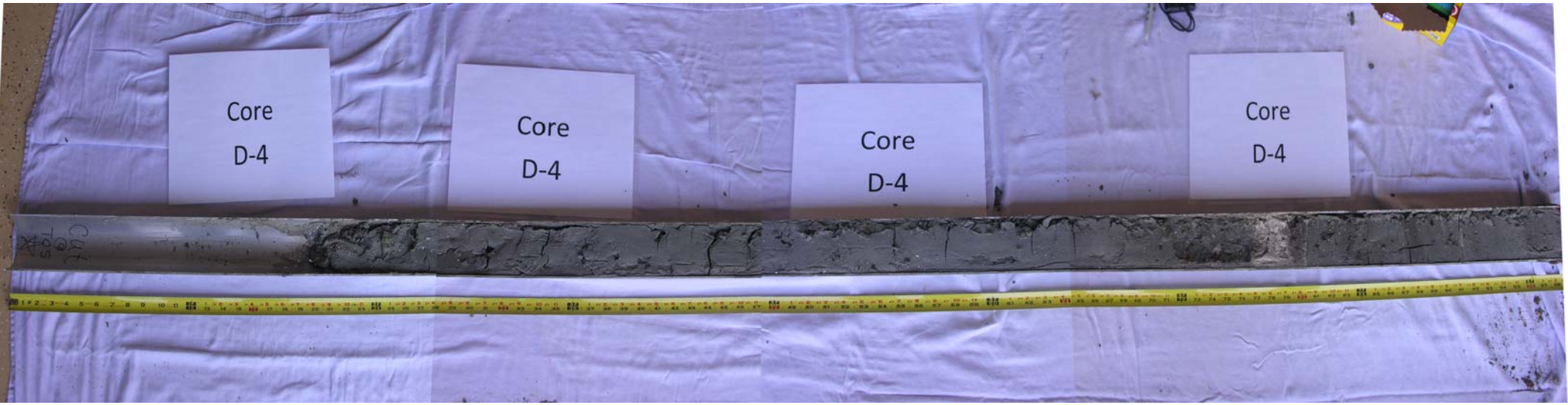
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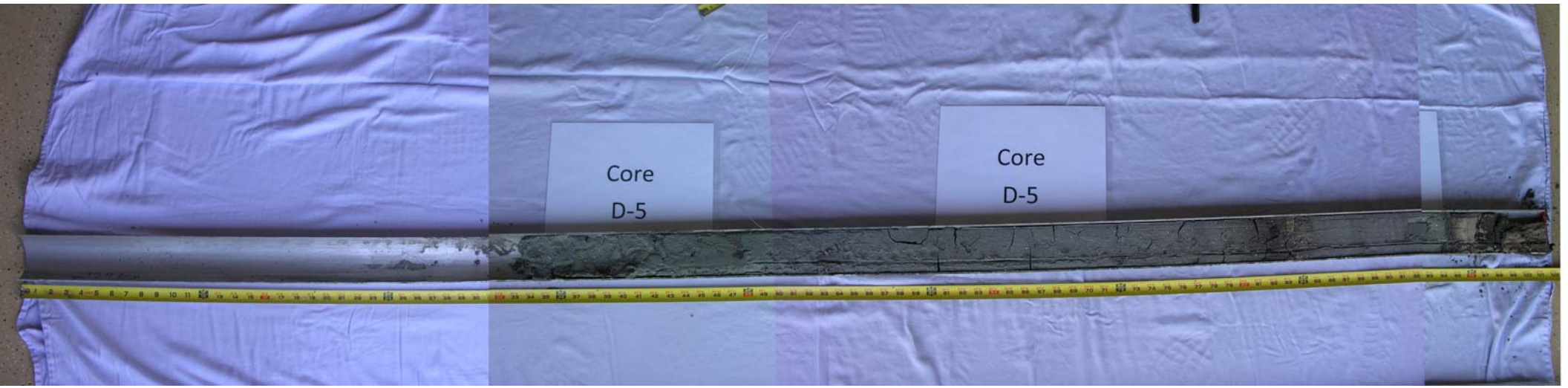
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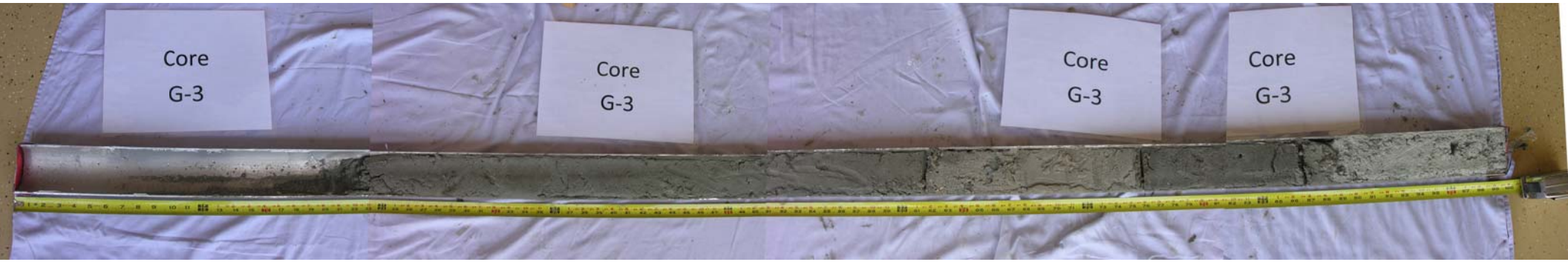
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