



TOWN OF PALM BEACH

Town Manager's Office

**TENTATIVE-
SUBJECT TO
REVISION**

SHORE PROTECTION BOARD MEETING

AGENDA

THURSDAY, MAY 24, 2018

9:00 AM

**TOWN COUNCIL CHAMBERS
360 SOUTH COUNTY ROAD**

WELCOME!

The progress of this meeting may be monitored by visiting the Town's website (www.townofpalmbeach.com) and selecting "Live Meeting Audio" under the "Your Government" tab. If you have questions regarding that feature, please contact the Office of Information Systems (561) 227-6315. The audio recording of the meeting will appear within 24 hours after the conclusion of the meeting under "Agendas, Minutes, and Audio."

I. CALL TO ORDER

II. ROLL CALL

E. Llwyd Ecclestone, Chair
Lewis Katz, Vice-Chair
Kane Baker, Shore Protection Board Member
Melissa Cerialle, Shore Protection Board Member
James C. Gavigan, Shore Protection Board Member
Reuben B. Johnson, III, Shore Protection Board Member
Harvey Kinzelberg, Shore Protection Board Member
Stephen Jacoby, Shore Protection Board Alternate Member
Warren Belmar, Shore Protection Board Alternate Member
William Lorentzen, Shore Protection Board Alternate Member

III. PLEDGE OF ALLEGIANCE

IV. APPROVAL OF AGENDA

V. COMMUNICATIONS FROM SHORE PROTECTION BOARD MEMBERS

VI. COMMUNICATIONS FROM CITIZENS - 3 MINUTE LIMIT PLEASE

VII. COASTAL MANAGEMENT PROGRAM FINANCING PLAN
[Jane Le Clainche, Director of Finance]

- VIII. FINANCIAL SUMMARY OF THE FIRST FIVE YEARS OF THE TOWN COUNCIL ADOPTED
10-YEAR COASTAL MANAGEMENT PLAN
[Robert Weber, Coastal Program Manager]
- IX. RECENT APPROVED REVISIONS TO 10-YEAR COASTAL MANAGEMENT PLAN
[H. Paul Brazil, P.E., Director of Public Works]
- X. RECOMMENDATION TO TOWN COUNCIL REGARDING THE PROPOSED FY 2019
COASTAL MANAGEMENT PROGRAM BUDGET
[H. Paul Brazil, P.E., Director of Public Works]
- XI. HISTORICAL AND CURRENT SHORELINE CONDITIONS
[Robert Weber, Coastal Program Manager]
- XII. SCHEDULING OF FUTURE MEETINGS
[H. Paul Brazil, P.E., Director of Public Works]
- Thursday, October 18, 2018
- XIII. ANY OTHER MATTERS
- XIV. ADJOURNMENT

Note: Disabled persons who need an accommodation in order to participate in the Town Council Meeting are requested to contact the Town Manager's Office at 838-5410 or through the Florida Relay Service by dialing 1-800-955-8770 for voice callers or 1-800-955-8771 for TDD callers, at least two (2) working days before this meeting.

TOWN OF PALM BEACH

Information for Shore Protection Board Meeting on: May 24, 2018

TO: Shore Protection Board

VIA: Kirk W. Blouin, Town Manager

FROM: Jane Le Clainche, Director of Finance

RE: Coastal Protection Fund Financial Plan
Item VII.

DATE: May 16, 2018

GENERAL INFORMATION

On October 8, 2013, the Town Council approved a coastal financing plan which required an increase in property taxes of \$4,777,000 beginning in FY15 to begin to fund the 10-year coastal plan. The plan also assumed that there would be a 3% increase in property taxes each year of the 10-year plan. Prior to this action, coastal protection projects had been funded through a 2000 bond issue, a 2013 bond issue to fund seawalls and groins, and the use of various Town reserves. The 2000 bond issue had a payback period of 10-years and the debt service was paid for by Town taxpayers.

After the adoption of the plan in 2013, the Mid-Town Beach and the Phipps Ocean Park renourishment projects exceeded the estimated budget. Tom Bradford, the Town Manager at that time, instructed the Coastal Program Manager to revise the 10-year plan to reflect the current market environment as well as update the plan with 2024 and 2025 estimates. This exercise was completed in 2015 for the FY16 budget. In the FY16 budget, the Town Council approved an increase in the annual property tax funding from \$4,777,000 to \$8,015,220. In 2017, the Town Council decided to reduce the annual funding to \$7,265,000 with 3% increases per year. The attached slide shows the current funding plan for the Coastal Protection program. The transfers for FY19 through FY28 to the Coastal Protection Fund from the General Fund has been built into the Town's 10-year Long-Term Financial Plan.

I will be prepared to go through the slide with the Shore Protection Board at the meeting on May 24, 2018, and answer any questions the board members may have.

Attachment

cc: Jay Boodheshwar, Deputy Town Manager
H. Paul Brazil, Director of Public Works
Patricia Strayer, Town Engineer
Robert Weber, Coastal Program Manager

Town of Palm Beach Coastal Protection Fund

Cash Flow Projection and Financing Plan through FY2028

Fiscal Year	General and		Bond Deposits		Bondable Project Costs	Non-Bond Project Costs	Interest Earnings	Debt Service	Ending Period Balance
	Beginning Balance	Other Funds Transfers In	Additional Transfers Federal/State/County Funds						
2013	15,448,557								15,448,557
2014	15,448,557	12,402,807	11,900,000	(243,783)	(1,278,817)	83,361	(295,100)		38,017,025
2015	38,017,025	4,777,000	6,925,412	(3,935,588)	(21,306,354)	329,203	(734,613)		24,072,085
2016	24,072,085	8,015,220	2,541,573	(2,591,110)	(17,653,274)	157,317	(731,163)		13,810,648
2017	13,810,648	7,265,000	43,385	-	(798,152)	72,496	(731,413)		19,661,964
2018	19,661,964	7,410,300	6,400,000	(5,129,519)	(14,053,718)	270,000	(736,038)		13,822,989
2019	13,822,989	7,434,405	4,637,500	-	(9,033,156)	345,575	(542,607)		16,664,706
2020	16,664,706	7,672,156	15,901,006	-	(33,543,591)	416,618	(544,107)		6,566,788
2021	6,566,788	7,906,129	-	-	(2,817,188)	164,170	(542,232)		11,277,666
2022	11,277,666	8,147,427	-	-	(4,224,954)	281,942	(540,982)		14,941,099
2023	14,941,099	8,401,138	-	-	(3,614,893)	373,527	(546,107)		19,554,765
2024	19,554,765	8,657,480	3,244,800	-	(28,436,009)	488,869	(540,732)		2,969,173
2025	2,969,173	8,917,204	-	-	(2,744,310)	74,229	(539,982)		8,676,314
2026	8,676,314	9,184,721	-	-	(3,759,299)	216,908	(543,607)		13,775,037
2027	13,775,037	9,460,262	-	-	(2,944,483)	344,376	(546,481)		20,088,711
2028	20,088,711	9,744,070	-	-	(28,854,367)	502,218	(543,731)		936,901
Total		125,395,319	51,593,676	(11,900,000)	(175,062,565)	4,120,808	(8,658,895)		
Assumes a 3% increase in general fund revenue per year									

TOWN OF PALM BEACH

Information for Shore Protection Board Meeting on: May 24, 2018

TO: Shore Protection Board

FROM: Kirk W. Blouin, Town Manager

VIA: Robert Weber, Coastal Program Manager

RE: Financial Summary of the First Five Years of the Town Council Adopted 10-Year Coastal Management Plan
Item VIII.

DATE: May 16, 2018

STAFF RECOMMENDATION

No action is required by the Shore Protection Board (SPB) at this time.

GENERAL INFORMATION

At the April 26, 2018 SPB meeting, the SPB requested that Town staff prepare a financial summary of the Town Council approved annual budgets and the annual actual expenditures between FY 2014 and FY 2018. Attached is the summary.

The “Approved” columns are reflective of the annual expenditures approved by Town Council and published within the respective annual Town-wide budgets. Three (3) items that were added by Town Council outside of the budget process and are included within the “Approved” columns are the 2016 Phipps Ocean Park Beach Nourishment Project (FY 2015), the Mid-Town Groin Project at Gulfstream Road (FY 2018), and the Breakers/Clarke Avenue/Mid-Town Beach Detailed Design (FY 2018). There may be other projects that were approved by Town Council during this 5-year window that were not listed within the Adopted 10-Year Plan.

The “Actuals” columns are representative of the annual expenditures funded. Because line items have changed from one year to the next, Town staff best matched expenditures to the most appropriate current line items. The totals on the bottom of the “Actuals” columns are consistent with the actual annual expenditures for the coastal program.

Due to the time frames for planning, design, permitting, construction, and monitoring of coastal projects, the “Approved” and “Actuals” columns for a specific year cannot be compared. However, the first five (5) years of the 10-Year Adopted Plan can be summarized from the data in the table with a Town Council approved total of \$59,061,242 and an actual expenditure total of \$54,358,592.

There are several line items that were approved by Town Council in the annual budget, but have yet to move forward. Some of these items may not move forward. One example is an EIS for Reaches 1 and 2. Some of these items may move forward at a later date. Another example is Sand Forepassing.

Town staff will present this item and answer questions from the SPB at the meeting on May 24, 2018.

Attachment

cc: Jay Boodheshwar, Deputy Town Manager
H. Paul Brazil, P.E., Director of Public Works
Patricia Strayer, P.E., Town Engineer
Jane Le Chainche, Director of Finance

Town of Palm Beach 5-Year Review of Coastal Management Program												
EXPENDITURES												
Item #	#'s Replaced (FY 2014)	Project Name	FY 2014 Approved	FY 2014 Actuals	FY 2015 Approved	FY 2015 Actuals	FY 2016 Approved	FY 2016 Actuals	FY 2017 Approved	FY 2017 Actuals	FY 2018 Approved	FY 2018 Anticipated
	1	Perform one-time supplemental analysis of historical data	\$ 40,000	\$ 17,231				\$ 4,170				
1	2	APPLY AND UPDATE ISLANDWIDE SEDIMENT TRANSPORT ANALYSIS	\$ 100,000		\$ 20,000	\$ 42,314	\$ 20,000		\$ 21,000		\$ 22,000	\$ 22,000
2	3, 25, 33	ANNUAL SEDIMENT REPORT (BMA REQUIRED)	\$ 75,000		\$ 25,000		\$ 45,000		\$ 47,000		\$ 48,000	\$ 48,000
3	4, 5	SEAWALL/LLOD FUNCTION/NON-STRUCTURAL INVENTORY ASSESSMENT & ANALYSIS	\$ 100,000	\$ 71,202	\$ 100,000							\$ 20,000
4	6	SEAWALL/LLOD REHABILITATION/REPLACEMENT			\$ 1,000,000							
5	7	GROIN ASSESSMENT	\$ 60,000	\$ 12,803								
6	8	GROIN REHABILITATION			\$ 500,000	\$ 57,620	\$ 1,500,000	\$ 42,816		\$ 25,248		\$ 25,000
7	9	FLOODING AND CLIMATE CHANGE/SLR ASSESSMENT			\$ 50,000		\$ 50,000		\$ 50,000	\$ 21,676		\$ 60,000
8	10	COMMUNICATIONS	\$ 25,000		\$ 7,000		\$ 25,000		\$ 25,000		\$ -	
9	11	DUNE VEGETATION MAINTENANCE	\$ 10,000		\$ 5,000		\$ 10,000	\$ 57,700	\$ 10,000	\$ 8,116	\$ 10,000	\$ 10,000
10	12	REGIONAL SAND NEEDS/SAND SEARCH	\$ 25,000					\$ 10,037				
11	13	GENERAL COASTAL ENGINEERING	\$ 50,000	\$ 57,196	\$ 50,000	\$ 21,072	\$ 50,000	\$ 11,972	\$ 52,000	\$ 40,678	\$ 54,000	\$ 52,000
12	14	PHYSICAL MONITORING (NON-PROJECT AREAS)	\$ 72,000	\$ 68,087	\$ 72,000	\$ 72,000	\$ 72,000	\$ 72,000	\$ 75,000	\$ 75,000	\$ 77,000	\$ 77,000
13	19, 27, 34, 42	BMA SEA TURTLE NESTING MONITORING	\$ 129,000	\$ 155,558	\$ 129,000	\$ 181,030	\$ 200,000	\$ 181,530	\$ 200,000	\$ 155,558	\$ 220,000	\$ 200,000
14	30, 37	BMA BIOLOGICAL MONITORING	\$ 320,000	\$ 126,097	\$ 175,000	\$ 384,408	\$ 200,000	\$ 180,679	\$ 206,000	\$ 140,980	\$ 213,000	\$ 213,000
15	15	COASTAL MANAGEMENT PROGRAM OPERATING EXPENSES	\$ 213,000	\$ 149,251	\$ 219,000	\$ 153,932	\$ 169,000	\$ 195,716	\$ 218,302	\$ 222,358	\$ 258,326	\$ 258,326
16		ANNUAL DEBT SERVICE PAYMENT				\$ 734,613	\$ 731,163	\$ 731,163	\$ 731,413	\$ 731,413	\$ 736,038	\$ 542,607
17	16	SAND TRANSFER OPERATING	\$ 310,000	\$ 4,050	\$ 313,000		\$ -		\$ -			
18	17	MAINTENANCE DREDGING, SAND PLACEMENT EXTENSION (EIS)			\$ 1,000,000							
19	18	LWI IMP PHYSICAL MONITORING	\$ 19,000		\$ 19,000	\$ 19,000	\$ 19,000	\$ 9,594	\$ 20,000	\$ 20,000	\$ 21,000	\$ 21,000
20	20	BEACH TILLING (REACHES 1 AND 2)	\$ 10,000	\$ 5,300	\$ 5,000		\$ 5,000		\$ 5,000		\$ 5,000	
21	21	ESCARPMENT REMOVAL (REACHES 1 AND 2)	\$ 10,000		\$ 5,000		\$ 5,000		\$ 5,000		\$ 5,000	
22	22	N. OCEAN BLVD. SEAWALL REPLACEMENT	\$ 5,600,000	\$ 230,980		\$ 3,877,968		\$ 2,178,380				
23		SAND FOREPASSING					\$ 700,000				\$ 600,000	
24	23	MID-TOWN BEACH RENOURISHMENT CONSTRUCTION	\$ 11,600,000	\$ 99,392		\$ 16,834,582						
25		MID-TOWN BEACH RENOURISHMENT PERMITTING										
26 (1)		OBTAIN FEDERAL COST-SHARE FOR MID-TOWN									\$ 500,000	
26 (2)		MID-TOWN BEACH GROIN PROJECT AT GULFSTREAM ROAD									\$ 2,832,000	\$ 2,037,000
27 (1)	24	MID-TOWN PHYSICAL MONITORING	\$ 38,000	\$ 26,190	\$ 38,000	\$ 38,000	\$ 38,000		\$ 40,000	\$ 7,318	\$ 41,000	\$ 41,000
27 (2)		MID-TOWN DETAILED DESIGN AND PERMITTING (BREAKERS/CLARKE AVENUE)									\$ 209,000	\$ 190,000
	25	MID-TOWN PROJECT ENGINEERING REPORT	\$ 11,000	\$ 3,392	\$ 11,000							
28	26	MID-TOWN MITIGATION - CORAL NURSERY/TRANSPLANTATION	\$ 150,000	\$ 97,575	\$ 100,000	\$ 26,371	\$ 200,000	\$ 9,259	\$ 200,000		\$ 200,000	\$ 200,000
29		MID-TOWN MITIGATION - ARTIFICIAL REEF CONSTRUCTION					\$ 3,000,000					
30	28	BEACH TILLING (MID-TOWN)	\$ 10,000	\$ 7,893	\$ 5,000		\$ 5,000	\$ 6,050	\$ 5,000		\$ 5,000	\$ 2,000
31	29	ESCARPMENT REMOVAL (MID-TOWN)	\$ 10,000	\$ 7,893	\$ 5,000		\$ 5,000	\$ 523	\$ 5,000		\$ 5,000	
32	31	PHIPPS OCEAN PARK/REACH 7 BEACH NOURISHMENT CONSTRUCTION	\$ 1,800,000		\$ 15,100,000	\$ 2,192,525	\$ 300,000	\$ 16,349,910		\$ 10,855		
33	32	PHIPPS PHYSICAL MONITORING	\$ 28,000		\$ 28,000	\$ 5,690	\$ 28,000	\$ 22,051	\$ 29,000		\$ 30,000	\$ 30,000
	33	PHIPPS PROJECT ENGINEERING REPORT	\$ 11,000	\$ 372	\$ 10,000		\$ -		\$ -			
34	35	BEACH TILLING (REACH 7)	\$ 10,000	\$ 7,893	\$ 5,000	\$ 3,600	\$ 5,000	\$ 5,000	\$ 5,000	\$ 3,480	\$ 5,000	\$ 3,000
35	36	ESCARPMENT REMOVAL (REACH 7)	\$ 10,000	\$ 7,893	\$ 5,000		\$ 5,000		\$ 5,000	\$ 900	\$ 5,000	
36	38	REACH 8 EIS	\$ 1,000,000	\$ 586,291		\$ 169,953		\$ 367,677		\$ 57,922		\$ 50,000
37		SOUTH END PALM BEACH RESTORATION PERMITTING		\$ 1,454			\$ 200,000					
38		SOUTH END PALM BEACH RESTORATION (INITIAL CONSTRUCTION)										
39		REACH 8 DUNE RESTORATION										
40		REACH 8 CONSTRUCTION ACCESS EASEMENT AND SITE RESTORATION										
41	39	REACH 8 DUNE/BEACH CONSTRUCT CONCURRENTLY WITH MID-TOWN OR PHIPPS	\$ 950,000			\$ 1,162,882	\$ 1,235,000	\$ 539,319				
42	45	REACH 8 BIOLOGICAL MONITORING					\$ 50,000		\$ 52,000	\$ 8,064	\$ 54,000	
43	40	REACH 8 PHYSICAL MONITORING	\$ 28,000		\$ 28,000		\$ 28,000		\$ 29,000		\$ 30,000	\$ 30,000
44	41	REACH 8 PROJECT ENGINEERING REPORT					\$ 10,000		\$ 11,000		\$ 11,000	
45	43	BEACH TILLING (REACH 8)	\$ 10,000		\$ 5,000		\$ 5,000		\$ 5,000		\$ 5,000	
46	44	ESCARPMENT REMOVAL (REACH 8)	\$ 10,000		\$ 5,000				\$ 5,000		\$ 5,000	
Total			\$ 22,844,000	\$ 1,743,989	\$ 19,039,000	\$ 25,977,560	\$ 8,915,163	\$ 20,975,546	\$ 2,056,715	\$ 1,529,564	\$ 6,206,364	\$ 4,131,933

5-YEAR APPROVED TOTAL (FY 2014 - FY 2018)	\$ 59,061,242
5-YEAR ACTUALS TOTAL (FY 2014 - FY 2018)	\$ 54,358,592

TOWN OF PALM BEACH

Information for Shore Protection Board Meeting on: May 24, 2018

TO: Shore Protection Board

FROM: Kirk W. Blouin, Town Manager

VIA: Robert Weber, Coastal Program Manager

RE: Recent Approved Revisions to 10-Year Coastal Management Plan
Item IX.

DATE: May 16, 2018

STAFF RECOMMENDATION

No action is required by the Shore Protection Board (SPB) at this time.

GENERAL INFORMATION

Staff was directed by the Town Manager in 2015 to use ‘adaptive management’, as recommended by Woods Hole Group during their independent evaluation of the Town’s long term Coastal Management Program, and modify the Adopted 10-Year Plan considering any regulatory changes due to the Beach Management Agreement, adding cost escalators, updating costs to existing projects, and add costs to new projects. Attached is a spreadsheet provided to the SPB in April 2017 that illustrates the changes between FY 2018 and FY 2027.

Regulatory and permit required projects are shown in red. Projects with added escalators are shown in green. Projects with added costs, due to the Beach Management Agreement, are shown in orange. New projects not included within the 2013 10-Year Adopted Plan are shown in purple. Town staff will be available to answer questions from the SPB at the meeting on May 24, 2018.

Attachment

cc: Jay Boodheshwar, Deputy Town Manager
H. Paul Brazil, P.E., Director of Public Works
Patricia Strayer, P.E., Town Engineer
Jane Le Chainche, Director of Finance

10-Year Coastal Management Program Budget Update, August 2015 (Extended for FY 2026 and FY 2027)

			Remaining Years of 2013 Adopted Coastal Management Program Budget August 2015					Updated	Outlook				Modification/Description
#	#s REPLACED (FY 2014)	PROJECT	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	
ISLANDWIDE													
1	2	APPLY AND UPDATE ISLANDWIDE SEDIMENT TRANSPORT ANALYSIS	22,000	22,000	23,000	24,000	24,000	25,000	26,000	27,000	28,000	29,000	Add 3% escalator (round up to \$1000)
2	3, 25, 33	ANNUAL SEDIMENT BUDGET REPORT (NOW BMA REQ'D)	48,000	50,000	51,000	53,000	54,000	56,000	58,000	59,000	60,000	63,000	Combined line items; Add 3% escalator (round up to \$1000)
3	4,5	SEAWALL/LLOD FUNCTION/NON-STRUCTURAL INVENTORY ASSESSMENT & ANALYSIS		116,000							143,000		Add 3% escalator (round up to \$1000)
4	6	SEAWALL/LLOD REHABILITATION/REPLACEMENT	0	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	Continue \$1M appropriation; Future roadway protective repairs
5	7	GROIN ASSESSMENT		70,000							86,000		Add 3% escalator (round up to \$1000)
6	8	GROIN REHABILITATION	1,500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	FY16-FY18 Phase 1; \$14.11 M needed for Phases 2-4; FY19-FY25 totals \$3.5M
7	9	FLOODING AND CLIMATE CHANGE/SLR ASSESSMENT											Reprogrammed from FY 2015 appropriation; then split into 2 equal years
8	10	COMMUNICATIONS	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	33,000	33,000	Increased back to \$25k from \$7k.
9	11	DUNE VEGETATION MAINTENANCE	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	13,000	13,000	Increased back to \$10K from \$5k
10	12	REGIONAL SAND NEEDS / SAND SEARCH					725,000	725,000					Estimate (3% annual. esc. from 2010 cost); then split into 2 equal years
11	13	GENERAL COASTAL ENGINEERING	54,000	55,000	57,000	58,000	60,000	62,000	64,000	66,000	69,000	70,000	Continue 3% escalator (round up to \$1000)
12	14	PHYSICAL MONITORING (NON-PROJECT AREAS)	77,000	79,000	82,000	84,000	86,000	89,000	92,000	94,000	97,000	100,000	Continue 3% escalator (round up to \$1000)
13	19, 27, 34, 42	BMA SEA TURTLE MONITORING	220,000	220,000	220,000	220,000	220,000	242,000	242,000	242,000	242,000	242,000	Combined line items; Inc by 10% every 5 years; New contracts every 5 years
14	30, 37	BMA BIOLOGICAL MONITORING	213,000	219,000	226,000	232,000	239,000	246,000	254,000	261,000	269,000	277,000	Combined line items; Add 3% escalator (round up to \$1000)
15	15	COASTAL MANAGEMENT PROGRAM OPERATING EXPENSES	179,000	184,000	189,500	195,000	201,000	207,000	213,000	219,500	226,000	232,000	Annual reductions, continue
16		ANNUAL DEBT SERVICE PAYMENT	736,038	735,038	733,038	733,538	733,913	735,538	731,538	731,913	732,000	733,000	Not included in FY 2013 10-Year plan
INLET MANAGEMENT ACTIVITIES													
17	16	SAND TRANSFER PLANT OPERATING	0	0	0	0	0	0	0	0	0	0	Approx. \$300K/year appropriation to be discontinued following 08/18 BCC
18	17	MAINTENANCE DREDGING, SAND PLACEMENT EXTENSION (EIS)	1,000,000										Reprogrammed from FY 2015 appropriation
19	18	LWI IMP PHYSICAL MONITORING	21,000	21,000	22,000	23,000	23,000	24,000	25,000	25,000	26,000	27,000	Continue 3% escalator (round up to \$1000)
REACH 1 (LAKE WORTH INLET TO ONONDAGA AVENUE)													
20	20	BEACH TILLING	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
21	21	ESCARPMENT REMOVAL	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
REACH 2 (ONONDAGA AVENUE TO EL MIRASOL)													
22	22	NOB SEAWALL REPLACEMENT											
23		SAND FOREPASSING	600,000		620,000		660,000		700,000		742,000		\$150K Des/Eng; \$50K Easement; Based on PBC contract values
REACHES 3+4 (EL MIRASOL TO BANYAN ROAD)													
24	23	MID-TOWN BEACH RENOURISHMENT CONSTRUCTION				17,850,000							Add \$2M (mob), \$1M (contingency); \$350K eng/observations
25		MID-TOWN BEACH RENOURISHMENT PERMITTING		100,000									Add for Federal permitting
26		OBTAIN FEDERAL COST-SHARE FOR MID-TOWN	500,000	500,000									\$1.5M estimate (USACE staff communication; based on 3/3/3 Rule)
27	24	MID-TOWN PHYSICAL MONITORING	41,000	42,000	43,000	45,000	46,000	47,000	49,000	50,000	51,500	53,000	Continue 3% escalator (round up to \$1000)
28	26	MID-TOWN MITIGATION - CORAL NURSERY/TRANSPLANTATION	200,000	200,000	200,000	200,000	200,000	200,000					Inc. from \$150K/yr to \$200K/yr; Discontinues after FY 2023
29		MID-TOWN MITIGATION - ARTIFICIAL REEF CONSTRUCTION											Reprogrammed from FY 2012 appropriation
30	28	BEACH TILLING	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
31	29	ESCARPMENT REMOVAL	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
REACH 7 (SLOAN'S CURVE TO LAKE WORTH MUNICIPAL PIER)													
32	31	PHIPPS OCEAN PARK/REACH 7 BEACH NOURISHMENT CONSTRUCTION				2,300,000			21,800,000				Actual; Add \$2M (mob) & \$1M (contingency); \$300K eng/observations
33	32	PHIPPS PHYSICAL MONITORING	30,000	31,000	32,000	33,000	34,000	35,000	36,000	37,000	38,000	39,000	Continue 3% escalator (round up to \$1000)
34	35	BEACH TILLING	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
35	36	ESCARPMENT REMOVAL	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
REACH 8 (LAKE WORTH MUNICIPAL PIER TO SOUTH TOWN LIMITS)													
36	38	EIS											
37		SOUTH END PALM BEACH RESTORATION PERMITTING											
38		SOUTH END PALM BEACH RESTORATION (INITIAL CONSTRUCTION)											75000cy @ \$40cy +10% contingency+\$200K eng
39		SOUTH END PALM BEACH RESTORATION MITIGATION											1.5 acres at \$1M/acre, \$500K contingency, \$200K eng.
40		CONSTRUCTION ACCESS EASEMENT AND SITE RESTORATION				80,000			80,000				Attorney, Engineering, Processing fees
41	39	DUNE/BEACH CONSTRUCT CONCURRENTLY W/MID-TOWN, PHIPPS				2,500,000			2,750,000				Recalculated with higher volume; 75,000cy \$25/cy; 10% contingency; 3% esc.
42	45	REACH 8 BIOLOGICAL MONITORING	54,000	55,000	57,000	58,000	60,000	62,000	64,000	66,000	68,000	70,000	Continue 3% escalator (round up to \$1000)
43	40	REACH 8 PHYSICAL MONITORING	30,000	31,000	32,000	33,000	34,000	35,000	36,000	37,000	38,000	39,000	Continue 3% escalator (round up to \$1000)
44	41	REACH 8 PROJECT ENGINEERING REPORT	11,000	11,000	12,000	12,000	12,000	13,000	13,000	14,000	14,000	15,000	Continue 3% escalator (round up to \$1000)
45	43	BEACH TILLING	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
46	44	ESCARPMENT REMOVAL	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	6,500	6,500	No change (Approx. 3% year/10 years)
			5,611,038	4,316,038	4,174,538	26,308,538	4,986,913	4,378,538	28,808,538	3,504,413	4,527,500	3,587,000	

10-YEAR ESTIMATED TOTAL (RAW COST) \$90,203,054

TOWN BUDGET TRANSFERS AND POTENTIAL REVENUES												
#		PROJECT	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
47		GENERAL FUND BUDGET TRANSFER	6,811,307	7,015,646	7,226,115	7,442,899	7,666,186	7,896,171	8,133,057	8,377,048		
48		BOND PROCEEDS	1,500,000									
49		PALM BEACH COUNTY COST-SHARE PARTICIPATION (20% ELIGIBLE PROJECT COSTS)				0			3,244,800			
50		ELIGIBLE NON-FED. STATE FDEP PROJECT COST-SHARE (46% MID-TOWN, 39% PHIPPS)				3,645,500			8,112,000			
51		FEDERAL COST-SHARE PARTICIPATION (50% TOTAL PROJECT COST, FY 2021 MID-TOWN)				8,425,000						
POTENTIAL NET COSTS												
10-YEAR TOTAL (NET TOWN COST WITH COUNTY PARTICIPATION)												\$86,958,254
10-YEAR TOTAL (NET TOWN COST WITH COUNTY AND STATE PARTICIPATION)												\$75,200,754
10-YEAR TOTAL WITH COUNTY, STATE, AND FEDERAL PARTICIPATION)												\$66,775,754

Notes: Any cost sharing is subject to availability of County, State, and Federal funds. Although projects are eligible for State cost-sharing, there is no guarantee for State participation. Grants are issued based on Statewide rankings.

File Name: 10-Year CMP Budget Update, 081015 With Colors

	Regulatory/Permit Required
	No Changes*
	Added Escalators*
	Added Project Costs to Existing Items*
	Added Project Costs to New Items*

*Based on FY2013 10-Year Plan (June 2013)

TOWN OF PALM BEACH

Information for Shore Protection Board Meeting on: May 24, 2018

TO: Shore Protection Board

FROM: Kirk W. Blouin, Town Manager

VIA: Robert Weber, Coastal Program Manager

RE: Recommendation to Town Council Regarding the Proposed FY 2019 Coastal Management Program Budget
Item X.

DATE: May 16, 2018

STAFF RECOMMENDATION

Town staff requests the Shore Protection Board (SPB) provide a recommendation to Town Council regarding the proposed FY 2019 Coastal Management Program Budget.

GENERAL INFORMATION

At the April 26, 2018 SPB meeting, the SPB deferred action on the FY 2019 Coastal Management Program Budget for additional information to be provided from Town staff. Both the additional information provided within the backup package and the presentations at the upcoming SPB meeting, including program financing, a five year summary, and an overview of the recent approved revisions, are intended to assist the SPB prepare a recommendation.

Funding of the Groin Rehabilitation Plan was extensively discussed as part of this item in April. Therefore, a continued discussion is expected in May. Attached is a copy of the permit application and drawings provided to the U.S. Army Corps of Engineers. The attachments may be helpful during a groin program discussion.

FUNDING/FISCAL IMPACTS

The 2013 Town Council-adopted 10-year plan included approximately \$3 million for FY 2019. The 2015 update included an FY 2019 Coastal Protection Fund budget of \$4.3 million. The Town's 25% net FEMA obligation for Hurricane Matthew relief leads to a SPB recommendation of \$5.6 million for FY 2019. This budget would increase the 2013 Town Council-adopted plan from approximately \$93.3 million to approximately \$95.9 million. Although the attached spreadsheet includes both the FY 2019 proposed budget and out-years, any annual changes to the adopted plan (out to FY 2023) are not included in the overall cost of the 10-year plan until the Shore Protection Board recommends that individual year.

Attachments

cc: Jay Boodheshwar, Deputy Town Manager
H. Paul Brazil, P.E., Director of Public Works
Patricia Strayer, P.E., Town Engineer
Jane Le Chainche, Director of Finance

Adopted Coastal Management Program Budget

Project	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
ISLANDWIDE								
Perform one-time supplemental analysis of historical data	40,000							
Apply and update island-wide sediment transport model	100,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
ANNUAL SEDIMENT BUDGET REPORT	75,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
SEAWALL/LLOD FUNCTION/NON-STRUCTURAL ASSESS.	100,000					100,000		
SEAWALL/LLOD ENGINEERING/STRUCTURAL ANALYSIS		100,000						
SEAWALL/LLOD REHABILITATION/REPLACEMENT		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
GROIN ASSESSMENT	60,000					60,000		
GROIN REHABILITATION *BONDED*		500,000	500,000	500,000	500,000	500,000	500,000	500,000
Perform a flooding and climate change/SLR assessment		50,000						
Commit a communications line item	25,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Establish budget for dune vegetation maintenance	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
REGIONAL SAND NEEDS / SAND SEARCH	25,000							
GENERAL COASTAL ENGINEERING	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
PHYSICAL MONITORING (NON-PROJECT AREAS)	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000
COASTAL MANAGEMENT PROGRAM OPERATING EXPENS.	213,000	219,000	226,000	233,000	240,000	247,000	255,000	262,000
INLET MANAGEMENT ACTIVITIES								
SAND TRANSFER PLANT OPERATING	310,000	313,000	316,000	319,000	322,000	325,000	328,000	331,000
MAINT. DREDGE SAND PERMIT, PLACEMENT EXTEN. (EIS)		1,000,000						
LWI IMP PHYSICAL MONITORING	19,000	19,000	19,000	19,000	19,000	19,000	19,000	19,000
REACH 1								
SEA TURTLE MONITORING	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000
BEACH TILLING	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
ESCARPMENT REMOVAL	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
REACH 2								
NOB SEAWALL REPLACEMENT *BONDED*	6,129,406							
REACH 3								
Maintain Reach 3 part of Mid-Town project	16,649,917							14,500,000
MID-TOWN PHYSICAL MONITORING	38,000	38,000	38,000	38,000	38,000	38,000	38,000	38,000
MID-TOWN PROJECT ENGINEERING REPORT	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000
REACH 4								
BEACH NOURISHMENT CONSTRUCTION MITIGATION	150,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
SEA TURTLE MONITORING	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000
BEACH TILLING	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
ESCARPMENT REMOVAL	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
BIOLOGICAL MONITORING	220,000	105,000	75,000	75,000	75,000	75,000	75,000	75,000
REACH 7								
Renourish Phipps project	2,176,254		17,191,200					2,300,000
PHIPPS PHYSICAL MONITORING	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000
PHIPPS PROJECT ENGINEERING REPORT	11,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
SEA TURTLE MONITORING	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000
BEACH TILLING	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
ESCARPMENT REMOVAL	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
BIOLOGICAL MONITORING	100,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
REACH 8								
Proceed with Regional EIS	1,000,000							
Construct first phase of project concurrently with Phipps	1,171,829		1,235,000					1,430,000
REACH 8 PHYSICAL MONITORING	28,000	28,000	28,000	28,000	28,000	28,000	28,000	28,000
REACH 8 PROJECT ENGINEERING REPORT			10,000	10,000	10,000	10,000	10,000	10,000
SEA TURTLE MONITORING	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000
BEACH TILLING	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
ESCARPMENT REMOVAL	10,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
BIOLOGICAL MONITORING			20,000	20,000	20,000	20,000	20,000	20,000
	29,021,406	3,939,000	21,225,200	2,809,000	2,819,000	2,989,000	2,840,000	21,080,000

Town of Palm Beach 10-Year Coastal Management Program													
EXPENDITURES													
		Remaining Years of 2013 Adopted Coastal Management Program Budget, Updated August 2015							Outlook				
Item #	Project Name	FY 2018 Adjusted	FY 2018 Anticipated	FY 2019 Proposed	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
1	APPLY AND UPDATE ISLANDWIDE SEDIMENT TRANSPORT ANALYSIS	\$ 22,000	\$ 22,000	\$ 22,000	\$ 23,000	\$ 24,000	\$ 24,000	\$ 25,000	\$ 26,000	\$ 27,000	\$ 28,000	\$ 29,000	\$ 30,000
2	ANNUAL SEDIMENT REPORT (BMA REQUIRED)	\$ 48,000	\$ 48,000	\$ 50,000	\$ 51,000	\$ 53,000	\$ 54,000	\$ 56,000	\$ 58,000	\$ 59,000	\$ 60,000	\$ 63,000	\$ 65,000
3	SEAWALL/LLOD FUNCTION/NON-STRUCTURAL INVENTORY ASSESSMENT & ANALYSIS	\$ 20,000	\$ 20,000	\$ 116,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 143,000	\$ -	\$ -
4	SEAWALL/LLOD REHABILITATION/REPLACEMENT	\$ -	\$ -	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
5	GROIN ASSESSMENT	\$ -	\$ -	\$ 70,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,000	\$ -	\$ -
6	GROIN REHABILITATION	\$ 25,000	\$ 25,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000
7	FLOODING AND CLIMATE CHANGE/SLR ASSESSMENT	\$ 70,000	\$ 60,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8	COMMUNICATIONS	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9	DUNE VEGETATION MAINTENANCE	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 13,000	\$ 13,000	\$ 13,000
10	REGIONAL SAND NEEDS/SAND SEARCH	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 725,000	\$ 725,000	\$ -	\$ -	\$ -	\$ -	\$ -
11	GENERAL COASTAL ENGINEERING	\$ 54,000	\$ 52,000	\$ 55,000	\$ 57,000	\$ 58,000	\$ 60,000	\$ 60,000	\$ 64,000	\$ 66,000	\$ 69,000	\$ 70,000	\$ 72,000
12	PHYSICAL MONITORING (NON-PROJECT AREAS)	\$ 77,000	\$ 77,000	\$ 79,000	\$ 82,000	\$ 84,000	\$ 86,000	\$ 89,000	\$ 92,000	\$ 94,000	\$ 97,000	\$ 100,000	\$ 103,000
13	BMA SEA TURTLE NESTING MONITORING	\$ 220,000	\$ 200,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 220,000	\$ 242,000	\$ 242,000	\$ 242,000	\$ 242,000	\$ 242,000	\$ 280,000
14	BMA BIOLOGICAL MONITORING	\$ 213,000	\$ 213,000	\$ 219,000	\$ 226,000	\$ 232,000	\$ 239,000	\$ 246,000	\$ 254,000	\$ 261,000	\$ 269,000	\$ 277,000	\$ 285,000
15	COASTAL MANAGEMENT PROGRAM OPERATING EXPENSES	\$ 258,326	\$ 255,472	\$ 181,156	\$ 186,591	\$ 192,188	\$ 197,954	\$ 203,893	\$ 210,009	\$ 216,310	\$ 222,799	\$ 229,483	\$ 236,367
16	ANNUAL DEBT SERVICE PAYMENT	\$ 736,038	\$ 736,038	\$ 542,607	\$ 544,107	\$ 542,232	\$ 540,982	\$ 546,107	\$ 540,732	\$ 539,982	\$ 543,607	\$ 546,481	\$ 543,731
17	SAND TRANSFER OPERATING	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
18a	MAINTENANCE DREDGING, SAND PLACEMENT EXTENSION (EIS)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
19	LWI IMP PHYSICAL MONITORING	\$ 21,000	\$ 21,000	\$ 21,000	\$ 22,000	\$ 23,000	\$ 23,000	\$ 24,000	\$ 25,000	\$ 25,000	\$ 26,000	\$ 27,000	\$ 28,000
20	BEACH TILLING (REACHES 1 AND 2)	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
21	ESCARPMENT REMOVAL (REACHES 1 AND 2)	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
22	N. OCEAN BLVD. SEAWALL REPLACEMENT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
23	SAND FOREPASSING	\$ 600,000	\$ -	\$ 600,000	\$ 620,000	\$ -	\$ 660,000	\$ -	\$ 700,000	\$ -	\$ 742,000	\$ -	\$ 787,000
24	MID-TOWN BEACH RENOURISHMENT ENGINEERING/PERMITTING	\$ -	\$ -	\$ 100,000	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 126,000	\$ -
25a	MID-TOWN BEACH RENOURISHMENT CONSTRUCTION	\$ -	\$ -	\$ -	\$ 8,950,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 22,000,000
25b	FEDERAL EMERGENCY MANAGEMENT AGENCY - HURRICANE MATTHEW	\$ -	\$ -	\$ 3,400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25c	FEDERAL EMERGENCY MANAGEMENT AGENCY - HURRICANE IRMA	\$ -	\$ -	\$ -	\$ 8,750,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
26	MID-TOWN BEACH GROIN PROJECT AT GULFSTREAM ROAD	\$ 2,832,000	\$ 2,037,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
27	MID-TOWN DETAILED DESIGN AND PERMITTING (BREAKERS/CLARKE AVENUE)	\$ 209,000	\$ 190,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
28	OBTAIN FEDERAL COST-SHARE FOR MID-TOWN	\$ 500,000	\$ -	\$ 500,000	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
29	MID-TOWN PHYSICAL MONITORING	\$ 41,000	\$ 41,000	\$ 42,000	\$ 43,000	\$ 45,000	\$ 46,000	\$ 47,000	\$ 49,000	\$ 50,000	\$ 51,500	\$ 53,000	\$ 55,000
30	MID-TOWN MITIGATION - CORAL NURSERY/TRANSPLANTATION	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ -
31	MID-TOWN MITIGATION - ARTIFICIAL REEF CONSTRUCTION [*CARRYOVER FROM FY 16]	\$ -	\$ -	\$ 3,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
32	BEACH TILLING (MID-TOWN)	\$ 5,000	\$ 2,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
33	ESCARPMENT REMOVAL (MID-TOWN)	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
34	PHIPPS NOURISHMENT ENGINEERING/PERMITTING	\$ -	\$ -	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 387,000	\$ -	\$ -	\$ -	\$ -
35a	PHIPPS OCEAN PARK/REACH 7 BEACH NOURISHMENT CONSTRUCTION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,800,000	\$ -	\$ -	\$ -	\$ -
35b	FEDERAL EMERGENCY MANAGEMENT AGENCY - HURRICANE MATTHEW	\$ -	\$ -	\$ 1,900,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
35c	FEDERAL EMERGENCY MANAGEMENT AGENCY - HURRICANE IRMA	\$ -	\$ -	\$ -	\$ 9,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
36	PHIPPS PHYSICAL MONITORING	\$ 30,000	\$ 30,000	\$ 31,000	\$ 32,000	\$ 33,000	\$ 34,000	\$ 35,000	\$ 36,000	\$ 37,000	\$ 38,000	\$ 39,000	\$ 40,000
37	BEACH TILLING (REACH 7)	\$ 5,000	\$ 3,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
38	ESCARPMENT REMOVAL (REACH 7)	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
39	REACH 8 - EIS	\$ -	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
40	REACH 8 - SOUTH END PALM BEACH RESTORATION PERMITTING	\$ -	\$ -	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
41	REACH 8 - SOUTH END PALM BEACH RESTORATION (INITIAL CONSTRUCTION)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
42a	REACH 8 - DUNE RESTORATION	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
42b	FEDERAL EMERGENCY MANAGEMENT AGENCY - HURRICANE IRMA	\$ -	\$ -	\$ -	\$ 800,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
43	REACH 8 - CONSTRUCTION ACCESS EASEMENT AND SITE RESTORATION	\$ -	\$ -	\$ -	\$ 80,000	\$ -	\$ -	\$ -	\$ 80,000	\$ -	\$ -	\$ -	\$ 80,000
44	REACH 8 - DUNE/BEACH CONSTRUCT CONCURRENTLY WITH MID-TOWN OR PHIPPS	\$ -	\$ -	\$ -	\$ 1,700,000	\$ -	\$ -	\$ -	\$ 2,750,000	\$ -	\$ -	\$ -	\$ 3,100,000
45	REACH 8 - BIOLOGICAL MONITORING	\$ 54,000	\$ -	\$ 55,000	\$ 57,000	\$ 58,000	\$ 60,000	\$ 62,000	\$ 64,000	\$ 66,000	\$ 68,000	\$ 70,000	\$ 72,000
46	REACH 8 - PHYSICAL MONITORING	\$ 30,000	\$ 30,000	\$ 31,000	\$ 32,000	\$ 33,000	\$ 34,000	\$ 35,000	\$ 36,000	\$ 37,000	\$ 38,000	\$ 39,000	\$ 40,000
47	REACH 8 - PROJECT ENGINEERING REPORT	\$ 11,000	\$ -	\$ 11,000	\$ 12,000	\$ 12,000	\$ 12,000	\$ 13,000	\$ 13,000	\$ 14,000	\$ 14,000	\$ 15,000	\$ 16,000
48	BEACH TILLING (REACH 8)	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
49	ESCARPMENT REMOVAL (REACH 8)	\$ 5,000	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 6,500	\$ 6,500	\$ 6,500
50	SAND TRANSFER PLANT FEASIBILITY STUDY	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total		\$ 6,321,364	\$ 4,322,510	\$ 13,175,763	\$ 34,087,698	\$ 3,359,420	\$ 4,765,936	\$ 4,161,000	\$ 28,976,741	\$ 3,284,292	\$ 4,302,906	\$ 3,490,964	\$ 29,398,098
5/16/2018													
REVENUES													
Item #	Source	FY 2018 Approved	FY 2018 Anticipated	FY 2019 Proposed	FY 2020 Estimated	FY 2021 Estimated	FY 2022 Estimated	FY 2023 Estimated	FY 2024 Estimated	FY 2025 Estimated	FY 2026 Estimated	FY 2027 Estimated	FY 2028 Estimated
51	General Fund Transfer	\$ 7,410,300	\$ 7,410,300	\$ 7,434,405	\$ 7,672,156	\$ 7,906,129	\$ 8,147,427	\$ 8,401,138	\$ 8,657,480	\$ 8,917,204	\$ 9,184,721	\$ 9,460,262	\$ 9,744,070
52	Coastal Fund Transfer	\$ -	\$ -	\$ 3,600,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
53	County	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,244,800	\$ -	\$ -	\$ -	\$ -
54	State portion of FEMA projects	\$ -	\$ -	\$ 662,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
55	State	\$ -	\$ -	\$ -	\$ 1,988,506	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
56	Federal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
57	Federal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
58	FEMA	\$ -	\$ -	\$ 3,975,000	\$ 13,912,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
60	Bonds	\$ 2,832,000	\$ 2,037,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
61	Interest	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total		\$ 10,242,300	\$ 9,447,300	\$ 15,671,905	\$ 23,573,162	\$ 7,906,129	\$ 8,147,427	\$ 8,401,138	\$ 11,902,280	\$ 8,917,204	\$ 9,184,721	\$ 9,460,262	\$ 9,744,070
NET ANNUAL COST													
Item #		Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)	Surplus/ (Deficit)
53	Surplus/Deficit												
FUND BALANCE													
	Fund Balance 10/1												
	Fund Balance 9/30												

U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved -
OMB No. 0710-0003
Expires: 30-SEPTEMBER-2015

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please **DO NOT RETURN** your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
--------------------	----------------------	------------------	------------------------------

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Thomas Middle - G Last - Bradford Company - Town of Palm Beach E-mail Address - tbradford@townofpalmbeach.com		8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Thomas Middle - Last - Pierro Company - CB&I Coastal Planning & Engineering, Inc. (CB&I) E-mail Address - Thomas.Pierro@cbi.com	
6. APPLICANT'S ADDRESS: Address- Post Office Box 2029 City - TOPB State - FL Zip - 33480 Country - USA		9. AGENT'S ADDRESS: Address- 2481 NW Boca Raton Blvd. City - Boca Raton State - FL Zip - 33431 Country - USA	
7. APPLICANT'S PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax 561-835-4691		10. AGENTS PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax 561-361-3150	

STATEMENT OF AUTHORIZATION

11. I hereby authorize, CB&I to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.


SIGNATURE OF APPLICANT DATE 12/17/15

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Town of Palm Beach Groin Rehabilitation Project			
13. NAME OF WATERBODY, IF KNOWN (if applicable) Atlantic Ocean		14. PROJECT STREET ADDRESS (if applicable) Address City - State - Zip -	
15. LOCATION OF PROJECT Latitude: °N 26.7 Longitude: °W 80.0			
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID Municipality Town of Palm Beach Section - Township - Range - 43E			

17. DIRECTIONS TO THE SITE

From Interstate 95, take exit 70 for Okeechobee Boulevard. Head east on Okeechobee Boulevard for 1.4 miles. Turn left (north) onto Flagler Drive and then right (east) onto the Royal Park Bridge. Continue 0.7 miles on Royal Palm Way. The Mid-Town Public Beach is located at the intersection of Royal Palm Way and South Ocean Boulevard. The project area extends approximately 4 miles north and 4 miles south from the public beach.

18. Nature of Activity (Description of project, include all features)

The applicant seeks authorization to repair, rehabilitate, or remove groins within the Town of Palm Beach within Reaches 2 through 6, (FDEP Range Monuments R-78+500 and R-116+500).

Please refer to the Groin Rehabilitation Execution Plan and other documents regarding the proposed project that were previously submitted (August 2015) to the USACE.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Basic: The intent of the project is to maintain the coastal system through groin rehabilitation.

Overall: The following primary objectives have been defined to implement this intent.

- Remove or cut down redundant and ineffective groins.
- Repair or replace effective groins to renew structural integrity.
- Enhance aesthetics and continuity in construction materials.
- Reducing hazards associated with deteriorated groins.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**20. Reason(s) for Discharge****21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:**

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres
or
Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list)

a. Address- Please find attached a figure and a list of riparian owners identified for public notice.

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL *	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
FDEP	IPA	0328802-004-BMA	2015-08-07	Pending	

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

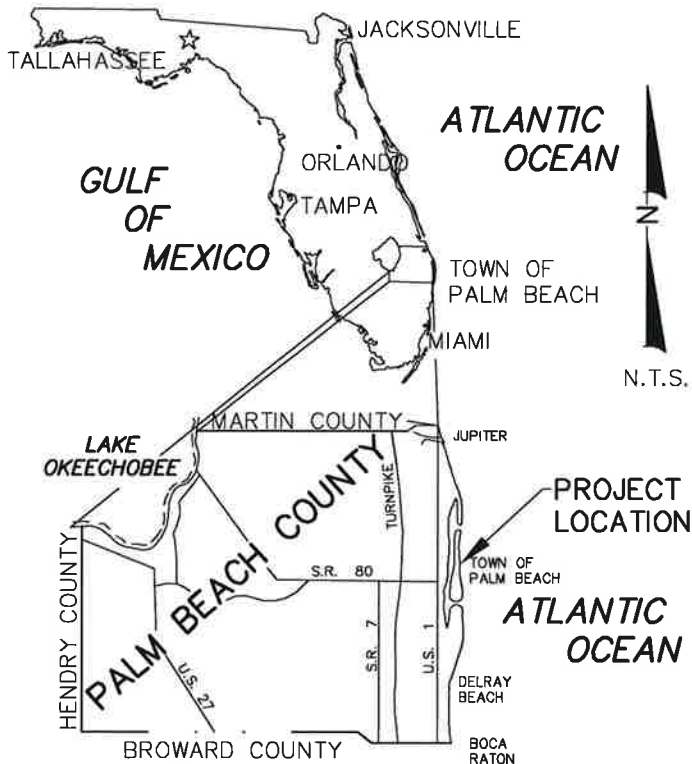

SIGNATURE OF APPLICANT 12/17/15
DATE


SIGNATURE OF AGENT 12/9/2015
DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

TOWN OF PALM BEACH GROIN REHABILITATION PROJECT PALM BEACH COUNTY, FLORIDA



SHEET INDEX

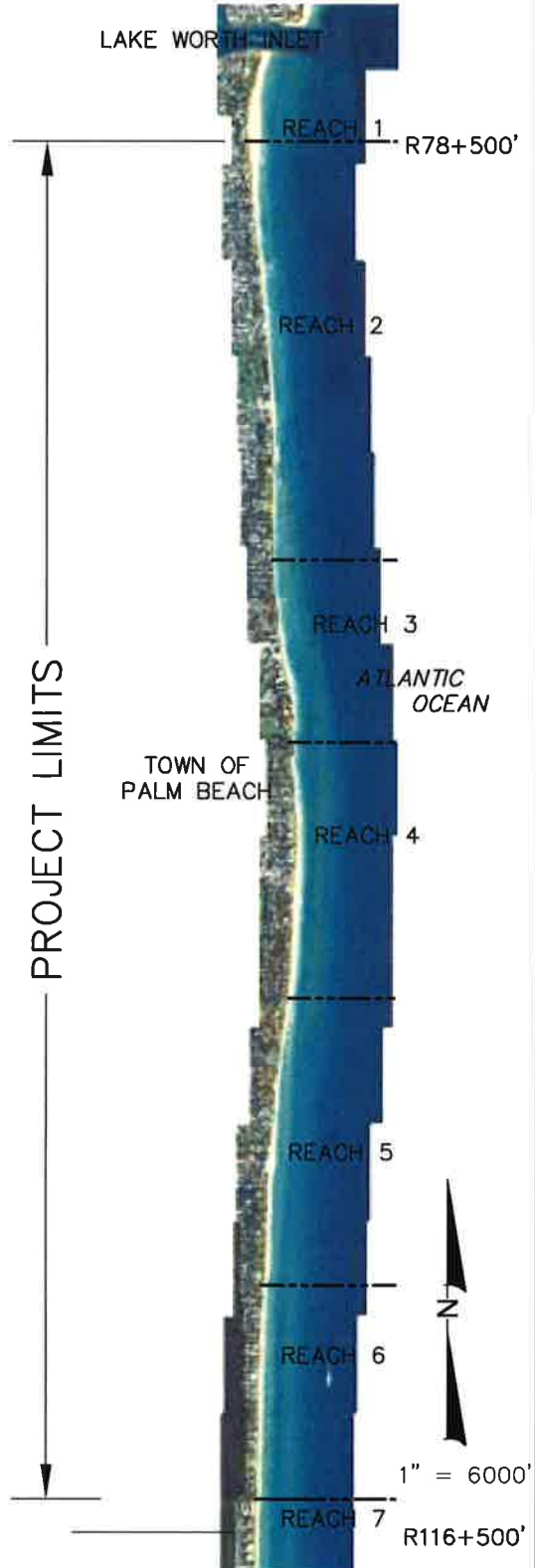
- 1 COVER SHEET
- 2-28 PLAN VIEWS
- 29 TYPICAL GROIN SECTION
- 30-31 TYPICAL GROIN DETAILS



NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

1/2/2016
DATE



TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
COVER SHEET

CB&I COASTAL PLANNING & ENGINEERING, INC.
PH. (561) 351-4102
FAX (561) 351-4116
BOCA RATON, FLORIDA 33431
www.CBI.com
C.O.A. FL #4028

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 1

REVISIONS		
DATE	BY	DESCRIPTION

P:\Palm Beach\Town of Palm Beach\152870 TPB Groin Rehabilitation\CAD\Permits\152870P_PV-WORKING.dwg - Dec 17, 2015 @ 9:49am - howard.nejlb



NOTES:

1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. DATE OF AERIAL PHOTOGRAPH: 2014.
3. STRUCTURE LENGTHS ARE APPROXIMATED IN FEET BASED ON AVAILABLE INFORMATION. ACTUAL LENGTHS MAY VARY.
4. LAND-BASED ACCESS WILL BE SUPPLEMENTED BY WATER-BASED ACCESS.

LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**

CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 NW BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
www.cbci.com
PH: (561) 394-4100
FAX: (561) 394-4110
C.D.A. #14025

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 2

NOT FOR CONSTRUCTION
FOR REGULATOR REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

1/7/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

MATCH LINE SHEET 2

NOTES:

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- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH GROIN REHABILITATION PROJECT PLAN VIEW

CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 391-4102
FAX: (561) 391-4116
WWW.CBI.COM
E.O.A. FL 94028

DATE:

3/5/15

BY:

GK

COMM NO.:

152870

SHEET:

3

SEAGATE RD

ANGLER AVE

OCEAN TERR

OCEOLA WAY

MERRIAN RD

KENLYN RD

PALMO WAY

R-79

R-80



MATCH LINE SHEET 4

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

1/7/2016

REVISIONS		
DATE	BY	DESCRIPTION



ATLANTIC
OCEAN

REACH 2

MATCH LINE SHEET 3

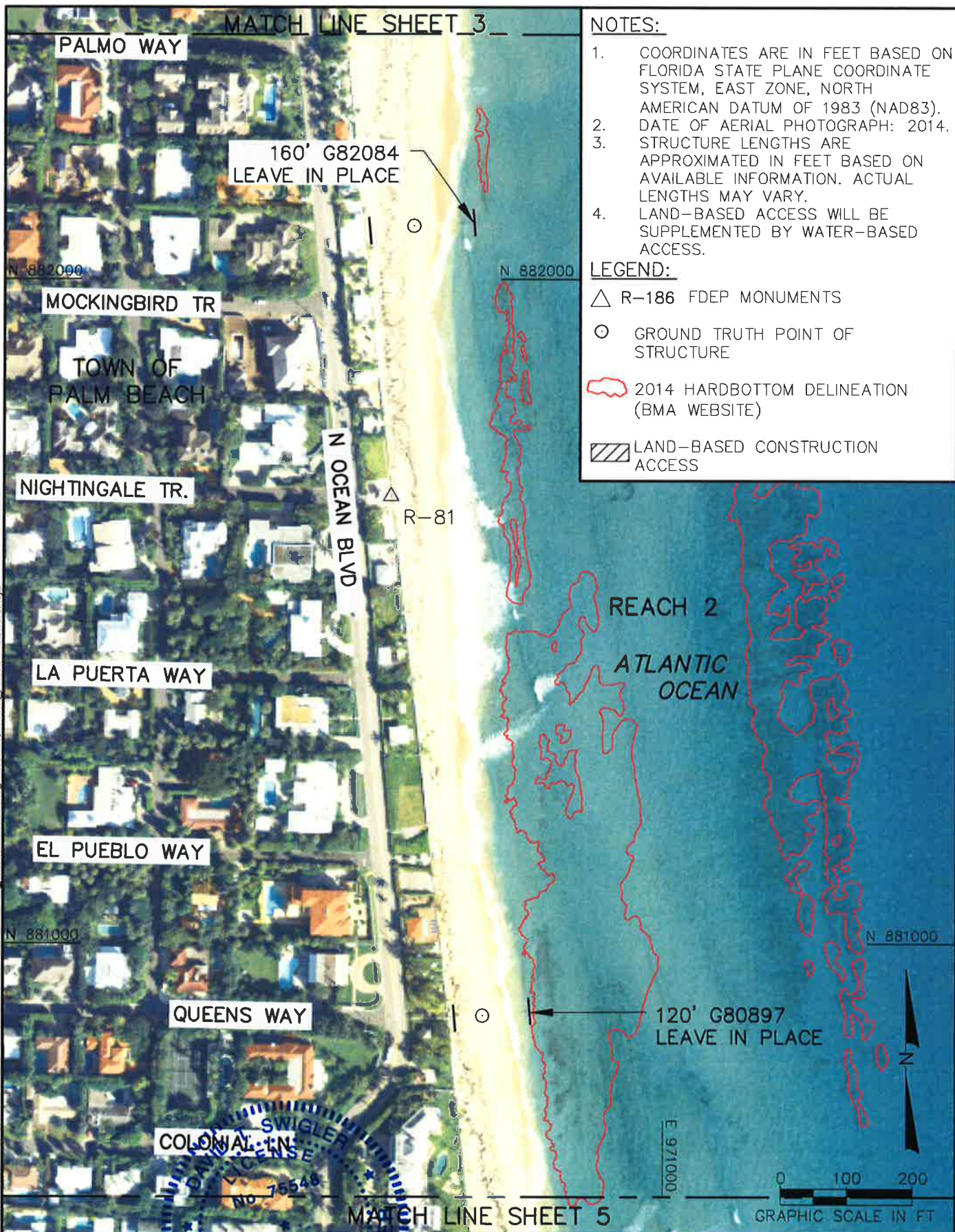
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- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**



CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 391-8102
FAX: (561) 391-8116
WWW.CBI.COM
C.D.A. FL 94029

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 4

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548
DATE 1/9/2016

REVISIONS		
DATE	BY	DESCRIPTION

MATCH LINE SHEET 4

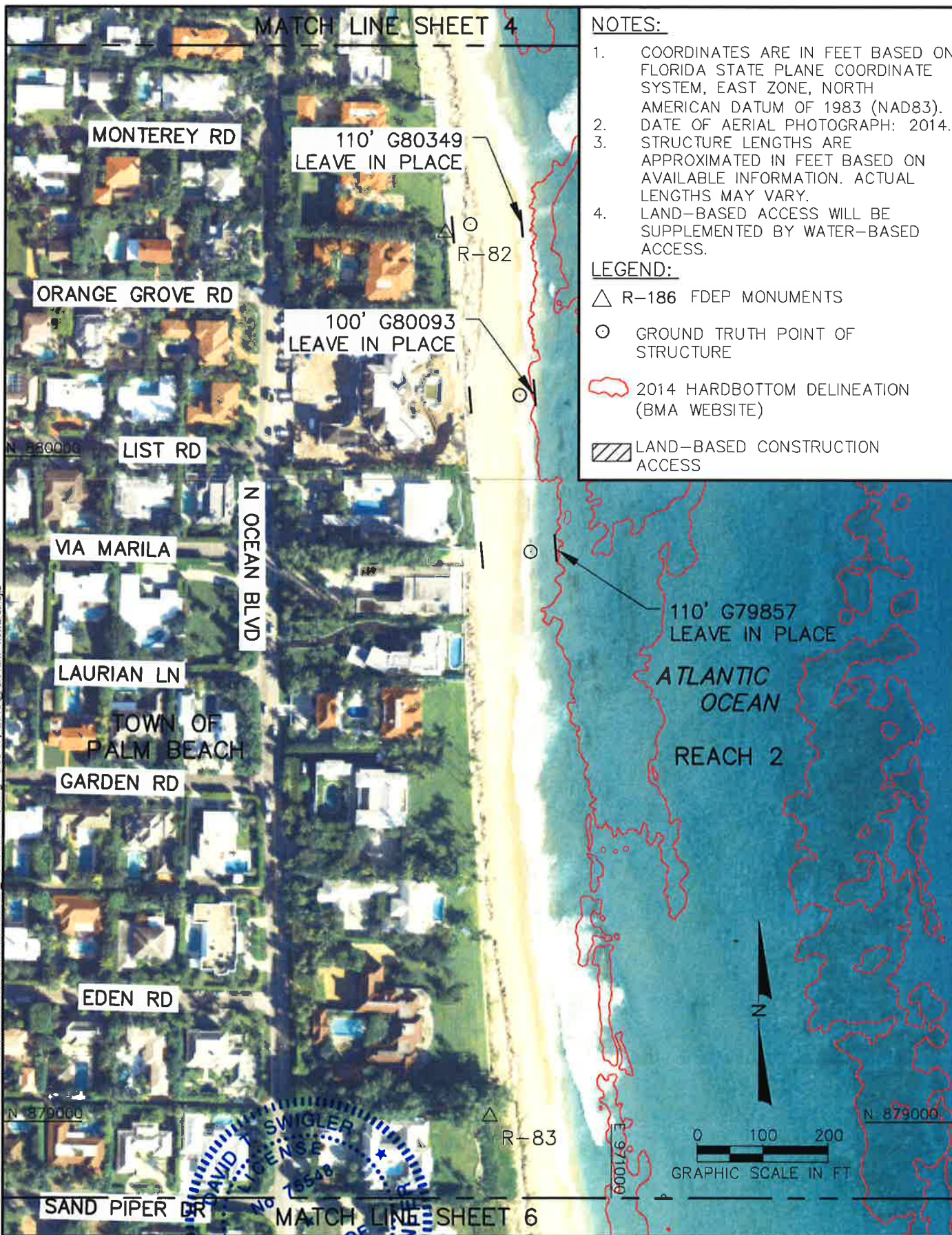
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- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**



CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 331-4102
FAX: (561) 331-9116
C.O.A. FL #4028
WWW.CBI.ENG

DATE: 3/5/15

BY: GK

COMM NO.: 152870

SHEET: 5

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

1/2/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

MATCH LINE SHEET 5

NOTES:

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- LAND-BASED CONSTRUCTION ACCESS

TRADEWIND DR

N OCEAN BLVD

BAHAMA LN

N 878000

E 971000

○

○

△ R-84

○

○

○

60' G78292-REMOVE

90' G77962-REMOVE

ATLANTIC OCEAN

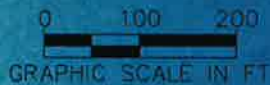
REACH 2

40' G77545-REMOVE

40' G77332 REMOVE

40' G77185 REMOVE

40' G77185-REMOVE



TOWN OF PALM BEACH

PALM BEACH COUNTY COUNTRY CLUB



MATCH LINE SHEET 7

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

1/2/2016
DATE

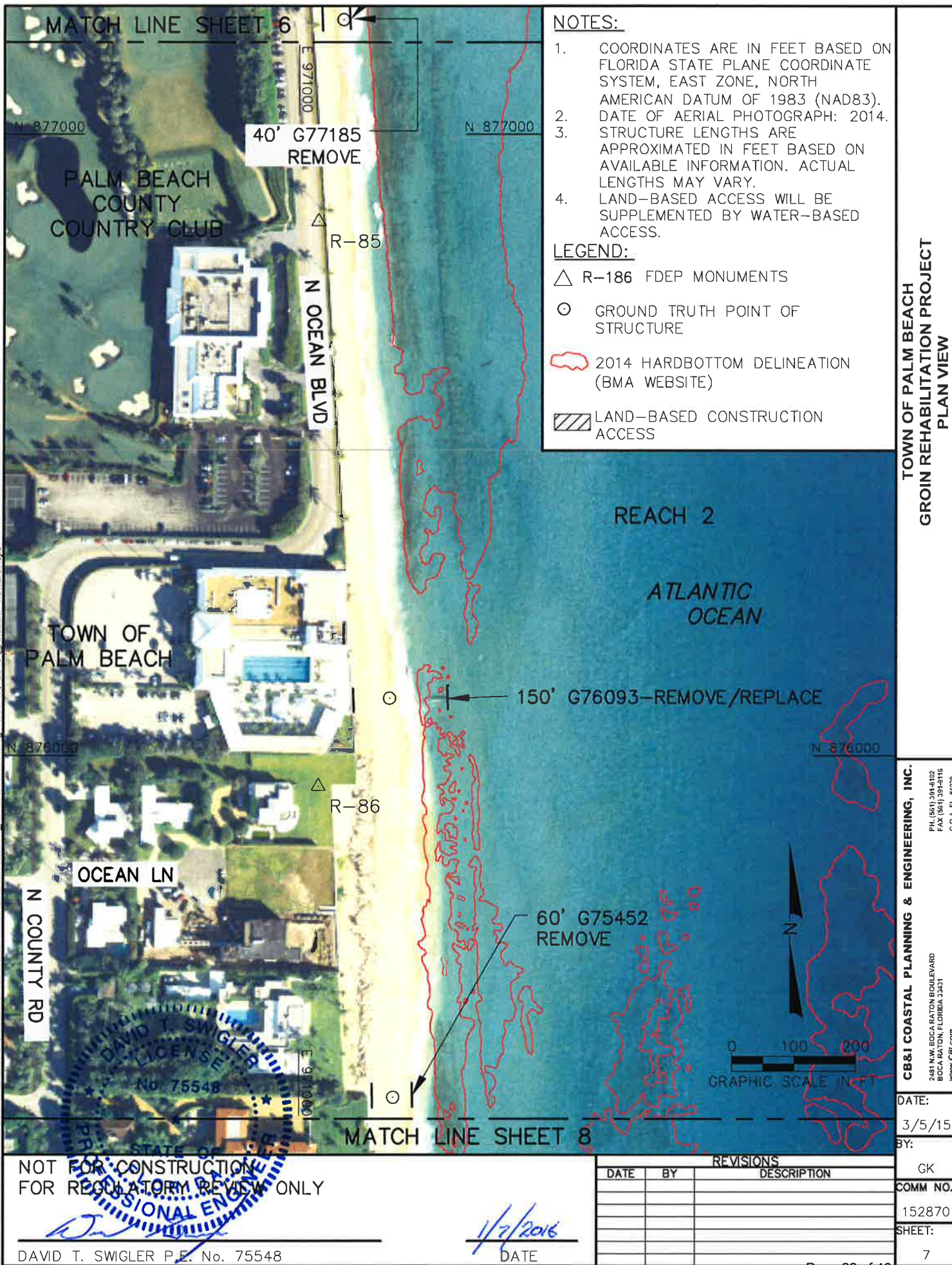
REVISIONS		
DATE	BY	DESCRIPTION

TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW

CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 NW BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
P: (561) 331-4100
F: (561) 331-4116
WWW.CBI.COM

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 6

P:\Palm Beach\Town of Palm Beach\152870 TPB Groin Rehabilitation\CAD\Permits\152870P_PV-WORKING.dwg - Dec 17, 2015 @ 9:52am - howard.nejlb



MATCH LINE SHEET 7

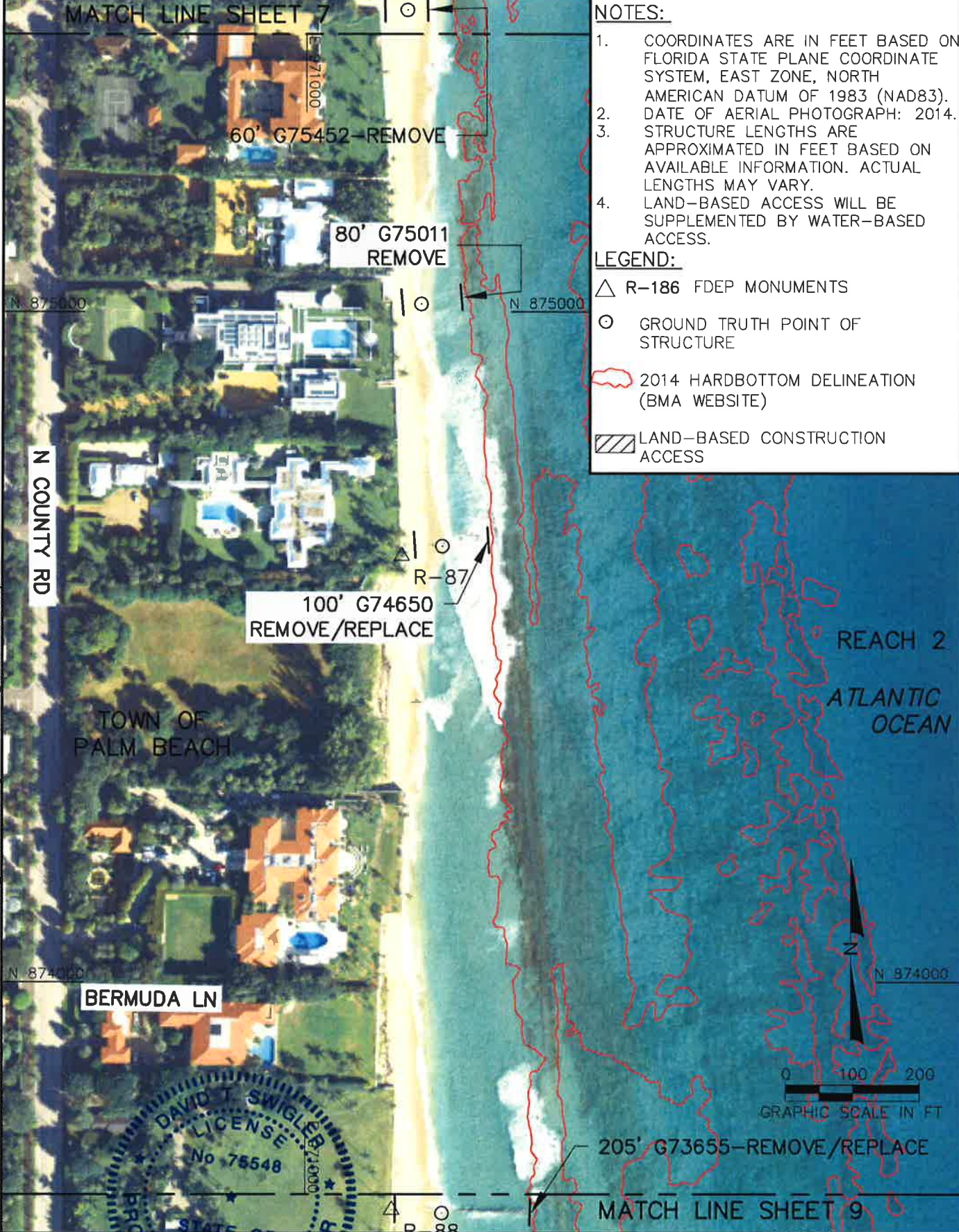
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- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**



BERMUDA LN

REACH 2
ATLANTIC OCEAN

205' G73655-REMOVE/REPLACE

MATCH LINE SHEET 9

NOT FOR CONSTRUCTION
FOR REGULAR REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

1/7/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CBI.COM
PH: (561) 391-4102
FAX: (561) 391-9116
C.D.A. FL 44028

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 8

MATCH LINE SHEET 8

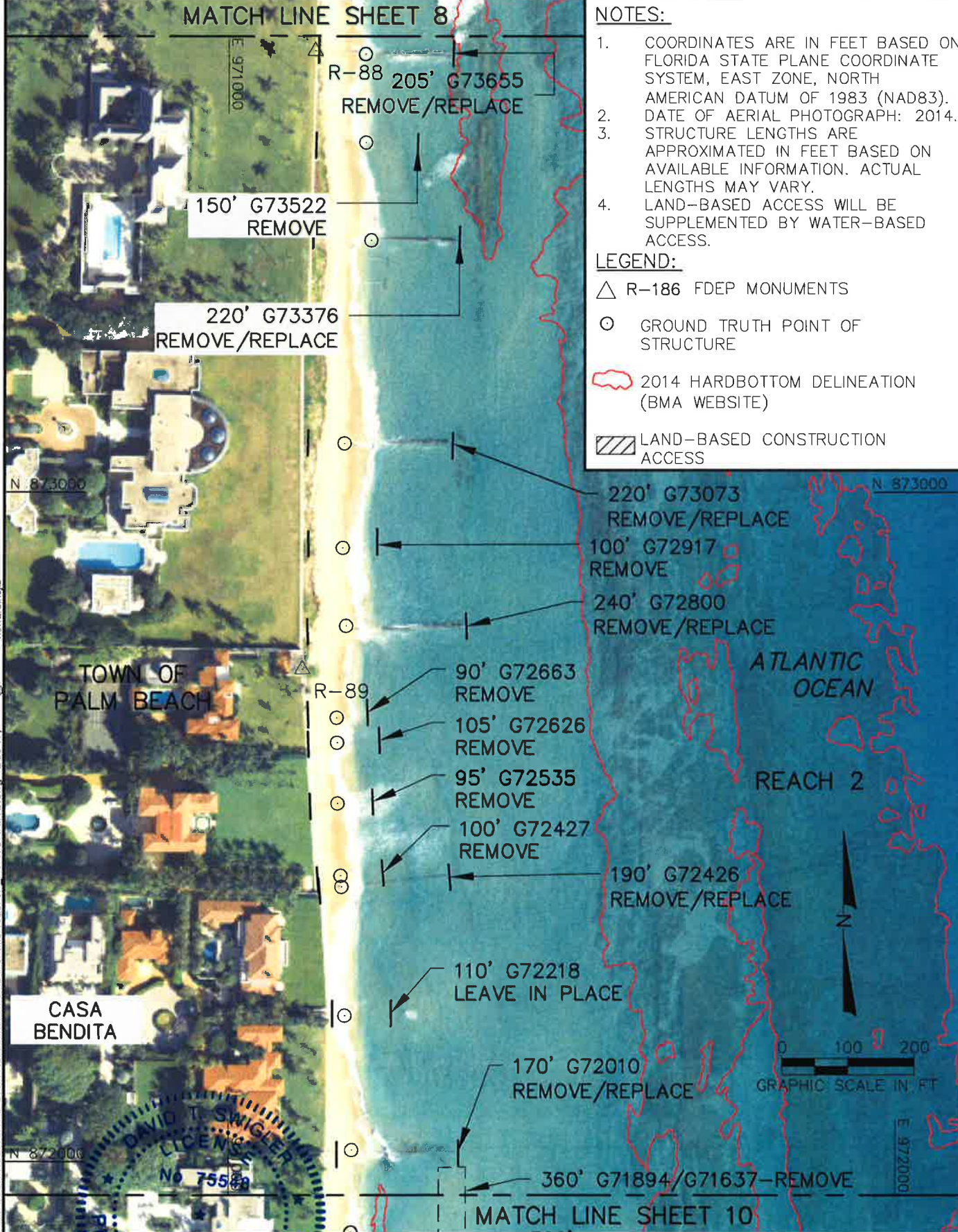
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- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**



CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 NW BOCCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH (561) 391-4103
FAX (561) 391-9116
WWW.CBI.COM
C.O.A. FL. #4528

DATE:
3/5/15

BY:
GK

COMM NO.:

152870

SHEET:

9

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

REVISIONS

DATE	BY	DESCRIPTION

PROFESSIONAL ENGINEER
FLORIDA
No. 75548

1/7/2016

MATCH LINE SHEET 9

NOTES:

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- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW

VIA LOS INCAS

190' G71633
REMOVE/REPLACE

REACH 2
REACH 3

120' G71208
REMOVE/REPLACE

110' G71020
REMOVE

230' G70910
REMOVE/REPLACE

120' G70845
REMOVE

60' G70724
REMOVE

110' G70657
REMOVE

230' G70651
REMOVE/REPLACE

40' G70620
REMOVE

230' G70451
REMOVE/REPLACE

110' G70324 REMOVE

60' G70239-REMOVE

50' G70221-REMOVE

ATLANTIC OCEAN

N OCEAN BLVD

N OCEAN BLVD

R-91

MATCH LINE SHEET 11



NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

1/7/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 331-4102
FAX: (561) 331-5116
WWW.CBI.COM
C.O.A. FL 94028

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 10

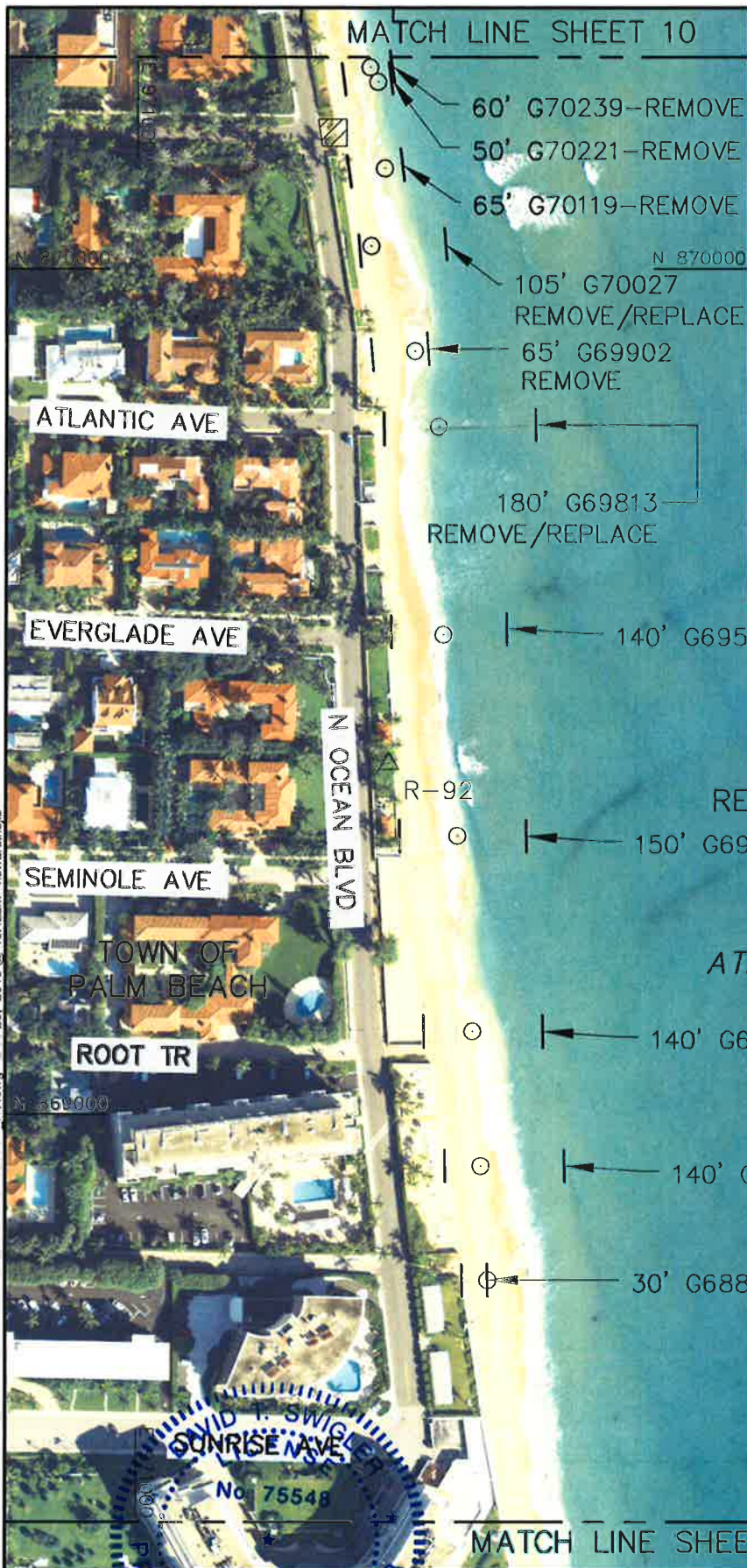
MATCH LINE SHEET 10

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- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS



TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW

CE&I COASTAL PLANNING & ENGINEERING, INC.
P.O. BOX 1314402
PALM BEACH, FL 33416
TEL: (561) 331-4102
FAX: (561) 331-0316
WWW.CE&I.COM

DATE: 3/5/15
BY: CK
COMM NO.: 152870
SHEET: 11

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

1/7/2016

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LEGEND:

-  R-186 FDEP MONUMENTS
-  GROUND TRUTH POINT OF STRUCTURE
-  2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
-  LAND-BASED CONSTRUCTION ACCESS

240' G68412
REMOVE/REPLACE

250' G68194
REMOVE

175' G67812-REMOVE

ATLANTIC
OCEAN

REACH 3

270' G67472-LEAVE IN PLACE

150' G66975
LEAVE IN PLACE

0 100 200
GRAPHIC SCALE IN FT

MATCH LINE SHEET 13

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE _____

[illegible]

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**

CB&I COASTAL PLANNING & ENGINEERING, INC.

PH. (561) 391-8102
FAX (561) 391-8116
C.O.A. FL. #4078

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
www.CBI.com

DATE:

3/5/15

BY:

COMM NO. 3

152870

SHEET:

12

MATCH LINE SHEET 12

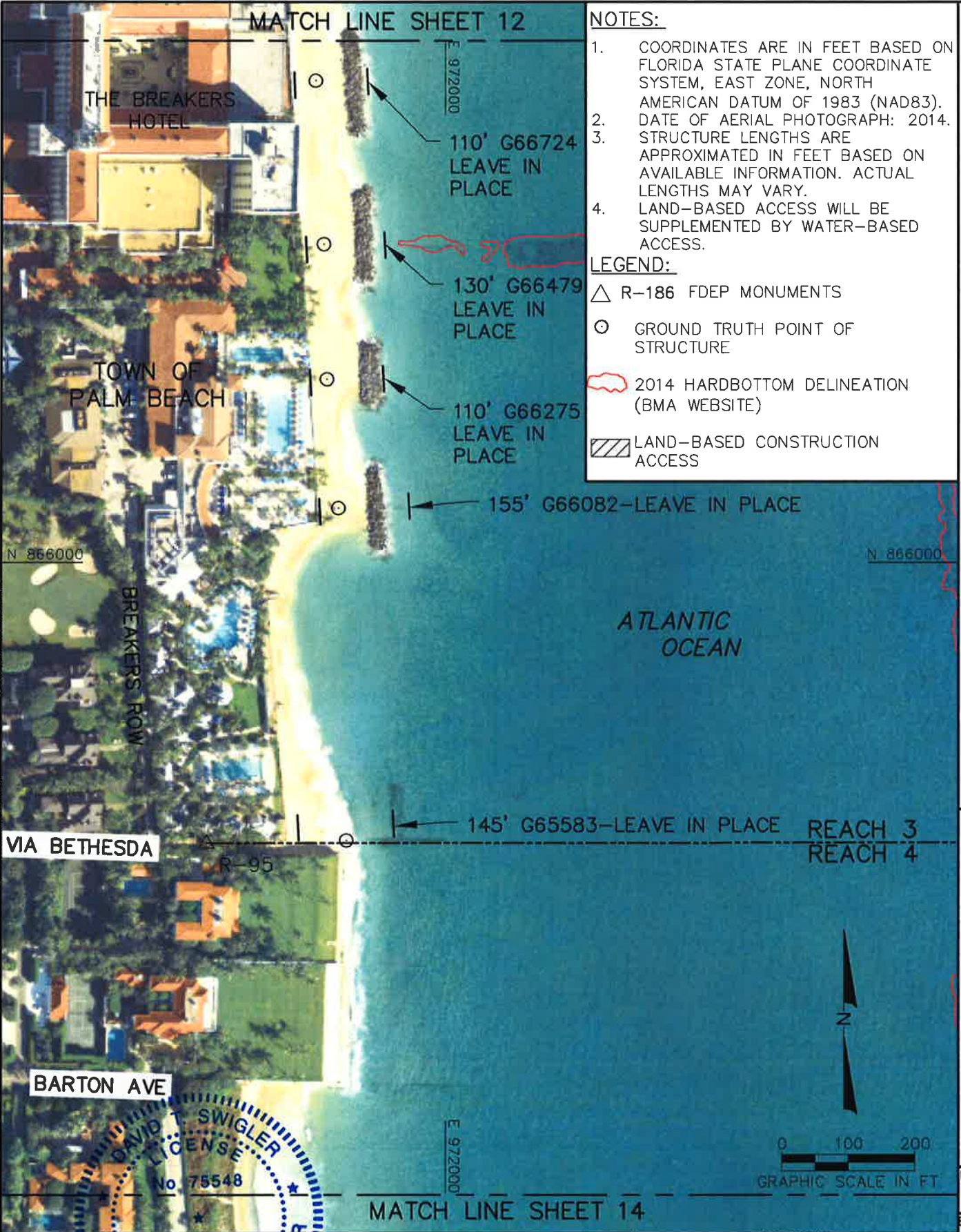
NOTES:

1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
2. DATE OF AERIAL PHOTOGRAPH: 2014.
3. STRUCTURE LENGTHS ARE APPROXIMATED IN FEET BASED ON AVAILABLE INFORMATION. ACTUAL LENGTHS MAY VARY.
4. LAND-BASED ACCESS WILL BE SUPPLEMENTED BY WATER-BASED ACCESS.

LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**



CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 NW BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
www.cb-i.com
PH: (561) 391-4102
FAX: (561) 391-4116
C.O.A. FL #4528

DATE:
3/5/15

BY:
CK

COMM NO.:
152870

SHEET:
13

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FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

1/2/2016

REVISIONS		
DATE	BY	DESCRIPTION

MATCH LINE SHEET 13

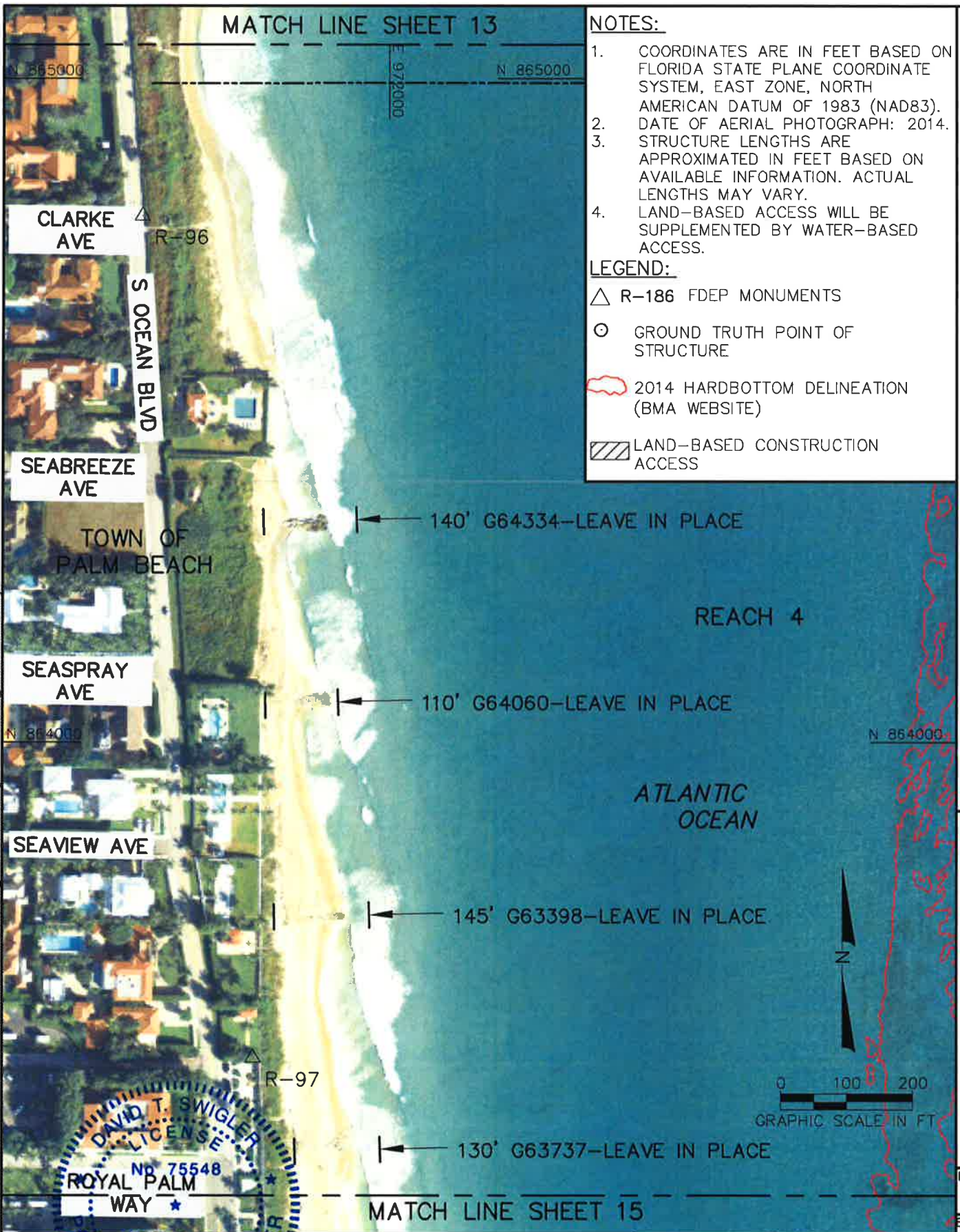
NOTES:

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LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH GROIN REHABILITATION PROJECT PLAN VIEW



CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CBI.COM
PH: (561) 391-4102
FAX: (561) 391-9116
C.O.A. FL. #4028

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 14

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DAVID T. SWIGLER P.E. No. 75548

DATE

1/7/2014

REVISIONS		
DATE	BY	DESCRIPTION

ROYAL PALM
WAY

MATCH LINE SHEET 14

NOTES:

1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
-  2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
-  LAND-BASED CONSTRUCTION ACCESS

BRAZILIAN AVE

S OCEAN BLVD

AUSTRALIAN AVE

TOWN OF
PALM BEACH

CHILEAN AVE

PERUVIAN AVE

WORTH AVE

140' G63083
LEAVE IN PLACE

140' G62756-LEAVE IN PLACE

170' G62381-LEAVE IN PLACE

145' G62004-LEAVE IN PLACE

140' G61654-LEAVE IN PLACE

ATLANTIC
OCEAN

REACH 4

N 862000

0 100 200

GRAPHIC SCALE IN FT

MATCH LINE SHEET 16

TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW

CS&I COASTAL PLANNING & ENGINEERING, INC.

PH: (561) 391-8102
FAX: (561) 391-8116
C.O.A. FL #4528

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CSI-FL.COM

DATE:

3/5/15

BY:

GK

COMM NO.:

152870

SHEET:

15

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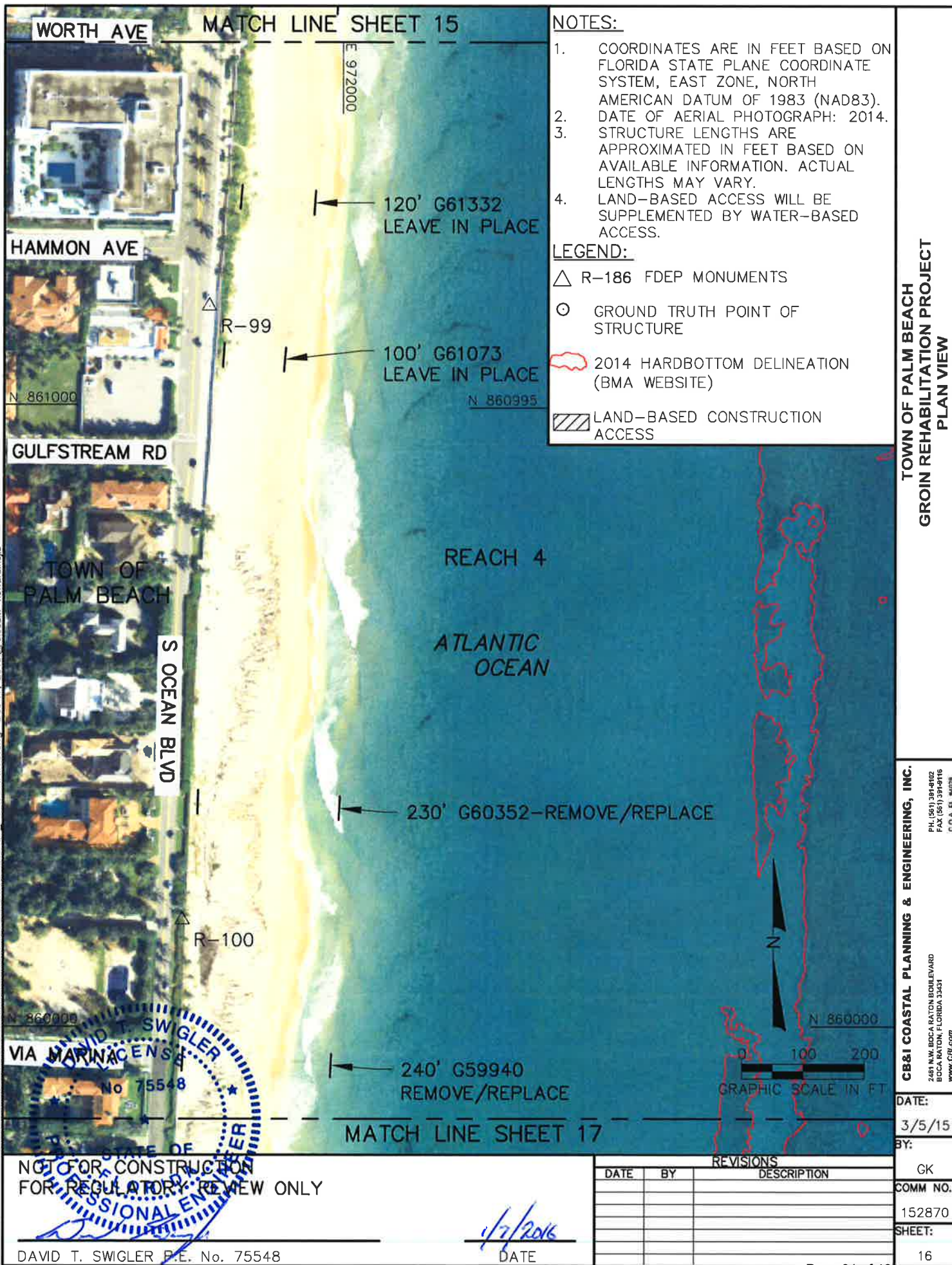
DAVID T. SWIGLER P.E. No. 75548

DATE

REVISIONS

DATE	BY	DESCRIPTION

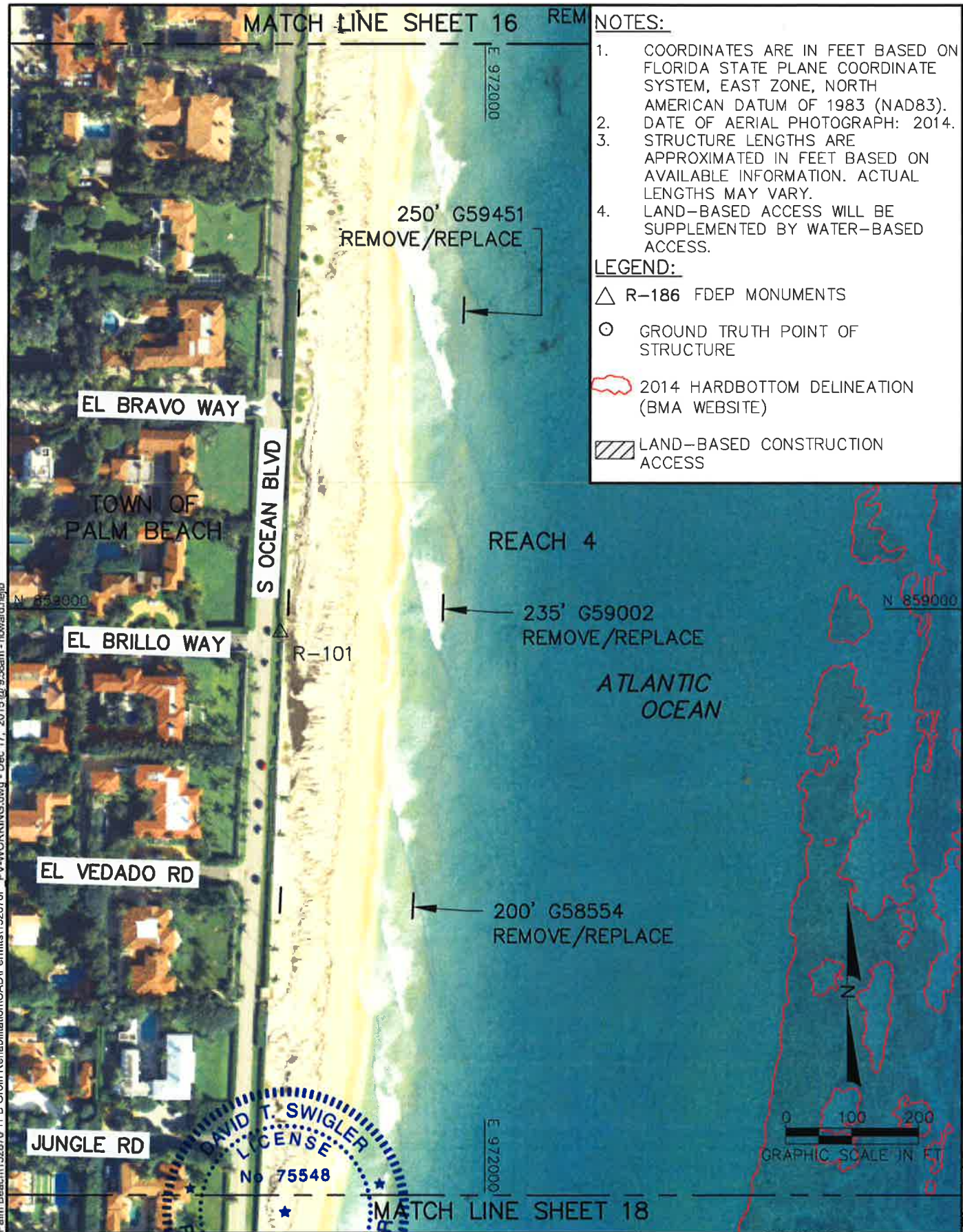
P:\Palm Beach\Town of Palm Beach\152870 TP&B Groin Rehabilitation\CAD\Permits\152870P_PV-WORKING.dwg - Dec 17, 2015 @ 9:58am - howard.nejlb



MATCH LINE SHEET 16 REM

- NOTES:**
1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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- LEGEND:**
- △ R-186 FDEP MONUMENTS
 - GROUND TRUTH POINT OF STRUCTURE
 - 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
 - LAND-BASED CONSTRUCTION ACCESS



TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW

CB&I COASTAL PLANNING & ENGINEERING, INC.
2401 NW BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CBI.COM
P.O. BOX 131416
FAX (561) 331-4716
C.O.A. FL #4028

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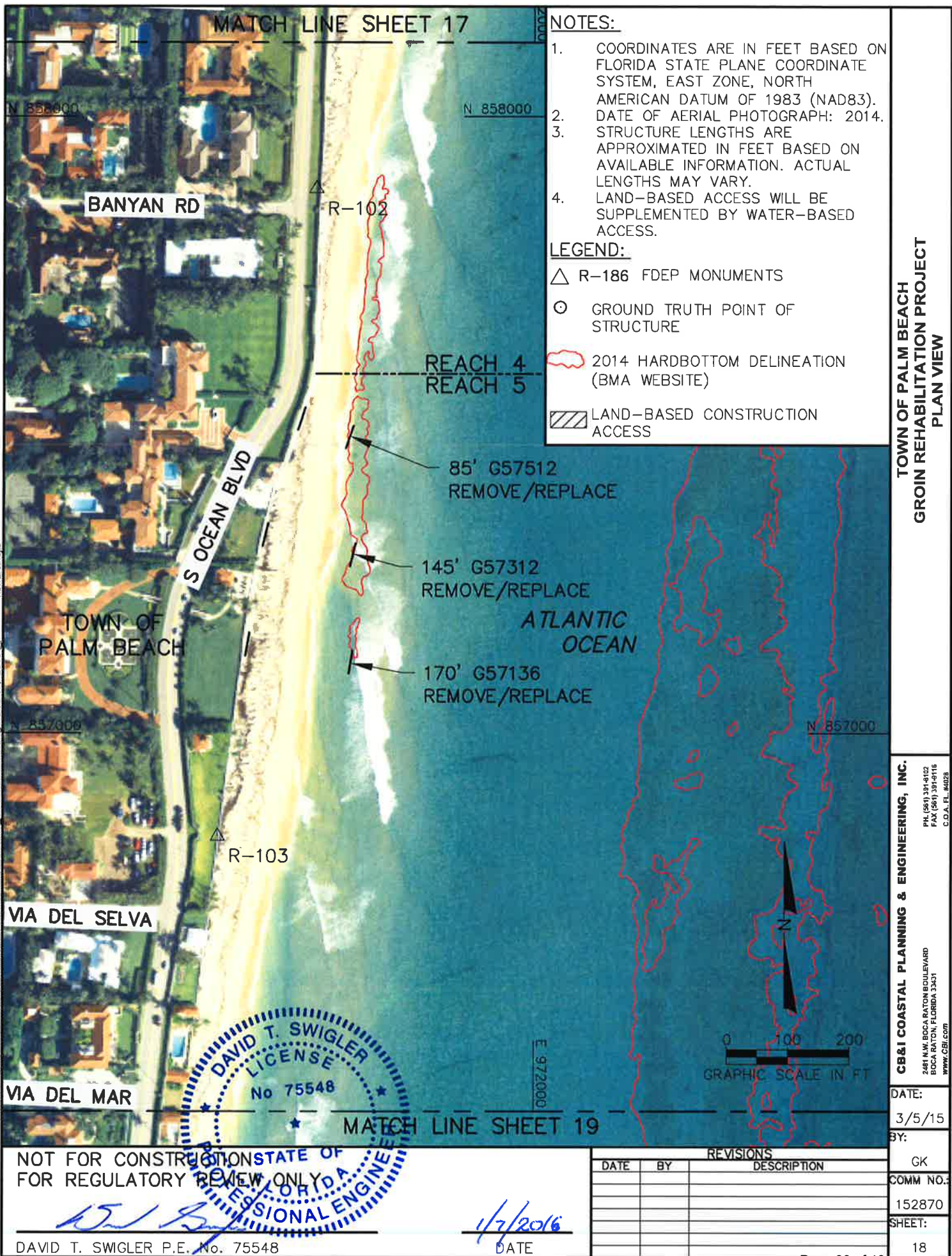
DAVID T. SWIGLER P.E. No. 75548

1/7/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

DATE: 3/5/15
BY: CK
COMM NO.: 152870
SHEET: 17

P:\Palm Beach\Town of Palm Beach\152870 TPB Groin Rehabilitation\CAD\Permits\152870P_PV-WORKING.dwg - Dec 17, 2015 @ 9:59am - howard.nejib



VIA DEL MAR MATCH LINE SHEET 18

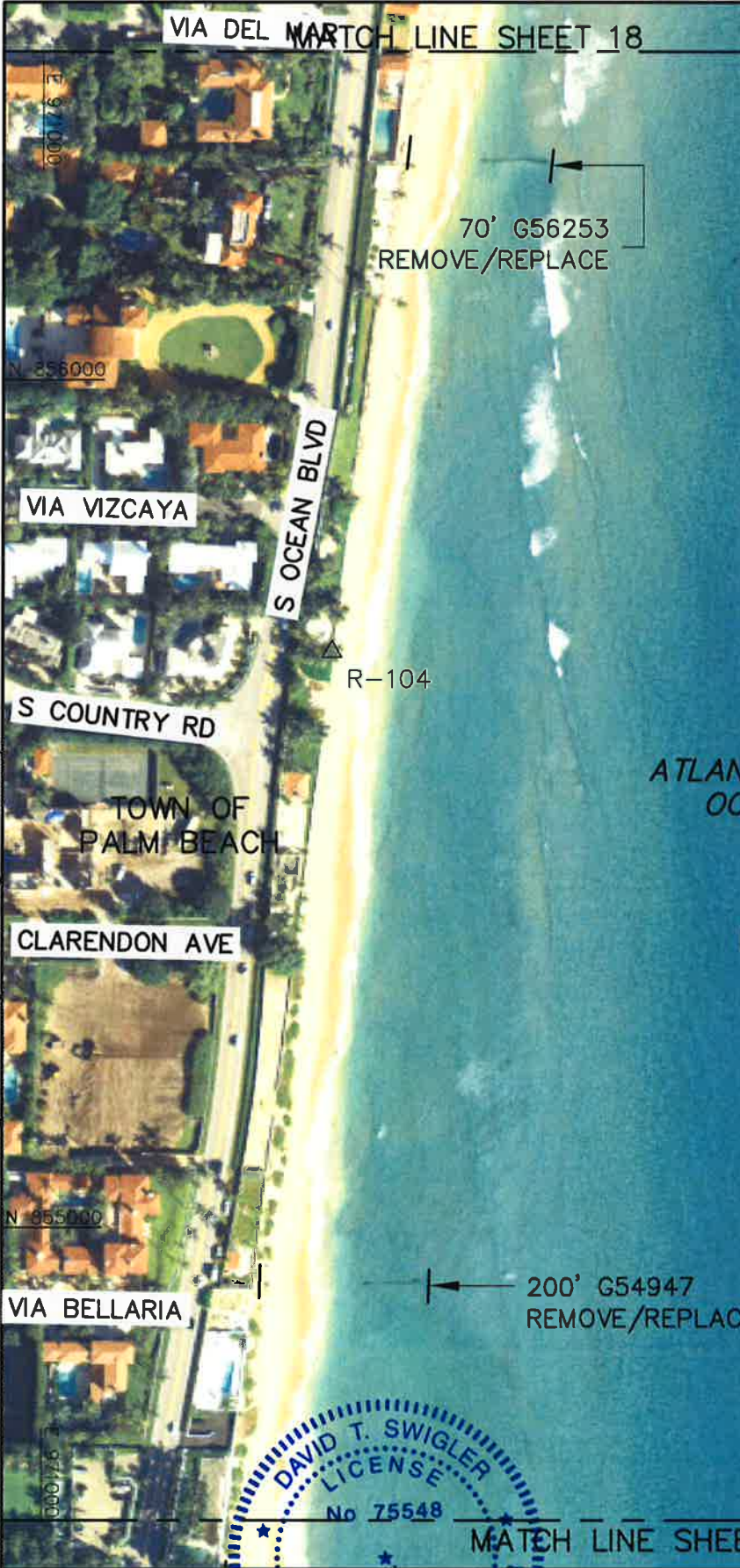
NOTES:

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LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW



ATLANTIC OCEAN

REACH 5



1/2/2016
DATE

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FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

MATCH LINE SHEET 20

REVISIONS		
DATE	BY	DESCRIPTION

CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCCA RATON BOULEVARD
BOCCA RATON, FLORIDA 33431
PH: (561) 391-4102
FAX: (561) 391-8116
WWW.CBI.COM
C.D.A. FL #4028

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 19

MATCH LINE SHEET 19

NOTES:

- COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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LEGEND:

- R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH GROIN REHABILITATION PROJECT PLAN VIEW

VIA DEL LAGO

S OCEAN BLVD

R-105

VIA PALMA

N 854000

N 854000

ALGOMA RD

200' G54176-LEAVE IN PLACE

E 972000

TOWN OF
PALM BEACH

REACH 5

ATLANTIC
OCEAN

KINGS RD

200' G53758-LEAVE IN PLACE

WOODBIDGE
RD

180' G53464-LEAVE IN PLACE

R-106

160' G53159-LEAVE IN PLACE

N 853000

DAVID T. SWIGLER
LICENSE
No 75548

180' G52871
LEAVE IN PLACE

MATCH LINE SHEET 21

0 100 200
GRAPHIC SCALE IN FT

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

4/7/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

CB&I COASTAL PLANNING & ENGINEERING, INC.

PH: (561) 391-8102
FAX: (561) 391-8116
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CBI.COM

DATE:
3/5/15
BY:
GK
COMM NO.:
152870
SHEET:
20

MATCH LINE SHEET 20

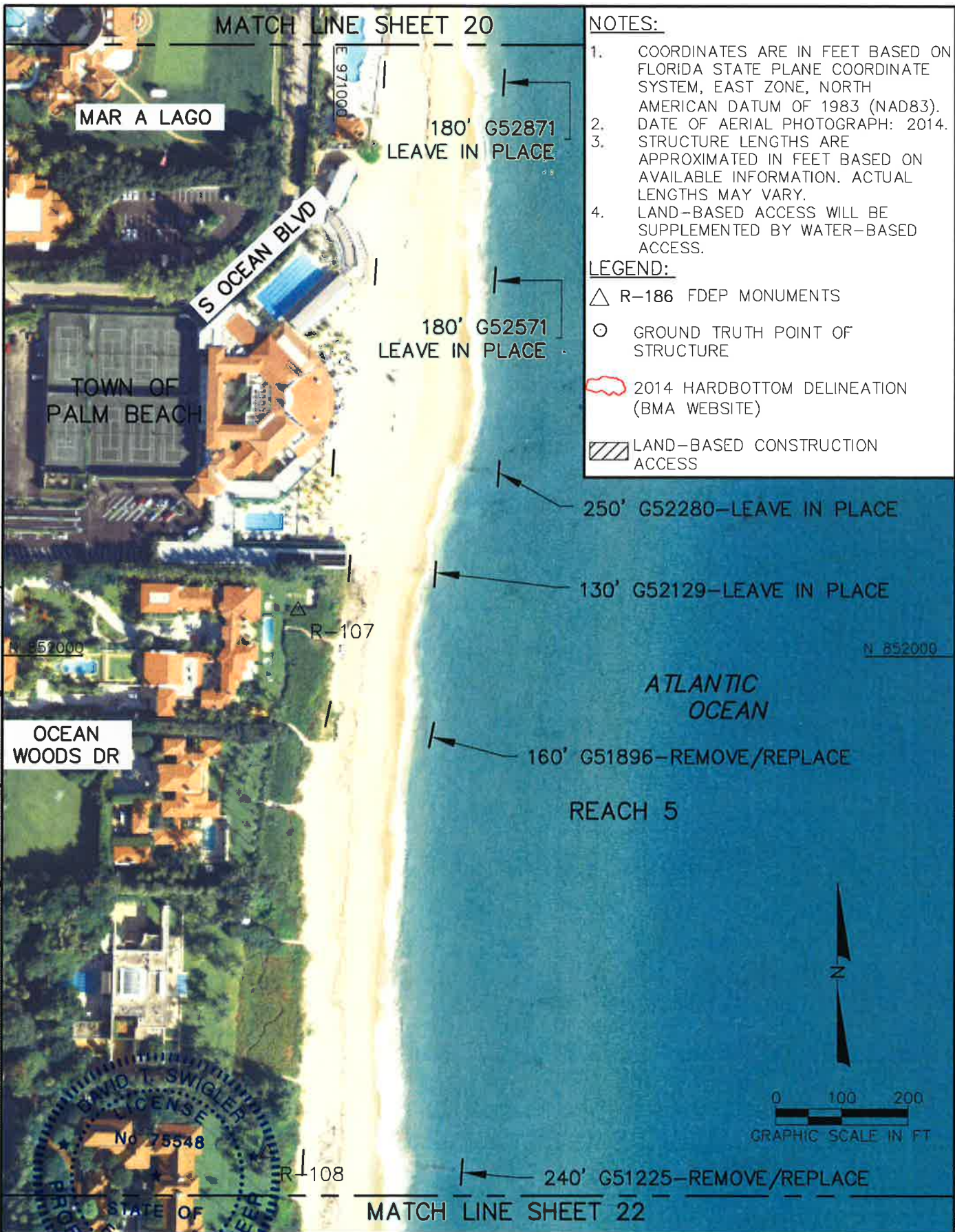
NOTES:

1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW



MATCH LINE SHEET 22

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

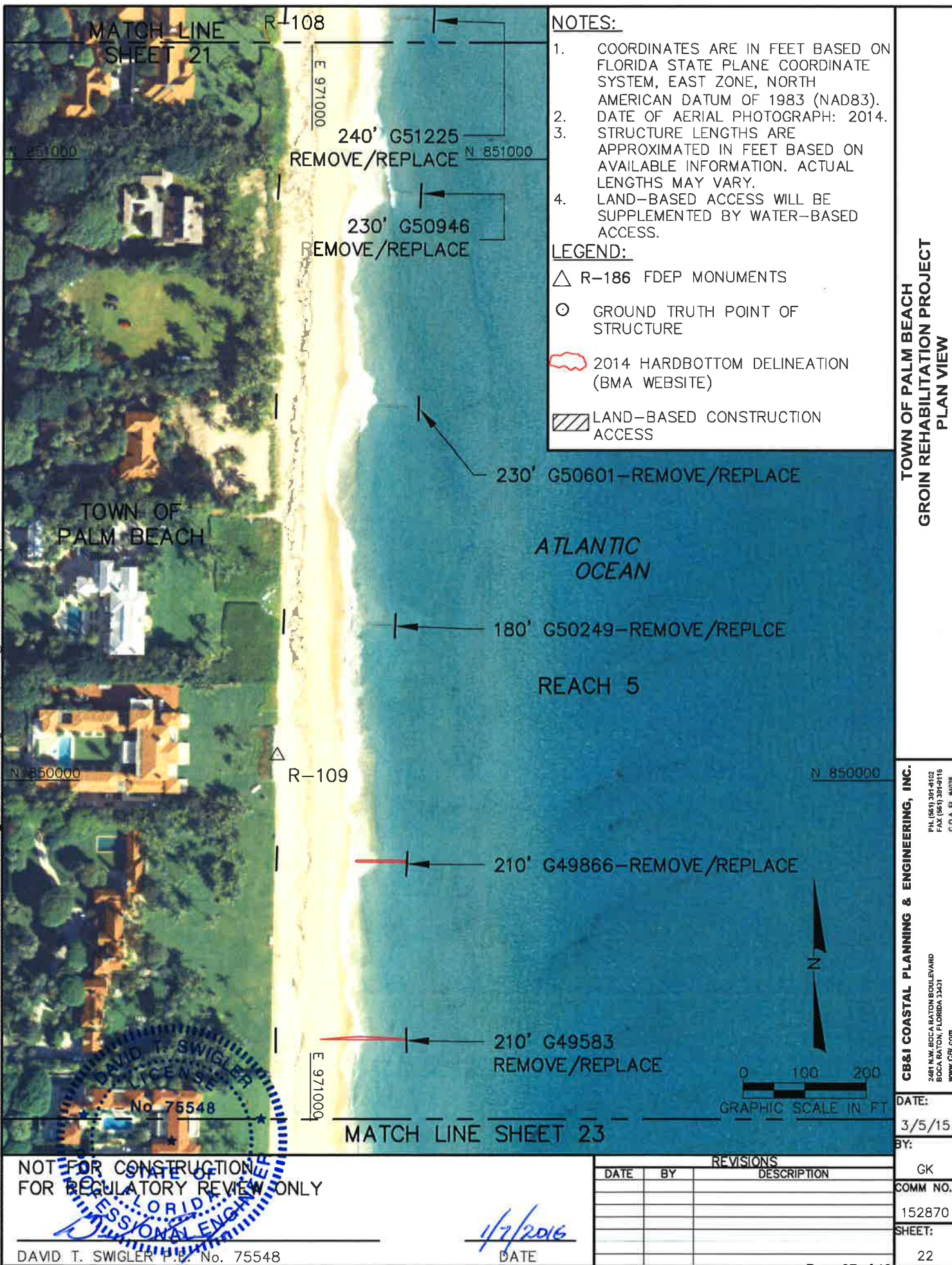
4/7/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 NW BOCCA RATON BOULEVARD
BOCCA RATON, FLORIDA 33431
PH (561) 391-4702
FAX (561) 391-4716
C.O.A. FL 44023
WWW.CBI.COM

DATE: 3/5/15
BY: GK
COMM NO.: 152870
SHEET: 21

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MATCH LINE SHEET 22

NOTES:

1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

210' G49351
REMOVE/REPLACE

200' G49088
REMOVE/REPLACE

195' G48818-REMOVE/REPLACE

260' G48688-REMOVE

REACH 5
REACH 6

35' G48338-LEAVE IN PLACE

70' G48015-REMOVE/REPLACE

ATLANTIC
OCEAN



MATCH LINE SHEET 24

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

1/7/2016

REVISIONS

DATE	BY	DESCRIPTION

TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW

CB&I COASTAL PLANNING & ENGINEERING, INC.

PH (561) 391-4902
FAX (561) 391-4916
C.O.A. FL #4028

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CBI-CON.COM

DATE:

3/5/15

BY:

CK

COMM NO.:

152870

SHEET:

23

MATCH LINE SHEET 23

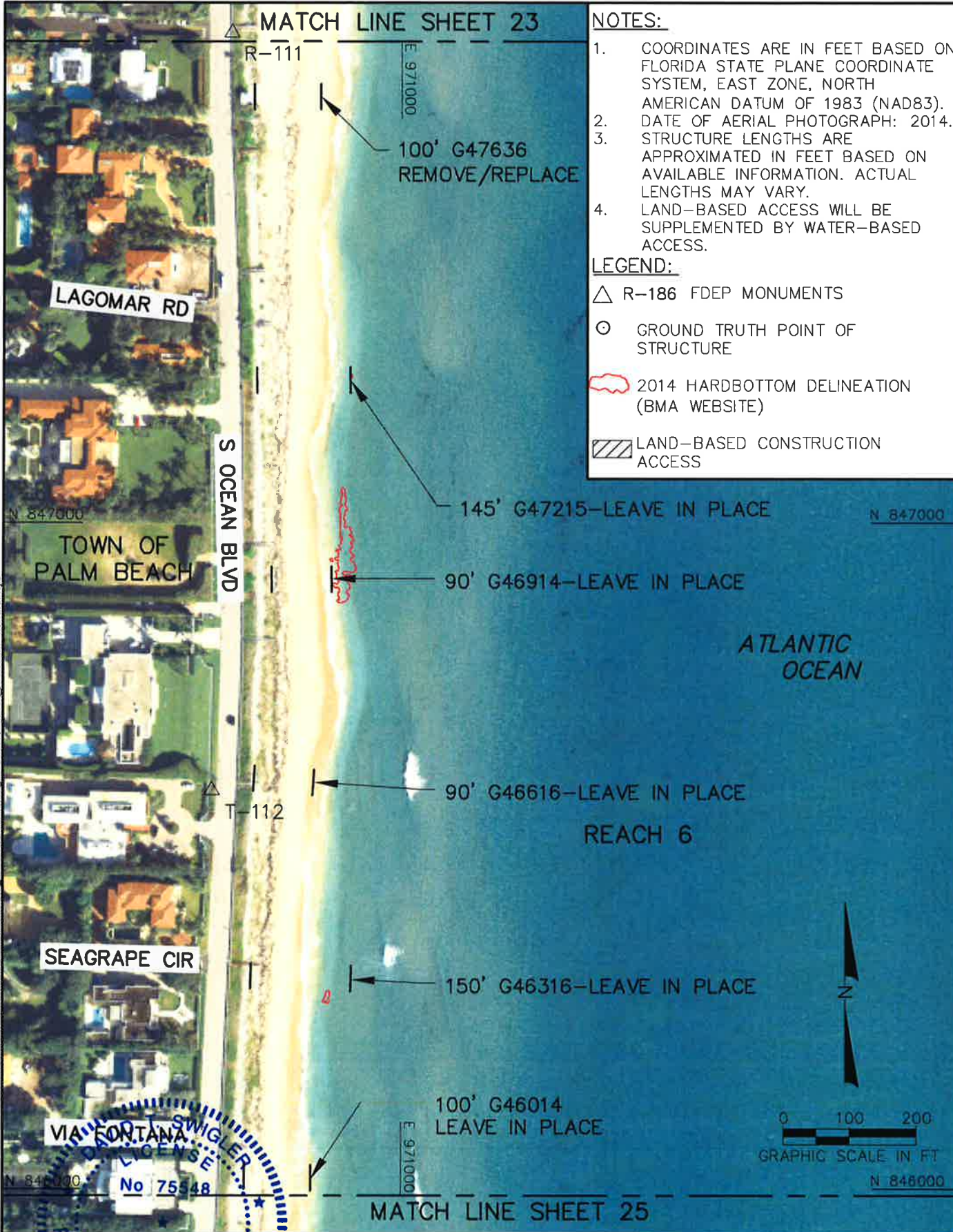
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LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH GROIN REHABILITATION PROJECT PLAN VIEW



CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 391-4902
FAX: (561) 391-9116
C.O.A. #4028
WWW.CBI.COM

DATE:

3/5/15

BY:

GK

COMM NO.:

152870

SHEET:

24

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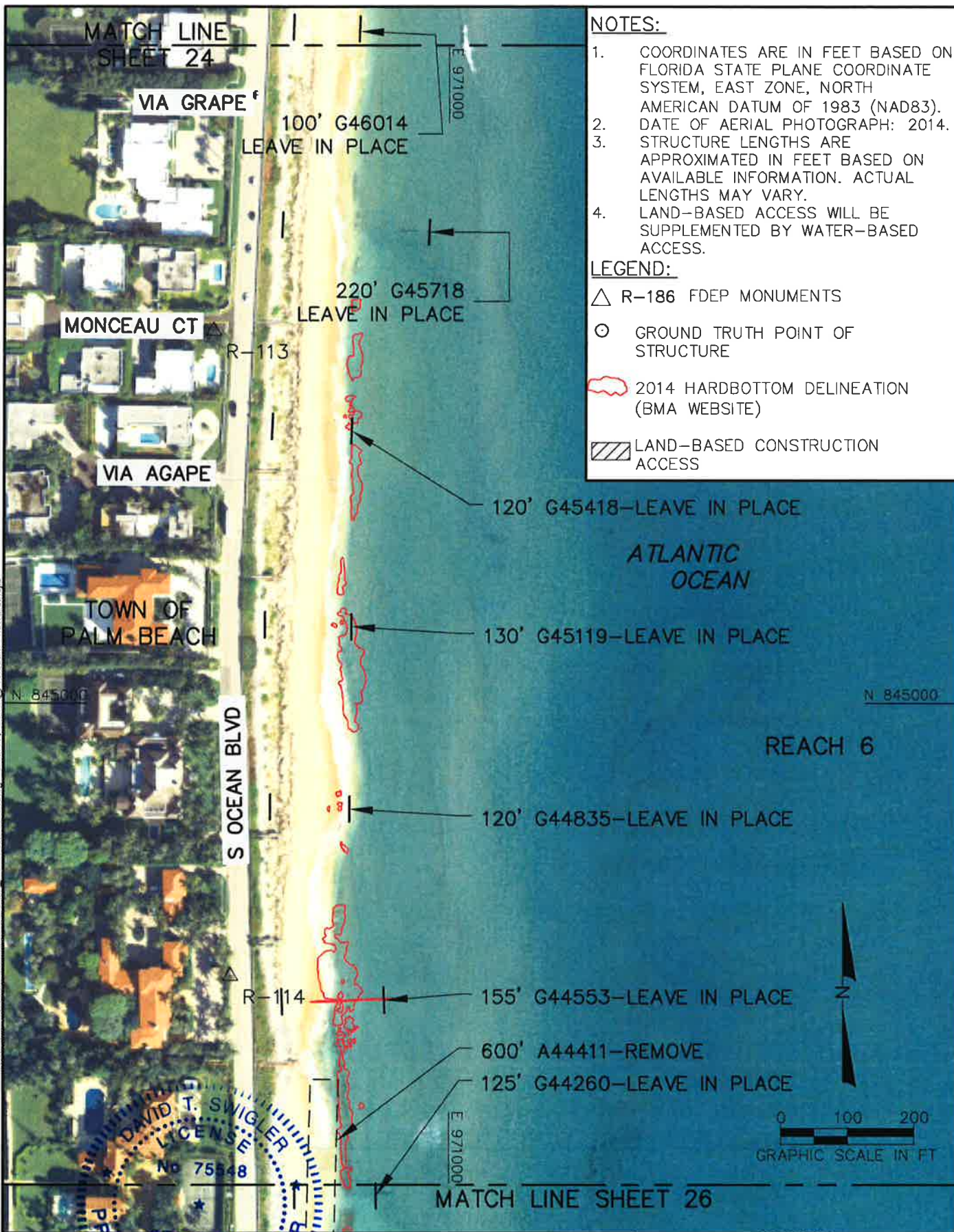
DAVID T. SWIGLER P.E. No. 75548

DATE

4/2/2016

REVISIONS		
DATE	BY	DESCRIPTION

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NOTES:

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LEGEND:

- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH GROIN REHABILITATION PROJECT PLAN VIEW

CB&I COASTAL PLANNING & ENGINEERING, INC.

PH: (561) 391-4102
FAX: (561) 391-4116
2491 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
WWW.CBI-ENG.COM
C.D.A. FL #4028

DATE:

3/5/15

BY:

GK

COMM NO.:

152870

SHEET:

25

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FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

4/2/2016

REVISIONS

DATE	BY	DESCRIPTION

MATCH LINE SHEET 25

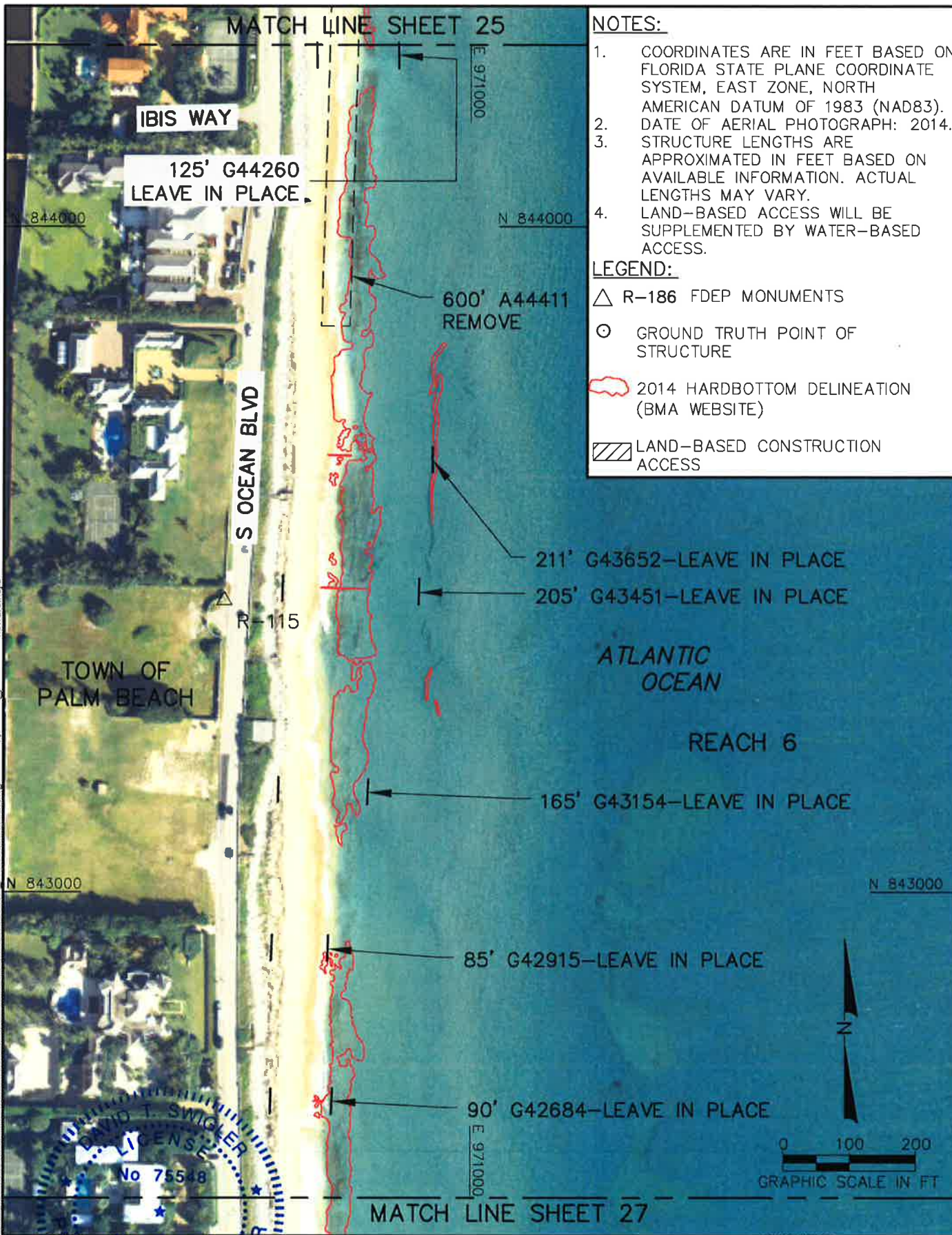
NOTES:

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- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**



CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 394-4102
FAX: (561) 394-9716
C.O.A. FL #4028
WWW.CBI.COM

DATE:

3/5/15

BY:

GK

COMM NO.:

152870

SHEET:

26

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FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

1/7/2016

REVISIONS		
DATE	BY	DESCRIPTION

MATCH LINE SHEET 26

NOTES:

1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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- △ R-186 FDEP MONUMENTS
- GROUND TRUTH POINT OF STRUCTURE
- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
PLAN VIEW**



ATLANTIC OCEAN

N 841000

E 971000

MATCH LINE SHEET 28

CB&I COASTAL PLANNING & ENGINEERING, INC.

2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 394-4102
FAX: (561) 394-4116
C.O.A. FL #4028
WWW.CBI.COM

DATE:

3/5/15

BY:

CK

COMM NO.:

152870

SHEET:

27

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

DATE

1/7/2016

REVISIONS

DATE	BY	DESCRIPTION

MATCH LINE SHEET 27

NOTES:

1. COORDINATES ARE IN FEET BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83).
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LEGEND:

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- 2014 HARDBOTTOM DELINEATION (BMA WEBSITE)
- LAND-BASED CONSTRUCTION ACCESS

TOWN OF PALM BEACH GROIN REHABILITATION PROJECT PLAN VIEW

CB&I COASTAL PLANNING & ENGINEERING, INC.
2481 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
PH: (561) 391-4102
FAX: (561) 391-8116
WWW.CBI.COM
S.O.A. FL #4028

DATE:
3/5/15

BY:
GK

COMM NO.:
152870

SHEET:
28

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PHIPPS
OCEAN
PARK

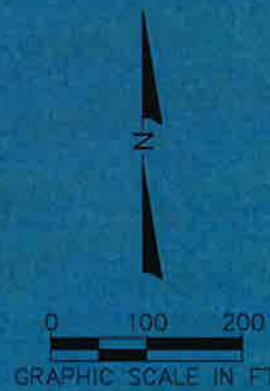
ATLANTIC
OCEAN



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FOR REGULATORY REVIEW ONLY

DAVID T. SWIGLER P.E. No. 75548

1/7/2016
DATE



REVISIONS		
DATE	BY	DESCRIPTION

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FOR REGULATORY REVIEW ONLY

DAVID SWIGLER P.E. NO. 75548



1/7/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

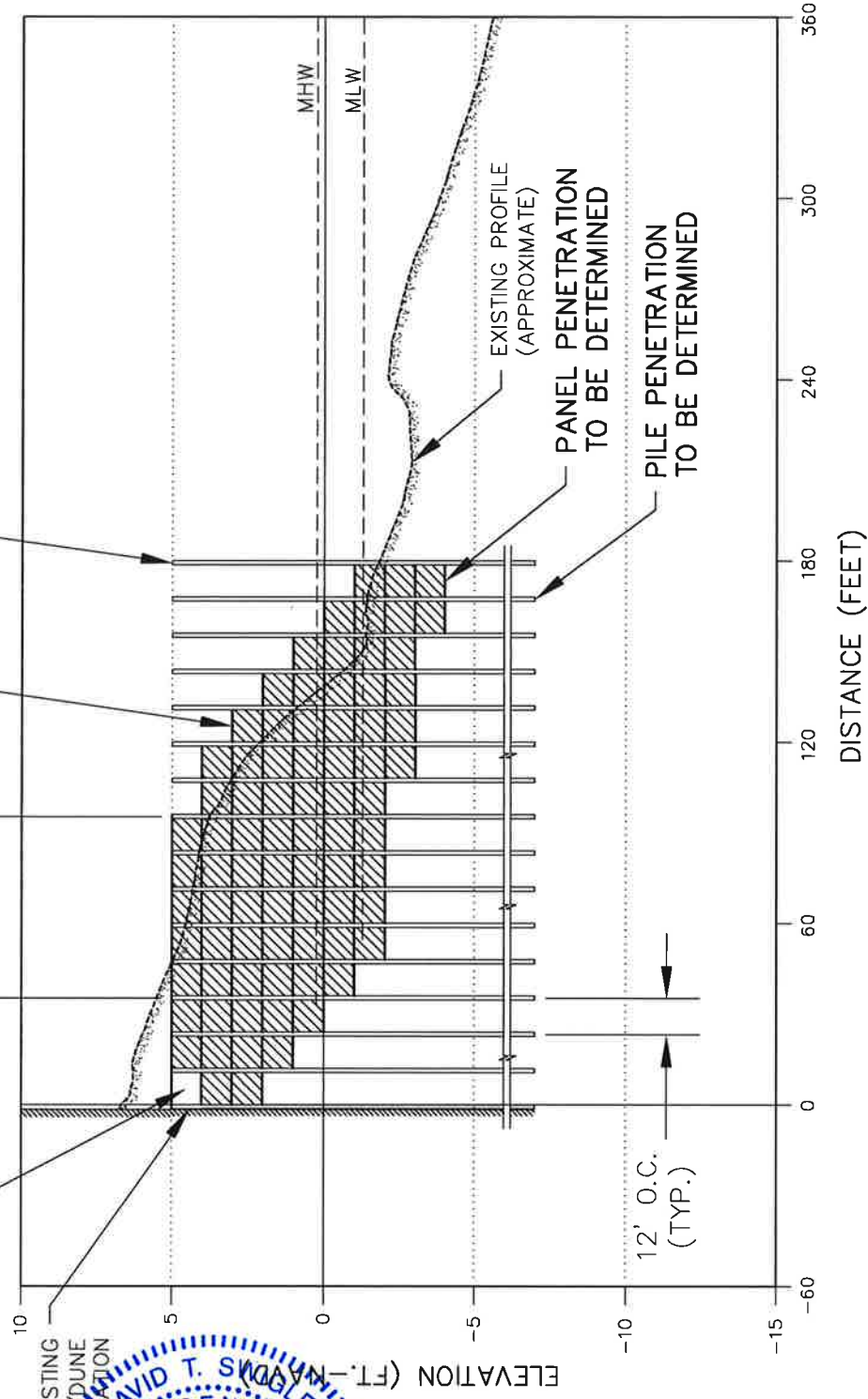
DATE:	03/10/15
BY:	HN
COMM NO.:	152870
SHEET:	29

PROPOSED CONCRETE PANEL
(TOP ELEVATION VARIES)

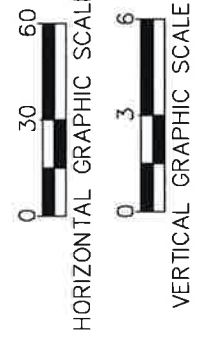
PROPOSED CONCRETE KING PILE
(TOP ELEVATION +5' NAVD)

GROIN LENGTH
(VARIES)

PANEL OMITTED
FOR LATERAL
BEACH ACCESS

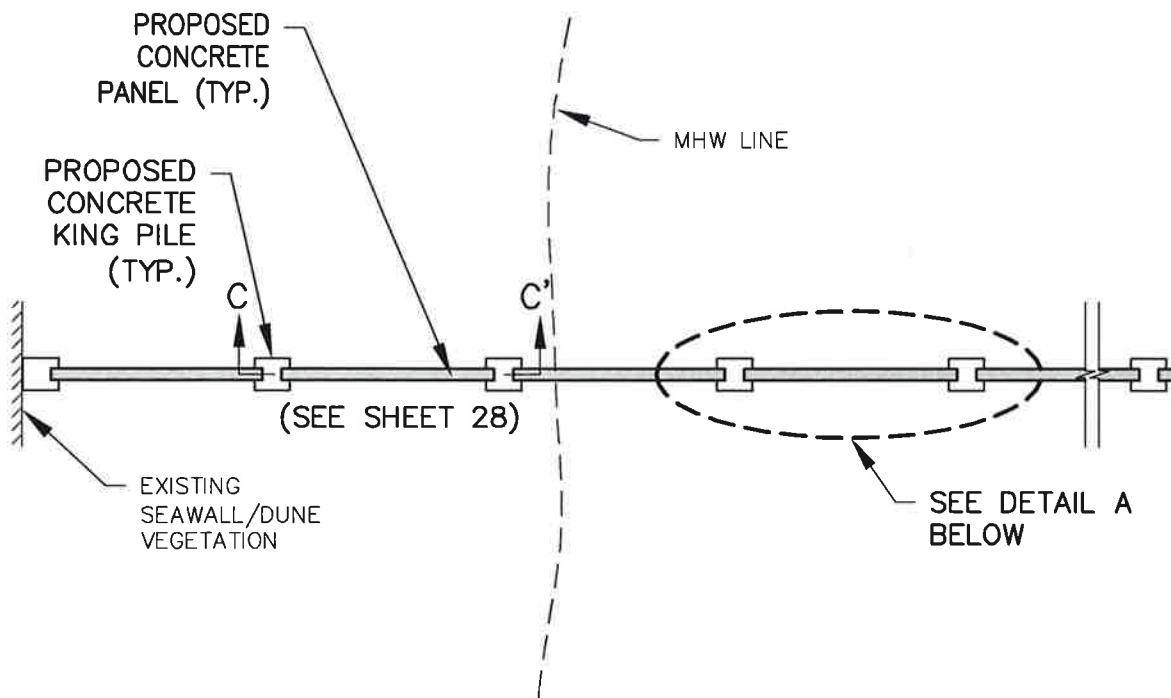


GROIN CROSS SECTION



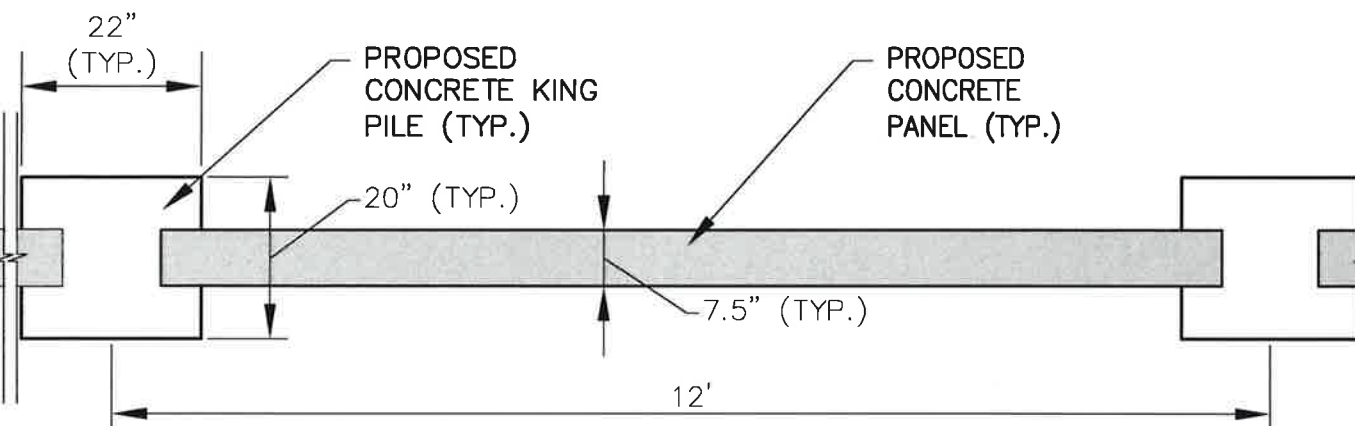
TOWN OF PALM BEACH
EROSION CONTROL PROJECT
TYPICAL GROIN SECTION

CB&I Coastal Planning & Engineering, Inc.
PH (951) 341-8102
FX (951) 341-8116
C.O.A. 11-1-0005
C.O.A. 11-1-0021
www.cbci.com



GROIN PLAN VIEW

SCALE: 1" = 10'



DETAIL A

SCALE: 1" = 2'



NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DAVID SWIGLER P.E. NO. 75548

1/2/2016
DATE

REVISIONS		
DATE	BY	DESCRIPTION

**TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
TYPICAL GROIN DETAILS**

CB&I COASTAL PLANNING & ENGINEERING, INC.
PH: (561) 391-4102
FAX: (561) 391-9116
C.O.A. FL #4026
C.O.A. LA #2331
2451 N.W. BOCA RATON BOULEVARD
BOCA RATON, FLORIDA 33431
www.CBI.com

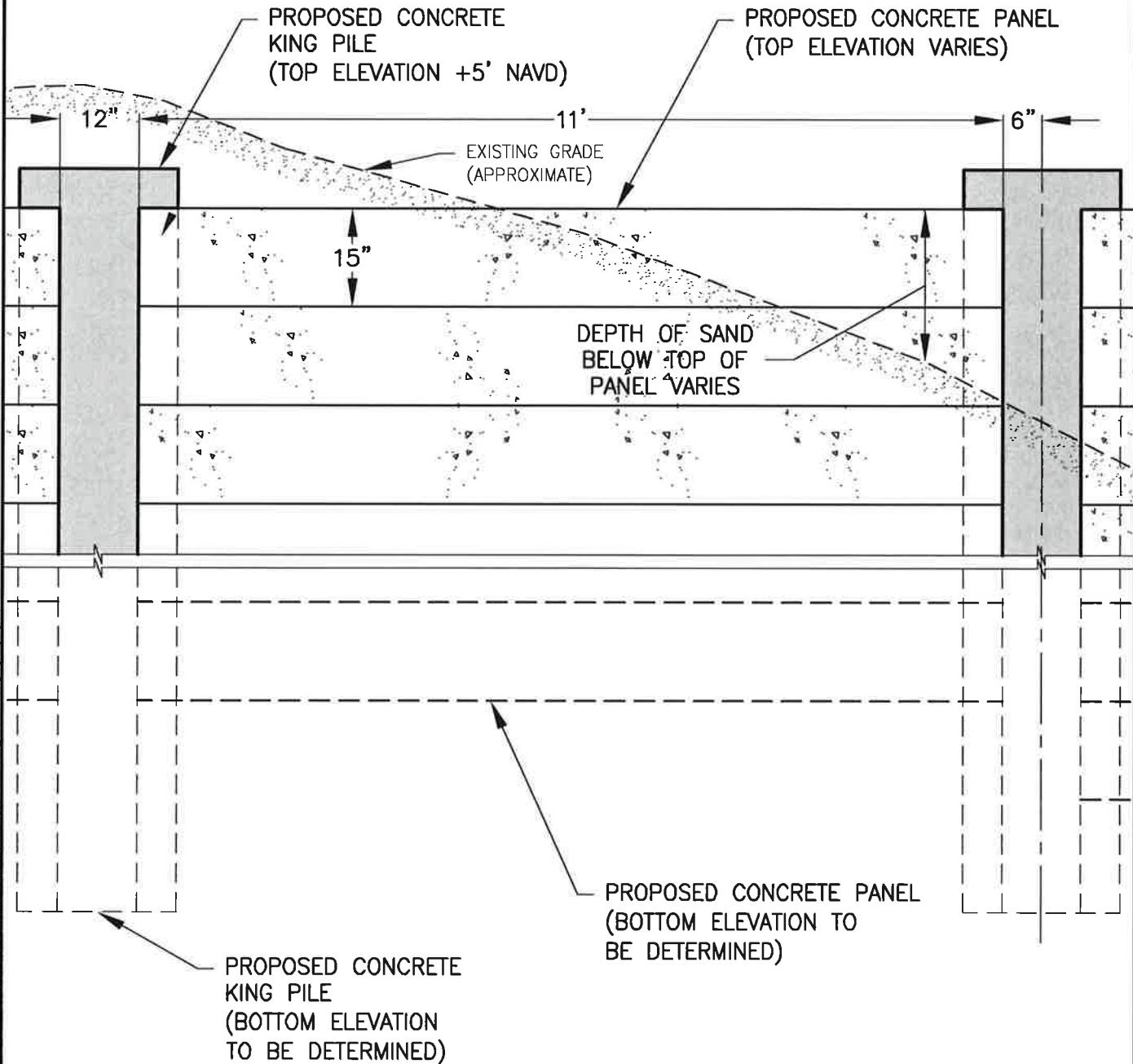
DATE:
03/05/15

BY:
HN

COMM NO.:
152870

SHEET:
30

P:\Palm Beach\Town of Palm Beach\152870 TPB Groin Rehabilitation\CAD\Permits\152870P_Dils.dwg - Aug 06, 2015 @ 6:58am - gary.krystyniak



DETAIL C-C'
SCALE: 1" = 2'

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1/7/2016
DATE

REVISIONS		
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TOWN OF PALM BEACH
GROIN REHABILITATION PROJECT
TYPICAL GROIN DETAILS

CB&I COASTAL PLANNING & ENGINEERING, INC.
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BOCA RATON, FLORIDA 33431

DATE: 03/05/15
BY: HN
COMM NO.: 152870
SHEET: 31